

**NIKKEN**

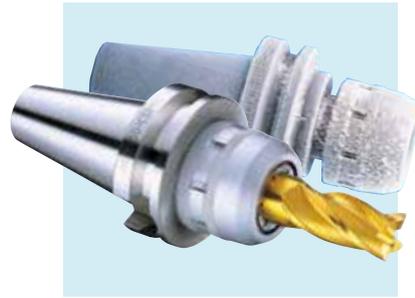
# NC TOTAL TOOLING SYSTEM



**NIKKEN KOSAKUSHO WORKS, LTD.**  
CAT.NO.303K

# NIKKEN's Proposal for Improved Quality and Productivity.

Total management of M/C manufacturing methods & technologies.



## HUMANWARE

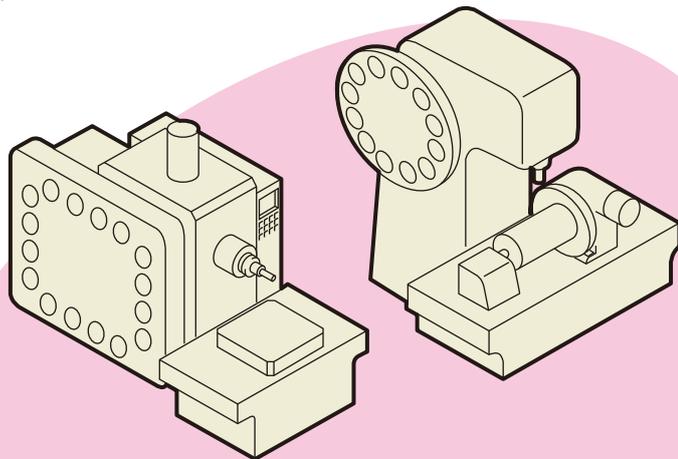
The effective utilization of M/C depends upon the insight and skill of shop floor people. Harmonization in the selection of machine, tooling, fixtures, peripherals, cutting tools under a coordinated shop floor management is the key to success.



**COMBAT Z DRILL**  
P.295



**REAMER SERIES**  
P.293

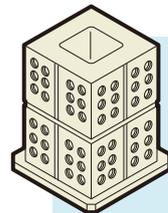


**M/C OFFERS INVALUABLE OPPORTUNITIES FOR AUTOMATED, UNATTENDED MACHINING, when proper tooling, work holding and fixtures technologies are applied all in HARMONY.**

## CUTTING TOOLS

Relatively simple tools like drills and face mills also need careful attention for stable and effective swarf making. For instance, high speed steel tools can be more effective than carbide tools with certain work pieces and materials.

For another instance, why not a reamer for inspection/proof after boring?



## FIXTURES

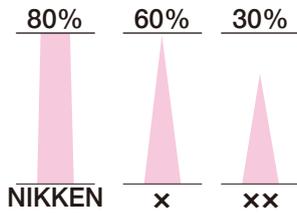
Work holding fixtures and power clamping systems for a variety of large or small batch work pieces.

Well designed fixtures can achieve cost effective parts manufacture. Fixtures (as shown above) effectively reduce ATC operations and drastically reduce cycle time.

# TOOLING

MORE THAN 80% TAPER CONTACT is needed for this vital linkage between machine and workpiece. ;

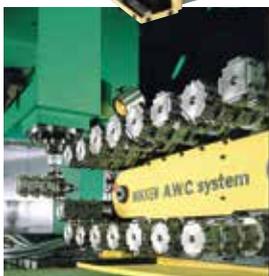
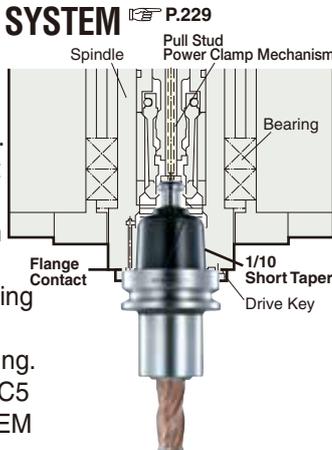
- ① NIKKEN holders protect the spindle. (They eliminate "dance" in the spindle.)



- ② NIKKEN milling chucks are SUB-ZERO TEMPERATURE (-90°C) TREATED for stable particle composition : Heat treated to HRC60.

## The Next Generation Tool Interface NC5 TOOLING SYSTEM

This newly developed Tool Interface featured. A Double Contact 1/10 Short Taper for improved High Speed & High Precision Machining and High Stock Removal Machining. Please refer to NC5 TOOLING SYSTEM catalogue.



# PERIPHERALS

**AUTOMATIC WORK CHANGER**  
Operator-friendly AWC system for vertical machining centres.

**CNC ROTARY TABLES**  
Precision worm screw made of solid tungsten carbide drives hardened and ionnitrided worm wheel made of steel.

THE ONE AND ONLY SOLUTION FOR ELIMINATING SPOT WEAR.



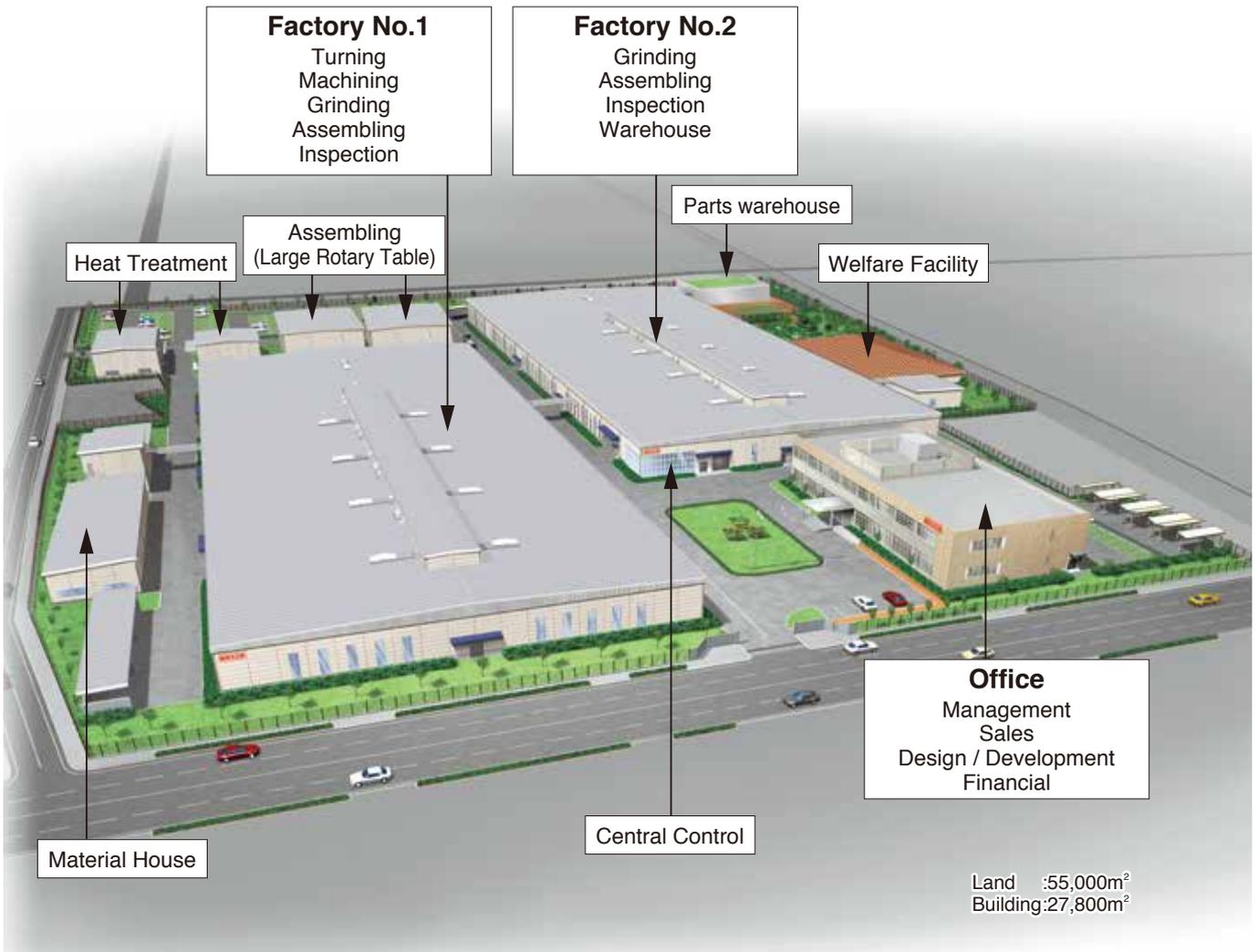
KOKORO = Human Heart

Our company's name, "NIKKEN," is derived from our desire to "always maintain the willingness to study patiently on a daily basis and contribute to future industry with technology and ideas." Pursuing the development and production of tools for 50 years, we have developed peripheral instruments such as NC tooling systems, reamers, CNC rotary tables and controllers (NIKKEN-Ø21 series), etc. conforming to customers' demands. Today's effort and study bear tomorrow's fruits. NIKKEN wishes to provide you with original products of the highest quality founded in **everyday study and research.**



OSAKA-DAITO NEW OFFICE & FACTORY  
LAND:55,000m<sup>2</sup>  
BUILDING:27,000m<sup>2</sup>

# OSAKA·DAITO Office & Factory



## Carbonizing & Sub-Zero Treatment

NIKKEN is the only tooling product manufacturer which performs sub-zero treatment for tooling. This refers to a technique where -90 deg. ultra-low-temperature processing is performed after carbonizing and quenching in order to eliminate the residual austenite and to form 100% martensite compositions to prevent deterioration over time. This technique has been applied for block gauges and for bearings of the highest grade in the past. It is an example of how NIKKEN pays attention to those aspects which are often hidden from view and how we put our hearts and souls into each and every tooling product.



## Ion Nitriding

Ion nitriding refers to a nitriding process where glow discharges are generated in a vacuum of a nitrogen-mixed gas atmosphere to heat the workpieces at a low temperature of 450 deg. while at the same time nitriding them by a sputtering action. This processing improves both the wear resistance and sliding performance.(It reduces the surface friction coefficient.)The experience and know-how of ion nitriding have been utilized in a large number of NIKKEN's products, including worm wheels for CNC Rotary Tables and Tough-Cut Skill Reamers.



### NC Lathe Line

NIKKEN Oil Jetter System and **Combat Z Drill P.295** resolved the problems from the cooling of the cutting edge and the swarf removal, then, night time un-manned operation could be done.

### M/C Line

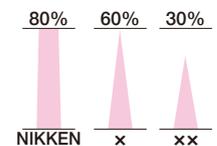
The M/Cs with **3Lock** spindle and **NC5** spindle are working with high accuracy and high productivity through the night.



### Tool Grinding Line

More than 80% Taper Contact is needed for this vital linkage between M/C and workpiece.

NIKKEN holders protect the spindle.  
(They eliminate "dance" in the spindle.)



### Reamer Grinding Line

Reamer grinding line to seek the ultimate unmanned operation with high accuracy and high productivity.



**RADICAL MILL REAMER**



### CNC Rotary Table Assembling Line

NIKKEN builds the most rigid, precise and durable CNC Rotary Table for the worldwide manufacturing market.

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**NIKKEN** is keeping the manufacturing not only the quality, but also the safety in mind.  
Please be careful for the content made . e.g.  **P.290 CATION**

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BT

3Lock

2Lock

NC5

HSK

IT/CAT

REAMER/DRILL

MEASUREMENT

# NIKKEN NC TOOLING SYSTEM

BT

3Lock

2Lock

NC5

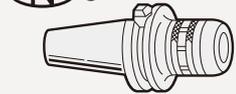
HSK

IT/CAT

REAMER-DRILL

MEASUREMENT

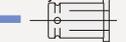
C P.31



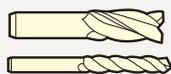
NK, CCNK P.33, P.34



KM, CCK P.33, P.34

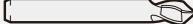


CKFN P.34

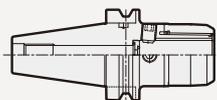


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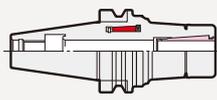
CC



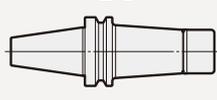
X-Treme P.222



MDSK P.39



VC P.38



SK P.43



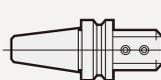
VCK P.36



COMZ P.295



SLA P.54



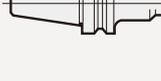
SK P.41



SK P.43

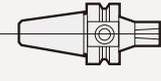


SK-P P.45



SKJ P.49

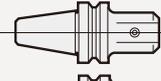
MMC P.37



PMK, VMK P.38



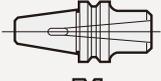
SLB P.54



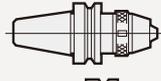
DSA P.54



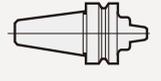
MTA P.55



NPU P.53



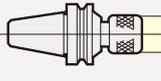
JTA P.53



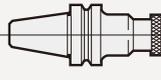
ZKN P.60, P.62



ZL P.57



Z P.58

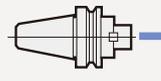


ZKG P.59, P.61

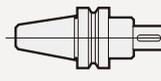


PE P.127

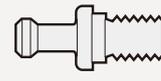
FMA P.123



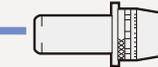
SCA P.128



PS P.303



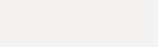
S-C P.33



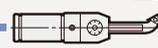
KM, CCK P.33, P.34



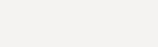
K-ZMAC-V P.105



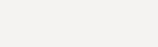
K-RAC P.105



K-DJ P.107



K-BCB P.104



K-SK P.47



SK P.43



K-MMC P.38



PMK P.38



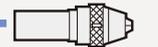
NCD



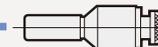
K-MT P.55



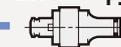
D-NPU P.53



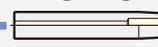
NZ P.64



ZKG P.59, P.61



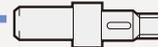
MS-A-O-O P.203



S-MDPE P.127



K-SCA P.128



S-UMT P.157



S-UMTX P.158



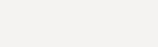
TP P.159



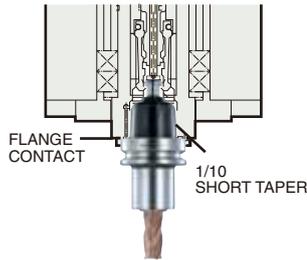
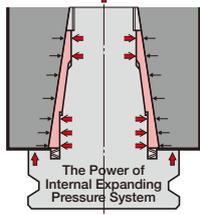
BAL P.162



SY P.162



## NEXT GENERATION TOOL INTERFACE



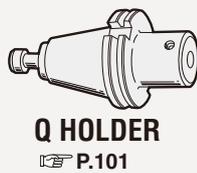
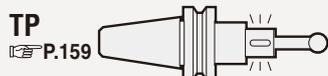
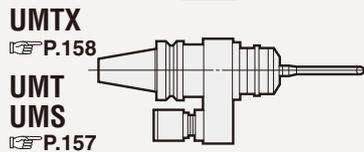
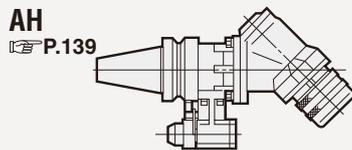
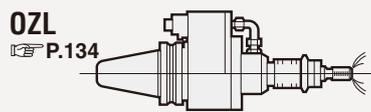
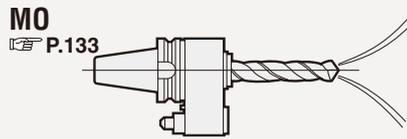
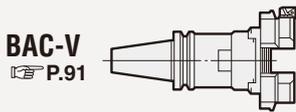
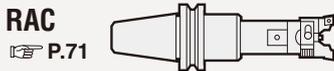
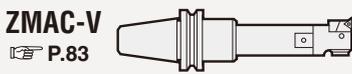
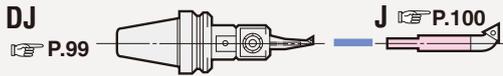
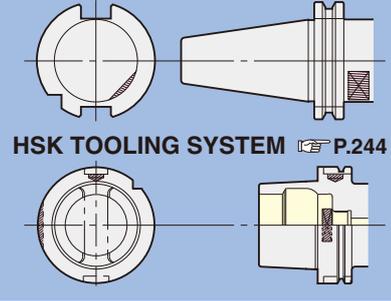
**3LOCK SYSTEM** P.169

**2LOCK SYSTEM** P.189

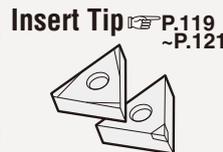
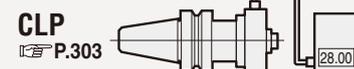
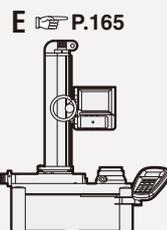
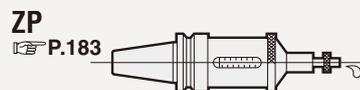
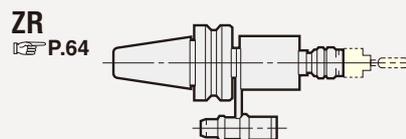
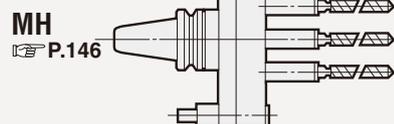
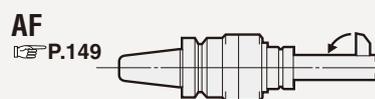
**NC5 TOOLING SYSTEM** P.229

## ISO·DIN/CAT

**IT TOOLING SYSTEM** P.151  
**CAT TOOLING SYSTEM** P.290



**RAC** P.81



**CENTRE THROUGH COOLANT HOLDER** P.129

**FLANGE THROUGH COOLANT HOLDER** P.131

**CLE** P.183

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**REAMER** P.293

**COMBAT Z DRILL** P.295

**CNC** P.299





"ANNIVERSARY"  
type



# MULTI LOCK MILLING CHUCK

It has been 55 years since NIKKEN developed the MULTI-LOCK MILLING CHUCK, NIKKEN's technology has developed the new generation universal chuck.

We call this MULTI -LOCK MILLING CHUCK  "ANNIVERSARY" type. 松本 駿一



### Sub-zero Treatment

NIKKEN Toolings are all subjected to ultra-low temperature treatment of -90°C after carburizing, as shown. This treatment removes residual austenite to prevent from deformation for many years. Thus all of our NIKKEN toolings are produced one by one with greatest possible care of NIKKEN spirits.



## 1 Chucking Torque and Durability

All the NIKKEN MULTI-LOCK Milling Chucks incorporate the multi-roller system including **140% more needle rollers** than the other imitations. Besides, the retainer is not made of phosphor bronze but of special steel which will never break.



As seen from the cross sectional view, the needle rollers are arranged in perfect order with a dense production, but they are arranged to be scattered in the imitations.



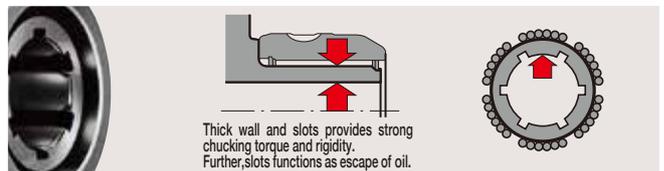
The larger quantity of needle rollers enables the moving of the same load with a small force and less damage on the bearing surface, thus providing a stronger chucking torque without creating even rolling when tightening.

## 2 Rigidity and Chucking Torque

Internal slots together with thickened wall of chuck body ensure no distortion even at heavier milling. Thus, smooth milling work is attained without the vibration or slipping of end mill.

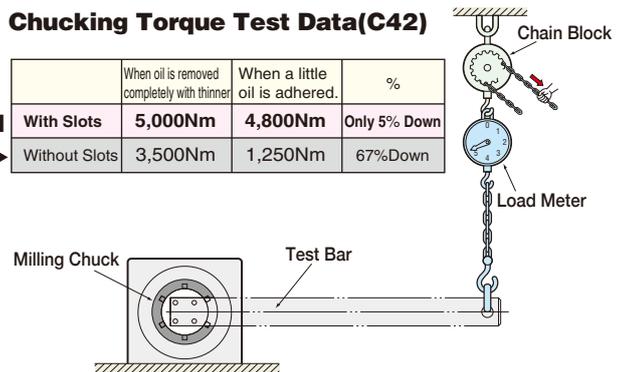
### Effects of Internal Slots

Thanks to internal slots, even if oil remains on the end mill shank, there is no decreasing of chucking torque. In case of imitations without slots, chucking torque is largely reduced by oil, causing the shank to slip down.



### Chucking Torque Test Data(C42)

	When oil is removed completely with thinner	When a little oil is adhered.	%
<b>NIKKEN</b> With Slots	5,000Nm	4,800Nm	Only 5% Down
Others → Without Slots	3,500Nm	1,250Nm	67%Down





Same Appearance,  
but a Remarkable Improvement can be found when cutting.



The cutting chips show us the actual machining capability

Quiet,  
high speed heavy milling



Stable finishing



### 3 New Clamping at Root & Anti-Vibration Mechanism

Cutting Data HSS Endmill Carbide Endmill

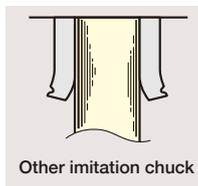
CHUCK	ENDMILL	CUTTING CONDITION	Ad×Rd
<b>BT50-C32-90</b>	HSS Coating 32φ4t	V 38m/min S 380min <sup>-1</sup> F 152mm/min	S55C 60mm OIL 12mm
<b>BT50-C42-95</b>	HSS Roughing 42φ 45φ6t	V 30m/min S 210min <sup>-1</sup> F 130mm/min	S55C 110mm OIL 20mm
<b>BT50-C20-135</b> KM20-16	Carbide Coating 16φ4t	V 176m/min S 3,500min <sup>-1</sup> F 2,000mm/min	S55C 35mm 3mm
<b>BT40-C25-70</b>	HSS Coating 25φ4t	V 38m/min S 480min <sup>-1</sup> F 192mm/min	S55C 50mm OIL 8mm
<b>BT40-C16-60</b>	Carbide Coating 16φ4t	V 200m/min S 4,000min <sup>-1</sup> F 2,000mm/min	S55C 30mm 3mm
<b>BT30-C12-55</b> KM12-10	Carbide Coating 10φ4t	V 160m/min S 5,000min <sup>-1</sup> F 2,000mm/min	S50C 15mm 3mm
<b>BT30-C12-55</b>	HSS Non Coating 12φ4t	V 30m/min S 800min <sup>-1</sup> F 250mm/min	S50C 18mm WATER 4mm
		V 228m/min S 6,000min <sup>-1</sup> F 3,600mm/min	ALUMINIUM 20mm WATER 3mm

The End Mill can perform at 100% of their capability by using the cutting data. If cutting condition is exceeded, they may cause tool failure. For the M/C with ball guide mechanism, MAJOR DREAM HOLDER might perform better than MULTI-LOCK milling chuck.

### 4 Clamping at Nose Mechanism

Clamping at nose - key Condition for Precise Milling.

Surface Finish and Tool Life are decided by Clamping at Nose, Rigidity and Run-Out Accuracy. Only our mechanism performs real clamping at nose, never rivalled by imitations : ideal for heavy milling to fine finishing. Only the NIKKEN MULTI-LOCK Milling Chuck perfectly clamps even at 3mm from chuck nose.

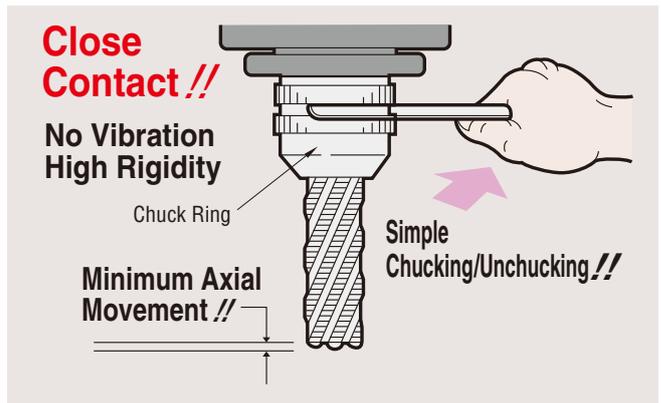


### 5 Stable Milling with Stopper

Easy for "anyone to attain a stable torque."

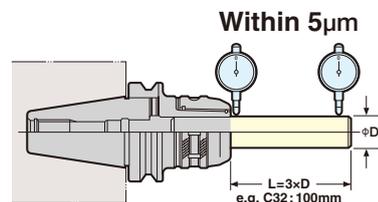
Wear of the bearing surface is only 1~2microns even after practical use of 4~5years owing to the use of 140% more needle rollers than imitations, the use of special material (steel) of NIKKEN own. and the know-how of hardening. The stopper is therefore located to the MULTI-LOCK Milling Chuck where the maximum efficiency of chucking torque is exerted. Tightening the chuck close to the flange face gives a sign of "MILLING OK" to ensure smooth, stable and reliable milling work.

(Important : Good production with Assurance!!)



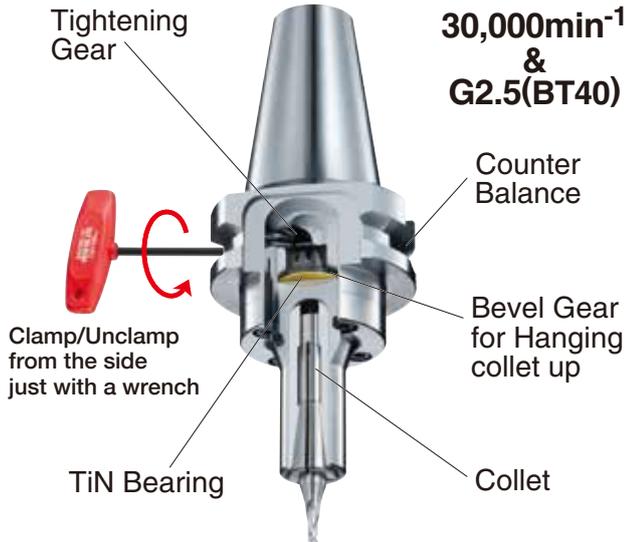
### 6 Fine Run-Out Accuracy

Only NIKKEN MULTI-LOCK Milling Chuck can obtain the run-out accuracy within 5μm(T. I. R) at the position 100mm apart from the nose.(C32 Style)



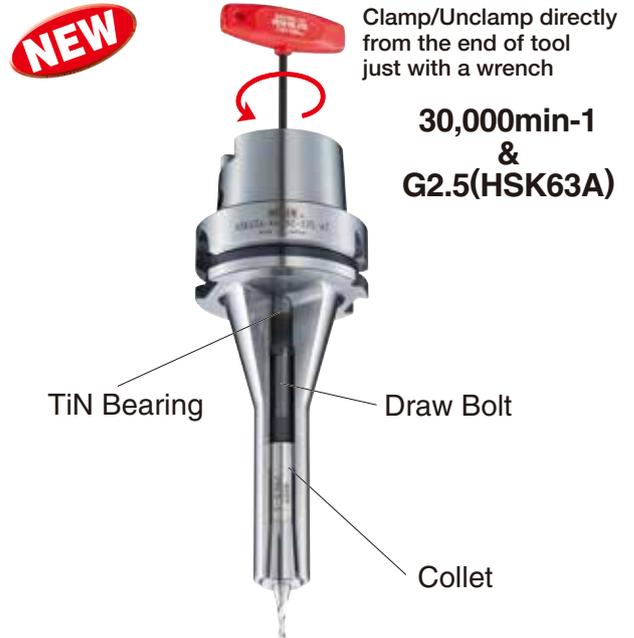
**High Speed·High Precision**  
**Best Chuck for Small Diameter Cutting Tool**

**Standard Type**



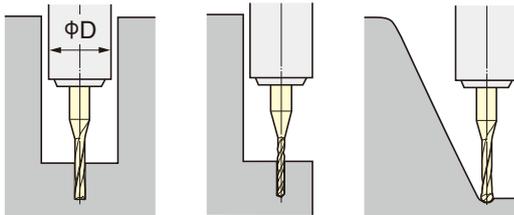
**Direct Screw Type**

Please add "-AT" at the end of Code No. e.g. HSK63A-MMC8C-107-AT

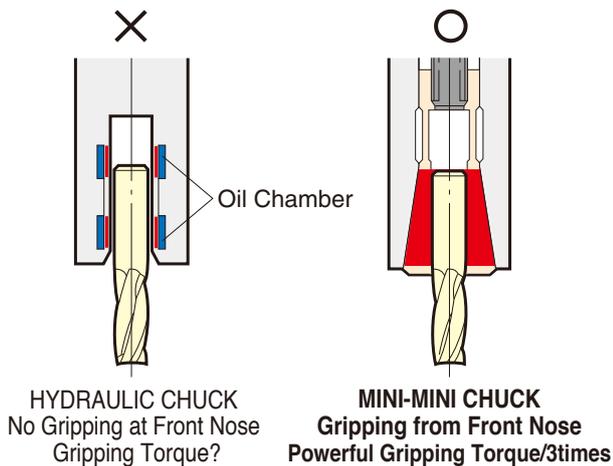


**Slim & Compact**

ΦD : MMC 4 : Φ15mm  
MMC 8 : Φ20mm  
MMC12 : Φ30mm



**Gripping from Front Nose**

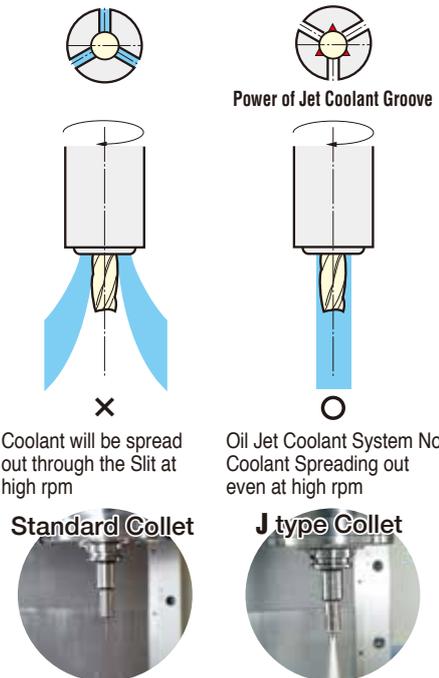


**High Speed**

**MAX. 30,000min<sup>-1</sup> & G2.5**

**Coolant Through Tool Capability**

J type Collet + End Mill  
High Pressure Coolant Through Jet Spread Groove



**HIGH SPEED ROTATION·HIGH ACCURACY·HIGH PRESSURE COOLANT THROUGH**  
**Power of TiN BEARING NUT**

TiN Bearing Nut is used for Nikken Slim Chuck, MAJOR DREAM Holder and VC Holder with great popularity.



**High Speed Slim Chuck**  
**MAX. 40,000min<sup>-1</sup> & G2.5**

**Power of TiN Bearing Nut**

8 degree Taper Collet for Accuracy & Gripping Torque

Simple & Compact Design for High Speed Rotation



**TiN BEARING (HV2,200)**

Special Coated for High Efficiency



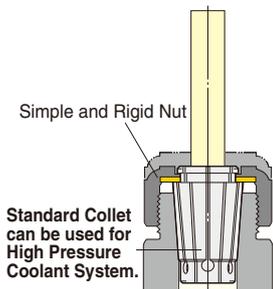
J nut is the best solution for the centre through coolant application, and strongly recommended to use for the high accuracy and the high productivity.

JAPAN, USA, EU, KOREA PAT.

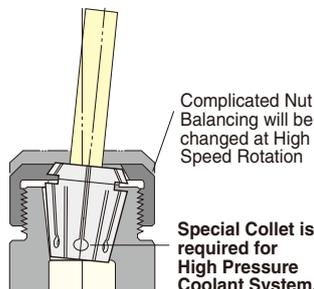
**Flat Shoulder Pushing & Taper Pushing**

**○ NIKKEN SLIM CHUCK**  
 Flat Shoulder Pushing

**× Others**  
 Taper Pushing

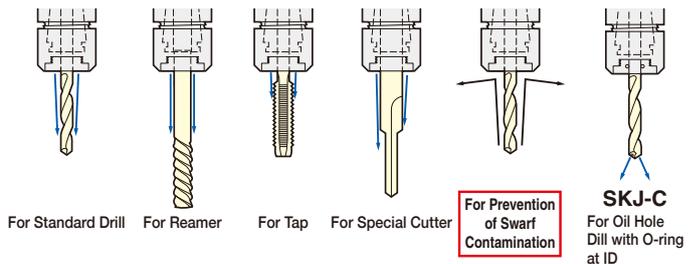


- High Run-out Accuracy due to Flat Shoulder Pushing.
- High Gripping Torque of 8° taper



- Unstable Run-out Accuracy due to Taper Part Pushing?
- Poor Gripping Torque of 12° ,16° taper

**Standard Nut & J Type Nut**

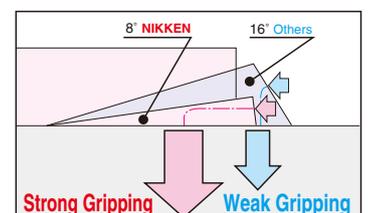
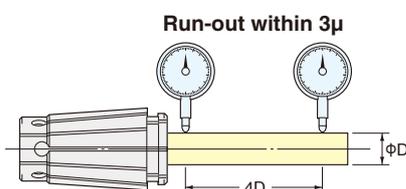


When SK J type nut is used, the total chuck length will be extended by 6mm.

**The Secret of strong gripping power and high rigidity... 8°Taper**

8°Taper and Wedge Principle is the Answer. The smaller the Taper Angle, the better Concentricity is obtained. Besides, thanks to Wedge principle, Strong Gripping Power is generated with small torque.

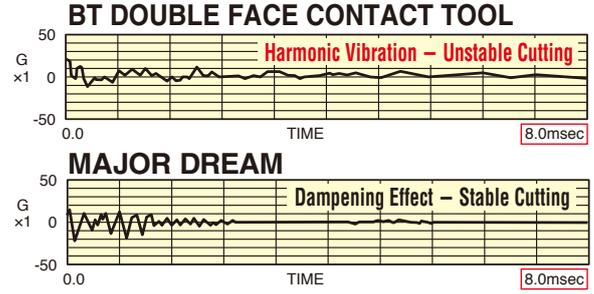
**P Class Concentric Accuracy**



**Revolutionary Dampening Mechanism**



Internal Dampening Mechanism is built-in to the MAJOR DREAM Holder.

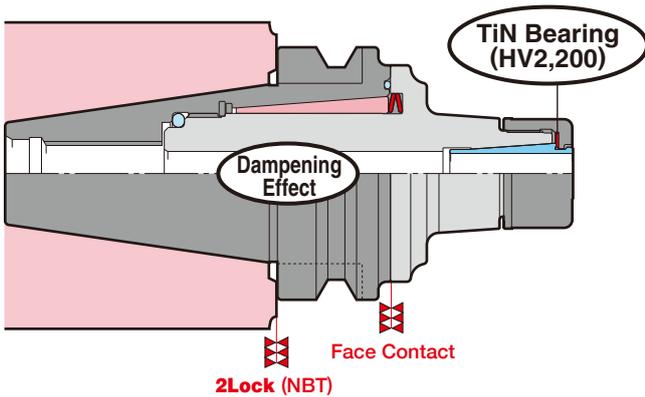


**Difference due to Dampening Technique and Effect**

**Excellent Machining on** { Linear Guide M/C  
Box Guide M/C

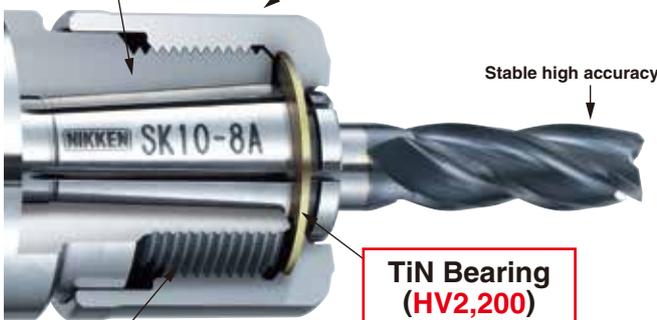


**Dampening Effect & Power of TiN Bearing Nut**



Slim Collet with 8 degree taper to satisfy the accuracy and the high gripping torque.

Simple design without the flats for the hook spanner. The GH handle is used to tighten / loosen precisely. The external diameter is more compact than the external diameter of the ball bearing nut.



Stable high accuracy

The molybdenum is coated to the internal thread of the nut, then the efficiency of the thread is highly improved.



J nut is the best solution for the centre through coolant application, and strongly recommended to use for the high accuracy and the high productivity.

**Great Popularity of MAJOR DREAM 3 Brothers**

- MAJOR DREAM SHRINK FIT HOLDER P.200
- MAJOR DREAM PRO ENDMILL P.202



This is the Mighty End Mill Holder from the series of Tin Bearing Nut type collet chuck to satisfy the gripping torque, run-out accuracy, cutting rigidity, high precision finish and high speed rotation.

**2LOCK** tooling can be used as the BT double face contact tooling on the machine with the BT double face contact spindle. It can be also used as the BT tooling on the machine with BT standard spindle.

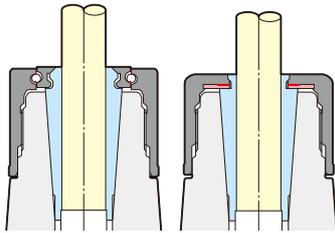
## ◆ Power of TiN Bearing Nut

Good sliding effect due to the surface hardness of HV2,200.  
More efficient than conventional ball bearing built-in nut.

Unstable accuracy caused by tightening torque and the possibility of rust.



The Tin coated bearing plate reduced friction. This is the best for the thrust load.



Competitors

NIKKEN

## ◆ Less micron vibration due to the collet flange contact

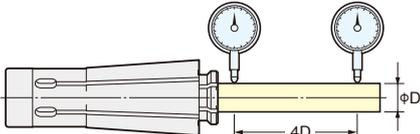
Improves the cutting capability and tool life.

## ◆ Run-out accuracy :

Less than 3 microns at 4XD

Better stability on run-out accuracy  
Improves the surface finish  
Suitable for finish on die-mould machining.

Less than 3 microns



Simple external design without the notches to be tightened with GH handle Ultra high speed rotation

8 deg. internal taper proven with the Slim Chuck for the accuracy and gripping torque.

PAT.



**TiN Bearing (Hardness : HV2,200)**

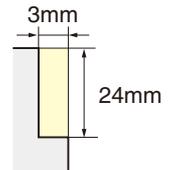
Pilot shank on the collet for further stability of the accuracy.

The thick wall design of the VC Holder body improves its cutting rigidity.



**12mm, 4teeth Carbide Endmill**

Material : Mild Steel  
V=220m/min  
S=6,000min<sup>-1</sup>  
F=3,000mm/min



Power of TiN Bearing

Cutting Rigidity

High Precision Finish

## ◆ Jet coolant splash with J type Nut.

J type Nut



**Cap with triangular grooves**  
The jet coolant pressure creates a tornado effect.

**Cap with O-ring**  
For oil hole cutting tool



## ◆ High Speed Rotation MAX.40,000min<sup>-1</sup> & G2.5

## ◆ Easy, safe and reliable handling with GH Handle USA PAT.

The nut has no notches for high speed rotation and GH Handle can tighten the nut with half of the tightening torque of the conventional C type spanner, thus, substantial improvement for quality of safety, reliability and operational efficiency will be obtained.



Tightening

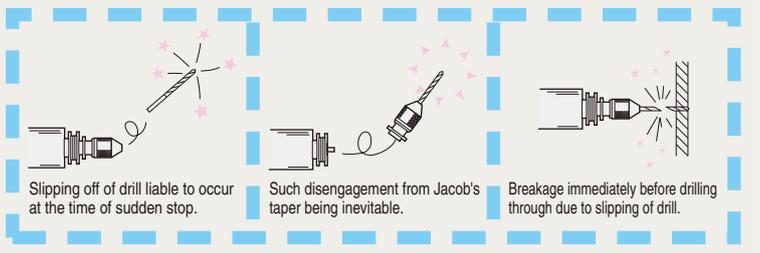


Loosening

## “Solid” means Compact, Precision, Rigidity and Safety.

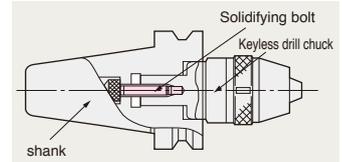


Such troubles will not only hinder an unmanned operation in FMS but cause successive occurrence of defective products to obstruct the rationalization of factory.



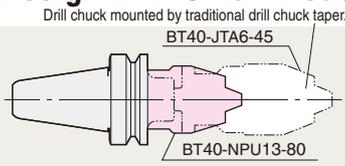
### Solid design eliminates the slipping off.

The keyless drill chuck is tightened by the solidifying bolt to the shank, so that there is no possibility of slipping off during rotation or drilling.



### Compact Design with Small Head

--- line illustrates the ISO or conventional drill chuck.



### Run-out Accuracy of MAX. 0.04mm.

### 3 Times Larger Chucking Power

### Even Carbide Drill does not occur Slipping.

### Centre through tool coolant

NPU13 can be used as centre through tool coolant holder for the shank diameter bigger equal to  $\phi 6\text{mm}$ . (Option)

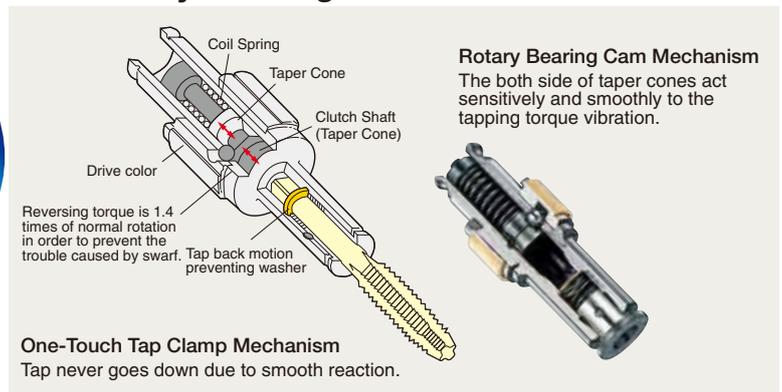


# NIKKEN TAPPER CHUCK

## Rotary Bearing Cam ensuring Precision, Sensitivity & Long Tap Life.



### Rotary Bearing Cam



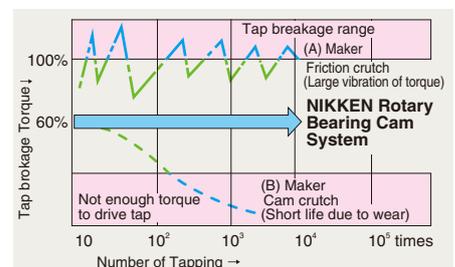
### Slim Body & Fine Floating

External Diameter as small as ever. Only NIKKEN Tapper Chuck performs even big size Tapping with slim body. The floating part is not a simple slide key, but plural preloaded balls are arranged in V-shape. That is why the tap slides smoothly without chattering accompanied.



### Torque Life Curve

The bearing cam with no sliding friction has been developed for the tap collet to protect the tap from breakage. The principle of this collet is fundamentally different from that of the conventional brake system utilizing a rubber reaction or a friction resistance as shown by the following graphs (A) & (B), so that constant torque characteristic as illustrated is obtainable to secure safety of tapping



$\phi 3 \sim 50$  Developed with all of NIKKEN Knowhows-Best Help of Fine Boring



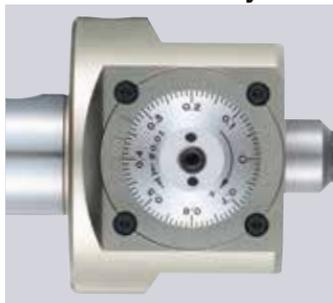
Photo shows new DJ8 series.

### Easy to Set Micron Accuracy

Easy operation with big dial graduations together with a wide adjusting range for fine boring of dia.3~50mm.

Dial Graduation  
 1 Graduation: dia. 0.01mm  
 Vernier reading: dia. 0.005mm  
 Smooth and High Precision Boring is ensured.

Micron accuracy can be obtained easily



### No Vibration and Least Wearing of Carbide Insert.

4 pcs of DJ Boring Bits are provided as standard accessories. Even 1mm stock removal on diameter can be done with maintaining fine surface finish without vibration.



$\phi 3 \sim 8$ mm

New Byte Series for DJ8 **P.100**

### Special Carbide Indexable Insert for $\phi 5$ mm Boring

Now Special Carbide Indexable Inserts for  $\phi 5 \sim 15$ mm are available for DJ Bit. No more regrinding and the **shank is solid Carbide**. Fine boring of  $\phi 5$ mm from 4.5mm drilled hole can be done without vibration and without bending. Fine boring of Safety and Sureness by DJ Boring Head.



### High Pressure Coolant Through Type



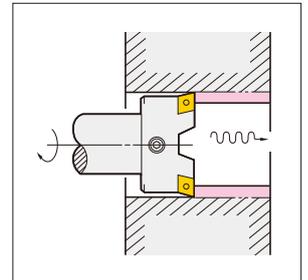
- Cutting Speed..... 100m/min.
- Feed ..... 0.05mm/rev
- Stock Removal ..... 0.5mm(on Dia.)
- Boring dia. ....  $\phi 30$ mm
- Material ..... SKD11

**φ25~580 Scram Type Cartridge Power & Smooth Boring with 250% Productivity**



**Double Cutting Capability**

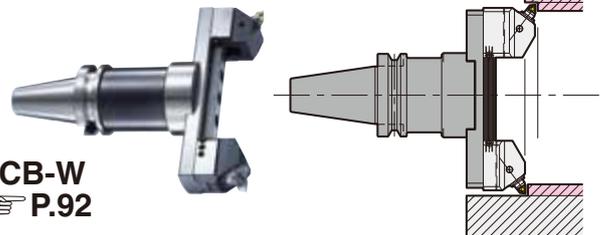
From φ25~580mm, all Balance Cut Boring Bars execute boring in 2 Carbide Inserts. One side cutting will not occur, and vibration is absorbed each other. The faster the feed rate (0.2~0.4mm/rev.), the better swarf ejection. Ideal for Rough and Medium Boring.



**2 Stepped Balance Cut**

Approx. double removal of standard cutting condition is possible by **-0.3mm Cartridge**.

Stepped Boring



**Various Cartridges & Inserts** P.79

Good Chip Ejection ensures no trouble Heavy Boring. Standard carbide insert is suitable both for Steel and Cast Iron. Besides, optional cartridges for steel, for Aluminium, through hole or multi-sheets are available.

RAC-E

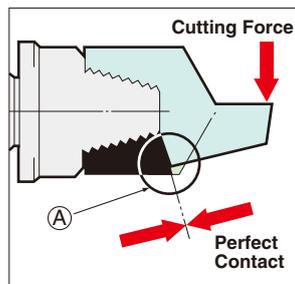
RAC-A

RAC-K



**Power of Scram Type Cartridge**

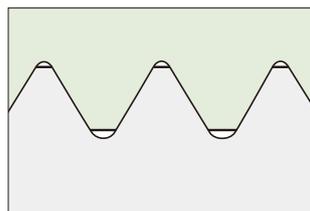
Cutting force is supported by the shoulders of both cartridges. This is the secret of heavy and powerful boring even at the intermittent bore.



**Precision Ground Serration**

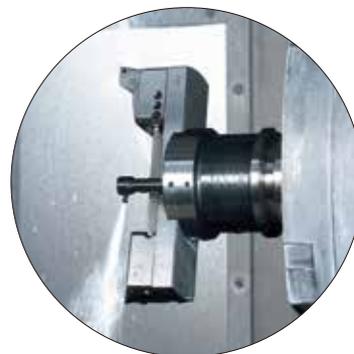
High Precision Serration is the base of high accurate performance of BALANCE CUT Boring Bar.

- Even strong cutting force is accepted by High Precision Serration, resulting in smooth boring without micro vibration.
- All slides are finished by precision grinding. Even micro adjustment can be done smoothly as you desire.



Precision Ground = Basic Serration

**High Pressure Coolant Through Tool**



- Cutting Speed ..... 150m/min
- Feed Rate ..... 0.4~0.6mm/rev
- Stock Removal ..... 6~10mm(on dia.)
- Boring Dia ..... φ60mm
- Material ..... SNCM420 (Ni, Cr, Mo Alloy Steel)

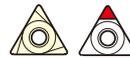
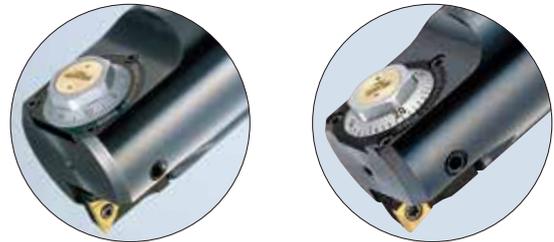


**BALANCE-CUT RAC BORING ARBOR** **NEW** for LARGE DIA P95 ULTRA LIGHT WEIGHT

## φ16~180 The World Leading Boring Head



### Various types of Insert Tips



Steel, cast iron, and stainless steel can be machined by the same coated insert tip. Specifications that support insert tips which are widely circulating on the market are also available. ➔ P.119 ZMAC-V-1

### Application

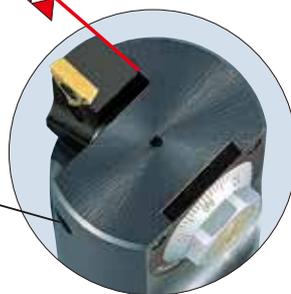
NIKKEN makes use of its abundant experiences and results to provide special boring bars, which are suited for various work shapes as part of the solutions to streamline production.



### High rigidity Double-contact support

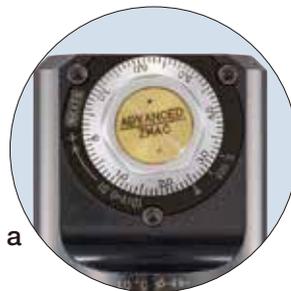
Innovative new feature of Double-Contact Support

New Locking screw closer to Cutting Edge



### High-precision / Easy micro-adjustment / High durability / High rigidity

New lock flanges reduce dial torque and increase visibility. ZMAC25-V and larger also have a sub scale for easier and more accurate diameter adjustments.



### Coolant Specifications for All Sizes

All sizes from φ16 to φ180 have coolant holes positioned so that the coolant is applied directly to the cutting edge. ZMAC70-V and larger use a variable nozzle system.

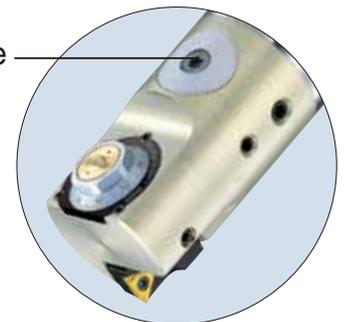


### High Speed Boring 12,000nin<sup>-1</sup>, Deep Hole Boring

Balance Weight

#### ZMACα-V

Special Hardened Light Alloy Metal Head with Balancing for Anti-Vibration.



### BALANCE-CUT BAC BORING ARBOR for LARGE DIA ➔ P97 ULTRA LIGHT WEIGHT **NEW**

**φ6~200 Easy-to-See Digital Displays / Supports Small to Large Diameters**



**Digital Displays for Easy Diameter Adjustments**

A digital display enables easily made adjustments, even in increments as small as 2 microns in diameter.

Various settings can be changed by operating the single Select Button.

Sizes are switchable between metric and imperial units.

The minimum set value for imperial size display is 0.0001".



Select button

**Combination Systems Support a Wide Machining Range**

A combination system realizes a wide machining range as it enables the mounting of boring cartridges that use both a cylindrical boring bit and serration.

**eMAC** : φ6~110

**eMAC-W**: φ6~200

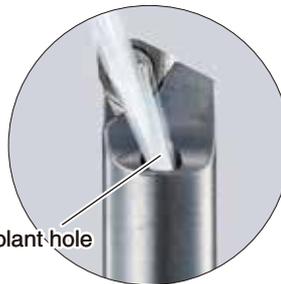
※Set products capable of boring in the range of φ6 to φ110 are also available. ➔ P.109, P.110



**Coolant through Tool Capability Provided as a Standard**

Coolant through tool capability that supports pressures up to 4 MPa is provided as a standard.

Coolant is discharged from the cutting edge of cylindrical boring bits, or from a coolant nozzle located near the cutting edge of cartridges.



Coolant hole



Coolant nozzle

**Waterproof Rating: IP67**

Waterproof Rating: IP67  
Waterproof specifications at an IP67 rating help keep the internal electronics safe, and the cover for the SR44 batteries (2 pcs) has seal specifications that enable repeated removal and attachment.



Battery cover

**INDUSTRY PROVEN TO ELIMINATE PULL-OUT**

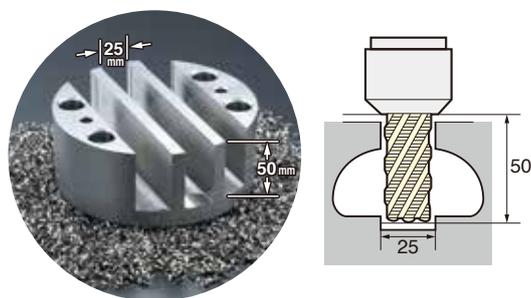


**PATENT**

JAPAN, USA, EU PAT.  
CHINA PAT.P

**Excellent Run-out & Powerful Gripping**

**Exclusively developed for demanding Applications and materials associated With the aircraft and energy industry.**



**Material: Ti6Al4V Titanium 25mm, 6teeth Carbide Roughing End Mill 25 X Depth 50mm 1 Path Milling Never Pull-Out**

**Selection of the Accessories**

Please select the proper stopper and the face cap according to your application. (end mill with/without coolant hole)  
The stopper and the face cap for the end mill with oil hole are attached as standard accessory.

	End mill with oil hole		End mill without oil hole		Support bolt	Drive bolt
	Stopper	Face cap	Stopper*1	Face cap (V grooves)*1		
C12EX	9MC12HEX- 6L(8.5L)*3	9C12SL-FS-EX-A1	9MC12HEX- 6L(8.5L)*3-J	9C12SL-FS-EX-J1	—	M10×16L-EX
C16EX	9MC16HEX-6.5L(9.5L)*3	9C16SL-FS-EX-A1	9MC16HEX-6.5L(9.5L)*3-J	9C16SL-FS-EX-J1	—	M12×16L-EX
C20EX*2	9MC20HEX-12L(13.5L)*3	9C20 -FS-EX-A1	9MC20HEX-12L(13.5L)*3-J	9C20 -FS-EX-J1	FSMB12-20	M12×20L-EX
C25EX	9MC25HEX-6.2L(8.7L)*3	9C25SL-FS-EX-A1	9MC25HEX-6.2L(8.7L)*3-J	9C25SL-FS-EX-J1	FSMB16-20-H8	M16×20L-EX
C32EX	9MC32HEX-7L(10L)*3	9C32SL-FS-EX-A1	9MC32HEX-7L(10L)*3 -J	9C32SL-FS-EX-J1		
C42EX	9MC42HEX-9L(11.5L)*3	9C42SL-FS-EX-A1	9MC42HEX-9L(11.5L)*3 -J	9C42SL-FS-EX-J1		
	O-ring Please insert the stopper which small hole diameter is located at the end mill side. (C42: Same hole diameter)		Cross groove Please insert the stopper which cross groove is located at the end mill side.			

\*1 Please contact us for the stopper for X-Treme chuck Inch series.

\*2 The Code No. of the stopper for NBT40-C20EX, HSK63A-C20EX and C8-C20EX is 9MC20HEX-7L(8.5L)

\*3 The length in ( ) is used for Code No. of extended stopper.  
eg. 9MC32HEX-10L

It can be used, when length of end mill become shorter after re-grinding.

★ X-Treme chuck with nose ring for C spanner is available as an option.

Please add "-A" at the end of Code No.

eg) NBT50-C25EX-116-J-A



Nose ring with C spanner

Chuck	Handle
12EX-○○○-A	9HC16
16EX-○○○-A	9HC22
20EX-○○○-A	9HC25
25EX-○○○-A	9HC25
32EX-○○○-A	9HC32
42EX-○○○	9HC42

**2LOCK** tooling can be used as the BT double face contact tooling on the machine with the BT double face contact spindle. It can be also used as the BT tooling on the machine with BT standard spindle.



# NIKKEN ZERO FIT HOLDER **"0"** Fit with Accurate, Quick and Simple Operation. **P.147,148**

JAPAN, USA, UK, GERMANY, KOREA, TAIWAN PAT.

When the machine has been used for 2~3 years, the run-out accuracy of the spindle will be declining with accuracy of 0.01mm~0.04mm at 100mm from the gauge line, the Zero Fit Holder allows correction of this error back to the run-out of 0.001~0.002mm.



**Multi-Cam Style**  
The minute run-out after adjusting by a master cam can be adjusted by fine adjust cams at the same position.  
e.g. BT40-SZF16-90-C3 (3 Cams)  
The multi-cam style can not be made for all zero fit holders.



**CF-CZF**  
P.147

## FLANGE STYLE ZERO FIT TYPE MILLING SHUCK

- Ideal for adjusting cutter run-out on an NC grinding machine or universal grinding machine
- 3-point cam as a standard feature makes it easy to adjust run-out on a grinding machine!

### At Machine Spindle

With **"0"** Fitting the Tool Run-out Accuracy;

- The milling surface finish and quality can be improved.

Materials : Pre-Hardened Steel NAK55 (HRC39)  
End Mill : 10mm, 2 teeth Carbide Ball End Mill  
Cutting Speed : V=200m/min  
Spindle Rotation : S=6,366min<sup>-1</sup>  
Feed per tooth : f=0.15mm/min  
Feed : F=1,910mm/min  
Dry Cutting with Air blow

Before Zero Fitting :  
Run-out at cutter front edge = 20 microns



After Zero Fitting :  
Run-out at cutter front edge = 1 micron

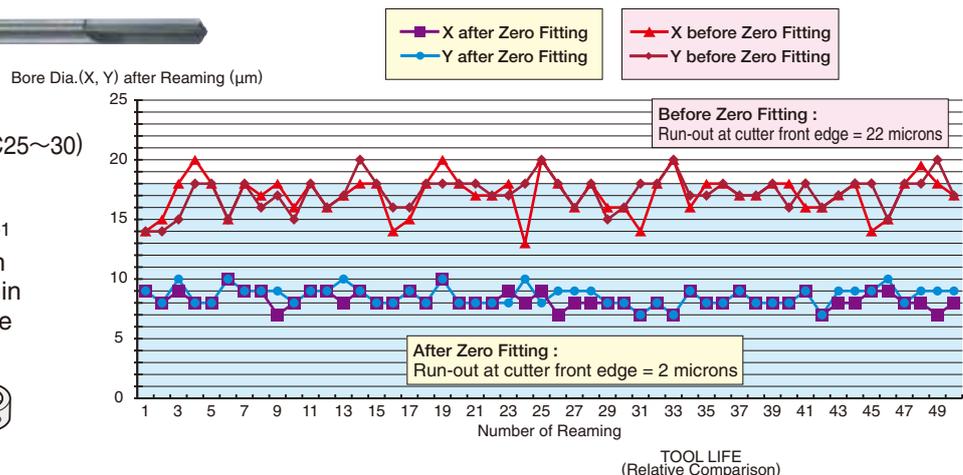
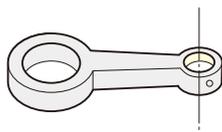


- For better and stable finish tolerance for machining holes

...The variation at finish tolerance can be minimized, thus the finish size tolerance can be reduced.



Materials : Tempered Steel (HRC25~30)  
Tool : φ13mm CBN Reamer  
Cutting Speed : V=80m/min  
Spindle Rotation : S=2,000min<sup>-1</sup>  
Feed per tooth : f=0.1mm/min  
Feed : F=200mm/min  
External coolant supply : Water soluble



- The tool life can be extended.

Fig.1 shows the relation between run-out accuracy and tool life, and when the run-out accuracy of 21 microns is reduced to 3 microns, the tool life can be improved by approximately 5 times.

- Zero Fit Holder has wide adjustment range compared with competitors equivalent, and its mechanism performs simple, quick and secured operation.

- The choice of the Slim Chuck style "SZF" & the Anniversary type Milling Chuck style "CZF" can be selected depending on your cutter.

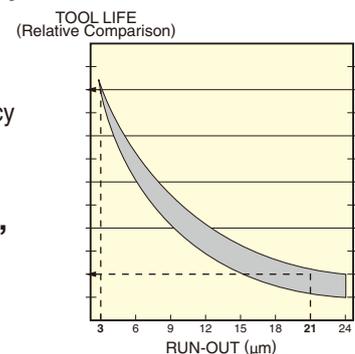


Fig.1

Spindle Speeder  P.137



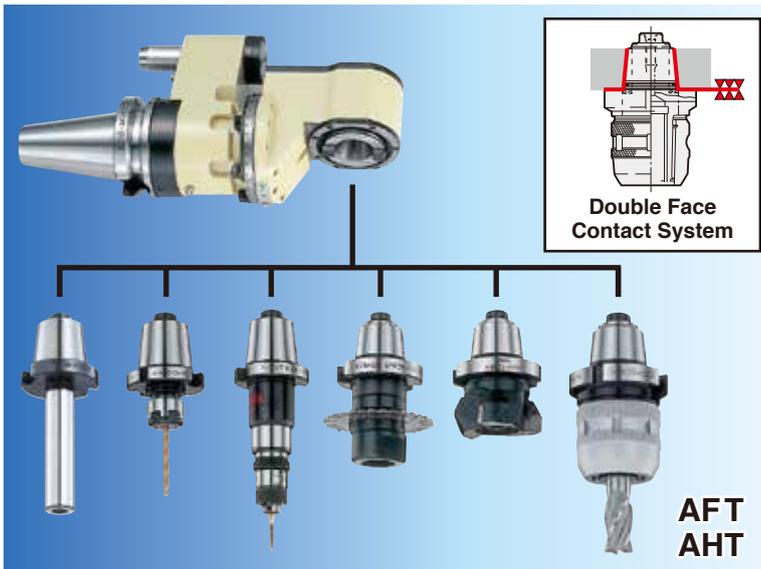
Air Motor Spindle Tool  P.138



Air Turbine Spindle Tool  P.137



Quick Change type Angular Head  P.141



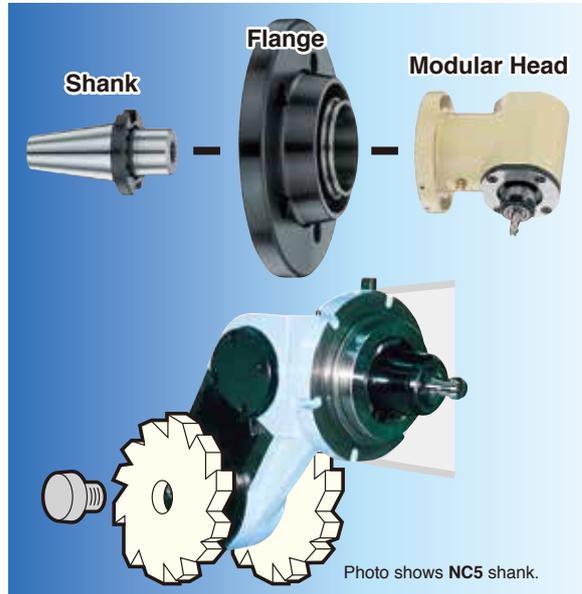
Modular type Angular Head  P.143



Solid type Angular Head  P.144



Direct Mount Flange type Angular Head  P.146



Compact type Angular Head for Deep Hole  P.143



Air Drive Angular Head  P.145



# NIKKEN FACTORY AUTOMATION SERIES

QR code reader



TOOL holder with QR code




TOOL PRESETTER



TOOL ID SYSTEM

Centre Through Tool Coolant  P.129



Flange Through Tool Coolant  P.131



8 Years used



RPT 18 years used




**RP Treatment**  P.130

The RP treatment creates a fine film of the contents ( $Fe_2O_4$ ) and ( $Fe_2O_3$ ), and penetrates into the tool holder 1~2 micron deep. This fine film inhibits the rust and corrosion of your tool holder taper and stops it from being transmitted to your machine spindle. The RP treatment will not effect the accuracy and the hardness of your tool holder.

**Automatic/Manual Back Spot Facing Arbor**  P.149

**Multi Spindle Drill Head**  P.146



MHD  
MHS  
MHV

**Multi Spindle Tapper Head**  P.146



MHT



AF  
MF

Automatic

Manual

**Oil Piaster**  P.183



ZP

**Spindle Taper Cleaner**  P.183



CLE

**Spindle Flange Cleaner**  P.183



CLEF

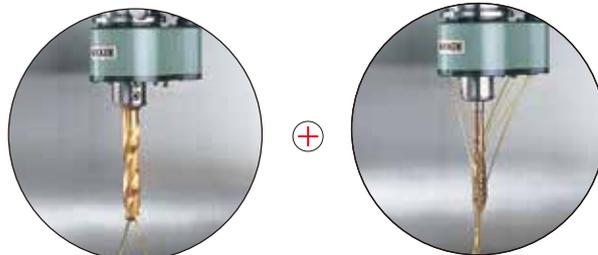
**Conventional Oil Hole Holder + Multi Coolant Nozzles**



Multi Oil Hole Holder and **COMBAT Z DRILL** are recommended for drilling on M/C to increase productivity.

**Combination of Coolant Through Tool Type and Outside Nozzle Type**

Can be used to both oil hole cutter and normal cutter without oil hole. When normal cutter (drill, end mill, tap etc.) is used, coolant is fed as Jet Streams exactly to cutting point.



**Oil Hole Drill**

**Multi-Nozzles**

**Zero Fit Type Oil Hole Holder** P.133  
Zero Fit Holder for Side Through



- Standard MT Drill & Reamer
- Standard Straight Drill & Reamer
- Tap
- End Mill
- Boring Bar

**NIKKEN COMBAT Z DRILL**

**φ16~80mm Power of Pilot Drill & 3 Phases Heat Treatment**



**Power of Pilot Drill**

No Vibration with Pilot Drill

L/D=3 and 4 times as standard



3 Phases Heat Treatment & Suitable Twisted Shape improves Ejecting Cutting Swarf.

**3 Phases Heat Treatment**

- It significantly improves Rigidity and Ejecting Cutting Swarf by suitable twisted shape and special surface treatment. Tool life of Insert and Drill grows 3 times longer.
- Pilot Drill prevents Inserts from chipping by reducing vibration.
- Powerful drilling speed of 120~150m/min. with small torque.
- Less cutting resistance with Rhomboid Inserts.

PN Treatment (Ejecting Cutting Swarf)

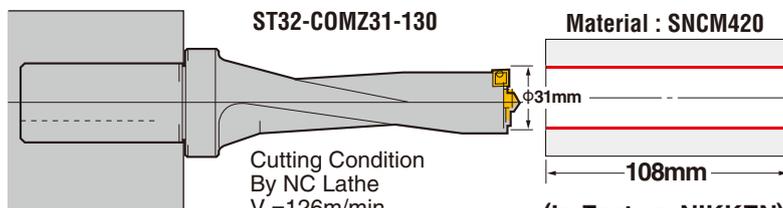


**3 Phases Heat Treatment**



NC Lathe

M/C



ST32-COMZ31-130

Material : SNCM420

Cutting Condition  
By NC Lathe  
V = 126m/min  
S = 1,300min<sup>-1</sup>  
f = 0.15mm/rev.  
F = 195mm/min  
Water Soluble Coolant

(In Factory NIKKEN) Machining Time = 35sec.

It can be used after total cutting length = 65mm.

## Carbide Reamer Series



**For difficult-to-cut materials evolution series NEW**

Designed for difficult-to-cut materials with an extremely heat-resistant alloy coating for such as Inconel, Hastelloy, and Waspaloy.



**For aluminium, aluminium casting Spectrum Reamer Series NEW**

Super-hard with a new thin-film hydrogen-free SPX coating



**PF Radical Reamer Series**

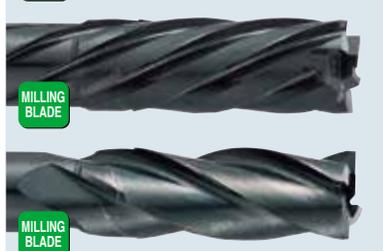
The run-out accuracy and the tool life have been substantially improved with Press Fit type Radical Reamer.

This is sophisticated reamer with fine powder carbide and TiCN-2 coated for low friction purpose and hardness HV3,500, thus its tool life is extremely extended even with water soluble coolant.



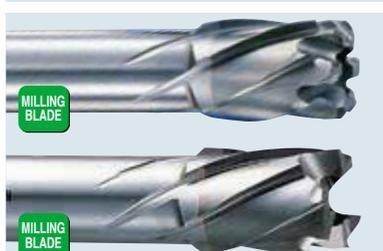
**Carbide Radical Mill Reamer DLC Coating**

DLC(Diamond-Like Carbon) coating provides improvement for aluminium and non-ferrous metals reaming. 3 type of the reamers with milling blade are into a line up



**Carbide Mill Reamer DLC Coating**

DLC(Diamond-Like Carbon) coating provides improvement for aluminium and non-ferrous metals reaming. 3 type of the reamers with milling blade are into a line up



**Carbide Mill Reamer**

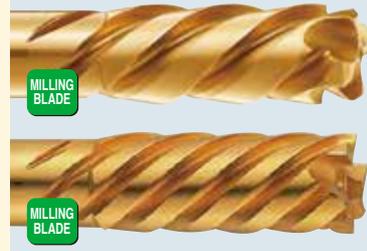
As the Mill Reamer made by K10 grade carbide, the cutting speed can be substantially increased for the productivity improvement. Especially it performs very well on Cast Iron, Meehanite, Aluminium, and Non-steel metal.



**Carbide Broach Reamer**

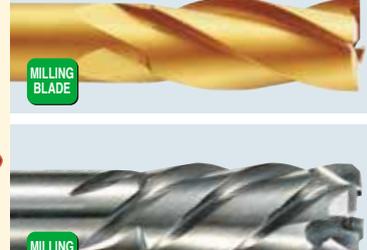
The Carbide Broach Reamer maintain the excellent surface finish for Aluminium and Cast Iron reaming operation.

## HSS Reamer Series



**NC Sensor Reamer**

The NC Sensor Reamer is dedicated for better surface finish, especially effective on Stainless Steel, Die Steel, Annealed and Tempered Steel. The high precision finish surface can be achieved with its TiN Coated and its burnishing effect. The reamer can be used with even water soluble coolant.



**Tough-Cut Skill Reamer**

This is all-mighty reamer, which is made by powder HSS & ion-nitrided and good for tough materials, die steel, annealed and tempered steel.



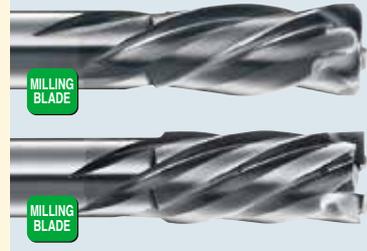
NEW  
**Turning Skill Reamer**

Short type Skill Reamer for NC Lathe



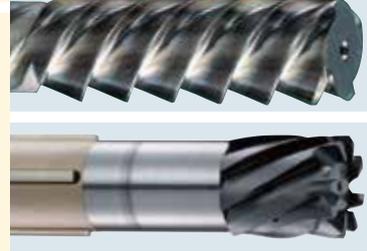
**Broach Reamer**

The ultra high left-handed helix of 60 degree performs smooth reaming operation.



**Long Type Reamer**

Longer neck type for deep hole is also available.



**Recommended Cutting Conditions and Special Made Reamer/ Technical Information**

**Various Application - Through Hole, Stepped Hole and Blind Hole**

**Through Hole series**



Excellent Circularity and Straightness

**Stepped Hole series**



JAPAN PAT.  
Excellent Circularity and Straightness

**Blind Hole series**



Excellent Circularity and Straightness

## Pioneer for Work Preparation



### Height Presetter

No need of test cut! Basic position of workpiece can be measured quickly without damaging tool teeth.

The distance from reference surface to tool end can be measured very quickly and accurately. This is a MUST for M/C, NC Lathe and NC Milling Machine.



## 3D Sensor

**UMTX**  
Internal Contact System

### Micro-Touch

This is 3D sensor enabling instantaneous detection of position, measurement and alignment of center by means of Red Lamp and Electric Beep.

The Red Lamp lights the moment when the stylus touches a measurement part. Owing to the conductive detection system, a time delay caused by a relay etc. is eliminated and a highly sensitive measurement can be made.

## Small Measuring Tool, but Great Time-Saver



### Micro-Stand

Free flexing with single knob, no dead angle and long reach.

Two arms incorporating ball joint mechanism at both ends provide free movement in any direction such as vertical, lateral, longitudinal or rotational etc. If stretched horizontally, a reach as long as 300mm can be attached. Measurements of inside dia., outside dia., end face and back face etc. can be made at will.

## Easy Micron Check



### Touch Point

Highly sensitive electronic edge finder.

Ideal for Milling Machine, Boring Machine, Drilling Machine as well as Machining Center. Instant indication by LED lamp at very light contact of sensor ball with workpiece.

Easy location of work face, O.D., I.D.

NIKKEN's Tool Presetter increasing Cost Performance of High Price Machining Centre.

E236N  P.165  
Spindle can be exchanged.  
(BT, HSK, POLYGONAL TAPER)



E346I  P.166  
Spindle can be exchanged.



E460N  P.167  
Spindle can be exchanged.



E4060L  P.168



Photo shows E4060L

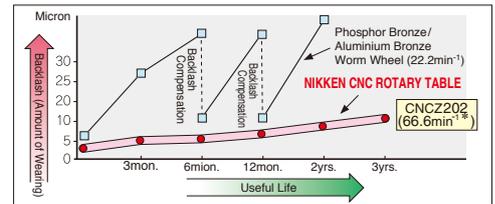
## CNC ROTARY TABLE for Full Automation

Worldwide Field-proven NIKKEN CNC ROTARY TABLE  
Consequently and finally, NIKKEN Carbide Worm Screw System



### Carbide Worm System

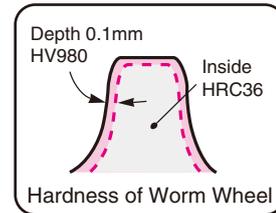
For heavy duty capability and high speed rotation with maintaining the high accuracy, the carbide worm screw is used for the hardened worm wheel. The wearing of the worm wheel is reduced and rotary table is used for more years comparing with the conventional worm system of soft material. For better impact capability, the special alloy steel worm screw is used for the worm screw of the small tooth module.



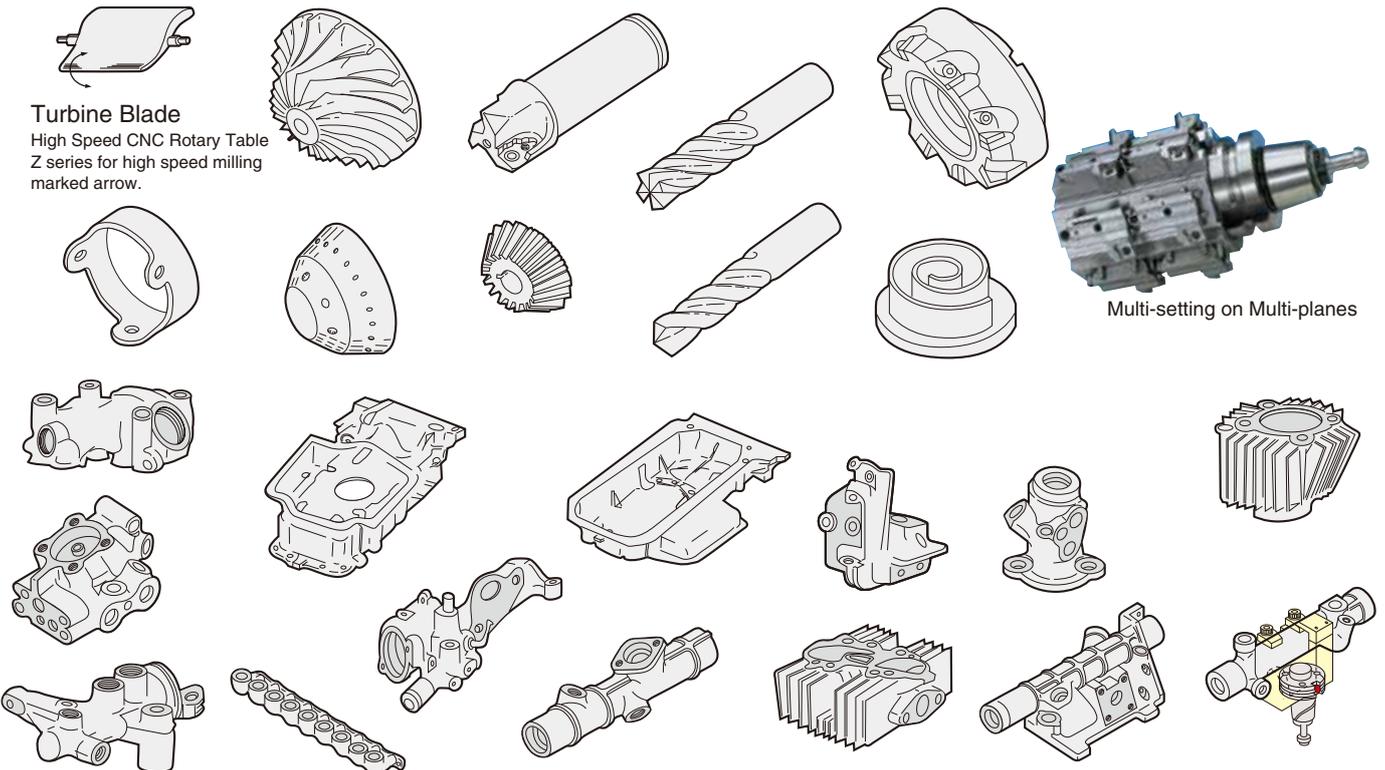
\* Rotation speed of motor = 3,000min<sup>-1</sup>

### Worm Wheel

Material is special NIKKEN order made steel. Specially hardened and furthermore ion-nitro treated on teeth. Thus, the problem of sliding friction is solved.



### Work Sample



➔ Please refer to CNC ROTARY TABLE Catalogue.

●CNC 105, CNCZ 105

P.300



●CNC 180, CNCZ 180

P.300



●CNC 202, CNCZ 202

P.300



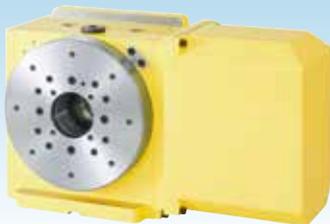
●CNC 205, CNCZ 205 **NEW**

P.300



●NCT 200, NCTZ 200 **NEW**

P.300



●CNC 260, 302, CNCZ 260, 302

P.300



●CNC 321,401,501,601,802  
CNCZ 321,401,501,601,801

P.301



●CNC 1000, 1200, 1201, 1600

P.301



●NSVX400, 500    NSVZ180, 300



●NST 250, 300, 500



●5AX-130, -201

P.302



●5AX-250, -350, -550, -800, -1200

P.302



●CNC100-2W, -3W, -4W, -120

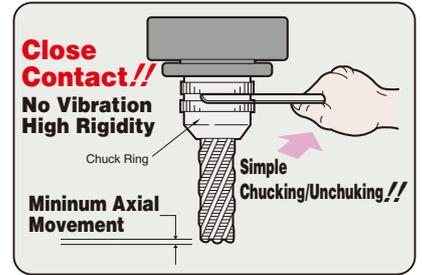
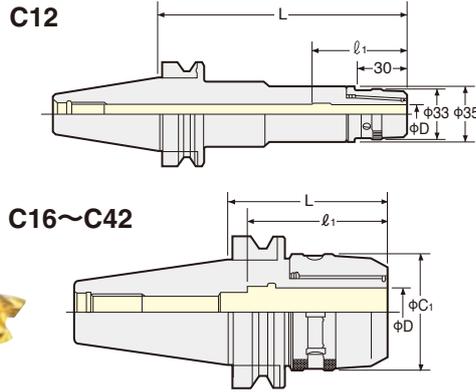


●5AX-2MT-105, -170, -200  
5AX-4MT-120



# MILLING CHUCK

**NIKKEN**



## FEATURES:

- Doubled rigidity & increased cutting ability!
- Run-out Accuracy: 5µm at 3×D

TAPER	Code No.	C <sub>1</sub>	L	l <sub>1</sub>	Suitable Collet	Weight(kg)
No.30	BT30-C12- 55	33	58	58	<b>CCK12</b> <b>KM12</b>	0.6
	-C16- 55	44	57	65	<b>CCK16</b> <b>KM16</b>	0.7, 0.8
	-C20- 65* <sup>1</sup> , 75	52	67, 75	80	<b>CCK20</b> <b>CCNK20</b> <b>KM20</b> <b>NK20</b>	1.0, 1.1
	-C25- 75* <sup>2</sup> , 80	55* <sup>4</sup>	75, 82	68	<b>CCK25</b> <b>CCNK25</b> <b>KM25</b> <b>NK25</b>	1.2, 1.3
	-C32- 90* <sup>3</sup> , 100	64* <sup>4</sup>	90, 100	68, 76	<b>CCK32</b> <b>CCNK32</b> <b>KM32</b> <b>NK32</b>	1.4, 1.5
No.40	BT40-C12- 65,90,120	33	65, 90, 120	58	<b>CCK12</b> <b>KM12</b>	1.3, 1.6, 1.9
	-C16- 60,90,120	44	63, 90, 120	65	<b>CCK16</b> <b>KM16</b>	1.4, 1.7, 2.0
	-C20- 70,90,105,120	52	71, 90, 105, 120	80	<b>CCK20</b> <b>CCNK20</b> <b>KM20</b> <b>NK20</b>	1.6, 1.8, 2.0, 2.2
	-C25- 70,90,120	60	70, 90, 120		<b>CCK25</b> <b>CCNK25</b> <b>KM25</b> <b>NK25</b>	1.8, 2.1, 2.5
	-C32- 85,105,120	69	85, 105, 120	77, 90, 105	<b>CCK32</b> <b>CCNK32</b> <b>KM32</b> <b>NK32</b>	2.1, 2.5, 2.8
No.50	BT50-C12-105,135,165	33	105, 135, 165	58	<b>CCK12</b> <b>KM12</b>	4.0, 4.3, 4.6
	-C16-105,135,165	44	105, 135, 165	65	<b>CCK16</b> <b>KM16</b>	4.2, 4.5, 4.8
	-C20-105,135,165,180	52	105, 135, 165, 180	80	<b>CCK20</b> <b>CCNK20</b> <b>KM20</b> <b>NK20</b>	4.5, 4.8, 5.1, 5.4
	-C25-105,135,165	60	105, 135, 165		<b>CCK25</b> <b>CCNK25</b> <b>KM25</b> <b>NK25</b>	4.8, 5.2, 5.6
	-C32- 90,105,120,135,165 -200,250,300,400,500	69	90,105,120,135,165 200,250,300,400,500	105	<b>CCK32</b> <b>CCNK32</b> <b>KM32</b> <b>NK32</b>	4.3, 4.6, 5.1, 5.6, 6.4 7.8, 9.2, 10.6, 13.4, 16.2
	-C42- 95,105,120,135,165 -200,250,300,400,500	86	95,105,120,135,165 200,250,300,400,500	125	<b>CCK42</b> <b>CCNK42</b> <b>KM42</b> <b>NK42</b>	5.5, 5.8, 6.6, 7.2, 8.6 9.5, 11.7, 14.0, 18.4, 22.8

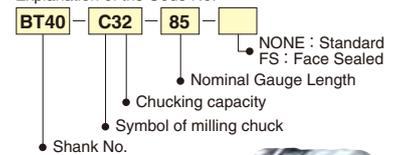
★MULTI LOCK Milling Chuck is a Base Holder for machining centre.

The following straight shank tooling to suit Milling Chucks are available.

- [S-C] Milling Chuck (Extension Type)  P.33
- [K-MMP] MINI-MINI Chuck  P.37
- [K-MMC] MINI-MINI Chuck  P.37
- [K-SK] Slim Chuck  P.47
- [S-SK] Long Size Slim Chuck  P.47
- [D-NPU] NC Drill Chuck  P.53
- [NZ] Tapper Chuck  P.64

- [K-MT] Morse Taper Socket  P.55
- [K-ZMAC-V] ZMAC-V Boring Bar  P.105
- [K-RAC] RAC Boring Bar  P.105
- [S-ZMACX-V] ZMAC-V Boring Bar for Deep Hole  P.106
- [K-DJ] DJ Boring Bar  P.107
- [K-SCA] Stub Arbor  P.90
- [S-MDPE] PRO-END MILL  P.127
- [MSO-AO-O] Straight shank shrink fit holder  P.203

Explanation of the Code No.



★Please refer  P.190 for heavy duty type milling chuck with larger arbor diameter.

★Please refer  P.33,  P.34 for KM, NK, CCK, CCNK collet.

★CKFN-D and CKFN-DC (With O-ring) can be used for the direct chucking application, when centre through tool coolant. CCK collet and CKFN nut can be used for collet application.

★For "L" dimension of centre through coolant type milling chuck is same as the above standard, however, refer  P.129 for Code No.

★For "L" dimension of flange through coolant type milling chuck is same as the above standard, however, refer  P.131 for Code No.

★Spanner is available as an option. C12 : 9HC12A, C16: 9HC16, C20: 9HC22, C25 (φC<sub>1</sub>=55mm) : 9HC22, C25 (φC<sub>1</sub>=60mm), C32 (φC<sub>1</sub>=64mm) : 9HC25, C32 (φC<sub>1</sub>=69mm) : 9HC32, C42: 9HC42  
\*4 C25(φC<sub>1</sub>=55mm): 9HC22, \*4 C32(φC<sub>1</sub>=64mm): 9HC25.

★Please note the acceptable shank tolerance is h7.

★The milling chucks marked \*1, \*2 and \*3 may not be used by the restriction of the diameter under V flange of your M/C.

★FS (Face Seal) types are available for C25~C42 of BT40/BT50. There are 2 types; FSJ: With J groove, FS: Without J groove



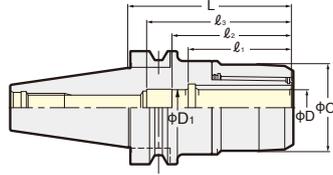
**FS type**  
For machining  
of aluminum  
**PAT.**

# HIGH SPEED MILLING CHUCK

**NIKKEN**



**C-G**  
High Pressure Centre Through  
(MAX. 7MPa)



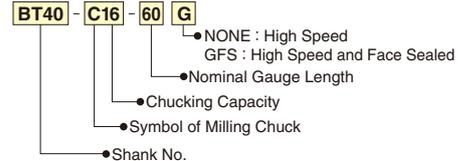
**GFS type**  
For machining  
of aluminum  
**PAT.**

## High Speed

TAPER	Code No.	D	D <sub>1</sub>	C <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	MAX. min <sup>-1</sup>	Suitable Collet	Weight(kg)
<b>No.30</b>	<b>BT30-C12- 55G</b>	12	12	33	58	48	53	58	40,000	<b>CCK12</b> <b>KM12</b>	0.5
	<b>-C16- 55G</b>	16	16	40	57	50	58	65		<b>CCK16</b> <b>KM16</b>	0.6
	<b>-C20- 65G*<sup>1</sup>, 75G</b>	20	20	48	67, 75	57	66	80	30,000	<b>CCK20</b> <b>CCNK20</b> <b>KM20</b> <b>NK20</b>	0.9, 1.0
	<b>-C25- 75G*<sup>2</sup>, 80G</b>	25	25	55	75, 82	56	65	68		<b>CCK25</b> <b>CCNK25</b> <b>KM25</b> <b>NK25</b>	1.2, 1.3
	<b>-C32- 90G*<sup>3</sup>, 100G</b>	32	32	62	90, 100	67	66, 73	68, 76		<b>CCK32</b> <b>CCNK32</b> * <sup>5</sup> <b>KM32</b> <b>NK32</b> * <sup>5</sup>	1.4, 1.5
<b>No.40</b>	<b>BT40-C12- 65G, 90G</b>	12	12	33	65, 90	48	53	58	30,000	<b>CCK12</b> <b>KM12</b>	1.1, 1.3
	<b>-C16- 60G, 90G</b>	16	16	40	63, 90	50	58	65		<b>CCK16</b> <b>KM16</b>	1.2, 1.5
	<b>-C20- 70G, 90G</b>	20	20	48	71, 90	57	66	80	<b>CCK20</b> <b>CCNK20</b> <b>KM20</b> <b>NK20</b>	1.4, 1.7	
	<b>-C25- 70G, 90G</b>	25	25	55	70, 90	60	72				20,000
	<b>-C32- 85G, 105G</b>	32	32	68	85, 105	67, 70	73, 82	77, 90	<b>CCK32</b> <b>CCNK32</b> <b>KM32</b> <b>NK32</b>	1.9, 2.3	
<b>No.50</b>	<b>BT50-C12-105G, 135G</b>	12	12	33	105, 135	48	53	58	20,000	<b>CCK12</b> <b>KM12</b>	3.9, 4.2
	<b>-C16-105G, 135G</b>	16	16	40		50	58	65		<b>CCK16</b> <b>KM16</b>	4.1, 4.4
	<b>-C20-105G, 135G</b>	20	20	48		57	66	80	<b>CCK20</b> <b>CCNK20</b> <b>KM20</b> <b>NK20</b>	4.4, 4.8	
	<b>-C25-105G, 135G</b>	25	25	55	60	72	80	15,000	<b>CCK25</b> <b>CCNK25</b> <b>KM25</b> <b>NK25</b>	4.6, 5.2	
	<b>-C32- 90G, 105G, 120G -135G, 165G</b>	32	32	68	90, 105, 120 135, 165	70	97		105	<b>CCK32</b> <b>CCNK32</b> <b>KM32</b> <b>NK32</b>	4.3, 4.7, 5.2 5.7, 6.5
	<b>-C42*<sup>4</sup> 95P, 105P, 120P</b>	42	42	86	95, 105, 120	73	110	125	12,000	<b>CCK42</b> <b>CCNK42</b> <b>KM42</b> <b>NK42</b>	5.5, 5.8, 6.6

★All high speed type milling chuck are centre through coolant type. Please use a stopper or **CCK**, **CCNK** collet, when endmill shank length is shorter than "l<sub>1</sub>" dimension. The Code No. of stopper for direct chucking  
**C20: 9MC20H, C25: 9MC25H (BT30-C25-75G: 9MC25HSB), C32: 9MC32HD (BT40-C32-85G: 9MC32HDA, BT40-C32-105G: 9MC32HDB), C42: 9MC42H**  
 ★The milling chucks marked \*1, \*2 and \*3 may not be used by the restriction of the diameter under V flange of your M/C.  
 ★\*4 : The Code No. of the wrench for **C42** is **9HC42**.  
 ★**GFS**(Face Seal)types are available for **C25~C42** of **BT40/BT50**. There are 2 types;  
**GFSJ**: With J groove, **GFS**: Without J groove  
 ★The milling chucks marked \*1, \*2 and \*3 may not be used by the restriction of the diameter under V flange of your M/C.  
 ★\*5 **NK32** and **CCNK32** collet can not be used on **BT30-C32-90**.

Explanation of the Code No.



JAPAN, USA, KOREA, TAIWAN

# GH Handle for HIGH SPEED TOOLING

**NIKKEN**



**GH**

**GH Handle** has a two-way tightening/loosening ratchet on the handle that has been developed to provide quick and convenient loading of the tool. The **GH Handle** also dispenses with the need for notches on the nose ring.

JAPAN, USA, KOREA, TAIWAN PAT.



Code No.	Milling Chuck	Slim Chuck	MAJOR DREAM	VC Holder
<b>GH 6*</b>	—	<b>SK 6-P / SKT 6</b>	<b>MDSK 6</b>	—
<b>GH10*</b>	—	<b>SK10-P / SKT10</b>	<b>MDSK10</b>	<b>VC6</b>
<b>GH12*</b>	<b>C12-G</b>	<b>SK13-P / SKT13</b>	<b>MDSK13</b>	—
<b>GH16*</b>	<b>C16-G</b>	<b>SK16-P / SKT16</b>	<b>MDSK16</b>	<b>VC13</b>
<b>GH20*</b>	<b>C20-G</b>	<b>SK20-P / SKT20</b>	<b>MDSK20</b>	—
<b>GH25*</b>	<b>C25-G</b>	<b>SK25-P / SKT25</b>	<b>MDSK25</b>	—
<b>GH32S</b>	<b>C32-G</b> (Nose Ring:φ62mm)	—	—	—
<b>GH32</b>	<b>C32-G</b> (Nose Ring:φ68mm)	—	—	—

★Torque adjustable **GH Handle** is available for \* marked handle. The Code No. is **GH6-TLS, GH10-TLS, GH16-TLS, GH25-TLS**.



Tightening



Loosening

# STRAIGHT COLLET (KM COLLET)

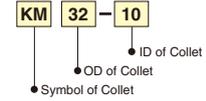


Photo shows ANNIVERSARY type KM Collet.



○ means with internal grooves for gripping strongly to eliminate the oil.

Explanation of the Code No.



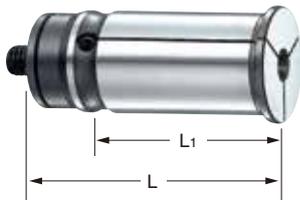
**KM** :Standard  
**NK** :Adjustable  
**CCK** :Centre Coolant  
**CCNK**:Centre Coolant, Adjustable

**KM**

Style	L	KM Collet Code No. (OD-ID)
<b>KM12</b>	40	<b>KM12-2, 3, 4, 5, 6, 7, 8, 9, 10</b>
<b>KM16</b>	47.5	<b>KM16-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12</b>
<b>KM20</b>	53	<b>KM20-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>KM22</b>	57	<b>KM22-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20</b>
<b>KM25</b>	59	<b>KM25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>KM32</b>	64.5	<b>KM32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30</b>
<b>KM42</b>	73(78)	<b>KM42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 40</b>

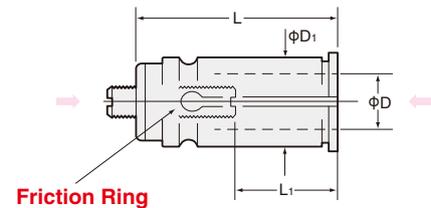
- ★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2"are also available.
- ★The collets with bold character are the "ANNIVERSARY" type KM Collet.  
 Ordinary KM Collet can be used with "ANNIVERSARY" type Milling Chuck, but better performance can be found with the "ANNIVERSARY" type KM Collet.
- ★Please note the acceptable shank tolerance is h6~h7.
- ★( ) : L dimension for KM42-12 or larger ID.
- ★Collet removal (9CCKR) is an optional accessory for NC milling chuck.

# STRAIGHT COLLET (NK COLLET)



**NK**

Cutter length adjustment on the collet is possible from front and back.



○ means with internal grooves for gripping strongly to eliminate the oil.

Style	L	L <sub>1</sub>	NK Collet Code No. (OD-ID)
<b>NK20</b>	63	20~40	<b>NK20-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>NK22</b>	70	30~50	<b>NK22-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18</b>
<b>NK25</b>	68	30~55	<b>NK25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>NK32</b>	75	30~60	<b>NK32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26</b>
<b>NK42</b>	85(92)	30~65	<b>NK42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32</b>

- ★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2"are also available.
- ★The collets with bold character are standard.
- ★Please note the acceptable shank tolerance is h6~h7.
- ★( ) : L dimension for NK42-12 or larger ID.
- ★Collet removal (9CCKR) is an optional accessory for NC milling chuck.

# Straight Shank MILLING CHUCK

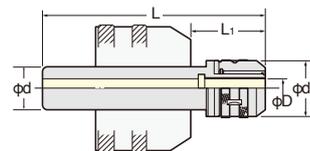


**S-C for Multi-Lock Milling Chuck**

■ For Extension



Photo. shows S32-C12-200



Style	Code No.	φd	φD	φd <sub>1</sub>	L	MAX. L <sub>1</sub>	Collet	Weight(kg)
<b>32</b>	<b>S32-C12-120, 160, 200</b>	32	12	33	120, 160, 200	60, 100, 140	<b>KM12</b>	0.6, 0.9, 1.1
	<b>-C16-130</b>		16	44	130	70	<b>KM16</b>	0.7
	<b>-C20-150</b>		20	52	150	90	<b>KM20</b>	1.1
<b>42</b>	<b>S42-C16-180</b>	42	16	44	180	120	<b>KM16</b>	1.6
	<b>-C20-185</b>		20	52	185	125	<b>KM20</b>	1.7

- ★S32-C22-150, S42-C22-185, S42-C25-150 are also available as semi-standard.
- ★The MC and NC straight shank Milling Chuck is unified to the above Code No. ★Please refer P.33 for KM Collet.

# CENTRE COOLANT STRAIGHT COLLET

**NIKKEN**

PAT.

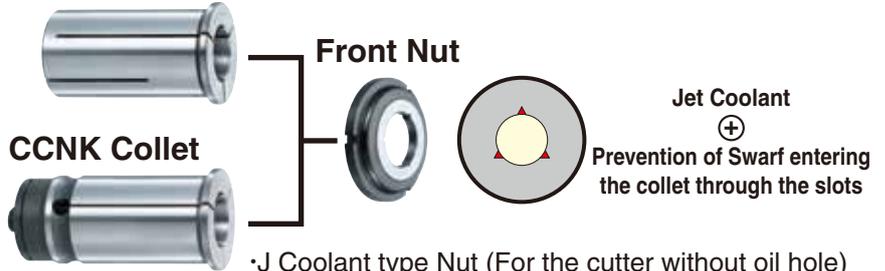
The Jet Coolant Pressure creates a tornado effect, ensuring efficient swarf dispersal.



**CCK**

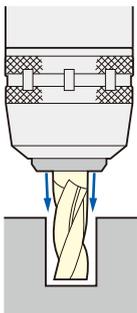
Suitable for all models of the NIKKEN MILLING CHUCK

## CCK Collet

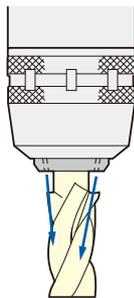


Jet Coolant + Prevention of Swarf entering the collet through the slots

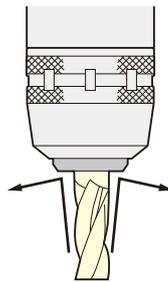
- J Coolant type Nut (For the cutter without oil hole)
- Nut with O-ring (For the oil hole cutter)
- Nut with multi coolant nozzles (For the cutter that the cutter dia. is larger than the shank dia.)



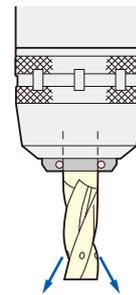
For grooving.



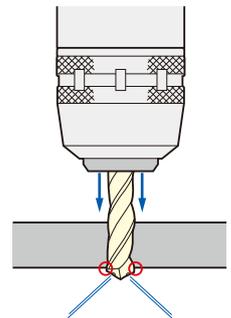
For cutters with cutting diameter which is larger than the shank diameter.



Prevention of the swarf contamination.



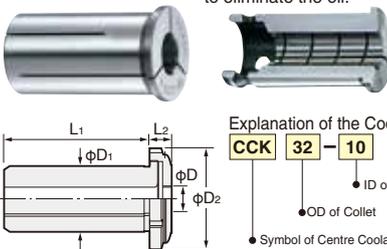
A front nut with an O-ring seal, for use with oil hole cutter, is also available as option.



Supply coolant to the shoulder when oil hole drill is passes through the hole.

## CCK Collet

○ means with internal grooves for gripping strongly to eliminate the oil.



Explanation of the Code No.  
**CCK** 32 - 10  
 ○ ID of Collet  
 ● OD of Collet  
 ● Symbol of Centre Coolant Collet

It can be used for the standard collet.

Style	φD1	φD2	L1	L2	CCK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCK12</b>	12	19.5	38	7	<b>CCK12-3, 4, 5, 6, 8, 10</b>	<b>CKFN12</b>
<b>CCK16</b>	16	28.5	45	8	<b>CCK16-3, 4, 5, 6, 8, 10, 12</b>	<b>CKFN16</b>
<b>CCK20</b>	20	33	50.5	8	<b>CCK20-6, 8, 10, 12, 16</b>	<b>CKFN20</b>
<b>CCK25</b>	25	39	56	8.5	<b>CCK25-6, 8, 10, 12, 16, 20</b>	<b>CKFN25</b>
<b>CCK32</b>	32	46.5, 43	61.5	9	<b>CCK32-6, 8, 10, 12, 16, 20, 25</b>	<b>CKFN32, CKFN32T</b>
<b>CCK42</b>	42	59.5	70(75)	9	<b>CCK42-6, 8, 10, 12, 16, 20, 25, 32</b>	<b>CKFN42</b>

- ★ Above bold figures indicate "ANNIVERSARY" type CCK Collet.
- ★ Please note the acceptable shank tolerance is h6~h7.
- ★ Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.
- ★ CKFN front nut and CCKL spanner are optional accessories.
- ★ Collet removal (9CKR) is an optional accessory for NC milling chuck.

## CCNK Collet

○ means with internal grooves for gripping strongly to eliminate the oil.

Cutter length adjustment on the collet is possible from front and back.



Explanation of the Code No.  
**CCNK** 32 - 10  
 ○ ID of Collet  
 ● OD of Collet  
 ● Symbol of Centre Coolant Collet for NC

It can be used for the standard collet.

Style	CCNK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCNK20</b>	<b>CCNK20-6, 8, 10, 12, 16</b>	<b>CKFN20</b>
<b>CCNK25</b>	<b>CCNK25-6, 8, 10, 12, 16, 20</b>	<b>CKFN25</b>
<b>CCNK32</b>	<b>CCNK32-6, 8, 10, 12, 16, 20, 25</b>	<b>CKFN32, CKFN32T</b>
<b>CCNK42</b>	<b>CCNK42-6, 8, 10, 12, 16, 20, 25, 32</b>	<b>CKFN42</b>

- ★ Please note the acceptable shank tolerance is h6~h7.
- ★ Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.
- ★ CKFN front nut and CCKL spanner are optional accessories.
- ★ Collet removal (9CKR) is an optional accessory for NC milling chuck.
- ★ Jet Coolant type for the cutter with a cutter dia. larger than shank dia. is also available. **CKFN25-20MN 32-25MN 42-32MN**
- ★ Front Nut fitted with an O-ring is also available. e.g. The Code No. is **CKFN32-10C**

## Front Nut



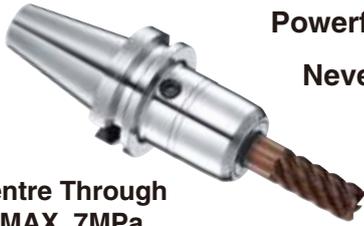
Explanation of the Code No.  
**CKFN** 32 - 10  
 ○ ID of Collet  
 ● OD of Collet  
 ● Symbol of Front Nut

Style	φD2	L2	Front Nut Code No.
<b>CKFN12</b>	19.5	7	<b>CKFN12 -3, 4, 5, 6, 8, 10</b>
<b>CKFN16</b>	28.5	8	<b>CKFN16 -3, 4, 5, 6, 8, 10, 12</b>
<b>CKFN20</b>	33	8	<b>CKFN20 -6, 8, 10, 12, 16</b>
<b>CKFN25</b>	39	8.5	<b>CKFN25 -6, 8, 10, 12, 16, 20</b>
<b>CKFN32</b>	46.5	9	<b>CKFN32 -6, 8, 10, 12, 16, 20, 25</b>
<b>CKFN32T</b>	43	9	<b>CKFN32T-6, 8, 10, 12, 16, 20, 25</b>
<b>CKFN42</b>	59.5	9	<b>CKFN42 -6, 8, 10, 12, 16, 20, 25, 32</b>

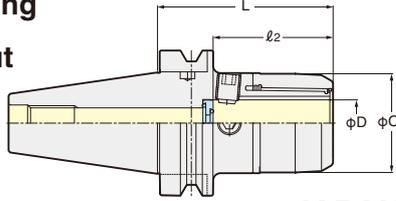
- ★ For C32 there are 2 sizes, CKFN32 = for nose ring diameter of φ69mm, CKFN32T = for nose ring diameter of φ64mm.
- ★ The spanner is available as an option.
- ★ The front nut for direct chucking is also available. e.g. **CKFN20-20D, CKFN25-25D, CKFN32-32D**
- ★ The Code No. fitted with O-ring is ; e.g. **CKFN20-20DC, CKFN25-25DC, CKFN32-32DC**

B1

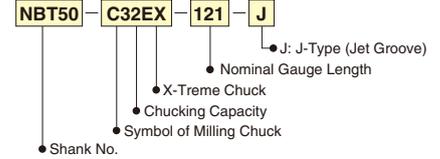
# X-Treme Shank 2LOCK NBT X-Treme Chuck NEW NIKKEN



**Powerful Gripping  
&  
Never Pull-out**



Explanation of the Code No.



**Centre Through  
MAX. 7MPa**

**JAPAN, USA, EU PAT. CHINA PAT.P**

TAPER	Code No. (φD - L)	C <sub>1</sub>	L	l <sub>2</sub>	End mill with oil hole		Handle (Option)	Weight (kg)
					Stopper*	Face cap*		
No.40	NBT40-C12EX- 86	40	86	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	1.6
	-C16EX- 96	48	96	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	1.7
	-C20EX- 96	55	96	71	9MC20HEX- 7L	9C20 -FS-EX-A1	GH25	1.8
No.50	NBT50-C12EX- 96	40	96	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	4.0
	-C16EX-106	48	106	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	4.4
	-C20EX-116	55	116	71	9MC20HEX- 12L	9C20 -FS-EX-A1	GH25	5.0
	-C25EX-116	55	116.3	77.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	4.8
	-C32EX-121	68	121.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	5.3
	-C42EX-126	86	126	86	9MC42HEX- 9L	9C42SL-FS-EX-A1	9HC42	6.3

**Please use direct chucking without KM collet.**

- ★MAX. 7MPa of center through coolant is available with the stopper.
- ★Please use J-type X-Treme chuck, when end mill without oil hole is used. eg) NBT50-C32EX-121-J  
In case of J-type X-Treme chuck, J-type stopper and J-type face cap (with Jet grooves) are attached. 9MC32HEX-7L-J, 9C32L-FS-EX-J  
J-type X-Treme chuck is used for the pocket milling and side milling.
- ★Extended length X-Treme chuck is also available. NBT50-C20EX-135, NBT50-C25EX-135, NBT50-C32EX-135



**GH Handle P. 48**

2LOCK tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
2LOCK tooling can also be used on the M/C with BT standard spindle.

# X-Treme Shank 2LOCK NIT/NCAT X-Treme Chuck NEW NIKKEN

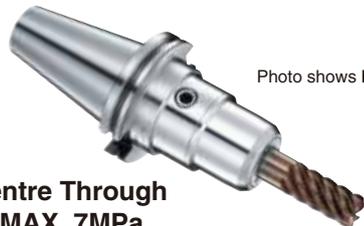
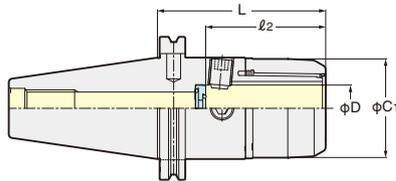
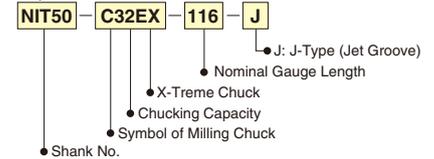


Photo shows NIT Shank.



Explanation of the Code No.



**Centre Through  
MAX. 7MPa**

**JAPAN, USA, EU PAT. CHINA PAT.P**

TAPER	Code No. (φD - L)	C <sub>1</sub>	L	l <sub>2</sub>	End mill with oil hole		Handle (Option)	Weight (kg)
					Stopper*	Face cap*		
NIT50	NIT50 -C12EX- 96	40	96	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	3.4
	-C16EX-106	48	106	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	3.8
	-C20EX-106	55	106	71	9MC20HEX- 12L	9C20 -FS-EX-A1	GH25	4.3
	-C25EX-111	55	111.3	77.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	4.2
	-C32EX-116	68	116.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	4.7
	-C42EX-126	86	136	86	9MC42HEX- 9L	9C42SL-FS-EX-A1	9HC42	6.0
NCAT50	NCAT50-C12EX- 96U	40	96	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	3.4
	-C16EX-106U	48	106	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	3.8
	-C20EX-106U	55	106	71	9MC20HEX- 12L	9C20 -FS-EX-A1	GH25	4.3
	-C25EX-111U	55	111.3	77.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	4.2
	-C32EX-116U	68	116.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	4.7
	-C42EX-126U	86	126	86	9MC42HEX- 9L	9C42SL-FS-EX-A1	9HC42	6.0

**Please use direct chucking without KM collet.**

- ★MAX. 7MPa of center through coolant is available with the stopper.
- ★Please use J-type X-Treme chuck, when end mill without oil hole is used. eg) NCAT50-C32EX-116U-J  
In case of J-type X-Treme chuck, J-type stopper and J-type face cap (with Jet grooves) are attached. 9MC32HEX-7L-J, 9C32L-FS-EX-J  
J-type X-Treme chuck is used for the pocket milling and side milling.

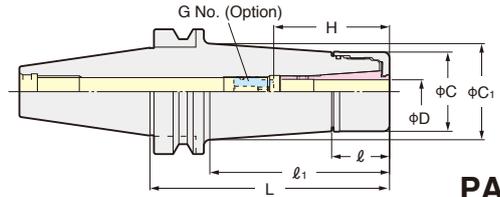


**GH Handle P. 48**

# VC HOLDER



With TiN Bearing Nut  
 MAX. 40,000min<sup>-1</sup> & G2.5  
 Run-Out Accuracy : Within 3µm at 4D



PAT.

BT

VC

High Speed

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	MAX. min <sup>-1</sup>	Collet
No.30	BT30-VC 6- 45	2.0~ 6.0	45	23	23	27.5	27.5	35~45	VCG 6- 8A	0.5	40,000	VCK 6
	- 60		60		35		31.7			0.6		
	- 90		90		65		33.4			0.8		
	-VC13- 60	3.0~12.0	60	29	37	40	41.1	VCG13-15A	0.7	VCK13		
	- 90		90		67		41.3		0.9			
-120	120	97	42.4	1.2								
No.40	BT40-VC 6- 60	2.0~ 6.0	60	23	30	27.5	30.0	35~45	VCG 6- 8A	1.1	30,000	VCK 6
	- 90		90		60		32.7			1.3		
	-120		120		90		36.9			1.5		
	-VC13- 60	3.0~12.0	60	29	31	40	40.3	VCG13-15A	1.2	VCK13		
	- 90		90		60		44.3		1.5			
	-120		120		90		48.5		1.9			
No.50	BT50-VC 6-105	2.0~ 6.0	105	23	62	27.5	33.0	35~45	VCG 6- 8A	3.9	20,000	VCK 6
	-135		135		92		37.1			4.1		
	-165		165		122		41.3			4.4		
	-VC13-105	3.0~12.0	105	29	62	40	44.6	VCG13-15A	4.1	VCK13		
	-135		135		92		48.8		4.5			
	-165		165		122		53.0		4.9			

★TiN Bearing Nut is supplied as standard.

★Collet, adjust screw (G No.) and GH Handle are available as an option. The Code No. of the GH Handle is VC6: GH10, VC13: GH16

★Please add "-RP" at the end of Code No. for Rust Proof Treatment VC Holder. e.g : BT40-VC13-60-RP

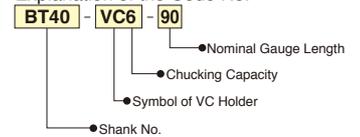
★Please use VC J type Nut & Cap for Centre Through Coolant. When VC J type Nut is used, the total holder length will be extended to 6mm.

★BT40-VC 6-150, BT40-VC13-150, BT50-VC13- 90, -120 are available as semi-standard.

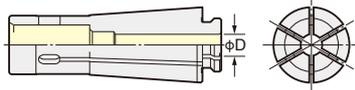
★When the axial stopper is required, please use Adjust Screw (G No.)

★All series are for High Speed Rotation.

Explanation of the Code No.



## VCK Collet



VCK Collet Code No.
VCK 6-2, 3, (3.175), 4, 5, 6
VCK13-3, (3.175), 4, 5, 6, 7, 8, 9, 10, 11, 12

VCK Collet (Inch) Code No.
VCK 6 -1/8, 3/16, 1/4
VCK13 -1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2

★The acceptable shank tolerance of VCK collet is h8.

★VCK6-3.175 is same as VCK6-1/8 ; VCK13-3.175 is same as VCK13-1/8.

## Jet coolant splash with J type Nut.



**Cap with triangular grooves**  
 The jet coolant pressure creates a tornado effect.

**Cap with O-ring**  
 For oil hole cutting tool



## J type NUT Code.

Style	J-type NUT	GH Handle	Cap	Wenche
VC 6	VCN- 6BJ	GH10	Cap With triangular grooves SKJ10-○.○	SKJL-10
			Cap With O-rong SKJ10-○.○C	
VC13	VCN-13BJ	GH16	Cap With triangular grooves SKJ16-○.○	SKJL-16
			Cap With O-rong SKJ16-○.○C	

Easy, safe and reliable handling with GH Handle



P. 48



# MINI-MINI CHUCK ADVANCED ALPHA NEW

**NIKKEN**

BT

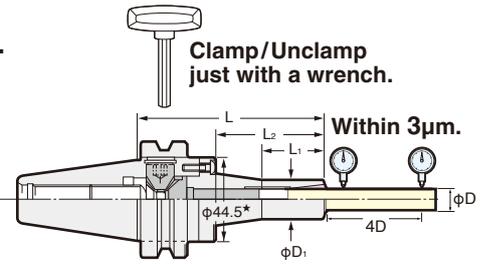
**MMC**

Extra-long sizes are added



EXPERT for SMALL DIA.  
END MILLING

30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-Out Accuracy :  
3μm at 4D



Dimension marked ★ is 52.4 for MMC12. **PAT.**

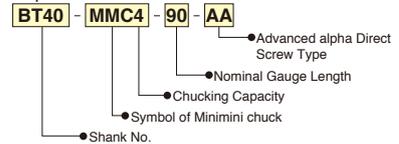
High Speed

TAPER	Code No.	D	L	φD <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	Collet	MAX.min <sup>-1</sup>	Weight(kg)
No.30	BT30 - MMC 4 - 105 - AA	1~ 4	105	15	30	43	MPK 4	30,000	0.9
	MMC 8C - 105 - AA	2~ 8		20	33	42	PMK 8 VMK 8		0.9
	MMC 12C - 105 - AA	4~12		30	35	44	PMK12 VMK12		1.1
No.40	BT40 - MMC 4 - 90 - AA	1~ 4	90	15	30	43	MPK 4	30,000	1.2
	8C - 90 - AA	2~ 8		20	33	42	PMK 8 VMK 8		1.2
	-120 - AA				72	102			1.3
	-150 - AA	4~12	30	40	74	PMK12 VMK12	1.4		
	-180 - AA			70	104		1.5		
	12C - 90 - AA			90	35		44		1.4
	-120 - AA	120	60	74	1.5				
	-150 - AA	150	70	104	1.6				
	-180 - AA	180	100	134	1.7				
No.50	BT50 - MMC 4 - 105 - AA	1~ 4	105	15	30	43	MPK 4	20,000	3.8
	8C - 105 - AA	2~ 8		20	33	42	PMK 8 VMK 8		3.8
	-135 - AA				40	72			102
	-165 - AA	4~12	30	70	132	PMK12 VMK12	4.0		
	-195 - AA			35	44		4.1		
	12C - 105 - AA			105	60		74		4.1
	-135 - AA	135	70	104	4.2				
	-165 - AA	165	100	134	4.3				
	-195 - AA	195							

- ★Wrench EA573KL-6 : MMC4, MMC8C MMCL12-M6T62 : MMC12 is attached as standard.
- ★Extra-long sizes are added \*Extra-long sizes : longer +30~90mm than conventional.
- ★Collet is available as an option. Please refer P.38
- ★Center through tool coolant type MINI-MINI Chuck is available for MMC8 and MMC12 type only.
- Please add the letter "C" to the Code No. e.g. BT40-MMC8C-90



Explanation of the Code No.



**Extra-long sizes are added\***



Photo shows BT50 type longer than +30~90mm than conventional.

Easy to approach a complicated work piece due to compact and extra-long design

# DIRECT SCREW TYPE MINI-MINI CHUCK

**NIKKEN**

TAPER	Code No.	D	L	φD <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	Collet	MAX.min <sup>-1</sup>	Weight(kg)
No.30	BT30-MMC8-65-AT	2~8	65	20	30	40	VMK 8	30,000	0.43

- ★Wrench EA573KL-15 is attached as standard. ★Wrench both for chuck and pull stud is available as an option. Code No. is MMCLA-BT30.
- ★Collet is available as an option. Please refer P.38

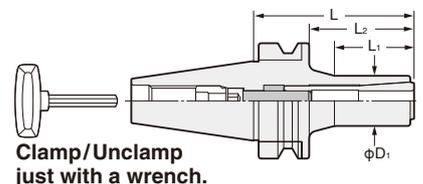
**Direct Screw Type**



Photo shows BT30-MMC8-65-AT

High Accuracy and High Gripping Torque by rigid and smooth shape body

HSK Direct Screw Type : P.255



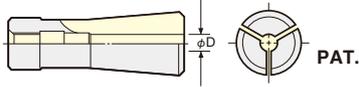
# MINI-MINI COLLET (MPK/PMK/VMK COLLET)



## STANDARD COLEET : MPK COLEET / PMK COLEET



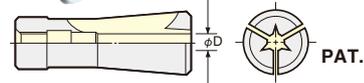
Explanation of the Code No.  
**PMK** **8** - **2**  
 • Symbol of PMK collet  
 • Style No.  
 • ID of Collet



## FOR CENTRE THROUGH TOOL COOLANT : VMK Collet / VMK-J Collet



Explanation of the Code No.  
**VMK** **12** - **6** **J**  
 • Symbol of VMK collet  
 • Style No.  
 • ID of Collet  
 Non: Without Jet Spread Groove  
 J : With Jet Spread Groove



Jet Spread Groove (J Type)

Code No.	最少把握長
MPK 4- 1	6
- 1.5	8
- 2	10
- 2.5	12
- 3	16
- 3.5	16
- 4	16
-1/16	8
-3/32	10
- 1/8	16

Code No.	最少把握長
PMK 8- 2	10
- 2.2	10
- 2.4	12
- 2.6	12
- 2.8	12
- 3	16
- 3.2	16
- 3.4	16
- 3.6	16
- 3.8	16
- 4	20
- 4.2	20
- 4.4	20
- 4.6	22
- 4.8	22
- 5	22
- 5.2	22
- 5.4	22
- 5.6	22
- 5.8	22
- 6	22
- 6.2	22
- 6.4	22
- 6.6	22

Code No.	最少把握長
PMK 8- 6.8	22
- 7	22
- 7.2	22
- 7.4	22
- 7.6	22
- 7.8	22
- 8	22
- 1/8	16
-3/16	22
PMK 12- 4	19
- 5	22
- 6	30
- 8	31
- 10	31
- 12	31

Code No.	最少把握長
VMK 8 - 2	10
- 3	16
- 4	20
- 5	22
- 6	22
- 7	22
- 8	22
- 2J	10
- 3J	16
- 4J	20
- 5J	22
- 6J	22
- 7J	22
- 8J	22
- 1/8	15
- 3/16	22
- 1/4	22
- 5/16	22
- 3/8	22
- 1/8J	16
- 3/16J	22
- 1/4J	22
- 5/16J	22
- 3/8J	22

Code No.	最少把握長
VMK12- 4	19
- 5	22
- 6	30
- 8	31
- 10	31
- 12	31
- 4J	19
- 5J	22
- 6J	30
- 8J	31
- 10J	31
- 12J	31
- 3/16	22
- 1/4	30
- 5/16	31
- 3/8	31
- 7/16	31
- 1/2	31
- 3/16J	22
- 1/4J	30
- 5/16J	31
- 3/8J	31
- 7/16J	31
- 1/2J	31

★Please note the acceptable shank tolerance of **MPK** Collet is h6.  
 ★Even the gripping range of **PMK** Collet is 0.2mm / dia. (e.g. **PMK8-2 : 1.8~2.0**) but the shank tolerance of **h6** highly recommended for precision machining.

★FOR Centre through tool Coolant type **MINI-MINI Chuck** :  
 ★Standard **VMK** Collet is for the cutting tool with coolant hole.  
 ★**VMK-J** Collet is for the cutting tool without Coolant hole.  
 ★Please note the acceptable shank tolerance h6.  
 ★**VMK8-2J** is Jet Spred Hole type.



VMK

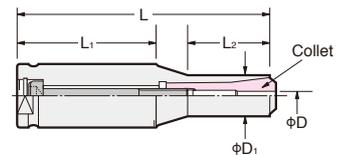
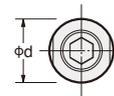


VMK-J

# Straight Shank MINI-MINI CHUCK



K-MMC



Style	Code No.	Chucking Range $\phi D$	L	$\phi D_1$	L <sub>1</sub>	L <sub>2</sub>	Collet	Weight(kg)
<b>16</b>	K16-MMP 4- 70, 150	1~ 4	70, 150	15	50, 130	20	<b>MPK 4</b>	0.1, 0.2
<b>20</b>	K20-MMC 8-100	2~ 8	100	20	80	20	<b>PMK 8</b> <b>VMK 8</b>	0.2
<b>32</b>	K32-MMC 8-122, 160	2~ 8	122, 160	20	67	40	<b>PMK 8</b> <b>VMK 8</b>	0.5, 0.7
	K32-MMC12-170S	4~12	170	30	120	50	<b>PMK12</b> <b>VMK12</b>	1.0

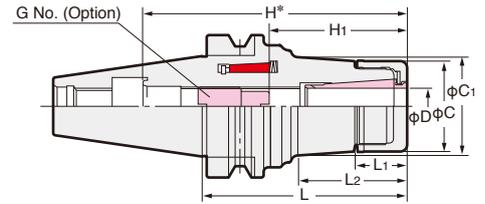
★Wrench is supplied as standard. Collet is available as an option.

Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.

Dampening Effect  
TiN Bearing Effect



MDSK



H : MAX. Cutter Shank Length to be inserted

**2LOCK** tool can be used on the M/C with BT standard spindle.

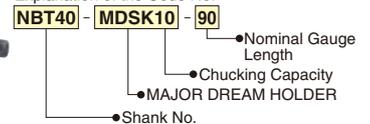
PAT.

TAPER	Code No.	D	L	L1	L2	C	C1	H*	H1	G No. (Option)	Weight (kg)	Collet
No.30	NBT30-MDSK 6- 50	3.0~6.0	50	16.2	19.5	19.5	20.0	73	21~35	SKG- 8	0.5	SK 6 A
	- 60		60		25.5		83	0.6				
	- 75		75		40.5		98	0.7				
	- 90		90		55.5		113	0.8				
	-MDSK10- 50	3.0~10.0	50	18.0	19.0	27.5	27.5	72	30~50	SKG-12L	0.5	SK10 A
	- 60		60		25.7		82	0.6				
	- 75		75		42.9		97	0.8				
	- 90		90		58.7		112	0.8				
	-MDSK13- 60	3.0~13.0	60	22.0	29.0	33.0	34.0	83	31~43	SKG-15	0.8	SK13 A
	- 75		75		45.0		98	0.8				
	- 90		90		60.0		113	0.8				
	-MDSK16- 75	3.0~16.0	75	23.0	47.5	40.0	60	75	45~60	SKG-12L	1.1	SK16 A
- 90	90		62.5		40.0		75	45~70	SKG-12	1.3		
No.40	NBT40-MDSK 6- 60	3.0~6.0	60	16.2	18.0	19.5	19.5	86	21~35	SKG- 8	0.8	SK 6 A
	- 75		75		33.0		101	0.9				
	- 90		90		48.0		116	1.1				
	-105		105		63.0		131	1.2				
	-120	120	78.0	146	1.4							
	-MDSK10- 60	3.0~10.0	60	18.0	19.0	27.5	27.5	86	30~50	SKG-12L	1.1	SK10 A
	- 75		75		33.0		101	1.3				
	- 90		90		48.0		116	1.5				
	-105		105		63.0		131	1.6				
	-120	120	78.0	146	1.8							
	-150	150	110.0	176	2.2							
	-MDSK13- 65	3.0~13.0	65	22.0	24.0	33.0	33.0	91	31~60	SKG-15	1.2	SK13 A
	- 75		75		33.0		101	1.4				
	- 90		90		48.0		116	1.7				
	-105		105		63.0		131	1.8				
	-120	120	78.0	146	2.0							
	-150	150	110.0	176	2.4							
	-180	180	144.0	206	2.6							
	-MDSK16- 65	3.0~16.0	65	23.0	24.0	40.0	40.0	91	45~60	SKG-18L	1.2	SK16 A
	- 75		75		33.0		101	1.5				
	- 90		90		48.0		116	1.9				
	-105		105		64.0		131	2.0				
	-120	120	80.0	146	2.2							
	-150	150	113.0	176	2.5							
-MDSK20- 75	4.0~20.0	75	25.2	41.2	48.0	51.3	80	50~73	SKG-12	1.9	SK20 A	
- 90		90		55.0		95	SKG-12-55L		2.1			
-105		105		70.0		110	SKG-12-70L		2.3			
-120		120		85.0		125	SKG-12-85L		2.6			

- ★Please use A type SK collet for the end milling operation. (P.43)
- ★Please refer (P.49) for the Jet coolant system, J type nut and cap.
- ★GH handle is available as an option. (P.48) Please order with the Code No. GH6 : MDSK6 &, GH10 : MDSK10, GH12 : MDSK13, GH16 : MDSK16, GH20 : MDSK20, GH25 : MDSK25
- ★Please add "P" at the end of Code No. for high speed specification, e.g NBT40-MDSK10-60P
- ★Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.



Explanation of the Code No.



MAX. min<sup>-1</sup>

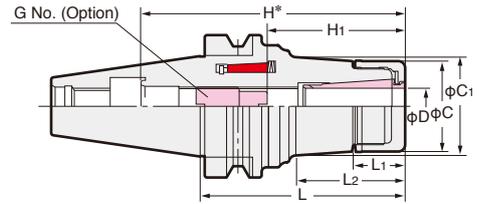
Code No.	MAX. min <sup>-1</sup>	Code No.	MAX. min <sup>-1</sup>	Code No.	MAX. min <sup>-1</sup>
NBT30-MDSK 6-P	30,000	NBT40-MDSK 6-P	25,000	NBT50-MDSK 6-P	20,000
-MDSK10-P		-MDSK10-P		-MDSK10-P	
-MDSK13-P		-MDSK13-P		-MDSK13-P	
-MDSK16-P	25,000	-MDSK16-P	20,000	-MDSK16-P	
		-MDSK20-P	20,000	-MDSK20-P	
				-MDSK25-P	

Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.

**Dampening Effect**  
**TiN Bearing Effect**



MDSK



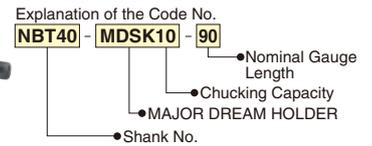
H : MAX. Cutter Shank Length to be inserted

**2LOCK** tool can be used on the M/C with BT standard spindle.

PAT.

TAPER	Code No.	D	L	L1	L2	C	C1	H*	H1	G No. (Option)	Weight (kg)	Collet						
No.50	<b>NBT50-MDSK 6-105</b>	3.0~6.0	105	16.2	48.0	19.5	24.0	116	21~35	SKG- 8	3.6	SK 6 A						
	-120		120		63.0		131	3.7										
	<b>-MDSK10-105</b>	3.0~10.0	105	18.2	48.0	27.5	31.7	116	30~50	SKG-12L	4.3	SK10 A						
	-120		120		63.2		131	4.4										
	-135		135		78.2		146	4.7										
	-165		165		110.2		176	5.0										
	-195		195		141.2		206	5.3										
	<b>-MDSK13-105</b>		3.0~13.0		105		22.0	48.0			33.0		36.7	116	31~60	SKG-15	4.2	SK13 A
	-120	120		63.0	131	4.7												
	-135	135		78.0	146	5.0												
	-165	165		110.0	176	5.3												
	-195	195		144.0	206	5.6												
	<b>-MDSK16-105</b>	3.0~16.0		105	23.0	48.0		40.0	43.5	116		45~70	SKG-18L	4.1			SK16 A	
	-120		120	64.0		131	4.9											
	-135		135	80.1		146	5.2											
	-165		165	114.7		176	5.5											
	-195		195	144.6		206	5.8											
	<b>-MDSK20-105</b>		4.0~20.0	105		25.2	42.3		48.0	51.4	159			47~80	SKG-22	4.9		SK20 A
	-135	135		72.0	175		5.3											
	-165	165		102.0	205		5.9											
	-195	195		132.0	235		6.7											
	<b>-MDSK25-105</b>	8.0~25.4		105	27.0		42.3	55.0		57.2	159	55~85	SKG-28			4.9	SK25 A	
	-135			135			74.0			175	5.7							
	-165		165	105.0		205	6.5											
-195	195		135.0	235		7.5												

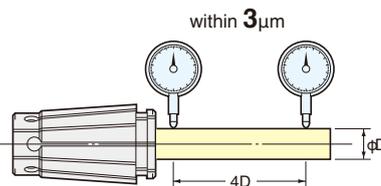
- ★Please use A type SK collet for the end milling operation.
- ★Please refer P.49 for the Jet coolant system, J type nut and cap.
- ★GH handle is available as an option. P.48 Please order with the Code No. GH6 : MDSK6 &, GH10 : MDSK10, GH12 : MDSK13, GH16 : MDSK16, GH20 : MDSK20, GH25 : MDSK25
- ★Please add "P" at the end of Code No. for high speed specification, e.g NBT40-MDSK10-60P
- ★Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.



**A TYPE SLIM COLLET**



SK



SK Collet A Type
SK 6-3A, 4A, 5A, 6A
SK10-3A, 4A, 5A, 6A, 8A, 10A
SK13-3A, 4A, 5A, 6A, 8A, 10A, 12A, 13A
SK16-3A, 4A, 5A, 6A, 8A, 10A, 12A, 16A
SK20-4A, 5A, 6A, 8A, 10A, 12A, 16A, 20A
SK25-8A, 10A, 12A, 16A, 20A, 25A

★The acceptable shank tolerance of A Type collet is h8.

Inch	mm	Collet ID	Inch	mm	Collet ID
1/8	3.175	3.5	7/16	11.113	11.5
3/16	4.763	5	1/2	12.7	13
1/4	6.35	6.5	5/8	15.875	16
5/16	7.938	8.0	3/4	19.05	19.5
3/8	9.525	10	1	25.4	25.4

SK Collet A Type (Inch)
SK 6 -1/8A, 3/16A
SK10 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A
SK13 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A
SK16 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A
SK20 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A, 3/4A
SK25 -3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 5/8A, 3/4A, 25.4A

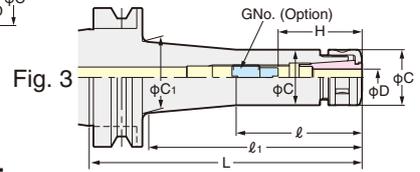
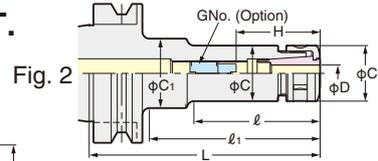
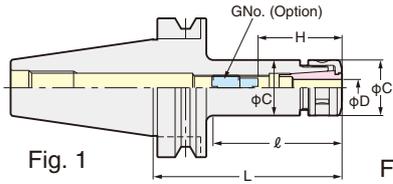
# SLIM CHUCK HIGH SPEED ROTATION • HIGH ACCURACY

JAPAN, USA, EU, KOREA PAT.



**SK**

Photo shows SK10 type.



When SK J type nut is used, the total chuck length will be extended by 6mm.

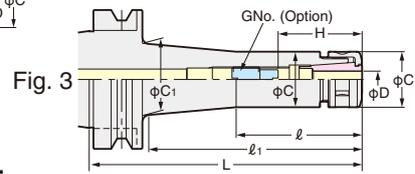
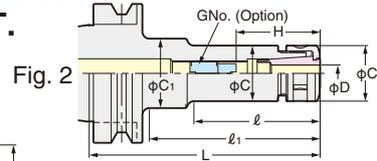
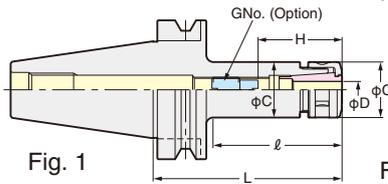
TAPER	Code No.	D	L	l	l <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	Fig	SK Collet	
No.30	BT30-SK 6- 60	0.7 ~ 6.0	60	33	33	19.5	19.5	21~35	SKG- 8	0.7	1	SK 6	
	- 90		90	56	65		32			0.7	2		
	-120		120	62	95		0.8						
	-SK10- 45	1.75~10.0	45	22	22	27.5	27.5	30~50	SKG-12S	0.8	1	SK10	
	- 60		60	35	35								0.9
	- 75		75	50	50								1.0
	- 90		90	65	65								1.0
	-120		120	95	95								1.1
	-SK13- 60	2.75~13.0	60	35	35	33	33	31~50	SKG-15	1.0	1	SK13	
	- 75		75	50	50								1.1
	- 90		90	65	65								1.1
	-SK16- 60	2.75~16.0	60	37	37	40	40	45~60	SKG-12L	1.1	1	SK16	
	- 75		75	52	52				1.2				
	- 90		90	67	67				1.2				
	-120		120	97	97				1.3				
	-SK20- 60	3.5~20.0	60	37	37	48.5	48.5	65~70	SKG-12S	0.7	1	SK20	
	- 75		75	52	52				0.9				
	- 90		90	67	67				1.2				
	-SK25- 90	7.5~25.4	90	67	67	55	55	55~75	SKG-12	1.5	1	SK25	
	No.40	BT40-SK 6- 60	0.7 ~ 6.0	60	30	30	19.5	19.5	21~35	SKG- 8	1.0	1	SK 6
- 90		90		51	60	32		1.1			2		
-120		120		60	90	25		1.4			3		
-150		150		60	120			1.5					
-SK10- 60		1.75~10.0	60	32	32	27.5	27.5	30~50	SKG-12L	1.1	1	SK10	
- 75			75	45	45								1.2
- 90			90	48	60					40			1.2
-120			120		90					34.5			1.4
-150			150		118			1.6					
-180			180	73	148			1.6					
-200			200		168		39	1.8					
-250			250		218			2.1					
-SK13- 60		2.75~13.0	60	28	28	33	33	31~65	SKG-15	1.2	1	SK13	
- 75			75	43	43								1.3
- 90			90	58	58								1.4
-120			120		88								1.6
-150			150		118			1.8					
-180			180	88	148			1.8					
-200			200		168		40	2.0					
-250			250		218			2.4					
-SK16- 60		2.75~16.0	60	32	32	40	40	50~65	SKG-18S	1.3	1	SK16	
- 75			75	43	43				1.4				
- 90			90	58	58				1.5				
-120			120	88	88				1.7				
-150			150	118	118			1.9					
-180			180	148	148			2.0					
-200			200	168	168			2.2					
-250			250	218	218			2.7					
-SK20- 60		3.5~20.0	60	32	32	48.5	48.5	47~60	SKG-22	1.3	1	SK20	
- 75			75	45	45					1.4			
- 90			90	60	60					1.6			
-120			120	90	90					2.0			
-SK25- 75	7.5~25.4	75	47	47	55	55	55~75	SKG-12	1.7	1	SK25		
- 90		90	61	61				1.8					
-120		120	91	91				2.0					

# SLIM CHUCK HIGH SPEED ROTATION • HIGH ACCURACY

JAPAN, USA, EU, KOREA PAT.



**SK**  
Photo shows SK16 type.



When SK J type nut is used, the total chuck length will be extended by 6mm.

TAPER	Code No.	D	L	l	l <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	Fig	SK Collet							
<b>No.50</b>	<b>BT50-SK 6-105</b>	0.7 ~ 6.0	105	55	64	19.5	32	21~35	SKG- 8	3.8	2	<b>SK 6</b>							
	-135		135		92					3.9									
	-165		165	60	114					4.0									
	-200		200		151					4.2									
		<b>-SK10-105</b>	1.75~10.0	105	57	57	27.5	30	30~50	SKG-12L	4.2	1	<b>SK10</b>						
	-135	135		70	92	4.4													
	-165	165			114	4.6													
	-200	200			151	4.8													
		<b>-225</b>	2.75~13.0	225	75	178	33	40	31~65	SKG-15	5.0	3	<b>SK13</b>						
	-250	250			203	5.2													
	-300	300			253	5.6													
		<b>-SK13-105</b>		105	62	62					40			50	40~70	SKG-18L	4.5	1	<b>SK16</b>
	-135	135		92	4.7														
	-165	165		122	4.9														
	-200	200	92	157	5.2														
		<b>-250</b>	2.75~16.0	250		207	48.5	48.5	47~80	SKG-22	5.7	3	<b>SK20</b>						
	-300	300			257	6.2													
		<b>-SK16-105</b>		105	62	62					55			55	50~85	SKG-28	4.7	1	<b>SK25</b>
	-135	135		92	92	4.9													
	-165	165		122	5.1														
	-200	200	90	157	5.5														
		<b>-250</b>	3.5~20.0	250		207	55	55	50~85	SKG-28	6.0	3	<b>SK16</b>						
	-300	300			257	6.5													
		<b>-SK20-105</b>		105	62	62					55			55	50~85	SKG-28	4.3	1	<b>SK20</b>
	-135	135		92	92	4.6													
	-165	165	122	122	5.0														
	-200	200	157	157	5.4														
		<b>-250</b>	7.5~25.4	250	207	207	55	55	50~85	SKG-28	6.1	3	<b>SK25</b>						
-300	300	257		257	6.8														
	<b>-SK25-105</b>	105		62	62	55					55			50~85	SKG-28	5.2	1	<b>SK25</b>	
-135	135	92		92	5.4														
-165	165	122	122	5.6															
-200	200	157	157	6.0															
	<b>-250</b>	7.5~25.4	250	207	207	55	55	50~85	SKG-28	6.7	3	<b>SK25</b>							
-300	300		257	257	7.4														

- ★Please refer P.65 for use as Tap Holder for Synchronized Tapping.
- ★Collet, adjust screw (G No.) and spanner are available as an option. Please refer P.43 for SK Collet.
- The Code No. of the spanner is SK6 (C=φ18) : SKL-6, SK6 (C=φ19.5) : SKL-6W, SK10: SKL-10, SK13: 9HC12A, SK16: 9HC16, SK20: 9HC22, SK25: 9HC25
- ★Please refer P.45, P.46 for High Speed Slim Chuck (40,000min<sup>-1</sup>)
- ★All Slim Chucks can be used for Centre Through Coolant type. Please refer P.52 for Centre Through Coolant Adjust Screw and P.304 for Centre Through Pull Stud.
- ★Please refer P.129 for High Pressure (MAX.7MPa) Centre Through Coolant type. ★Please refer P.131 for Flange Through Coolant type.
- ★BT40-SK10-200, 250 BT50-SK10-250, 300 are also available as semi-standard.
- SK16-200, 250 -SK16-250, 300
- ★Please add "-RP" at the end of Code No. for Rust Proof Treatment Slim Chuck. e.g. BT40-SK10-90-RP



## BT15 Shank

TAPER	Code No.	D	L	l	l <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	Fig	SK Collet	
<b>No.15</b>	<b>BT15BR-SK 6- 40</b>	0.7 ~ 6.0	40	26	26	19.5	19.5	21~30	SKG- 6	0.10	1	<b>SK 6</b>	
	- 55		55	39	39			21~35	SKG- 8	0.14			
	- 65		65	49	49					0.15			
		<b>-SK10- 40</b>	1.75~10.0	40	26	26	27.5	27.5	30~37	SKG- 6L		0.14	<b>SK10</b>
	- 55	55		41	41	35~45				0.20			

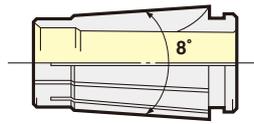
- ★BT15BR is the solid tool integrated with pull stud for BROTHER.
- ★BT15HW is the solid tool integrated with pull stud for HOWA.
- ★BT20P and BT25M are the solid tools with integrated with pull stud without drive key groove for MAKINO SEIKI. e.g. BT20P-SK10-40S, BT25M-SK16-70
- ★S20T is the short taper tool for SUGINO.



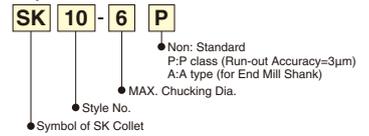
BT15BR

B1

# SLIM CHUCK COLLET



Explanation of the Code No.



**SK** "A" type SK collet (for End Mill Shank) are marked **P**. The acceptable shank tolerance is h8. Code No. is e.g. SK10-10A  
 "P" class SK collet (for drill) are available for all series. e.g. SK10-10P

Code No.	Chucking D
SK 6- 0.8	0.7 ~ 0.8
- 1	0.9 ~ 1.0
- 1.25	1.15~ 1.25
- 1.5	1.3 ~ 1.5
- 1.75	1.55~ 1.75
- 2	1.8 ~ 2.0
- 2.25	2.05~ 2.25
- 2.5	2.3 ~ 2.5
- 2.75	2.55~ 2.75
- 3	2.8 ~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
SK10- 2	1.75~ 2.0
- 2.25	2.0 ~ 2.25
- 2.5	2.25~ 2.5
- 2.75	2.5 ~ 2.75
- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
-10	9.5 ~10.0

Code No.	Chucking D
SK13- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~10.0
- 10.5	10.0~10.5
- 11	10.5~11.0
- 11.5	11.0~11.5
- 12	11.5~12.0
- 12.5	12.0~12.5
- 13	12.5~13.0

Code No.	Chucking D
SK16- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~10.0
- 10.5	10.0~10.5
- 11	10.5~11.0
- 11.5	11.0~11.5
- 12	11.5~12.0
- 12.5	12.0~12.5
- 13	12.5~13.0
- 13.5	13.0~13.5
- 14	13.5~14.0
- 14.5	14.0~14.5
- 15	14.5~15.0
- 15.5	15.0~15.5
- 16	15.5~16.0

Code No.	Chucking D
SK20- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~ 10.0
- 10.5	10.0~ 10.5
- 11	10.5~ 11.0
- 11.5	11.0~ 11.5
- 12	11.5~ 12.0
- 12.5	12.0~ 12.5
- 13	12.5~ 13.0
- 13.5	13.0~ 13.5
- 14	13.5~ 14.0
- 14.5	14.0~ 14.5
- 15	14.5~ 15.0
- 15.5	15.0~ 15.5
- 16	15.5~ 16.0
- 16.5	16.0~ 16.5
- 17	16.5~ 17.0
- 17.5	17.0~ 17.5
- 18	17.5~ 18.0
- 18.5	18.0~ 18.5
- 19	18.5~ 19.0
- 19.5	19.0~ 19.5
- 20	19.5~ 20.0

Code No.	Chucking D
SK25- 8	7.5~8.0
- 10	9.5~10.0
- 12	11.5~12.0
- 16	15.5~16.0
- 16.5	16.0~16.5
- 17	16.5~17.0
- 17.5	17.0~17.5
- 18	17.5~18.0
- 18.5	18.0~18.5
- 19	18.5~19.0
- 19.5	19.0~19.5
- 20	19.5~20.0
- 20.5	20.0~20.5
- 21	20.5~21.0
- 21.5	21.0~21.5
- 22	21.5~22.0
- 22.5	22.0~22.5
- 23	22.5~23.0
- 23.5	23.0~23.5
- 24	23.5~24.0
- 24.5	24.0~24.5
- 25	24.5~25.0
- 25.4	25.0~25.4

★SK6 collet with the special internal dia. is also available.



Collet removal (SKR-6) is supplied as standard only for SK6. SKR-10, SKR-16 and SKR-25 are available as an option. Collet removal is not necessary for the new types of collet (SK10 to SK25 collet including SK13 and SK20).

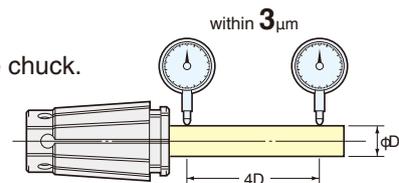
★Please refer P.44 for SK Coolant Collet AC.

## ■ "P" class SK collet for drill

It guarantees the Run-out accuracy within 3 micron at the nose (4D) from the chuck. Additionally Collet Set is also available.

## ■ "A" type SK collet for endmill

The acceptable shank tolerance is h8.



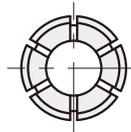
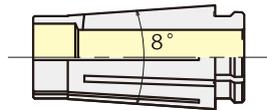
SK Collet A Type
SK 6-3A, 4A, 5A, 6A
SK10-3A, 4A, 5A, 6A, 8A, 10A
SK13-3A, 4A, 5A, 6A, 8A, 10A, 12A, 13A
SK16-3A, 4A, 5A, 6A, 8A, 10A, 12A, 16A
SK20-4A, 5A, 6A, 8A, 10A, 12A, 16A, 20A
SK25-8A, 10A, 12A, 16A, 20A, 25A

SK Collet A Type (Inch)
SK 6 -1/8A, 3/16A
SK10 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A
SK13 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A
SK16 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A
SK20 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A, 3/4A
SK25 -3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 5/8A, 3/4A, 25.4A

# CENTER-THRU COOLANT COLLET (SK-AC) for NIKKEN SLIM CHUCK



**NEW**



Code number reference  
**SK** **10** - **6** **AC**  
 • Slim Chuck  
 • Style  
 • Max clamping diameter  
 • Center-thru coolant

## SK-AC

The acceptable shank tolerance is h8.

Style	Code No.	Chucking D
SK 6	SK 6- 3AC	3.0
	- 4AC	4.0
	- 5AC	5.0
	- 6AC	6.0
SK10	SK10- 3AC	3.0
	- 4AC	4.0
	- 5AC	5.0
	- 6AC	6.0
	- 7AC	7.0
	- 8AC	8.0
	- 9AC	9.0
	-10AC	10.0
SK13	SK13- 4AC	4.0
	- 5AC	5.0
	- 6AC	6.0
	- 7AC	7.0
	- 8AC	8.0
	- 9AC	9.0
	-10AC	10.0
	-11AC	11.0
SK16	SK16- 6AC	6.0
	- 7AC	7.0
	- 8AC	8.0
	- 9AC	9.0
	-10AC	10.0
	-11AC	11.0
	-12AC	12.0
	-13AC	13.0
SK20	SK20-12AC	12.0
	-16AC	16.0
	-20AC	20.0
	SK25-16AC	16.0
SK25	-20AC	20.0
	-25AC	25.0

★Clamping range: h8

## Quick & Easy to block coolant diffusion

Slim Chuck  
Major Dream Holder



SK standard nut  
SKT/MDSK standard nut



New SK coolant collet



Image



# HIGH SPEED SLIM CHUCK

**NIKKEN**

MAX.40,000min<sup>-1</sup> & G2.5

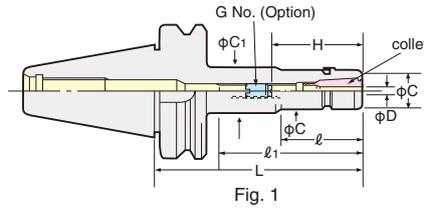
Explanation of the Code No.

BT40 - SK 10 - 90 P

- Symbol of High Speed
- Nominal Gauge Length mm
- Chucking Capacity
- Symbol of Slim Chuck
- Shank No.



SK-P



When SK J type nut is used, the total chuck length will be extended by 6mm.

PAT.

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	MAX. (min <sup>-1</sup> )	collet	weight (kg)		
No.30	BT30-SK 6- 60P	0.7 ~ 6.0	60	33	33	19.5	19.5	21~35	SKG- 8	40,000	SK 6	0.7		
	- 90P		90	56	65		32					0.7		
	-120P		120	62	95		32					0.8		
	-SK10- 45P	1.75~10.0	45	22	22	27.5	27.5	30~50	SKG-12S		30,000	SK10	0.8	
	- 60P		60	35	35								0.9	
	- 75P		75	50	50								1.0	
	- 90P		90	65	65								1.0	
	-SK13- 60P	2.75~13.0	60	35	35	33	33	31~50	SKG-15		30,000	SK13	1.1	
	- 75P		75	50	50								1.1	
	- 90P		90	65	65								1.1	
	-120P		120	95	95								1.2	
	-SK16- 60P	2.75~16.0	60	37	37	40	40	45~60	SKG-12L		30,000	SK16	1.1	
	- 75P		75	52	52			45~65					1.2	
	- 90P		90	67	67			40~70					1.2	
	-120P		120	97	97			40~70					1.3	
	-SK20- 60P	3.5~20.0	60	37	37	48.5	48.5	65~70	SKG-12S		30,000	SK20	0.7	
- 75P	75		52	52	70~75			0.9						
- 90P	90		67	67	65~75			1.2						
-SK25- 90P	7.5~25.4	90	67	67	55	55	55~75	SKG-12	30,000	SK25	1.5			
No.40	BT40-SK 6- 60P	0.7 ~ 6.0	60	30	30	19.5	19.5	21~35	SKG- 8	30,000	SK 6	1.0		
	- 90P		90	51	60		32					1.1		
	-120P		120	60	90		25					1.4		
	-150P		150	60	120		25					1.5		
	-SK10- 60P	1.75~10.0	60	32	32	27.5	27.5	30~50	SKG-12L		30,000	SK10	1.1	
	- 75P		75	45	45								40	1.2
	- 90P		90	48	60								40	1.2
	-120P		120	73	90								34.5	1.4
	-150P		150	73	118								39	1.6
	-SK13- 60P	2.75~13.0	60	28	28	33	33	31~65	SKG-15		30,000	SK13	1.2	
	- 75P		75	43	43								40	1.3
	- 90P		90	58	58								40	1.4
	-120P		120	88	88								40	1.6
	-150P		150	88	118								40	1.8
	-SK16- 60P	2.75~16.0	60	32	32	40	40	50~65	SKG-18S		25,000	SK16	1.3	
	- 75P		75	43	43			40~67					1.4	
	- 90P		90	58	58			40~70					1.5	
	-120P		120	88	88								1.7	
	-150P		150	118	118								1.9	
	-SK20- 60P	3.5~20.0	60	32	32	48.5	48.5	47~60	SKG-22		20,000	SK20	1.3	
	- 75P		75	45	45			47~70					1.4	
	- 90P		90	60	60			47~80					1.6	
	-120P		120	90	90			47~80					2.0	
	-SK25- 75P	7.5~25.4	75	47	47	55	55	55~75	SKG-12		20,000	SK25	1.7	
- 90P	90		61	61	55~85			1.8						
-120P	120		91	91	55~85			2.0						

# HIGH SPEED SLIM CHUCK

**NIKKEN**

MAX.40,000min<sup>-1</sup> & G2.5



SK-P

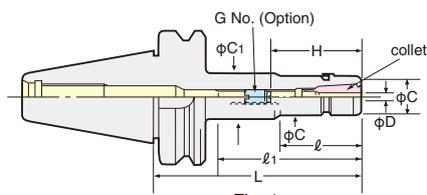
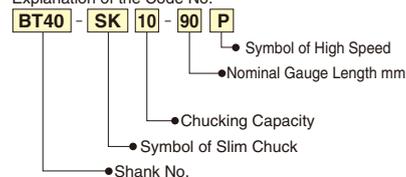


Fig. 1

Explanation of the Code No.



When SK J type nut is used, the total chuck length will be extended by 6mm.

PAT.

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	MAX. (min <sup>-1</sup> )	collet	weight (kg)
No.50	BT50-SK 6-105P	0.7 ~ 6.0	105	55	64	19.5	32	21~35	SKG- 8	20,000	SK 6	3.8
	-135P		135		92							3.9
	-165P		165	60	114							4.0
	-200P		200		151							4.2
	-SK10-105P	1.75~10.0	105	57	57	27.5	32	30~50	SKG-12L		SK10	4.2
	-135P		135	70	92							4.4
	-165P		165		114							4.6
	-200P		200	75	151							4.8
	-225P	225		178	5.0							
	-SK13-105P	2.75~13.0	105	62	62	33	33	31~65	SKG-15		SK13	4.5
	-135P		135		92							4.7
	-165P		165	92	122							4.9
	-200P		200		157							5.2
	-SK16-105P	2.75~16.0	105	62	62	40	40	40~70	SKG-18L		SK16	4.7
	-135P		135	92	92							4.9
	-165P		165	90	122							5.1
	-200P		200		157							5.5
	-SK20-105P	3.5~20.0	105	62	62	48.5	48.5	47~80	SKG-22		SK20	4.3
	-135P		135	92	92							4.6
	-165P		165	122	122							5.0
-200P	200		157	157	5.4							
-SK25-105P	7.5~25.4	105	62	62	55	55	50~85	SKG-28	SK25	5.2		
-135P		135	92	92						5.4		
-165P		165	122	122						5.6		
-200P		200	157	157						6.0		

- ★ Collet, adjust screw (G No.) and GH Handle are available as an option.
- The Code No. of the GH Handle is SK6-P: GH6, SK10-P: GH10, SK13-P: GH12, SK16-P: GH16, SK20-P: GH20, SK25-P: GH25
- ★ Please refer P.49 for TiN Bearing Nut.
- ★ Please refer P.43 for SK collet.
- ★ Adjust screw with centre hole P.52 can be used for centre through tool coolant application (MAX. 1MPa).
- Please refer P.52 for adjust screw (G No.).



GH Handle P.48

## Code No. for SLIM CHUCK with SPECIAL NUT

**NIKKEN**

### Code No. for Slim Chuck with special nut

Standard nut (for C-spanner) is attached for standard slim chuck.  
Nut for high speed (for GH Handle) is attached for high speed slim chuck.

- Standard slim chuck + J type nut : Please add "-J" at the end of Code No. e.g. BT40-SK10-90-J
- Standard slim chuck + Nut for high speed : Please add "-G" at the end of Code No. e.g. BT40-SK10-90-G
- Standard slim chuck + J type nut for high speed : Please add "-GJ" at the end of Code No. e.g. BT40-SK10-90-GJ
- High speed slim chuck + J type nut : Please add "-J" at the end of Code No. e.g. BT40-SK10-90P-J

### Code No. for VC holder with special nut

- With J type nut : Please add "-J" at the end of Code No. e.g. BT40-VC13-90-J

### Code No. for MAJOR DREAM holder with special nut

- With J type nut : Please add "-J" at the end of Code No. e.g. BT40-MDSK13-90-J
- With nut for C-spanner : Please add "-SN" at the end of Code No. e.g. BT40-MDSK13-90-SN
- With J type nut for C-spanner : Please add "-SNJ" at the end of Code No. e.g. BT40-MDSK13-90-SNJ

When RPT treatment is required at same time, please add "-RP" first. e.g. BT40-SK10-90-RP-J

# Straight Shank SLIM CHUCK

**NIKKEN**



Suitable for Multi-Lock Milling Chuck

**K-SK**

Explanation of the Code No.

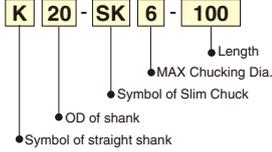


Fig. 1

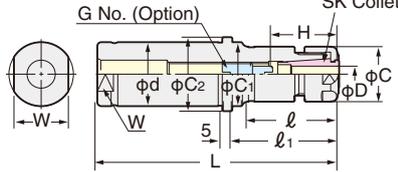
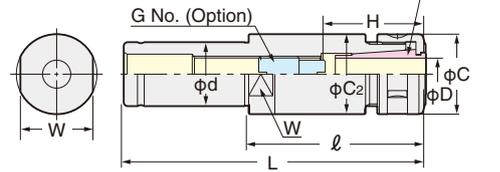


Fig. 2



**PAT.**

Code No.	D	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	C <sub>2</sub>	W	H	G No. (Option)	Weight (kg)	Fig	SK Collet
K20-SK 6-100, 120	0.7~6.0	37, 57		19.5		27	18	21~35	SKG-8	0.2, 0.2	1	SK 6
-SK10-100, 120	1.75~10.0	40, 60		27.5		27.5	18	30~50	SKG-12L	0.3, 0.3	2	SK10
K22-SK 6-100, 120	0.7~6.0	37, 57		19.5		27	19	21~35	SKG-8	0.2, 0.2	1	SK 6
-SK10-100, 120	1.75~10.0	40, 60		27.5		27.5	19	30~50	SKG-12L	0.3, 0.3	2	SK10
K25-SK 6-100, 130	0.7~6.0	32, 62		19.5			30	21~35	SKG-8	0.3, 0.3		SK 6
-SK10-120, 150	1.75~10.0	50, 80		27.5			22	30~50	SKG-12L	0.4, 0.5		SK10
K32-SK 6-120, 140, 170	0.7~6.0	45, 65, 63	53, 73, 100	19.5	32, 32, 24			21~35	SKG-8	0.5, 0.5, 0.5	1	SK 6
-SK10-120, 150, 180, 210	1.75~10.0	45, 75, 75, 75	53, 83, 111, 141	27.5	32, 32, 31.5, 33.5	37	27	30~50	SKG-12L	0.6, 0.7, 0.8, 1.0		SK10
-SK13-120, 150, 180, 210	2.75~13.0	52, 82, 112, 142		33				31~65	SKG-15	0.7, 0.8, 1.0, 1.2		SK13
-SK16-120, 150, 180, 210	2.75~16.0	58, 88, 118, 148		40		40	36	45~70	SKG-18L	0.7, 0.9, 1.2, 1.4		SK16
-SK20-120, 150, 180	3.5~20.0	58, 88, 118		48.5		40	41	47~80	SKG-22	0.9, 1.3, 1.7	2	SK20
-SK25-150	7.5~25.4	88		55		42	46	55~65	SKG-18L	1.3		SK25
K42-SK 6-150, 170	0.7~6.0	52, 62	61, 78	19.5	32			21~35	SKG-8	1.0, 1.1		SK 6
-SK10-150, 180	1.75~10.0	56, 78		27.5			47	30~50	SKG-12L	1.1, 1.3		SK10
-SK13-150, 180	2.75~13.0	56, 86		33			36	31~65	SKG-15	1.2, 1.4	1	SK13
-SK16-150, 180	2.75~16.0	58, 88		40				45~70	SKG-18L			SK16
-SK20-150, 180	3.5~20.0	68, 98		48.5		48.5		47~80	SKG-22	1.5, 1.9		SK20
-SK25-170	7.5~25.4	88		55		44.5	46	55~65	SKG-18L	1.8	2	SK25

★Collet, adjust screw (G No.) and spanner are available as an option.

The Code No. of the spanner is SK6 (C=φ18) : SKL-6, SK6 (C=φ19.5) : SKL-6W, SK10: SKL-10, SK13: 9HC12A, SK16: 9HC16, SK20: 9HC22, SK25: 9HC25

★Please refer P.43 for SK Collet.

★All Slim Chucks are Centre Through Coolant type.

★Please refer P.52 for adjust screw (G No.).



# Straight Shank SLIM CHUCK ULTRA LONG TYPE

**NIKKEN**

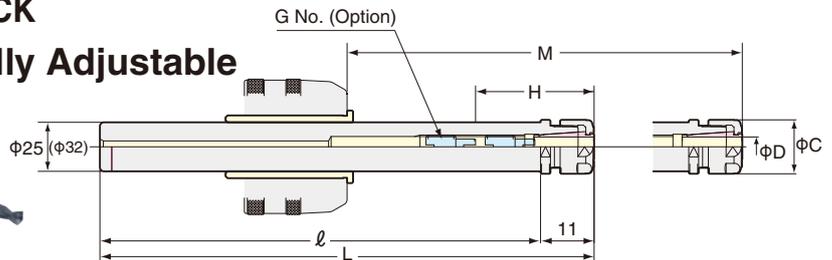
ULTRA LONG SLIM CHUCK

Axially Adjustable



**S-SK**

Photo. shows solid carbide type.



Solid Carbide type is also available.

Please add "X" to the Code No. e.g. S25-SK10X-250, S25-SK10X-300

**PAT.**

Code.No.	Chucking Range D	Length L	ℓ <sub>1</sub>	ℓ <sub>2</sub>	C	Over Hang Length M	H	G No. (Option)	Weight (kg)	Collet
S25-SK10-250	1.75~10.0	250	223	27	27.5	145~200	30~60	SKG-12L	0.9	SK10
-300		300	273			195~250			1.1	
S32-SK13-250	2.75~13.0	250	224	26	33	145~185	31~65	SKG-15	1.4	SK13
-300		300	274			195~235			1.7	
S32-SK16-250	2.75~16.0	250	192	58	40	145~185	40~70	SKG-18	1.5	SK16
-300		300	242			195~235			1.8	

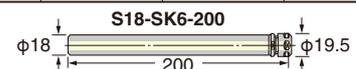
★Nut, Adjust Screw (G No.) and Collet Extractor are supplied as standard.

★Spanner "SKL-10" is available as an option.

★Please refer P.43 for SK collet.

★Please add "C" at the Code No. for Centre Through Coolant type. e.g. S25-SK10C-250

★S18-SK6-200 is also available ★Please refer P.52 for adjust screw (G No.).



# HANDLE / SPANNER / WRENCH

**NIKKEN**

## Handle for Milling Chuck

Style	Code No.
C12 (C <sub>1</sub> =φ30mm)	9HC12
C12 (C <sub>1</sub> =φ33mm)	9HC12A
C16	9HC16
C20	9HC22
C25 (C <sub>1</sub> =φ55mm)	9HC22
C25 (C <sub>1</sub> =φ60mm)	9HC25
C32 (C <sub>1</sub> =φ64mm)	9HC25
C32 (C <sub>1</sub> =φ69mm)	9HC32
C42	9HC42

## Spanner for Slim Chuck

Style	Code No.
SK6 (C=φ18mm)	SKL-6
SK6 (C=φ19.5mm)	SKL-6W
SK10	SKL-10
SK13	9HC12A
SK16	9HC16
SK20	9HC22
SK25	9HC22

## Wrench for NPU Drill Chuck

Style	Code No.
NPU 8	NPUL- 8
NPU13	NPUL-13



# GH HANDLE for HIGH SPEED TOOLING

**NIKKEN**



GH Handle has a two-way tightening/loosening ratchet on the handle that has been developed to provide quick and convenient loading of the tool. The GH Handle also dispenses with the need for notches on the nose ring.

PAT.



GH

Code No.	Milling Chuck	Slim Chuck	MAJOR DREAM	VC Holder
GH 6*	—	SK 6-P / SKT 6	MDSK 6	—
GH10*	—	SK10-P / SKT10	MDSK10	VC6
GH12*	C12-G	SK13-P / SKT13	MDSK13	—
GH16*	C16-G	SK16-P / SKT16	MDSK16	VC13
GH20*	C20-G	SK20-P / SKT20	MDSK20	—
GH25*	C25-G	SK25-P / SKT25	MDSK25	—
GH32S	C32-G (Nose Ring: φ62mm)	—	—	—
GH32	C32-G (Nose Ring: φ68mm)	—	—	—

★Torque adjustable GH Handle is available for \* marked handle. The Code No. is GH6-TLS, GH10-TLS, GH16-TLS, GH25-TLS.



Tightening



Loosening

# CLAMPING HANDLE "BENKEI"

**NEW** **NIKKEN**

PAT.

Clamp Nose Ring (Milling Chuck) by pair of clamping handles. New designed clamping handle "BENKEI"



HC-TW

Reference of the code number

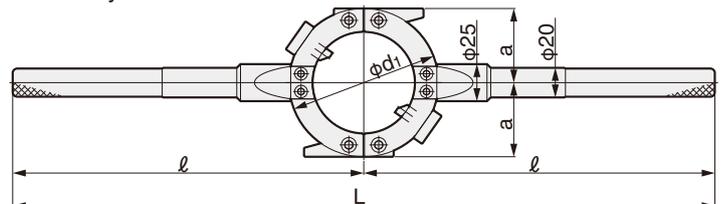
9HC32-TW

● Clamping handle

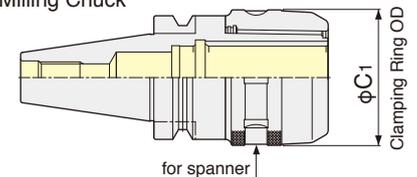
● Corresponding Milling Chuck (Ex. \*32" is available for C32(φC<sub>1</sub>=69mm) milling chuck)



3 easy steps make it possible to clamp, unclamp milling chuck very safely and easily.



Milling Chuck



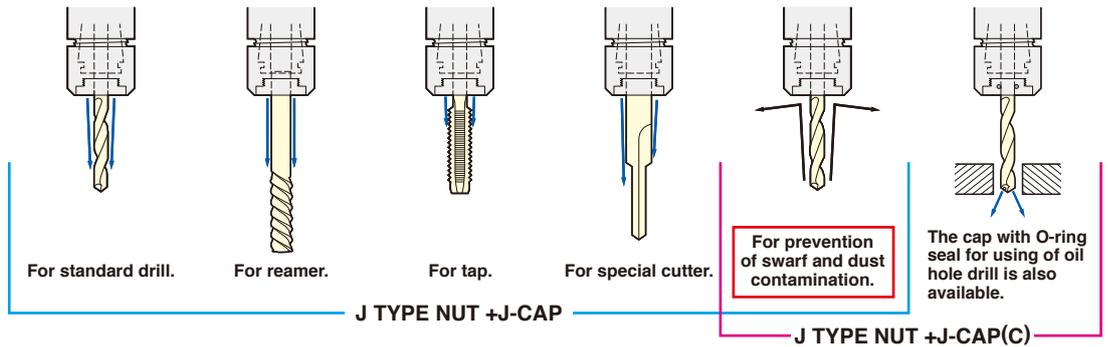
Code No.	Dimensions(mm)				Corresponding Milling Chuck
	a	ℓ	L	φd <sub>1</sub>	
9HC32TW	50	235	470	100	C32 (φC <sub>1</sub> =69mm)
9HC42TW	59	285	570	117	C42 (φC <sub>1</sub> =86mm)
9HC50TW	69	285	570	138	C50EX (φC <sub>1</sub> =105mm)

# TiN BEARING NUT, J-TYPE NUT, J-CAP



## J-TYPE NUT & J-CAP for Various Coolant SYSTEM

The Jet Coolant pressure creates a tornado effect, ensuring efficient swarf dispersal.



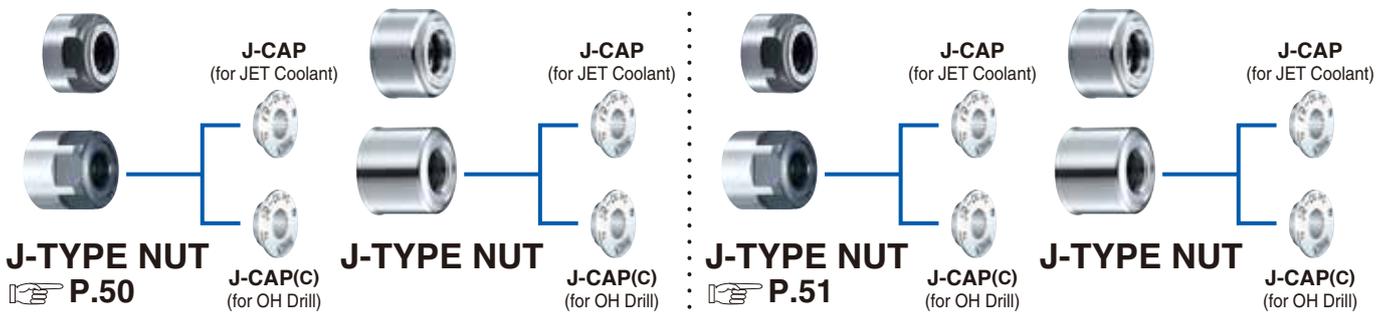
## Various Coolant SYSTEM with combination of Slim Chuck, Nut & J-CAP

### SK standard Nut (for C-Spanner)

### SK-P standard Nut (for GH Handle)

### SKT/MDSK Nut (for C-Spanner)

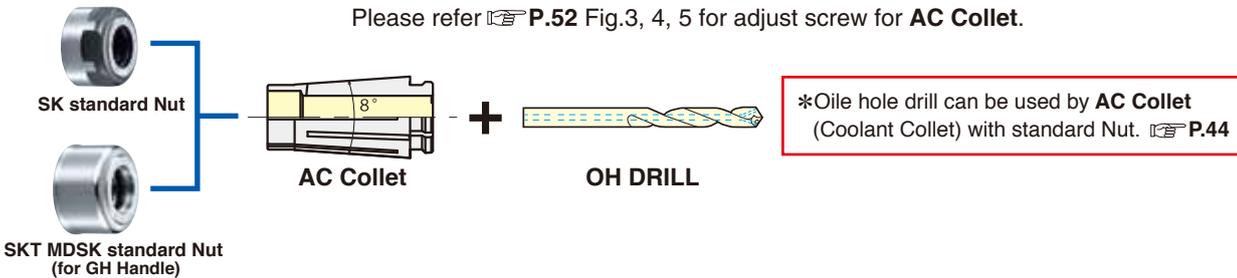
### SKT/MDSK Nut (for GH Handle)



⚠ To keep run-out accuracy high, you are recommended to change nuts periodically when slim chuck is used very frequently.

## SK standard Nut + AC Collet (for using of oil holl drill)

Please refer P.52 Fig.3, 4, 5 for adjust screw for AC Collet.



Style	Nut for C-Spanner	SPANNER	Nut for GH Handle	GH Handle	OPTION
					AC Collet
SK 6 SK 6(P)	SKN-6WK	SKL-6W	SKN-6WK (GH)	GH6	SK 6-3AC, 4AC, 5AC, 6AC
SKT 6 MDSK 6	SKTN-6K		MDSKN-6K		
SK10 SK10(P)	SKN-10K	SKL-10	SKN-10K (GH)	GH10	SK10-3AC, 4AC, 5AC,6AC, 7AC, 8AC, 9AC, 10AC
SKT 10 MDSK10	SKTN-10K		MDSKN-10K		
SK13 SK13(P)	SKN-13B	9HC12A	SKN-13B (GH)	GH13	SK13-4AC, 5AC, 6AC, 7AC, 8AC, 9AC, 10AC, 11AC, 12AC
SKT 13 MDSK13	SKTN-13B		MDSKN-13B		
SK16 SK16(P)	SKN-16B	9HC16	SKN-16B (GH)	GH16	SK16-6AC, 7AC, 8AC, 9AC,10AC, 11AC, 12AC, 13AC, 14AC, 15AC, 16AC
SKT 16 MDSK16	SKTN-16B		MDSKN-16B		
SK20 SK20(P)	SKN-20B	9HC22	SKN-20B (GH)	GH20	SK20-12AC, 16AC, 20AC, 25AC
SKT 20 MDSK20	SKTN-20B		MDSKN-20B		
SK25 SK25(P)	SKN-25B		SKN-25B (GH)	GH25	SK25-16AC, 20AC, 25AC
SKT 25 MDSK25	SKTN-25B		MDSKN-25B		

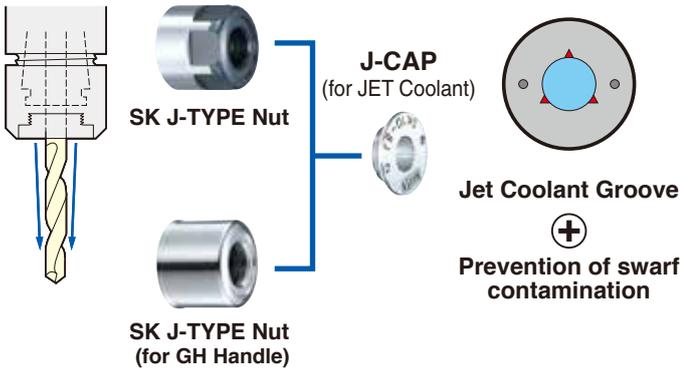
★Please refer P.44 for SK-AC Collet.

# COMBINATION of J-TYPE NUT for SK & SK-P



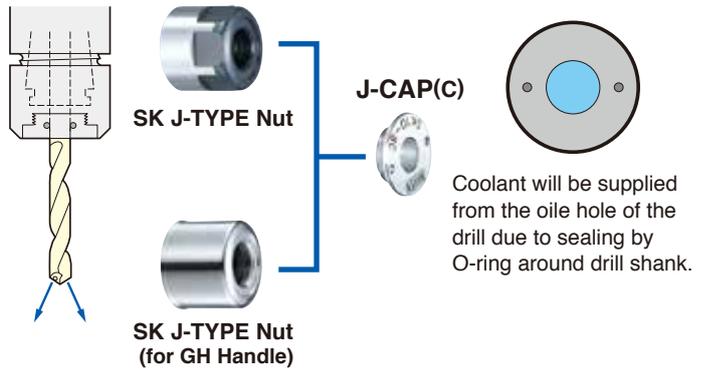
## JET COOLANT SYSTEM

Please refer P.52 Fig.5 for adjust screw for J-TYPE Nut



## WITH OIL HOLE DRILL

Please refer P.52 Fig.3, 4, 5 for adjust screw for J-TYPE Nut & Oil hole drill



Style	コレット選定	OPTION				
		J-TYPE Nut	SPANNER	J-CAP Code No. for JET COOLANT SYSTEM	J-CAP(C) Code No. for OIL HOLL DRILL	Wrench for J-cap Code No.
SK 6 SK 6(P) (High Speed)	SK 6-○.○ SK 6-○.○A	(for C-Spanner) SKN-6WKJ	(C-Spanner) SKL-6W	 SKJ 6-3, 3.3, 4, 4.2, 5, 6	 SKJ 6-3C, 3.3C, 4C, 4.2C, 5C, 6C	 SKJL-6
		(for GH Handle) SKN-6WKJ (GH)	(GH Handle) GH6			
SK10 SK10(P) (High Speed)	SK10-○.○ SK10-○.○A	(for C-Spanner) SKN-10KJ	(C-Spanner) SKL-10	 SKJ10-3, 4, 5, 5.5, 6, 6.2, 6.8, 7, 8, 8.5, 10	 SKJ10-3C, 4C, 5C, 5.5C, 6C, 6.2C, 6.8C, 7C, 8C, 8.5C, 10C	 SKJL-10
		(for GH Handle) SKN-10KJ (GH)	(GH Handle) GH10			
SK13 SK13(P) (High Speed)	SK13-○.○ SK13-○.○A	(for C-Spanner) SKN-13BJ	(C-Spanner) 9HC12A	 SKJ16-7, 8, 8.5, 10, 10.3, 12, 12.5	 SKJ16-7C, 8C, 8.5C, 10C, 10.3C, 12C, 12.5C	 SKJL-16
		(for GH Handle) SKN-13BJ (GH)	(GH Handle) GH13			
SK16 SK16(P) (High Speed)	SK16-○.○ SK16-○.○A	(for C-Spanner) SKN-16BJ	(C-Spanner) 9HC16	 SKJ16-7, 8, 8.5, 10, 10.3, 12, 12.5, 14, 15, 16	 SKJ16-7C, 8C, 8.5C, 10C, 10.3C, 12C, 12.5C, 14C, 15C, 16C	 SKJL-16
		(for GH Handle) SKN-16BJ (GH)	(GH Handle) GH16			
SK20 SK20(P) (High Speed)	SK20-○.○ SK20-○.○A	(for C-Spanner) SKN-20BJ	(C-Spanner) 9HC22	 SKJ25-8, 10, 12, 16, 17.5, 20	 SKJ25-8C, 10C, 12C, 16C 17.5C, 20C	 SKJL-25
		(for GH Handle) SKN-20BJ (GH)	(GH Handle) GH20			
SK25 SK25(P) (High Speed)	SK25-○.○ SK25-○.○A	(for C-Spanner) SKN-25BJ	(C-Spanner) 9HC22	 SKJ25-8, 10, 12, 16, 17.5, 20, 25	 SKJ25-8C, 10C, 12C, 16C 17.5C, 20C, 25C	 SKJL-25
		(for GH Handle) SKN-25BJ (GH)	(GH Handle) GH25			

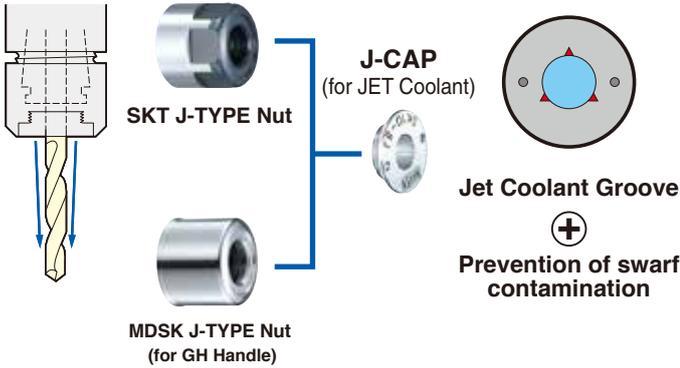
★Please refer P.43 for SK Collet.

# COMBINATION of J-TYPE NUT for SKT & MDSK



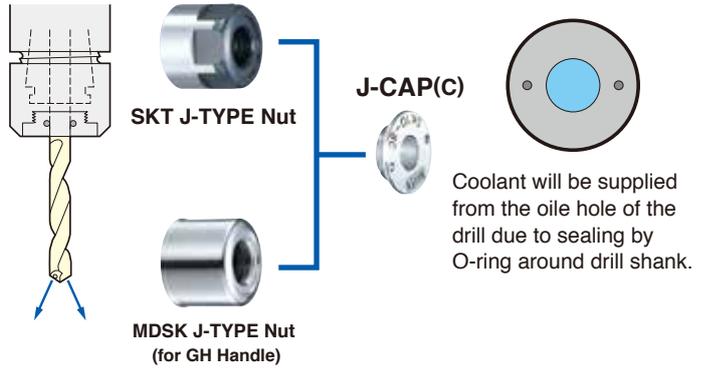
## JET COOLANT SYSTEM

Please refer P.52 Fig.5 for adjust screw for J-TYPE Nut



## WITH OIL HOLE DRILL

Please refer P.52 Fig.3, 4, 5 for adjust screw for J-TYPE Nut & Oil hole drill



Style	コレット選定	OPTION				
		J-TYPE Nut	SPANNER	J-CAP Code No. for JET COOLANT SYSTEM	J-CAP(C) Code No. for OIL HOLL DRILL	Wrench for J-cap Code No.
SKT 6 MDSK 6	SK 6-○.○ SK 6-○.○A	(for C-Spanner) SKTN-6KJ	(C-Spanner) SKL-6W	 SKJ 6-3, 3.3, 4, 4.2, 5, 6	 SKJ 6-3C, 3.3C, 4C, 4.2C, 5C, 6C	 SKJL-6
		(for GH Handle) MDSKN-6KJ	(GH Handle) GH6			
SKT 10 MDSK10	SK10-○.○ SK10-○.○A	(for C-Spanner) SKTN-10KJ	(C-Spanner) SKL-10	 SKJ10-3, 4, 5, 5.5, 6, 6.2, 6.8, 7, 8, 8.5, 10	 SKJ10-3C, 4C, 5C, 5.5C, 6C, 6.2C, 6.8C, 7C, 8C, 8.5C, 10C	 SKJL-10
		(for GH Handle) MDSKN-10KJ	(GH Handle) GH10			
SKT 13 MDSK13	SK13-○.○ SK13-○.○A	(for C-Spanner) SKTN-13BJ	(C-Spanner) 9HC12A	 SKJ16-7, 8, 8.5, 10, 10.3, 12, 12.5	 SKJ16-7C, 8C, 8.5C, 10C, 10.3C, 12C, 12.5C	 SKJL-16
		(for GH Handle) MDSKN-13BJ	(GH Handle) GH13			
SKT 16 MDSK16	SK16-○.○ SK16-○.○A	(for C-Spanner) SKTN-16BJ	(C-Spanner) 9HC16	 SKJ16-7, 8, 8.5, 10, 10.3, 12, 12.5, 14, 15, 16	 SKJ16-7C, 8C, 8.5C, 10C, 10.3C, 12C, 12.5C, 14C, 15C, 16C	 SKJL-16
		(for GH Handle) MDSKN-16BJ	(GH Handle) GH16			
SKT 20 MDSK20	SK20-○.○ SK20-○.○A	(for C-Spanner) SKTN-20BJ	(C-Spanner) 9HC22	 SKJ25-8, 10, 12, 16, 17.5, 20	 SKJ25-8C, 10C, 12C, 16C 17.5C, 20C	 SKJL-25
		(for GH Handle) MDSKN-20BJ	(GH Handle) GH20			
SKT 25 MDSK25	SK25-○.○ SK25-○.○A	(for C-Spanner) SKTN-25BJ	(C-Spanner) 9HC22	 SKJ25-8, 10, 12, 16, 17.5, 20, 25	 SKJ25-8C, 10C, 12C, 16C 17.5C, 20C, 25C	 SKJL-25
		(for GH Handle) MDSKN-25BJ	(GH Handle) GH25			

★Please refer P.43 for SK Collet.

# ADJUST SCREW for SLIM CHUCK



The adjust Screw for the High Speed Slim Chuck "GSK-P type" is identical to the Standard Slim Chuck as below.  
 e.g. The adjust Screw for BT30-GSK10-45P is SKG-12S, is the same as the screw for BT30-SK10-45.

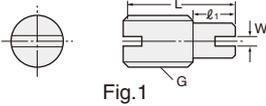


Fig.1

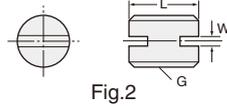


Fig.2

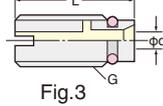


Fig.3

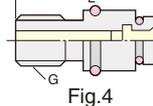


Fig.4

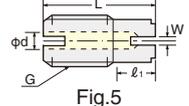


Fig.5

Please remove standard Adjust Screw or use the Adjust Screw specially designed to J type Nut for the stopper.

## SK

### Explanation of the Code No. of the Adjust screw for Standard Slim Chuck

e.g. **SKG** - **12** **L** - **J**

- None, -J : Symbol of adjust screw used with J type nut (Fig.5)
- None, S, L : Length indication
- 8, 12, 18, 28 : Screw size
- Symbol of adjust screw

Style	Adjust Screw Code No.	Fig.	Slim Chuck Code No.
SK 6	SKG- 8	1	All SK6 Slim Chucks
SK10	SKG-12L	1	All SK10 Slim Chucks except below
	SKG-12S	2	BT30-SK10-45, HSK50A-SK10-90, HSK63F-SK10-90
SK13	SKG-15	1	All SK13 Slim Chucks
SK16	SKG-18L	1	All SK16 Slim Chucks except below
	SKG-12	2	BT30-SK16-90
	SKG-12L	1	BT30-SK16-60
	SKG-18S	2	BT40-SK16-60
SK20	SKG-22	1	All SK20 Slim Chucks except below
	SKG-12	2	BT30-SK20-90
	SKG-12L	1	BT30-SK20-75
	SKG-12S	2	BT30-SK20-60
SK25	SKG-28	1	All SK25 Slim Chucks except below
	SKG-12	2	BT30-SK25-90, BT40-SK25-75
	SKG-12MF	2	NC5-46-SK25-90

★W=2mm is standard. W=2.4, 3, 4, 5, 6, 8, 12mm are also available. e.g. SKG-12L-W2.4  
 Please choose suitable one for the tang width of your drill.

### Explanation of the Code No. of the Adjust screw with centre hole for Standard Slim Chuck

e.g. **SKG** - **12** **H** **A**

- None, A : Centre hole indication
- H : With centre hole
- 12, 18, 28 : Screw size
- Symbol of adjust screw

Style	Screw Size	Adjust Screw Code No.	Fig.	Hole Dia.	Cutter Shank Dia.	Wrench width
SK10	M12	SKG-12H	3	φ4	φ6~	3
		SKG-12HA		φ2.5	φ4~	2
SK13	M15 P1.0	SKG-15H	3	φ4	φ6~	3
		SKG-15HA		φ2.5	φ4~	2
SK16	M12	SKG-12H	3	φ4	φ6~	3
		SKG-12HA		φ2.5	φ4~	2
	SKG-18H	φ7.2		φ10~	6	
	SKG-18HA	φ3.5		φ5~	3	
SK20	M12	SKG-12H	3	φ4	φ6~	3
		SKG-12HA		φ2.5	φ4~	2
SK20	M22 P1.5	SKG-22H	3	φ8	φ10~	5
		SKG-22HA		φ4	φ6~	3
SK25	M12	SKG-12H	3	φ4	φ6~	3
		SKG-12HA		φ2.5	φ4~	2
SK25	M28 P2.0	SKG-28H	3	φ12	φ16~	8
		SKG-28HA		φ2.5	φ4~	2

★The adjust screw for oil hole tap is also available. Please contact with us.  
 ★These adjust screws are for the coolant pressure up to 1MPa.

## SK-C

There is no leakage of coolant from screw, because OD of the straight portion of the adjust screw is sealed.

### Explanation of the Code No. of the Adjust screw for High Pressure Coolant Slim Chuck

e.g. **SKG** **10** - **10** **HG** **B** - **J**

- None, -J : Symbol of adjust screw used with J type nut (Fig.5)
- None, A, B, ... : Specification (Length, for small drill, for Tap...)
- Symbol of high pressure coolant
- 6, 10, 12, 18, 24 : Screw size
- 6, 10, 16, 25 : Slim chuck style
- Symbol of adjust screw

3LOCK tool (MBT, MIT and MCAT) , 2LOCK tool (NBT, NIT and NCAT) , NC5 tool and HSK tool can be used at high pressure centre through tool coolant application (MAX.7MPa) .

Please change the shank No. from BT to MBT or NBT for 3LOCK tool or 2LOCK tool.

The adjust screw for BT40-SK16F-90 is same as the adjust screw for MBT40-SK16F-90 and NBT40-SK16F-90.

Please refer adjust screw for oil hole holder. SKO P.135, MOK P.133

Style	Adjust Screw Code No.	Fig.	Hole Dia.	Cutter Shank Dia.	Slim Chuck Code No.	Wrench width	
SK 6	SKG 6- 6HG	1	φ2.5	φ4~	All SK6C/SK6F Slim Chucks	2	
SK10	SKG10-10HG		φ4	φ6~	All SK10C/SK10F Slim Chucks	4	
	SK10	SKG10-10HGA	φ2.5	φ4~	All SK10C/SK10F Slim Chucks	2	
SK13		SKG13-10HG	1	φ4	φ6~	All SK13C/SK13F Slim Chucks	4
	SKG13-10HGA	φ2.5		φ4~	All SK13C/SK13F Slim Chucks	2	
SK16	SKG16-12HG	1	φ7.2	φ10~	All SK16C/SK16F Slim Chucks except below	6	
	SKG16-12HGB				BT40-SK16F-90		
	SKG16-10HG				HSK40A-SK16C-120, HSK50A-SK16C-120		
					HSK63A-SK16C-120, 150, HSK100A-SK16C-120		
					NC5-46-SK16C-90, -120, NBT40-SK16C-60, NBT30-SK16C-75		
					NBT30-SK16C-60		
SK16	SKG16-12HGE	1	φ3.5	φ5~	All SK16C/SK16F Slim Chucks except below	3	
	SKG16-12HGA				BT40-SK16F-90		
	SKG16-12HGAB				HSK40A-SK16C-120, HSK50A-SK16C-120		
	SKG16-10HGA				HSK63A-SK16C-120, 150, HSK100A-SK16C-120		
SK20	SKG20-18HG	1	φ6.8	φ10~	All SK20C/SK20F Slim Chucks except below	5	
	SKG20-12MFHG				NC5-46-SK20C-90, NC5-53-SK20C-90, HSK63A-SK20C-120,-135		
	SKG20-12HG				NC5-46-SK20C-120, NC5-53-SK20C-120, NBT30-SK20C-90		
					SKG20-12HGE		HSK100A-SK20C-150, -200
					SKG20-16HG		NBT30-SK20C-75
					SKG20-18HGB		NBT40-SK20C-60
SK25	SKG25-24HG	1	φ12	φ16~	All SK25C/SK25F Slim Chucks except below	8	
	SKG25-24HGA				BT40-SK25F-120, BT50-SK25F-105		
	SKG25-18HGC				BT40-SK25F-90		
	SKG25-18HGD				BT40-SK25C-90, NC5-63-SK25C-135		
					NC5-85-SK25C-135, NBT40-SK25C-90		
					HSK63A-SK25C-135, HSK100A-SK25C-145, NBT40-SK25C-75		

★The adjust screw for oil hole tap is different from standard. The front end of the adjust screw is flat, not taper.

Please add "S" at the end of Code No. e.g. SKG10-10HGAS, SKG16-12HGAS, SKG16-12HGASB

★The adjust screw for extra small cutter shank dia. (φ3) is available. Please contact with us.

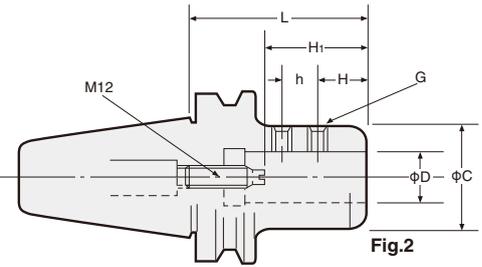
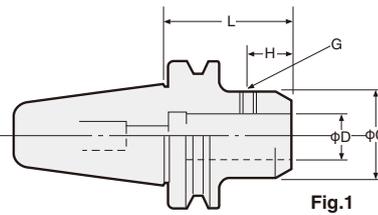
★The steel made adjust screw for SK10 or SK16 is available.

Please add "-FE" at the end of Code No. e.g. SKG10-10HG-FE





# SIDE LOCK HOLDER A TYPE (for END MILL)



SL,SLA

■ Taper contact area of more than 80% ensures reliable cutting with no chattering.

TAPER	Code No.	D	L	C	H	h	H <sub>1</sub>	G	fig	Weight (kg)
							MIN.~MAX.			
No.30	BT30-SL 6-60	6	60	20	15	—	—	M 6	1	1.2
	-SL 8-60	8		24	16			M 8		1.2
	-SL 10-60	10		30	20			M10		1.2
	-SL 12-60	12		35	22.5					1.2
	-SL 16-60	16		40	22.5					1.2
-SLA20-75	20	75	50	24	15	55~70	M14 P=1.5	2	1.3	
No.40	BT40-SL 6-65	6	65	20	15	—	—	M 6	1	1.6
	(IT40)-SL 8-65	8		24	16			M 8		1.6
	-SL 10-65	10		30	20			M10		1.6
	-SL 12-65	12		35	23					1.6
	-SL 16-65	16		40	23					1.7
	-SLA20-90	20	90	50	24	21	55~70	M14 P=1.5	2	1.8
	-SLA25-90	25		60	25	25	M16 P=1.5	1.7		
	-SLA32-90	32		60	25	25	M16 P=1.5	1.9		
No.50	BT50-SL 6-75	6	75	20	15	—	—	M 6	1	4.3
	(IT50)-SL 8-75	8		24	16			M 8		4.3
	-SL 10-75	10		30	20			M10		4.3
	-SL 12-75	12		35	23					4.5
	-SL 16-75	16		40	23					4.5
	-SLA20-105	20	105	50	24	21	55~70	M14 P=1.5	2	4.8
	-SLA25-105	25		60	25	25	65~80	M16 P=1.5		4.7
	-SLA32-105	32		60	25	25	85~100	M20 P=2.0		4.9
	-SLA42-115	42		90	30	32	85~100	M20 P=2.0		6.6

★ Code No. of Side Lock Holder for Combination Shank is DM.  
★ The Code No. of Centre Through Coolant type is "SLOC". ☎ P.107

BT50-DM32 -120  
-DM50.8-120



# SIDE LOCK HOLDER B TYPE (for DRILL)

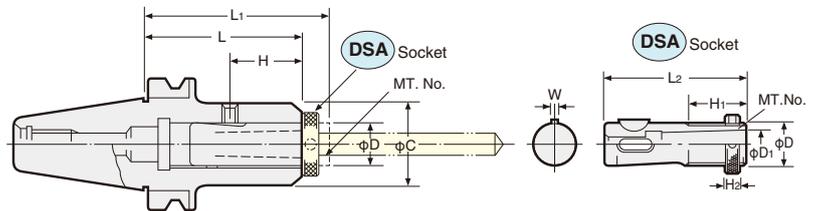


SLB



DSA-MT

■ Taper contact area of more than 80% ensures reliable drilling with no chattering.



TAPER	Code No.	D	L	L <sub>1</sub>	H	C	W	DSA Socket-MT.No.	Weight (kg)
				MIN.~MAX.					
No.30	BT30-SLB26-105	26	105	117~142	40	50	5	DSA26-MT1,MT2	1.5
				1.4					
No.40	BT40-SLB26-105	26	105	117~142	40	50	5	DSA26-MT1,MT2	2.1
				2.0					
	-SLB35-135	35	135	147~182	55	60	6	DSA35-MT2,MT3	3.3
				3.2					
No.50	BT50-SLB26-105	26	105	117~142	40	50	5	DSA26-MT1,MT2	4.8
				4.7					
	-SLB35-120	35	120	132~167	55	60	6	DSA35-MT2,MT3	5.4
				5.3					
				5.7					
-SLB35-135	35	135	147~182	55	60	6	5.6		
-SLB48-165	48	165	181~227	65	80	8	DSA48-MT3,MT4	8.4	
									8.1

# MORSE TAPER ADAPTER A TYPE

**NIKKEN**

BT



MTA

■ Taper contact area of more than 80% ensures high repeatability run-out accuracy.

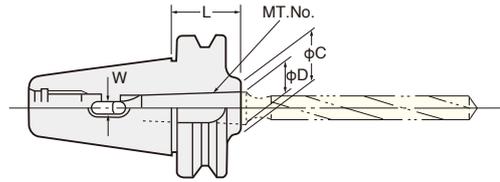


Fig. 1

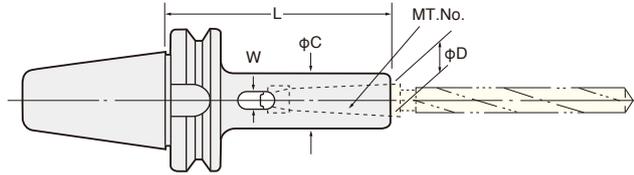


Fig. 2

TAPER	Code No.	MT. No.	D	L	C	W	Fig	Weight (kg)
No.30	BT30-MTA1- 45	1	12.065	45	20	5.6	1	0.8
	-MTA1-105			105			2	0.9
	-MTA2- 60	2	17.780	60	30	6.6	1	0.9
	-MTA2-120			120			2	1.2
	-MTA3- 80	3	23.825	80	40	8.4	1	1.0
No.40	BT40-MTA1- 45	1	12.065	45	25	5.6	1	1.0
	(IT40)-MTA1-120			120			2	1.3
	-MTA2- 60	2	17.780	60	32	6.6	1	1.1
	-MTA2-120			120			2	1.4
	-MTA3- 75	3	23.825	75	40	8.4	1	1.2
	-MTA3-135			135			2	1.8
	-MTA4- 95	4	31.267	95	50	12.4	1	1.4
-MTA4-165	165			2			2.4	
No.50	BT50-MTA1- 45	1	12.065	45	25	5.6	1	4.0
	(IT50)-MTA1-120			120			2	4.3
	-MTA1-180			180			2	4.3
	-MTA2- 45	2	17.780	45	32	6.6	1	4.0
	-MTA2-135			135			2	4.4
	-MTA2-180			180			2	4.6
	-MTA3- 45	3	23.825	45	40	8.4	1	3.9
	-MTA3-150			150			2	4.7
	-MTA3-180			180			2	4.9
	-MTA4- 75	4	31.267	75	50	12.4	1	4.0
	-MTA4-180			180			2	5.4
-MTA5-105	5	44.399	105	65	16.5	1	4.6	

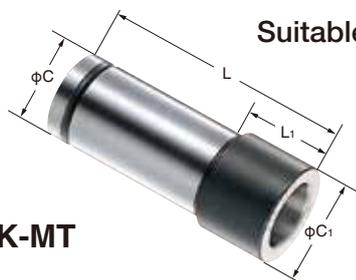
★Centre through type MT Adapter has different dimensions.  
★Flange through type MT Adapter has different dimensions.



For high pressure coolant through, please use Milling Chuck P.31, Slim Chuck P.41 or Side Lock Holder P.54 instead of MT Adapter.

# Straight Shank MORSE TAPER SOCKET

**NIKKEN**



K-MT

Suitable for MULTI-LOCK Milling Chuck

Style	Code No.	L	L1	C	C1
20	K20-MT1, MT2	59, 70.5	5, 20	20	25
25	K25-MT1, MT2	59, 70.5	3, 10.5	25	29
32	K32-MT1, MT2, MT3	59, 70.5, 88	3, 8.5, 26	32	37
42	K42-MT1, MT2, MT3, MT4	59, 70.5, 89, 113.5	5, 5, 5, 18	42	48

# MORSE TAPER ADAPTER B TYPE with DRAW BOLT

**NIKKEN**



MTB

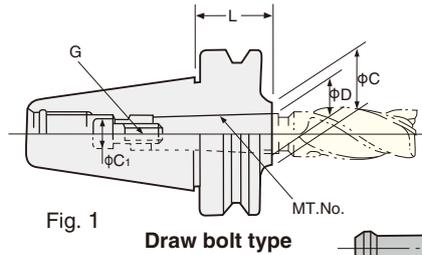


Fig. 1

Draw bolt type

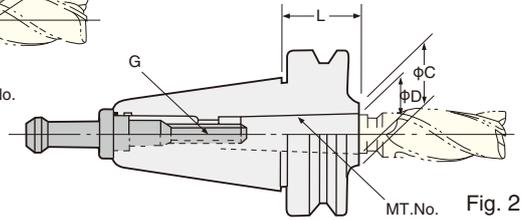


Fig. 2

Pull stud draw bolt type.

■ Taper contact area of more than 80% ensures reliable machining without vibration.

TAPER	Code No.	MT.No.	D	L	C	C <sub>1</sub>	G	Fig	Weight (kg)	
No.30	BT30-MTB1- 45	1	12.065	45	25	10	M 6×1	1	0.8	
	-MTB2- 25	2	17.780	25	32	—	M10×1.5	2	0.8	
	-MTB3- 80	3	23.825	80	40	—	M12×1.75		1.0	
No.40	BT40-MTB1- 45	1	12.065	45	25	10	M 6×1	1	1.0	
	-MTB2- 60	2	17.780	60	32	13.5	M10×1.5		1.1	
	-MTB3- 45	3	23.825	45	40	—	M12×1.75	2	1.1	
	-MTB4- 85	4	31.267	85	50	—	M16×2		1.3	
No.50	BT50-MTB1- 45	1	12.065	45	25	10	M 6×1	1	3.9	
	-MTB2- 45	2	17.780		32	16	M10×1.5		3.9	
	-MTB3- 60	3	23.825	60	40	18	M12×1.75		3.9	
	-MTB4- 75	4	31.267	75	50	20.5	M16×2		3.9	
	-MTB5-105-M16	5	44.399	105	70	—	—		2	4.2
	-MTB5-105									4.0

★Adapter in Fig.1 is supplied with a special draw bolt.

★Morse Taper Adapters B type as illustrated in Fig.2 need the special pull stud. The pull stud is optional accessory. When ordering, please specify the pull stud code number.

## PULL STUD for MORSE TAPER ADAPTER B TYPE



MT No.	DRAW BOLT
MT 2	M10×1.5
MT 3	M12×1.75
MT4 / MT5	M16×2
MT 5	M20×2.5

TAPER	Standard pull stud Code No.	MTB2	MTB3	MTB4	MTB5
No.30	PS- 16	PS-27	PS- 32	—	—
	- 17	-28	- 33	—	—
No.40	PS- 1	—	PS- 7	PS- 8	—
	- 2	—	- 29	- 10	—
	- 08-1	—	- 017	- 018	—
	- P5-1	—	- P51	- P52	—
	- G51	—	- G56	- G57	—
	- 805	—	- 872	- 873	—
No.50	PS- 5	—	—	PS- 57	PS-15*
	- 6	—	—	- 65	-61*
	- 0	—	—	- 016	-06*

★For standard pull stud Code No. Please refer to P.303.

★The screw of the pull stud marked \* is M20.

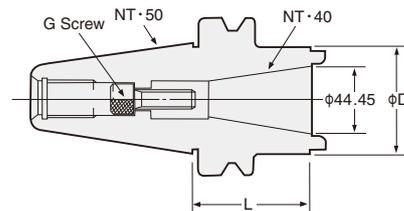
★The other type of pull stud is available, please specify the pull stud Code No.

# SLEEVE for NT40 TOOL

**NIKKEN**



TSA



Code No.	L	D	G	Weight (Kg)
BT50-TSA40M-75	75	70	M16P=2	4.6
(IT50)-TSA40U-75			5/8-11UNC	4.6

★G Screw is standard accessory. When ordering, please specify M (metric) or U (inch).

★Above Code No. is the sleeve which internal taper is for conventional T40U (M). When internal taper is BT40, G screw 9TSA40-M16-70L (option) is necessary.

BT

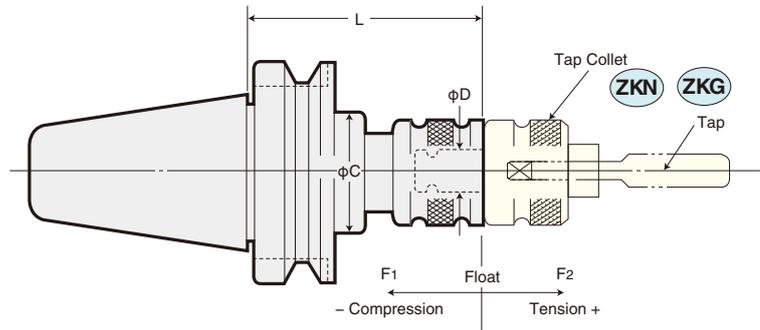
# AUTO. DEPTH CONTROL TAPPER CHUCK

**NIKKEN**

- Most suitable for tapping gas threads, blind-end threads and light alloys.
- When normal rotation of machine is stopped at specified position, the Tapper Chuck runs idle after progressing by its elongation (4mm for ZL12 type). Simply rotate the machine in the reverse direction, and the tap depth will be made uniform within a high-precision.



ZL



TAPER	Code No.	Tapping Capability			D	L	C	Float		Tap Collet	Weight (kg)
		M	U	P				F <sub>1</sub>	F <sub>2</sub>		
No.30	BT30-ZL 8-110*1	M 2~8	1/8~1/4	—	13	110	34	3	3	ZKN 8*1	1.5
	-ZL12-130	M 2~12	1/8~1/2	P1/16~1/4	19	130	58	5	4	ZKG12	1.9
No.40	BT40-ZL 8-120*1	M 2~8	1/8~1/4	—	13	120	34	3	3	ZKN 8*1	1.6
	(IT40)-ZL12-100	M 2~12	1/8~1/2	P1/16~1/4	19	100	58	5	4	ZKG12	1.9
	-ZL12-130					130					2.3
	-ZL16-150	M 3~16	1/8~5/8	P1/8~3/8	25	150	60	6	7	ZKG16	2.9
	-ZL24-160	M 8~24	1/2~1	P1/4~5/8	30	160	73	6	7	ZKG24	3.3
-ZL38-190	M18~38	3/4~13/8	P3/8~1	45	190	92	8	10	ZKN38	6.0	
No.50	BT50-ZL 8-130*1	M 2~8	1/8~1/4	—	13	130	34	3	3	ZKN 8*1	4.2
	(IT50)-ZL12-85	M 2~12	1/8~1/2	P1/16~1/4	19	85	58	5	4	ZKG12	3.4
	-ZL12-130					130					4.3
	-ZL16-135	M 3~16	1/8~5/8	P1/8~3/8	25	135	60	6	7	ZKG16	4.6
	-ZL24-100	M 8~24	1/2~1	P1/4~5/8	30	100	73	6	7	ZKG24	4.5
	-ZL24-142					142					5.8
-ZL38-150	M18~38	3/4~13/8	P3/8~1	45	150	92	8	10	ZKN38	6.9	

★In Case of IT40, IT40-ZL16-160 and IT40-ZL24-175 are standard.

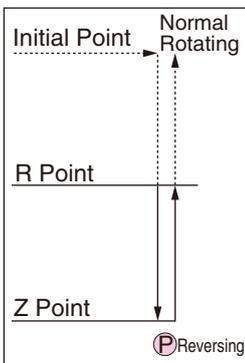
★In Case of IT50, IT50-ZL12-130, IT50-ZL24-142 and IT50-ZL38-180 are standard.

★Marked \*1 ZL8 Tapper Chuck and ZK8 Tap Collet are available as semi-standard.

★Please refer P.59 (ZKG) ~P.52 (ZK) for ISO, IMPERIAL, DIN Tap Collet, P.61 (ZKG) ~P.54 (ZKN) for JIS Tap Collet, and P.63 for Long Size Tap Collet.

★Centre Coolant type Tapper Chuck is also available. Please contact with us.

★Flange through type Tapper Chuck is also available. Please contact with us.



## Program of Auto-Depth Control Tapper Chuck

(ZL)

- NO. 1 M03 S—; Spindle Rotating
- NO. 2 G00 X—Y—; Initial Point
- NO. 3 G00 Z—; R Point
- NO. 4 G01 Z—F—; Z Point
- NO. 5 G04 P—; Dwell
- NO. 6 M05 Spindle Stop
- NO. 7 M04 Spindle Reversing
- NO. 8 G01 Z—; R Point
- NO. 9 M05 Spindle Stop
- NO.10 G00 Z— M03; Initial Point, Spindle Normal Rotating

⚠ When using ZL Tapper Chuck, please make sure of the following program.

**G04 P —;** — Threads are made only by Spindle Rotation during Dwell. Thus, exact depth is controlled.

**M05 ;** — Spindle stop.

**M04 ;** — First command Spindle Reversing. Then, upward movement of Z. If upward movement of Z is commanded earlier than Spindle Reversing, down movement of tap and up movement of Z may cause breakage of tap.

**G01 Z —;** —

# FLOATING TAPPER CHUCK

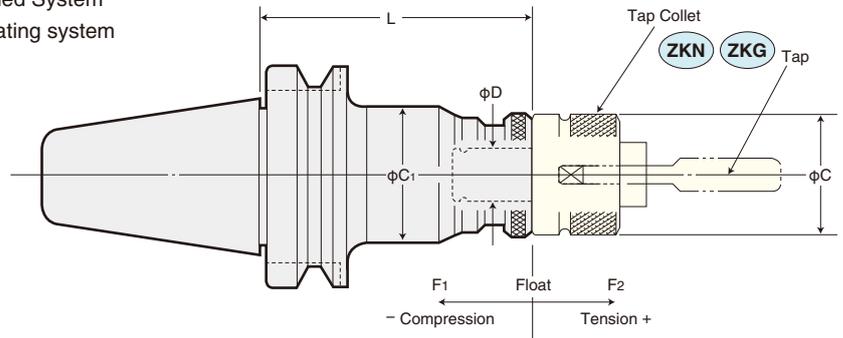


## Suitable Tapper Chuck for Conventional M/C

- More convenient in tapping, thanks to stable torque and slim body
- Good Run-out, No Pull-out and No Tap Breakage with NIKKEN Tapper Chuck  
Ideal for Unmanned System
- With the axial floating system



Z



TAPER	Code No.	Tapping Capability			D	L	C	C <sub>1</sub>	Float		Tap Collet	Weight (kg)
		M	U	P					F <sub>1</sub>	F <sub>2</sub>		
No.30	BT30-Z 8- 90* <sup>1</sup>	M 2~ 8	1/8~1/4	—	13	90	23	33	5	15	ZKN 8* <sup>1</sup>	1.2
	-Z12-105	M 2~ 12	1/8~1/2	P1/16~1/4	19	105	32	45	5	15	ZKG12	1.2
No.40	BT40-Z 8- 90* <sup>1</sup>	M 2~ 8	1/8~1/4	—	13	90	23	33	5	15	ZKN 8* <sup>1</sup>	1.4
	(IT40)-Z12- 90	M 2~ 12	1/8~1/2	P1/16~1/4	19	90	32	45	5	15	ZKG12	1.5
	-Z12-130					130			15			1.6
	-Z16-109	M 3~ 16	1/8~5/8	P1/8~3/8	25	109	39	55	8	20	ZKG16	2.0
	-Z24-100	M 8~ 24	1/2~ 1	P1/4~5/8	30	100	46	68	10	20	ZKG24	2.1
	-Z24-187					187						63
-Z38-140	M18~ 38	3/4~13/8	P3/8~ 1	45	140	78	85	8	22	ZKN38	6.7	
No.50	BT50-Z 8-105* <sup>1</sup>	M 2~ 8	1/8~1/4	—	13	105	23	33	5	15	ZKN 8* <sup>1</sup>	4.2
	(IT50)-Z12-130	M 2~ 12	1/8~1/2	P1/16~1/4	19	130	32	45	15	15	ZKG12	4.3
	-Z12-175					175						4.8
	-Z12-220					220						5.0
	-Z16-135	M 3~ 16	1/8~5/8	P1/8~3/8	25	135	39	55	8	20	ZKG16	5.2
	-Z24-142	M 8~ 24	1/2~ 1	P1/4~5/8	30	142	46	63	20	20	ZKG24	5.8
	-Z24-187					187						6.2
	-Z38-175	M18~ 38	3/4~13/8	P3/8~ 1	45	175	78	98	10	25	ZKN38	8.3
-Z65-160	M36~100	1~33/4	P1~ 3	68	160	110* <sup>2</sup> (125)	110	10	25	ZKN65	9.0	

★In Case of IT40, IT40-Z8-95\*<sup>1</sup> and IT40-Z24-125 are standard.

★In Case of IT50, IT50-Z8-105\*<sup>1</sup>, IT50-Z38-187 and IT50-Z65-165 are standard.

★Marked \*1 Z8 Tapper Chuck and ZK8 Tap Collet are available as semi-standard.

★Please refer to P.59 (ZKG) ~ P.52 (ZK) for ISO, IMPERIAL, DIN Tap Collet, P.61 (ZKG) ~ P.54 (ZKN) for JIS Tap Collet, and P.63 for Long Size Tap Collet.

★Marked \*2 ( ) dimension is for M65 or more size of ZK Tap Collet.



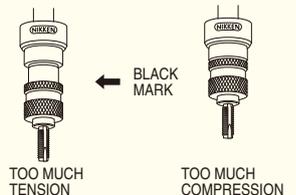
### ① Caution for Floating Mechanism

#### (1). Too Much Tension

When tension movement exceeds the limitation, the black line will appear. In this case increase machine feed.

#### (2). Too Much Compression

When machine feed is too fast for the tap thread pitch, the compression floating mechanism will work. The machine program should be modified to slow feed rate down.



② When the drilled hole diameter is too small (this is often caused by the drilling of the tough materials, extended drilling diameter is not large enough.), the tap will slip before the breakage due to torque limiter mechanism. In this case enlarge the drilled hole and do not adjust the torque setting.

③ For a blind hole tapping, the tap might hit the bottom of the hole and the floating shaft will not extend any further, if the Z point is too close to the component. And the point of reversing the floating shaft could compress further than the extension, it may cause damage to the tapped hole. In this case, make the drilled hole deeper or restrict Z point at the higher position.

④ When the R point is too close to the component, the spindle will moves upwards with the fully extended float mechanism at reversing operation, and it might cause damage to the tapped hole as the tap may be still in the hole when the spindle try to return to the initial point at the rapid feed. In this case, give further distance between the R point and the component.

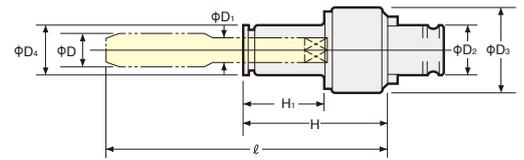
⑤ In case of the tapping with Z type tapper chuck, since the Z Axis stroke will move upwards after reversing operation starts at the Z point due to the machine tapping cycle features, it may cause damage to the tapped hole. In this case, input the dwell command at the Z point on the program in order to make the upward movement of Z Axis with the tapper chuck as its extended float mechanism.

# ONE TOUCH TAP COLLET (ISO, IMPERIAL, DIN)



- Can be used with all NIKKEN Floating Tapper Chucks.
- Setting and Removal of Tap can be done in ONE TOUCH.
- Torque Limiter Mechanism built-in.

Reversing Torque is 1.4 times of Normal Rotation in order to prevent the troubles caused by swarf.



ZKG

Tapping Capacity	ZKG12		ZKG16			ZKG24		
	M2~5	M6~12	M3~5	M6~12	M14~20	M8~12	M14~20	M22~24
D <sub>2</sub>	19		25			30		
D <sub>3</sub>	32		39			46		
D <sub>4</sub>	13	19	13	19	26	19	26	32
H	54.5	55	64.5	65	66	73	74	
H <sub>1</sub>	30.5	31	37.5	38	42	45	48	

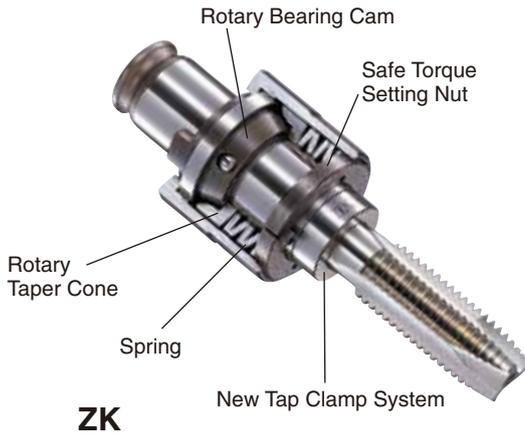
TAP SPEC.	ZKG12					ZKG16					ZKG24				
	Code No.	D	D <sub>1</sub>	W	ℓ	Code No.	D	D <sub>1</sub>	W	ℓ	Code No.	D	D <sub>1</sub>	W	ℓ
ISO Metric	ZKG12-2S	2	2.5	2	74	ZKG16-4S	4	4	3.15	93	ZKG24-12S	12	9	7.1	129
	-3S	3	3.15	2.5	79	-5S	5	5	4	97	-14S	14	11.2	9	130
	-4S	4	4	3.15	83	-6S	6	6.3	5	102	-16S	16	12.5	10	136
	-5S	5	5	4	87	-8S	8	8	6.3	106	-18S	18	14	11.2	145
	-6S	6	6.3	5	92	-10S	10	10	8	113	-20S	20	14	11.2	145
	-8S	8	8	6.3	96	-12S	12	9	7.1	121	-22S	22	16	12.5	145
	-10S	10	10	8	103	-14S	14	11.2	9	122	-24S	24	18	14	155
	-12S	12	9	7.1	111	-16S	16	12.5	10	128					
ISO Pipe	ZKG12-1/8PS	9.728	8	6.3	87	ZKG16-1/8PS	9.728	8	6.3	97.5	ZKG24-1/4PS	13.157	10	8	110
						-1/4PS	13.157	10	8	103.5	3/8PS	16.662	12.5	10	116
						-3/8PS	16.662	12.5	10	109.5	-1/2PS	20.955	16	12.5	122
IMPERIAL BSW BSF	ZKG12-1/8S(No.5S)	3.175	3.15	2.5	78	ZKG16-1/8S(No.5S)	3.175	3.15	2.5	88	ZKG24-1/2S	12.7	9	7.1	129
	-No.6S	3.505	3.55	2.8	80	-No.6S	3.505	3.55	2.8	90	-9/16S	14.288	11.2	9	130
	-No.8S	4.166	4.5	3.55	82	-No.8S	4.166	4.5	3.55	92	-5/8S	15.875	12.5	10	136
	-3/16S(No.10S)	4.762	5	4	86	-3/16S(No.10S)	4.762	5	4	96	-3/4S	19.05	14	11.2	145
	-No.12S	5.48	5.6	4.5	90	-No.12S	5.48	5.6	4.5	100	-7/8S	22.225	16	12.5	145
	-1/4S	6.35	6.3	5	90	-1/4S	6.35	6.3	5	100	-1S	25.4	18	14	155
	-5/16S	7.937	8	6.3	95	-5/16S	7.937	8	6.3	105					
	-3/8S	9.525	10	8	101	-3/8S	9.525	10	8	111					
	-7/16S	11.112	8	6.3	108	-7/16S	11.112	8	6.3	118					
	-1/2S	12.7	9	7.1	111	-1/2S	12.7	9	7.1	121					
IMPERIAL Pipe	ZKG12-1/8PB	9.728	8.08	6	83.037	ZKG16-1/8PB	9.728	8.08	6	93.537	ZKG24-1/4PB	13.157	10.9	8.18	104.8
						-1/4PB	13.157	10.9	8.18	98.3	-3/8PB	16.662	13.77	10.31	106.388
						-3/8PB	16.662	13.77	10.31	99.888	-1/2PB	20.955	17.45	13.08	114.5
DIN Metric	ZKG12-2D(DIN352)	2	2.8	2.1	72	ZKG16-4D(DIN371)	4	4.5	3.4	102	ZKG24-12D(DIN376)	12	9	7	150
	-3D(DIN371)	3	3.5	2.7	85	-5D(DIN371)	5	6	4.9	107	-14D(DIN376)	14	11	9	145
	-4D(DIN371)	4	4.5	3.4	92	-6D(DIN371)	6	6	4.9	117	-16D(DIN376)	16	12	9	145
	-5D(DIN371)	5	6	4.9	97	-8D(DIN376)	8	6	4.9	127	-18D(DIN376)	18	14	11	158
	-6D(DIN371)	6	6	4.9	107	-8D7(DIN371)	8	8	6.2	123	-20D(DIN376)	20	16	12	168
	-8D(DIN376)	8	6	4.9	117	-10D(DIN376)	10	7	5.5	134	-22D(DIN376)	22	18	14.5	166
	-8D7(DIN371)	8	8	6.2	113	-10D7(DIN371)	10	10	8	131	-24D(DIN376)	24	18	14.5	186
	-10D(DIN376)	10	7	5.5	124	-12D(DIN376)	12	9	7	142					
	-10D7(DIN371)	10	10	8	121	-14D(DIN376)	14	11	9	137					
	-12D(DIN376)	12	9	7	132	-16D(DIN376)	16	12	9	137					
DIN Pipe	ZKG12-1/8R(DIN353)	9.728	7	5.5	92	ZKG16-1/8R(DIN353)	9.728	7	5.5	102.5	ZKG24-1/4R(DIN353)	13.157	11	9	105
						-1/4R(DIN353)	13.157	11	9	98.5	-3/8R(DIN353)	16.662	12	9	112
						-3/8R(DIN353)	16.662	12	9	105.5	-1/2R(DIN353)	20.955	16	12	116

★Long size TAP Collet is available. ☞ P.63 e.g. ZKG12-4S-50L

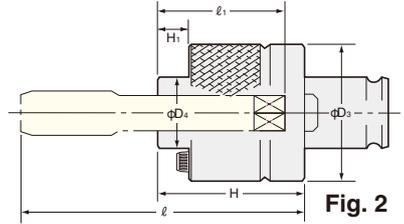
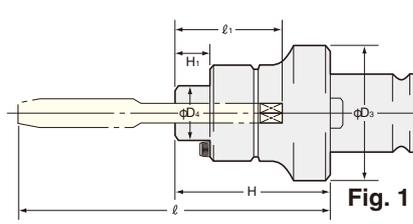
★TAP Clamp Mechanism for PIPE TAP is Side Lock System.

★High torque setting type example for stainless steel is available. Please add "-HT" at the end of Code No. e.g. ZKG12-3S-HT

# ZK TAP COLLET (ISO, IMPERIAL, DIN)



- Can be used with all NIKKEN Floating Tapper Chucks.
- Torque Limiter Mechanism built-in.



Total length "l" is calculated as ;  
 $l = \text{Tap length} - l_1 + H$

	ZK8	ZK38	ZK65
D <sub>4</sub>	13	45	68
D <sub>3</sub>	23	78	110
H <sub>1</sub>	6.5	12	13
H	29.5	64	89

ZK8 type is semi-standard.

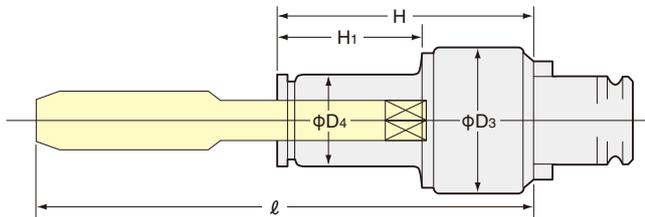
TAP SPEC.	ZK 8					Fig	
	Code No.	D	D <sub>1</sub>	W	l <sub>1</sub>		
ISO Metric	ZK8-2S	2	2.5	2.0	22.5	2	
	-3S	3	3.15	2.5	23.5		
	-4S	4	4.0	3.15	24.5		
	-5S	5	5.0	4.0	25.5		
	-6S	6	6.3	5.0	26.5		
ISO Pipe							
IMPERIAL BSW BSF	ZK8-No.2S	2.18	2.8	2.24	23.5	2	
	-No.3S	2.515					
	-No.4S	2.845	3.15	2.5	23.5		
	-No.5S(1/8S)	3.175					
	-No.6S	3.505	3.55	2.8	24.5		
	-No.8S	4.166					
	-No.10S(3/16S)	4.826	5.0	4.0	25.5		
	-No.12S	5.480					
	-1/4S	6.350	6.3	5.0	26.5		
IMPERIAL Pipe							
DIN Metric	ZK8-2D	2(Din 371)	2.8	2.1	23.5	2	
	-3D	3(Din 371)	3.5	2.7	24.5		
	-4D	4(Din 371)	4.5	3.4			
	-5D	5(Din 371)	6.0	4.9	26.5		
	-6D	6(Din 371)					
	-8D	8(Din 376)					
DIN Pipe							
ZK38	ZK38					Fig	
	Code No.	D	D <sub>1</sub>	W	l <sub>1</sub>		
ISO Metric	ZK38-18S	18	14	11.2	44	1	
	-20S	20					
	-22S	22	16	12.5	46		
	-24S	24					
	-27S	27	20	16	54		
	-30S	30					
	-33S	33	22.4	18	56		
	-36S	36					
	ZK38-3/8PS	16.662	12.5	10	34		1
	-1/2PS	20.955	16	12.5	38		
	-5/8PS	22.911	18	14	40		
	-3/4PS	26.441	20	16	46		2
	-7/8PS	30.201	22.4	18	48		
- 1 PS	33.249	25	20	50			
ZK38- 3/4S	19.050	14	11.2	44	1		
- 7/8S	22.225	16	12.5	46			
- 1 S	25.400	18	14	48			
-11/8S	28.575	20	16	54	2		
-11/4S	31.750	22.4	18	56			
-13/8S	34.925	25	20	58			
ZK38- 3/8PB	16.662	13.77	10.31	33.7	1		
- 1/2PB	20.955	17.45	13.08	39.9			
- 5/8PB	22.911	20.32	15.3	39.5			
- 3/4PB	26.441	23.01	17.3	43.5	2		
- 7/8PB	30.201	27.76	20.6	45.1			
- 1 PB	33.249	28.57	21.4	46.6			
ZK38-18D	18(Din 376)	14	11	44	1		
-20D	20(Din 376)	16	12	45			
-22D	22(Din 376)	18	14.5	47			
-24D	24(Din 376)						
-27D	27(Din 376)	20	16	53			
-30D	30(Din 376)						
-33D	33(Din 376)	25	20	57			
-36D	36(Din 376)						
ZK38-3/8R	16.662	12	9	33	1		
-1/2R	20.955	16	12	37			
-5/8R	22.911	18	14.5	39			
-3/4R	26.441	20	16	45	2		
-7/8R	30.201	22	18	47			
- 1 R	33.249	25	20	49			
ZK65	ZK65					Fig	
Code No.	D	D <sub>1</sub>	W	l <sub>1</sub>			
ZK65-36S	36	25.0	20.0	58	2		
-39S	39						
-42S	42	28.0	22.4	60			
-45S	45						
-48S	48	31.5	25.0	65			
-52S	52						
-56S	56	35.5	28.0	68			
-60S	60						
-64S	64	40.0	31.5	71			
ZK65-11/4PS	41.910	31.5	25	51		2	
-11/2PS	47.803	35.5	28	55			
-13/4PS	53.746						
- 2 PS	59.614	40	31.5	62			
ZK65-11/2S	38.100	28	22.4	60	2		
-13/4S	44.450	31.5	25.0	65			
- 2 S	50.800						
-21/4S	57.150	40.0	31.5	71			
-21/2S	63.500						
ZK65-11/4PB	41.910	33.32	25.0	51	2		
-11/2PB	47.803	38.10	28.57	50			
-13/4PB	53.746						
- 2 PB	59.614	47.63	35.71	56			
ZK65-36D	36(Din 376)	28.0	22.0	59	2		
-39D	39(Din 376)	32.0	24.0	61			
-42D	42(Din 376)						
-45D	45(Din 376)	36.0	29.0	69			
-48D	48(Din 376)						
-52D	52(Din 376)	40.0	32.0	72			
-56D	56(Din 376)						
-60D	60(Din 376)	45.0	35.0	75			
-64D	64(Din 376)						
ZK65-11/8R	37.898 (Din 353)	28.0	22.0	51	2		
-11/4R	41.910 (Din 353)						
-13/8R	44.325 (Din 353)						
-11/2R	47.803 (Din 353)	36.0	29.0	55			
-13/4R	53.746 (Din 353)						
- 2 R	59.614 (Din 353)						

★ Tap collet Code No. "ZK" is for ISO, IMPERIAL and DIN Taps.  
 ★ Tap collet Code No. "ZKN" is for JIS Taps.

# ONE TOUCH TAP COLLET (JIS)

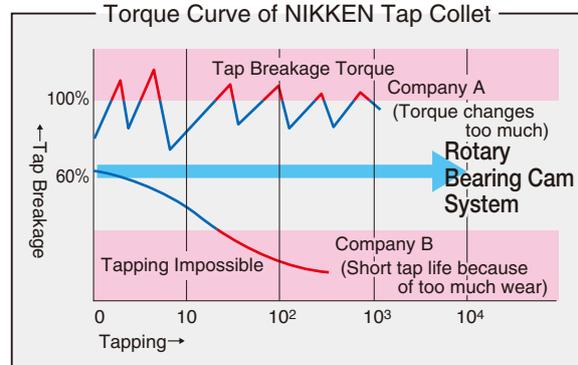


## ZKG Tap Collet



**D<sub>3</sub> Dimension**  
**ZKG12:32mm**  
**ZKG16:39mm**  
**ZKG24:46mm**

- **High Accuracy, Quick Response and Long Tap Life.**  
 NIKKEN ZKG Tap Collet can be used with all of NIKKEN floating Tapper Chucks.
- **Rotary Bearing Cam Mechanism**  
 The ZKG tap collet can respond very smoothly for the change of the tapping torque.



- The torque of CCW is 1.4 times of the torque of CW to prevent the problem of the swarf.
- The tap can be clamped with one touch operation.
- The adjustment mechanism of the setting torque is not installed on the ZKG tap collet. The high torque setting type is available for the tapping on the stainless as an option. e.g ZKG12-4-HT

The ZKG tap collet is not interchangeable with ZKN tap collet.

	ZKG12					ZKG16					ZKG24				
	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ
Metric (M)	ZKG12- 2	13	54.5	30.5	72	ZKG16- 3	13	64.5	37.5	85.5	ZKG24- 8	19	73	45	111
	- 3				75	- 4				90.5	-10				116
	- 4				80	- 5				98.5	-12				122
	- 5				88	- 6				100.5	-14				123
	- 6	19	55	31	90	- 8	19	65	38	104	-16	26	74	48	128
	- 8				94	-10				109	-18				128
	-10				99	-12				115	-20				136
	-12				105	-14				116	-22				141
						-16	26	66	42	121	-24	32			144
	Unified (U) or British Standard Whitworth (W)	ZKG12-1/8	13	54.5	30.5	75	ZKG16-1/8	13	64.5	37.5	85.5	ZKG24-1/2	19	73	45
-3/16		88				-3/16	98.5				-9/16	125			
-1/4		90				-1/4	100.5				-5/8	129			
-5/16		93.5				-5/16	104				-3/4	137			
-3/8		19	55	31	99	-3/8	19	65	38	109	-7/8	32	74	48	141
-7/16					103	-7/16				113	-1				149
-1/2					107	-1/2				117					
						-9/16	26	66	42	118					
						-5/8				122					
Pipe (PT) (PS) (PF)	ZKG12-1/8P	19	56	32	83	ZKG16-1/8P	19	66.5	39	93	ZKG24-1/4P	26	75	49	104
	-1/4P				89	-1/4P				97	-3/8P				105
	-1/16P	19	56	32	81.5	-3/8P	26	68.5	44	98	-1/2P	32	75	49	114
	-1/16P-Y	19	56	32	81.5						-5/8P				115

★ Tap for pipe thread is clamped with the side lock screw.  
 ★ High torque setting type example for stainless steel is available. Please add "-HT" at the end of Code No. e.g. ZKG12-4-HT  
 ★ Low torque setting is "-LT". e.g. ZKG12-4-LT  
 ★ Please refer P.63 for the long size tap collet.  
 ★ The ahank dimension of the 1/16P tap varies depending on the tap maker.  
 ★ The internal mechanism of the tap collet for the left handed tap is different from the standard one. Please use the special tap collet for the left handed tap.

# ZKN TAP COLLET (JIS)



## ZKN Tap Collet



- High Accuracy, Quick Response and Long Tap Life.
- Rotary Bearing Cam Mechanism  
NIKKEN ZKG Tap Collet can be used with the all NIKKEN floating Tapper Chucks.
- The torque of CCW is 1.4 times of the torque of CW to prevent the problem of the swarf.
- The setting torque can be adjusted.

Smaller equal to ZKG38-24

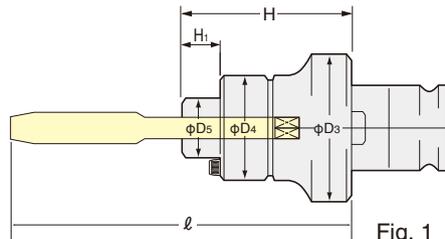


Fig. 1

All size for ZKN8  
Larger equal to ZKN38-27  
All size of ZKN65

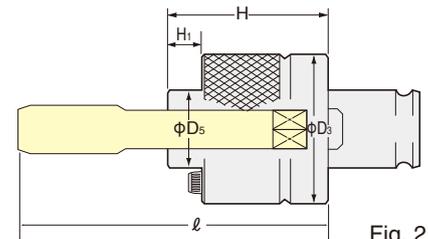


Fig. 2

**ZKN65** : The tap collet for the unified thread is also available. (U,W)  
1<sup>3</sup>/<sub>8</sub>, 1<sup>1</sup>/<sub>2</sub>, 1<sup>5</sup>/<sub>8</sub>, 1<sup>3</sup>/<sub>4</sub>, 1<sup>7</sup>/<sub>8</sub>, 2, 2<sup>1</sup>/<sub>4</sub>,  
2<sup>1</sup>/<sub>2</sub>, 2<sup>3</sup>/<sub>4</sub>, 3, 3<sup>1</sup>/<sub>4</sub>, 3<sup>1</sup>/<sub>2</sub>, 3<sup>3</sup>/<sub>4</sub>

	ZKN8	ZKN38		ZKN65	
		M18~24	M27~36	M36~65	M68~100
D <sub>3</sub>	23	78		110	125
D <sub>4</sub>	—	56	—	—	—

ZKN8 is semi-standard.

	ZKN 8					ZKN38					ZKN65				
	Code.No	D <sub>5</sub>	H	H <sub>1</sub>	ℓ	Code.No	D <sub>5</sub>	H	H <sub>1</sub>	ℓ	Code.No	D <sub>5</sub>	H	H <sub>1</sub>	ℓ
Metric (M)	ZKN 8-2	13	29.5	6.5	50	ZKN38-18	32	61	17	117	ZKN65- 36	68	89	20	179
	-3				55	-20				121	- 39				187
	-4				56	-22				130	- 42				189
	-5				64	-24				133	- 45				194
	-6				66	-27				142	- 48				198
	-8				73	-30				145	- 52				205
						-33				153	- 56				212
						-36				161	- 60				222
						-38				121	- 64				229
											- 65				229
				- 68	254										
Unified (U) or British Standard Whitworth (W)	ZKN 8-1/8	13	29.5	6.5	55	ZKN38-3/4	32	61	17	122	- 72	84	94	25	254
	-3/16				64	-7/8				130	- 80				264
	-1/4				66	-1				138	-100*				274
						-11/8				145	ZKN65-1P				127
						-11/4				153	-11/8P				135
						-13/8				161	-11/4P				139
											-13/8P				144
											-11/2P				144
											-15/8P				144
											-13/4P				144
Pipe (PT) (PS) (PF)					ZKN38 -3/8P	26	61	17	24	91	-13/4P	84	94	25	144
					-1/2P	32			100	-2P	149				
					-5/8P	32			104	-21/4P	159				
					-3/4P	45			103	-21/2P	174				
					-7/8P	45			106	-23/4P	174				
					-1P	45			109	-3P	174				

★\*mark: The Code No. of tap collet for M85 to M90 is ZKN65-100.  
The Code No. of tap collet for M95 to M100 is ZKN65-100N.

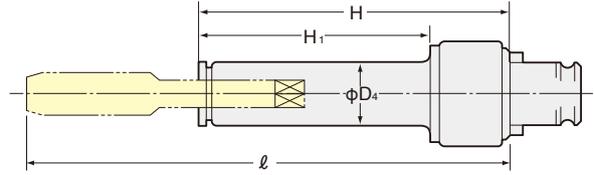
★The internal mechanism of the tap collet for the left handed tap is different from the standard one. Please use the special tap collet for the left handed tap.

# LONG SIZE ONE TOUCH TAP COLLET (ISO)

**NIKKEN**



ZKG-L



(ISO)

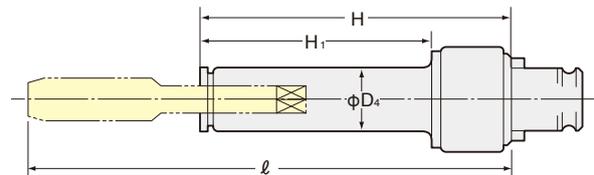
	ZKG12L					ZKG16L					ZKG24L				
	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ
50mm Long	ZKG12- 3S- 50L	13	104.5	38.5	129	ZKG16- 3S- 50L	13	114.5	38.5	139	ZKG24- 8S- 50L	19	123	95	164
	- 4S- 50L				133	- 4S- 50L				143	-10S- 50L				171
	- 5S- 50L				137	- 5S- 50L				147	-12S- 50L				179
	- 6S- 50L	19	105	81	142	- 6S- 50L	19	115	88	152	-14S- 50L	26	124	98	180
	- 8S- 50L				146	- 8S- 50L				156	-16S- 50L				186
	-10S- 50L				153	-10S- 50L				163	-18S- 50L				195
	-12S- 50L				161	-12S- 50L				171	-20S- 50L				195
						-14S- 50L	26	116	92	172	-22S- 50L	32			195
						-16S- 50L				178	-24S- 50L				205
100mm Long	ZKG12- 3S-100L	13	154.5	88.5	179	ZKG16- 3S-100L	13	164.5	88.5	189	ZKG24- 8S-100L	19	173	145	214
	- 4S-100L				183	- 4S-100L				193	-10S-100L				221
	- 5S-100L				187	- 5S-100L				197	-12S-100L				229
	- 6S-100L	19	155	131	192	- 6S-100L	19	165	138	202	-14S-100L	26	174	148	230
	- 8S-100L				196	- 8S-100L				206	-16S-100L				236
	-10S-100L				203	-10S-100L				213	-18S-100L				245
	-12S-100L				211	-12S-100L				221	-20S-100L				245
						-14S-100L	26	166	142	222	-22S-100L	32			245
						-16S-100L				228	-24S-100L				255

# LONG SIZE ONE TOUCH TAP COLLET (JIS)

**NIKKEN**



ZKG-L



(JIS)

	ZKG12L					ZKG16L					ZKG24L				
	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ	Code.No	D <sub>4</sub>	H	H <sub>1</sub>	ℓ
50mm Long	ZKG12- 3- 50L	13	104.5	38.5	125	ZKG16- 3- 50L	13	114.5	38.5	135.5	ZKG24- 8- 50L	19	123	95	161
	- 4- 50L				130	- 4- 50L				140.5	-10- 50L				166
	- 5- 50L				138	- 5- 50L				148.5	-12- 50L				172
	- 6- 50L	19	105	81	140	- 6- 50L	19	115	88	150.5	-14- 50L	26	124	98	173
	- 8- 50L				144	- 8- 50L				154	-16- 50L				178
	-10- 50L				149	-10- 50L				159	-18- 50L				178
	-12- 50L				155	-12- 50L				165	-20- 50L				186
						-14- 50L	26	116	92	166	-22- 50L	32			191
						-16- 50L				171	-24- 50L				194
100mm Long	ZKG12- 3-100L	13	154.5	88.5	175	ZKG16- 3-100L	13	164.5	88.5	185.5	ZKG24- 8-100L	19	173	145	211
	- 4-100L				180	- 4-100L				190.5	-10-100L				216
	- 5-100L				188	- 5-100L				198.5	-12-100L				222
	- 6-100L	19	155	131	190	- 6-100L	19	165	138	200.5	-14-100L	26	174	148	223
	- 8-100L				194	- 8-100L				204	-16-100L				228
	-10-100L				199	-10-100L				209	-18-100L				228
	-12-100L				205	-12-100L				215	-20-100L				236
						-14-100L	26	166	142	216	-22-100L	32			241
						-16-100L				221	-24-100L				244

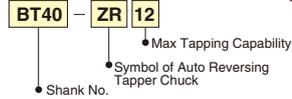
# AUTO. REVERSING TAPPER CHUCK

**NIKKEN**

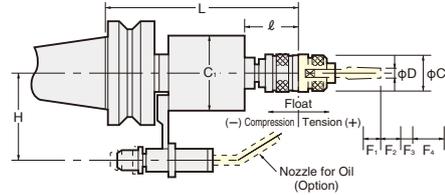


**ZR**

Explanation of the Code No.

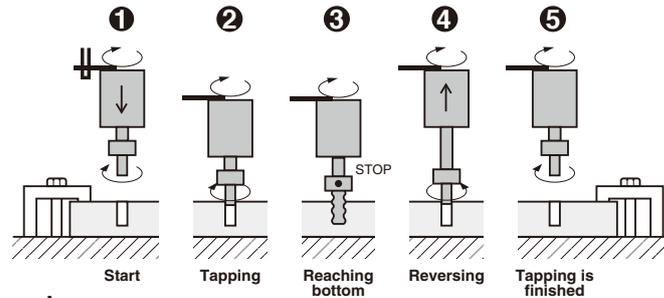
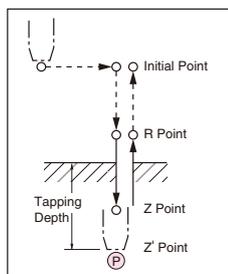


- As Self-Reversing Mechanism is built in Tapper Chuck body, this tapper is very suitable for the operation that the main spindle rotates and reverses frequently.
- Floating Mechanism: With a built in Floating Mechanism, High Accuracy Tapping Operations can be achieved.
- Tapping depth can be kept within  $\pm 0.1\text{mm}$ .



TAPER	Code. No.	Tapping Capability D	L	l	C	C <sub>1</sub>	H	Float				MAX.min <sup>-1</sup>	Weight (Kg)	Tap Collet
								F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>			
<b>No.40</b>	BT40-ZR 8*1	M 3 ~ 8	157	43	23	55	60	4	5	2	9	1,500	2.6	ZKN 8
	-ZR12	M 3 ~ 12	171	51	38	70		6	7	4	14	1,000	3.7	ZKG12
	-ZR20	M10 ~ 16	199	66	56	80		6	7	4	14	600	4.8	ZKG16
<b>No.50</b>	BT50-ZR 8*1	M 3 ~ 8	166	43	23	55	82	4	5	2	9	1,500	5.2	ZKN 8
	-ZR12	M 3 ~ 12	180	51	38	70		6	7	4	14	1,000	6.3	ZKG12
	-ZR20	M10 ~ 16	208	66	56	80		6	7	4	14	600	7.5	ZKG16

★Marked \*1 ZR8 Tapper Chuck and ZK8 Tap Collet are available as semi-standard.  
 ★Please refer P.59 for ISO, IMPERIAL, DIN Tap Collet, P.61 for JIS Tap Collet, and P.63 for Long Size Tap Collet.  
 ★Positioning Block is not included. When ordering, please advise name of M/C Builder and Model No. and so on.



## Program example of ZR Tapper Chuck

- No. 1 M03 S \_\_\_\_\_ ; Spindle Rotating  
 No. 2 G00 X \_\_\_\_\_ Y \_\_\_\_\_ ; Initial Point  
 No. 3 Z \_\_\_\_\_ ; R Point  
 No. 4 G01 Z \_\_\_\_\_ F \_\_\_\_\_ ; Z Point  
 No. 5 G04 P \_\_\_\_\_ ; Dwell: Only tap going to Z' Point  
 No. 6 G01 Z \_\_\_\_\_ F \_\_\_\_\_ ; Only tap going to R Point with reversing  
 No. 7 G00 Z \_\_\_\_\_ ;

- ★ZR tapper can be fed one block at a time. Check correct positions at the point No.3-No.5 and input correct values.
- ★Allow about 15mm for distance between Z-Z' (self-feed of the ZR tapper)
- ★Value F of No.4 is tapping self-feeding speed X 0.9.
- ★Value F of No.6 is tapping self-feeding speed X 1.1.

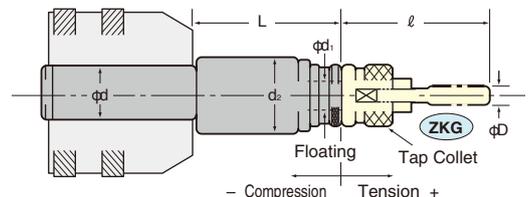
# Straight Shank TAPPER CHUCK

**NIKKEN**

- For Slim body and Ultra Smooth Tapping Operations with Float Mechanism.



**NZ**



Style	Code. No.	Tapping Capability		L	d <sub>1</sub>	d	d <sub>2</sub>	Float		Weight (kg)	Tap Collet
		M	P					Compression	Tension		
<b>32</b>	NZ32-12-105	M 2~12	P1/16 ~ 1/4	105~125	19	32	45	5	15	1.3	ZKG12
	-16-125	M 3~16	P1/8 ~ 3/8	125~145	25		55	8	20	2.2	ZKG16
	-24-140	M 8~24	P1/4 ~ 5/8	140~160	30		63	8	20	2.8	ZKG24
<b>42</b>	NZ42-12-90	M 2~12	P1/16 ~ 1/4	90~125	19	42	45	5	15	2.0	ZKG12
	-16-125	M 3~16	P1/8 ~ 3/8	125~160	25		55	8	20	3.0	ZKG16
	-24-140	M 8~24	P1/4 ~ 5/8	140~175	30		63	8	20	3.6	ZKG24

# SYNCHRONIZED TAPPING HOLDER (for 100% Synchronized Feed)



■ Synchronized (Rigid or Direct) Tapping Feed Function is one of recent machining function to feed 1 pitch of tap per 1 revolution of machine spindle.

Please use High Run-Out Accuracy & Powerful Gripping of SLIM CHUCK or MULTI LOCK Milling Chuck for this application.

■ Tapping holder & Collet for 100% Synchronized Tapping

■ For JIS TAP Shank

Metric Tap	Tap Shank Dia.	SLIM CHUCK	SLIM COLLET	MILLING CHUCK	KM COLLET
M 2	3.0	SK10	SK10- 3	C20	
M 3	4.0		SK10- 4		
M 4	5.0		SK10- 5		
M 5	5.5		SK10- 5.5		
M 6	6.0		SK10- 6		
M 8	6.2		SK10- 6.5		
M10	7		SK13- 7		
M12	8.5		SK13- 8.5		
M14	10.5	SK13	SK13-10.5	C20	
M16	12.5		SK16-12.5		
M18	14	SK16	SK16-14	C32	
M20	15		SK16-15		
M22	17				KM20- 5.5
M24	19				KM20- 6
M27	20				KM20- 6.2
M30	23				KM20- 7
					KM20- 8.5
					KM20-10.5
					KM20-12.5
					KM20-14
					KM20-15
					KM32-17
					KM32-19
					KM32-20
					KM32-23

■ For ISO TAP Shank

Metric Tap	Tap Shank Dia.	SLIM CHUCK	SLIM COLLET	MILLING CHUCK	KM COLLET
M 2	3.0	SK10	SK10- 3	C20	
M 3	4.0		SK10- 4		
M 4	6.0		SK10- 6		
M 5	6.0				
M 6	6.0	SK13	SK13- 8	C20	KM20- 6
M 8	8.0				
M10	8.0				
M12	10.0				
M14	12.0	SK13-10			
M16	16.0		SK13-12		
M18	16.0	SK16	SK16-16	C20	KM20- 8
M20	16.0				
M22	20.0	C32		C32	KM20-10
M24	20.0				
M27	20.0				
M30	25.0				

★ Tap Collet for Tap with Oil Hole is also available.

★ At use of MILLING CHUCK, please use tap with shank tolerance h7.

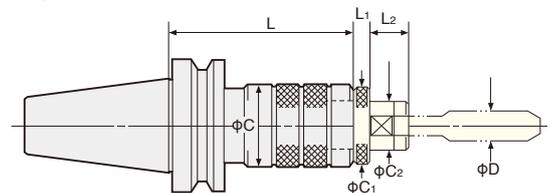
# SYNCHRONIZED TAPPING HOLDER (with fine floating)



■ This fine floating tapping holder improves tap life remarkably by absorbing fine pitch error completely with the small floating mechanism.



Center Through Tool Coolant



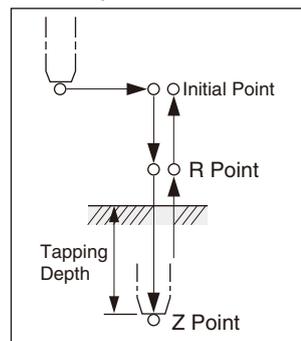
ZH-C

OZMK-OM Tap Collet

TAPER	Code No.	L	C	Weight (kg)	Tap Collet
No.40	BT40-ZH12CH- 80	80	36	1.2	ZMK12 OZMK12-OM
	-105	105		1.5	
	-135	135		1.8	
	-ZH16CH- 95	95		1.5	
	-120	120	45	1.9	ZMK16 OZMK16-OM
	-150	150		2.3	
	-ZH24CH-105	105	56	1.8	ZMK24 OZMK24-OM
	-120	120		2.0	
-150	150	2.4			
-200	200	5.0			
No.50	BT50-ZH12CH- 90	90	36	3.9	ZMK12 OZMK12-OM
	-135	135		4.3	
	-165	165		4.6	
	-200	200		5.0	
	-ZH16CH-105	105	45	4.2	ZMK16 OZMK16-OM
	-135	135		4.6	
	-165	165		5.0	
	-200	200		5.5	
	-ZH24CH-105	105	56	4.4	ZMK24 OZMK24-OM
	-135	135		5.0	
	-165	165		5.6	
	-200	200		6.2	

	OZMK12-OM		OZMK16-OM			OZMK24-OM		
D	M8	M8-M12	M6	M8-M12	M14-M16	M12	M14-M16	M18-M24
D <sub>2</sub>	19		25			30		
D <sub>3</sub>	28		36			42		
D <sub>4</sub>	13	19	13	19	26	19	26	32
H	16	20	21			29		
H <sub>1</sub>	6		6			8		
G	M4-0.5	M6-0.75	M4-0.5	M6-0.75		M6-0.75	M8-1.0	

■ Example of RIGID TAP cycle



No.1 MO3 S ... ; Spindle Rotation  
 No.2 G84.2 X ... Y ... Z ... R ... F ... ;  
 Rigid Tap Cycle      Z point      R point      ★ Feed

★ F is calculated by Pitch of Tap and Spindle Rotation Speed.  
 For example, in case of M10×P1.5 and S400min<sup>-1</sup> (Cutting Speed 12.6m/min.) then F = 1.5mm×400min<sup>-1</sup> = 600 mm/min.

★ Please use OZMK-OM tap collet for center through tool coolant.

★ Please use ZMK P.66 tap collet for external coolant. In this case, the spacer attached as standard accessory is put on a tapper chuck.

ZH-C Tapping Holder has fine floating mechanism, but it's not standard floating system (Tension/Compression) like Z or ZL Tap Holder.



Therefore, please use this ZH Tap Holder only with synchronized tapping cycle, not with ordinary tapping cycle.

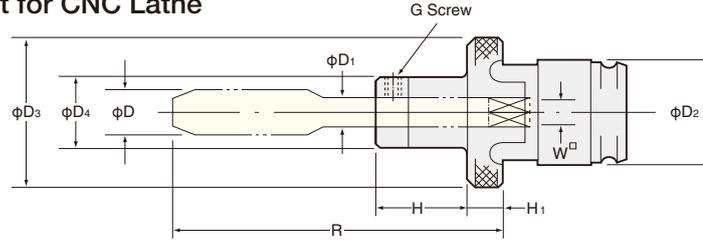


★ When use ZMK Collett, please attach a spacer (white) to ZH-C Tapping Holder with an attached bolt.

# TAP COLLET without TORQUE CONTROL (JIS)



- Tap Collet for ZH Tapping Holder
- Tap Collet for CNC Lathe



## ZMK

For Synchronized Tapping on M/C, use ZMK tap collet with ZH Tapping Holder, Please refer P.66.

⚠ Torque Control is not built-in. Careful attention must be paid to diameter of drilled hole, program and so on.

## Dimension List of ZMK Tap Collet

D	ZMK8		ZMK12		ZMK16			ZMK24		
	M3~6	M8	M3~6	M8~12	M4~6	M8~12	M14~16	M12	M14~16	M18~24
D <sub>2</sub>	13		19		25			30		
D <sub>3</sub>	20		28		36			42		
D <sub>4</sub>	13	19	13	19	13	19	26	19	26	32
H	14	24	16	20	21			25		29
H <sub>1</sub>	4		6		6			8		
G	M4-0.5	M6-0.75	M4-0.5	M6-0.75	M4-0.5	M6-0.75		M6-0.75	M8-1.0	

	ZMK 8				ZMK12				ZMK16				ZMK24			
	Code No.	D <sub>1</sub>	W	ℓ	Code No.	D <sub>1</sub>	W	ℓ	Code No.	D <sub>1</sub>	W	ℓ	Code No.	D <sub>1</sub>	W	ℓ
Metric (M)	ZMK8-3	4	3.2	43.5	ZMK12-3	4	3.2	47.5	ZMK16-4	5	4.0	53.5	ZMK24-12	8.5	6.5	83
	-4	5	4.0	44.5	-4	5	4.0	48.5	-5	5.5	4.5	61.5	-14	10.5	8.0	84
	-5	5.5	4.5	52.5	-5	5.5	4.5	56.5	-6	6	4.5	63.5	-16	12.5	10.0	89
	-6	6	4.5	54.5	-6	6	4.5	58.5	-8	6.2	5.0	66	-18	14	11.0	93
	-8	6.2	5.0	67	-8	6.2	5.0	65	-10	7	5.5	71	-20	15	12.0	97
Unified (U) or British Standard Whitworth (W)	ZMK8-1/8	4	3.2	43.5	ZMK12-1/8	4	3.2	47.5	ZMK16-1/8	4	3.2	52.5	ZMK24-1/2	9	7.0	85
	-3/16	5	4.5	52.5	-3/16	5.5	4.5	56.5	-3/16	5	4.5	61.5	-9/16	10.5	8.0	86
	-1/4	6	4.5	54.5	-1/4	6	4.5	58.5	-1/4	6	4.5	63.5	-5/8	12	9.0	90
					-5/16	6.1	5.0	65	-5/16	6.1	5.0	66	-3/4	14	11.0	98
					-3/8	7	5.5	70	-3/8	7	5.5	71	-7/8	17	13.0	106
					-7/16	8	6.0	74	-7/16	8	6.0	75	-1	20	15.0	114
Pipe (PT) (PF)					-1/2	9	7.0	78	-1/2	9	7.0	79				
					ZMK12-1/8P	8	6.0	51	ZMK16-1/8P	8	6.0	54	ZMK24-3/8P	14	11.0	63
									-1/4P	11	9.0	56	ZMK24-1/2P	18	14.0	76
									-3/8P	14	11.0	57	ZMK24-5/8P	19	15.0	80

★For long size Tap Collets are also available. 50mm (-50L), 100mm (-100L) longer than standard type. e.g. ZMK12-4-50L

# OLD SYNCHRONIZED TAPPING HOLDER (with fine floating)



ZH

The sales of old ZH holder will be finished, when the stock is sold out. Please use ZH-C holder P.65

TAPER	Code No.	L	C	Weight (kg)	Tap collet
No.40	BT40-ZH 8-75	75	23	1.1	ZMK 8
	ZH12-80	80	36	1.2	ZMK12
	ZH16-95	95	45	1.5	ZMK16
	ZH24-105	105	56	1.8	ZMK24
No.50	BT50-ZH 8-90	90	23	3.8	ZMK 8
	ZH12-90	90	36	3.9	ZMK12
	ZH16-105	105	45	4.2	ZMK16
	ZH24-105	105	56	4.4	ZMK24

# BORING SYSTEM

## ROUGH BORING

RAC-E (Steel, Stainless Steel, Cast Iron)

BT  P.71  
 MBT  P.178  
 NBT  P.209  
 NC5  P.240  
 HSK  P.267



CC  
 Positive type  
 $\phi 25 \sim \phi 130$

RAC (Heavy Duty Boring)

BT  P.73  
 MBT  P.178  
 NBT  P.209  
 NC5  P.240  
 HSK  P.269



CN  
 Negative type  
 $\phi 43 \sim \phi 130$

RAC-A (Aluminium)

BT  P.75  
 MBT  P.178  
 NBT  P.209  
 NC5  P.240  
 HSK  P.271



$\phi 25 \sim \phi 130$

## ROUGH BORING

RAC-K (Through Hole / Multi Sheets)

BT  P.77  
 MBT  P.178  
 NBT  P.209  
 NC5  P.240  
 HSK  P.273



$\phi 25 \sim \phi 130$

RAC (For Large Dia)

BT  P.81  
 MBT  P.180  
 NBT  P.211  
 NC5  P.241  
 HSK  P.275



$\phi 130 \sim \phi 580$

ULTRA LIGHT BORING BAR FOR Large Dia **NEW**

## ROUGH BORING

RAC-AA  
 P.95

BAC-AA  
 P.97



## FINISH BORING

## SEMI-FINISH BORING

ZMAC-VR

BT  P.85  
 MBT  P.117  
 NBT  P.208  
 NC5  P.239  
 HSK  P.279



$\phi 32 \sim \phi 180$

BCB (For Large Dia)

BT  P.92  
 HSK  P.282



$\phi 130 \sim \phi 595$

## FINISH BORING

DJ

BT  P.99  
 MBT  P.179  
 NBT  P.210  
 HSK  P.284



$\phi 3 \sim \phi 50$

## FINISH BORING

ZMAC-V

BT  P.83  
 MBT  P.117  
 NBT  P.208  
 NC5  P.239  
 HSK  P.277



$\phi 16 \sim \phi 180$

ZMAC  $\alpha$ -V

BT  P.84  
 MBT  P.117  
 NBT  P.208  
 NC5  P.239  
 HSK  P.278



$\phi 25 \sim \phi 180$

BAC-V (For Large Dia)

BT  P.91  
 MBT  P.180  
 NBT  P.211  
 NC5  P.241  
 HSK  P.281



$\phi 130 \sim \phi 595$

**MODULAR SYSTEM**

Base Holder Q  
 BT  P.101  
 MBT  P.179  
 NBT  P.210  
 NC5  P.215  
 HSK  P.283



Spacer SP  P.102



**COOLANT THROUGH**

**RAC-C**



High Pressure Coolant Through Tool

**STRAIGHT SHANK**

K-RAC K-ZMAC-V  P.105 S-BCBX S-ZMACX-V  P.106  
 K-DJ  P.107



$\phi 25 \sim \phi 100$   $\phi 16 \sim \phi 70$   $\phi 3 \sim \phi 50$



$\phi 12.7 \sim \phi 55$

**ZMAC-V**



High Pressure Coolant Through Tool

**SPECIAL BORING BAR**

Multi-Stage, External  
 P.83, P. 85, P. 107



Boring, Overturning  
 P.107



**DJ**



High Pressure Coolant Through Tool

**FINISH BORING**

**eMAC**  P.109



$\phi 6 \sim \phi 110$

**eMAC-W**  P.110



$\phi 6 \sim \phi 200$

**RAC / BAC-VC for LARGE DIA.**



High Pressure Coolant Through Tool

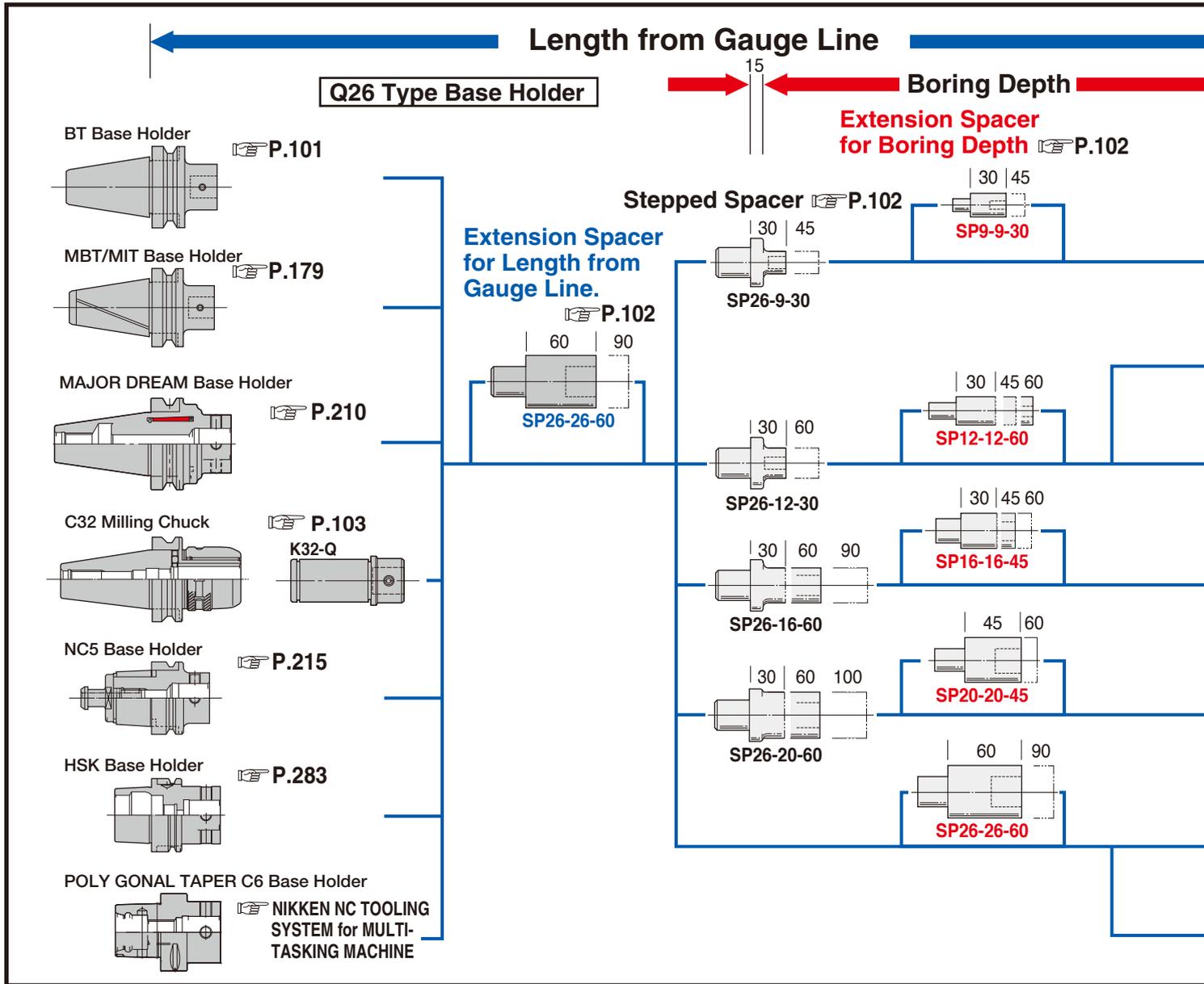
# MODULAR ZMAC ADVANCED BORING BAR

## BASE-HOLDER

Q26 type base holder can be used for various combinations. Ideal for low volume production on manual machine with wide variety of boring sizes. We recommend that you also use the Q42 base holder on #50 M/C. P.101

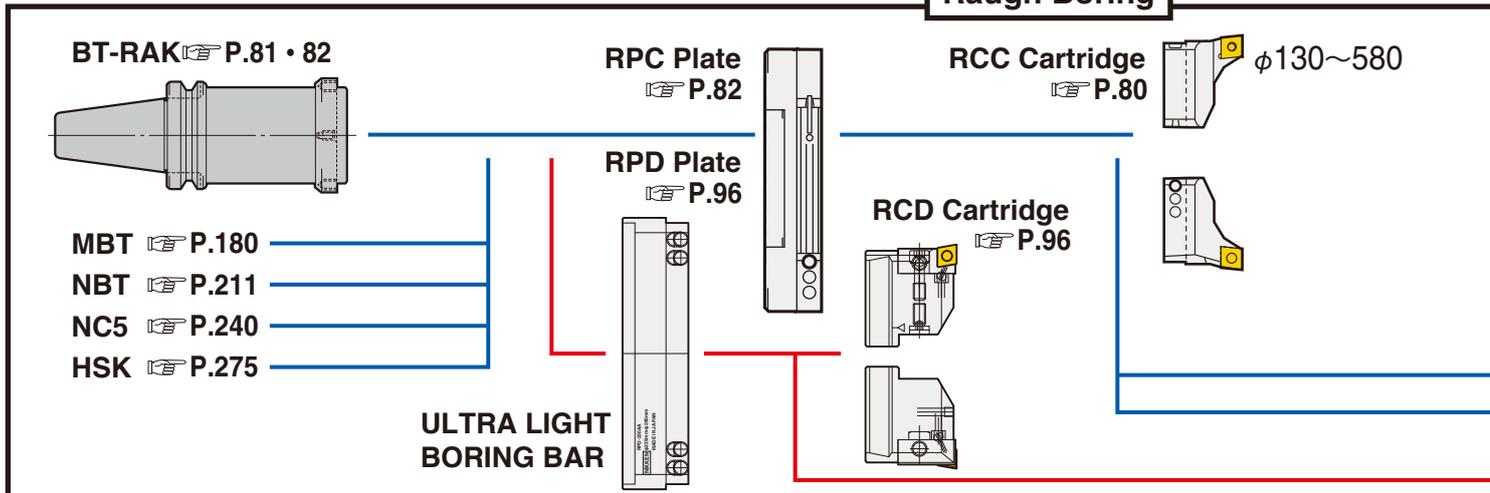
## Spacer & Head

The extensive range of heads & spacers allow the correct selection to suit your boring applications.

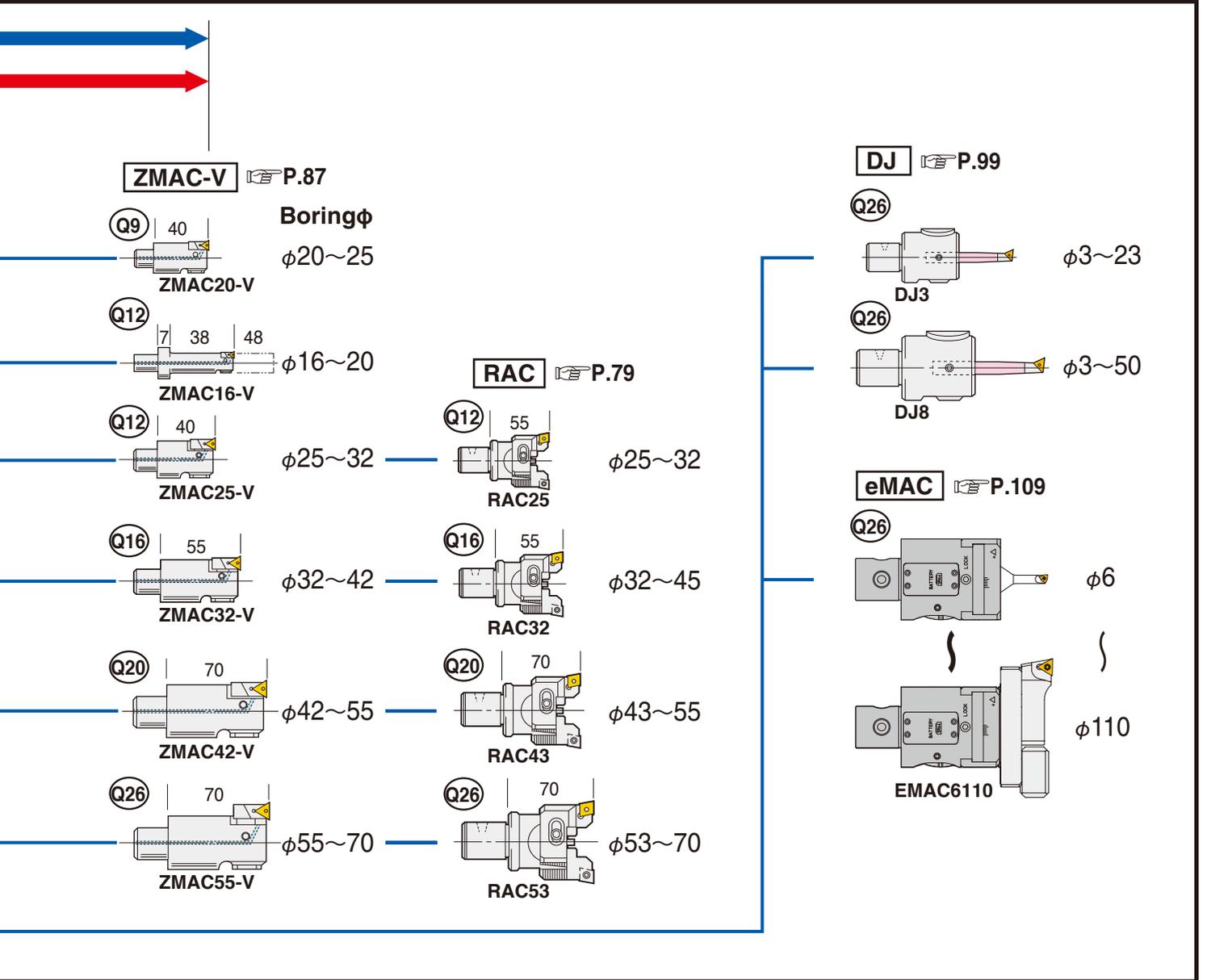


# BORING ARBOR FOR LARGE DIA

## Rough Boring



**Method of Selection for Modular ZMAC-V Boring Arbors**  
 Firstly, select a head, spacer and stepped spacer from boring diameter and depth.  
 Then select base holder and SP26 extension spacer by the length from gauge line.



**Finish Boring**

BAC-V type cartridge for large dia. P.93

BCB type cartridge for large dia. P.93

MCDZ type cartridge for large dia. P.98



# BALANCE-CUT BORING ARBOR (RAC-E)



Rough Boring — For Steel, Stainless Steel and Cast Iron  
CC Insert (Positive type)



RAC-E

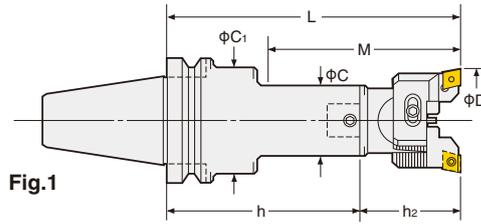


Fig.1

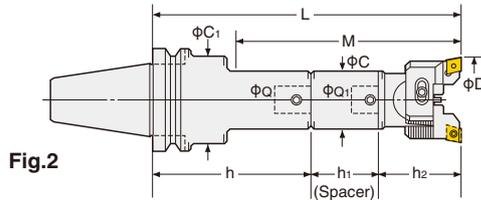
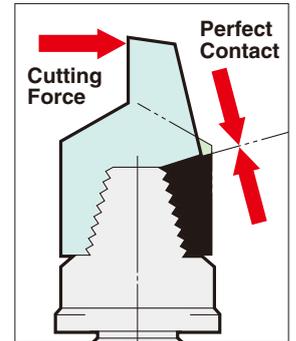


Fig.2

Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.72		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.40	BT40-RAC 25-135E	25~32	67	12	24	35	BT40-Q12- 80	—	12-RAC 25- 55E	CC07-C	2.0	1
	(IT40) -165E		105				-Q12-110				2.1	
	-180E		112				-Q12- 80				2.1	
	-RAC 32-150E	32~45	77	16	31	42	-Q16- 95	—	16-RAC 32- 55E	CC08-C	2.4	1
	-180E		110				-Q16-125				2.6	
	-195E		122				-Q16- 95				2.6	
	-RAC 43-150E	43~55	97	20	40	50	-Q20- 80	—	20-RAC 43- 70E	—	2.7	1
	-180E		130				-Q20-110				2.9	
	-210E		157				-Q20- 80				3.2	
	-RAC 53-165E	53~70	135	26	50	50	-Q26- 95	—	26-RAC 53- 70E	CC12-C	2.5	1
	-210E		180				-Q26-140				3.3	
	-225E		195				-Q26- 95				3.2	
	-RAC 70-180E	70~100	180	34	64	64	-Q34- 95	—	34-RAC 70- 85E	—	4.8	1
	-195E		195				-Q34-110				5.2	
	-240E		240				-Q34- 95				6.2	
	-RAC100-195E	100~130	195	42	83	62	-Q42- 95	—	42-RAC100-100E	—	6.8	1

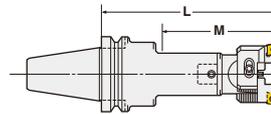
★“C” grade (Coated) inserts are supplied as standard with the head. P.72 Please refer P.116 for cutting condition.

★Please refer P.101 for base holder, P.102 for spacer and P.79 for head.

★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT40-RAC53-165-C  
Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E.

★When L length is required longer than standard, please specify the boring depth M.

★Code No. of RAC25 and RAC32 are changed to RAC25E and RAC32E.  
e.g. BT40-RAC25-135 → BT40-RAC25-135E  
12-RAC25- 55 → 12-RAC25- 55E



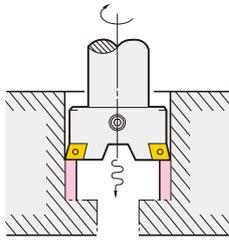
High Pressure Coolant Through Tool

# BALANCE-CUT BORING ARBOR (RAC-E)

**NIKKEN**

Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is ideal for rough and medium boring.

## Double Cutting Capability

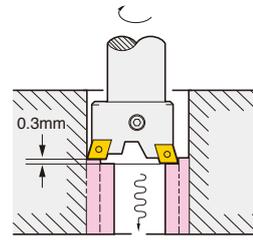


Please use RAC-K for through hole boring.

☞ P.77, P.78



## Example of 2 Stepped Balance Cut



Approx. double removal of below cutting condition is possible by -0.3 Cartridge.  
☞ P.80

TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.72		Weight (kg)	Fig	
									Head Code No.	Tip No.			
No.50	BT50-RAC 25-150E	25~ 32	67	12	24	44	BT50-Q12- 95	—	12-RAC 25- 55E	CC07-C	4.7	1	
	(IT50) -180E		105				-Q12-125				4.9		
	-195E		112				-Q12- 95				4.8		2
	-RAC 32-180E	32~ 45	77	16	31	50	-Q16-125N	—	16-RAC 32- 55E	CC08-C	5.4	1	
	-210E		110				-Q16-155				5.6		
	-225E		122				-Q16-125N				5.6		2
	-RAC 43-180E	43~ 55	97	20	40	60	-Q20-110	—	20-RAC 43- 70E	—	5.7	1	
	-195E		130				-Q20-125				5.8		
	-225E		142				-Q20-110				6.1		2
	-240E		157				SP20-20-45 SP20-20-60				6.2		
	-RAC 53-210E	53~ 70	117	26	50	65	-Q26-140	—	26-RAC 53- 70E	—	6.9	1	
	-240E		182				-Q26-170N				7.0		
	-270E		177				-Q26-140				7.6		2
	-RAC 70-255E		205				-Q34-170				9.5		
	-285E	235	-Q34-200	9.9	1								
	-315E	265	-Q34-170	10.9		2							
	-RAC100-225E	100~130	225	42	83		83	-Q42-125	—	42-RAC100-100E	—	12.5	1
	-290E		290			-Q42-190		15.2					
	-325E		325			-Q42-225A		16.5				2	

★“C” grade (Coated) inserts are supplied as standard with the head. ☞ P.72 Please refer ☞ P.116 for cutting condition. ★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E.  
★Please refer ☞ P.101 for base holder, ☞ P.102 for spacer and ☞ P.79 for head. e.g. BT50-RAC25-150 → BT50-RAC25-150E  
★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-RAC53-210E-C  
★BT50-RAC100-375E, 425E and 475E are also available. 12-RAC25- 55 → 12-RAC25- 55E

## Insert tip for RAC-E

● : best ○ : good

Material	Steel		●	○
	Stainless Steel		●	○
	Cast Iron		○	●
Aluminium		○	●	
		Coated Carbide M	Coated Carbide K	
		Grade	C	
		Material	AC630M	AC410K
Applicable Arbor	Dimension	Code No.	Nose R	
RAC025E		CC07-○4	0.4	● ●
		CC07-○8	0.8	● ●
RAC25E(CC08), RAC32E		CC08-○4	0.4	● ●
		CC08-○8	0.8	● ●
RAC43E - RAC530E		CC12-○4	0.4	● ●
		CC12-○8	0.8	● ●

Please add the grade indication into ○, and add the insert tip material indication at the end of the Code No. e.g. CC12-C8 (AC630M)

★Minimum order quantity : 10pcs.

B1

# BALANCE-CUT BORING ARBOR (RAC)

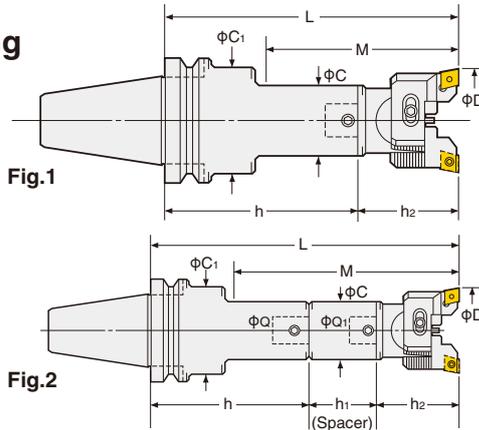


Rough Boring— For Heavy Duty Boring of Iron and Cast Iron  
CN Insert (Negative type)

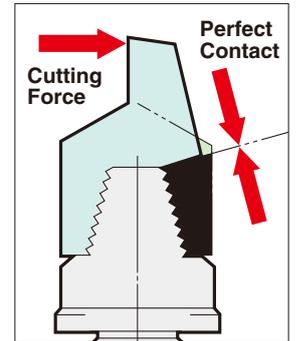


Heavy Duty Boring

RAC



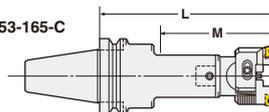
Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.74		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.40	BT40-RAC 43-150	43~55	97	20	40	50	BT40-Q20- 80	—	20-RAC 43- 70	CN08-C	2.7	1
	(IT40) -180		130				-Q20- 110	—			2.9	
	-210		157				-Q20- 80	SP20-20-60			3.2	
	-RAC 53-165	53~70	135	26	50	-Q26- 95	—	26-RAC 53- 70	2.5	1		
	-210		180			-Q26-140	—		3.3			
	-225		195			-Q26- 95	SP26-26-60		3.2		2	
	-RAC 70-180		180			-Q34- 95	—		4.8		1	
	-195	70~100	195	34	64	64	-Q34-110	—	34-RAC 70- 85	5.2		
	-240		240	-Q34- 95	SP34-34-60	6.2	2					
	-RAC100-195	100~130	195	42	83	62	-Q42- 95	—	42-RAC100-100	6.8	1	

- ★“C” grade (Coated) inserts are supplied as standard with the head. P.74 Please refer P.116 for cutting condition.
- ★Please refer P.101 for base holder, P.102 for spacer and P.79 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT40-RAC53-165-C
- ★When L length is required longer than standard, please specify the boring depth M.

★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.71, P.72



High Pressure Coolant Through Tool

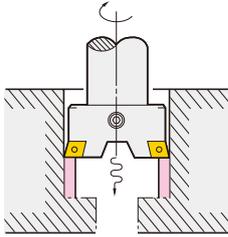
# BALANCE-CUT BORING ARBOR (RAC)



Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is ideal for rough and medium boring.

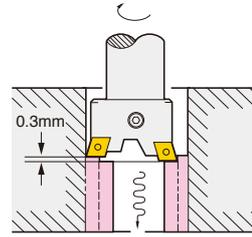
## Double Cutting Capability

Please use RAC-K for through hole boring. P.77, P.78



## Example of 2 Stepped Balance Cut

Approx. double removal of below cutting condition is possible by **-0.3 Cartridge**. P.80



TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.74		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.50	<b>BT50-RAC 43-180</b>	43~ 55	97	20	40	60	BT50-Q20-110	—	20-RAC 43- 70	CN08-C	5.7	1
	(IT50) -195		130				-Q20-125				5.8	
	-225		142				-Q20-110				6.1	
	-240		157				SP20-20-45				6.2	
	-RAC 53-210	53~ 70	117	26	50	65	-Q26-140	—	26-RAC 53- 70	CN08-C	6.9	1
	-240		182				-Q26-170N				7.0	
	-270		177				-Q26-140				7.6	
	-RAC 70-255	70~100	205	34	64	80	-Q34-170	—	34-RAC 70- 85	CN08-C	9.5	1
	-285		235				-Q34-200				9.9	
	-315		265				-Q34-170				10.9	
	-RAC100-225	100~130	225	42	83	83	-Q42-125	—	42-RAC100-100	CN08-C	12.5	1
	-290		290				-Q42-190				15.2	
	-325		325				-Q42-225A				16.5	

★“C” grade (Coated) inserts are supplied as standard with the head. P.74 Please refer P.116 for cutting condition. ★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.71, P.72  
 ★Please refer P.101 for base holder, P.102 for spacer and P.79 for head.  
 ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-RAC53-210-C  
 ★BT50-RAC100-375, 425 and 475 are also available.

## Insert tip for RAC for Heavy Duty Boring

Material	Steel	●	
	Stainless Steel	●	
	Cast Iron	●	
	Aluminium	●	
	Coated Carbide M		
	Grade	C	
	Material	AC630M	
Applicable Arbor	Dimension	Code No.	Nose R
RAC43 - RAC530	 (CNM120408)	CN08-○8	0.8 ●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. CC08-C8 (AC630M)

★Minimum order quantity : 10pcs.  
 ★When CN08 insert (CN○1204○) in the market is used, please use the eccentric bolt type cartridge (S.RCC-○Q) P.113. Nikken CN08-○8 insert can be used on the eccentric bolt type cartridge.

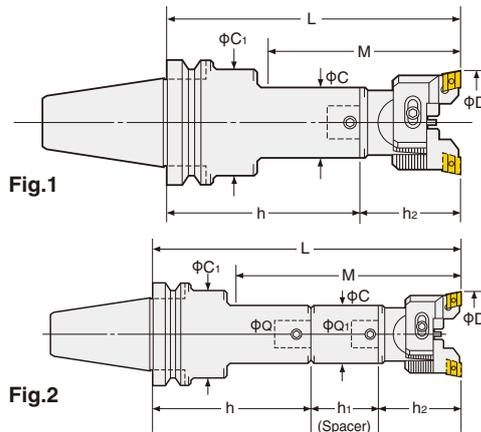
# BALANCE-CUT BORING ARBOR (RAC-A)



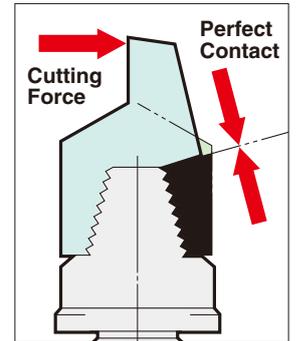
Rough Boring—For Aluminium



RAC-A

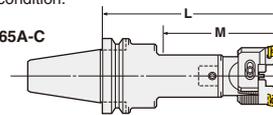


Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.76		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.40	BT40-RAC 25-135A	25~32	67	12	24	35	BT40-Q12- 80	—	12-RAC 25- 55A	AEG12	2.0	1
	(IT40) -165A		105				-Q12-110	—			2.1	
	-180A		112				-Q12- 80	SP12-12-45			2.1	2
	-RAC 32-150A	32~45	77	16	31	42	-Q16- 95	—	16-RAC 32- 55A	AEG16	2.4	
	-180A		110				-Q16-125	—			2.6	
	-195A		122				-Q16- 95	SP16-16-45			2.6	2
	-RAC 43-150A	43~55	97	20	40	50	-Q20- 80	—	20-RAC 43- 70A	AEG16	2.7	
	-180A		130				-Q20-110	—			2.9	
	-210A		157				-Q20- 80	SP20-20-60			3.2	2
	-RAC 53-165A	53~70	135	26	50	50	-Q26- 95	—	26-RAC 53- 70A	AEG16	2.5	
	-210A		180				-Q26-140	—			3.3	
	-225A		195				-Q26- 95	SP26-26-60			3.2	2
	-RAC 70-180A	70~100	180	34	64	64	-Q34- 95	—	34-RAC 70- 85A	AEG16	4.8	
	-195A		195				-Q34-110	—			5.2	
	-240A		240				-Q34- 95	SP34-34-60			6.2	2
	-RAC100-195A	100~130	195	42	83	62	-Q42- 95	—	42-RAC100-100A	6.8	1	

- ★“F” grade inserts are supplied as standard with the head. P.76 Please refer P.116 for cutting condition.
- ★Please refer P.101 for base holder, P.102 for spacer and P.79 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT40-RAC53-165A-C
- ★When L length is required longer than standard, please specify the boring depth M.



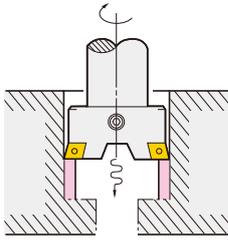
High Pressure Coolant Through Tool

# BALANCE-CUT BORING ARBOR (RAC-A)

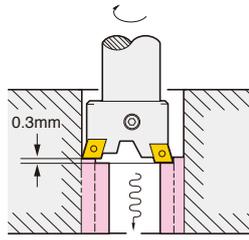


Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is Ideal for rough and medium boring.

## Double Cutting Capability



## Example of 2 Stepped Balance Cut



Approx. double removal of below cutting condition is possible by **-0.3 Cartridge**.  
 ☞ P.80

TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.76		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.50	BT50-RAC 25-150A	25~ 32	67	12	24	44	BT50-Q12- 95	—	12-RAC 25- 55A	AEG12	4.7	1
	(IT50) -180A		105				-Q12-125				4.9	
	-195A		112				-Q12- 95				4.8	
	-RAC 32-180A	32~ 45	77	16	31	50	-Q16-125N	—	16-RAC 32- 55A	AEG12	5.4	1
	-210A		110				-Q16-155				5.6	
	-225A		122				-Q16-125N				5.6	
	-RAC 43-180A	43~ 55	97	20	40	60	-Q20-110	—	20-RAC 43- 70A	AEG16	5.7	1
	-195A		130				-Q20-125				5.8	
	-225A		142				-Q20-110				6.1	
	-240A	53~ 70	157	26	50	65	-Q26-140	—	26-RAC 53- 70A	AEG16	6.2	2
	-RAC 53-210A		117				-Q26-170N				6.9	
	-240A		182				-Q26-140				7.0	
	-270A	70~100	177	34	64	80	-Q34-170	SP26-26-60	34-RAC 70- 85A	AEG16	7.6	2
	-RAC 70-255A		205				-Q34-200				9.5	
	-285A		235				-Q34-170				9.9	
	-315A	100~130	265	42	83	83	-Q34-170	SP34-34-60	42-RAC100-100A	AEG16	10.9	2
	-RAC100-225A		225				-Q42-125				12.5	
	-290A		290				-Q42-190				15.2	
-325A		325				-Q42-225A				16.5	2	

★“F” grade inserts are supplied as standard with the head. ☞ P.76 Please refer ☞ P.116 for cutting condition.  
 ★Please refer ☞ P.101 for base holder, ☞ P.102 for spacer and ☞ P.79 for head.  
 ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-RAC53-210A-C  
 ★BT50-RAC100-375A, 425A and 475A are also available.

## Insert tip for RAC-A

Material	Steel		Grade	Material
	Stainless Steel	Cast Iron		
	Aluminium		F	KW10
RAC25A, RAC32A		AEG12-○1	0.1	●
		AEG12-○2	0.2	●
		AEG12-○4	0.4	●
RAC43A-RAC530A		AEG16-○1	0.1	●
		AEG16-○2	0.2	●
		AEG16-○4	0.4	●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. AEG16-F2 (KW10)

★Minimum order quantity : 10pcs.

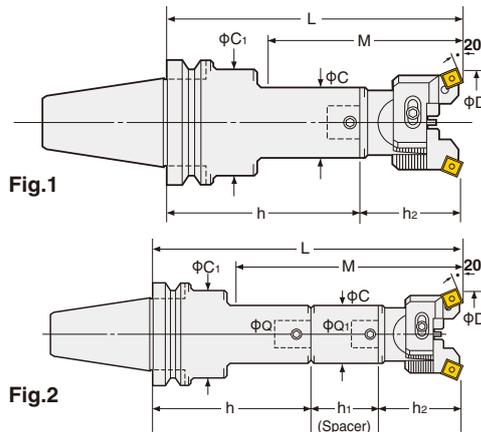
# BALANCE-CUT BORING ARBOR (RAC-K)

**NIKKEN**

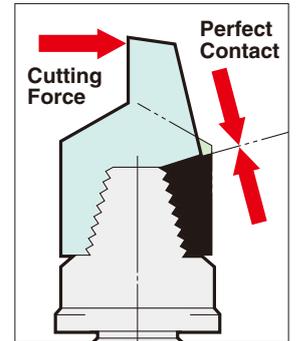
Rough Boring—For Through Hole and Multi Sheets



RAC-K

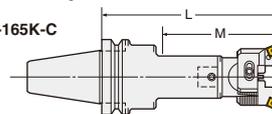


Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Cupling Dia Q	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.78		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.40	BT40-RAC 25-135K	25~32	67	12	24	35	BT40-Q12- 80	—	12-RAC 25- 55K	SC09	2.0	1
	(IT40) -165K		105				-Q12-110				2.1	
	-180K		112				-Q12- 80				SP12-12-45	
	-RAC 32-150K	32~45	77	16	31	42	-Q16- 95	—	16-RAC 32- 55K	SC12	2.4	1
	-180K		110				-Q16-125				2.6	
	-195K		122				-Q16- 95				SP16-16-45	
	-RAC 43-150K	43~55	97	20	40	50	-Q20- 80	—	20-RAC 43- 70K	SC12	2.7	1
	-180K		130				-Q20-110				2.9	
	-210K		157				-Q20- 80				SP20-20-60	
	-RAC 53-165K	53~70	135	26	50	64	-Q26- 95	—	26-RAC 53- 70K	SC12	2.5	1
	-210K		180				-Q26-140				3.3	
	-225K		195				-Q26- 95				SP26-26-60	
	-RAC 70-180K	70~100	180	34	64	64	-Q34- 95	—	34-RAC 70- 85K	SC12	4.8	1
	-195K		195				-Q34-110				5.2	
	-240K		240				-Q34- 95				SP34-34-60	
	-RAC100-195K	100~130	195	42	83	62	-Q42- 95	—	42-RAC100-100K	SC12	6.8	1

★“C” grade (Coated) inserts are supplied as standard with the head. P.78 Please refer P.116 for cutting condition.  
 ★Please refer P.101 for base holder, P.102 for spacer and P.79 for head.  
 ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT40-RAC53-165K-C  
 ★When L length is required longer than standard, please specify the boring depth M.



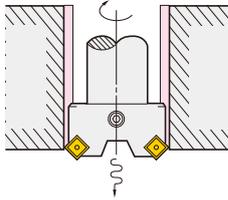
High Pressure Coolant Through Tool

# BALANCE-CUT BORING ARBOR (RAC-K)

**NIKKEN**

Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is Ideal for rough and medium boring.

## Double Cutting Capability



TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.78		Weight (kg)	Fig
									Head Code No.	Tip No.		
No.50	BT50-RAC 25-150K	25~ 32	67	12	24	44	BT50-Q12- 95	—	12-RAC 25- 55K	SC09	4.7	1
	(IT50) -180K		105				-Q12-125	—			4.9	
	-195K		112				-Q12- 95	SP12-12-45			4.8	2
	-RAC 32-180K	32~ 45	77	16	31	50	-Q16-125N	—	16-RAC 32- 55K	SC09	5.4	1
	-210K		110				-Q16-155	—			5.6	
	-225K		122				-Q16-125N	SP16-16-45			5.6	2
	-RAC 43-180K	43~ 55	97	20	40	60	-Q20-110	—	20-RAC 43- 70K	SC12	5.7	1
	-195K		130				-Q20-125	—			5.8	
	-225K		142				-Q20-110	SP20-20-45			6.1	2
	-240K		157				-Q20-110	SP20-20-60			6.2	
	-RAC 53-210K	53~ 70	117	26	50	65	-Q26-140	—	26-RAC 53- 70K	SC12	6.9	1
	-240K		182				-Q26-170N	—			7.0	
	-270K		177				-Q26-140	SP26-26-60			7.6	2
	-RAC 70-255K	70~100	205	34	64	80	-Q34-170	—	34-RAC 70- 85K	SC12	9.5	1
	-285K		235				-Q34-200	—			9.9	
	-315K		265				-Q34-170	SP34-34-60			10.9	2
	-RAC100-225K	100~130	225	42	83	83	-Q42-125	—	42-RAC100-100K	SC12	12.5	1
	-290K		290				-Q42-190	—			15.2	
	-325K		325				-Q42-225A	—			16.5	2

★“C” grade (Coated) inserts are supplied as standard with the head. P.78 Please refer P.116 for cutting condition.  
 ★Please refer P.101 for base holder, P.102 for spacer and P.79 for head.  
 ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-RAC53-210K-C  
 ★BT50-RAC100-375K, 425K and 475K are also available.

## Insert tip for RAC-K

● : best ○ : good

Material	Steel	●	○		
	Stainless Steel	●	○		
Material	Cast Iron	○	●		
	Aluminium	○	○		
Applicable Arbor	Dimension	Code No.	Nose R	Coated Carbide M	Coated Carbide K
				Grade	C
Material	AC630M	AC410K			
			RAC25K, RAC32K		SC09-○4
RAC43K-RAC100K		SC12-○8	0.8	●	●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. SC12-C8 (AC630M)

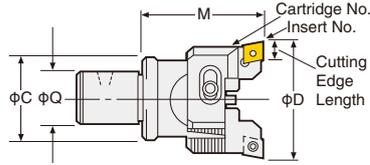
★Minimum order quantity : 10pcs.

BT

# MODULAR TYPE RAC BORING HEAD

**NIKKEN**

## RAC-E Balance-Cut Boring Head



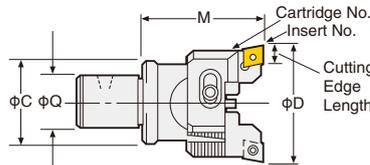
For Steel, Stainless Steel and Cast Iron  
CC Insert (Positive type)

P.72

Head Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	Cartridge No.	Insert No.	Cutting Edge Length	Weight (Kg)
12-RAC 25 - 55E	25 ~ 32	55	12	24	RCC-025E	CC07	8.0	0.4
16-RAC 32 - 55E	32 ~ 45		16	31	RCC- 32E	CC08	9.7	0.5
20-RAC 43 - 70E	43 ~ 55	70	20	40	RCC- 43E	CC12	12.9	0.7
26-RAC 53 - 70E	53 ~ 70		26	50	RCC- 53E			0.8
26-RAC 70 - 70E	70 ~ 100		85	34	64			RCC- 70E
34-RAC 70 - 85E		1.5						
42-RAC100 -100E	100 ~ 130	100	42	83	RCC-100E			2.9

★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. ★Insert tips are supplied as an option. P.72 Please refer P.116 for cutting condition.  
★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. 26-RAC53-70E-C

## RAC Balance-Cut Boring Head



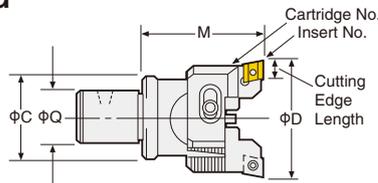
For Heavy Duty Boring of Iron and Cast Iron  
CN Insert (Negative type)

P.74

Head Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	Cartridge No.	Insert No.	Cutting Edge Length	Weight (Kg)
20-RAC 43 - 70	43 ~ 55	70	20	40	RCC- 43	CN08	12.9	0.7
26-RAC 53 - 70	53 ~ 70		26	50	RCC- 53			0.8
26-RAC 70 - 70	70 ~ 100	85	34	64	RCC- 70			1.0
34-RAC 70 - 85					1.5			
42-RAC100 -100	100 ~ 130	100	42	83	RCC-100			2.9

★Insert tips are supplied as an option. P.74 Please refer P.116 for cutting condition.  
★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. 26-RAC53-70-C

## RAC-A Balance-Cut Boring Head



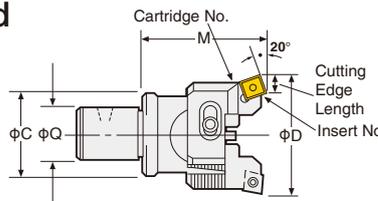
For Aluminum

P.76

Head Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	Cartridge No.	Insert No.	Cutting Edge Length	Weight (Kg)
12-RAC 25 - 55A	25 ~ 32	55	12	24	RAC- 25A	AEG12	9.5	0.4
16-RAC 32 - 55A	32 ~ 45		16	31	RAC- 32A		0.5	
20-RAC 43 - 70A	43 ~ 55	70	20	40	RAC- 43A	AEG16	15.875	0.7
26-RAC 53 - 70A	53 ~ 70		26	50	RAC- 53A			0.8
26-RAC 70 - 70A	70 ~ 100		85	34	64			RAC- 70A
34-RAC 70 - 85A		1.5						
42-RAC100 -100A	100 ~ 130	100	42	83	RAC-100A			2.9

★Insert tips are supplied as an option. P.76 Please refer P.116 for cutting condition.  
★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. 26-RAC53-70A-C

## RAC-K Balance-Cut Boring Head



For Through Hole and Multi Sheets

P.78

Head Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	Cartridge No.	Insert No.	Cutting Edge Length	Weight (Kg)
12-RAC 25 - 55K	25 ~ 32	55	12	24	RAC- 25K	SC09	7.4	0.4
16-RAC 32 - 55K	32 ~ 45		16	31	RAC- 32K		0.5	
20-RAC 43 - 70K	43 ~ 55	70	20	40	RAC- 43K	SC12	11.9	0.7
26-RAC 53 - 70K	53 ~ 70		26	50	RAC- 53K			0.8
26-RAC 70 - 70K	70 ~ 100		85	34	64			RAC- 70K
34-RAC 70 - 85K		1.5						
42-RAC100 -100K	100 ~ 130	100	42	83	RAC-100K			2.9

★Insert tips are supplied as an option. P.78 Please refer P.116 for cutting condition.  
★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. 26-RAC53-70K-C

BT

# CARTRIDGE for RAC BORING HEAD

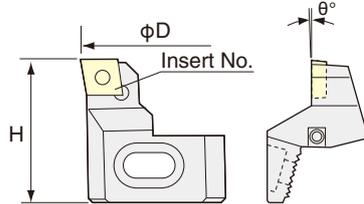


B1

RAC Base ( ) is common for all types of cartridges.  
Please select suitable cartridge and insert tip for your application such as material and machining.

For Steel, Stainless Steel and Cast Iron  
CC Insert (Positive type)

## S.RCC-E Cartridge

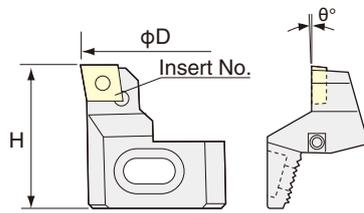


Set Code No.	Boring Range D	H	θ	Insert Code No.	
				Steel, Stainless Steel	Cast Iron
S.RCC- 25E	25 ~ 32	41	0°	CC08-C (AC630M)	CC08-C (AC410K)
				CC07-C (AC630M)	CC07-C (AC410K)
- 32E	32 ~ 45	41		CC08-C (AC630M)	CC08-C (AC410K)
- 43E	43 ~ 55	46			
- 53E	53 ~ 70	50	+3°	CC12-C (AC630M)	CC12-C (AC410K)
- 70E	70 ~ 100	55			
-100E	100 ~ 130	57			

★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E.  
★Insert tips are supplied as an option. P.72 Please refer P.116 for cutting condition.  
★Please order set of cartridges. e.g S.RCC-70E  
★2 stepped balance cut with H=0.3 cartridge is also available. e.g. S.RCC-70E (0.3)

For Heavy Duty Boring of Iron and Cast Iron  
CN Insert (Negative type)

## S.RCC Cartridge

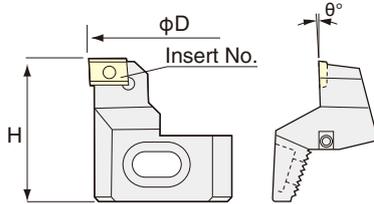


Set Code No.	D	H	θ	Insert Code No.	
				Iron and Cast Iron	
S.RCC- 43	43 ~ 55	46	-3°	CN08	
- 53	53 ~ 70	50			
- 70	70 ~ 100	55			
-100	100 ~ 130	57			

★Insert tips are supplied as an option. P.74 Please refer P.116 for cutting condition.  
★Please order set of cartridges. e.g S.RCC-70  
★When CN08 insert (CN00120400) in the market is used, please use the eccentric bolt type cartridge (S.RCC-00Q) P.113. Nikken CN08-08 insert can be used on the eccentric bolt type cartridge.

For Aluminum

## S.RCC-A Cartridge

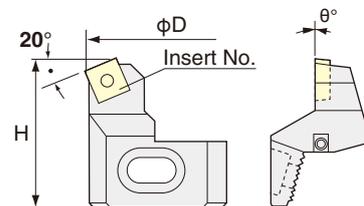


Set Code No.	D	H	θ	Insert Code No.	
				For Aluminum	
S.RCC- 25A	25 ~ 32	38	+6°	AEG12	
- 32A	32 ~ 45	41			
- 43A	43 ~ 55	46		AEG16	
- 53A	53 ~ 70	50			
- 70A	70 ~ 100	55			
-100A	100 ~ 130	57			

★Insert tips are supplied as an option. P.76 Please refer P.116 for cutting condition.  
★Please order set of cartridges. e.g S.RCC-70A  
★2 stepped balance cut with H=0.3 cartridge is also available. e.g. S.RCC-70A (0.3)  
★S.RCC-A cartridge can be used for the bottom face finishing of iron and cast iron.

For Through Hole and Multi Sheets

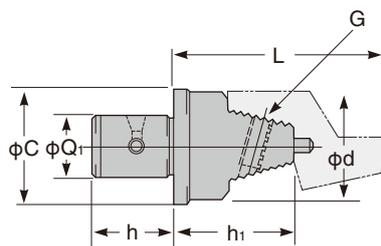
## S.RCC-K Cartridge



Set Code No.	D	H	θ	Insert Code No.	
				Steel, Stainless Steel	Cast Iron
S.RCC- 25K	25 ~ 32	41	0°	SC09-C (AC630M)	SC09-C (AC410K)
- 32K	32 ~ 45	41			
- 43K	43 ~ 55	46			
- 53K	53 ~ 70	50		SC12-C (AC630M)	SC12-C (AC410K)
- 70K	70 ~ 100	55			
-100K	100 ~ 130	57			

★Insert tips are supplied as an option. P.78 Please refer P.116 for cutting condition.  
★Please order set of cartridges. e.g S.RCC-70E

## Dimension of RAC Base



Code No.	Boring Range D	h	h <sub>1</sub>	C	G	d
12-RAC025- 55B						
16-RAC 32- 55B	32~45	22	31	31	M6	30
20-RAC 43- 70B						
26-RAC 53- 70B	53~70	24	42	40	M8	35
26-RAC 70- 70B						
34-RAC 70- 85B	70~100	28	40	50	M8	45
42-RAC100-100B						
	100~130	36	53	64	M8	60
	100~130	42	66	83	M8	70

★Dimension "L" is "58mm" in combination of RCC-25K and 12-RAC25-55B.  
★For centre through tool coolant type except 26-RAC70-70B, please add "-C" at the end of Code No. e.g. 34-RAC70-85B-C

# BALANCE-CUT RAC BORING ARBOR for LARGE DIA.

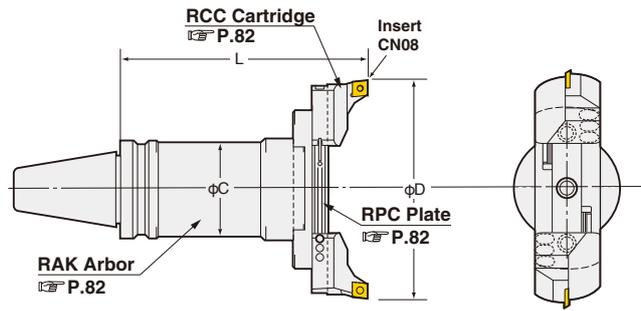


**For Roughing**

- With the screws for slight adjustment
- Boring Dia. :  $\phi 130 \sim \phi 580\text{mm}$



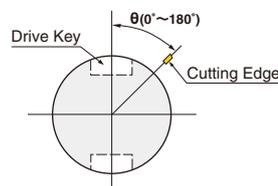
RAC



Boring Dia. :  $\phi 130 \sim 580\text{mm}$

TAPE	Code.No	D	L	C	RAK Arbor Code No.	RPC Plate No.	RCC Cartridge No.	Weight (Kg)			
		MIN. ~ MAX.									
<b>No.40</b>	<b>BT40-RAC130-205</b>	130~180	205	61	<b>BT40-RAK-130A</b>	<b>RPC-130</b>		7.0			
	<b>(IT40)-RAC180-205</b>	180~230						8.0			
<b>No.50</b>	<b>BT50-RAC130-185</b>	130~180	185	90	<b>BT50-RAK-110A</b>	<b>RPC-130</b>	For Heavy Duty Boring of Iron and Cast Iron RCC-130 x2 Insert Tip CN08	9.8			
	<b>(IT50)-235</b>		235					-160A	12.5		
	<b>-285</b>		285					-210A	15.2		
	<b>-335</b>		335					-260A	17.9		
	<b>-385</b>		385					-310A	20.6		
	<b>-435</b>		435					-360A	23.3		
	<b>-485</b>		485					-410A	26.0		
	<b>-RAC180-185</b>		185					-RAK-110A	10.4		
	<b>-235</b>	235	-160A		13.1						
	<b>-285</b>	285	-210A		15.8						
	<b>-335</b>	335	-260A		18.5						
	<b>-385</b>	385	-310A		21.2						
	<b>-435</b>	435	-360A		23.9						
	<b>-485</b>	485	-410A		26.6						
	<b>-RAC230-185</b>	185	-RAK-110A		11.1						
	<b>-235</b>	235	-160A		13.8						
	<b>-285</b>	285	-210A		16.5						
	<b>-335</b>	335	-260A		19.2						
	<b>-385</b>	385	-310A		21.9						
	<b>-435</b>	435	-360A		24.6						
	<b>-485</b>	485	-410A		27.3						
	<b>-RAC280-185</b>	185	-RAK-110A		11.7						
	<b>-235</b>	235	-160A		14.4						
	<b>-285</b>	285	-210A		17.1						
	<b>-335</b>	335	-260A		19.8						
	<b>-385</b>	385	-310A		22.5						
	<b>-435</b>	435	-360A		25.2						
	<b>-485</b>	485	-410A		27.9						
	<b>-RAC330-210*</b>	330~380	210 (220*)		98	<b>BT50-RAK330-125</b> <b>IT50-RAK330-135</b>		<b>RPC-330</b>		16.0	
	<b>-RAC380-210*</b>	380~430								-380	17.0
	<b>-RAC430-210*</b>	430~480								-430	18.0
	<b>-RAC480-210*</b>	480~530								-480	19.0
<b>-RAC530-210*</b>	530~580	-530		20.0							

- ★The Code No. on above table are the boring arbors with **RCC-130** cartridge (Insert tip: **CN08**) the Heavy Duty Boring of Iron and Cast Iron. Please refer P.116 for cutting condition.
- ★Boring arbor with cartridges & insert for Steel, Stainless Steel and Cast Iron (E), for Aluminum (A) and for Through Hole & Multi Sheets (K) are available. Please refer P.82 for cartridges. e.g. **BT50-RAC130-185E**
- ★Please refer P.82 for **RAK** arbor and **RPC** plate.
- ★Arbor, plate and cartridges are delivered in separate packages.
- ★Please check the interference of the arbor with your M/C not to occur the interference in the tool magazine.
- ★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify  $\theta$ . e.g. **BT50-RAC180-235 (90°)**
- ★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. **BT50-RAC130-185-C**
- ★The boring arbors marked \* with **IT50**, L (gauge length) is 220. e.g. **IT50-RAC330-220**



View from Cutting Edge

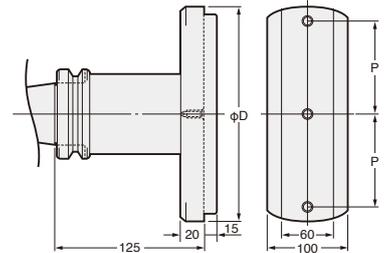
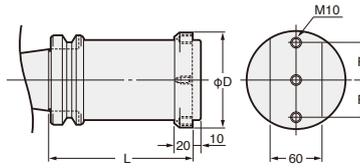


High Pressure Coolant Through Tool

# MODULAR TYPE ARBOR



## BALANCE CUT RAK BORING ARBOR for LARGE DIA. <RAK Arbor>



RAK

Fig.1

Fig.2

Code No.	Boring Range	L	D	P	Weight (Kg)	Applicable RPC Plate	Hex. Socket bolt	Fig.
BT40-RAK-130A (IT40)	130~230	130	102	35	4.9	RPC-130, 180	M1035	1
BT50-RAK-110A (IT50)-RAK-160A	130~330	110			7.2	RPC-130, 180, 230, 280		
-RAK-210A		160			9.9			
-RAK-260A		210			12.6			
-RAK-310A		260			15.3			
-RAK-360A		310			18.0			
-RAK-410A		360			20.7			
-RAK330-125*	330~580	410			23.4	RPC-330, 380, 430, 480, 530		

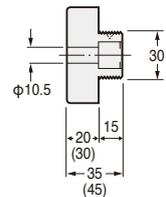
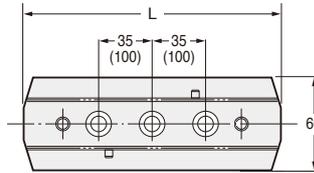
★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify  $\theta$ . e.g. BT50-RAK-160A (90°)

★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. BT50-RAK-160A-C 2 set of coolant nozzles are standard accessory.

★IT40-RAK-130 is available. ★\*: In case of IT50, IT50-RAK-330-135 is standard gauge length.



## BALANCE CUT PLATE for LARGE DIA. <RPC Plate>



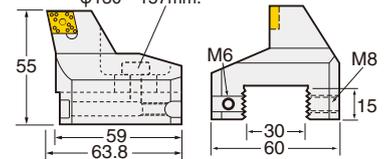
Dimensions in ( ) are for RPC-330, 380, 430, 480 and 530.

Code No.	Boring Range	L	Weight (Kg)	Code No.	Boring Range	L	Weight (Kg)	Code No.	Boring Range	L	Weight (Kg)
RPC-130	$\phi 130 \sim 180$	118	1.4	RPC-330	$\phi 330 \sim 380$	316	5.3	RPC-530	$\phi 530 \sim 580$	516	8.7
-180	$\phi 180 \sim 230$	166	2.0	-380	$\phi 380 \sim 430$	366	6.1				
-230	$\phi 230 \sim 280$	216	2.7	-430	$\phi 430 \sim 480$	416	7.0				
-280	$\phi 280 \sim 330$	266	3.3	-480	$\phi 480 \sim 530$	466	7.9				

## Accessories for Balance-Cut RAC



**Cartridge Lock Bolt**  
Please remove the bolt when using RAC-130 type for  $\phi 130 \sim 157$ mm.



Weight : 0.6Kg

Accessories	Insert Tip	Clamp Bolt	Adjust Screw	Adjust Wrench	Wrench for Insert	Set Screw (M8)	L-Wrench for M815 Bolt	Hex Socket Bolt	Applicable RPC Plate
Code No.	*	CSM-70	M540	M3	20S	M815	M4	M625	RPC-130, 180, 230, 280, 330, 380, 430, 480, 530

★\*: The insert tip is RCC-130: CN08 (P.74), RCC-130E: CC12 (P.72), RCC-130A: AEG16 (P.76), RCC-130K: SC12 (P.78) Please refer P.116 for cutting condition.

★There are two different types clamping system. One is eccentric system, the other is screw on system. Above parts are for screw on system.

★Code No. RCC-130 indicates a single cartridge. When ordering a pair cartridge, please appoint to us Code No. S.RCC-130.

★The Code No. of the cartridges for 2 stepped balance cut is SRCC-130-0.3

# ZMAC ADVANCED BORING ARBOR (ZMAC-V)



## Boring for Finishing



ZMAC-V

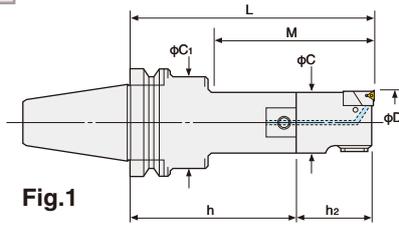


Fig.1

Only for ZMAC16-V

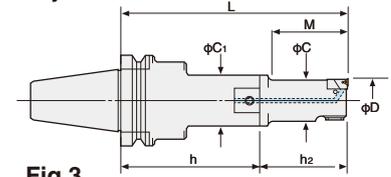


Fig.3

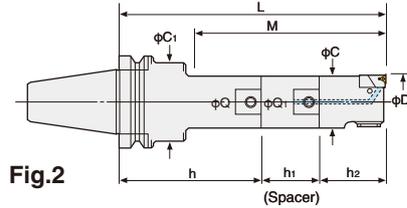


Fig.2

ZMAC100-V, 140-V

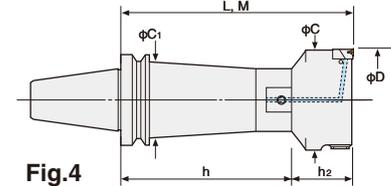


Fig.4

Code No. of the insert tip are shown.

PAT.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C1	Shank Code No.	Extension Spacer Code No.	P.119		Weight (kg)	Fig.
								Head No.	Insert No.		
								BT No.-Q-h	Q-Q1-h1		
No.40	BT40-ZMAC16 -125V (IT40) -135V	15.9~20.2	38	15	24	BT40-Q12- 80	-	12-ZMAC16-45V	3MP-C,B	1.9	3
	-ZMAC20 -120V		48					12-ZMAC16-55V			
	-135V	19.8~25.2	45	19	30	-Q 9- 80	-	9-ZMAC20-40V		1.9	1
	-150V		67					-Q 9- 95N		2.0	
	-ZMAC25 -120V	24.8~32.2	75	24	35	-Q12- 80	SP9-9-30	12-ZMAC25-40V		2.1	2
	-150V		52					-Q12-110		2.1	
	-165V		90					-Q12- 80		2.5	
	-ZMAC32 -150V	31.8~42.2	77	31	42	-Q16- 95	-	16-ZMAC32-55V		2.7	4MP-C,B
	-180V		110					-Q16-125		2.7	
	-195V		122					-Q16- 95		3.0	
	-ZMAC42 -150V		97					-Q20- 80		3.2	
	-180V	41.8~55.2	130	40	50	-Q20- 80	-	20-ZMAC42-70V		3.5	6MP-C,B
	-210V		157					-Q20- 80		3.9	
	-ZMAC55 -165V		135					-Q26- 95		4.6	
	-210V	54.8~70.2	180	53	50	-Q26-140	-	26-ZMAC55-70V		4.6	1
	-225V		195					-Q26- 95		5.4	
	-ZMAC70 -165V		165					-Q34- 95		5.8	
	-180V	69.8~85.2	180	67	64	-Q34-110	-	34-ZMAC70-70V		6.8	2
	-225V		225					-Q34- 95		9.0	
	-ZMAC85 -195V	84.8~100.2	195	83	62	-Q42- 95	-	42-ZMAC85-100V		1	

★MIN. dial readout : ZMAC25-V & smaller is 0.02mm on diameter. ZMAC32-V and larger are 0.01mm on diameter.

★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). Please refer P.117 for cutting condition.

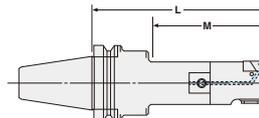
We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

★Please refer P.101,P102 for Shank & Spacer, and P.87, P.88 for Head.

★Centre Through Tool Coolant function is available as standard.

★For BT30, modular connection system is applied. Please refer P.101 for Base Holder.

★When L length is required longer than standard, please specify boring depth M.



High Pressure Coolant Through Tool

### Boring Arbor with Extension Spacer



### ZMAC-V for Multi-Stage Boring Bar

Please contact us for the special boring bar.



# ZMAC ADVANCED BORING ARBOR (ZMAC-V)



■ With ZMAC $\alpha$ -V Boring Head  
Please add "AA" at the end of Code No.  
e.g. BT40-ZMAC42-150AAV



ZMAC $\alpha$ -V

Diameter can be adjusted easily and quickly by new handle with wrench.



Unlock

Adjust diameter

Lock

Code No. of the insert tip are shown.

PAT.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Extension Spacer Code No.	P.119		Weight (kg)	Fig.		
								Head No.	Insert No.				
								Q- Min.D -h <sub>2</sub>					
No.50	BT50-ZMAC16 -140V (IT50) -150V	15.9~20.2	38	15	24	BT50-Q12- 95	—	12-ZMAC16-45V	3MP-C,B	4.7	3		
	12-ZMAC16-55V		4.7										
	-ZMAC20 -150V	19.8~25.2	45	19	40	-Q 9-110	9-ZMAC20-40V	3MP-C,B	4.8	4.8	1		
	-165V		67			-Q 9-125N						4.9	
	-180V		75			-Q 9-110							SP9-9-30
	-ZMAC25 -135V	24.8~32.2	52	24	44	-Q12- 95	12-ZMAC25-40V	4MP-C,B	4.8	4.8	1		
	-165V		90			-Q12-125						4.9	
	-180V		97			-Q12- 95							SP12-12-45
	-ZMAC32 -180V	31.8~42.2	77	31	50	-Q16-125N	16-ZMAC32-55V	4MP-C,B	5.5	5.6	1		
	-210V		110			-Q16-155						5.7	
	-225V		122			-Q16-125N							SP16-16-45
	-ZMAC42 -180V	41.8~55.2	97	40	60	-Q20-110	20-ZMAC42-70V	6MP-C,B	6.0	6.0	1		
	-195V		130			-Q20-125						6.4	
	-225V		142			-Q20-110							SP20-20-45
	-240V		157			-Q20-110						SP20-20-60	2
	-ZMAC55 -210V		54.8~70.2			117						53	65
	-240V	182		-Q26-170N	8.1								
	-270V	177		-Q26-140		SP26-26-60	2						
	-ZMAC70 -240V	69.8~85.2	190	67	80	-Q34-170	34-ZMAC70-70V	6MP-C,B	10.0	10.6	1		
	-270V		220			-Q34-200						11.5	
	-300V		250			-Q34-170							SP34-34-60
	-ZMAC85 -225V	84.8~100.2	182	83	83	-Q42-125	42-ZMAC85-100V	6MP-C,B	12.5	15.0	1		
	-290V		247			-Q42-190						16.0	
	-315V		272			-Q42-125							SP42-42-90
	-ZMAC100-225V	99.5~140.5	225	95	98	-Q42-125	42-ZMAC100-100V	6MP-C,B	12.4	15.1	4		
	-290V		290			-Q42-190						17.8	
	-325V		325			-Q42-225A							20.5
	-375V		375			-Q42-275A						23.2	
	-425V		425			-Q42-325A							13.8
	-ZMAC140-225V	139.5~180.5	225	135	98	-Q42-125	42-ZMAC140-100V	6MP-C,B	13.8	16.5	4		
-290V	290		-Q42-190			19.2							
-325V	325		-Q42-225A									21.9	
-375V	375		-Q42-275A			24.6							
-425V	425		-Q42-325A									24.6	

★MIN. dial readout : ZMAC25-V & smaller is 0.02mm on diameter. ZMAC32-V and larger are 0.01mm on diameter.

★When L length is required longer than standard, please specify boring depth M. ★Centre Through Tool Coolant function is available as standard.

★"C" grade (Coated) insert for Steel, Stainless&Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). P.119

We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron. Please refer P.117 for cutting condition.

★Please refer P.101,P102 for Shank & Spacer, and P.87, P.88 for Head.

# ZMAC ADVANCED BORING ARBOR (ZMAC-VR)



## Boring for Semi-Finishing—ZMAC-VR



ZMAC-VR

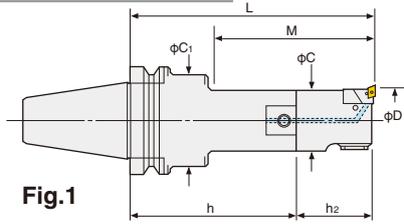


Fig.1

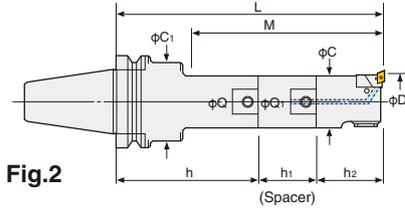


Fig.2

ZMAC100-VR, 140-VR

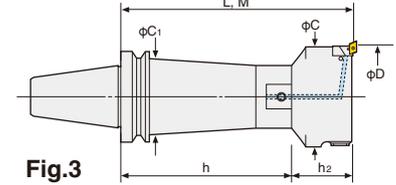


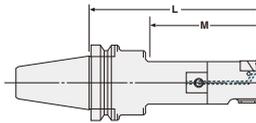
Fig.3

Code No. of the insert tip  are shown.

PAT.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Extension Spacer Code No.	P.86		Weight (kg)	Fig.	
								Head No.	Insert No.			
						BT No.-Q-h	Q-Q1-h1	Q- Min.D -h2				
No.40	BT40-ZMAC32R -150V	31.8~42.2	77	31	42	BT40-Q16- 95	—	16-ZMAC32R-55V	CC06-C	2.5	1	
	(IT40) -180V		110			-Q16-125				2.7		
	-195V		122			-Q16- 95				SP16-16-45		2.7
		-ZMAC42R -150V	41.8~55.2	97	40	50	-Q20- 80	—	20-ZMAC42R-70V	CC06-C	3.0	1
		-180V		130			-Q20-110				3.2	
		-210V		157			-Q20- 80				SP20-20-60	
		-ZMAC55R -165V	54.8~70.2	135	53	50	-Q26- 95	—	26-ZMAC55R-70V	CC06-C	3.9	1
		-210V		180			-Q26-140				4.6	
		-225V		195			-Q26- 95				SP26-26-60	
		-ZMAC70R -165V	69.8~85.2	165	67	64	-Q34- 95	—	34-ZMAC70R-70V	CC08-C	5.4	1
		-180V		180			-Q34-110				5.8	
		-225V		225			-Q34- 95				SP34-34-60	
	-ZMAC85R -195V	84.8~100.2	195	83	62	-Q42- 95	—	42-ZMAC85R-100V		9.0	1	

- ★MIN. dial readout : ZMAC25-VR & smaller is 0.02mm on diameter. ZMAC32-VR and larger are 0.01mm on diameter.
- ★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  P.86 Please refer  P.117 for cutting condition. We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.
- ★Please refer  P.101, P.102 for Shank & Spacer, and  P.87, P.88 for Head.
- ★Centre Through Tool Coolant function is available as standard.
- ★For BT30, modular connection system is applied. Please refer  P.101 for Base Holder.
- ★When L length is required longer than standard, please specify boring depth M.



### Boring Arbor with Extension Spacer

### ZMAC-V for Multi-Stage Boring Bar

Please contact us for the special boring bar.



High Pressure Coolant Through Tool

# ZMAC ADVANCED BORING ARBOR (ZMAC-VR)



## Insert Tip for ZMAC-VR

● : best ○ : good

Material	Steel		●	
	Stainless Steel		●	
	Cast Iron		○	●
Aluminium				
High Speed finish for Cast Iron				
Hardened Steel				
High Speed finish for Aluminium				
			Coated Carbide M	Coated Carbide K
			Grade C	
			Material	
			Nose R	
			AC630M	AC410K

Applicable Arbor	Dimension	Code No.	Nose R	AC630M	AC410K
ZMAC32-VR, ZMAC42-VR, ZMAC55-VR		CC06-○4	0.4	●	●
		CC06-○8	0.8	●	●
ZMAC70-VR, ZMAC85-VR		CC08-○4	0.4	●	●
		CC08-○8	0.8	●	●
ZMAC100-VR, ZMAC140-VR		CC12-○4	0.4	●	●
		CC12-○8	0.8	●	●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. CC12-C8 (AC630M)

There is the CBN insert tip which both corners can be used. Please refer P.120 for ISO code of the insert tip.



Code No. of the insert tip are shown.

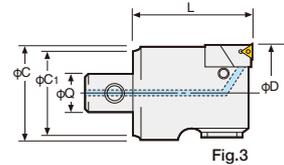
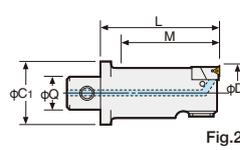
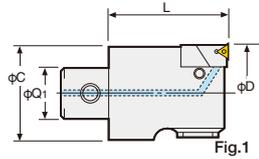
TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Extension Spacer Code No.	P.86		Weight (kg)	Fig.
								Head No.	Insert No.		
								BT No.-Q-h	Q-Q <sub>1</sub> -h <sub>1</sub>		
No.50	BT50-ZMAC32R -180V	31.8~42.2	77	31	50	BT50-Q16-125N	—	16-ZMAC32R-55V	CC06-C	5.5	1
	(IT50) -210V		110			-Q16-155	5.6				
	-225V		122			-Q16-125N	SP16-16-45			5.7	
	-ZMAC42R -180V	41.8~55.2	97	40	60	-Q20-110	—	20-ZMAC42R-70V	CC06-C	6.0	1
	-195V		130			-Q20-125	6.0				
	-225V		142			-Q20-110	SP20-20-45			6.4	
	-240V		157			SP20-20-60	6.5				
	-ZMAC55R -210V		117			-Q26-140	—			7.5	1
	-240V	182	-Q26-170N	—	7.6						
	-270V	177	-Q26-140	SP26-26-60	8.1	2					
	-ZMAC70R -240V	69.8~85.2	190	67	80	-Q34-170	—	34-ZMAC70R-70V	CC08-C	10.0	1
	-270V		220			-Q34-200	10.6				
	-300V		250			-Q34-170	SP34-34-60			11.5	2
	-ZMAC85R -225V		182			-Q42-125	—			12.5	1
	-290V	247	-Q42-190	—	15.0						
	-315V	272	-Q42-125	SP42-42-90	16.0	2					
	-ZMAC100R-225V	99.5~140.5	225	95	98	-Q42-125	—	42-ZMAC100R-100V	CC12-C	12.4	3
	-290V		290			-Q42-190	15.1				
	-325V		325			-Q42-225A	—			17.8	
	-375V		375			-Q42-275A	—			20.5	
	-425V		425			-Q42-325A	—			23.2	
	-ZMAC140R-225V	139.5~180.5	225	135	98	-Q42-125	—	42-ZMAC140R-100V	CC12-C	13.8	
	-290V		290			-Q42-190	16.5				
	-325V		325			-Q42-225A	—			19.2	
-375V	375		-Q42-275A			—	21.9				
-425V	425		-Q42-325A			—	24.6				

★MIN. dial readout : ZMAC25-VR & smaller is 0.02mm on diameter. ZMAC32-VR and larger are 0.01mm on diameter.  
 ★When L length is required longer than standard, please specify boring depth M. ★Centre Through Tool Coolant function is available as standard.  
 ★“C” grade (Coated) insert for Steel, Stainless&Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). P.86  
 We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron. Please refer P.117 for cutting condition.  
 ★Please refer P.101,P.102 for Shank & Spacer, and P.87, P.88 for Head.

# MODULAR TYPE ZMAC ADVANCED BORING HEAD **NIKKEN**

BT

## ZMAC-V Triangular Insert type head



PAT. 

Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)
				C	C1	Unit No.	Insert No.	Fig.	
12-ZMAC 16- 45V	15.9~20.2	38	12	15	24	M 2HZ- 16V	3MP-C,B	2	0.4
12-ZMAC 16- 55V		48							0.4
9-ZMAC 20- 40V	19.8~25.2	40	9	19	24	M 2HZ- 20V	4MP-C,B	1	0.4
12-ZMAC 25- 40V	24.8~32.2		12			M 3HZ- 25V			0.5
16-ZMAC 32- 55V	31.8~42.2	55	16	31	-	M 4HZ- 32V	6MP-C,B	1	0.7
20-ZMAC 42- 70V	41.8~55.2	20	40	M 5HZ- 42V		1.1			
26-ZMAC 55- 70V	54.8~70.2	70	26	53	-	M 5HZ- 55V	6MP-C,B	1	1.2
34-ZMAC 70- 70V	69.8~85.2		34	67		M 7HZ- 70V			2.0
42-ZMAC 85-100V	84.8~100.2	100	42	83	-	M10HZ- 85V	6MP-C,B	1	4.3
42-ZMAC100-100V	99.5~140.5			95		83			M10HZ-100V
42-ZMAC140-100V	139.5~180.5	100	42	135	83	M10HZ-140V	6MP-C,B	3	6.3

★MIN. dial read out: ZMAC25-V and smaller is 0.02mm on dia.

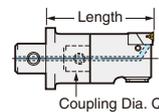
ZMAC32-V and larger is 0.01mm on dia.

★The above boring ranges are based on heads with Nose/R 0.2 insert.

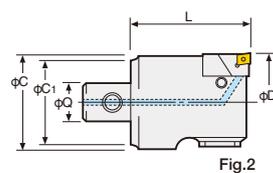
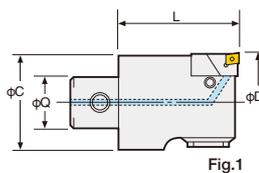
★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  P.119 Please refer  P.117 for cutting condition. We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

★Centre Through Tool Coolant function is available as standard.

★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-LengthV e.g. Q26-20-ZMAC42-100V



## ZMAC-VR Rhomboid Insert type head



PAT. 

Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)
				C	C1	Unit No.	Insert No.	Fig.	
16-ZMAC 32R - 55V	31.8~42.2	55	16	31	-	M 4HZ- 32VR	CC06-C	1	0.7
20-ZMAC 42R - 70V	41.8~55.2					20			40
26-ZMAC 55R - 70V	54.8~70.2	70	26	53	-	M 5HZ- 55VR	CC08-C	1	1.2
34-ZMAC 70R - 70V	69.8~85.2					34			67
42-ZMAC 85R -100V	84.8~100.2	100	42	83	-	M10HZ- 85VR	CC12-C	2	4.3
42-ZMAC 100R -100V	99.5~140.5			95		83			M10HZ-100VR
42-ZMAC 140R -100V	139.5~180.5	100	42	135	83	M10HZ-140VR	CC12-C	2	6.3

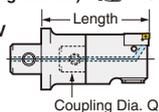
★MIN. dial read out: ZMAC25-VR and smaller is 0.02mm on dia.

ZMAC32-VR and larger is 0.01mm on dia.

★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  P.86 Please refer  P.117 for cutting condition.

★Centre Through Tool Coolant function is available as standard.

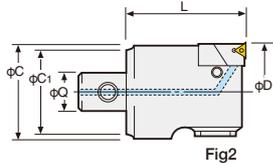
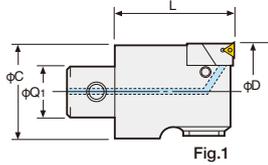
★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-LengthV e.g. Q26-20-ZMAC42R-100V



# MODULAR TYPE ZMAC& ADVANCED BORING HEAD **NIKKEN**

## For High Speed/Deep Hole Boring

ZMAC&-V  Triangular Insert type head



PAT. 

Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)			
				C	C1	Unit No.	Insert No.	Fig.				
12-ZMAC 25- 40AAV	24.8~32.2	40	12	24	-	M 3HZ- 25V	3MP-C,B	1	0.4			
16-ZMAC 32- 55AAV	31.8~42.2	55	16	31		M 4HZ- 32V	4MP-C,B		0.5			
20-ZMAC 42- 70AAV	41.8~55.2	70	20	40		M 5HZ- 42V	6MP-C,B		2	0.8		
26-ZMAC 55- 70AAV	54.8~70.2		26	53		M 5HZ- 55V				0.7		
34-ZMAC 70- 70AAV	69.8~85.2		34	67		M 7HZ- 70V				1.1		
42-ZMAC 85-100AAV	84.8~100.2	100	42	83		M10HZ- 85V				6MP-C,B	2	2.3
42-ZMAC100-100AAV	99.5~140.5		95	83		M10HZ-100V						2.8
42-ZMAC140-100AAV	139.5~180.5		135		M10HZ-140V	3.1						

★MIN. dial read out: ZMAC25&-V and smaller is 0.02mm on dia.

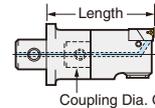
ZMAC32&-V and larger is 0.01mm on dia.

★The above boring ranges are based on heads with Nose/R 0.2 insert.

★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  P.119 Please refer  P.117 for cutting condition. We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

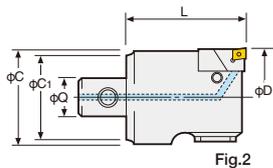
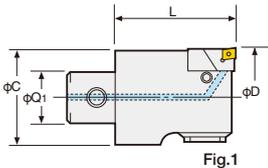
★Centre Through Tool Coolant function is available as standard.

★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-Length AAV e.g. Q26-20-ZMAC42-100AAV



## For High Speed/Deep Hole Boring

ZMAC& - VR  Rhomboid Insert type head



PAT. 

Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)		
				C	C1	Unit No.	Insert No.	Fig.			
16-ZMAC 32R - 55AAV	31.8~42.2	55	16	31	-	M 4HZ- 32VR	CC06-C	1	0.5		
20-ZMAC 42R - 70AAV	41.8~55.2	70	20	40		M 5HZ- 42VR			0.8		
26-ZMAC 55R - 70AAV	54.8~70.2		26	53		M 5HZ- 55VR			0.7		
34-ZMAC 70R - 70AAV	69.8~85.2		34	67		M 7HZ- 70VR			1.1		
42-ZMAC 85R -100AAV	84.8~100.2	100	42	83		M10HZ- 85VR			CC08-C	2	2.3
42-ZMAC 100R -100AAV	99.5~140.5		95	83		M10HZ-100VR					2.8
42-ZMAC 140R -100AAV	139.5~180.5		135			M10HZ-140VR					3.1

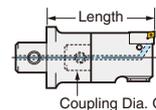
★MIN. dial read out: ZMAC25&-VR and smaller is 0.02mm on dia.

ZMAC32&-VR and larger is 0.01mm on dia.

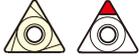
★“C” grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  P.86 Please refer  P.117 for cutting condition. We would recommend “B” grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.

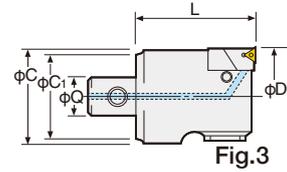
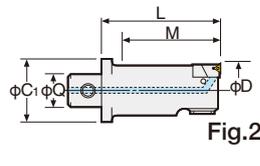
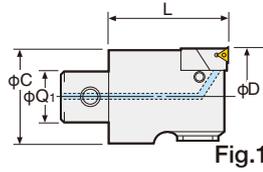
★Centre Through Tool Coolant function is available as standard.

★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-Length AAV e.g. Q26-20-ZMAC42R-100AAV



# MODULAR TYPE ZMAC ADVANCED (ISO) BORING HEAD **NIKKEN**

ZMAC-V-I  Triangular Insert type head

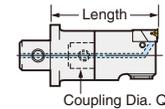


PAT.  P.119

Boring head for ISO insert tip widely available on the market.  
\* Only insert clamp bolts are supplied (Insert tips are not supplied).

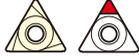
Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)		
				C	C <sub>1</sub>	Unit No.	Insert No.	チップクランプボルトネジサイズ		Fig.	
16-ZMAC 32- 55V-I	31.8~42.2	55	16	31	-	M 4HZ- 32V-I	TC□□0902□□L	M2.2	1	0.7	
20-ZMAC 42- 70V-I	41.8~55.2	70	20	40		M 5HZ- 42V(M3)	TP□□1103□□L			M3	1.1
26-ZMAC 55- 70V-I	54.8~70.2		26	53		M 5HZ- 55V(M3)					1.2
34-ZMAC 70- 70V-I	69.8~85.2		34	67		M 7HZ- 70V(M3)					2.0
42-ZMAC 85-100V-I	84.8~100.2	100	42	83		M10HZ- 85V(M3)					M3
42-ZMAC100-100V-I	99.5~140.5			95	83	M10HZ-100V(M3)		4.9			
42-ZMAC140-100V-I	139.5~180.5			135	M10HZ-140V(M3)	6.3					

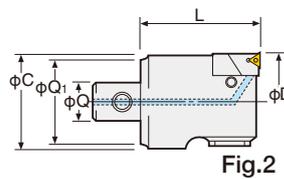
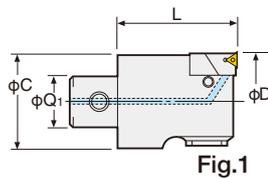
★MIN. dial read out: ZMAC32-V-I and larger is 0.01mm on dia. (Sub scale : 0.005)  
★The above boring ranges are based on heads with Nose/R 0.2 insert.  
★Centre Through Tool Coolant function is available as standard.  
★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-LengthV-I e.g. Q26-20-ZMAC42-100V-I



# MODULAR TYPE ZMAC & ADVANCED (ISO) BORING HEAD **NIKKEN**

**For High Speed/Deep Hole Boring**

ZMAC&-V-I  Triangular Insert type head

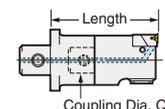


PAT.  P.119

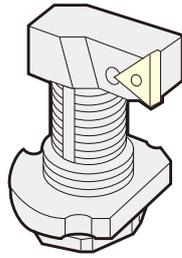
Boring head for ISO insert tip widely available on the market.  
\* Only insert clamp bolts are supplied (Insert tips are not supplied).

Head No.	Boring Range D	Boring Depth M	Coupling Dia. Q	Remarks					Weight (Kg)		
				C	C <sub>1</sub>	Unit No.	Insert No.	チップクランプボルトネジサイズ		Fig.	
16-ZMAC 32- 55AAV-I	31.8~42.2	55	16	31	-	M 4HZ- 32V-I	TC□□0902□□L	M2.2	1	0.5	
20-ZMAC 42- 70AAV-I	41.8~55.2	70	20	40		M 5HZ- 42(M3)	TP□□1103□□L			M3	0.8
26-ZMAC 55- 70AAV-I	54.8~70.2		26	53		M 5HZ- 55(M3)					0.7
34-ZMAC 70- 70AAV-I	69.8~85.2		34	67		M 7HZ- 70(M3)					1.1
42-ZMAC 85-100AAV-I	84.8~100.2	100	42	83		M10HZ- 85(M3)					M3
42-ZMAC100-100AAV-I	99.5~140.5			95	83	M10HZ-100(M3)		2.8			
42-ZMAC140-100AAV-I	139.5~180.5			135	M10HZ-140(M3)	3.1					

★MIN. dial read out: ZMAC32&-V-I and larger is 0.01mm on dia. (Sub scale : 0.005)  
★The above boring ranges are based on heads with Nose/R 0.2 insert.  
★Centre Through Tool Coolant function is available as standard.  
★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-ZMAC○-Length AAV-I e.g. Q26-20-ZMAC42-100AAV-I



# ZMAC ADVANCED (ISO) BORING UNIT PARTS LIST



**ZMAC-V-I**

NIKKEN ZMAC-V-I Boring Heads come complete with the ZMAC-V-I Boring Unit. Specify the part No. in the table below when ordering spares. Triangular Insert Heads and Rhomboid Insert Heads use different boring units, cartridges, insert tips, insert clamp bolts, and insert clamp handles, but all other parts are common to both.

\* The ZMAC units and new ZMAC-V-I units are interchangeable.

ZMAC-V-I Style	Boring Range	Unit	Triangular Insert	Insert Clamp Screw	Insert Clamp Handle	Lock Screw	Adjustment Handle	Unit Clamp Bolt
ZMAC 32-V-I	31.8~42.2	M 4HZ- 32V-I	TC□□0902□□L	M2255	T-6	M365	M 4HZL	M2577
ZMAC 42-V-I	41.8~55.2	M 5HZ- 42V(M3)	TP□□1103□□L	M3070	T-10	M364	M 5HZL	
ZMAC 55-V-I	54.8~70.2	M 5HZ- 55V(M3)				M366		
ZMAC 70-V-I	69.8~85.2	M 7HZ- 70V(M3)				M360	M 7HZL	M3090
ZMAC 85-V-I	84.8~100.2	M10HZ- 85V(M3)				M367		
ZMAC 100-V-I	99.5~140.5	M10HZ-100V(M3)				M368		
ZMAC 140-V-I	139.5~180.5	M10HZ-140V(M3)				M369		

★Each Unit and Cartridge are supplied without Insert Tip.



Special cartridge example for necking is available. Please contact us with the work piece drawing.

ZMAC-VR Style	Boring Range	Unit	Triangular Insert (ISO code)	Insert Clamp Screw	Insert Clamp Handle
ZMAC 32-VR	31.8~42.2	M 4HZ- 32VR	CC06-C (CC□□0602□□)	M2560	T-8
ZMAC 42-VR	41.8~55.2	M 5HZ- 42VR		M2577	
ZMAC 55-VR	54.8~70.2	M 5HZ- 55VR	CC08-C (CC□□09T3□□)	M4090	T-15
ZMAC 70-VR	69.8~85.2	M 7HZ- 70VR		M4012	
ZMAC 85-VR	84.8~100.2	M10HZ- 85VR	CC12-C (CC□□1204□□)	M5012	T-15
ZMAC 100-VR	99.5~140.5	M10HZ-100VR			
ZMAC 140-VR	139.5~180.5	M10HZ-140VR			

The cartridge head can be exchanged itself for the head bigger equal to ZMAC42-V.

Boring Range	Cartridge Head		Head Clamp Bolt
	Triangular	Rhomboid	
41.8~55.2	M 5HZ- 42 CH (M3)	M 5HZ- 42RCH	M512C
54.8~70.2	M 7HZ- 70 CH (M3)	M 7HZ- 70RCH	
69.8~85.2	M10HZ- 85 CH (M3)	M10HZ- 85RCH	
84.8~100.2	M10HZ- 100 CH (M3)	M10HZ- 100RCH	
99.5~140.5			
139.5~180.5			

★Each Unit and Cartridge are supplied without Insert Tip.  
★Cartridge can not be supplied alone, please order ZMAC-V unit.

- Detach** ●Loosen head clamp bolt after boring diameter is set to little larger than the MIN. boring diameter.
- Attach** ●Insert the head into cartridge, then tighten head clamp bolt temporary.  
●Loosen side lock bolt.  
●Rotate the dial ring 0.2~0.3mm to minus direction.  
●Tighten head clamp bolt by pushing the head to the support portion of the main body.

■ INSERT TIP (please refer to the ISO code below to purchase.)

ZMAC-V-I Style	Dimension	ISO code
ZMAC32-V-I		TC□□0902□□L
ZMAC42-V-I ZMAC140-V-I		TP□□1103□□L

■ Code No. of ISO standard Insert Tip

T P G T 1 1 0 3 0 4 L

T : Insert Shape  
 P : Normal Clearance  
 G : Corner Radius  
 T : Cutting Edge Thickness  
 1 : Cutting Edge Length  
 1 : Corner Radius  
 0 : Corner Radius  
 3 : Corner Radius  
 0 : Cutting Direction  
 4 : Cutting Direction  
 L : Left Direction  
 N : Either

T : Triangle  
 W : 80°  
 C : 80°  
 M : 86°  
 S : 90°  
 A : 85°

B : 5°  
 C : 7°  
 P : 11°  
 N : 0°  
 E : 20°

Tolerance Class  
 Tip Breaker & Hole Configuration  
 M : Pressed

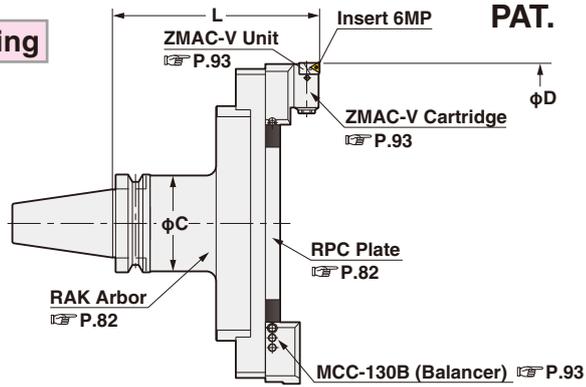
W : □  
 T : □  
 R : □  
 B : □  
 H : □  
 M : □  
 X : Special

# BALANCE-CUT BAC ADVANCED BORING ARBOR for LARGE DIA. **NIKKEN**



BAC-V

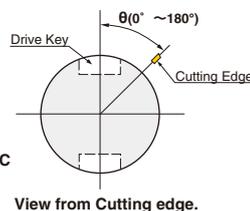
For Finishing



Boring Dia:φ130~595mm

TAPER	Code.No	D		L	C	RAK Arbor Code No.	PPC Plate No	Cartridge (Balancer)	Weight (Kg)			
		MIN.~MAX.										
No.40	BT40-BAC130-205V	130~195		205	61	BT40-RAK-130A	RPC-130	MCCZ-130V (MCC-130B) Insert 6MP	7.0			
	(IT40)-BAC180-205V	180~245							8.0			
	No.50	BT50-BAC130-185V	130~195		185	90	BT50-RAK-110A		RPC-130	10.0		
		(IT50) -235V		235	12.7							
		-285V		285	15.4							
		-335V		335	18.1							
		-385V		385	20.8							
		-435V		435	23.5							
		-485V		485	26.2							
		-BAC180-185V		185	10.6							
-235V		235		13.3								
-285V		285		16.0								
No.50	-335V	180~245		335	90	-RAK-110A	RPC-180	18.7				
	-385V		385	21.4								
	-435V		435	24.1								
	-485V		485	26.8								
	-BAC230-185V		185	11.3								
	-235V		235	14.0								
	-285V		285	16.7								
	-335V		335	19.4								
	-385V		385	22.1								
	-435V		435	24.8								
No.50	-485V	230~295		485	90	-RAK-110A	RPC-230	27.5				
	-BAC280-185V		185	11.9								
	-235V		235	14.6								
	-285V		285	17.3								
	-335V		335	20.0								
	-385V		385	22.7								
	-435V		435	25.4								
	-485V		485	28.1								
	-BAC330-210V*		330~395					210 (220*)	98	BT50-RAK330-125 IT50-RAK330-135	RPC-330	16.7
	-BAC380-210V*		380~445									-380
-BAC430-210V*	430~495		-430	18.0								
-BAC480-210V*	480~545		-480	19.0								
-BAC530-210V*	530~595		-530	20.0								

- ★“C” grade (Coated) Inserts are supplied as standard. P.119 Please refer P.117 for cutting condition.
- ★Unit “M5HZ-55V” is provided as standard, please refer P.82 for Arbor (RAK) and Plate (RPC).
- ★Arbor, Plate and Cartridge are delivered in separate packages.
- ★When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★The location of cutting edge is same as drive key in standard.
- The different location is available, please specify θ in Code No. e.g. BT50-BAC180-235V (90°)
- ★The boring arbors marked \* with IT50, L (gauge length) is 220. e.g. IT50-BAC330-220V
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. BT50-BAC130-185V-C



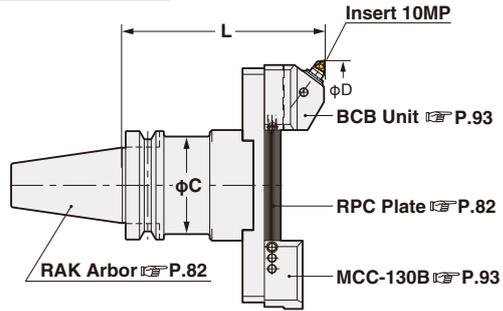
High Pressure Coolant Through Tool

# BALANCE-CUT BCB BORING ARBOR for LARGE DIA.



BCB

For Roughing / Finishing



Boring Dia: φ130~595mm

TAPER	Code.No	D		L	C	RAK Arbor Code No.	RPC Plante No	Cartridge (Balancer)	Weight (Kg)							
		MIN.	MAX.													
No.40	BT40-BCB130-215	130	195	215	61	BT40-RAK-130A	RPC-130	BCB-130 (MCC-130B) Insert 10MP	7.5							
	(IT40)-BCB180-215	180	245						8.5							
	No.50	BT50-BCB130-195	130	195	195	90	BT50-RAK-110A		RPC-130	10.3						
		(IT50)-245								245	13.0					
		-295								295	15.7					
		-345								345	18.4					
		-395								395	21.1					
		-445								445	23.8					
		-495								495	26.5					
		-BCB180-195								180	195	195	90	BT50-RAK-110A	RPC-180	10.9
-245		245						13.6								
-295		295	16.3													
-345		345	19.0													
-395		395	21.7													
-445		445	24.4													
No.50		-495	230	195	195	90	BT50-RAK-110A	RPC-230	27.1							
		-BCB230-195							230	195	195	90	BT50-RAK-110A	RPC-230	11.6	
		-245													245	14.3
		-295													295	17.0
		-345													345	19.7
	-395	395													22.4	
	-445	445													25.1	
	No.50	-495							280	195	195	98	BT50-RAK-110A	RPC-280	27.8	
		-BCB280-195													280	195
		-245	245	14.9												
		-295	295	17.6												
		-345	345	20.3												
		-395	395	23.0												
		-445	445	25.7												
		No.50	-495	330	195	220	98	BT50-RAK330-125 IT50-RAK330-135							RPC-330	28.4
			-BCB330-220*													330
	-BCB380-220*		380						17.5							
	-BCB430-220*		430						18.5							
-BCB480-220*	480		19.5													
-BCB530-220*	530		20.5													

★10MP-T (Cermet) is supplied as standard. P.121 Please refer P.117 for cutting condition.  
 ★MIN. dial readout on dia.: 0.02mm, Sub scale: 0.002mm  
 ★The boring arbor marked \* with IT50, L (gauge length) is 220. e.g. IT50-BCB330-220.

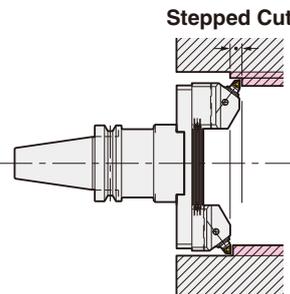
Up to φ800 is also available. Please contact with us.

## Double Cut Style BCB Boring Bar



BCB-W

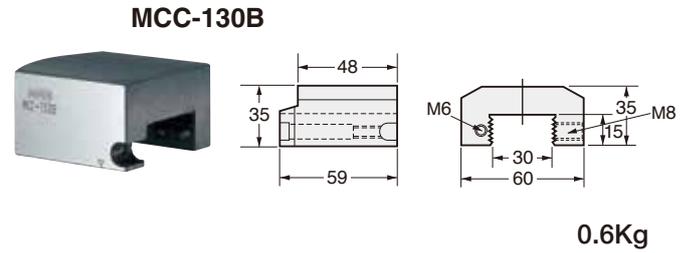
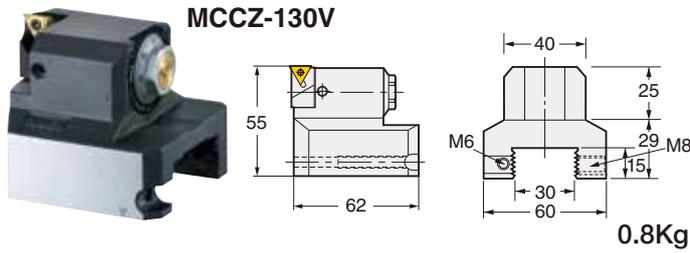
- ★Double cut style can be done with both side of BCB-130 cartridges. Please add "W" at the end of Code No. e.g. BT50-BCB130W-195
- True balance cut can be done to adjust the height by micro adjustment first and then to adjust the diameter by adjust screw.
- Stepped cut can be done to change the height of the cartridges.



## Accessories for Balance-Cut BAC-V

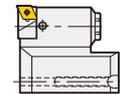
Balance-Cut MAC type cartridge for large dia.

MAC type Balancer for Balance-Cut large dia.



Accessories	ZMAC-V Unit	Insert Tip	Clamp Bolt	Wrench for Insert	Lock Screw	Adjust Screw	Set Screw (M8)	L-Wrench for M815 Belt	Adjust Wrench	Adjustment Handle	Applicable RPC Plate
Code No.	M5HZ-55V	6MP-C	M2577	T-8	M366	M540	M815	M4	M3	M5HZL	RPC-130,180,230,280,330,380,430,480,530

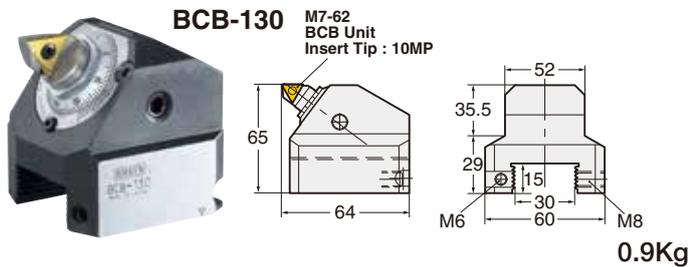
★Please refer P.82 for RPC Plate. ★Set Code No. is S.MCCZ-130V.  
 ★M5HZ-55VR with CC06-C insert tip is available. Please specify code No. S.MCCZ-130VR.  
 ★6MP-C insert tip is supplied as standard. P.119 Please refer P.117 for cutting condition.



## Accessories for Balance-Cut BCB

Balance-Cut BCB type cartridge for large dia.

MAC type Balancer for Balance-Cut large dia.



Accessories	BCB Unit	Insert Tip	Clamp Bolt	Wrench for Insert	Lock Screw	Adjust Screw	Set Screw (M8)	L-Wrench for M815 Belt	Adjust Wrench	Adjustment Handle	Applicable RPC Plate
Code No.	M7-62	10MP-T	M67	20S	B357, B367	M540	M815	M4	M3	M397	RPC-130,180,230,280,330,380,430,480,530

★Please refer P.82 for RPC Plate. ★Set Code No. is S.BCB-130.  
 ★10MP-T insert tip is supplied as standard. P.121 Please refer P.117 for cutting condition.

# SPECIAL DESIGNED BORING ARBOR

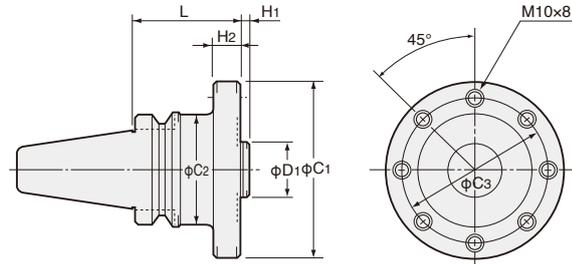


There exist various kinds of boring applications which cannot be managed using standard boring arbors. NIKKEN has great experience of special boring applications, utilizing the double contact shoulder support **ZMAC-V** boring heads. NIKKEN can also design and manufacture special boring arbors to suit your special applications.

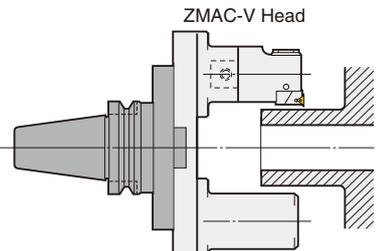


RAA

## Base Arbor for Special Boring Head

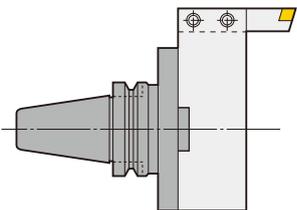


## For Overturning



Counter Balance

## For U Axis Boring Arbor

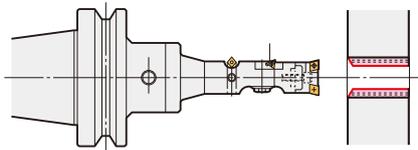


TAPER	Code No.	D <sub>1</sub>	L	H <sub>1</sub>	H <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	Weight (kg)
No.40	BT40-RAA32- 60 (IT40)	32 h7	60	7	15	102	61	82	2.5
No.50	BT50-RAA32- 60 (IT50)		60		12				
	-120		120	20	98	82	9		
	-180		180				15.5		

★The Base Holder with long gauge length is available on demand.  
 ★High Pressure Centre Through Tool Coolant Type is available on demand.  
 ★The dimension with ( ) is for IT40 and IT50.  
 ★For BT40, φD<sub>1</sub>=22mm is also available.

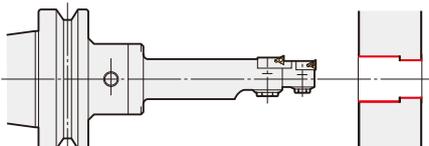
## Multi Stage Boring Arbor

For Simultaneous machining for rough, finish and chamfer.



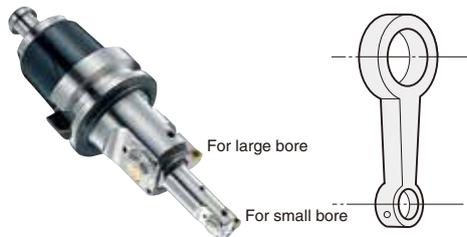
Please specify the boring dia., depth, and necessary length from the gauge line.

For stepped hole boring with restricted concentricity.



Please specify each boring dia., depth, and necessary length from the gauge line.

For decreasing the number of A.T.C with one arbor for two different size of the bores.



For large bore

For small bore

Photo shows with NC5 Shank.

## DRILLING OPERATION by COMBAT Z DRILL



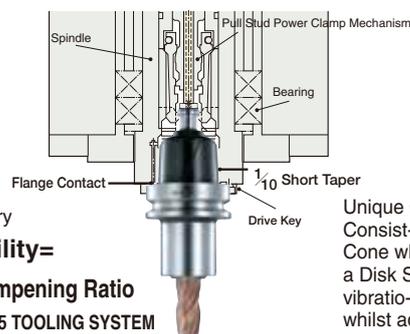
“Rationalization is Study of Drilling.” which is our Slogan for developing NIKKEN **COMBAT Z DRILL**. Please try it. Pilot Drill and 3-Phases Heat Treatment significantly improves Cutting Condition, Secure Drilling and Tool Life.

## Ultra Long Size Boring Bar



Photo shows with NC5 Shank.

For Extreme Deep Hole Boring Operation, please study the Machine with **NC5 Spindle** or **3LOCK Spindle**. In case of BT/IT spindle, we recommend **ZMAC V** type Head for these applications.



The above are just samples. Pre-Balanced type Boring Arbor for High Speed Application and Aluminium Body Head are also available. Please contact with us about your special boring applications.

E · H · MERRITT's Theory

**Chattering Stability=**

**Static Stiffness × Dampening Ratio**

Thus, the advantage of NC5 TOOLING SYSTEM is clearly demonstrated.

Unique Construction : Consist-ing of a Slotted Taper Cone which is Pre-Loaded by a Disk Spring to increase its vibratio-nal dampening effect whilst ad-justing minute gaugeline errors, completely.

# BALANCE-CUT RAC $\alpha$ BORING ARBOR for LARGE DIA.

**NIKKEN**

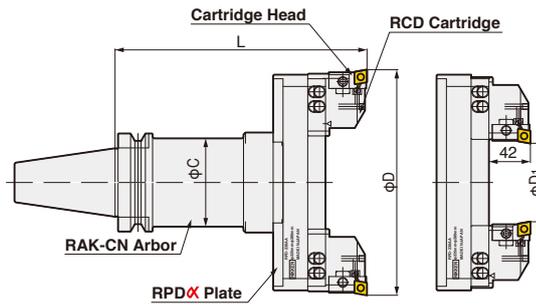
For Roughing

- With the screws for slight adjustment
- Boring Dia. :  $\phi 130 \sim \phi 580 \text{mm}$



RAC $\alpha$

High Pressure Coolant Through Tool

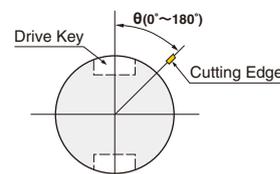


Boring Dia. :  $\phi 130 \sim 580 \text{mm}$  / Over Turning Dia. :  $10 \sim 430 \text{mm}$

P.74

TAPE	Code.No	D		L	D <sub>1</sub>		C	RAK Arbor Code No.	RPD Plate No.	RCD Cartridge No.	Weight (Kg)
		MIN. ~MAX.			MIN. ~MAX.						
No.40	BT40-RAC130-225AA	130~180		225	10~30		61	BT40-RAK-130A-CN	RPD-130AA		7.2
	(IT40)-RAC180-225AA	180~230			30~80						7.7
No.50	BT50-RAC130-205AA	130~180		205	10~30		90	BT50-RAK-110A-CN	RPD-130AA		9.5
	(IT50)-255AA		255	12.2							
	-305AA		305	14.9							
	-355AA		355	17.6							
	-405AA		405	20.3							
	-455AA		455	23.0							
	-505AA		505	25.7							
	-RAC180-205AA		205	10.0							
	-255AA	255	12.7								
	-305AA	305	15.4								
	-355AA	180~230	355	30~80	RPD-180AA		18.1				
	-405AA	405	20.8								
	-455AA	455	23.5								
	-505AA	505	26.2								
	-RAC230-205AA	205	10.6								
	-255AA	255	13.3								
	-305AA	305	16.0								
	-355AA	230~280	355	80~130			RPD-230AA		18.7		
	-405AA	405	21.4								
	-455AA	455	24.1								
	-505AA	505	26.8								
	-RAC280-205AA	205	11.1								
	-255AA	255	13.8								
	-305AA	305	16.5								
	-355AA	280~330	355	130~180	RPD-280AA				19.2		
	-405AA	405	21.9								
	-455AA	455	24.6								
	-505AA	505	27.3								
	-RAC330-220AA*	330~380	220 (230*)	180~230			98	BT50-RAK330-125-CN IT50-RAK330-135-CN	RPD-330AA	16.4	
	-RAC380-220AA*	380~430		230~280						-380AA	16.9
	-RAC430-220AA*	430~480		280~330						-430AA	17.4
	-RAC480-220AA*	480~530		330~380						-480AA	17.9
-RAC530-220AA*	530~580	380~430		-530AA	18.4						

- ★The Code No. on above table are the boring arbors with RCD-130 cartridge (Insert tip: CN08) the Heavy Duty Boring of Iron and Cast Iron. Please refer P.116 for cutting condition.
- ★Boring arbor with cartridges & insert for Steel, Stainless Steel and Cast Iron (E), for Aluminum (A) and for Through Hole & Multi Sheets (K) are available. Please refer P.96 for cartridges. e.g. BT50-RAC130-205AA-E
- ★Please refer P.96 for RAK arbor and RPD plate.
- ★Arbor, plate and cartridges are delivered in separate packages.
- ★Please check the interference of the arbor with your M/C not to occur the interference in the tool magazine.
- ★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify  $\theta$ . e.g. BT50-RAC180-255AA (90°)
- ★The boring arbors marked \* with IT50, L (gauge length) is 220. e.g. IT50-RAC330-230AA
- ★RAK arbor with "-C" at the end of Code is centre through coolant type which is without coolant nozzle.

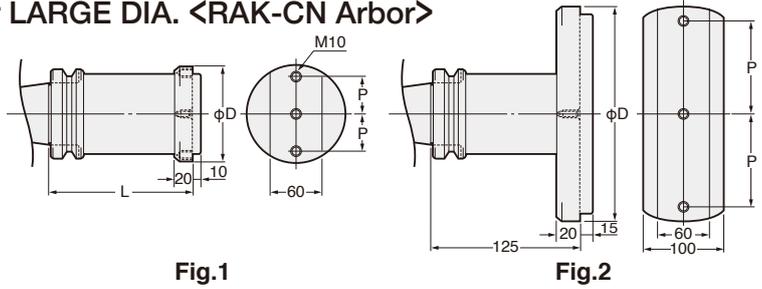


View from Cutting Edge

# MODULAR TYPE ARBOR



## BALANCE CUT RAK $\alpha$ BORING ARBOR for LARGE DIA. <RAK-CN Arbor>



RAK-CN

Fig.1

Fig.2

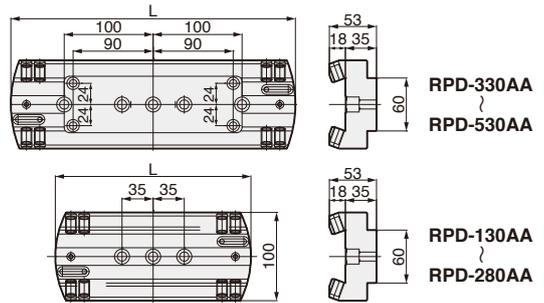
Code No.	Boring Range	L	D	P	Weight (Kg)	Applicable RPD $\alpha$ Plate	Hex. Socket bolt	Fig.
BT40 (IT40)-RAK-130A-CN	130~330	130	102	35	4.9	RPD-130AA, 180AA, 230AA, 280AA	M1035	1
BT50 (IT50)-RAK-110A-CN		110			7.2			
(IT50)-RAK-160A-CN		160			9.9			
-RAK-210A-CN		210			12.6			
-RAK-260A-CN		260			15.3			
-RAK-310A-CN		310			18.0			
-RAK-360A-CN		360			20.7			
-RAK-410A-CN		410			23.4			
-RAK330-125-CN*	330~580	125	240	100	12.0	RPD-330AA, 380AA, 430AA, 480AA, 530AA	M1045	2

★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify  $\theta$ . e.g. BT50-RAK-160A-CN (90°)

★RAK avbor with "-C" at the end of Code is centre through coolant type which is without coolant nozzle.

★\* : In case of IT50, IT50-RAK-CN-330-135 is standard gauge length.

## BALANCE CUT $\alpha$ PLATE for LARGE DIA. <RPD $\alpha$ Plate>



Code No.	Boring Range	L	Weight (Kg)	Code No.	Boring Range	L	Weight (Kg)	Code No.	Boring Range	L	Weight (Kg)
RPD-130AA	$\phi$ 130~180	124	1.1	RPD-330AA	$\phi$ 330~380	320	3.2	RPD-530AA	$\phi$ 530~580	520	5.2
-180AA	$\phi$ 180~230	170	1.6	-380AA	$\phi$ 380~430	370	3.7				
-230AA	$\phi$ 230~280	220	2.2	-430AA	$\phi$ 430~480	420	4.2				
-280AA	$\phi$ 280~330	270	2.7	-480AA	$\phi$ 480~530	470	4.7				

★Accessories : coupling sleeve (2pieces) code No. RAK-CLS.

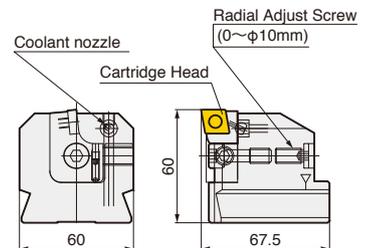
## Accessories for Balance-Cut RAC $\alpha$

Heavy Duty Boring of Iron and Cast Iron  
**RCD-130 (CN08)**

Steel, Stainless Steel and Cast Iron  
**RCD-130E (CC12)**

For aluminum  
**RCD-130A (AEG16)**

For Through Hole and Multi Sheets  
**RCD-130K (SC12)**



Weight : 0.6Kg



Accessories	Insert Tip	Clamp Bolt	Adjust Screw for Axial direction	Adjust Wrench for Axial direction	Wrench for Insert	Lock Screw (M10)	L-Wrench for M1010	Head Clamp Bolt	Coolant stop Screw	L-Wrench for M510	Applicable RPD $\alpha$ Plate
Code No.	*	CSM-70	M416	M2	20S	M1016	M5	M825-AJ	M510	M2.5	RPD-130AA, 180AA, 230AA, 280AA, 330AA, 380AA, 430AA, 480AA, 530AA

★\* : The insert tip is RCD-130: CN08 (P.74) , RCD-130E: CC12 (P.72) , RCD-130A: AEG16 (P.76) , RCD-130K: SC12 (P.78) Please refer P.116 for cutting condition.

★There are two different types clamping system. One is eccentric system, the other is screw on system. Above parts are for screw on system.

★Code No. RCD-130 indicates a single cartridge. When ordering a pair cartridge, please appoint to us Code No. S.RCD-130.

★The cartridge head can be exchanged it self. M10HZ-85CH-N, -E, -A, -K.

# BALANCE-CUT BAC $\alpha$ ADVANCED BORING ARBOR for LARGE DIA.

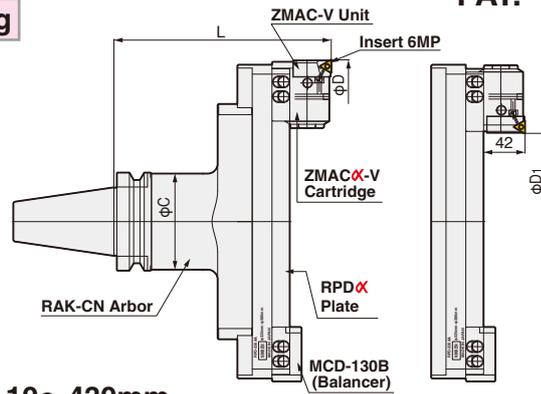
**NIKKEN**

For Finishing

PAT.

**BAC  $\alpha$ -V**

High Pressure Coolant Through Tool



**P.119**

Boring Dia:  $\phi 130 \sim 595\text{mm}$  / Over Turning Dia. :  $10 \sim 430\text{mm}$

TAPE	Code.No	D		L	D <sub>1</sub>		C	RAK Arbor Code No.	RPD Plate No.	Cartridge (Balancer)	Weight (Kg)
		MIN.~MAX.			MIN.~MAX.						
<b>No.40</b>	BT40-BAC130-225AAV	130~195		225	10~30		61	BT40-RAK-130A-CN	RPD-130AA		7.5
	(IT40)-BAC180-225AAV	180~245			30~80				-180AA		8.0
<b>No.50</b>	BT50-BAC130-205AAV	130~195		205	10~30		90	BT50-RAK-110A-CN	RPD-130AA	MCDZ-130AAV (MCD-130B) Insert 6MP	9.8
	(IT50)-255AAV		255	12.5							
	-305AAV		305	15.2							
	-355AAV		355	17.9							
	-405AAV		405	20.6							
	-455AAV		455	23.3							
	-505AAV		505	26.0							
	-BAC180-205AAV		205	10.3							
	-255AAV	255	13.0								
	-305AAV	305	15.7								
	-355AAV	355	18.4								
	-405AAV	405	21.1								
	-455AAV	455	23.8								
	-505AAV	505	26.5								
	-BAC230-205AAV	205	10.9								
	-255AAV	255	13.6								
	-305AAV	305	16.3								
	-355AAV	355	19.0								
	-405AAV	405	21.7								
	-455AAV	455	24.4								
	-505AAV	505	27.2								
	-BAC280-205AAV	205	11.4								
	-255AAV	255	14.1								
	-305AAV	305	16.8								
	-355AAV	355	19.5								
	-405AAV	405	22.2								
	-455AAV	455	24.9								
	-505AAV	505	27.6								
	-BAC330-220AAV*	330~395	220 (230*)	180~230	98			BT50-RAK330-125-CN IT50-RAK330-135-CN	RPD-330AA		16.7
	-BAC380-220AAV*	380~445		230~280					-380AA		17.2
	-BAC430-220AAV*	430~495		280~330					-430AA		17.7
	-BAC480-220AAV*	480~545		330~380					-480AA		18.2
-BAC530-220AAV*	530~595	380~430		-530AA			18.7				

\*"C" grade (Coated) Inserts are supplied as standard. **P.119** Please refer **P.116** for cutting condition.

\*Unit "M10HZ-75V" is provided as semi-standard, please refer "M10HZ-85V" **P.98** for Arbor (RAK) and Plate (RPD).

\*Arbor, Plate and Cartridge are delivered in separate packages.

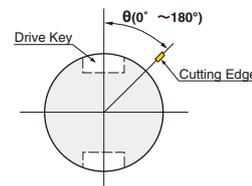
\*When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.

\*The location of cutting edge is same as drive key in standard.

The different location is available, please specify  $\theta$  in Code No. e.g. BT50-BAC180-255AAV (90°)

\*The boring arbors marked \* with IT50, L (gauge length) is 220. e.g. IT50-BAC330-230AAV

\*RAK avbor with "-C" at the end of Code is centre through coolant type which is without coolant nozzle.

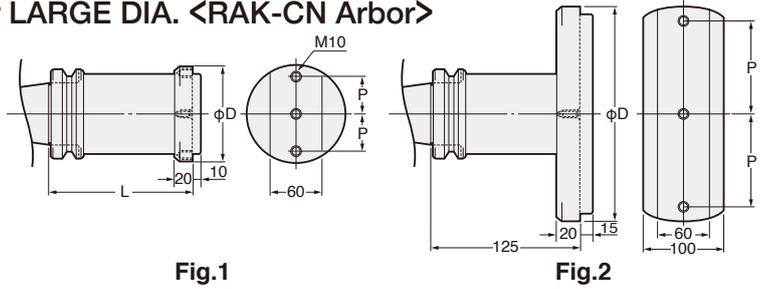


View from Cutting edge.

# MODULAR TYPE ARBOR



BALANCE CUT RAK $\alpha$  BORING ARBOR for LARGE DIA. <RAK-CN Arbor>



RAK-CN

Fig.1

Fig.2

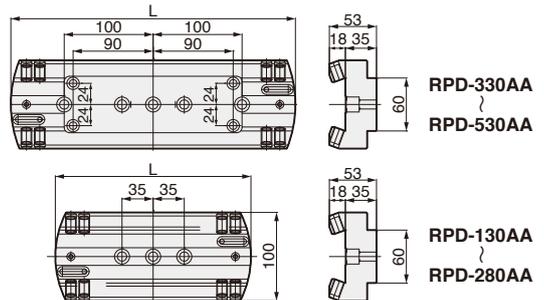
Code No.	Boring Range	L	D	P	Weight (Kg)	Applicable RPD $\alpha$ Plate	Hex. Socket bolt	Fig.
BT40 (IT40)-RAK-130A-CN	130~230	130	102	35	4.9	RPD-130AA, 180AA	M1035	1
BT50 -RAK-110A-CN		110			7.2			
(IT50)-RAK-160A-CN		160			9.9			
-RAK-210A-CN		210			12.6			
-RAK-260A-CN		260			15.3			
-RAK-310A-CN		310			18.0			
-RAK-360A-CN		360			20.7			
-RAK-410A-CN		410			23.4			
-RAK330-125-CN*	330~580	125	240	100	12.0	RPD-330AA, 380AA, 430AA, 480AA, 530AA	M1045	2

★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify  $\theta$ . e.g. BT50-RAK-160A-CN (90°)

★RAK avbor with "-C" at the end of Code is centre through coolant type which is without coolant nozzle.

★\* : In case of IT50, IT50-RAK-CN-330-135 is standard gauge length.

BALANCE CUT  $\alpha$  PLATE for LARGE DIA. <RPD $\alpha$  Plate>



Code No.	Boring Range	L	Weight (Kg)	Code No.	Boring Range	L	Weight (Kg)	Code No.	Boring Range	L	Weight (Kg)
RPD-130AA	$\phi$ 130~180	124	1.1	RPD-330AA	$\phi$ 330~380	320	3.2	RPD-530AA	$\phi$ 530~580	520	5.2
-180AA	$\phi$ 180~230	170	1.6	-380AA	$\phi$ 380~430	370	3.7				
-230AA	$\phi$ 230~280	220	2.2	-430AA	$\phi$ 430~480	420	4.2				
-280AA	$\phi$ 280~330	270	2.7	-480AA	$\phi$ 480~530	470	4.7				

★Accessories : coupling sleeve (2pieces) code No. RAK-CLS.

# ACCESSORIES for BALANCE-CUT BORING ARBOR for LARGE DIA.



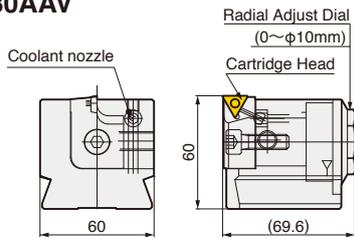
Accessories for Balance-Cut BAC $\alpha$ -V

Balance-Cut BAC $\alpha$  type cartridge for large dia.

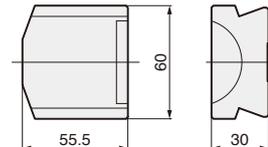
BAC $\alpha$  type Balancer for Balance-Cut large dia.

MCDZ-130AAV

MCD-130B



0.8Kg



0.7Kg

Accessories	ZMAC-V Unit	Insert Tip	Clamp Bolt	Wrench for Insert	Coolant stop Screw	Lock Screw (M10)	L-Wrench for M1016	L-Wrench for M510	Adjustment Handle	Applicable RPD $\alpha$ Plate
Code No.	M10HZ-75V	6MP-C	M2577	T-8	M510	M1016	M5	M2.5	M10HZL	RPD-130AA, 180AA, 230AA, 280AA, 330AA, 380AA, 430AA, 480AA, 530AA

★Please refer P.98 for RPD $\alpha$  Plate.

★Set Code No. is S.MCDZ-130AAV.

★M10HZ-75VR with CC08-C insert tip is available. Please specify code No. S.MCDZ-130AAVR.

★6MP-C insert tip is supplied as standard. P.119 Please refer P.117 for cutting condition.

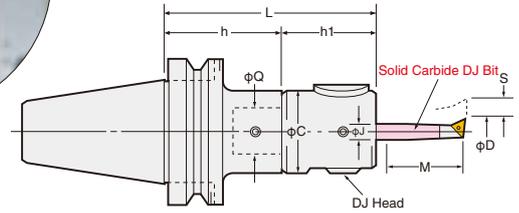


# DJ BORING BAR

**NIKKEN**



High Pressure Coolant Through Tool is available. Please contact us.



BT-DJ

TAPER	Code No.	Boring Range	Boring Depth	L	C	Bit Hole Size	Shank Code No.	Head Code No.	Bit Stroke	DJ Bit Code No.	Weight (Kg)
No.30	BT30-DJ3- 80	3~28	14~ 80	80	50	10	BT30-Q26- 40	Q26-DJ3-40A	5.2	J10	1.0
	-DJ8- 84AN	3~50	14~130	84	59	16		-DJ8-44AN	6.0	J16	1.2
No.40	BT40-DJ3- 90A	3~28	14~ 80	90	50	10	BT40-Q26- 50	Q26-DJ3-40A	5.2	J10	1.6
	(IT40) -135A			135							
	-DJ8- 94AN	94	59	- 95	-DJ8-44AN	6.0	J16	1.9			
	-139AN	139							2.5		
No.50	BT50-DJ3-105A	3~28	14~ 80	105	50	10	BT50-Q26- 65	Q26-DJ3-40A	5.2	J10	4.2
	(IT50) -210A			210							
	-DJ8-109AN	109	59	-170N	-DJ8-44AN	6.0	J16	4.5			
	-214AN	214							6.0		

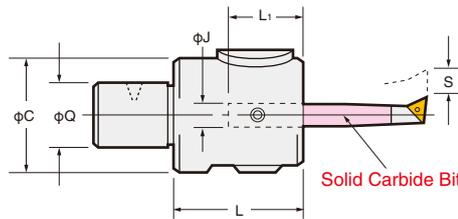
- ★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.
- ★Each boxed set of DJ3 and DJ8 Boring Bars include 4 pcs of DJ Boring Bits as standard.
- ★Bits included for BT40-DJ8-94A : J16-8-40, J16-18-80, J16-28-85, J16-38-85
- ★Bits included for BT40-DJ8-94AN : J16-8-40, J16-18-60, J16-28-65, J16-38-65
- ★DJ Boring Bar without Boring Bits is also available. Please add “-BD” at the end of Code No. e.g. BT40-DJ3-90A-BD
- ★Shank and DJ Head (including Boring Bits) are delivered in separate packages.
- ★Please refer P.100 for Boring Bits. Please refer P.118 for cutting condition.

# DJ BORING HEAD with DJ BORING BIT

**NIKKEN**

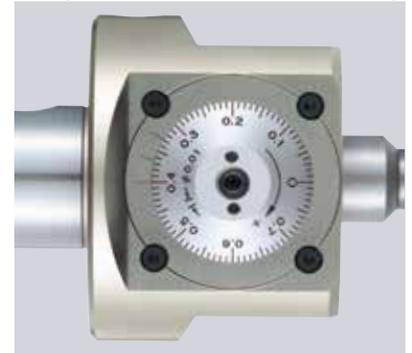


DJ



P.119

Easy to Set Micron Accuracy



▲1 Graduation:0.01mm on dia.

DJ No.	Code No.	Boring Range	Boring Depth	Q	L	C	Bit Hole Size	L <sub>1</sub>	Bit Stroke	Weight (kg)	Bit Code No. (Standard Accessories)	Insert Tip Code No.
DJ3	Q26-DJ3-40A	3~28	14~80	26	40	50	10	27	5.2	0.5	J10- 3-14	—
											J10- 5-35	CC03-C
											J10- 8-40	3MP-C
											J10-18-62A	6MP-C
DJ8	Q26-DJ8-44AN	3~50	14~130	26	44	59	16	32	6.0	0.8	J16- 8-40	3MP-C
											J16-18-60	6MP-C
											J16-28-65	6MP-C
											J16-38-65	6MP-C

- ★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.
- ★Each boxed set of DJ3 and DJ8 Boring Bars include 4 pcs. of DJ Bits, Insert, Insert Clamp Handle, (T6, T8, (10S for DJ3) Micro Adjusting Handle (M2.5) as standard.
- ★Bits included for Q26-DJ8-44A : J16-8-40, J16-18-80, J16-28-85, J16-38-85
- ★Bits included for Q26-DJ8-44AN : J16-8-40, J16-18-60, J16-28-65, J16-38-65
- ★Please refer P.100 for Boring Bits. Please refer P.118 for cutting condition.
- ★DJ Boring Head without Bits is also available. Please add “-BD” at the end of Code No. e.g. Q26-DJ3-40A-BD, Q26-DJ8-44A-BD
- ★Weight of wooden box of DJ head with Boring Bits: Q26-DJ3-40A : 1.2kg, Q26-DJ8-44AN : 2.2kg, Q26-DJ8-44A : 2.5kg

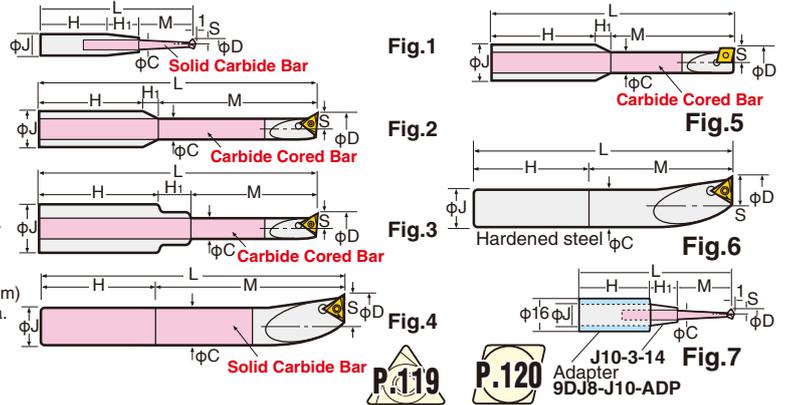
# DJ BORING BIT SOLID CARBIDE

**NIKKEN**



New Bit Series for DJ8

Explanation of the Code No.  
**J** 16 - 5 - 35  
 ↓ Boring Depth(mm)  
 ↓ Min. Boring Dia.  
 ↓ Dia. of Shank  
 ↓ Abbreviation of DJ Bit.



Style	Code No.	Boring Range		Boring Depth		J	L	H	H <sub>1</sub>	C	S	Insert No.	Insert Clamping Bolt No.	Insert Clamping Handle No.	Fig.	Weight (g)						
		D	M	D	M																	
DJ3	J10- 3- 14	3~ 8	14	10	62	30	18	2.2	1.5	4.3	2.5	CC03-C	M611	10S	1	30						
	- 5- 30*	5~15	30		60		5.0	2.5	5							28						
	- 5- 35		35		70		-	30	30													
	- 8- 35*	8~18	35		65	32.5	2.5	7.2	4.0	6.0	3MP-C	M2040	T-6	2	43							
	- 8- 40		40		75										90	70	30	80				
	- 8- 55*		55		90										85	26	100					
	-12- 40* <sub>*2</sub>	12~22	40		91	26	-	12	9.0	6MP-C	M2577	T-8	4	130								
	-12- 55* <sub>*2</sub>		55		79									91	80	110						
	-18- 65* <sub>*1</sub>		18~28		65									106	26	130						
	-18- 50A* <sub>*2</sub>	50			79	29	110															
	-18- 62A* <sub>*2</sub>	62			91	29	130															
	-18- 80* <sub>*1</sub>	80			106	26	130															
-18- 77A* <sub>*2</sub>	77	106		29	130																	
DJ8	J10- 3- 14*	3~ 8	14	16	62	30	18	2.2	1.5	4.3	2.5	CC03-C	M611	10S	7	30						
	J16- 5- 25*	5~15	25		60		31.5	3.5	4.3							2.5	5	76				
	- 5- 35*		35		78		33	10	80													
	- 8- 35*		8~18		35		70	32.5	2.5							7.2	4.0	2	90			
	- 8- 40	40			83		32	10	11.2							6.0	M2040	T-6	3	100		
	- 8- 55*	55			98		32	10												110		
	-12- 50*	12~22	50		90		35	-	16							14.0	6MP-C	M2577	T-8	6	150	
	-12- 60*		60		103		40.5	2.5													170	
	-18- 60		60		93		9.0	6													150	
	-18- 80	18~28	80		113		33	-	16							14.0	6MP-C	M2577	T-8	4	300	
	-18-100*		100		133																4	350
	-18-120*		120		153																4	400
	-28- 65	28~39	65		98		33	-	16							14.0	6MP-C	M2577	T-8	6	150	
	-28- 85		85		118																6	300
	-28-100*		100		133																4	350
	-28-130*	28~39	130		163		33	-	16							14.0	6MP-C	M2577	T-8	4	450	
	-38- 65		65		98																6	200
	-38- 85		85		118																6	350
	-38-100*	38~50	100		133		33	-	16							19.0	6MP-C	M2577	T-8	4	370	
	-38-130*		130		163																4	470
-38-130*	130		163	23	16	470																

\*The Bits marked \* are optional accessories. Please refer to P.118 for cutting condition.  
 \*9DJ8-J10-ADP adapter option is necessary to use J10-3-14 for DJ8 head.  
 \*The shorter bits are added for J10-5, J10-8, J10-12 and J10-18. \*The shorter bits are added for J16-5, J16-8 and J16-12.  
 \*"C" grade (Coated) insert tip is supplied. Please refer to P.118 for cutting condition.  
 \*Coolant through tool is basically available for the boring bits with MIN. boring diameter is φ12mm. e.g. J16-12-60C Please contact us.  
 \*\*1 means bits for old type DJ3. \*\*2 means bits for new type DJ8. It can be used for old type DJ8, but M will be 3mm longer than above figure. e.g. J10-18-65A

## Oil Hole Bit

Style	Code No.	Boring Range		Boring Depth		J	L	H	H <sub>1</sub>	C	S	Insert No.	Insert Clamping Bolt No.	Insert Clamping Handle No.	Fig.	Weight (g)				
		D	M	D	M															
DJ3	J10-12- 40C	12~22	40	10	70	30	-	10	6.0	3MP-C	M2040	T-6	4	80						
	-12- 55C		55		85									100						
	-18- 65C	18~28	65		91	26								12	9.0	6MP-C	M2577	T-8	4	130
	-18- 80C		80		106															
DJ8	J16-12- 50C	12~22	50	16	90	35	-	11.2	6.0	3MP-C	M2045	T-6	2	140						
	-12- 60C		60		103									2.5	40.5	170				
	-18- 60C		60		93									9.0	6	150				
	-18- 80C	18~28	80		113	33	-	16	14.0	6MP-C	M2577	T-8	4	300						
	-18-100C		100		133									4	350					
	-18-120C		120		153									4	400					
	-28- 65C	28~39	65		98	33	-	16	14.0	6MP-C	M2577	T-8	6	150						
	-28- 85C		85		118									6	300					
	-28-100C		100		133									4	350					
	-28-130C	28~39	130		163	33	-	16	14.0	6MP-C	M2577	T-8	4	450						
	-38- 65C		65		98									6	200					
	-38- 85C		85		118									6	350					
	-38-100C	38~50	100		133	33	-	16	19.0	6MP-C	M2577	T-8	4	370						
	-38-130C		130		163									4	470					
	-38-130C		130		163									23	16	470				

# BASE HOLDER for MODULAR TYPE (BT Shank)

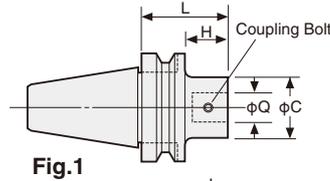


Fig.1

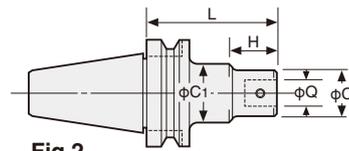


Fig.2

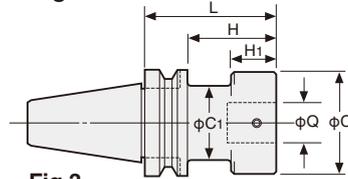


Fig.3

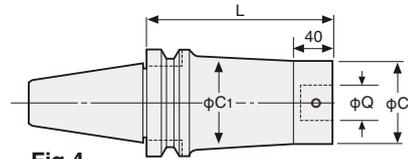


Fig.4

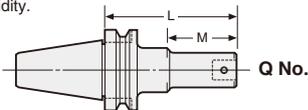
TAPER	Code No.	Coupling Dia Q	L	C	C1	H	H1	Coupling Bolt No.	Fig.	Weight (kg)	
No.30	BT30-Q 9- 50	9	50	19	30	20	-	B19	2	0.5	
	-Q12- 65	12	65	24	-	40		B12	1	0.5	
	-Q16- 50	16	50	31		25		B16		0.5	
	-Q20- 50	20	50	40		26		B20		0.5	
	-Q26- 40	26	40	50		45		18		6	B26N
No.40	BT40-Q 9- 80	9	80	19	30	5	-	B19	2	1.2	
	- 95N		95			27				1.2	
	-Q12- 80	12	80	24	35	12		B12		1.2	
	- 110		110			50				1.3	
	-Q16- 95	16	95	31	42	22		B16		1.5	
	- 125		125			55				1.6	
	-Q20- 80	20	80	40	50	27		B20	1.5		
	- 110		110			60			1.7		
	-Q26- 50	26	50	50	-	20		B26N	1	1.1	
	- 95		95			65				1.8	
	- 140		140			110				2.4	
	-Q34- 95	34	95	64	62	68		B34	3	2.2	
	- 110		110			83				70	2.6
	-Q42- 95	42	95	83	-	68		B42	3	2.8	
	No.50	BT50-Q 9- 110	9	110	19	40		5	-	B19	2
- 125N		125		27			4.1				
-Q12- 95		12	95	24	44	12	B12	2		4.0	
- 125			125			50				4.0	
-Q16- 125N		16	125	31	50	22	B16	2		4.5	
- 155			155			55				4.6	
-Q20- 110		20	110	40	60	27	B20	2		4.6	
- 125			125			60				4.5	
-Q26- 65		26	65	50	65	27	B26N	1		3.7	
- 140			140			47		2		5.3	
- 170N			170			112		2		5.4	
-Q34- 140		34	140	64	80	102	B34	1		5.6	
- 170			170			120		2		6.5	
- 200			200			150		2		7.1	
-Q42- 125			42			125		83		-	87
- 190		190		152	9.1						
-Q42- 225A		42		225	83	98	-				B42
- 275A			275	-			15.6				
- 325A			325	-			18.3				
- 375A			375	-			21.0				

★φC of Q26 base holder has been increased from 45mm to 50mm due to improvement of its rigidity.

★All base holders have a centre through-tool coolant hole.

★The Coupling screw & wrench are supplied as standard.

★When L length is required longer than standard, please specify the boring depth M.

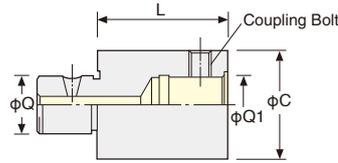


Q No.

# SPACER for MODULAR TYPE

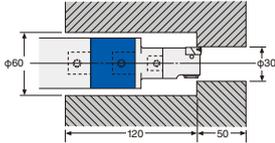


## Extension Spacer



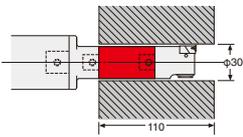
SP

■ Example of small diameter boring in a deep recess using the largest diameter extension spacer in order to maintain rigidity.



BT40-Q26-95  
**SP26-26-60**  
 SP26-12-30  
 12-ZMAC25-40V

■ Example of deep hole boring using the extension spacer with the same diameter as head.

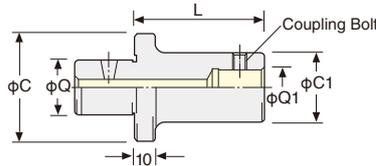


BT40-Q26-95  
 SP26-12-30  
**SP12-12-60**  
 12-ZMAC25-40V

Code No. Q-Q1-L	Coupling Dia		C	Coupling Bolt No.	Weight (kg)
	Q	Q1			
SP 9- 9-30, 45	9	9	19	B19	0.06, 0.1
SP 12-12-30, 45, 60	12	12	24	B12	0.1, 0.15, 0.2
SP 16-16-30, 45, 60	16	16	31	B16	0.15, 0.25, 0.35
SP 20-20-45, 60	20	20	40	B20	0.4, 0.5
SP 26-26-60, 90	26	26	50	B26N	0.8, 1.2
SP 34-34-60, 90	34	34	64	B34	1.4, 2.0
SP 42-42-60, 90	42	42	83	B42	2.4, 3.4

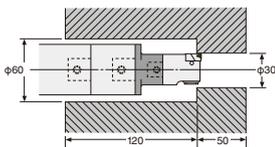
★φC of SP26 Spacer has been increased from 45mm to 50mm due to improvement of its rigidity.  
 ★All spacers have a centre through-tool coolant hole. ★The Coupling screw is included as standard.

## Stepped Spacer



SP

■ Example of small diameter boring in deep recess using stepped spacer with the same diameter as head.



BT40-Q26-95  
 SP26-26-60  
**SP26-12-30**  
 12-ZMAC25-40V

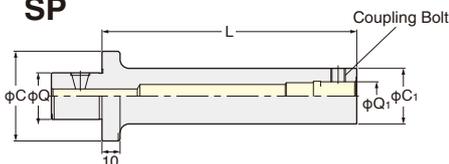
Code No. Q-Q1-L	Coupling Dia		C	C1	Coupling Bolt No.	Weight (kg)
	Q	Q1				
SP 12- 9-45	12	9	24	19	B19	0.1
SP 16- 9-45	16	9	31	19	B19	0.15
-12-60		12		24	B12	0.25
SP 20- 9-45	20	9	40	19	B19	0.2
-12-60		12		24	B12	0.3
-16-60, 90		16		31	B16	0.4, 0.6
SP 26- 9-30, 45	26	9	50	19	B19	0.3, 0.3
-12-30, 60		12		24	B12	0.3, 0.4
-16-30, 60, 90		16		31	B16	0.3, 0.5, 0.6
-20-30, 60, 100		20		40	B20	0.4, 0.6, 1.0
SP 34-16-60, 90	34	16	64	31	B16	0.7, 0.9
-20-60, 100		20		40	B20	1.0, 1.3
-26-60, 100		26		50	B26N	1.1, 1.5
SP 42-20-60, 100	42	20	83	40	B20	1.2, 1.6
-26-60, 100		26		50	B26N	1.4, 1.9
-34-60, 100		34		64	B34	1.8, 2.5

★φC of SP26 Spacer has been increased from 45mm to 50mm due to improvement of its rigidity.  
 ★All spacers have a centre through-tool coolant hole. ★Coupling bolt is supplied as standard.

## A1 Spacer for Deep Hole



SP



L/D:MAX.6 times

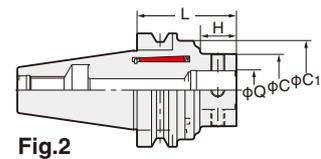
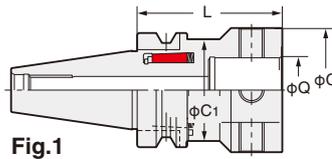
Code No. Q-Q1-L	Coupling Dia		C	C1	MAX. L	Weight (kg)
	Q	Q1				
SP 26- 9- 85-A1	26	9	50	19	85	0.6
-12-115-A1		12		24	115	0.7
-16-140-A1		16		31	140	0.9
-20-180-A1		20		40	180	1.2
-26-190-A1		26		50	190	1.5

Please specify the "L" length when ordering. Code No. is e.g SP26-9-85-A1 (Q1=9 and L=85)



Modular connection system is the face contact system drawing-in by the bolt, which top shape is gentle taper.

1. Insert a head by adjusting the hole positions.
2. Tighten the bolt temporary, then loosen slightly.
3. Tighten the bolt again by moving the head CW and CCW. (Centering each other)
4. Then tighten the bolt completely until face contact.

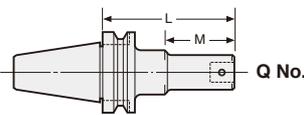


**MDQ**

Photo shows with A1 spacer and ZMAC-α-V head.

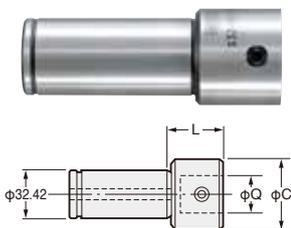
TAPER	Code No.	Q	L	C	C1	H	Weight (kg)	ZMAC-V Boring Range	Fig
No.30	NBT30-MDQ26- 60	26	60	50	50	37.5	-	16~70	1
No.40	NBT40-MDQ26- 65	26	65	50	54	30.0	1.3	16~70	2
No.50	NBT50-MDQ26- 80	26	80	50	87	22.0	4.6	16~70	2
	-MDQ34- 90	34	90	64	87	32.0	4.9	16~85	
	-MDQ42-100	42	100	83	87	45.0	5.7	16~180	

- ★All base holders are used for centre through tool coolant.
- ★Coupling bolt and wrench are supplied as standard.
- ★ZMAC-α-V head is recommended to use with the MAJOR DREAM base holder for anti-vibration.
- ★When L length is required longer than standard, please specify the boring depth M and Q No.



**MODULAR TYPE STRAIGHT SHANK**

**K-Q**



Code No.	Coupling Dia.	C	L	Coupling Bolt.	Weight (Kg)
	Q				
K32-Q 9-20	9	19	20	B19	0.4
			40		0.5
-Q12-20	12	24	20	B12	0.4
			60		0.6
-Q16-20	16	31	20	B16	0.5
			55		0.7
-Q20-40	20	40	40	B20	0.7
-Q26-40	26	50		B26N	0.8
K42-Q26-40	26	50		B26N	1.2

★All straight shank base holders are used for centre through tool coolant.

**CHANFERING CUTTER for Modular System**

**CAF**



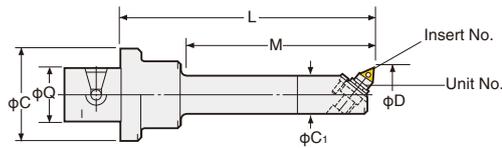
Code No.	Coupling Dia.	Chamfering Dia.	Code No.	Coupling Dia.	Chamfering Dia.
CAF 9- 32	9	20~32	CAF20- 60	20	42~60
CAF12- 38	12	25~38	CAF26- 85A	26	56~85
CAF16- 45	16	33~45	CAF34-110	34	70~110

★Chamfering angle is 45°

# MODULAR TYPE BORING HEAD

**NIKKEN**

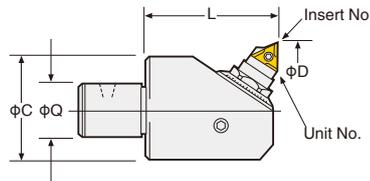
## BCB Micro-Cut Boring Head



**P.121**

Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	Total Length L	C	C <sub>1</sub>	Unit No.	Insert No.
Q26-BCB12.7S- 95	12.7~14.5	60	26	95	50	12	M1-12.7	1MP-T
Q26-BCB14.5S-100	14.5~19.5	65		100		13	M1-14.5	
Q26-BCB19 S-125	19 ~22.5	90		125		18	M2-19	

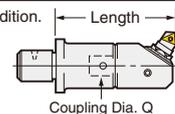
★“T” grade (Cermet) insert is supplied as standard. P.121 Please refer P.117 for cutting condition.



**P.121**

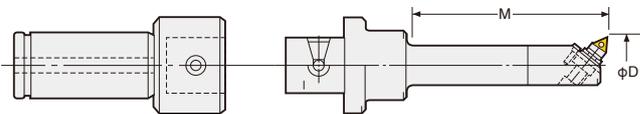
Set/Head Code No	Boring Range D	Boring Depth M	Coupling Dia Q	Remarks		
				C	Unit No.	Insert No.
9-BCB 22 - 40	22 ~29.5	40	9	20	M 2- 22	3MS-T
12-BCB 29 - 40	29 ~ 41		12	25	M 3- 29	
16-BCB 38 - 55	38 ~ 50	55	16	35	M 5- 38	6MP-C
20-BCB 48 - 70	48 ~ 65	70	20	41	M 5- 48	
26-BCB 62 - 70	62 ~ 90		26	54	M 7- 62	10MP-T
34-BCB 82 - 85	82 ~ 110	34	67			
42-BCB100 -100	100~140	100	42	85	M10-100	

★“6MP-C” (Coaterd) insert or “T” grade (Cermet) insert is supplied as standard. P.121 Please refer P.117 for cutting condition.  
 ★Min. dial readout (on dia) : 0.02mm (Sub scale : 0.002mm)  
 ★Code No. of the set with SP26 stepped spacer is Q26-Coupling Dia.-BCB○-Length e.g. Q26-20-BCB48-100



# Straight Shank MICRO CUT BORING BAR

**NIKKEN**



The sales of micro cut boring bar will be finished, when the stock is sold out.

**P.121**

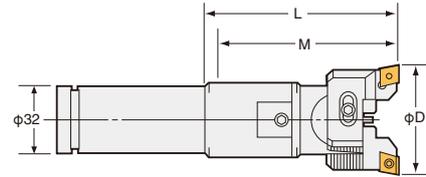
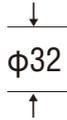
## K-BCB

Style	Code. No.	Q Holder Code. No.	Head No.	Boring Range φD	Boring Depth	Insert No.
<b>K32</b>	K32-BCB12.7S-135	K32-Q26-40	Q26-BCB12.7S- 95	12.7~14.5	60	1MP-T
	-BCB14.5S-140		-BCB14.5S-100	14.5~19.5	65	

★Please refer P.103 for straight shank base holder and P.104 for micro cut head.  
 ★“T” grade (Cermet) Insert is supplied as standard. P.121 Please refer P.117 for cutting condition.  
 ★Please use ZMAC-V Boring Bar for the bore dia. is larger equal to φ16mm. P.105

# Straight Shank BALANCE CUT BORING BAR

**NIKKEN**



**K-RAC**

You can use following boring tools with C32 Milling Chuck. It is convenient for Various/Small Volume Productions. Use with Straight Shank ZMAC-V Boring Bar.

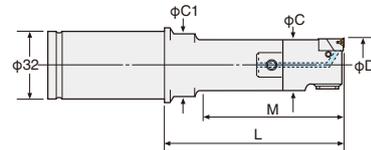
**P.74**

Code No.	Boring Range D	Boring Depth M	Shank Code No.	Head No.	Insert No.	Weight (kg)
<b>K32-RAC25- 75E</b>	25~ 32	70	K32-Q12-20	<b>12-RAC 25- 55E</b>	<b>CC07-C</b>	0.8
<b>-115E</b>		93	-Q12-60			0.9
<b>-RAC32- 75E</b>	32~ 45	70	-Q16-20	<b>16-RAC 32- 55E</b>	<b>CC08-C</b>	1.1
<b>-110E</b>			-Q16-55			1.3
<b>-RAC43-110E</b>	43~ 55	105	-Q20-40	<b>20-RAC 43- 70E</b>	<b>CC12-C</b>	1.7
<b>-RAC53-110E</b>	53~ 70		-Q26-40	<b>26-RAC 53- 70E</b>		1.8
<b>-RAC70-110E *</b>	70~ 100			<b>26-RAC 70- 70E</b>		1.9

★Balance cut boring bar on above table is the boring bar with the cartridges (E) for steel, stainless and cast iron. "C" grade (Coated) insert tip is supplied as standard. **P.72**  
 ★Boring bar with the cartridges for heavy duty boring of iron and cast iron **P.74**, for aluminium (A) **P.76** and for through hole and multi sheets (K) . **P.78**  
 Please refer **P.116** for cutting condition.  
 ★Shank (P.103) and head (P.79) are delivered in separate packages.  
 ★For centre through tool coolant type except **K32-RAC70-110E** marked \*, please add "-C" at the end of Code No. e.g. **K32-RAC53-110E-C**

# Straight Shank ZMAC ADVANCED BORING BAR

**NIKKEN**



**K-ZMAC-V**

You can use following boring tools with C32 Milling Chuck. It is convenient for Various/Small Volume Productions. **PAT.**

Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	<b>P.119</b>		<b>P.120</b>		Weight (kg)
						Head No.	Insert No.	Head No.	Insert No.	
<b>K32-ZMAC16- 65V</b>	15.9~20.2	38	15	-	K32-Q12-20	<b>12-ZMAC16-45V</b>				0.5
<b>- 75V</b>		48				<b>12-ZMAC16-55V</b>				0.5
<b>-ZMAC20- 60V</b>	19.8~25.2	55	19	-	-Q 9-20	<b>9-ZMAC20-40V</b>	<b>3MP-C,B</b>			0.6
<b>- 80V</b>		63								-Q 9-40
<b>-ZMAC25- 60V</b>	24.8~32.2	55	24	-	-Q12-20	<b>12-ZMAC25-40V</b>				0.6
<b>-100V</b>		83								-Q12-60
<b>-ZMAC32- 75V</b>	31.8~42.2	70	31	-	-Q16-20	<b>16-ZMAC32-55V</b>	<b>4MP-C,B</b>	<b>16-ZMAC32R-55V</b>	<b>CC06-C</b>	0.9
<b>-110V</b>										-Q16-55
<b>-ZMAC42-110V</b>	41.8~55.2	105	40	-	-Q20-40	<b>20-ZMAC42-70V</b>	<b>6MP-C,B</b>	<b>20-ZMAC42R-70V</b>		1.5
<b>-ZMAC55-110V</b>	54.8~70.2									-Q26-40

★All Codes shown are for Heads with Triangular Inserts.

For Heads with Rhomboid Inserts, please add "R" to the Code No. e.g.) **K32-ZMAC32 R -75V**

★MIN. dial read out: **ZMAC25-V** and smaller is 0.02mm on dia. **ZMAC32-V** and larger is 0.01mm on dia.

★"C" grade (coated) Insert for Steel, Stainless and Cast Iron is supplied as standard with the Head. (Smooth Boring and Long tool-life) Please refer **P.117** for cutting condition. We would recommend "B" grade (CBN) Insert for Hardened Steel and High Speed Boring of Cast Iron.

★Centre Through Tool Coolant function is available as standard.

# Straight Shank DEEP HOLE ZMACX ADVANCED BORING BAR **NIKKEN**

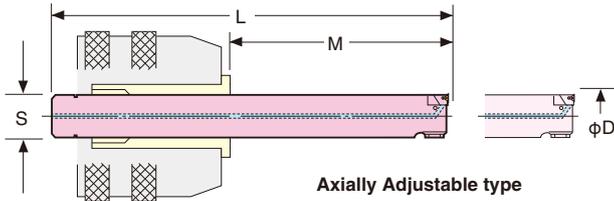
Axially Adjustable and **Solid Carbide**



For Deep Hole Boring



For Deep Hole Boring with Extended Gauge Length



Axially Adjustable type

PAT. P.119

## S-ZMACX-V

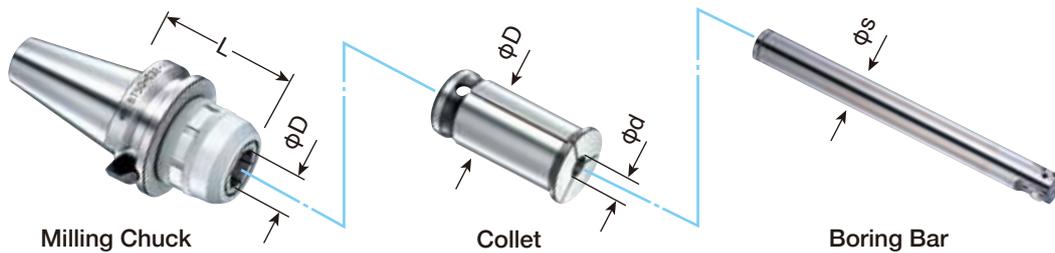
Code. No.	Boring Range D	Boring Depth M	L	S	Unit No.	Insert No.	Weight (kg)	Suitable Holder	
								Chuck	KM Collet
<b>S12-BCBX12.7- 95</b>	12.7~14.5	50~ 95	130	12	M1-12.7	<b>1MP-T</b>	0.2	<b>BT40-C32</b> <b>BT50-C32</b>	<b>KM32-12</b>
<b>S13-BCBX14.5-105</b>	14.5~19.5	50~105	135	13	M1-14.5				<b>-13</b>
<b>S15-ZMACX16-120V</b>	15.9~20.2	65~120	150	15	M2HZ-16V	<b>3MP-C, B</b>	<b>-15</b>		
<b>S19-ZMACX20-150V</b>	19.8~25.2	100~150	180	19	M2HZ-20V		<b>-19</b>		
<b>S24-ZMACX25-190V</b>	24.8~32.2	140~190	220	24	M3HZ-25V		<b>-24</b>		
<b>S30-ZMACX32-260V</b>	31.8~42.2	190~260	290	30	M4HZ-32V	<b>4MP-C, B</b>	2.6		<b>-30</b>
<b>S32-ZMACX42-275V</b>	41.8~55.2	205~275	305	32	M5HZ-42V	<b>6MP-C, B</b>	3.8	-	

★T grade (Cermet) insert tip or "C" grade (Coated) insert tip is supplied as standard for BCBX or S-ZMACX-V respectively. P.119 Please refer P.117 for cutting condition.  
★Centre Through Tool Coolant function of ZMAC-V is available as standard.

## Deep Hole Boring Operation with combination of Milling Chuck, Collet and S-ZMACX-V Boring Bar.

Ultra Deep Hole Boring MAX.L/D=8 times with Carbide Solid Boring Bar

Axially Adjustable with Milling Chuck



TAPER	Milling Chuck Code No.	Collet
<b>No.40</b>	<b>BT40 -C20- 70, 90, 105, 120</b>	<b>KM20</b>
	<b>-C25- 70, 90, 120</b>	<b>KM25</b>
	<b>-C32- 85, 105, 120</b>	<b>KM32</b>
<b>No.50</b>	<b>BT50 -C20-105, 135, 165, 180</b>	<b>KM20</b>
	<b>-C25-105, 135, 165</b>	<b>KM25</b>
	<b>-C32- 90, 105, 120, 135, 165</b>	<b>KM32</b>
	<b>-C42- 95, 105, 120, 135, 165</b>	<b>KM42</b>

KM Collet No.
<b>KM20-12</b>
<b>-13</b>
<b>KM25-12</b>
<b>-13</b>
<b>KM32-12</b>
<b>-13</b>
<b>-15</b>
<b>-19</b>
<b>-24</b>
<b>-30</b>
<b>-</b>

Deep Hole Boring Bar Code No.
<b>S12-BCBX12.7- 95</b>
<b>S13-BCBX14.5-105</b>
<b>S12-BCBX12.7- 95</b>
<b>S13-BCBX14.5-105</b>
<b>S15-ZMACX16-120V</b>
<b>S12-BCBX12.7- 95</b>
<b>S13-BCBX14.5-105</b>
<b>S15-ZMACX16-120V</b>
<b>S19-ZMACX20-150V</b>
<b>S24-ZMACX25-190V</b>
<b>S30-ZMACX32-260V</b>
<b>S32-ZMACX42-275V</b>

★KM42-12, 13, 15, 19, 24, 30, 32 are also available.

# Straight Shank DJ BORING BAR



## K-DJ

You can use following boring tools with C32 Milling Chuck.  
It is convenient for Various/Small Volume Productions.



Code No.	Boring Range D	Boring Depth M	L	C	Bit Hole Size L	Shank Code No.	Head No.	Bit Stroke S	Bit Code No.	Weight (kg)
<b>K32-DJ3-80A</b>	3~28	14~ 80	80	50	10	<b>K32-Q26-40</b>	<b>Q26-DJ3-40A</b>	5.2	<b>J10</b>	1.3
<b>-DJ8-84AN</b>	3~50	14~130	84	59	16		<b>-DJ8-44AN</b>	6.0	<b>J16</b>	1.6

- ★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.
- ★Each box set of DJ3 and DJ8 Boring Bar includes 4 pcs of Boring Bits and insert tips.
- Bits included to **K32-DJ8-84A** : J16-8-40, J16-18-80, J16-28-85, J16-38-85
- Bits included to **K32-DJ8-84AN** ; J16-8-40, J16-18-60, J16-28-65, J16-38-65
- ★Please refer P.100 for Boring Bit. Please refer P.118 for cutting condition.
- ★DJ Boring Bar without Boring Bits is available. Please add “-BD” at the end of Code No. e.g. K32-DJ8-84A-BD

# MULTI STAGE BORING BAR



Please provide your material drawing, machining drawing and machine information for multi stage boring bars.

## Multi-Boring



## Rough Boring by ISO Cartridge



## Boring, Over Turning



## Rough Boring by ISO Cartridge



## Multi-Boring



Please supply ISO cartridges basically, even we can provide by ourselves.

# eMAC BORING SET PARTS LIST

**NIKKEN**

## eMAC Boring Set

\* Photo Shows S.EMAC6110



### φ 6 ~ 110 eMAC Boring Set

Code. No.	Part name	Code No.	Q'ty	Weight(Kg)
<b>S.EMAC6110</b>	eMAC Boring Head	<b>Q26-EMAC6110-61</b>	1	0.85
	Boring Bit	<b>EJ16-6-21</b>	1	0.04
		<b>EJ16-8-28</b>	1	0.04
		<b>EJ16-11-40</b>	1	0.06
		<b>EJ16-16-50</b>	1	0.07
		<b>EJ16-22-68</b>	1	0.1
	Extension Bar for Cartridge(S/M)	<b>ECCB-53</b>	1	0.5
	Cartridge	<b>S</b> <b>ECC -28-10</b>	1	0.01
		<b>M</b> <b>ECC -36-11.5</b>	1	0.02
		<b>L</b> <b>ECC -54-19</b>	1	0.08
	Bush	<b>ECC -54-BM10</b>	1	0.02
	Plate for Cartridge	<b>ECCP-14</b>	1	0.2
	Counter Weight for Large Dia.	<b>ECC-92-CW</b>	1	0.5
	Insert Tip	<b>EM02-T2(NX)</b>	2	—
		<b>EM09-T2(NX)</b>	5	—
		<b>EM11-T2(NX)</b>	1	—
	Tip Clamping Bolt / Spare	<b>TS21</b>	1	—
		<b>TS211</b>	1	—
<b>CS250T</b>		1	—	
<b>CS300890T</b>		1	—	
Wrench Set		1	—	
Case		1	—	

★Base Holder for eMAC Boring Head is available as an option. ★Please refer P.111 for Insert Tip.  
★Gross weight : 2.9kg Case Size : 330x290x120

## eMAC-W Boring Set

### φ 85 ~ 200 eMAC-W Boring Set Parts List

Code. No.	Part name	Code No.	Q'ty	Weight(Kg)
<b>S.EMAC6200-W85200</b>	eMAC-W Boring Head	<b>Q42-EMAC6200W-85</b>	1	3.4
	Cartridge(L)	<b>ECC-54-19</b>	1	0.08
	Plate for Cartridge(L)	<b>ECCP-23</b>	1	0.4
		<b>ECCP-23L</b>	1	0.6
	Counter Weight for Large Dia.	<b>ECC-92-CW</b>	1	0.05
	Insert Tip	<b>EM11-T2(NX)</b>	1	—
	Tip Clamping Bolt / Spare	<b>CS300890T</b>	1	—
	Wrench Set		1	—
	Case		1	—

★Base Holder for eMAC Boring Head is available as an option. ★Please refer P.111 for Insert Tip.  
★Gross weight : 5.7kg Case Size : 330x290x120

## eMAC Boring Head / Combination of Processing Each Dia.



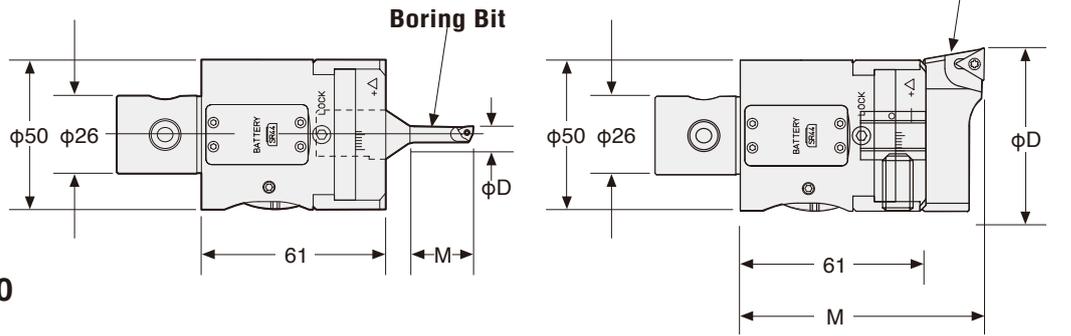
# MODULAR TYPE eMAC BORING HEAD

**NIKKEN**

**NEW**



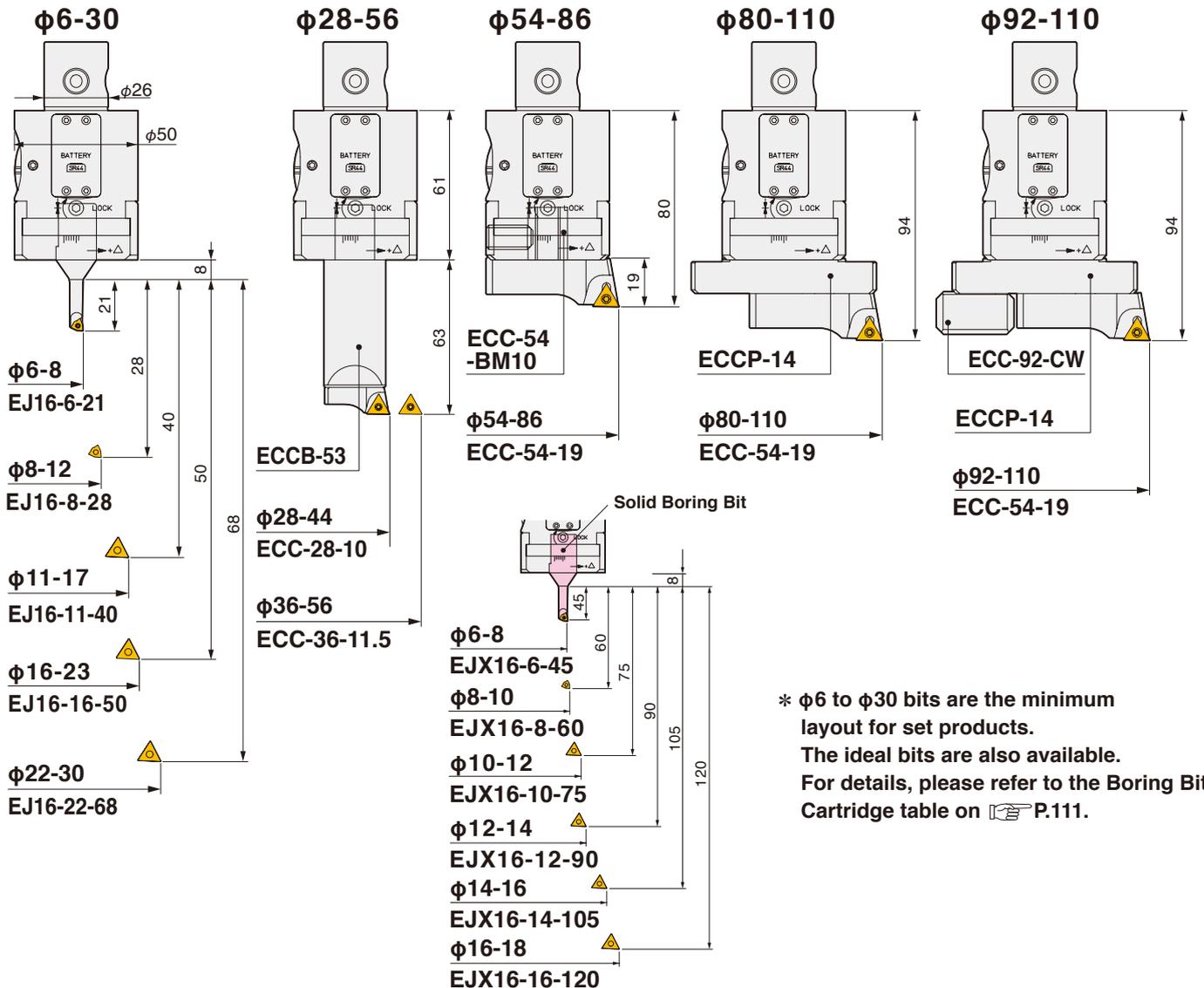
**eMAC**  $\phi 6 \sim \phi 110$



Q No.	Boring Head Code No.	Boring Range	Boring Depth	Boring Bit	Solid Boring Bit	Cartridge
		$\phi D$	M			
Q26	Q26-EMAC6110-61	$\phi 6 \sim \phi 110$	21~(94) * Please refer to the layout below	EJ16- 6-21	EJX16- 6- 45	ECC-28- 10 -36-11.5 -54- 19
				- 8-28	- 8- 60	
				-10-35	-10- 75	
				-11-40	—	
				-12-42	-12- 90	
				-14-50	-14-105	
				-16-50	-16-120	
				-18-63	—	
				-22-68	—	

★Please refer to P.102 for Spacer.  
 ★Centre Through Tool Coolant function is available as standard.(MAX.4MPa)  
 ★Please refer to P.111 for Boring Bit, Cartridge and Insert Tip.

## COMBINATION OF PROCESSING EACH DIAMETER



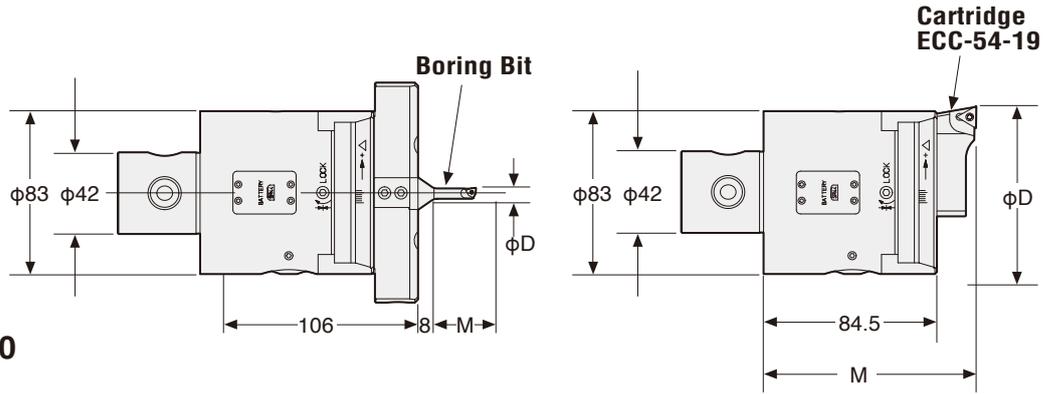
# MODULAR TYPE eMAC-W BORING HEAD



**NEW**



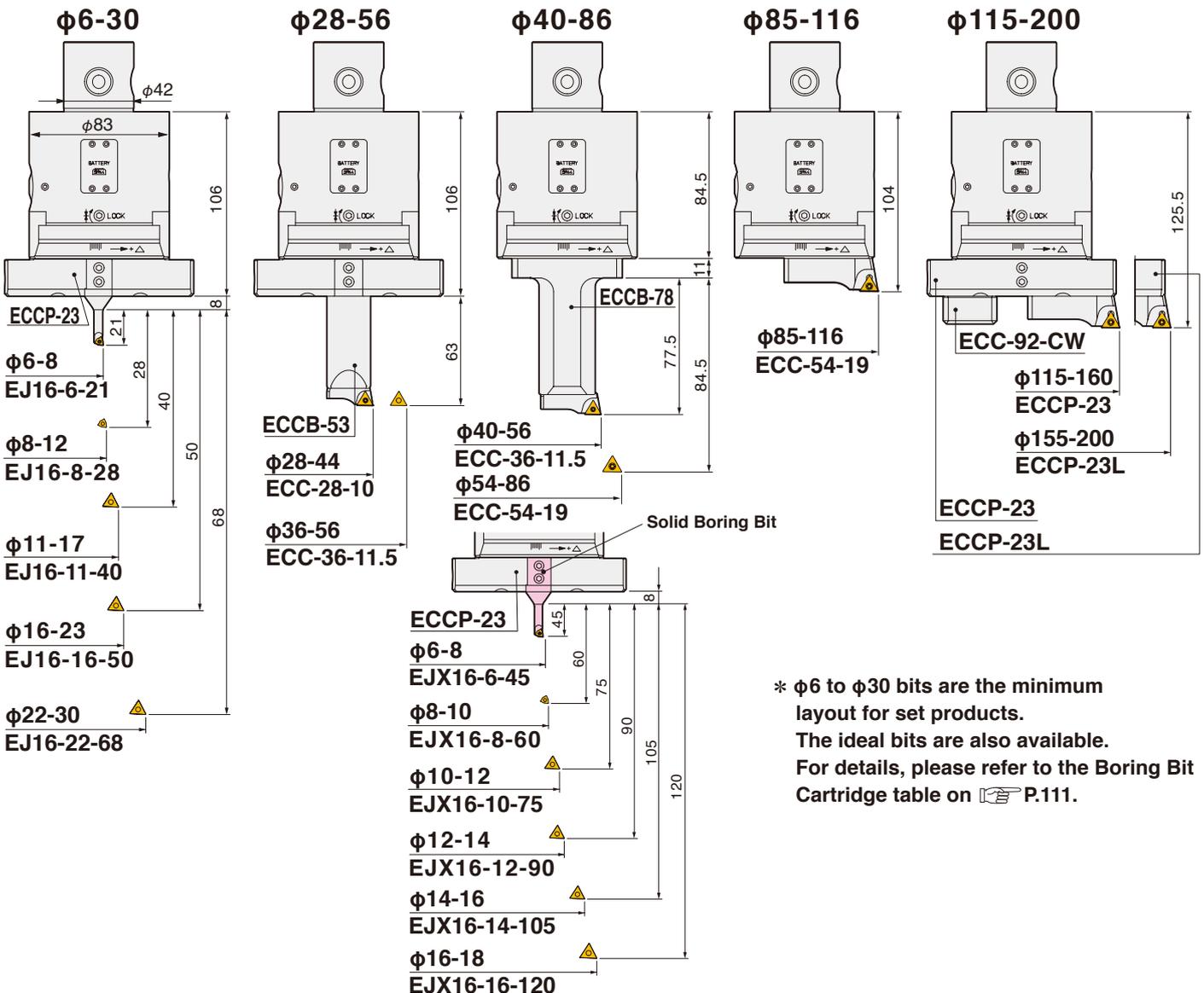
**eMAC-W  $\phi 6 \sim \phi 200$**



Q No.	Boring Head Code No.	Boring Range	Boring Depth	Boring Bit	Cartridge
		$\phi D$	M		
Q42	Q42-EMAC6200W-85	$\phi 6 \sim \phi 200$	21~(125.5) * Please refer to the layout below	EJ16- 6-21	ECC-28- 10 -36-11.5 -54- 19
				- 8-28	
				-10-35	
				-11-40	
				-12-42	
				-14-50	
				-16-50	
				-18-63	
				-22-68	

★Please refer to P.102 for Spacer.  
 ★Centre Through Tool Coolant function is available as standard.(MAX.4MPa)  
 ★Please refer to P.111 for Boring Bit, Cartridge and Insert Tip.

## COMBINATION OF PROCESSING EACH DIAMETER



\*  $\phi 6$  to  $\phi 30$  bits are the minimum layout for set products.  
 The ideal bits are also available.  
 For details, please refer to the Boring Bit Cartridge table on P.111.

# BORING BIT & CARTRIDGE for eMAC BORING SYSTEM



## eMAC Boring Head & eMAC-W Boring Head



Q26-EMAC6110-61



Q42-EMAC6200W-85

\* Select the ideal bit, cartridge, and insert tip based on the boring head and the equipment conditions

## Boring Bit & Cartridge \*Each Boring bit and Cartridge are supplied without insert tip.

Boring Range Φ	Boring bit	Solid carbide bit	Cartridge	Insert tip		Clamp bolt		Torx Wrench	
							Thread size		
6 - 8	EJ16- 6-21	EJX16- 6- 45	-	EM02	-	TS21	M2	T-6	
8 - 10	EJ16- 8-28	EJX16- 8- 60		TS211					
10 - 12	EJ16-10-35	EJX16-10- 75		-	-	EM09	CS250T	M2.5	T-8
11 - 13	EJ16-11-40	-							
12 - 14	EJ16-12-42	EJX16-12- 90							
14 - 16	EJ16-14-50	EJX16-14-105							
16 - 18	EJ16-16-50	EJX16-16-120							
18 - 22	EJ16-18-63	-							
22 - 30	EJ16-22-68	-	-	-	EM09	CS250T	M2.5	T-8	
28 - 44	-	-							ECC-28-10
36 - 56	-	-							ECC-36-11.5
54 - 200	-	-	ECC-54-19	-	EM11	CS300890T	M3	T-8	

★The EJ16-10-35, EJ16-12-42, EJ16-14-50, EJ16-18-63 bits, and the EJX16 carbide bit series are not included in sets. These products should be purchased separately.

## Inserts

Material	Steel	●	
	Stainless Steel	●	
Cast Iron	●	●	
Aluminium			●
Titanium Alloy, Heat Resistant Alloy			●

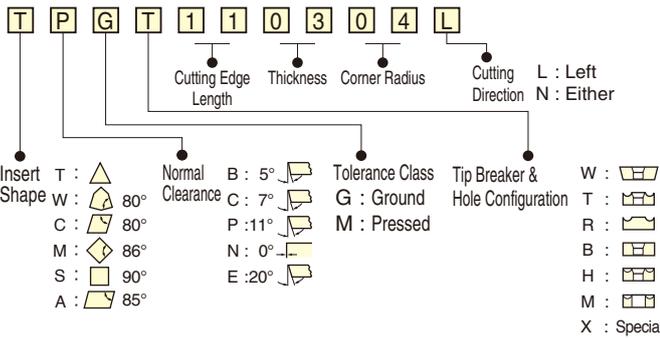
Insert with large nose radius have a stronger cutting edge, and are therefore ideal for large diameter boring of short holes. Small nose radius insert is ideal for smaller diameter boring or finishing.

Boring head type	Dimension	Code No.	Grade	Cermet (w/o coating)	Carbide K
			Material NOSE R	NX	HTI
EJ16-6-21 EJX16-6-45 -8-28 EJX16-8-60		EM02-○2 EM02-○4	0.2	●	●
			0.4	●	●
EJ16-10-35 EJX16-10-75 -11-40 -12-42 -14-50 -16-50 -18-63 -22-68 ECC-28-10 -36-11.5 -12-90 -14-105 -16-120		EM09-○2 EM09-○4	0.2	●	●
			0.4	●	●
ECC-54-19		EM11-○2 EM11-○4	0.2	●	●
			0.4	●	●

★Minimum order quantity : 10pcs

★When you use the other brand insert, use same brand Clamp bolt.

## Code No. of ISO standard Insert Tip



Please add the grade indication into ○, and add the insert tip material indication at the end of the Code No.  
**e.g. EM09-T4(NX)**

## Grade & Material

Grade	Grade Indication	Insert Tip Material Indication	Specification
Cermet (w/o coating)	T	NX	The general material for the steel and the cast iron with the heat resistance and the toughness.
Carbide K	F	HTI	Toughness and the excellent wear resistance. Applicable for the cast iron, non-ferrous metal and the non-metal.

## Recommended Cutting Speed ☉...Best ○...Good —...Unsuitable

Insert	Insert		SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	ALC	Ti
	Code No.	Material									
	T	NX	☉	☉	☉	☉	☉	☉	☉	-	-
	F	HTI	-	-	-	-	-	☉	-	☉	☉

★The cutting speed is recommended to be reduced to 50% for the interrupted cutting. ★Rapid speed : ~6000min<sup>-1</sup>.  
 ★Please be sure to make a test run and confirm of no deflection, vibration and unusual sound.

## Recommended Cutting Condition (removal, feed)

Boring Range	Boring head type			Best Condition		MAX. Condition	
	Boring bit	Solid carbide bit	Cartridge	Removal mm/φ	Feed mm/rev	Removal mm/φ	Feed mm/rev
φ 6~ 12	EJ16- 6-21 - 8-28	EJX16- 6- 45 - 8- 60		0.1~0.2	0.03~0.07	-	-
φ 10~ 30	EJ16-10-35 -11-40 -12-42 -14-50 -16-50 -18-63 -22-68	EJX16-10- 75  -12- 90 -14-105 -16-120		0.1~0.3	0.05~0.07	-	-
φ 28~ 56			ECC-28-10 -36-11.5	0.2~0.4	0.05~0.08	1.0	0.1
φ 54~200			ECC-54-19	0.2~0.5	0.05~0.08	2.0	0.15

$$\text{Speed } n(\text{min}^{-1}) = \frac{V_c \cdot 1000}{\pi D}$$

$$\text{Feed } V_f(\text{mm}/\text{min}^{-1}) = n \cdot f$$

$$\text{Logical Surface Finish } (\text{min}) = \frac{(\text{Feed per rev.})^2}{8 \times \text{Nose}/R}$$

V<sub>c</sub>: Cutting Speed(m/min<sup>-1</sup>)

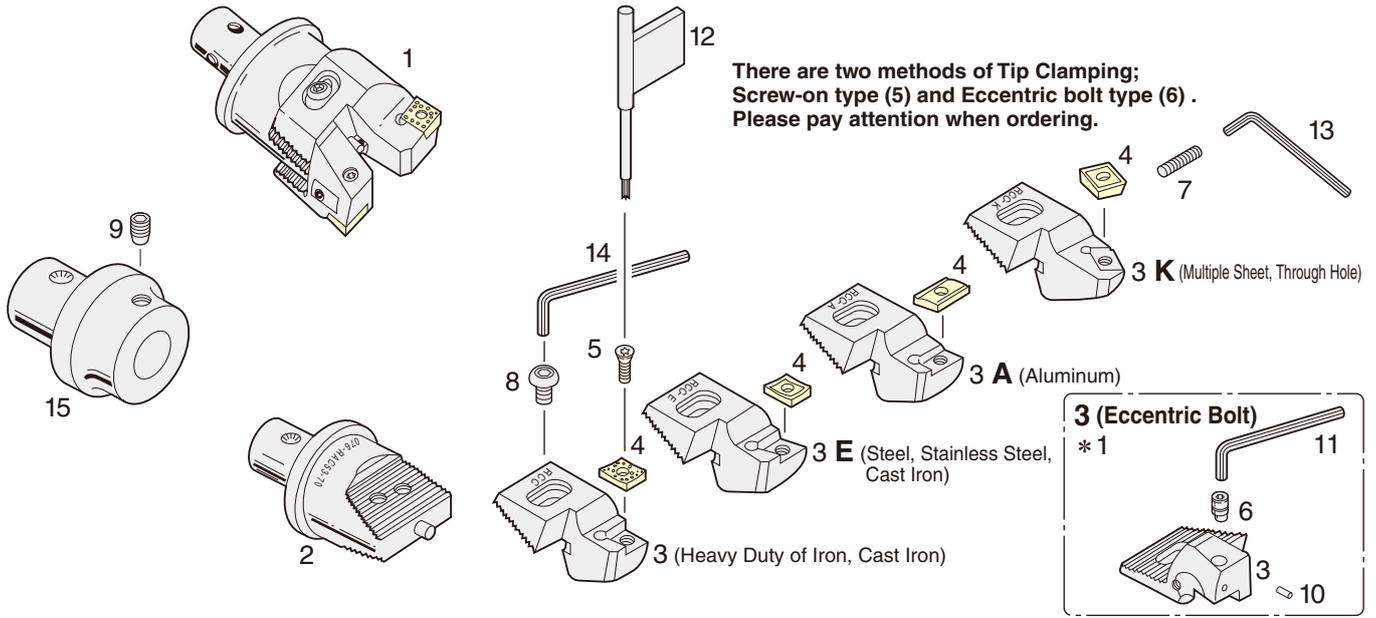
π : 3.14

D : Boring dia(mm)

f : Feed(mm/rev)

Feed per rev. depends on Nose/R and accuracy required.

# RAC BALANCE-CUT BORING UNIT PARTS LIST



Boring Range	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	RAC Head	RAC Base	Cartridge	Tip	Tip Clamping Bolt	Eccentric Bolt	Adjusting Screw	Cartridge Clamping Bolt	Set Screw	Copper Pin	Tip Clamping L-Wrench	Tip Clamping Handle	L-Wrench for Adjustment	L-Wrench for Cartridge	Stepped Spacer
φ25~32	12-RAC 25- 55E	12-RAC025- 55B	RCC- 25E	CC07	M3070	—	M508	G025	B12	—	—	T-10	M2.5	M3	SP26-12-30
	- 55A		- 25A	AEG12											
	- 55K		- 25K	SC09											
φ32~45	16-RAC 32- 55E	16-RAC 32- 55B	RCC- 32E	CC08	M4090	—	M512	G032	B16	—	—	T-15	M4	SP26-16-30	
	- 55A		- 32A	AEG12	M3070							T-10			
	- 55K		- 32K	SC09											
φ43~55	20-RAC 43- 70	20-RAC 43- 70B	RCC- 43	CN08	CSM-70	CSM-43	—	M514	G043	B20	R12	M3	20S	M5	SP26-20-30
	- 70E		- 43E	CC12	M5012	T-15									
	- 70A		- 43A	AEG16	M4090	—									
	- 70K		- 43K	SC12	M5012										
φ53~70	26-RAC 53- 70	26-RAC 53- 70B	RCC- 53	CN08	CSM-70	CSM-43	—	M518	G053	—	R12	M3	20S	M2.5	—
	- 70E		- 53E	CC12	M5012	T-15									
	- 70A		- 53A	AEG16	M4090	—									
	- 70K		- 53K	SC12	M5012										
φ70~100	26-RAC 70- 70	26-RAC 70- 70B	RCC- 70	CN08	CSM-70	CSM-43	—	M528	G070	—	R12	M3	20S	M6	—
	- 70E		- 70E	CC12	M5012	T-15									
	- 70A		- 70A	AEG16	M4090	—									
	- 70K		- 70K	SC12	M5012										
	34-RAC 70- 85	34-RAC 70- 85B	RCC- 70	CN08	CSM-70	CSM-43	—	M528	G070	—	R12	M3	20S	M6	—
	- 85E		- 70E	CC12	M5012	T-15									
	- 85A		- 70A	AEG16	M4090	—									
	- 85K		- 70K	SC12	M5012										
φ100~130	42-RAC100-100	42-RAC100-100B	RCC-100	CN08	CSM-70	CSM-43	—	M538	G070	—	R12	M3	20S	M6	—
	-100E		-100E	CC12	M5012	T-15									
	-100A		-100A	AEG16	M4090	—									
	-100K		-100K	SC12	M5012										

★You can use only one type RAC Base irrespective of material and work piece. Suitable Cartridge and Carbide Insert must be selected. ☎P.79, P.80

★Insert tip is available as an option.

★There are 2 methods of Tip Clamping; Screw-on type (5) and Eccentric Bolt type (6). Please pay attention when ordering for spare parts.

★Code No. of Cartridge means for Cartridge only. When ordering for cartridge set, please use set Code No. e.g. "S.RCC-25".

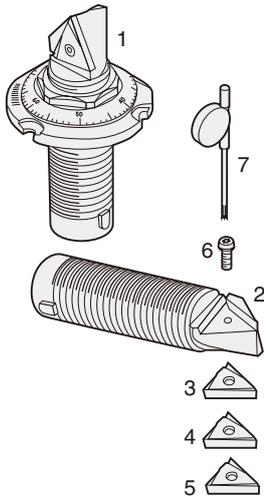
★The Code No. of Tip Clamping Handle is unified to T10, T15 and 20S.

★\* 1 Eccentric Bolt type Cartridge ; Code No. e.g. "RCC-43Q".

# BCB MICRO-CUT BORING UNIT PARTS LIST

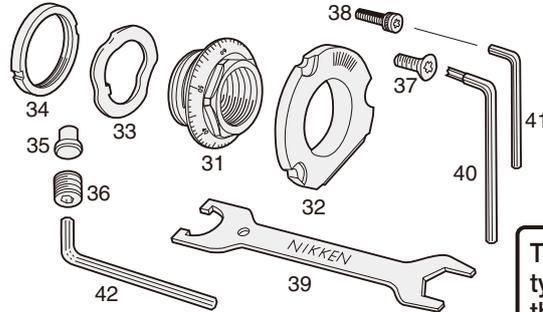


## BCB Screw on type

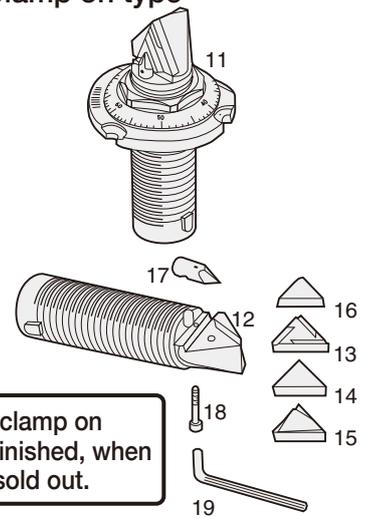


## Relation between Micro-Cut Boring Arbor and Micro-Cut Boring Unit

NIKKEN Micro-Cut Boring Arbor is provided with Micro-Cut Boring Unit. When ordering each parts for spare, please place the order by Code No. of Insert, Cartridge and Unit of the following parts list.



## BCB Clamp on type



The sales of clamp on type will be finished, when the stock is sold out.

Boring Range	Screw on type							Clamp on type										
	1	2	3	4	5	6	7	11	12	13	14	15	16	17	18	19		
	BCB Unit	Cartridge	Insert for Alloy Steel	Insert for Cast Iron	Insert for Steel, Stainless Steel	Insert Clamp Bolt	Insert Clamp Handle	BCB Unit	Cartridge	Insert for Alloy Steel	Insert for Cast Iron	Insert for Steel, Stainless Steel	Insert Breaker	Clamp Piece	Insert Clamp Bolt	Insert Clamp Handle		
12.7~14.5	M 1-12.7	—	1MP-E	1MP-F	1MP-T	M61	10S	M 1S-2	M 1S-2C*	—	—	—	—	—	—	—		
14.5~19.5	M 1-14.5	—						M 1L-2	M 1L-2C*	—	—	—	—	—	—	—	—	—
19 ~ 22.5	M 2-19	M 2-19 C	3MS-E	3MS-F	3MS-T	M68	13S	M 2S-2	M 2S-2C*	—	—	—	—	—	—	—		
22 ~ 29.5	M 2-22	M 2-22 C						M 2L-2	M 2L-2C*	—	—	—	—	—	—	—	—	—
29 ~ 41	M 3-29	M 3-29 C				M63	T-8	M 3L-2S	M 3L-2SC	3P-E	3P-F	3P-T	—	CP- 3	B183	M1.5		
38 ~ 50	M 5-38	M 5-38 C	M2577	M 5S-2S	M 5S-2SC			5P-E	5P-F	5P-T	5CB	CP- 5	B185	M2				
48 ~ 65	M 5-48	M 5-48 C		M67	20S	M 5L-2S	M 5L-2SC	7P-E	7P-F	7P-T	7CB	CP- 7	B187	M2.5				
62 ~ 90	M 7-62	M 7-62 C	M60			M 7L-2S	M 7L-2SC	10P-E	10P-F	10P-T	10CB	CP-10	B180	M3				
82 ~ 110	M 7-62	M 7-62 C				M 10L-2S	M 10L-2SC	10P-E	10P-F	10P-T	10CB	CP-10	B180	M3				
100 ~ 140	M10-100	M10-100 C	10MP-E	10MP-T	10MP-T	M60	20S	M10L-2S	M10L-2SC	10P-E	10P-F	10P-T	10CB	CP-10	B180	M3		

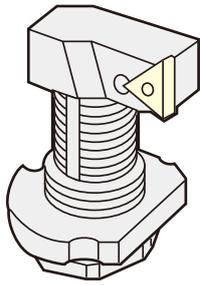
★Each Unit and Cartridge are supplied without Insert Tip.  
★Codes for BCB boring bars that support micro units are indicated by red text.  
e.g. M5-28: **BCB38**

★All brazed types marked \* were stopped production on 2007 JAN.  
★Each unit and cartridge are supplied without insert tip.  
★Brazed type is available for the diameter of φ29~φ200.

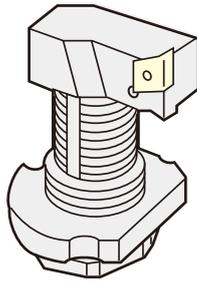
Boring Range	31	32	33	34	35	36	37	38	39	40	41	42
	Dial Ring	Lock Flange	Wave Spring	Pre-Load Nut	Lock Metal	Lock Screw	Unit Mounting Bolt A	Unit Mounting Bolt B	Adjustment Handle	Wrench for Unit Mounting Bolt A	Wrench for Unit Mounting Bolt B	Wrench for Lock Screw
12.7~14.5	—	B321	B331	B341	B351	B361	—	B381	M391	—	M1.27	M1.5
14.5~19.5	—	B321	B331	B341	B351	B361	—	B381	M391	—	M1.27	M1.5
19 ~ 22.5	B312	B322	9M216W	9M216P	B352	B362	—	B382	M392	—	T6	M2
22 ~ 29.5						M363						
29 ~ 41	B313	B323	M333	9M325P	B353	B363	—	B384	M393	—	13S	M2.5
38 ~ 50	B315	B325	M335	9M542P	B355	B365	—	B386	M395	—	20S	M3
48 ~ 65		B326			B356	B366						
62 ~ 90	B317	B327	M337	9M770P	B357	B367	M377	B387	M397	M407	M405	M5
82 ~ 110						B368						
100 ~ 140	B310	B320	M330	9M108P	B350	B360	M370	—	M390	M400	—	M6

★31, 32, 33 and 34 are set for spare parts. When ordering, please add "D." at the beginning of Code No.  
e.g. D.M2-22 for Boring Range: 22~29.5mm

# ZMAC ADVANCED BORING UNIT PARTS LIST



ZMAC-V



ZMAC-VR

NIKKEN ZMAC-V Boring Heads come complete with the ZMAC-V Boring Unit. Specify the part No. in the table below when ordering spares.

Triangular Insert Heads and Rhomboid Insert Heads use different boring units, cartridges, insert tips, insert clamp bolts, and insert clamp handles, but all other parts are common to both.

Other manufacturers' ISO standard insert tips available on the market may have different insert clamp hole diameters, so please contact us regarding use.

\* Boring heads that use ISO standard insert tips available on the market are also available with us.

ZMAC Advanced (ISO) Boring Head

P.89

\* The ZMAC units and new ZMAC-V, ZMAC-VR units are interchangeable.

ZMAC-V Style	Boring Range	Unit	Triangular Insert	Insert Clamp Screw	Insert Clamp Handle	Lock Screw	Adjustment Handle	Unit Clamp Bolt	
ZMAC16 -V	15.9~20.2	M 2HZ- 16V		M2045	T-6	M361	M 2HZL-A	M2045	
ZMAC20 -V	19.8~25.2	M 2HZ- 20V				M362	M 2HZL-B		
ZMAC25 -V	24.8~32.2	M 3HZ- 25V				M363	M 3HZL		
ZMAC32 -V	31.8~42.2	M 4HZ- 32V	4MP-C,B	M2055	T-8	M365	M 4HZL	M2577	
ZMAC42 -V	41.8~55.2	M 5HZ- 42V				M364	M 5HZL		
ZMAC55 -V	54.8~70.2	M 5HZ- 55V	6MP-C,B	M2577 (M2562D) <sup>*</sup>	T-8	M366	M 7HZL	M3090	
ZMAC70 -V	69.8~85.2	M 7HZ- 70V				M360			
ZMAC85 -V	84.8~100.2	M10HZ- 85V				M367	M10HZL		M4012
ZMAC100-V	99.5~140.5	M10HZ-100V				M368			
ZMAC140-V	139.5~180.5	M10HZ-140V				M369			

★Each Unit and Cartridge are supplied without Insert Tip.

★Cartridge for base forming of bore is an option.

Please specify the diameter and width of base forming.

★For Diamond Insert Tip (6MP-D), M2562D\* must be used.

★Cartridge can not be supplied alone, please order ZMAC-V unit.



Special cartridge example for necking is available. Please contact us with the work piece drawing.

ZMAC-VR Style	Boring Range	Unit	Triangular Insert	Insert Clamp Screw	Insert Clamp Handle
ZMAC32 -VR	31.8~42.2	M 4HZ- 32VR	CC06-C	M2560	T-8
ZMAC42 -VR	41.8~55.2	M 5HZ- 42VR		M2577	
ZMAC55 -VR	54.8~70.2	M 5HZ- 55VR	CC08-C	M4090	T-15
ZMAC70 -VR	69.8~85.2	M 7HZ- 70VR		M4012	
ZMAC85 -VR	84.8~100.2	M10HZ- 85VR	CC12-C	M5012	T-15
ZMAC100-VR	99.5~140.5	M10HZ-100VR			
ZMAC140-VR	139.5~180.5	M10HZ-140VR			

The cartridge head can be exchanged itself for the head bigger equal to ZMAC42-V.

Boring Range	Cartridge Head		Head Clamp Bolt
41.8~55.2	M 5HZ- 42 CH	M 5HZ- 42RCH	M512C
54.8~70.2	M 7HZ- 70 CH	M 7HZ- 70RCH	
69.8~85.2	M10HZ- 85 CH	M10HZ- 85RCH	
99.5~140.5	M10HZ-100 CH	M10HZ-100RCH	
139.5~180.5	M10HZ-100 CH	M10HZ-100RCH	

★Each Unit and Cartridge are supplied without Insert Tip.  
★Cartridge can not be supplied alone, please order ZMAC-V unit.

Detach Attach

●Loosen head clamp bolt after boring diameter is set to little larger than the MIN. boring diameter.

●Insert the head into cartridge, then tighten head clamp bolt temporary.

●Loosen side lock bolt.

●Rotate the dial ring 0.2~0.3mm to minus direction.

●Tighten head clamp bolt by pushing the head to the support portion of the main body.

# RAC BALANCE-CUT BORING ARBOR CUTTING DATA



## CC (Positive type) RAC-E



## CN (Negative type) RAC



## RAC-A



## RAC-K



### Material

**Steel**

60~150m/mim. (Dry or Wet cutting)

**Stainless Steel**

40~80m/mim. (Wet cutting)

**Cast Iron**

60~150m/mim. (Dry or Wet cutting)

**Aluminium,  
Non-ferrous metal**

200~500m/mim. (Wet cutting)

**Multiple Sheets,  
Through Hole**

40~120m/mim. (Dry or Wet cutting)

### Recommended cutting Speed

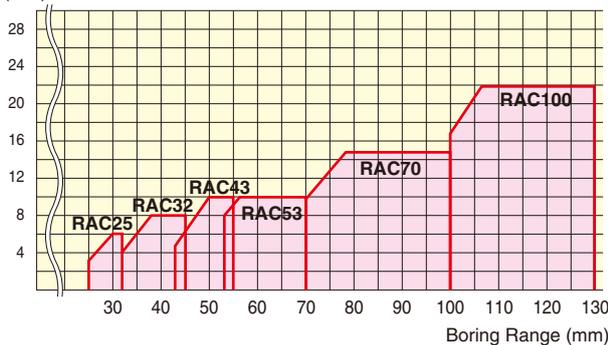
◎...Best ○...Good ---...Unsuitable

Insert	Insert		SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	Interrupted Cutting
	Code No.	Grade									
CC	CC	Coated Carbide M	◎60~120	◎60~150	◎60~150	◎50~80	○80~120	○60~150	◎40~80	—	○
		Coated Carbide K	—	—	—	—	◎80~120	◎60~150	—	—	—
CN	CN	Coated Carbide M	○60~120	○60~150	○60~150	○50~80	○50~80	○60~150	○40~80	—	○
		Coated Carbide K	—	—	—	—	—	—	—	◎400~800	—
SC	SC	Coated Carbide M	◎60~120	◎60~150	◎60~150	◎50~80	○80~120	○60~150	◎40~80	—	○
		Coated Carbide K	—	—	—	—	◎80~120	◎60~150	—	—	—

- ★The cutting speed is recommended to be reduced to 50% for the interrupted cutting.
- ★When L/D is longer, the insert tip with small Nose R is recommended.
- ★When L/D is longer, the feed rate at the entrance is recommended to be reduced to 60 to 70%.

### Relation between Boring Dia. & MAX. Removal

MAX. Removal on Dia. (mm)



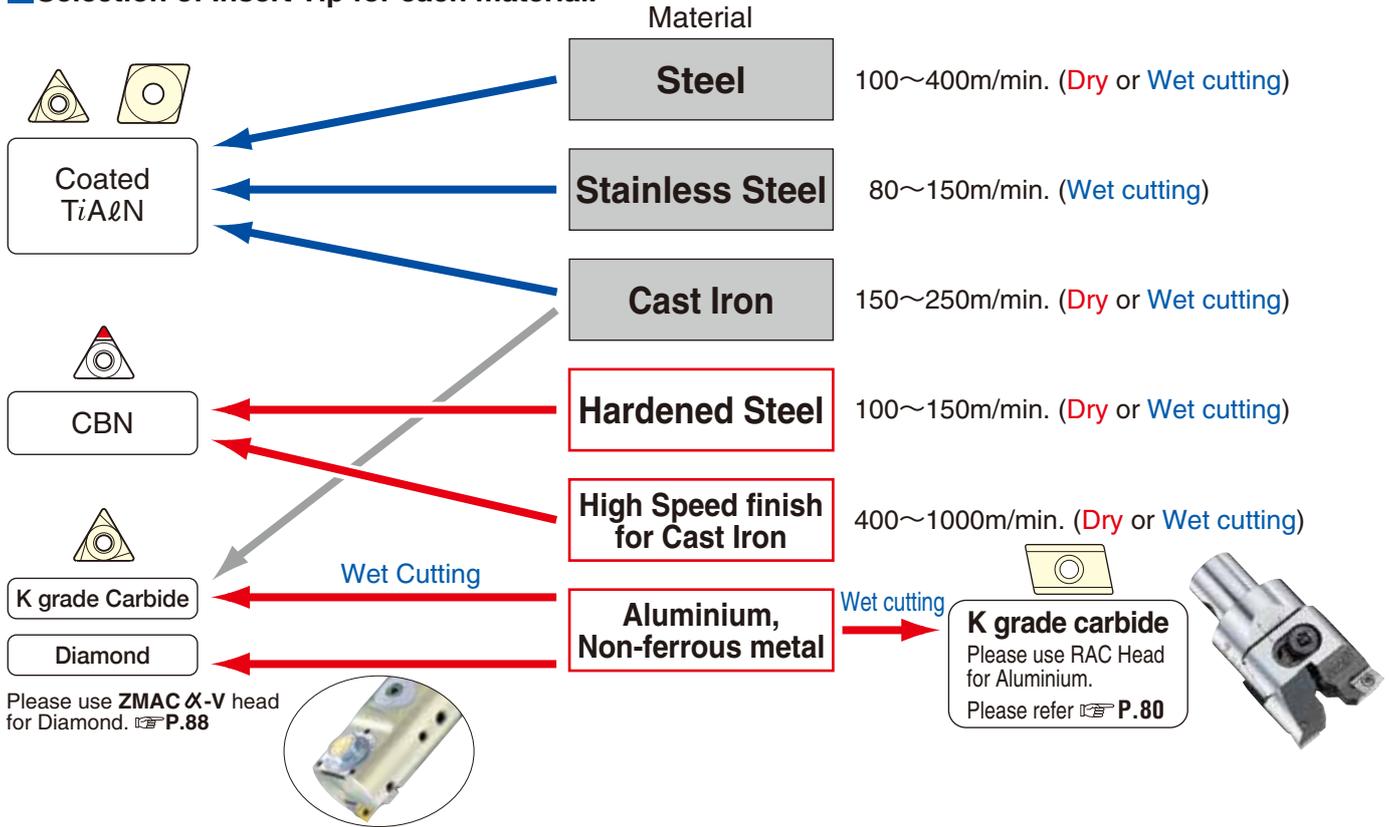
### Recommended Cutting Condition (removal, feed)

These figures are based on the application of L/D=3~3.5 times on cast iron.

Boring Range	Type	Best Condition		MAX. Condition	
		Removal mm/φ	Feed mm/rev.	Removal mm/φ	Feed mm/rev.
φ25~ 32	RAC 25	2.0~ 4.0	0.2~0.3	0.5~ 6.0	0.1~0.4
32~ 43	RAC 32	3.0~ 5.0	0.2~0.3	1.0~ 8.0	0.1~0.4
43~ 53	RAC 43	4.0~ 7.0	0.2~0.3	1.0~10.0	0.1~0.5
53~ 70	RAC 53	4.0~ 7.0	0.2~0.3	1.0~10.0	0.1~0.5
70~100	RAC 70	5.0~10.0	0.3~0.4	1.0~15.0	0.1~0.5
100~130	RAC100	7.0~12.0	0.3~0.4	1.0~22.0	0.1~0.5

# ZMAC ADVANCED BORING SYSTEM CUTTING DATA **NIKKEN**

## Selection of Insert Tip for each material.



## Recommended cutting Speed ○...Best ○...Good ---Unsuitable

Insert	Code No.	Grade	SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	Hardened Steel			Interrupted Cutting
											SCM	SKD	SUJ	
	C	Coated	○	○	○	○	○	○	○	-	-	-	-	○
	E	P10	○	○	○	○	○	-	○	-	-	-	-	○
	F	K10	-	-	-	-	-	○	-	○	-	-	-	○
	T	Cermet	○	○	○	○	○	-	○	-	-	-	-	○
	B	CBN	-	-	-	-	-	○	-	-	○	○	○	○
	D	Diamond	-	-	-	-	-	-	-	○	○	-	-	-
	C	Coated Carbide M	○	○	○	○	○	○	○	-	-	-	-	○
		Coated Carbide K	○	○	○	○	○	○	○	-	-	-	-	○

- ★ Existing Inserts (Cermet, P grade Carbide & K grade Carbide) are available.
- ★ The cutting speed is recommended to be reduced to 50% for the interrupted cutting.
- ★ When L/D is longer, the insert tip with small Nose R is recommended.
- ★ When L/D is longer, the feed rate at the entrance is recommended to be reduced to 60 to 70%.

## Recommended Cutting Condition (removal, feed)

Boring Range	Type								
		Best Condition		MAX. Condition		Best Condition		MAX. Condition	
		Removal mm/φ	Feed mm/rev.						
φ16~20	ZMAC16-V	0.2~0.4	0.05~0.07	1.0	0.1				
φ20~25	ZMAC20-V	0.2~0.4	0.05~0.07	1.5	0.1				
φ25~32	ZMAC25-V	0.2~0.4	0.05~0.07	2.0	0.1				
φ32~42	ZMAC32-V	0.2~0.4	0.05~0.08	2.0	0.2	1.0~3.0	0.1~0.15	5.0	0.2
φ42~55	ZMAC42-V	0.2~0.5	0.05~0.08	4.0	0.2	1.0~3.0	0.1~0.15	5.0	0.2
φ55~70	ZMAC55-V	0.2~0.5	0.05~0.08	4.0	0.2	1.0~3.0	0.1~0.15	5.0	0.2
φ70~85	ZMAC70-V	0.2~0.8	0.05~0.1	4.0	0.25	1.0~4.0	0.1~0.2	8.0	0.25
φ85~	ZMAC85-V~	0.2~0.8	0.05~0.1	4.0	0.25	1.0~4.0	0.1~0.2	8.0	0.25

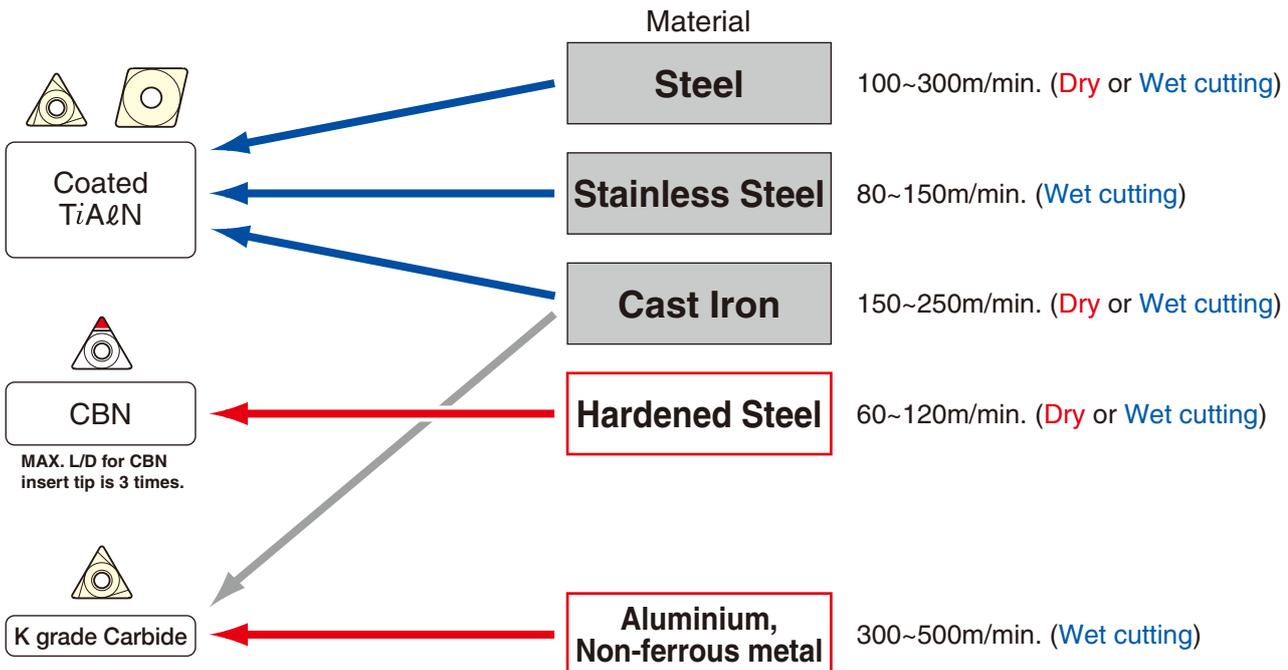
In case of CBN insert, reduce L/D as small as possible : MAX. 3 times.  
Stock removal on diameter.  
D<32mm : less than 0.25mm  
D>32mm : less than 0.3mm

Feed per rev. depends on Nose/R and accuracy required.  
Logical Surface Finish :  $\frac{(\text{Feed per rev.})^2}{8 \times \text{Nose/R}}$

# DJ BORING ARBOR CUTTING DATA

**NIKKEN**

## Selection of Insert Tip for each material.



## Recommended cutting Speed

○...Best   ○...Good   -...Unsuitable

Insert	Code No.	Grade	SS41	S55C	SCM	SKD	SC	FC,FCD	SUS	AL,ALC	Hardened Steel			Inter-rupted Cutting
											SCM	SKD	SUJ	
	C	Coated	○	○	○	○	○	○	○	-	-	-	-	○
	E	P10	○	○	○	○	○	-	○	-	-	-	-	○
	F	K10	-	-	-	-	-	○	-	○	-	-	-	○
	T	Cermet	○	○	○	○	○	-	○	-	-	-	-	○
	B	CBN	-	-	-	-	-	-	○	-	-	○	○	○
	C	Coated	○	○	○	○	○	○	○	-	-	-	-	○

★Existing Inserts (Cermet,P grade Carbide & K grade Carbide) are available.  
 ★The cutting speed is recommended to be reduced to 50% for the interrupted cutting.

## Recommended Cutting Condition (removal,feed)

Boring Range	Type		Best Condition		MAX. Condition	
	DJ3	DJ8	mm/φ	mm/rev.	mm/φ	mm/rev.
φ 3~ 8	J10- 3		~0.1	0.03~0.07		
φ 5~ 15	J10- 5		0.1~0.2	0.05~0.07		
φ 8~ 18	J10- 8	J16- 8	0.1~0.2	0.05~0.08		
φ18~ 28	J10-18	J16-18	0.2~0.4	0.05~0.08	1.0	0.1
φ28~ 39		J16-28	0.2~0.4	0.05~0.08	1.5	0.15
φ38~ 50		J16-38	0.2~0.5	0.05~0.08	2.0	0.15

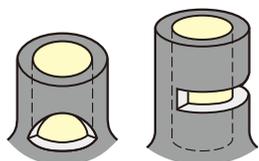
In case of CBN insert, reduce L/D as small as possible : MAX. 3 times.  
 Stock removal on diameter.  
 D<32mm : less than 0.25mm  
 D>32mm : less than 0.3mm

Feed per rev. depends on Nose/R and accuracy required.

$$\text{Logical Surface Finish} : \frac{(\text{Feed per rev.})^2}{8 \times \text{Nose/R}}$$

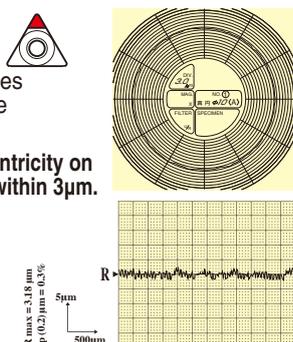
## Example of hardened steel boring with CBN Insert

Reduce L/D as small as possible:MAX. 3times  
 For bits of L/D shorter than standard one are also available. Please contact with us.



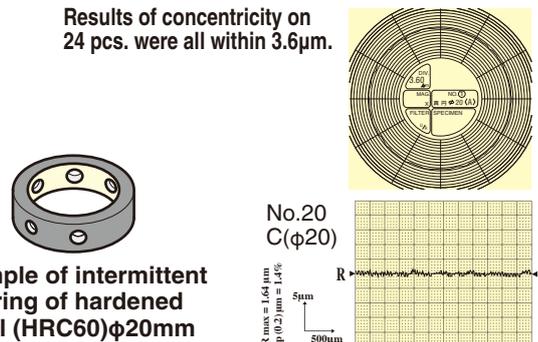
Example of intermittent boring of hardened steel (HRC60) φ10mm

Results of concentricity on 24 pcs. were all within 3μm.



Results of surface finish on 24 pcs. were all within 3.3 microns. (R MAX.)

Results of concentricity on 24 pcs. were all within 3.6μm.



Example of intermittent boring of hardened steel (HRC60)φ20mm

Results of surface finish on 24 pcs. were all within 2.8 microns. (R MAX.)

# NIKKEN INSERT TIP (EXCLUSIVE FOR BORING ARBOR) (1)



Material	Steel	●	●	●				
	Stainless Steel	●	●					
	Cast Iron	●			●	●		
	Aluminium					●		
	High Speed finish for Cast Iron						●	
	Hardened Steel						●	
	High Speed finish for Aluminium							●

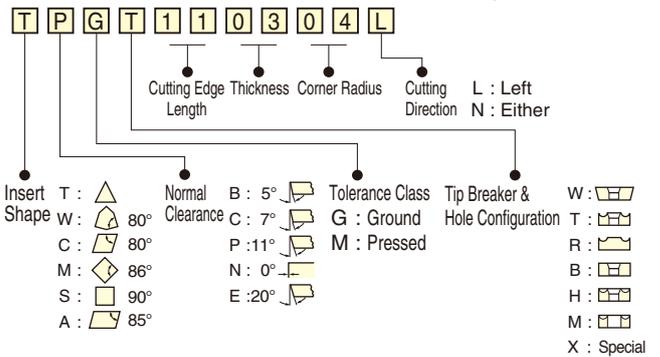
For the Boring of Large Diameter and Short Depth, the use of insert with large nose radius is recommended. The smaller nose radius inserts are ideal for smaller diameter boring or finishing operation.

Applicable Arbor	Dimension	Code No.	Grade	Coated Cermet	Cermet (w/o coating)	Carbide P	Carbide K	CBN	Diamond	
				C	T	E	F-NB*2 w/o breaker	F	B	D
				Material NOSE R	PV720*7	T2000Z	NS530*5	TN90	ST10P	H1
BCB12.7, BCB14.5		1MP-○2	0.2	●		●			●	
			0.4							
BCB19, BCB22, BCB29		3MS-○2	0.2	●		●	●*2	●	●	
			0.4							
ZMAC16-V, ZMAC20-V, ZMAC25-V for DJ Bit		3MP-○2	0.2	●	●		●*2	●	●	
			0.4	●	●				●	●
ZMAC32-V		4MP-○2	0.2	●	●		●*2	●	●	
			0.4	●	●			●*2	●	●
ZMAC42-V-ZMAC140-V, BCB38, BCB48, DJ Bit, MCCZ130-V, BAC130-V - BAC530-V		6MP-○2	0.2	●	●		●*2	●	●*4	
			0.4	●	●		●	●*2	●	●*4
			0.8	●	●		●	●*2	●	●*4
BCB62, BCB82, BCB100		10MP-○2	0.2	●			●*2	●		
			0.4	●			●	●*2	●	
			0.8	●			●	●*2	●	

- ★Minimum quantity of CBN and Diamond: 1pcs, All other insert tip: 10pcs
- ★\*2 "-NB" (w/o breaker) is recommended for cast iron.
- ★\*3 Hole diameter of 6MP is φ2.8mm. M2562D (Optional tip clamp bolt) is required for the ISO standard insert tip with the hole diameter of φ3.3~φ3.5mm.
- ★\*4 M2562D is necessary for 6MP-D (Diamond), because of the hole diameter is different.
- ★The ISO code No. surrounded with ( ) is the Nikken original insert tip.
- ★\*5 Changes it to NS9530, When the stock is sold out.
- ★\*6 Changes it to KBN510, When the stock is sold out.
- ★\*7 Changes it to PV720, When the stock is sold out.

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No.  
e.g. 6MP-C4 (PV720), 6MP-F4-NB (H1)

## Code No. of ISO standard Insert Tip



# NIKKEN INSERT TIP (EXCLUSIVE FOR BORING ARBOR) (2)



Material	Steel	●	●	
	Stainless Steel	●	●	
	Cast Iron	●	●	●

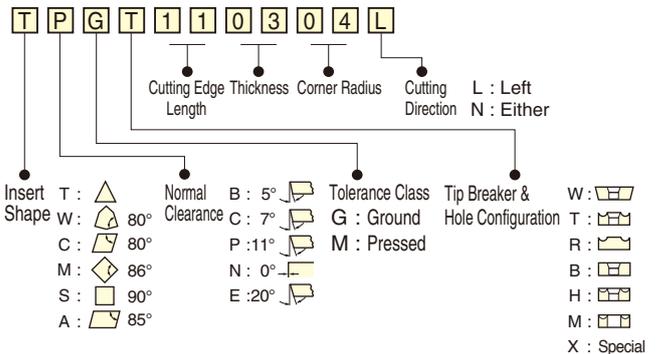
For the Boring of Large Diameter and Short Depth, the use of insert with large nose radius is recommended. The smaller nose radius inserts are ideal for smaller diameter boring or finishing operation.

Applicable Arbor	Dimension	Code No.	NOSE R	Coated Cermet	Coated Carbide M	Coated Carbide K
				Grade	PV90	AC630M
J10-5, J16-5		CC03-○2	0.2	●		
ZMAC32-VR, ZMAC42-VR, ZMAC55-VR		CC06-○4	0.4		●	●
		CC06-○8	0.8		●	●
RAC25E		CC07-○4	0.4		●	●
		CC07-○8	0.8		●	●
ZMAC70-VR, ZMAC85-VR, RAC25E (CC08), RAC32E		CC08-○4	0.4		●	●
		CC08-○8	0.8		●	●
RAC43 - RAC530 (Eccentric Bolt Type)		CN08-○8	0.8		●	
ZMAC100-VR, ZMAC140-VR, RAC43E - RAC100E		CC12-○4	0.4		●	●
		CC12-○8	0.8		●	●

★Minimum quantity of CBN and Diamond: 1pcs, All other insert tip: 10pcs  
 ★The ISO code No. surrounded with ( ) is the Nikken original insert tip.

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No.  
 e.g. 6MP-C4 (PV90) , 6MP-F4-NB (H1)

### Code No. of ISO standard Insert Tip



# NIKKEN INSERT TIP (EXCLUSIVE FOR BORING ARBOR) (3)



Material	Steel	●	●			
	Stainless Steel	●				
	Cast Iron			●		
	Aluminium			●		
High Speed finish for Cast Iron				●		
Hardened Steel				●		
		Cermet (w/o coating)	Carbide P	Carbide K	CBN	
		Grade	T	E	F	B
		Material NOSE R	T12A	ST10P	HTi10	KBN10B*1
Applicable Arbor	Dimension	Code No.				
BCB29		3P-○2	0.2	●	●	●
BCB38, BCB48		5P-○4	0.4	●	●	●
BCB62, BCB82		7P-○4	0.4	●	●	●
		7P-○8	0.8		●	●
BCB100		10P-○4	0.4	●	●	●
		10P-○8	0.8		●	●

★Minimum quantity of CBN: 1pcs, All other insert tip: 10pcs ★\*1 Changes it to **KBN510** sequentially as soon as stock disappears.  
 ★The ISO code No. surrounded with ( ) is the Nikken original insert tip.

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. 10P-T4 (T12A)

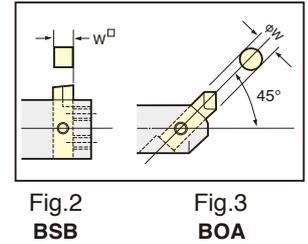
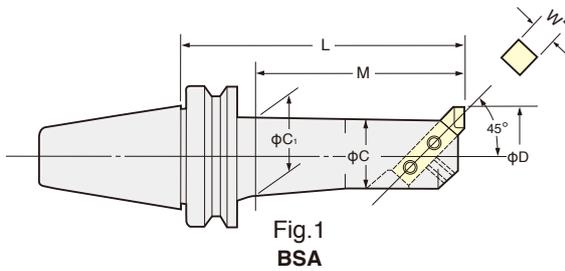
## Grade & Material

Grade	Grade Indication	Insert Tip Material Indication	Specification
Coated Cermet	C	PV90	Applicable for the midium roughing and finishing on the steel. Very stable cutting with coolant to be improved the heat resistance and the impact resistance.
		T2000Z	ZX coated suitable for the high speed finishing on the steel with long insert life. Very fine surface finish to be improved the impact resistance and the fracture resistance.
Coated Carbide M		AC630M	Very tough carbide M (base material) with the super FF coated. Excellent for the impact resistance and the fracture resistance for the stainless steel
Coated Carbide K		AC410K	Very tough carbide K (base material) with the super FF coated. Very stable cutting for the ductile cast iron and normal cast iron.
Cermet (w/o coating)	T	NS530	The general material for the steel and the cast iron with the heat resistance and the toughness.
		NS9530	New grade with tough and smooth top layer demonstrates amazing fracture resistance. Stable tool life due to incredible toughness. This is an upgraded version of NS530.
		T12A	Applicable for the roughing and finishing on the steel. Very stable cutting to be improved the heat resistance and the impact resistance.
Carbide P	E	ST10P	Applicable for the middle to high speed cutting on the steel and the steel casting.
Carbide K	F	H1	Excellent wear resistance and applicable for the cast iron, non-ferrous metal and the non-metal.
		HTi10	Toughness and the excellent wear resistance. Applicable for the cast iron, non-ferrous metal and the non-metal.
		KW10	Stable wear resistance and the fracture resistance. Applicable for the cast iron, non-ferrous metal and the non-metal.K10
CBN	B	KBN10B	Excellent for the fracture resistance and wear resistance. Suitable for the high performance and high accuracy cutting on the harden steel
		KBN510B	Excellent for the fracture resistance and wear resistance. This is an upgraded version of KBN10B. Suitable for the high performance and high accuracy cutting on the harden steel.
Diamond	D	KPD010	Suitable for the high speed cutting on the aluminium and the non-metal. Applicable for the cutting on the carbide, ceramics, glass fibere and the plastic also.

# BORING BAR for SQUARE & CYLINDRICAL BORING TOOL



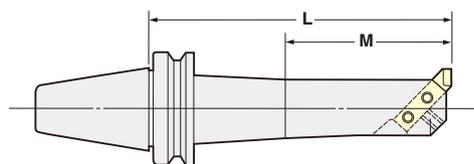
BSA BSB BOA



TAPER	Code No.	Boring Range	Boring Depth	Dimension				
	BTNo.-Min D -L	D	M	W	C	C <sub>1</sub>	Weight (kg)	Fig
No.40	BT40-BSA 25-135	25~ 38	108	8	20	22	1.3	Fig.1
	(IT40)-BSA 30-165	30~ 42	138		24	26	1.5	
	-BSA 38-180	38~ 52	153	10	30	33	1.8	
	-BSA 42-210	42~ 56	183		34	37	2.3	
	-BSA 50-180,225	50~ 65	153, 198	13	40	44	2.4, 2.9	
	-BSA 62-180,240	62~ 90	153, 218	16	50	56	3.2, 4.2	
	-BSA 72-180,240	72~110	153, 213	19	60	63	4.4, 5.7	
	-BSA 90-180	90~125	180		75		5.4	
No.50	BT50-BSA 25-135	25~ 38	95	8	20	22	4.4	BSA
	(IT50)-BSA 30-165	30~ 42	125		24	26	4.6	
	-BSA 38-180	38~ 52	140	10	30	33	4.8	
	-BSA 42-210	42~ 56	170		34	37	5.0	
	-BSA 50-180,240	50~ 65	140, 200	13	40	44	5.4, 5.7	
	-BSA 62-195,270	62~ 90	155, 230	16	50	56	6.1, 7.5	
	-BSA 72-195,285	72~110	155, 245	19	60	66	6.9, 9.3	
	-BSA 90-210,300	90~125	170, 260		75	80	9.2,12.3	
-BSA105-195,285	105~160	157, 247	25	90	90	10.5,15.0		
No.40	BT40-BSB 25-135	25~ 50	108	8	20	22	1.3	Fig.2
	(IT40)-BSB 38-180	38~ 70	153	10	30	33	1.9	
	-BSB 50-180,225	50~ 90	153, 198	13	40	44	2.6, 3.1	
	-BSB 62-180,225	62~115	153, 198	16	50	56	3.4, 4.1	
	-BSB 72-180,225	72~138	153, 198	19	60	63	4.7, 5.6	
	-BSB 90-180,225	90~150	180, 225		75		5.7, 6.6	
No.50	BT50-BSB 25-135	25~ 50	95	8	20	22	4.1	BSB
	(IT50)-BSB 38-180	38~ 70	140	10	30	32	4.8	
	-BSB 50-180,240	50~ 90	140, 200	13	40	44	5.5, 5.7	
	-BSB 62-195,270	62~115	155, 230	16	50	56	6.4, 7.9	
	-BSB 72-195,285	72~138	155, 245	19	60	66	7.3, 9.6	
	-BSB 90-210,300	90~150	170, 260		75	80	9.6,12.6	
-BSB105-195,285	105~190	155, 245	25	90	94	11.0,15.0		
No.40	BT40-BOA 25-135	25~ 31	107	8	20	22	1.3	Fig.3
	(IT40)-BOA 30-165	30~ 35	137		24	26	1.5	
	-BOA 34-165	34~ 42	137	10	28	30	1.7	
	-BOA 40-180	40~ 46	152		32	35	2.3	
	-BOA 44-210	44~ 54	182	12	36	39	2.4	
	-BOA 52-180,225	52~ 60	152, 197		42	46	2.5, 3.0	
No.50	BT50-BOA 25-135	25~ 31	97	8	20	22	4.2	BOA
	(IT50)-BOA 30-165	30~ 35	127		24	26	4.4	
	-BOA 34-180	34~ 42	142	10	28	30	4.7	
	-BOA 40-210	40~ 46	172		32	35	5.0	
	-BOA 44-210	44~ 54	172	12	36	39	5.1	
	-BOA 52-180,240	52~ 60	142, 202		42	46	5.1, 6.0	

★Square or Cylindrical Boring Bit is not included.

★When L length is required longer than standard, please specify the boring depth M.



# FACE MILL ARBOR

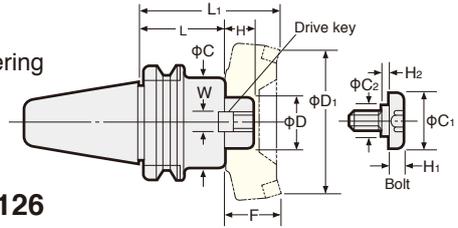


FMA

## For JIS B4113 Face Mill

■ Taper contact area of more than 80% ensures reliable milling with no chattering accompanied

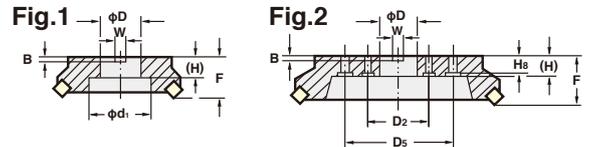
## FMH Arbor for High Feed with Coolant Through P.125, P.126



TAPER	Code No. ( $\phi D$ -L)	Dimensions								Weight (kg)	Dimension of Arbor with cutter			Drive Key	Bolt
		H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	L <sub>1</sub>		D <sub>1</sub>	F			
<b>No.30</b>	BT30-FMA25.4 - 45	22	50	9.5	33	23	10	2	1.3	95	80	50	FW 5	FM12	
<b>No.40</b>	BT40-FMA25.4 - 45	22	50	9.5	33	23	10	2	1.5	95	80	50	FW 5	FM12	
	(IT40)-FMA25.4 - 90								3.1	140			FW 5		
	-FMA31.75 - 45	30	60	12.7	40	23	10	6	1.7	105	100	60	FW13*1	FM16	
	-FMA31.75 - 75								3.1	135			FW13		
-FMA38.1 - 60	34	80	15.9	50	27	14	6	2.9	120	125	60	FW18	FM20		
<b>No.50</b>	BT50-FMA25.4 - 45	22	58	9.5	33	23	10	2	3.7	95	80	50	FW 5	FM12	
	(IT50)-FMA25.4 - 90								4.6	140					
	-FMA25.4 -150								5.5	200					
	-FMA31.75 - 45								4.5	105			FW12	FM16	
	-FMA31.75 - 75	30	70	12.7	40	23	10	6	5.3	135	100	60	FW13		
	-FMA31.75 -105								6.1	165					
	-FMA38.1 - 45	34	80	15.9	50	27	14	6	4.3	105	125	60	FW18	FM20	
	-FMA38.1 - 75								5.6	135			FW19		
	-FMA50.8 - 45	36	100	19	65	37	14	10	4.9	105	160	60	FW23	FM24	
	-FMA50.8 - 75								6.8	135			FW24		
-FMA47.625- 75	38	128.57	25.4	—	—	—	—	—	7.7	135	200	60	FW26	*	

- ★ Drive keys, L-Wrench & Bolt are supplied as standard.
- ★ The arbor marked \* requires 4 fixing bolts.
- ★ Above weight is for Arbor only. (Not include Face Mill Cutter)
- ★ FMA25.4 type Arbor is suitable for NIKKEN PRO-END MILL  $\phi 60$  (PE60HC) and  $\phi 80$  (PE80HC).
- ★ FMA31.75 type Arbor is suitable for NIKKEN PRO-END MILL  $\phi 100$  (PE100HC). Please refer P.127.
- ★ Code No. of Centre Through Coolant type FMA Arbor for NIKKEN PRO-END MILL is : e.g. BT40-FMA25.4C-45
- ★ Extended length Face Mill Arbors are available on request.
- BT50-FMA25.4 -200,-250
- FMA31.75-150,-200
- FMA38.1 -150,-200
- ★ Diameter  $\phi C$  of BT50-FMA25.4 and BT50-FMA31.75 are enlarged.
- \*IT40の場合、FW12となります。

★ In case of the special cutter, please specify the dimensions below.

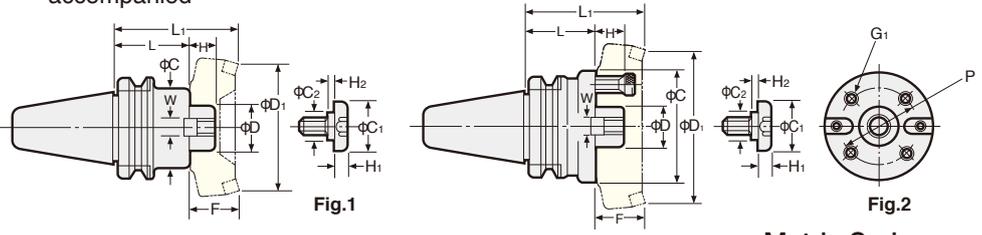


# FACE MILL ARBOR



FMB

■ Taper contact area of more than 80% ensures reliable milling with no chattering accompanied



Inch Series

(●) figures for Metric Series

Metric Series

TAPER	Code No. ( $\phi D$ -L)	Dimensions										Weight (kg)	Dimension of Arbor with cutter			Fig.	Code No. ( $\phi D$ -L)			
		H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	G <sub>1</sub>	P	L <sub>1</sub>		D <sub>1</sub>	F						
<b>No.30</b>	BT30-FMB25.4 - 45	26	80	9.5 (12)	33	23	10	2	—	—	1.7	95	80	50	1	BT30-FMB27 - 45				
<b>No.40</b>	BT40-FMB25.4 - 60	26	80	9.5 (12)	33	23	10	2	—	—	2.5	110	80	50	1	BT40-FMB27 - 60				
	(IT40)-FMB25.4 - 90										4.7	140				(IT40)-FMB27 - 90				
	-FMB38.1 - 60										7.4	123	125	63		-FMB40 - 60				
<b>No.50</b>	BT50-FMB25.4 - 45	26	80	9.5 (12)	33	23	10	2	—	—	4.0	95	80	50	1	BT50-FMB27 - 45				
	(IT50)-FMB25.4 - 90										5.8	140				(IT50)-FMB27 - 90				
	-FMB25.4 -150										8.2	200				-FMB27 -150				
	-FMB38.1 - 45										4.7	108				-FMB40 - 45				
	-FMB38.1 - 75										6.1	138				-FMB40 - 75				
	-FMB38.1 -105										8.7	168				-FMB40 -105				
	-FMB38.1F- 75										110					M12 66.7	6.6			-FMB40F- 75
	-FMB60 - 75										25	140	25.4	—		—	—	—	M16 101.6	7.9

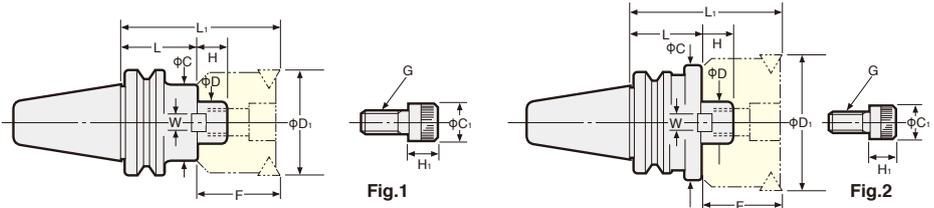
- ★ Drive keys, L-Wrench & Bolt are supplied as standard.
- ★ Above weight is for Arbor only. (Not include Face Mill Cutter)

# SHOULDER CUTTER ARBOR

**NIKKEN**

## FMC

Taper contact area of more than 80% ensures reliable Milling with no chattering accompanied.



## FMC

### Inch Series

(●) figures for Metric Series

### Metric Series

TAPER	Dimensions				Weight (kg)	Dimensions of Arbor with cutter				C <sub>1</sub>	H <sub>1</sub>	Fig	Code No.(φD -L)
	Code No.(φD -L)	H	C	W		L <sub>1</sub>	D <sub>1</sub>	F	G CAP bolt				
No.30		18	45	10	1.4	80	50	40	M10×30	16	10	1	BT30-FMC22- 40
		18	45	10	1.3	85	50	40	M10×30	16	10	1	BT40-FMC22- 45
No.40	BT40-FMC25.4- 60	20	60	9.4(12)	2.0	130	80	50	M12×35	18	12	2	(IT40) FMC22- 90
	1.5				110	FMC27- 60							
	(IT40)-FMC25.4- 90				2.2	140							FMC27- 90
	-FMC38.1- 60	22	85	15.5(14)	2.3	110	125	50	M16×35	30	15(16)		FMC32- 60
	-FMC38.1- 75				2.6	125							FMC32- 75
No.50		18	45	10	4.2	100	50	40	M10×30	16	10	1	BT50-FMC22- 60
					4.7	145							(IT50) FMC22-105
					5.3	190							FMC22-150
	BT50-FMC25.4- 45	20	70	9.4(12)	4.1	95	80	50	M12×35	18	12	1	FMC27- 45
	(IT50)-FMC25.4- 90				5.5	140							FMC27- 90
	-FMC25.4-150				7.3	200							FMC27-150
	-FMC38.1- 45	22	85	15.5(14)	4.2	95	125	50	M16×40	30	15(16)		FMC32- 45
	-FMC38.1- 75				5.5	125							FMC32- 75
	-FMC38.1-105				7.0	155							FMC32-105

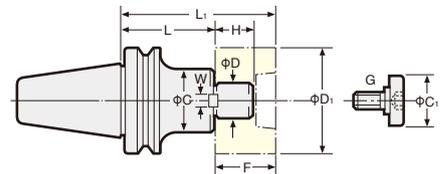
★Drive keys, L-Wrench & Bolt are supplied as standard.  
 ★Above weight is for Arbor only. (Not include Face Mill Cutter)  
 ★FMC22 type Arbor is suitable for NIKKEN PRO-END MILL φ50(PE50HC). 参考 P.127  
 ★Code No. of Centre Through Coolant type FMC Arbor for NIKKEN PRO-END MILL is e.g. BT40-FMC22C-45.

# SHELL END MILL ARBOR

**NIKKEN**

## SMS

Taper contact area of more than 80% ensures reliable Milling with no chattering accompanied.



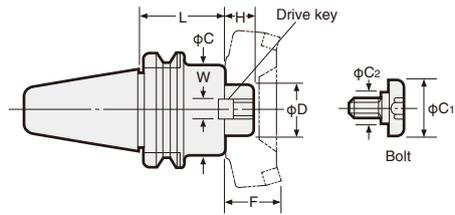
TAPER	Code No.	Dimensions							Weight (kg)
		D	L	H	C	C <sub>1</sub>	W	G	
No.30	BT30-SMS16- 30	16	30	14	34	20	8	M 8	0.9
	-SMS22- 30	22		16	42	28	10	M10	1.0
	-SMS27- 45	27	45	18	50	33	12	M12	1.3
No.40	BT40-SMS16- 60	16	60	14	34	20	8	M 8	1.3
	(IT40)-SMS16-120		120						1.7
	-SMS22- 60	22	60	16	42	28	10	M10	1.4
	-SMS22-120		120						2.1
	-SMS27- 45	27	45	18	50	33	12	M12	1.4
	-SMS27-105		105						2.3
	-SMS32- 45	32	45	20	60	40	14	M16	1.6
-SMS32- 75	75		2.3						
No.50	BT50-SMS16- 75	16	75	14	34	20	8	M 8	4.2
	(IT50)-SMS16-120		120						5.8
	-SMS22- 75	22	75	16	42	28	10	M10	4.3
	-SMS22-120		120						4.8
	-SMS27- 60	27	60	18	50	33	12	M12	4.3
	-SMS27-105		105						5.2
	-SMS32- 45	32	45	20	60	40	14	M16	4.2
	-SMS32- 75		75						5.2
	-SMS40- 45	40	45	23	80	50	16	M20	4.3
	-SMS40- 75		75		70				5.5
-SMS50- 60	50	60	26	90	65	18	M24	6.3	

★Drive keys, L-Wrench & Bolt are supplied as standard.  
 ★Above weight is for Arbor only. (Not include Face Mill Cutter)

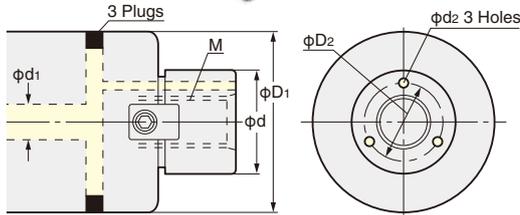
# BT FMH FACE MILL ARBOR



■ For Oil Hole Cutter  
■ For High Feed Cutter



FMH



Code No.	Cutter Dia.	φd	φD1	M	Coolant Hole		
					φD2	φd1	φd2
<b>FMH22 (22.225)</b>	φ50, φ52 φ63, φ66	22(22.225)	47 60	M10×1.5	16	6~8	3
<b>FMH27 (25.4)</b>	φ80	27(25.4)	76(70)	M12×1.75	19.5(18.5)	8~10	3.5
<b>FMH32 (31.75)</b>	φ100	32(31.75)	96	M16×2.0	24	10~13	4
<b>FMH40 (38.1)</b>	φ125	40(38.1)	100	M20×2.5	30(29)	10~15	5
<b>FMH50.8</b>	φ160	50.8	100	M24×3.0	37.5	15~20	7

★Fixing dimension is basically based on FMA/FMC. ★The combination of the other cutter dia. are also available.

## FMH Inch Series

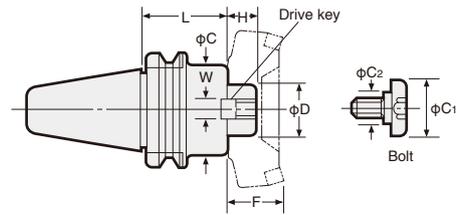
TAPER	Code No.	Arbor						Drive Key	Lock Bolt	G Cap Bolt	Weight (kg)
		D	L	H	C	C1	W				
No.40	<b>BT40-FMH22.225- 47- 45</b> <b>(IT40)</b>	22.225	45	17	47	28	8	FW 3	FM10	—	1.3
	- 60		60								1.5
	- 90		90								1.9
	-150		150								2.7
	-FMH22.225- 60- 45	22.225	45	17	60	28	8	FW 3	FM10	—	1.5
	- 60		60								1.8
	- 90		90								2.5
	-FMH25.4 - 70- 60	25.4	60	22	70	33	9.5	FW 5	FM12	—	2.0
	- 90		90								2.7
	-105		105								3.1
	-FMH31.75 - 76- 60	31.75	60	30	76	40	12.7	FW13	FM16	—	2.2
	- 90		90								2.9
	-FMH31.75 - 96- 60	31.75	60	30	96	40	12.7	FW13	FM16	—	2.5
	No.50	<b>BT50-FMH22.225- 47- 60</b> <b>(IT50)</b>	22.225	60	17	47	28	8	FW 3	FM10	—
-105		105		4.7							
-150		150		5.3							
-200		200		6.0							
-250		250		6.6							
-300		300		7.7							
-350		350	8.9								
-FMH22.225- 60- 60		22.225	60	17	60	28	8	FW 3	FM10	—	4.2
-105			105								5.2
-150			150								6.2
-200			200								7.4
-250			250								8.5
-300			300								9.6
-350		350	10.6								
-FMH25.4 - 70- 45		25.4	45	22	70	33	9.5	FW 5	FM12	—	4.0
- 60			60								4.5
- 90			90								5.4
-150			150								7.2
-200			200								8.7
-250			250								10.3
-300		300	11.8								
-FMH31.75 - 76- 45		31.75	45	30	76	40	12.7	FW12	FM16	—	4.1
- 75			75					5.2			
-105			105					6.3			
-150			150					7.9			
-200			200					9.7			
-250			250					11.6			
-300		300	13.4								
-FMH31.75 - 96- 45		31.75	45	30	96	40	12.7	FW13	FM16	—	4.3
- 75			75								6.0
-105			105								7.7
-150			150								10.3
-200			200								13.1
-250			250								16.4
-300	300	19.2									
-FMH38.1 -100- 45	38.1	45	34	100	50	15.9	FW19	FM20	—	4.4	
- 75		75								6.3	
-105		105								8.1	
-150		150								10.9	
-200		200								14.5	
-250		250								17.5	
-300	300	20.5									
-FMH50.8 -100- 45(50)	50.8	45	36	100	65	19	FW23	FM24	—	4.4	

★Drive keys, L-Wrench & Bolt are supplied as standard.  
★Above weight is for Arbor only. (Not include Face Mill Cutter)

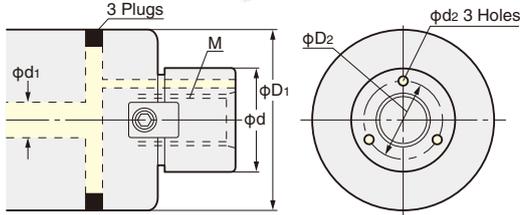
# BT FMH FACE MILL ARBOR



■ For Oil Hole Cutter  
■ For High Feed Cutter



FMH



Code No.	Cutter Dia.	φd	φD1	M	Coolant Hole		
					φD2	φd1	φd2
FMH22 (22.225)	φ50, φ52 φ63, φ66	22(22.225)	47 60	M10×1.5	16	6~8	3
FMH27 (25.4)	φ80	27(25.4)	76(70)	M12×1.75	19.5(18.5)	8~10	3.5
FMH32 (31.75)	φ100	32(31.75)	96	M16×2.0	24	10~13	4
FMH40 (38.1)	φ125	40(38.1)	100	M20×2.5	30(29)	10~15	5
FMH50.8	φ160	50.8	100	M24×3.0	37.5	15~20	7

★ Fixing dimension is basically based on FMA/FMC. ★ The combination of the other cutter dia. are also available.

## FMH Metric Series

TAPER	Code No.	Arbor						Drive Key	Lock Bolt	G Cap Bolt	Weight (kg)	
		D	L	H	C	C1	W					
No.30	BT30-FMH16- 37 - 35	16	35	17	37	20	8	FW 3	FM 8	—	0.56	
	-FMH22- 47 - 45	22	45	18	47	16	10	FW 8	—	M10 × 30	0.76	
	-FMH27- 60 - 45	27	45	20	60	18	12	FW11	—	M12 × 35	0.91	
No.40	BT40-FMH16- 37 - 40	16	40	17	37	20	8	FW 3	FM 8	—	1.1	
	(IT40)-FMH22- 47 - 45		45								1.3	
	- 60		60	18	47	16	10	FW 8	—	M10 × 30	1.5	
	- 90		90								1.9	
	-150		150								2.7	
	-FMH22- 60 - 45*1	22	45								1.5	
	- 60		60	18	60	16	10	FW 8	—	M10 × 30	1.8	
	- 90		90								2.5	
	-FMH27- 60 - 45	27	45								1.5	
	- 60		60	20	60	18	12	FW11	—	M12 × 35	1.8	
	- 90		90								2.5	
	-FMH27- 76 - 60	27	60	20	76	18	12	FW11	—	M12 × 35	2.1	
- 90		90								2.8		
-FMH32- 96 - 60	32	60	22	96	24	14	FW16	—	M16 × 35	2.4		
No.50	BT50-FMH16- 37 - 60		60								3.8	
	(IT50)-105	16	105	17	37	20	8	FW 3	FM 8	—	4.1	
	-150		150								4.5	
	-200		200								4.9	
	-FMH22- 47 - 60		60								4.1	
	-105		105								4.7	
	-150		150								5.3	
	-200	22	200	18	47	16	10	FW 8	—	M10 × 30	6.0	
	-250		250								6.7	
	-300		300								7.8	
	-350		350								8.9	
	-FMH22- 60 - 60		60								4.2	
	-105		105								5.2	
	-150		150								6.3	
	-200	22	200	18	60	16	10	FW 8	—	M10 × 30	7.4	
	-250		250								8.5	
	-300		300								9.6	
	-350		350								10.7	
	-FMH27- 60 - 45		45						9FWE27			3.9
	- 90		90									5.0
	-150	27	150	20	60	18	12	FW11	—	M12 × 35	6.3	
	-200		200								7.4	
	-250		250								8.5	
	-300		300								9.6	
	-FMH27- 76 - 45		45						FW10			4.0
	- 90		90									5.6
	-150	27	150	20	76	18	12	FW11	—	M12 × 35	7.8	
	-200		200								9.7	
	-250		250								11.4	
	-300		300								13.2	
-FMH32- 96 - 45		45						FW15			4.2	
- 90		90									6.8	
-150	32	150	22	96	24	14	FW16	—	M16 × 35	10.2		
-200		200								13.3		
-250		250								16.1		
-300		300								19.0		
-FMH40-100 - 45		45						FW20			4.4	
- 75	40	75	26	100	50	16	FW22	FM20	—	6.2		
-105		105									8.1	

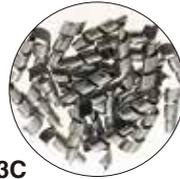
★ Drive keys, L-Wrench & Bolt are supplied as standard.  
★ Above weight is for Arbor only. (Not include Face Mill Cutter)  
★\*1 IT40-FMH27-60-45 is not available.

# PRO-END MILL for Precision Face Milling, Right Angle Shoulder Mill & High Speed Grooving.

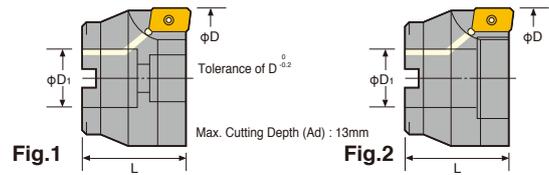


## PRO-END MILL

Suitable for NIKKEN FMA/FMC Arbor.



S53C



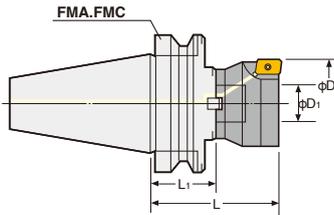
Code No.	D	D1	L	No. of Teeth	Insert Tip	Tip Clamp Bolt	Weight (kg)	Fig.
PE 50HC	50	22	45	5	Steel : 9DKT15	M 4090	0.4	1
PE 60HC	60	25.4	45	5			0.6	
PE 80HC	80	25.4	45	6	Aluminium, Cast Iron : 9DKR15	M 4012	0.8	2
PE100HC	100	31.75	50	6			1.6	

- ★Insert Clamp Bolt & Wrench are supplied as standard. ★Insert Tip is available as an option.
- ★Suitable for Face Mill Arbor FMA & FMC.
- ★Please add "C" after FMA/FMC for Centre Through Tool Coolant type. e.g. BT40-FMC22C-45
- ★The Lock Bolt is not supplied for PE50HC. Please use the bolt (M10x30) attached to FMC22.
- ★The Lock Bolt is supplied for PE60HC~PE100HC as standard.
- PE60HC: M12x35 PE80HC: 9PEM12-50 PE100HC: 9PEM16-55



PE

## BT (IT) Shank Arbor for PRO-END MILL



TAPER	PRO-END MILL	PRO-END MILL Arbor	L	L1	D	D1
No.40	PE50HC	BT40-FMC22 -45,-90	90,135	45,90	50	22
	PE60HC, PE80HC	(IT40)-FMA25.4 -45,-90			60,80	25.4
	PE100HC	-FMA31.75-45,-75	95,125	45,75	100	31.75
No.50	PE50HC	BT50-FMC22 -60,-105	105,150	60,105	50	22
	PE60HC, PE80HC	(IT50)-FMA25.4 -45,-90			90,135	45,90
	PE100HC	-FMA31.75-45,-75	95,125	45,75	100	31.75

- ★Please add "C" after FMA/FMC for Centre Through Coolant type. e.g. BT40-FMC22C-45
- ★Please refer P.123 for FMC Arbor, FMA Arbor.

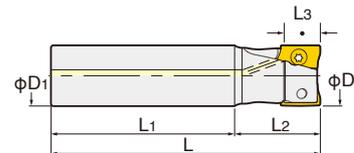
Code No.	Dimension	Grade	Material	Pro-END MILL	ISO Code No.	Tip Clamp Bolt	Tip Clamp Wrench
9DKT12		IC50M	Steel, Cast Iron	S20-PE22	APKT1203	M 3070	T-10
9DKT15			Steel	Except S20-PE22	ADKT1505	M 4090*1	PE-T15
9DKR15		IC28	Aluminum, Cast Iron		ADKR1505	M 4012	

- ★Please ask us if you require any other type of insert grade e.g. Coated, Cermet etc. For Heavy Cutting on Cast Iron, insert grade of IC520M is suitable.
- ★Purchase of Insert : box each (10 pcs.) ★\*1 Please note there are two different kinds of Tip Clamp Bolts.

## Straight Shank PRO-END MILL



S-MDPE



Code No.	φD	D1	L	L1	L2	MAX. Cutting Depth L3	No. of Teeth	Insert Code No.	Tip Clamp Bolt	Tip Clamp Wrench	Weight (Kg)
S16-MDPE16-90	16	16	90	60	30	10	2	AOMT123608PEER-M	TPS-25	TIP07F	0.2
S20-MDPE20-100	20	20	100	70			3				0.2
S25-MDPE25-110	25	25	110	75	40	15	2	AOMT184808PEER-M	TPS-4	TIP15W	0.4
S32-MDPE32-120	32	32	120	80			3				0.7

- ★2 tip clamp bolts and tip clamp wrench are supplied as standard. ★Please refer P.258 for cutting condition.
- ★Insert tip is available as an option. P.202
- ★Coolant through tool is available as a standard for all series.

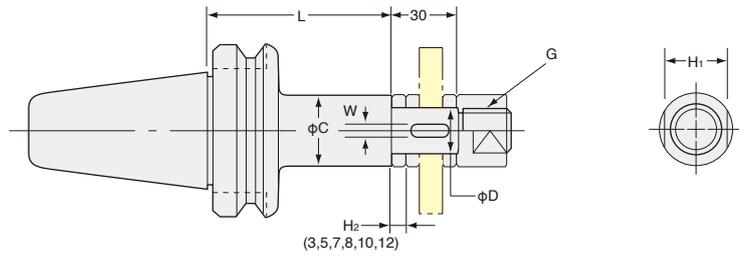
# STUB ARBOR



■ Taper contact area of more than 80% ensures reliable milling with no chattering accompanied.



SCA



## Inch Series

(●) figures for Metric Series

## Metric Series

TAPER	Code No.(ϕD-L)	H <sub>1</sub>	C	W	G	Weight (kg)	Code No.(ϕD-L)
No.30	BT30-SCA12.7 -60	17	20	—	M12	1.0	BT30-SCA13-60
	-SCA15.875-60	23	26	3.18 (4)	M14	1.1	-SCA16-60
	-SCA22.225-60	29	34	3.18 (6)	M20	1.2	-SCA22-60
	-SCA25.4 -60	32	40	6.35 (7)	M24	1.3	-SCA27-60
No.40	BT40-SCA12.7 -75,105	17	20	—	M12	1.2, 1.3	BT40-SCA13-75,105
	(IT40)-SCA15.875-75,105	23	26	3.18 (4)	M14	1.4, 1.5	(IT40)-SCA16-75,105
	-SCA22.225-75,120	29	34	3.18 (6)	M20	1.7, 2.0	-SCA22-75,120
	-SCA25.4 -75,120	32	40	6.35 (7)	M24	2.0, 2.4	-SCA27-75,120
	-SCA31.75 -90	41	46	7.92 (8)	M30	2.6	-SCA32-90
No.50	BT50-SCA12.7 -75,105	17	20	—	M12	4.0, 4.3	BT50-SCA13-75,105
	(IT50)-SCA15.875-90,120	23	26	3.18 (4)	M14	4.2, 4.4	(IT50)-SCA16-90,120
	-SCA22.225-90,135	29	34	3.18 (6)	M20	4.4, 4.7	-SCA22-90,135
	-SCA25.4 -90,135	32	40	6.35 (7)	M24	4.5, 4.9	-SCA27-90,135
	-SCA31.75 -90,135	41	46	7.92 (8)	M30	4.7, 5.2	-SCA32-90,135
	-SCA38.1 -90,135	46	55	9.52 (10)	M36	4.9, 5.9	-SCA40-90,135

★JIS B4206, JIS B4107, JIS B4219, JIS B4109 cutters can be attached.  
 ★Key and Collars (H<sub>2</sub>=3, 5, 7, 8, 10, 12) are supplied as standard.  
 ★The Code No. of Nut is unified from "GN" to "GNT".

Inch Series			Metric Series		
Arbor	Collar	Nut	Arbor	Collar	Nut
SCA12.7	G 1/2	GNT 1/2	SCA13	G13	GNT 1/2
15.875	G 5/8	GNT 5/8	16	G16	GNT 5/8
22.225	G 7/8	GNT 7/8	22	G22	GNT 7/8
25.4	G1	GNT1	27	G27	GNT1
31.75	G1 1/4	GNT1 1/4	32	G32	GNT1 1/4
38.1	G1 1/2	GNT1 1/2	40	G40	GNT1 1/2

★Please add the H<sub>2</sub> thickness at the end of Code No. for the collar. e.g. G1-8.

## Straight Shank STUB ARBOR

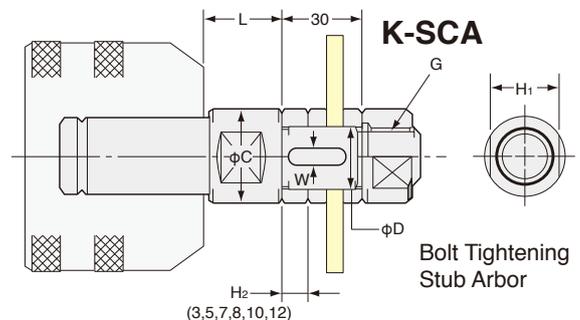
■ For Multi-Lock Milling Chuck



K-SCA



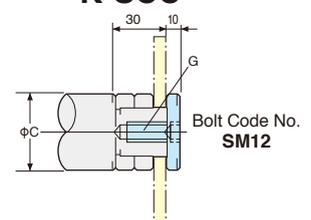
K-SCC



Bolt Tightening Stub Arbor

Style	K No. ϕD -L	H <sub>1</sub>	C	W	G	Weight (kg)
32	K32-SCA25.4-30	32	40	6.35	M24	1.2
	-SCC25.4-30				M12	1.2
42	K42-SCA25.4-30				M24	1.3
	-SCC25.4-30				M12	1.3

## K-SCC



Thinner Bolt Head type is also available.

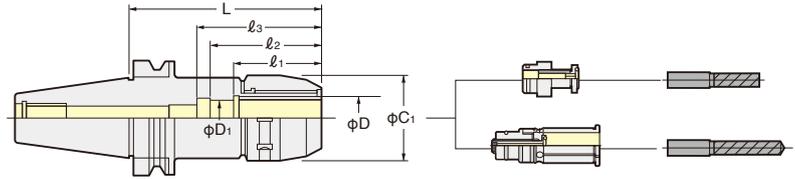
# CENTRE THROUGH COOLANT TYPE HOLDER

## MAX.7MPa



### MILLING CHUCK for Centre Through

Centre Through  
MAX. 7MPa

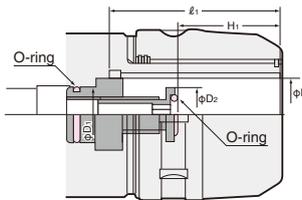


TAPER	Code No.	C1	D	D1	l1	l2	l3	Stopper(Optional)	Collet	Weight (kg)
No.40	BT40 -C20C- 70, 90,105	52	20	20	58	66	80	9MC20H	<b>CCK20</b> <b>CCNK20</b>	1.6, 1.8, 2.0
	(IT40)-C25C- 70, 90	60	25	25	61	72		9MC25H	<b>CCK25</b> <b>CCNK25</b>	1.8, 2.1
	-C32C- 85,105,120	69	32		64,70,70	77,81,81	107	9MC32HS, 9MC32H, 9MC32H	<b>CCK32</b> <b>CCNK32</b>	2.1, 2.5, 2.8
No.50	BT50 -C20C-105,135	52	20	20	58	66	80	9MC20H	<b>CCK20</b> <b>CCNK20</b>	4.5, 4.9
	(IT50)-C25C-105,135	60	25	25	61	72		9MC25H	<b>CCK25</b> <b>CCNK25</b>	4.8, 5.2
	-C32C- 90,105,135,165	69	32		70	81	107	9MC32H	<b>CCK32</b> <b>CCNK32</b>	4.3, 4.6, 5.5, 6.4
	-C42*- 95,105,135	86	42	42	74	115	125	9MC42H	<b>CCK42</b> <b>CCNK42</b>	5.5, 5.8, 7.1

#### Stopper for Direct Chucking

Direct Chucking means that chucking  $\phi 32\text{mm}$  shank tool by  $\phi 32\text{mm}$  ID Holder. If Tool's shank length longer than  $l_1$ , Stopper is not necessary.

Chuck	Stopper	H1	C2
C20C	9MC20H	42~47	17
C25C	9MC25H	50~55	22
C32C	9MC32H	49~59	24
	9MC32HS	55~60	
C42	9MC42H	57~67	24



★Spanner is available as an option. C20 : 9HC22, C25 : 9HC25  
C32 : 9HC32, C42 : 9HC42

★Shank of High Speed Milling Chuck (G) is **2LOCK**. (Centre through tool coolant is standard.) e.g. NBT40-C32-105G GH handle is necessary for High Speed Milling Chuck.

★Please note the acceptable shank tolerance is h7.

★Please refer for CCK Collet and CCNK Collet.

★Please add "RP" at the end of Code No. for Rust Proof Treatment Milling Chuck. e.g. BT40-C32C-85-RP.

★\*C42 Milling Chuck is Centre Coolant Through type as standard.

★Stopper for Direct Chucking is available as an option.

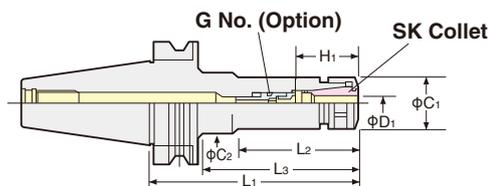
★In case of Heavy End Milling operation, please chuck the End Mill longer than  $l_1$  without using Stopper.

★GH Handle



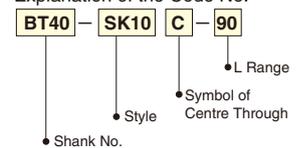
### SLIM CHUCK for Centre Through

Centre Through  
MAX. 7MPa



#### PAT.

Explanation of the Code No.



TAPER	Code No.	D1	H1	L2	L3	C1	C2	G No. (Option)	Weight (kg)	SK Collet
No.40	BT40-SK 6C- 90,120	4~6	26~31	51,60	60,90	19.5	32,32	SKG6-6HG	1.1,1.4	<b>SK 6</b>
	(IT40)-SK10C- 90,120,150,180	5~10	33~41	48,73,73,73	60,90,118,148	27.5	40,40,34.5,39	SKG10-10HG	1.2,1.4,1.6,1.6	<b>SK10</b>
	-SK13C- 90,120,150,180	5~13	39~51	58,88,88,88	-,-,118,148	33	-,-,40,40	SKG13-10HG	1.4,1.6,1.8,1.8	<b>SK13</b>
	-SK16C- 90,120,150,180	10~16	45~57	58,88,118,148		40		SKG16-12HG	1.5,1.7,1.9,2.0	<b>SK16</b>
	-SK20C- 75, 90,120	10~20	47~63	45,60,90		48.5		SKG20-18HG	1.4,1.6,2.0	<b>SK20</b>
	-SK25C- 90,120	16~25	60~65,60~70	61,91		55		SKG25-18HG,SKG25-24HG	1.8,2.0	<b>SK25</b>
No.50	BT50-SK 6C-105,165	4~6	26~31	55,60	64,114	19.5	32,32	SKG6-6HG	3.8,4.0	<b>SK 6</b>
	(IT50)-SK10C-105,135,165,200	5~10	33~41	57,70,75,75	-,-,92,114,151	27.5	-,-,32,32,36	SKG10-10HG	4.2,4.4,4.6,4.8	<b>SK10</b>
	-SK13C-105,135,165,200	5~13	39~51	62,92,92,92	-,-,122,157	33	-,-,45,45	SKG13-10HG	4.5,4.7,4.9,5.2	<b>SK13</b>
	-SK16C-105,135,165,200	10~16	45~57	62,92,90,90	-,-,122,157	40	-,-,50,52	SKG16-12HG	4.7,4.9,5.1,5.5	<b>SK16</b>
	-SK20C-105,135,165	10~20	47~63	62,92,122		48.5		SKG20-18HG	4.3,4.6,5.0	<b>SK20</b>
	-SK25C-105,165	16~25	60~70	62,122		55		SKG25-24HG	5.2,5.6	<b>SK25</b>

★Collet, adjust screw (G No.) and spanner are available as an option.

The Code No. of the spanner is SK6C (C= $\phi 18$ ) : SKL-6, SK6C (C= $\phi 19.5$ ) : SKL-6W, SK10C: SKL-10, SK13C: 9HC12A, SK16C: 9HC16, SK20C: 9HC22, SK25C: 9HC25

★Shank of High Speed Slim Chuck (P) is **2LOCK**. e.g. NBT40-SK10C-90P. GH handle is necessary for High Speed Slim Chuck.

★Please add "RP" at the end of Code No. for Rust Proof Treatment Slim Chuck. e.g. BT40-SK10C-90-RP. ★Please refer for SK Collet.

★When cutter shank dia. is smaller than MIN. of D1, special adjust screw (G No.) is required.

★GH Handle



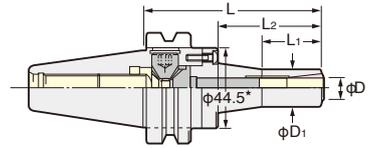
# CENTRE TROUGH COOLANT TYPE HOLDER

MAX. 7MPa



## MINI-MINI CHUCK ADVANCED ALPHA for Centre Through PAT.

30,000min<sup>-1</sup> & G2.5  
 Gripping from Front Nose  
 Run-out Accuracy : Within 3μm  
 Extra-long sizes are added.

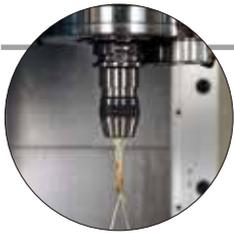


★ : MMC12 : φ52

Centre Through  
 MAX. 7MPa

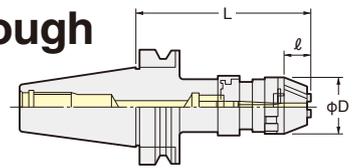
TAPER	Code No.	φD	φD <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	Collet	MAX. (min <sup>-1</sup> )	Weight (kg)
No.40	BT40-MMC 8C- 90-AA,120-AA,150-AA,180-AA	2~ 8	20	30, 40, 40, 70	42, 72, 102, 132	VMK 8J	30,000	1.2, 1.3, 1.4, 1.5
	(IT40)-MMC12C- 90-AA,120-AA,150-AA,180-AA	4~12	30	35, 60, 70, 100	44, 74, 104, 134	VMK12J		1.4, 1.5, 1.6, 1.7
No.50	BT50-MMC 8C-105-AA,135-AA,165-AA,195-AA	2~ 8	20	30, 40, 40, 70	42, 72, 102, 132	VMK 8J	20,000	3.8, 3.9, 4.0, 4.1
	(IT50)-MMC12C-105-AA,135-AA,165-AA,195-AA	4~12	30	35, 60, 70, 100	44, 74, 104, 134	VMK12J		4.0, 4.1, 4.2, 4.3

★Wrench is supplied as standard. Collet is available as an option P.36.  
 ★Please use VMK Collet for the cutter with oil hole, and use VMK-J Collet for the cutter without oil hole. P.36  
 ★Photo shows MINI-MINI Chuck & VMK Collet chucking with φ2.7mm oil hole drill.



## NPU DRILL CHUCK for Centre Through

(MAX. 1MPa)



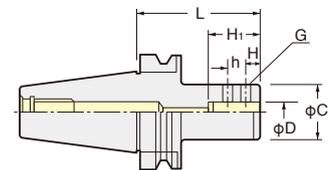
TAPER	Code No.	φDmm	φD	ℓ	L	Weight (kg)
No. 40	BT40-NPU13C- 80	6~ 13	48.5	26.5	92.1~103.1	1.5
	(IT40) 130				137.1~148.1	2.2
	175				182.1~193.1	2.7
No. 50	BT50-NPU13C- 90	6~ 13	48.5	26.5	97.1~108.1	4.1
	(IT50) 130				137.1~148.1	4.6
	190				197.1~208.1	5.2

★Wrench is available as an option. NPU8: NPUL-8, NPU13: NPUL-13.  
 ★MIN. Chucking Dia. for center through coolant is φ6mm. ★Please use Slim Chuck for high pressure coolant 7MPa. P.129



## SIDE LOCK HOLDER (for DRILL) for CentreThrough

Centre Through  
 MAX. 7MPa



TAPER	Code No.	D	L	C	h	H	H <sub>1</sub>	G	Collet	Weight (kg)
No. 40	BT40-SL20C- 90	20	90	50	16	12	44.5	M10	—	1.8
	(IT40)-SL25C- 90	25		55	17	14	54.5	M12 P1.25	OK25	1.7
	-SL32C- 90	32		60	16	15	59.5	M12 P1.25	OK32	1.9
No. 50	BT50-SL20C-105	20	105	50	16	12	44.5	M10	—	4.8
	(IT50)-SL25C-105	25		55	17	14	54.5	M12 P1.25	OK25	4.7
	-SL32C-105	32		60	16	15	59.5	M12 P1.25	OK32	4.9
	-SL40C-105	40		88	19	18	70	M12 P1.25	OK40	5.2

★For OK 25, OK 32 and OK 40 Collet, please refer P.135.

# RP (RUST PROOF TREATMENT)



### Rust Proof Treatment (Option)

The RP treatment creates a fine film of the contents (Fe<sub>3</sub>O<sub>4</sub>) and (Fe<sub>2</sub>O<sub>3</sub>), and penetrates into the tool holder taper material 1~2 micron deep. This fine film inhibits the rust and corrosion of your tool holder taper and stops it from being transmitted to your machine spindle. The RP treatment will not effect the accuracy and the hardness of your NIKKEN tool holders.

### Caution

- If the detection of tool existing at tool magazine by optical method on your M/C, the tool with RP treatment may be judged "no tool existing". Please check your M/C specification.
- The taper connection of the tool shank with RP treatment is more stuck than the taper connection of the tool shank without RP treatment. Then, the unclamping force for the tool with RPT is required 20% stronger than the unclamping force for the tool without RPT. Please be careful to check the unclamping force of your M/C, when the tool with RPT treatment is chosen.
- Therefore, the taper cone of 3LOCK tool and NC5 tool is changed to without RP treatment as standard. And the special anti-rust treatment is applied to the taper cone of the 3LOCK tool and NC5 tool.

Standard  
 8 years used

RPT  
 18 years used

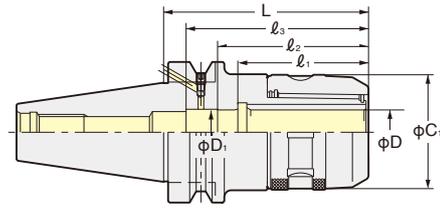


# FLANGE THROUGH COOLANT TYPE HOLDER

**NIKKEN**



## MILLING CHUCK for Flange Through



TAPER	Code No.	C <sub>1</sub>	D	D <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Stopper (Option)	Collet	Weight (kg)
No.40	BT40-C20F- 90,105	52	20	20	58	66	80	9MC20H	<b>CCK20</b> <b>CCNK20</b>	1.9, 2.0
	(IT40)-C25F- 90,105	60	25	25	61	70		9MC25H	<b>CCK25</b> <b>CCNK25</b>	2.0, 2.2
	-C32F-105,120	69	32		70	81	107	9MC32H	<b>CCK32</b> <b>CCNK32</b>	2.5, 2.8
No.50	BT50-C20F-105,135,165	52	20	20	58	66	80	9MC20H	<b>CCK20</b> <b>CCNK20</b>	4.2, 4.4, 4.8
	(IT50)-C25F-105,135,165	60	25	25	61	72		9MC25H	<b>CCK25</b> <b>CCNK25</b>	4.5, 5.1, 5.7
	-C32F-105,120,135,165	69	32		70	81	107	9MC32H	<b>CCK32</b> <b>CCNK32</b>	4.6, 5.1, 5.5, 6.4
	-C42F-120,135,165	86	42	42				105, 115, 115	125	9MC42H

★Spanner is available as an option. C20 : 9HC22, C25 : 9HC25  
C32 : 9HC32, C42 : 9HC42

★Shank of High Speed Milling Chuck (G) is **2LOCK**. e.g. NBT40-C20F-105G  
GH Handle  P.48 is necessary for High Speed Milling Chuck.

★Please refer  P.34 for CCK Collet and CCNK Collet.

★In case of Heavy End Milling operation, please chuck the End Mill longer than l<sub>1</sub> without using stopper.  P.129

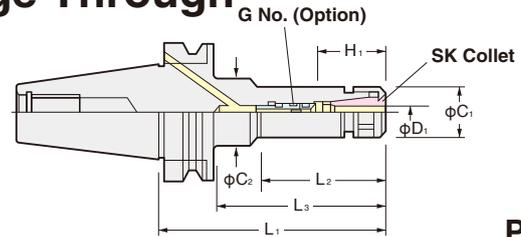
★Please add "RP" at the end of Code No. for Rust Proof Treatment Milling Chuck. e.g. BT40-C20F-75-RP.

★Please note the acceptable shank tolerance is h7.

★GH Handle 



## SLIM CHUCK for Flange Through



**PAT.**

TAPER	Code No.	D <sub>1</sub>	H <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	C <sub>1</sub>	C <sub>2</sub>	G No. (Option)	Weight (kg)	Collet
No.40	BT40-SK 6F- 90,120	4~6	26~31	51,60	60,90	19.5	32,32	SKG6-6HG	1.1,1.4	<b>SK 6</b>
	(IT40)-SK10F- 90,120,150,180	5~10	33~41	48,73,73,73	60,90,118,148	27.5	40,40,34.5,39	SKG10-10HG	1.2,1.4,1.6,1.6	<b>SK10</b>
	-SK13F- 90,120,150,180	5~13	39~51	58,88,88,88	-,-,118,148	33	-,-,40,40	SKG13-10HG	1.4,1.7,1.8,1.8	<b>SK13</b>
	-SK16F- 90	10~16	45~50	58	-	40	-	SKG16-12HGB	1.5	<b>SK16</b>
	-120,150,180		45~57	88,118,148				SKG16-12HG	1.7,1.9,2.0	
	-SK20F- 90,120	10~20	57~63,47~63	60,90	-	48.5	-	SKG20-18HGB,SKG20-18HG	1.4,2.0	<b>SK20</b>
-SK25F- 90,120	16~25	50~58,55~65	61,91	-	55	-	SKG25-18HGC,SKG25-24HGA	1.8,2.0	<b>SK25</b>	
No.50	BT50-SK 6F-105,165	4~6	26~31	55,60	64,114	19.5	32,32	SKG6-6HG	3.8,4.0	<b>SK 6</b>
	(IT50)-SK10F-105,165,200,225	5~10	33~41	57,75,75,75	-,114,151,178	27.5	-,32,36,40	SKG10-10HG	4.2,4.6,4.8,5.1	<b>SK10</b>
	-SK13F-105,165,200	5~13	39~51	62,92,92	-,122,157	33	-,45,45	SKG13-10HG	4.5,4.9,5.2	<b>SK13</b>
	-SK16F-105,165,200	10~16	45~57	62,90,90	-,122,157	40	-,50,52	SKG16-12HG	4.7,5.1,5.5	<b>SK16</b>
	-SK20F-105,165	10~20	47~63	62,122	-	48.5	-	SKG20-18HG	4.3,5.0	<b>SK20</b>
	-SK25F-105,165	16~25	55~65,55~70	62,122	-	55	-	SKG25-24HGA,SKG25-24HG	5.2,5.6	<b>SK25</b>

★Collet, adjust screw (G No.) and spanner are available as an option.

The Code No. of the spanner is **SK6F** (C=φ18) : **SKL-6**, **SK6F** (C=φ19.5) : **SKL-6W**, **SK10F**: **SKL-10**, **SK13F**: **9HC12A**, **SK16F**: **9HC16**, **SK20F**: **9HC22**, **SK25F**: **9HC25**

★Shank of High Speed Slim Chuck (P) is **2LOCK**. e.g. NBT40-SK10F-90P GH Handle  P.30 is necessary for High Speed Slim Chuck.

★Please add "RP" at the end of Code No. for Rust Proof Treatment Slim Chuck. e.g. BT40-SK10F-90-RP.

★Please refer  P.43 for SK Collet.

★When cutter shank dia. is smaller than MIN. of D<sub>1</sub>, special adjust screw (G No.) is required.  P.52

★GH Handle 



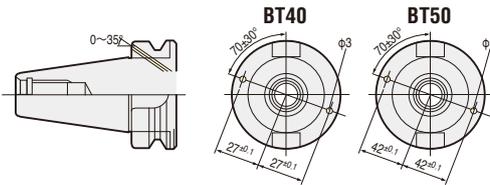
- The special pull stud with Oring is required for the M/C with flange through coolant capability.
- When the stroke of the coolant nozzles at the spindle flange on the M/C with flange through coolant capability is shorter, it may be a collision between flange of **2LOCK** tool and the nozzles. Please check the specification on your M/C.

# FLANGE THROUGH COOLANT TYPE HOLDER



## High Pressure Coolant Through Flange

The Flange Through Coolant System is a solution against the spindle rust and the dust problems of Centre Through Coolant System. These Tool Holder are used for Machine has Flange Through Holes and standard as **DIN69871/B**.



NISHIDA **BT40** Machine's Flange Through Hole alignment is unique. Option **(T)** is available. Specify as **BT40-C20T-90**

## RPT (Rust Proof Treatment) P.130

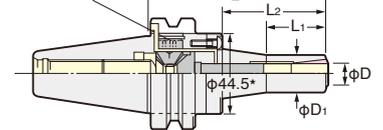
Pull Stud (with O-ring) for Flange Through type is also available.



## MINI-MINI CHUCK ADVANCED ALPHA for Flange Through

30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-out Accuracy: Within 3μm

New Locking Mechanism



High Speed

PAT.

★ : MMC12 : φ52.4

TAPER	Code No.	φD	φD <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	Collet	MAX. min <sup>-1</sup>	Weight (kg)
No.40	BT40-MMC 8F- 90-AA, 120-AA	2~ 8	20	33, 40	42, 72	VMK 8J	30,000	1.4, 1.5
	(IT40)-MMC12F- 90-AA, 120-AA	4~12	30	36, 60	44, 74	VMK12J		1.7, 1.8
No.50	BT50-MMC 8F-105-AA, 135-AA, 165-AA	2~ 8	20	33, 40, 40	42, 72, 102	VMK 8J	20,000	4.4, 4.5, 4.6
	(IT50)-MMC12F-105-AA, 135-AA, 165-AA	4~12	30	36, 60, 70	44, 74, 104	VMK12J		4.6, 4.7, 4.8

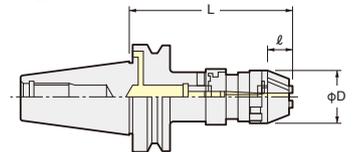
★Wrench is supplied as standard. Collet is available as an option P.36.

★Please use VMK Collet for the cutter with oil hole, and use VMK-J Collet for the cutter without oil hole.

★Photo shows MINI-MINI Chuck & VMK Collet chucking with φ2.7mm oil hole drill.



## NPU DRILL CHUCK for Flange Through



TAPER	Code No.	φDmm	φD <sub>1</sub>	ℓ	L	Weight (kg)
No.40	BT40-NPU13F-105	6~13	48.5	26.5	112.1~123.1	1.9
	(IT40) 150				157.1~168.1	2.4
No.50	BT50-NPU13F-110				117.1~128.1	4.4
	(IT50) 150				157.1~168.1	4.8

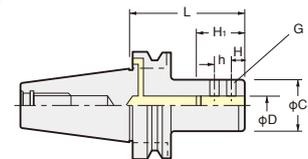
★Wrench is available as an option. NPU8: NPUL-8, NPU13: NPUL-13.

★Please use Slim Chuck P.129 for high pressure coolant (MAX. 7Mpa).

★MIN. Chucking Dia. for center through coolant is φ6mm.



## SIDE LOCK HOLDER (for DRILL) for Flange Through



TAPER	Code No.	D	L	C	h	H	H <sub>1</sub>	G	Collet	Weight (kg)
No. 40	BT40-SL20F- 90	20	90	50	16	12	44.5	M10	—	1.8
	(IT40)-SL25F- 90	25	90	55	17	14	54.5	M12 P1.25	OK25	1.7
	-SL32F- 90	32	90	60	16	15	59.5	M12 P1.25	OK32	1.9
No. 50	BT50-SL20F-105	20	105	50	16	12	44.5	M10	—	4.8
	(IT50)-SL25F-105	25	105	55	17	14	54.5	M12 P1.25	OK25	4.7
	-SL32F-105	32	105	60	16	15	59.5	M12 P1.25	OK32	4.9
	-SL40F-105	40	105	88	19	18	70	M12 P1.25	OK40	5.2

★For OK25, OK32 and OK40 Collet, please refer P.135.

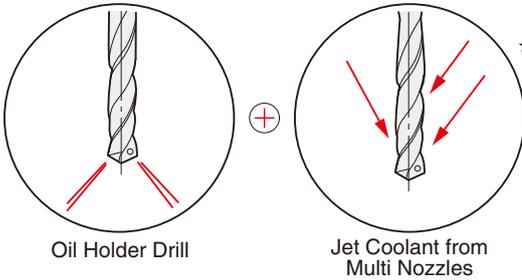
B1

# MULTI OIL HOLE HOLDER (1)



## Internal and External Coolant Feeding Switchable

Internal Coolant Feeding is done with Oil Holder Drill and External Coolant Feeding from Multi Nozzles exactly hit the cutting point in jet streams, when drill, end mill, tap, and reamer without oil hole are used switching of Internal and External Feeding can be done in one touch.



Oil Holder Drill

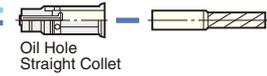
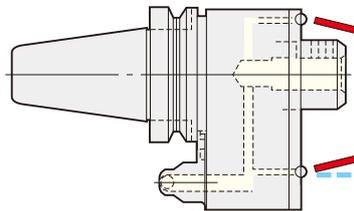
Jet Coolant from Multi Nozzles

Varieties of Attachment P.111

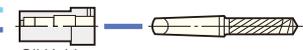


★For High Precision Machining, MOC or MOK is recommended.

JET Coolant direction adjustable



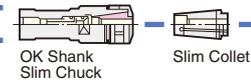
Oil Hole Straight Collet



Oil Holder MT Sleeve



ZMAC-V Boring Head P.89



OK Shank Slim Chuck



Slim Collet



Straight Collet (for Drill)



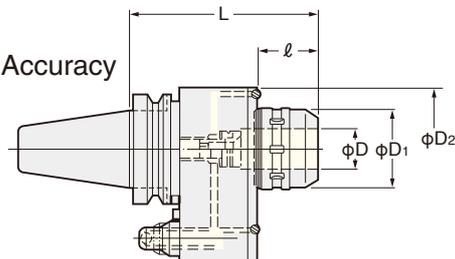
Straight Collet (for End Mill)

Conventional Oil Hole Holder (Internal Coolant Feeding) SLO, SKO are also available. P.135

## Milling Chuck type Multi Oil Hole Holder

Rigidity · Gripping Power · Accuracy

MOC



D<sub>2</sub> :  
BT40 : 85  
BT50 : 110

MAX. Coolant Pressure: 2.5MPa

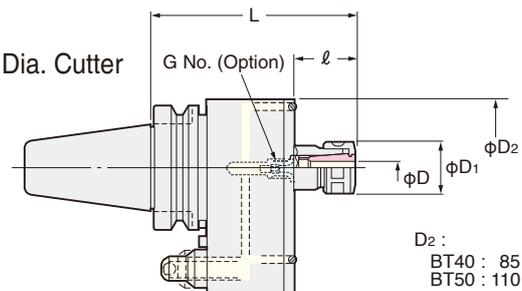
TAPER	Code No. -L	D	ℓ	D <sub>1</sub>	MAX.min <sup>-1</sup>	Weight (kg)	Applicable Collet
No.40	BT40-MOC20-145	20	49	52	4,000	3.6	CCK20 CCNK20
	(IT40)-MOC32-160	32	69	69	3,500	4.4	CCK32 CCNK32 OK32-MT K32-Q
No.50	BT50-MOC20-160	20	44	52	4,000	7.0	CCK20 CCNK20
	(IT50)-MOC32-170	32	54	69	3,500	7.1	CCK32 CCNK32 OK32-MT K32-Q

★For Collet and Adapter, please refer P.135. ★K32-Q : Straight Shank for Modular type. P.103 ★IT40-MOC20-155 and IT40-MOC32-170 are also available.  
★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension. P.308

## Slim Chuck type Multi Oil Hole Holder

For High Speed Rotation of Small Dia. Cutter  
MAX.6,000min<sup>-1</sup>

MOK



D<sub>2</sub> :  
BT40 : 85  
BT50 : 110

MAX. Coolant Pressure: 2.5MPa

TAPER	Code No. -L	D	ℓ	D <sub>1</sub>	MAX.min <sup>-1</sup>	Weight (kg)	Collet	G No. (Option)
No.40	BT40-MOK10-135	5~10	39	27.5	6,000	3.2	SK10	SKG10-10HGF
	(IT40)-MOK16-150	10~16	54	40	5,500	3.5	SK16	SKG16-12HGF
No.50	BT50-MOK10-150	5~10	34	27.5	6,000	6.8	SK10	SKG10-10HGF
	(IT50)-MOK16-165	10~16	49	40	5,500	7.1	SK16	SKG16-12HGF

★Nut is supplied as standard. ★Adjust Screw (G No.) P.52 and spanner are available as an option. MOK10: SKL-10, MOK16: 9HC16 P.308  
★For Slim Collet, please refer P.43. ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.

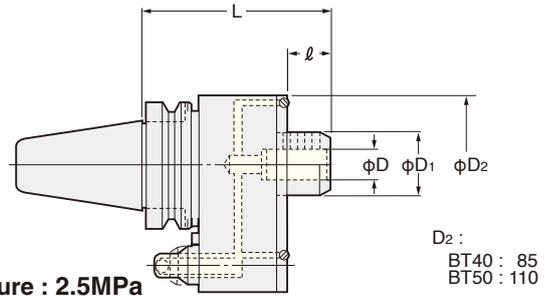
# MULTI OIL HOLE HOLDER (2)



## Side Lock type Multi Oil Hole Holder



- Tool life is extremely extended in straight shank drill.



MAX. Coolant Pressure : 2.5MPa

TAPER	Code No.	-L	D	ℓ	D <sub>1</sub>	MAX.min <sup>-1</sup>	Weight (kg)	Collet
No.40	BT40-MOL16-130		16	34	34.5	5,500	3.1	—
	(IT40)-MOL20-130		20		44	4,000	3.5	—
	MOL25-130		25	39	49	3,500	3.8	OK25-16, 20
	-MOL32-135		32		59	3,000	8.0	OK32-16, 20, 25
No.50	BT50-MOL16-150		16	34	34.5	5,500	7.0	—
	(IT50)-MOL20-150		20		44	4,000	7.5	—
	-MOL25-150		25	49	59	3,000	8.0	OK25-16, 20
	-MOL32-150		32		59	3,000	8.0	OK32-16, 20, 25
	-MOL40-160		40	44	59	3,000	8.0	OK40-32

★For Collet, please refer P.135.

★IT40-MOL16-140, IT40-MOL20-140, IT40-MOL25-140 and IT40-MOL32-145 are also available.

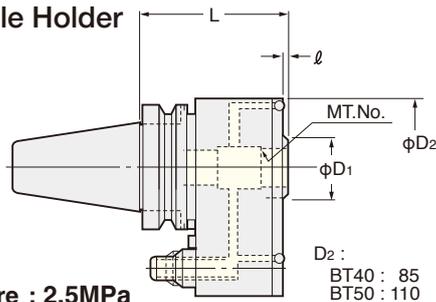
★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension. P.308

## Morse Taper type Multi Oil Hole Holder

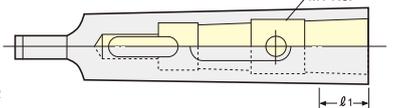


MOM

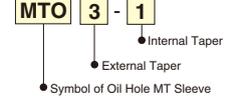
MAX. Coolant Pressure : 2.5MPa



### MTO MT Shank MT Sleeve



Explanation of the Code No.



TAPER	Code No.	-L	MT	ℓ	D <sub>1</sub>	MAX.min <sup>-1</sup>	Weight (kg)	Sleeve
No.40	BT40-MOM3- 95		3	0	—	5,500	2.6	MTO3-1, 2
	(IT40)-MOM4-105		4	17	44	4,000	2.6	MTO4-1, 2, 3
No.50	BT50-MOM3-113		3	0	—	5,500	6.3	MTO3-1, 2
	(IT50)-MOM4-120		4	4	44	4,000	6.8	MTO4-1, 2, 3
	-MOM5-120		5	4	59	3,000	6.8	—

★For Socket, please refer P.133.

★IT40-MOM3-105 and IT40-MOM4-115 are also available.

★( ) in sleeve shows ℓ<sub>1</sub>.

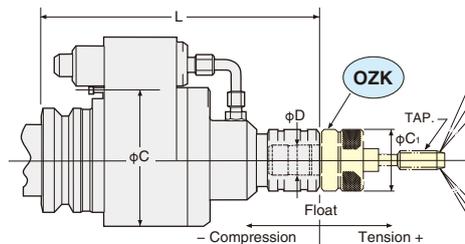
★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension. P.308

## Auto Depth Control Tapper Chuck for Oil Hole Tap



OZL

- To be used with Oil Hole Tap.
- Tapping depth is precisely controlled.
- MAX. 2,000min<sup>-1</sup>, MAX. Coolant Pressure : 1.5MPa



### OZK Tap Collet for OZL



TAPER	Code No.	-L	Tapping Capability			D	Float		C	C <sub>1</sub>	Weight (kg)	Tap Collet
			M	U	P		Compression	Tension				
No.40	BT40-OZL12-170		M 2~12	1/8~1/2	P 1/16~1/4	19	5	4	82	38.5	4.8	OZK12
	(IT40)-OZL24-205		M 8~24	1/2~1	P 1/4~5/8	30	6	7	98	56	5.3	OZK24
No.50	BT50-OZL12-185		M 2~12	1/8~1/2	P 1/16~1/4	19	5	4	98	38.5	8.5	OZK12
	(IT50)-OZL24-210		M 8~24	1/2~1	P 1/4~5/8	30	6	7	98	56	9.0	OZK24
	-OZL38-240		M18~38	3/4~1 3/8	P 3/8~1	45	8	10	115	78	10.0	OZK38

★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension. P.308

BT

# OIL HOLE HOLDER

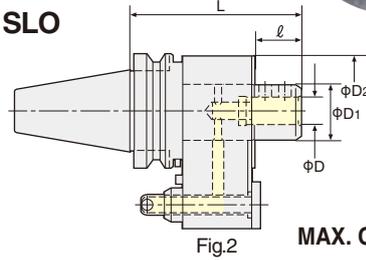


**SLO** Side Lock type  
**SKO** Slim Chuck type

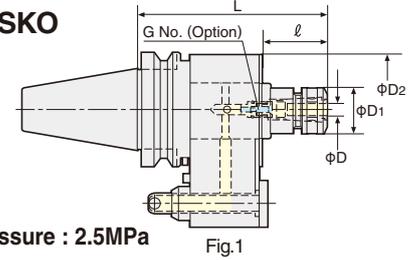
Slim Chuck type for BT40/50 is Multi Oil Hole type (**MOK**), please refer P.133.



**SLO**



**SKO**



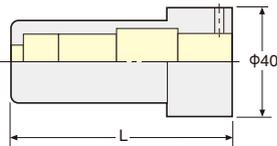
MAX. Coolant Pressure : 2.5MPa

Oil Mist type holder which is not necessary to use coolant is also available for health and safety environment regulation. Please contact with us. e.g. **BT40-SLO25M-130**

TAPER	Code No.	L	D	ℓ	D <sub>1</sub>	D <sub>2</sub>	MAX.min <sup>-1</sup>	Weight (kg)	Collet	Fig.			
<b>No.30</b>	<b>BT30-SKO10-135B,135,125KA</b>	5~10	18,41,43	27.5	63	63	6,000	1.8	<b>SK10</b>	1			
	<b>-SKO16-140B,145,130KA</b>	10~16	23,51,48	40			5,500	2.1	<b>SK16</b>				
	<b>-SKO25-145B,145,130KA</b>	16~25	28,48,48	55	80	3,000	2.8	<b>SK25</b>					
<b>No.40</b>	<b>BT40-SLO16-130</b>	16	39.5	49	82	82	3,000	3.5	—	2			
	<b>(IT40)-SLO20-130</b>	20							<b>OK25</b>				
	<b>-SLO25-130</b>	25							<b>OK32</b>				
<b>No.50</b>	<b>-SLO32-140</b>	32	41.5	54	98	98	3,000	7.5	—	2			
	<b>BT50-SLO16-150</b>	16	40	49					54		64	8.0	<b>OK25</b>
	<b>(IT50)-SLO20-150</b>	20											<b>OK32</b>
	<b>-SLO25-150</b>	25	50	54					79		118	10.0	<b>OK40</b>
	<b>-SLO32-150</b>	32											—
	<b>-SLO40-160</b>	40	—	—					—		—	—	—
<b>-SLO50-160</b>	50	—	—	—	—	—	—						

- ★BT-30-SKO added "B" (e.g. BT-30-SKO10-135B) is for BROTHER. BT30-SKO added "KA" (e.g. BT30-SKO10-125KA) is for KIRA.
- ★IT40-SLO16-140, IT40-SLO20-140, IT40-SLO25-140 and IT40-SLO32-140 are also available.
- ★For SKO Slim Chuck, Adjust Screw (G No.) is available as an option. P.52
- ★For Heavy Duty Model with strong oil seals, please add the letter "HD" to the Code No. e.g. BT40-SLO25-130HD Ideal for ceramic material component.
- ★Please refer P.135 for OK25 and OK32 Collet for SLO type. ★Nut, Adjust Screw and Collet Extractor are included for SKO type as standard. Please refer P.43 for Slim Chuck Collet.
- ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension. P.308

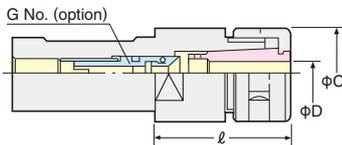
## OK Shank MT Sleeve for MOL and SLO



OK-MT Sleeve Code No.
<b>OK32-MT1-85, MT2-85, MT3-100</b>

Explanation of the Code No.  
**OK 32 - MT1 - L**  
 • Symbol of OK Shank  
 • OD of Collet  
 • Internal Taper  
 • Length

## OK Shank Slim Chuck for MOL and SLO



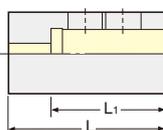
Explanation of the Code No.

**OK 25 - SK 10**  
 • Symbol of OK Shank  
 • OD of Shank  
 • Slim Chuck  
 • MAX. Chucking Dia.

Code No.	D	C	ℓ	G No. (Option)	Collet
<b>OK25-SK10</b>	5~10	27.5	23	SKG10-10HG	<b>SK10</b>
<b>-SK16</b>	10~16	40	65	SKG16-12HG	<b>SK16</b>
<b>OK32-SK10</b>	5~10	27.5	23	SKG10-10HG	<b>SK10</b>
<b>-SK16</b>	10~16	40	65	SKG16-12HG	<b>SK16</b>
<b>OK40-SK10</b>	5~10	27.5	25	SKG10-10HG	<b>SK10</b>
<b>-SK16</b>	10~16	40	51	SKG16-12HG	<b>SK16</b>

- ★Adjust Screw (G No.) is available as an option. P.52
- ★Please refer P.52 for Adjust Screw (G No.) .
- ★Please refer P.43 for Slim collet.

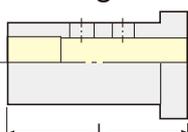
## OK Shank Straight Collet for MOL and SLO (for drill)



Code No.	L	L <sub>1</sub>
<b>OK25-16, 20</b>	56	45
<b>OK32-16, 20, 25</b>	61	45, 45, 55
<b>OK40-32</b>	71	60

Explanation of the Code No.  
**OK 25 - 16**  
 • Symbol of OK Shank  
 • OD of Collet  
 • ID of Collet

## OK Shank Straight Collet for MOL and SLO (for end mill)



Code No.	L
<b>OKE32-16, 20, 25</b>	63
<b>OKE40-20, 25, 32</b>	73

Explanation of the Code No.  
**OK E 32 - 16**  
 • Symbol of OK Shank  
 • for End Mill  
 • OD of Collet  
 • ID of Collet

# ZERO FIT TYPE OIL HOLE HOLDER



## ZERO FIT TYPE OIL HOLE HOLDER SLIM CHUCK



SZFO

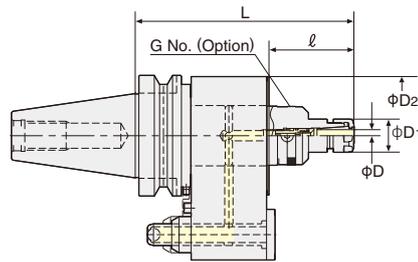


Fig.1

MAX. run-out at 100mm	
SZFO 10	0.050mm/dia.
SZFO 16	0.040mm/dia.
SZFO 25	0.025mm/dia.

## ZERO FIT TYPE OIL HOLE HOLDER MILLING CHUCK



CZFO

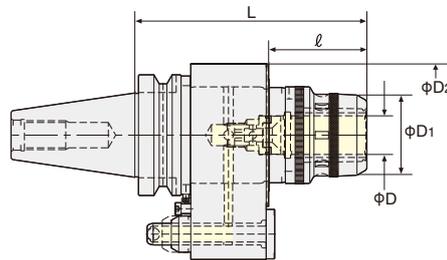


Fig.2

MAX. run-out at 100mm	
CZFO 20	0.050mm/dia.
CZFO 32	0.030mm/dia.

### The milling surface finish and quality can be improved.

- The milling surface finish and quality can be improved.
- For better and stable finish tolerance for machining holes.
- The tool life can be extended.
- **Zero Fit Holder** has wide adjustment range compared with competitors equivalent, and its mechanism performs simple, quick and secured operation.
- The choice of the Slim Chuck style “SZF” & the Anniversary type Milling Chuck style “CZF” can be selected depending on your cutter.
- The side through coolant type does not hurt the machine tool spindle inside.

MAX. Coolant Pressure : 2.5MPa

TAPER	Code No.	L	D	l	D <sub>1</sub>	D <sub>2</sub>	MAX.min <sup>-1</sup>	Weight(kg)	Collet	G No. (Option)	Fig.
No.40	BT40-SZFO10-160	6~10	69.5	49	82	3,000	4.0	(SK10)	SKG10-10HG	1	
	-CZFO20-180(65)	20	65	66.5	98			(KM20) (CCK20)	—	2	
No.50	BT50-SZFO10-180	6~10	70	49	98	3,000	8.0	(SK10)	SKG10-10HG	1	
	-SZFO16-190	2.75~16	80	64				(SK16)	SKG16-12HG		
	-SZFO25-175	16~25.4	65	66.5				(SK25)	SKG25-16HG		
	-CZFO20-175	20	65	66.5				(KM20) (CCK20)	—	2	
	-CZFO32-190	32	80	80.5				118			(KM32) (CCK32)

★For SZFO Slim Chuck, Nut is available as a standard.

★For SZFO Slim Chuck, Adjust Screw (G No.) is available as an option.

★For SZFO Slim Chuck, Collet is available as an option. Please refer P.43 for Slim Chuck Collet.

★For SZFO Slim Chuck, Adjust screw for small cutter shank dia. (φ4) is available. Please contact with us.

★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension. P.308

# HIGH SPEED SPINDLE SPEEDER

**NIKKEN**



**10,000~40,000min<sup>-1</sup>**

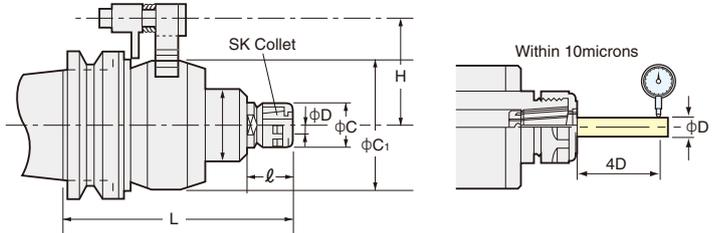
■ NIKKEN NX increases the spindle speed by 4 or 5 times, so economically convert your standard M/C to high speed M/C.

■ Inside gears are mirror-finish ground by NIKKEN original Fluid-Dynamic Grinding Process.

■ Run-out accuracy is more stable due to TiN Bearing Nut (standard accessory).

**NX**

Explanation of the Code No.  
**BT40-NX 5 160**  
 • Length  
 • Ratio  
 • NX : 4times, 5 times  
 • PX : 6times, 10 times  
 • Shank



TAPER	Code No.	D	L	C	C <sub>1</sub>	l	H	Ratio	MAX. min <sup>-1</sup>	Weight (kg)	Collet	
No.30	BT30-NX 5-153	1.75~10	153	27.5	85	32	55	5	20,000	2.9	SK10A	
	BT40-NX 5-153		153									
No.40	(IT40)-PX 6-150GX	0.5~8.0	149	22	76	14.5	60	6	30,000	4.1	ETS14	
	-PX10-160GX		162.5									
No.50	BT50-NX 4-192	1.75~16	192	40	118	46	82	4	10,000	11.0	SK16A	
	(IT50)-NX 5-151	1.75~10	151	27.5	85			5	20,000	7.0	SK10A	
	-PX 6-140GX	0.5~8.0	142	22	76			14.5	6	30,000	6.8	ETS14
	-PX10-155GX		155.5						98	10	40,000	

**NX type**

- ★ For End Mill, please use SK A type collet. For Drill, please use SK-P class collet. (P.43)
- ★ Wrench, Collet Extractor and A type SK Collets are supplied as standard.
- NX5: SK10-6A, 8A, 10A NX4: SK16-8A, 10A, 12A, 16A
- ★ Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension. (P.308)
- ★ Air Cylinder for Cooling (NXE-COOL) is highly recommended to use for the stable milling.



**Air Cylinder for Cooling with ON/OFF Magnet NXE-COOL**

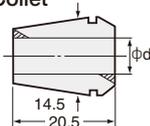
The best cooling is to cool the speeder body directly.



**PX type**

- ★ Grease lubrication is standard.
- ★ Please add "MX" instead of "GX" at the end of Code No. for the oil mist lubrication. e.g. BT40-PX6-130MX
- ★ ETS collet is supplied as an option.

**ETS Collet**



Explanation of the Code No.

**ETS 14 - 0.5**  
 • MAX. Chucking Dia.  
 • Style No.  
 • Symbol of ETS Collet

- ★ d=0.5~1.0: Each 0.1mm (Gripping range : 0.1mm) e.g. ETS14-0.5 : 0.4~0.5mm
- ★ d=1.25~2.5: Each 0.25mm (Gripping range : 0.25mm)
- ★ d=3.0~8.0: Each 0.5mm (Gripping range : 0.5mm)

# AIR TURBINE SPINDLE TOOL

**NIKKEN**

**HTS**



**150,000min<sup>-1</sup>**

**Run-out Accuracy of the Spindle: Within 1μm**

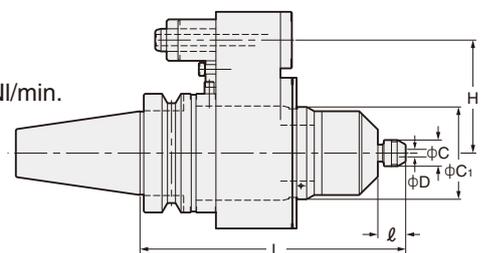
Air Pressure, Consumption: 0.5MPa, 90NI/min.  
 Collet Size : MAX 4.0mm

Explanation of the Code No.

**BT40-HTS1500-140**  
 • Nominal Gauge Length  
 • 150,000min<sup>-1</sup>  
 • Symbol of Air Turbine Spindle  
 • Shank No.

HSK shank is also available.

**HSK 50A-HTS1500-158**  
**HSK 63A-HTS1500-160**  
**HSK100A-HTS1500-167**



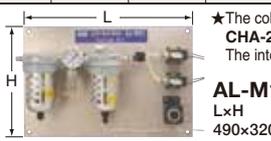
**Please do not rotate the machine spindle.**

TAPER	Code No.	D	L	C	C <sub>1</sub>	l	H	Fixed min <sup>-1</sup>	Weight (kg)	Collet
No.30	BT30-HTS1500-148	0.5~4	148	13.9	49	15	55	150,000	2.7	CHA-□ (Internal dia.)
	-HTS1500-152B		152							
No.40	BT40-HTS1500-140		140				60		3.2	
No.50	BT50-HTS1500-146		146				82		6.0	

- ★ Collet CHA-4.0 and spanner are supplied as standard.
- ★ Air line kit (AL-M1202/AL-M1203BS2), the lubrication oil (K-211) and the stopper block are available as an option.
- ★ Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension. (P.308)



**AL-M1202**  
 LxWxH  
 300x120x220



★ The collet which internal dia. excepts φ4.0mm is available as an option.  
**CHA-2.35, 3.0, 3.175**  
 The internal dia. range is each 0.1mm incremental from φ0.5 to φ4.0mm.  
**AL-M1203BS2 (DC24V ON/OFF)**  
 LxH  
 490x320

# AIR MOTOR SPINDLE TOOL



NBT-NR Photo shows NR601.

## NR2351:25,000min<sup>-1</sup>

Air Pressure, Consumption : 0.5MPa, 226ℓ/min  
Collet Size : MAX φ6.0mm

### Tools for NR2351

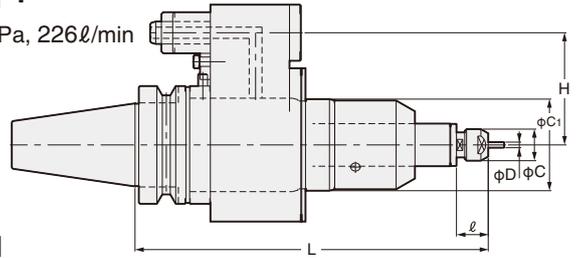
- Square End Mill : MAX.φ3.0mm
- Ball End Mill : MAX.R0.5mm
- Grinding Wheel : MAX.φ20mm

## NR601:50,000min<sup>-1</sup>

Air Pressure, Consumption : 0.6MPa, 160ℓ/min  
Collet Size : MAX φ3.0mm

### Tools for NR601

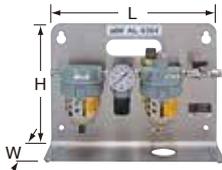
- Square End Mill : MAX.φ1.0mm
- Ball End Mill : MAX.R0.5mm
- Grinding Wheel : MAX.φ10mm



Please do not rotate the machine spindle.

TAPER	Code No.	D	L	C	C <sub>1</sub>	ℓ	H	Fixed min <sup>-1</sup>	Weight (kg)	Collet
No.30	NBT30-NR2351-208	0.5~6.35	208	16.9	49	16.9	55	30,000	3	CHK-□
	-NR2351-208B						40			
	-NR601 -210	8	55	58,000		CHM-□				
	-NR601 -210B		40							
No.40	NBT40-NR2351-188	0.5~6.35	188	16.9	16.9	60	30,000	3.7	CHK-□	
	(NIT40)-NR601 -190	0.3~3.175	190	8.2	8	58,000	CHM-□			
No.50	NBT50-NR2351-208	0.5~6.35	208	16.9	16.9	82	30,000	6.7	CHK-□	
	(NIT50)-NR601 -210	0.3~3.175	210	8.2	8	58,000	CHM-□			

## Air Line Kit AL-M1202/AL-M1203BS2



AL-M1202 (Manual ON/OFF)  
LxWxH 300x120x220



AL-M1203BS2(DC24V ON/OFF)  
LxH 490x320

- The pressure can be adjusted.
- It can be mount on the wall.
- Lubrication oil is supplied as standard.

- Tool life can be extended.
- Eliminate the impurities from the air.

### Preparation for automatic tool change

1. Compressor 0.5~0.6MPa
2. Installation of the air circuit including the air line kit (AL-M1203BS2) and the stopper block.
3. Modal M signals to activate the solenoid valve ON/OFF
4. Warning alarm or machine stop at the shortage of the oil. Further discussion is required.



The filter at the air line kit is not sufficient for the high humidity. Please install the air dryer near the filter at the air line kid.

## NR2351 (25,000min<sup>-1</sup>) Work Sample



Material: Aluminium

No.	Shape	Cutting condition	Time
①	φ3, 2t End mill	S25,000min <sup>-1</sup> F125mm/min	6sec.
②	Drill hole: 11.5mm deep	11.5mm Deep	
③	φ1 Drill: 15mm deep	S25,000min <sup>-1</sup> F100mm/min 15mm Deep	9sec.
④	φ1.32 Drill: 6mm deep	S25,000min <sup>-1</sup> F208mm/min 6mm Deep	2sec.
⑤	φ1.32 Drill: 15mm deep	S25,000min <sup>-1</sup> F100mm/min 15mm Deep	9sec.

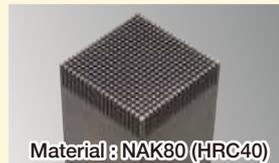
## HTS1500 (150,000min<sup>-1</sup>) Work Sample



Material NAK80 (HRC40)

No.	Shape	Cutting Condition	Cutting Length	Time
①	Pillamid (1.5mm deep)	Rough Ad 0.04 X Rd 0.04 F 3,000	82m	59min.46sec.
		Finish Ad 0.01 X Rd 0.01 F 2,000		
②	Pocket (1.0mm deep)	Rough Ad 0.04 X Rd 0.04 F 3,000	50m	1hour5min.22sec.
		Finish Ad 0.01 X Rd 0.01 F 2,000		
③	Pocket (2.0mm deep)	Rough Ad 0.04 X Rd 0.04 F 3,000	47m	1hour3min.17sec.
		Finish Ad 0.01 X Rd 0.01 F 2,000		

End Mill : Nissin MRB230 (R0.25x6)  
S : 150,000min<sup>-1</sup>  
F : 2,500mm/min  
Z : 0.01mm incremental  
The groove of R0.25 x 5mm is machined in 19 lines and 19 lows at the □20mm x 20mm.



Material : NAK80 (HRC40)



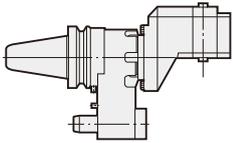
The die mould profiling by the φ0.2mm end mill at the 150,000min<sup>-1</sup> can be done continuously and stably.

# ANGULAR HEAD SYSTEM (Free Positioning in 360°)

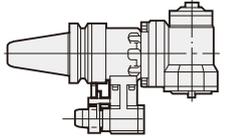
**NIKKEN**

## Quick type Angular Head P.119

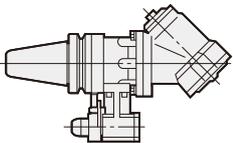
### BT-AFT Off-Set type



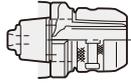
### BT-AHT 90°type



### BT-AHT 45°type



### AHK-C



### AHK-SK



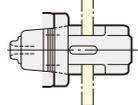
### AHK-PC



### AHK-Z



### AHK-SCA



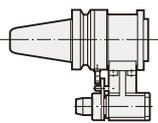
 P.142

Various machining such as end milling, drilling, face milling, tapping etc. can be conveniently done by just changing adapter. Very suitable for production of many kinds of small quantity.

BT50-AFT35-90 Cutting Data Material of Work: S55C Carbon Steel				
Adaptor	Tool	Cutting Width×Depth	min <sup>-1</sup>	Feed (mm/min)
SK10	HSS 2 Flutes End Mill	10×5.0	800	80
PC60	φ60 Face Mill	45×3.0	600	300
SCA	φ100×4 Side Cutter	4.0×6.0	70	70
C20	φ18.5 Drill	18.5×40	400	80

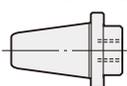
## Modular type Angular Head P.143

### BT-AHM Modular type Main Body

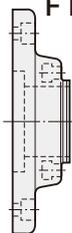


### Direct Mount Flange type Angular Head P.146

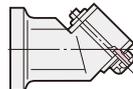
#### NT-F Direct Mount Flange type Shank



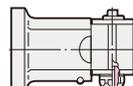
F Flange



### AHM-SK 45°type



### AHM-SK 90°type

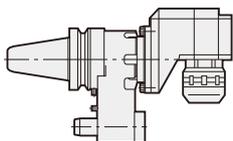


Head can be changed according to the application. Small Dia. Head, 45° or 90° Head, Long Head etc. are available in standard series. For Heavy Cutting, Direct Mount Flange type is recommended.

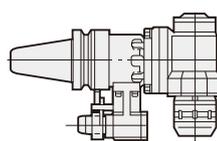


## Solid Type Angular Head P.144

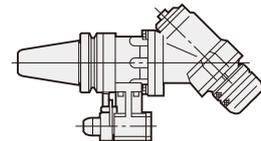
### AFK AFC Off-Set type



### AHK AHC 90°type



### AHK AHC 30°,45°,60°types



- Free Radius Positioning in 360°.
- Taper Connection System is applied to Stopper Block. (Different from the one of another FA tooling)
- Oil Hole type is available. Please contact with us.
- Special Degree Angular Head is available on demand.
- Spindle Speeder type Angular Head (X5 times, MAX. 18,000min<sup>-1</sup>) is available.

BT40-AHPX10-215, BT50-AHPX10-206  
IT40-AHPX10-215, IT50-AHPX10-206

Spindle Speeder type Angular Head  
MAX.18,000min<sup>-1</sup>



Angular Head with Oil Hole System



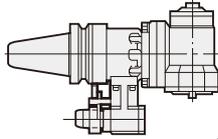
# ANGULAR HEAD Torque - power



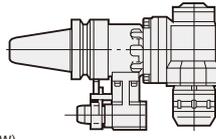
Please decide a cutting condition for the cause in 70% of following torque and power.

## BT-AH

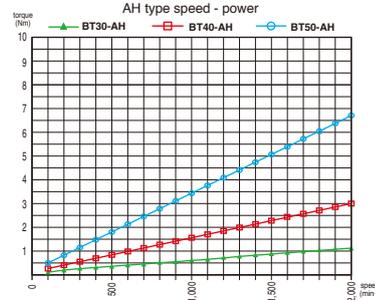
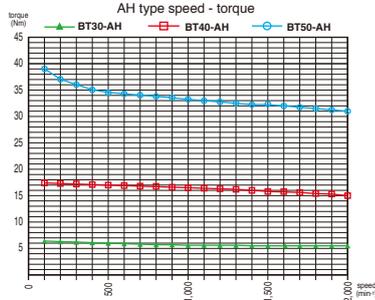
### BT-AHT 90° type



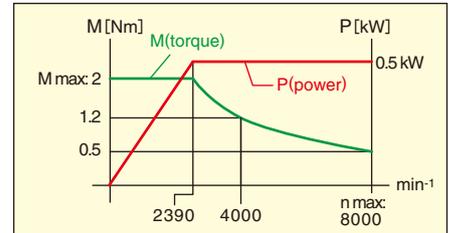
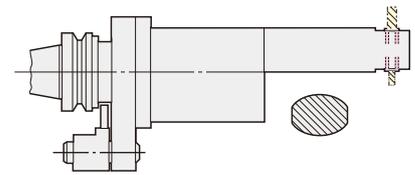
### AHK AHC 90° type



ANGULAR HEAD(AH)  
speed(min<sup>-1</sup>)-torque(Nm)/power(kW)

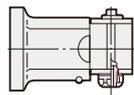


## BT-AHPL4

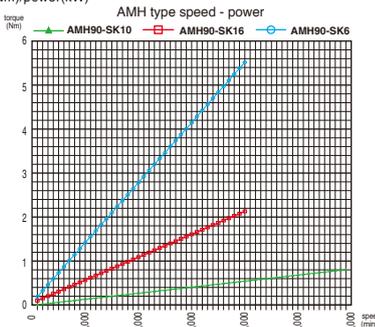
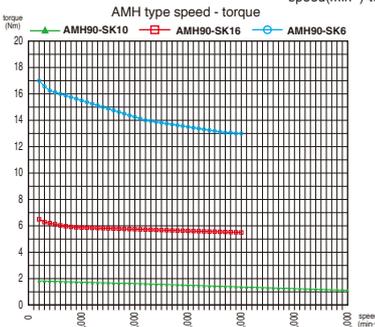


## AHM-SK

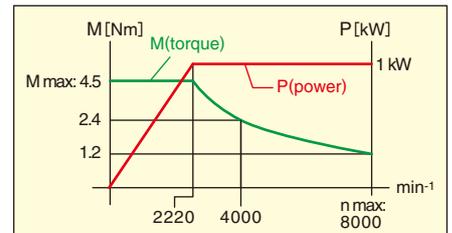
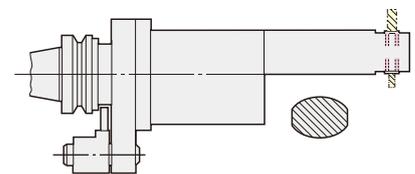
### AHM-SK 90° type



ANGULAR HEAD(AMH)  
speed(min<sup>-1</sup>)-torque(Nm)/power(kW)

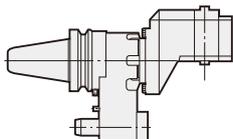


## BT-AHPL6

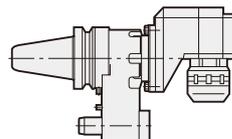


## BT-AF

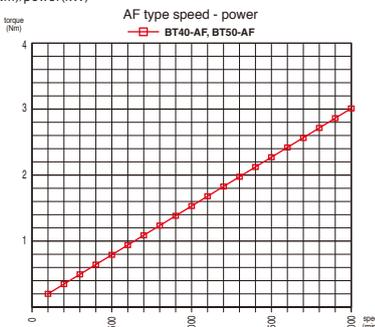
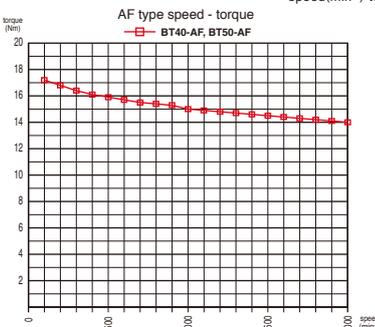
### BT-AFT OFF SET type



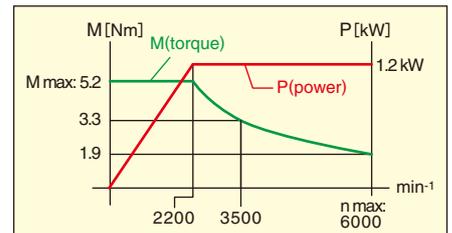
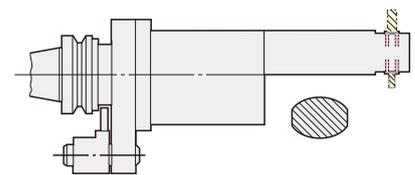
### AFK AFC OFF SET type



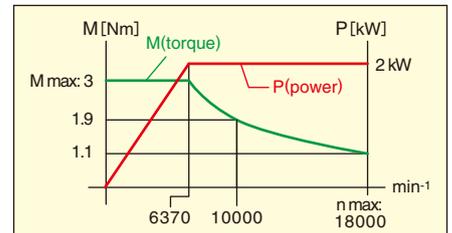
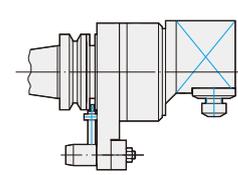
ANGULAR HEAD(AF)  
speed(min<sup>-1</sup>)-torque(Nm)/power(kW)



## BT-AHPL8



## BT-AHPX10



## Cutting Power : Pc (kW) and Cutting Torque : Mc (Nm) for Milling

$$P_c(kW) = \frac{ap \cdot ae \cdot vf \cdot kc}{60 \times 10^6}$$

$$M_c(Nm) = \frac{9550 \times P_c}{n}$$

ap(mm) : Depth of Cut  
ae(mm) : Cutting Width  
vf(mm/min) : Table Feed per Min  
Kc(MPa) : Specific Cutting Force  
Pc(kW) : Cutting Power

n(min-1) : Spindle Speed  
Mc(Nm) : Cutting Torque  
Kc(MPa) : Reference level of the specific cutting Force.  
It is found by materials and feed per tooth ( fz ( mm/t ) ).  
Specifically, please refer to a cutting tool maker catalogue.

- S50C(fz=0.1mm/tooth)≒2000MPa
- FC250(fz=0.1mm/tooth)≒1800MPa

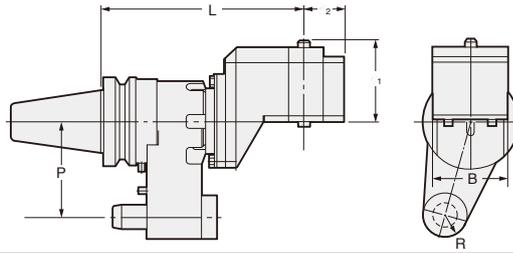
# QUICK TYPE ANGULAR HEAD (Free Positioning in 360°)



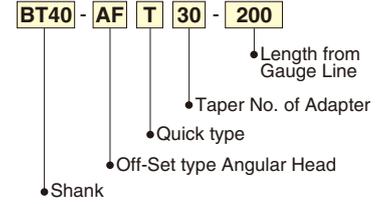
## Quick type Off-Set Angular Head



AFT



Explanation of the Code No.



MAX2,000min<sup>-1</sup>

TAPER	Code No.	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	B	R	Adapter	Weight (kg)
No.40	BT40 (IT40)-AFT30-200	BT40	200	65	85	35	70	17.5	AHK30	7.5
No.50	BT50 (IT50)-AFT35-230	BT50	230	110	85	45	84	25	AHK35	16.0

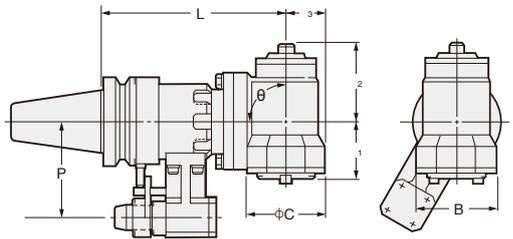
★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling) ★All types are available with Oil Hole System. ★Test bar is attached as standard.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.  
 ★IT40-AFT30-200 and IT50-AFT35-230 are also available. ★When M/C spindle rotates CW, the cutter rotates CW.



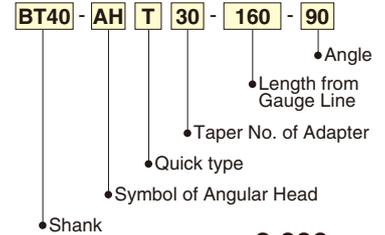
## Quick type 90° Angular Head



AHT



Explanation of the Code No.



MAX2,000min<sup>-1</sup>

TAPER	Code No. L -θ	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	C	B	θ	Adapter	Weight (kg)
No.40	BT40-AHT30-160 -90	BT40	160	65	58	61	37	86	80	90	AHK30	6.5
	(IT40) -250* -90	BT40	250									10.5
No.50	BT50-AHT35-210 -90	BT50	210	110	65	88	45	100	90	90	AHK35	17.0
	(IT50) -300* -90	BT50	300									22.0

★Taper Connection System is applied to Stopper Block. (Different from the another FA tooling) ★All types are available with Oil Hole System. ★Test bar is attached as standard.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.  
 ★Models with \* mark : Detailed discussion is needed. ★When M/C spindle rotates CCW, the cutter rotates CW.

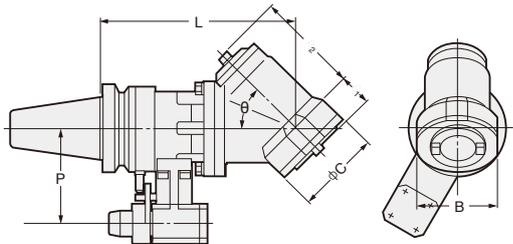


## Quick type 30°, 45°, 60° Angular Head

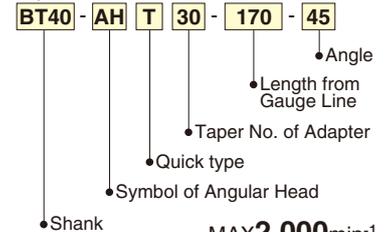


AHT

Photo shows 30° type.



Explanation of the Code No.



MAX2,000min<sup>-1</sup>

TAPER	Code No. L -θ	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	C	B	θ	Adapter	Weight (kg)
No.40	BT40-AHT30-205 -30	BT40	205	65	1.5	122	86	80	30	AHK30	6.5
	(IT40) -170 -45		170		35	88			45		6.5
	-160 -60		160		35	88			60		6.5
	-250* -30	BT40	250	1.5	122	86	80	30	AHK30	10.5	
	-45		250	35	88			45		10.5	
	-60		250	35	88			60		10.5	
No.50	BT50-AHT35-258 -30	BT50	258	110	0	140	100	90	30	AHK35	17.0
	(IT50) -225 -45		225		26	110			45		17.0
	-210 -60		210		40	105			60		17.0
	-300* -30	BT50	300	0	140	100	90	30	AHK35	22.0	
	-45		300	26	110			45		22.0	
	-60		300	40	105			60		22.0	

★Taper Connection System is applied to Stopper Block. (Different from the another FA tooling) ★All types are available with Oil Hole System. ★Test bar is attached as standard.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.  
 ★Models with \* mark : Detailed discussion is needed. ★When M/C spindle rotates CCW, the cutter rotates CW.

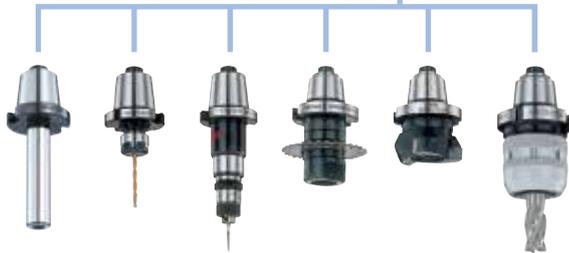


# ADAPTER FOR QUICK TYPE ANGULAR HEAD

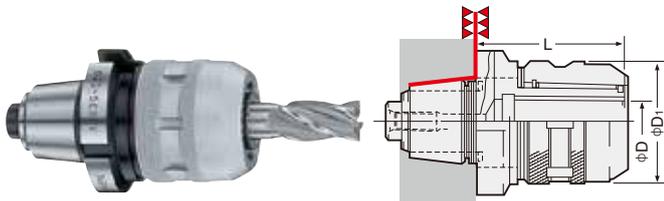
**NIKKEN**



Quick type Angular Head  
☞ P.141



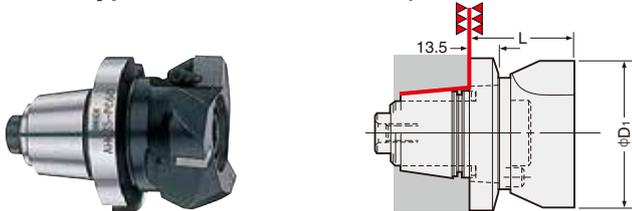
Quick type Milling Chuck (Double Face Contact)



Code No.	D	L	D <sub>1</sub>	Weight(kg)	KM Collet
AHK30-C16		60	44	1.0	<b>KM16</b>
AHK35-C16,C20		60, 65	44, 52	1.1, 1.2	<b>KM16 KM20</b>

★For KM COLLET, please refer ☞ P.34.

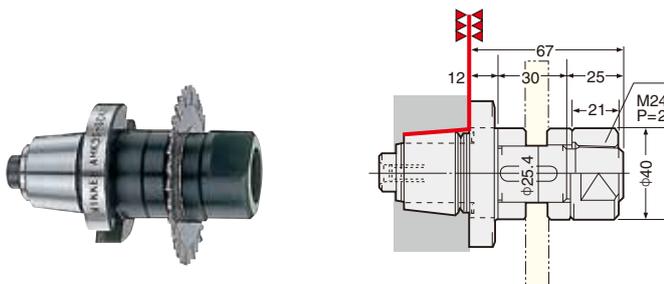
Quick type NIKKEN PRO-CUT (Double Face Contact)



Code No.	PC.No.	L	D <sub>1</sub>	Weight(kg)
AHK30-PC50		45	50	0.7
AHK35-PC60,PC80		45, 57	60, 80	0.9, 1.3

★Inserts are standard accessory.

Quick type Side Cutter Arbor (Double Face Contact)



Code No.	L	D	D <sub>1</sub>	Weight(kg)
AHK35-SCA25.4	12	25.4	40	1.1

★The key and set of distance collars are standard accessory.

Quick type Slim Chuck



Code No.	SK.No.	D	L	D <sub>1</sub>	Weight(kg)	SK Collet
AHK30-SK10		1.75~10	35	27.5	0.4	<b>SK10</b>
-SK16		2.75~16	50	40	0.6	<b>SK16</b>
AHK35-SK10		1.75~10	35	27.5	0.5	<b>SK10</b>
-SK16		2.75~16	50	40	0.7	<b>SK16</b>

★SK Collet is not included, please refer ☞ P.43.

Quick type Tapper Chuck

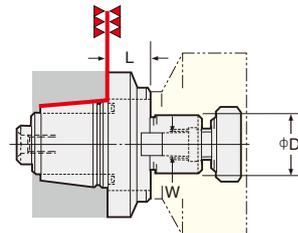


Code No.	Z.No.	L	Weight(kg)	Tap Collet
AHK30-Z8, Z12		85, 100	0.6, 0.9	<b>ZKN 8 ZKG12</b>
AHK35-Z8, Z12, Z16		75, 85, 100	0.7, 1.0, 1.5	<b>ZKN 8 ZKG12 ZKG16</b>

★Tapping Capability Z8 : M2~8 Z12 : M2~12 Z16 : M3~20

★Tap Collet is not included, please refer ☞ P.61.

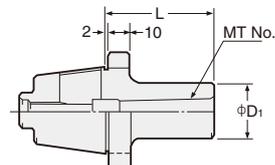
Quick type Face Mill Arbor (Double Face Contact)



Code No.	L	D <sub>1</sub>	W	Weight(kg)
AHK35-FMA25.4	18.5	25.4	9.5	0.7
-FMA31.75		31.75	12.7	0.8

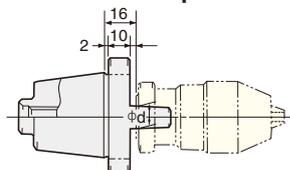
★The Keys and a Bolt are standard accessory.

Quick type Morse Taper Sleeve



Code No.	MT.No.	L	D <sub>1</sub>	Weight(kg)
AHK30-MT1, MT2		50, 65	25, 32	0.4, 0.5
AHK35-MT1, MT2, MT3		50, 60, 85	25, 32, 40	0.5, 0.6, 0.9

Quick type Drill Chuck Adapter



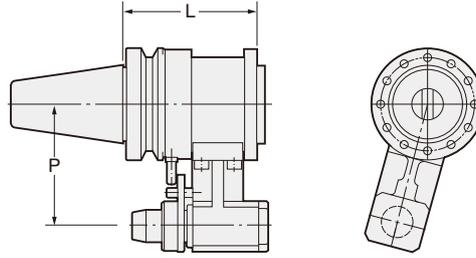
Code No.	J.No.	L	J.No.	Weight(kg)
AHK30-J6	J6	16		0.4
AHK35-J6				0.5

★This adapter is supplied without drill chuck.

# MODULAR TYPE ANGULAR HEAD



## Modular type Angular Head AHM

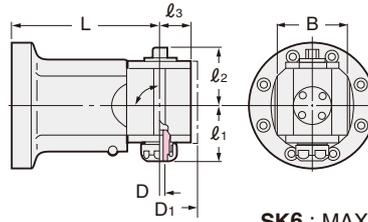


MAX6,000min<sup>-1</sup>

TAPER	Code No. -L	L	P	Weight (kg)	Suitable Modular Head
No.40	BT40 (IT40)-AHM-100	100	65	4.5	
No.50	BT50 (IT50)-AHM-120	120	110	11.5	

★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling) ★All types are available with Oil Hole System.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.

## 90°type Modular Head AHM90



Explanation of the Code No.

AHM90 - SK6 - 80

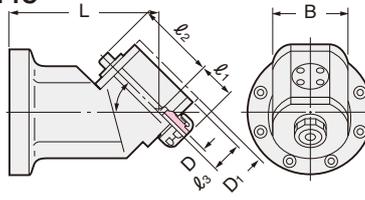
- Length from Gauge Line
- Symbol of Slim Chuck
- Symbol of Modular Head 90°type

SK6 : MAX6,000min<sup>-1</sup> SK10,16 : MAX4,000min<sup>-1</sup>

Code No. -L	D	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	D <sub>1</sub>	B	Weight (kg)	SK Collet
AHM90-SK 6-80, 120, 150*	0.7~6	42	35	22	50	48	3.0, 4.0, 4.5	SK 6
-SK10-80, 120, 150*	1.75~10	63	57	32	64	60	3.5, 4.5, 5.0	SK 10
-SK16-80, 120, 150*	2.75~16	66	58	35	74	70	4.2, 5.2, 5.7	SK 16

★\*Mark is for light machining. ★For SK Collet, please refer P.43. ★When M/C spindle rotates CCW, the cutter rotates CW. ★Test bar is attached as standard.

## 30°, 45°, 60°,type Modular Head AHM45



Explanation of the Code No.

AHM45 - SK6 - 120

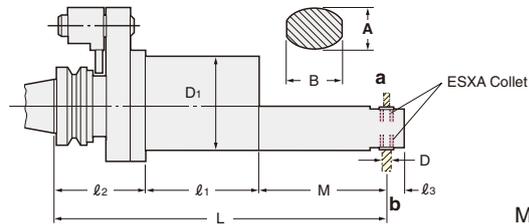
- Length from Gauge Line
- Symbol of Slim Chuck
- Symbol of Modular Head 45°type

SK6 : MAX6,000min<sup>-1</sup> SK10,16 : MAX4,000min<sup>-1</sup>

Code No. -L	D	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	D <sub>1</sub>	B	Weight (kg)	SK Collet
AHM45-SK 6-120, 150*	0.7~6	27	67	22	50	52	3.0, 4.0, 4.5	SK 6
-SK10-120, 150*	1.75~10	39	80	30	64	60	3.5, 4.5, 5.0	SK 10
-SK16-120, 150*	2.75~16	38	90	35	74	70	4.2, 5.2, 5.7	SK 16

★\*Mark is for light machining. ★For SK Collet, please refer P.43. ★Angle 30°, 60° are also available as an option. ★When M/C spindle rotates CCW, the cutter rotates CW. ★Test bar is attached as standard.

## Angular head for deep hole AHPL



MAX3,500min<sup>-1</sup>

TAPER	Code No. -L	D	D <sub>1</sub>	A	B	L	M	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	min <sup>-1</sup>	Weight (kg)	Applicable Collet
No.40	BT40-AHPL4-199	1.0~4.0	80	25	31	199	32	67.5	99.5	14.5	6,450	5.0	ESXA4
	-223					56	5.5						
	-247					80	6.0						
	-271					104	7.5						
	-AHPL6-208					207.5	46.5					5.0	
No.50	BT50-AHPL6-221	1.0~6.0	80	36	45	235.5	74.5	61.5	99.5	15	8,000	6.0	ESXA6
	-236					263.5	102.5					8.0	
	-264					220.5	46.5					7.0	
	BT50-AHPL6-221					248.5	74.5					8.0	
	-249					276.5	102.5					10.0	
	-277					247.5	73					9.0	
No.50	-AHPL8-248	1.0~8.0	110	43	47.5	279.5	105	78	96.5	20	6,000	10.0	ESXA8
	-280					299.5	125					11.0	
	-300												

★ESXA Collet is supplied as an option. ★Different shape is possible, please contact with us for more detail.  
 ★When M/C spindle rotates cw, the cutter at a rotates CW and the cutter at b rotates CCW. ★IT40-AHPL6-270 and IT50-AHPL8-288 are also available.

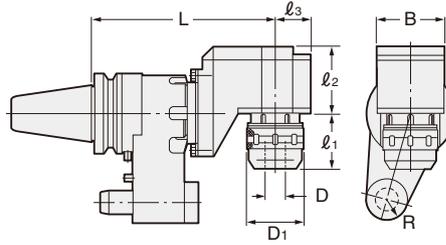
# SOLID TYPE ANGULAR HEAD (Free Positioning in 360°)



## Solid OFF SET type Angular head



AFK·AFC



Explanation of the Code No.

BT40 - AF K 16 - 200

- Length from Gauge Line
- MAX. Chucking Dia.
- Kind of chuck  
K : Slim Chuck  
C : Milling Chuck
- OFF SET type  
Symbol of Angular Head
- Shank

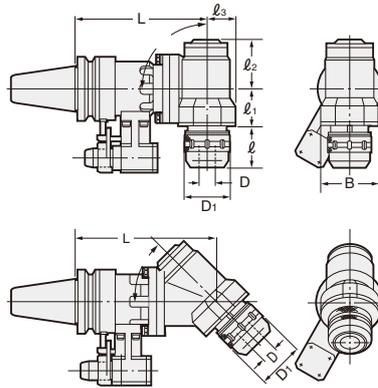
TAPER	Code No. -L	D	D <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	B	R	min <sup>-1</sup>	Weight (kg)	Collet
No.40	BT40-AFK16-200	2.75~16	40	50	85	35	70	17.5	2,000	8.5	SK 16
	(IT40)-AFC20-200	2~20	52	56						8.7	KM 20
No.50	BT50-AFC20-230	2~20	52	58	85	45	84	25	2,000	17.0	KM 20
	(IT50)-AFC32-230	3~32	69	65						17.2	KM 32

- ★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling) ★Test bar is attached as standard.
- ★All types are available with Oil Hole System.
- ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.
- ★For (SK16), please refer P.43. For (KM20) and (KM32), please refer P.33.
- ★Please advise name of M/C builder and model No. etc. ★When M/C spindle rotates CW, the cutter rotates CW.

## Solid - 90°, 45° type Angular head



AHK·AHC



Explanation of the Code No.

BT40 - AH K 10 - 195 - 90

- angle 30°, 45°, 60°, 90°
- Length from Gauge Line
- MAX chucking Dia
- Kind of chuck  
K : Slim Chuck  
C : Milling Chuck
- Symbol of Angular Head
- Shank

TAPER	Code No. -L	-	D	D <sub>1</sub>	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	B	min <sup>-1</sup>	Weight (kg)	Collet
No.30	BT30-AHK10-120-90		1.75~10	27.5	20	49	50	27.5	55	2,000	3.0	SK 10
No.40	BT40-AHK10-180,220*90		1.75~10	27.5	18	45	57	32	60	4,000	8.0, 9.0	SK 10
	(IT40)-AHK16-180,220*90		2.75~16	40	25	41	58	35	70		8.7, 9.7	SK 16
	-AHC20-160,250*90		2~20	52	57	58	61	37	80	2,000	7.1, 11.1	KM20
No.50	BT50-AHK10-200,240*90		1.75~10	27.5	18	45	57	32	60	4,000	15.0, 16.0	SK 10
	(IT50)-AHK16-200,240*90		2.75~16	40	25	41	58	35	70		15.7, 16.7	SK 16
	-AHK25-210,300*90		7.5~25.4	55	57	60	82	45	90	2,000	17.2, 22.2	SK 25
	-AHC32-210,300*90		3~32	69							17.5, 22.5	KM32

- ★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling) ★Test bar is attached as standard.
- ★All types are available with Oil Hole System.
- ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.
- ★For (SK10) (SK16) (SK25), please refer P.43. For (KM20) (KM25) and (KM32), please refer P.33.
- ★Angle 30°, 45°, 60° are also available as an option. ★ \* Mark is for light cutting.
- ★When M/C spindle rotates CCW, the cutter rotates CW.
- ★Please contact with us for the dimension of 30°, 45°, 60° type.



**HSK40A-IC300**

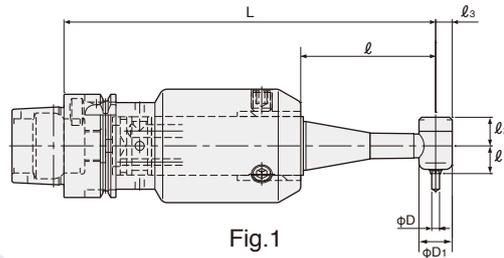


Fig.1

- For small-diameter drilling such as of aircraft parts and aluminum.
- With a spindle indexing function, curved surfaces can be machined directly.
- Turns offline processes into online process.  
Cuts down on processes and human error
- Air motor drive eliminates the need for spindle rotation.
- Gripping diameter:  $\phi 1.6 / \phi 2.35 / \phi 3.0 / \phi 3.175$   
Comes with a collet for  $\phi 3.0$ .
- IC-300 interchangeable 90° angle attachment (included).



**BT40-IC300**

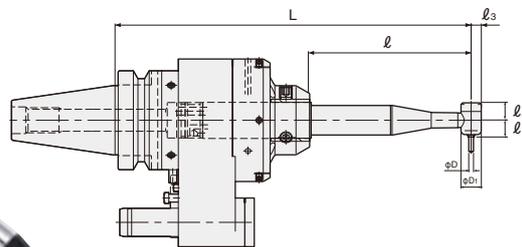
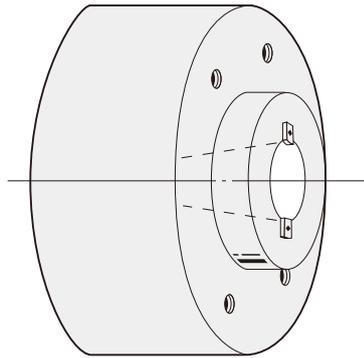


Fig.2

TAPER	Code No. -L	D	D <sub>1</sub>	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	min <sup>-1</sup>	Power (W)	Weight (Kg)	Collet	Fig.	for MAKINO
HSK40A	HSK40A-IC300-143A	1.6~3.175	12.8	51.9	10.7	11.1	6.4	22,500/0.4MPa	57	1.0	CHC-□ (内径)	1	N2
BT40	BT40 -IC300-225A			102				22,500/0.5MPa	108	3.4		2	a51nx
HSK63A	HSK63A-IC300-240A								4.0	MAG1			
HSK80F/LPM	HSK80F/LPM-IC300-240A												

★The BT40, HSK63A, and HSK80F/LPM require a stop block.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.  
 ★Center-through oil mist and spindle indexing are required as preparatory functions on the machine side.  
 ★The above-mentioned preparatory functions must be provided by the machine manufacturer.  
 ★Please consult us regarding other models.

# DIRECT MOUNT FLANGE TYPE ANGULAR HEAD



Spindle



Direct Mount Flange type Shank

Code. No.  
**NT 50 - F 235 - 14**

Shank No.      φD



Flange

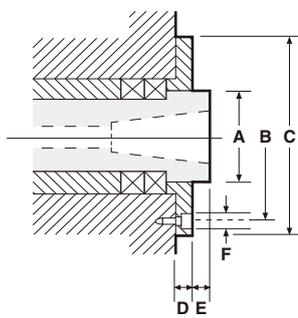
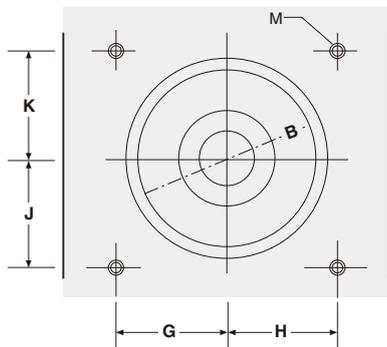
Code. No.  
**F 235 - AHM**

φD      Symbol of Flange type



Modular Head

P.139



We have a lot of experience of Special Angular Heads such as Flange Mount type, Both Sides Spindles type Heads and Angular Head for High Speed Rotation. Please contact with us.

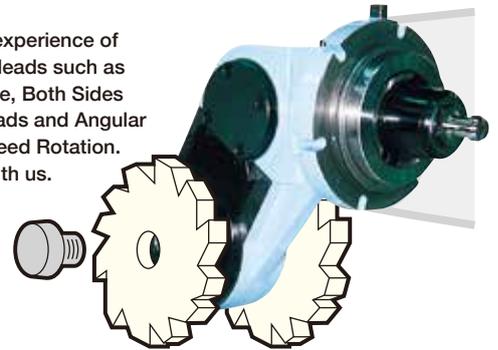


Photo shows NC5 Shank.

★When ordering, please let us know above A, B, C, D, E, F, G, H, J, K, M and Work Drawing.

# MULTI SPINDLE HEAD SERIES



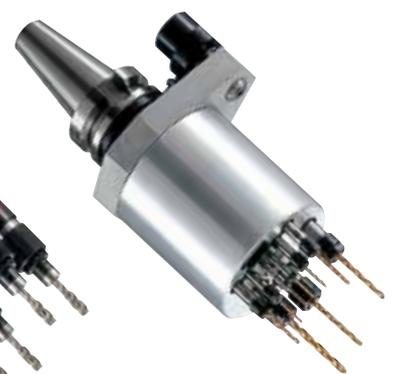
MHS ① Multi Drill Head (for Straight Shank Drill)



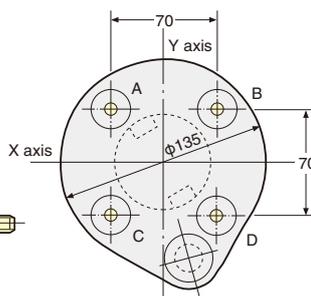
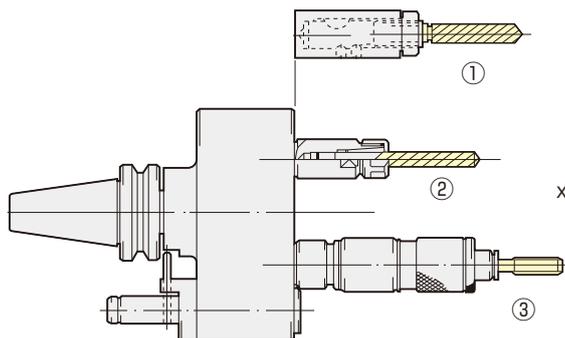
MHD ② Multi Drill Head (for MT Shank Drill)



MHT ③ Multi Drill Head (for Tapper Chuck)



MHV High Speed Multi Drill Head MAX.8,000min<sup>-1</sup>



Please specify the below when ordering.

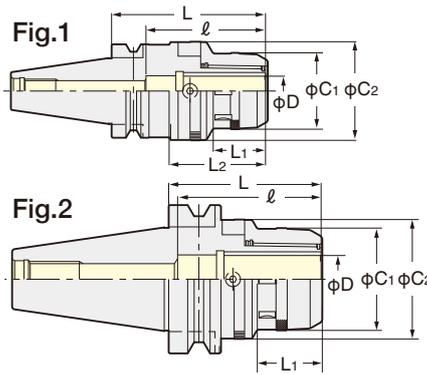
- M/C Maker, Model No. Drawing of Spindle Flange. Stopper Block is provided or not.
- Coordinates of each hole A(X= -35, Y= 35) B(X= 35, Y= 35) C(X= -35, Y=-35) D(X= 35, Y=-35) or pitch and number of holes.
- A diameter of drill or tap
- Material

# ZERO FIT TYPE MILLING CHUCK

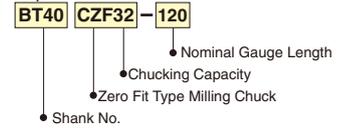
**NIKKEN**



CZF



Explanation of the Code No.



MAX. run-out at 100mm	
CZF20	0.050mm/dia.
CZF25	0.050mm/dia.
CZF32	0.030mm/dia.

PAT.

TAPER	Code No.	C1	C2	L	L1	L2	l	Weight (Kg)	Fig.	Collet
No.30	BT30-CZF20-100	51.5	66.5	100	35	68	80	1.5	1	KM20 CCK20
	-CZF25-100	59.5	74.5					1.6		KM25 CCK25
No.40	BT40-CZF20-105	51.5	66.5	105	35	64.5	80	2.1	1	KM20 CCK20
	-120			120				2.5		KM25 CCK25
	-CZF25-105	59.5	74.5	105	68	2.4	KM25 CCK25			
	-120			120		2.9	KM32 CCK32			
No.50	BT50-CZF20-105	51.5	66.5	105	35	-	80	4.6	2	KM20 CCK20
	-165			165				6.0		KM25 CCK25
	-CZF25-105	59.5	74.5	105	-	5.0	KM25 CCK25			
	-165			165		6.8	KM32 CCK32			
	-CZF32-105	69	80.5	105	42	78	105	5.3		KM32 CCK32
	-165			165				7.4		

- ★Spanner is available as an option. CZF20 type : 9HC22, CZF25 type : 9HC25, CZF32 type : 9HC32
- ★Wrench to adjust run-out (9ZFL) is available as an option.
- ★Please refer P.33, P.34 for KM, CCK collet.
- ★When direct chucking of centre through tool coolant, please use CKFN-D nut.
- ★When using collet, please use CCK collet and CKFN nut. P.34
- ★Please note the acceptable shank tolerance is h7.
- ★Multi-Cam style is available. e.g. BT40-CZF32-120-C3. (3 Cams) Please contact us for more detail.

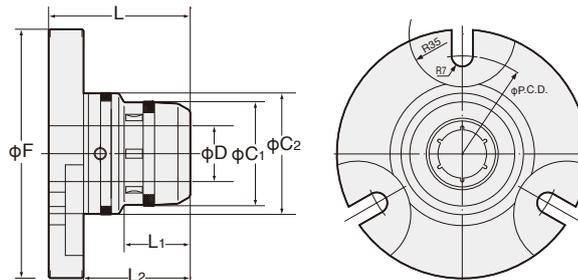


# FLANGE STYLE ZERO FIT TYPE MILLING CHUCK

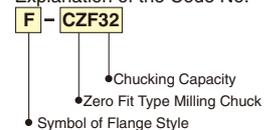
**NIKKEN**



F-CZF



Explanation of the Code No.



A holder for gripping the cutter on a tool-grinding machine and adjusting run-out.

PAT.

Style	Code No.	phi F	phi D	phi C1	phi C2	L	L1	L2	Width of groove for fixing bolts	phi P.C.D
32	F-CZF32	165	32	69	80.5	93.2	43.5	70.2	14mm ( three places )	130
42	F-CZF42	175	42	86	98.2	95	46	72		140

- ★Spanner is available as Standard CZF20 type : 9HC22, CZF25 type : 9HC25, CZF32 type : 9HC32
- ★Wrench to adjust run-out (9ZFL) is available as an option.
- ★Please refer P.33, P.34 for KM, CCK collet.
- ★When direct chucking of centre through tool coolant, please use CKFN-D nut.
- ★When using collet, please use CCK collet and CKFN nut. P.34
- ★Please note the acceptable shank tolerance is h7.



- Ideal for adjusting cutter run-out on an NC grinding machine or universal grinding machine.
- 3-point cam as a standard feature makes it easy to adjust run-out on a grinding machine.

⚠

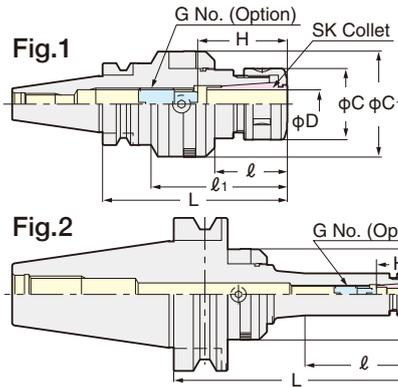
- In case of CZF (Milling Chuck) style, please rotate the Adjust Cam to the free position. Then, tighten the nose ring until face contact. If the face contact is not completed, the Adjust Cam can not function. (Free run) If the Adjust Cam is not at the free position before tightening, you can not tighten the nose ring until face contact correctly.
- For the safety reason, the Cam Ring Lock Screws can not be loosen to remove to the outside. Please loose the Cam Ring Lock Screws slightly to rotate the Cam Ring.



# ZERO FIT TYPE SLIM CHUCK



SZF



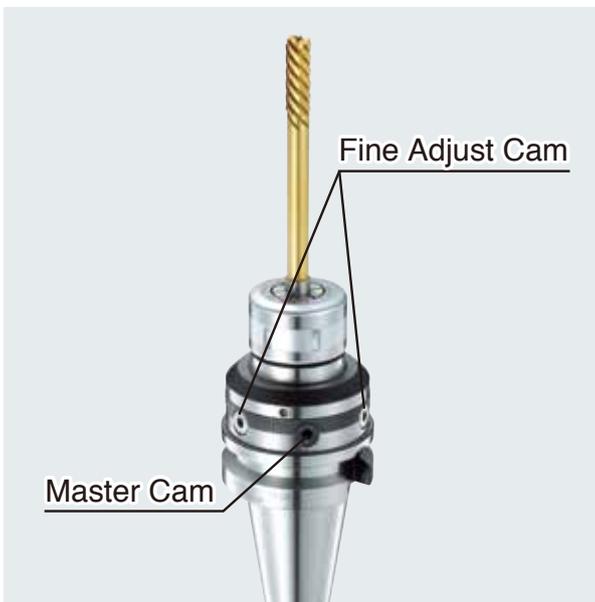
Explanation of the Code No.  
**BT40** | **SZF10** | **-90**  
 • Nominal Gauge Length  
 • Chucking Capacity  
 • Zero Fit Type Slim Chuck  
 • Shank No.

MAX. run-out at 100mm		
SZF 6	L < 150	0.050mm / dia.
	L ≥ 150	0.040mm / dia.
SZF10		0.050mm / dia.
SZF16		0.040mm / dia.
SZF25		0.025mm / dia.

PAT.

TAPER	Code No.	D	L	l	l <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (Kg)	Fig.	Collet					
No.30	BT30-SZF 6- 90	0.7~6.0	90	42	-	19.5	40.5	21~35	SKG- 8	0.9	2	SK 6					
	-SZF10- 90	1.75~10.0		35	61	27.5	48.5	30~50	SKG-12L	1.3	1	SK10					
	-SZF16-105	2.75~16.0		40	76	40	59.5	45~65	SKG-18L	1.6	1	SK16					
No.40	BT40-SZF 6- 90	0.7~6.0	90	37	-	19.5	40.5	21~35	SKG- 8	1.3	2	SK 6					
	-150		150	60			48.5			1.7							
	BT40-SZF10- 90	1.75~10.0	90	37		27.5	48.5	30~50	SKG-12L	1.5		1.9	SK10				
	-150		150	97		40	59.5	40~70	SKG-18L	2.2							
	BT40-SZF16- 90	2.75~16.0	90	37						55		66.5	55~85	SKG-28	2.4	1	SK25
	-150		150	97											2.9		
	No.50	BT50-SZF 6-105	0.7~6.0	105		41	-	19.5	40.5	21~35		SKG- 8	4.0	2	SK 6		
-165		165		63	59.5	4.2											
-SZF10-105		1.75~10.0	105	41	27.5	48.5		30~50	SKG-12L	4.5	4.9	SK10					
-165			165	101	40	59.5		40~70	SKG-18L	5.0							
-SZF16-105		2.75~16.0	105	41						55	66.5	55~85	SKG-28		5.4	SK16	
-165			165	101											5.8		
-SZF25-135		7.5~25.4	135	71	55	66.5		55~85	SKG-28	5.8	6.0	SK25					
-165			165	101						6.0							

★Adjust screw (G No.), wrench to adjust run-out (9ZF) and SKL spanner are available as an option. SZF6: SKL-6W, SZF10: SKL-10, SZF16: 9HC16, SZF25: 9HC25  
 ★Please use "P" class or "A" type SK collet. P.43  
 ★For centre through coolant application please use SK J type nut and cap for your preference. Please note that the length of J type nut is 6mm longer than the standard SK nut. P.49  
 ★For High Speed type, Code No. is "SZF-P". e.g. BT40-SZF10-90P GH handle P.48 is necessary for High Speed Milling Chuck.  
 ★Multi-Cam style is available. e.g. BT40-SZF16-90-C3. (3 Cams) Please contact us for more detail.



## Multi-Cam Style

The minute run-out after adjusting by a master cam can be adjusted by fine adjust cams at the same position.

e.g. BT40-SZF16-90-C3 (3 Cams)

The multi-cam style can not be made for all zero fit holders.

# AUTOMATIC BACK SPOT FACING ARBOR

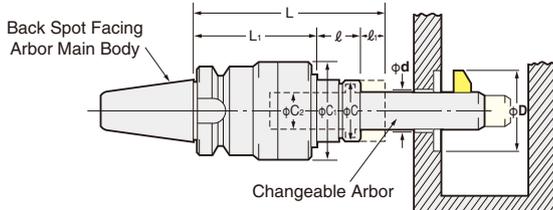
**NIKKEN**

No Swarf Adhesion. Mechanical Automatic Blade In/Out System.  
No Need of Stopper Block.

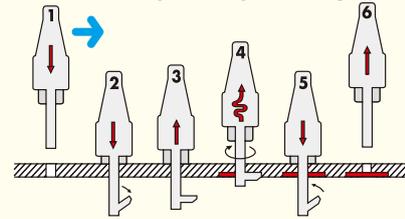


Coolant Through is standard.

AF-OH



Operational Procedure of Back Spot Facing Arbor (Full Automatic System by NC Programming)



The front end arbor is changeable to suit different facing diameter. Byte can be selected as follows;

- HSS : Powdered HSS + Ion Nitrided + TiAlN Coated (Min. order : 3pcs)
- Carbide : Grade P, K or M can be selected. (Min. order : 5pcs)
- Insert Tip

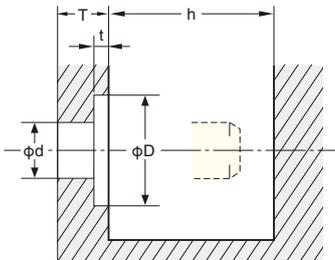
Explanation of the Code No.



d MIN. and D MAX. are the figures only for the selection of the main body.

TAPER	Code No.	d		L	L <sub>1</sub>	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	C <sub>2</sub>	Weight (kg)	Arbor Code No.
		MIN.	MAX.									
No.40	BT40-AF1-20-OH	16	32	185	143	7	35	60	90	32	4.5	BF120-d-D-T
	(IT40) -30-OH	29	58	205	153		45				4.8	BF130-d-D-T
	-40-OH	40	80	225	163		55				5.0	BF140-d-D-T
No.50	BT50-AF1-20-OH	16	32	160	118	7	35	60	90	32	6.0	BF120-d-D-T
	(IT50) -30-OH	29	58	180	128		45				6.5	BF130-d-D-T
	-40-OH	40	80	200	138		55				7.0	BF140-d-D-T
	BT50-AF2-50-OH	50	90	230	158		65				9.0	BF250-d-D-T
	(IT50) -60-OH	60	100	250	168		75				9.5	BF260-d-D-T
	-70-OH	70	130	270	178		85				10.0	BF270-d-D-T
	-80-OH	80	160	290	188		95				10.5	BF280-d-D-T
	-90-OH	90	180	310	198		105				11.0	BF290-d-D-T

Please specify  $\phi d$ ,  $\phi D$ , t, T, h and material, when ordering.

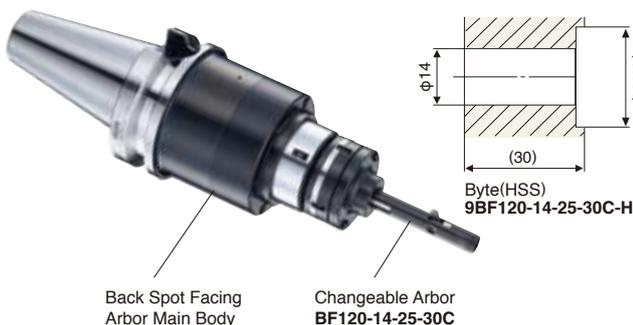


Material	Hole Dia. $\phi d$	Facing Dia. $\phi D$	Facing Depth t	Thickness T	Space h

Grade : Coated Material : Steel, Cast Iron

Code No.	Dimension	A	B	T	$\phi d$	Nose R	Tip Clamp Bolt	Tip Clamp Handle
AFC- 9		9.5	6.4	2.4	2.8	0.4	M2545S	T8
-15		15						
-20		20.5	7	3.2	3.5	0.8	M3065S	8IP
-27		27.4						
-35		35						
-45		45	9.4	5.4	3.5 2 pcs		M3090 2 pcs	T8

## Processing example of minimum hole diameter $\phi 14$



### Specification of hole diameter $\phi 14$ .

- Maximum facing diameter :  $\phi 25$  (for M12 bolt head)
- Material of byte : Powdered HSS + Ion Nitrided + TiAlN Coated

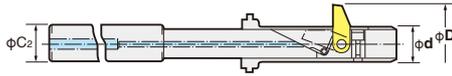
■ With coolant hole.

■ Reference Cutting Speed

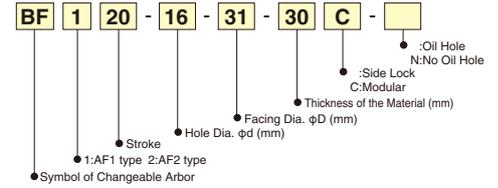
Material : S50C(JIS) / Hole dia. "d" :  $\phi 14$   
Facing dia. "D" :  $\phi 25$  / Thickness "T" : 30mm  
V=20~30m/min. f=0.05~0.1mm/rev.

# CHANGEABLE ARBOR for Automatic Back Spot Facing Arbor

**NIKKEN**



Explanation of the Code No.



BF

★ The following list shows the concepts for the changeable arbor. Please order your own arbor to suit your application.

Changeable Arbor Code No.	Facing Dia. D	Facing Depth d	Thick T	h <sub>1</sub>	h <sub>2</sub>	C <sub>2</sub>	Byte W <sub>1</sub> ×W <sub>2</sub>	Main Body Code No.
BF120-d-D-TC	18~ 32	14.0~17.7	30	32	63	32	8× 4	BT40,50-AF1-20-OH
BF120-d-D-TC	20~ 36	17.8~19.9		30	65		10× 6	
BF120-d-D-TC	23~ 40	20.0~22.4		35	68		10× 8	
BF120-d-D-TC	26~ 45	22.5~25.9		32	73		12× 8	
BF120-d-D-TC	29~ 50	26.0~28.9		36	73		15×10	
BF120-d-D-TC	32~ 50	29.0~31.9		36	83			
BF130-d-D-TC	51~ 58	32.0~35.9		36	83			
BF120-d-D-TC	36~ 55	36.0~39.9		36	73			
BF130-d-D-TC	56~ 63	36.0~39.9		36	83			
BF120-d-D-TC	40~ 55	36.0~39.9		36	73			
BF130-d-D-TC	56~ 73	36.0~39.9		36	83		15×12	
BF120-d-D-TC	45~ 60	40.0~44.9		39	79			
BF130-d-D-TC	61~ 75	40.0~44.9		39	89			
BF140-d-D-TC	76~ 80	45.0~49.9		39	99			
BF120-d-D-TC	50~ 60	45.0~49.9		39	79			
BF130-d-D-TC	61~ 75	45.0~49.9		39	89			
BF140-d-D-TC	76~ 90	45.0~49.9		39	99	18×15		
BF250-d-D-TC	65~ 75	45.0~49.9		65	109			
BF260-d-D-TC	75~ 85	45.0~49.9		70	119			
BF270-d-D-TC	80~ 90	45.0~49.9		75	129			
BF250-d-D-TC	75~ 85	50.0~54.9		65	111			
BF260-d-D-TC	85~ 95	50.0~54.9		70	121			
BF270-d-D-TC	90~100	50.0~54.9		75	131	20×15		
BF250-d-D-TC	85~ 95	55.0~61.9		65	111			
BF260-d-D-TC	95~105	55.0~61.9		70	121			
BF270-d-D-TC	100~110	55.0~61.9		75	131			
BF250-d-D-TC	95~105	62.0~69.9		65	118			
BF260-d-D-TC	105~115	62.0~69.9		70	121			
BF270-d-D-TC	110~120	62.0~69.9	75	138	22×18			
BF250-d-D-TC	105~115	70.0~74.9	65	118				
BF260-d-D-TC	115~125	70.0~74.9	70	121				
BF250-d-D-TC	105~115	70.0~74.9	75	138				
BF260-d-D-TC	115~125	70.0~74.9	75	138				
BF270-d-D-TC	120~130	70.0~74.9	75	138				

# MANUAL BACK SPOT FACING ARBOR

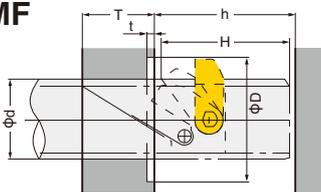
**NIKKEN**

e.g. ST32-MF53-84-300

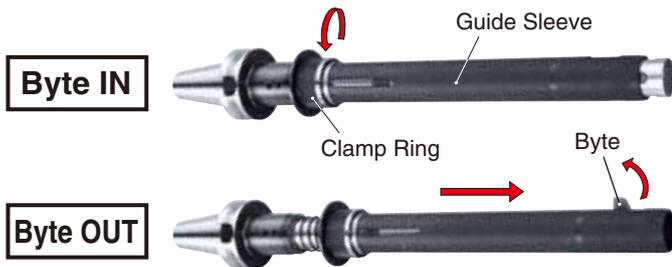
PAT.P

Arbor shank is straight shank. Please use side lock holder (BT50-SL32C-105 P.108).

MF

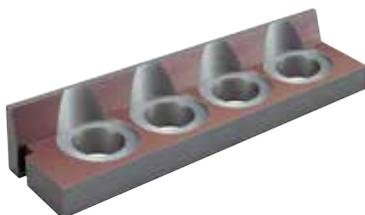


★ Please specify φd, φD, t, T, h and material, when ordering. H (Dimension for byte in/out) is depended on φd and φD.



### Operation

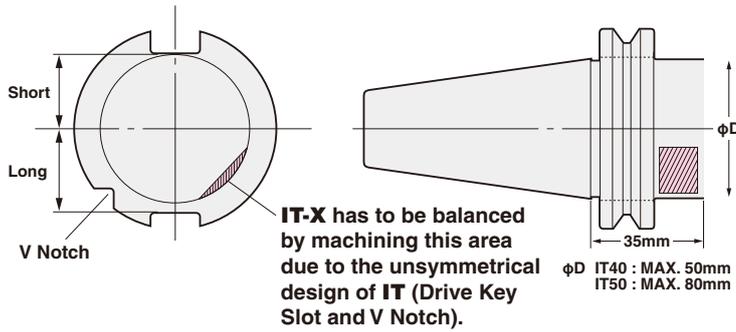
1. X, Y Positioning
2. Z down (Insert the arbor into the hole.)
3. Rotate clamp ring causes guide sleeve forward to push the byte out.
4. Z up (Back spot facing)
5. Z Down
6. Rotate clamping in reverse direction causes guide sleeve backward to store the byte in.
7. X, Y Moving



### Sample

Material : FCD200 V=30m/min.  
 Hole : φ53 f=0.1mm/rev.  
 Facing Dia. : φ84

## What is IT Shank Tooling?



IT shank is based on ISO 7388/1-'83 (DIN69871-'90) and its flange has an unsymmetrical shape.

- Depth of Drive Key Slots are different.
- V Notch on one side.

Therefore, NIKKEN IT\_X shank has a groove at bottom of V groove for mass balancing.

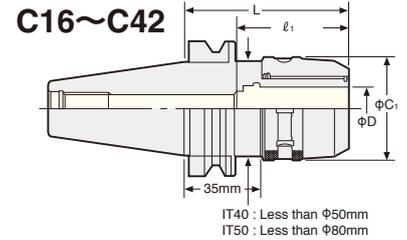
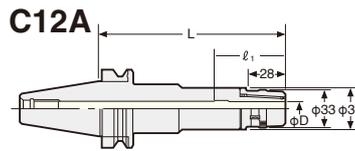
Diameter "D" below the flange is restricted under the above standard. Normally the holder for large diameter cutter has a large body, therefore, large diameter at "D" is expected. However, in case of IT Shank large diameter tool holder, "D" is smaller than the front end part due to the standard, and the length from gauge line is also different from BT Shank tool holders.

## IT MULTI LOCK MILLING CHUCK



### ANNIVERSARY Type

- Powerful gripping torque -
- High rigidity
- High precision
- Compact design



TAPER	Code No.	C <sub>1</sub>	L	l <sub>1</sub>	Collet	Weight (kg)
No.40	IT40-C12- 65, 90 <sup>*1</sup> , 120 <sup>*1</sup>	33	65, 90, 120	58	KM12 CCK12	1.3, 1.6, 1.8
	-C16- 60, 90 <sup>*1</sup> , 120 <sup>*1</sup>	44	60, 90, 120	65	KM16 CCK16	1.4, 1.7, 2.0
	-C20- 80, 90, 105, 120 <sup>*2</sup>	52	80, 90, 105, 120	80	KM20 CCK20 CCNK20	1.6, 1.8, 2.0, 2.2
	-C25- 85, 105, 120	60	85, 105, 120	80	KM25 CCK25 CCNK25	2.1, 2.3, 2.5
	-C32- 95, 105, 120	64	95, 105, 120	82, 95, 105	KM32 CCK32 CCNK32	2.1, 2.5, 2.8
No.50	IT50-C12-105, 135, 165 <sup>*1</sup>	33	105, 135, 165	58	KM12 CCK12	4.0, 4.3, 4.6
	-C16-105, 135, 165 <sup>*1</sup>	44	105, 135, 165	65	KM16 CCK16	4.2, 4.6, 5.1
	-C20-105, 135, 165, 180 <sup>*1</sup>	52	105, 135, 165, 180	80	KM20 CCK20 CCNK20	4.5, 5.1, 5.7, 6.0
	-C25-105, 135, 165	60	105, 135, 165	80	KM25 CCK25 CCNK25	4.8, 5.2, 5.6
	-C32- 85, 105, 120, 135, 165	69	85, 105, 120, 135, 165	105	KM32 CCK32 CCNK32	4.1, 4.6, 5.1, 5.6, 6.4
	-C42- 95 <sup>*2</sup> , 105, 135 <sup>*1</sup> , 165 <sup>*1</sup>	86	95, 105, 135, 165	125	KM42 CCK42 CCNK42	5.2, 5.5, 7.2, 8.6

- ★Spanner is available as an option.
- C12(φ30):9HC12, C12A(φ33):9HC12A, C16:9HC16, C20: 9HC20, C25: 9HC25, C32&φC1=64:9HC25, C32:9HC32, C42:9HC42
- ★Please note the acceptable shank tolerance is h7.
- ★For KM, CCK and CCNK Collet, please refer to P.33, P.34.
- ★For heavy duty milling, please grip the end mill shank longer than l<sub>1</sub>.
- ★For Milling Chucks marked \*2, NK Collet, CCNK Collet, ONK Collet and OJK Collet can not be used.
- ★Milling chucks marked \*1 are available as an option.
- ★IT50-C32-200, 250 and IT50-C42-200,250 are also available as an option.
- ★C22 style is also available.
- ★Please add "C" for the centre through tool coolant type.
- IT40-C20C-80, 90, 105, 120 IT50-C20C-105, 135, 165<sup>\*1</sup>
- C25C-85, 105 -C25C-105, 135, 165<sup>\*1</sup>
- C32C-95, 105, 120 -C32C- 85, 105, 135, 165
- C42C-105
- ★Please add "F" for the flange through tool coolant type.
- IT40-C20F- 90, 120<sup>\*1</sup> IT50-C20F-105, 135, 165<sup>\*1</sup>
- C25F- 90, 120<sup>\*1</sup> -C25F-105, 135, 165<sup>\*1</sup>
- C32F-105 -C32F-105, 135, 165
- C42F-120



High Speed Milling Chuck



GH Handle P.48

Code No.	MAX. (min <sup>-1</sup> )	Code No.	MAX. (min <sup>-1</sup> )
IT40X-C12- 65G, 90G	30,000	IT50X-C12-105G, 135G <sup>*1</sup>	20,000
-C16- 60G, 90G	25,000	-C16-105G, 135G <sup>*1</sup>	
-C20- 80G, 90G		-C20-105G, 135G <sup>*1</sup>	
-C25- 85G	20,000	-C25-105G, 135G <sup>*1</sup>	15,000
-C32- 95G, 105G		-C32- 85G, 105G, 120G	
-C42- 95P <sup>*2</sup> , 105P			

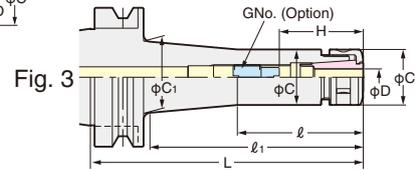
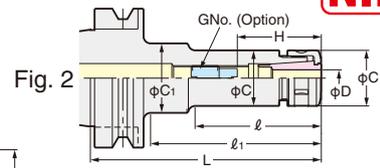
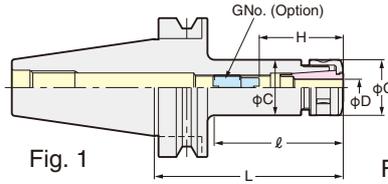
- ★For Milling Chucks except \*2, Stopper for Direct Chucking, ONK Collet and OJK Collet can be used.
- ★The extended gauge length (L) is available. Please contact with us.
- ★The end mill shank tolerance is recommended to be h<sub>7</sub>.

# IT SLIM CHUCK PAT.



High precision  
High speed  
Powerful gripping

SK



When SK J type nut is used, the total chuck length will be extended by 6mm.

TAPER	Code No.	D	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	Fig.	SK Collet
No.40	IT40-SK 6- 60	0.7~6.0	38	-	19.5	-	21~35	SKG-8	1.0	1	SK 6
	- 90		48	-		1.1			1		
	-120		62	82		1.2			2		
	-150		60	112		1.4			3		
	-SK10- 60	1.75~10.0	40	-	27.5	-	30~50	SKG-12L	1.1	1	SK10
	- 90		50	-		1.2			1		
	-120		60	82		1.4			2		
	-150		73	112		1.6			3		
	-180	73	144	1.7	3						
	-SK13- 60	2.75~13.0	40	-	33	-	31~65	SKG-15	1.3	1	SK13
	- 90		50	-		1.4			1		
	-120		80	-		1.6			1		
	-150		88	114		1.8			3		
	-180	88	144	1.9	3						
	-SK16- 60	2.75~16.0	40	-	40	-	40~70	SKG-18S	1.4	1	SK16
	- 90		54	-		1.5			1		
	-120		84	-		SKG-18L		1.7	1		
	-150		114	-				1.9	1		
-180	144	-	2.0	1							
-SK20- 90	3.5~20.0	70	-	48.5	-	47~80	SKG-22	1.7	1	SK20	
-120		100	-		1.9			1			
-SK25- 90	7.5~25.4	70	-	55	-	55~75	SKG-28	1.8	1	SK25	
-120		100	-		2.0			1			
No.50	IT50-SK 6-105	0.7~6.0	60	-	19.5	-	21~35	SKG-8	3.7	1	SK 6
	-135		62	93		3.9			2		
	-165		62	117		4.1			2		
	-200		60	154		4.3			3		
	-SK10-105	1.75~10.0	65	-	27.5	-	30~50	SKG-12L	4.2	1	SK10
	-135		70	95		4.4			2		
	-165		75	125		4.6			2		
	-200		75	154		5.0			3		
	-SK13-105	2.75~13.0	65	-	33	-	31~65	SKG-15	4.5	1	SK13
	-135		95	-		4.7			1		
	-165		92	125		4.8			2		
	-200		92	160		4.5			3		
	-SK16-105	2.75~16.0	65	-	40	-	40~70	SKG-18L	4.7	1	SK16
	-135		95	-		4.9			1		
	-165		90	125		5.1			2		
	-200		90	160		5.5			2		
	-SK20-105	3.5~20.0	65	-	48.5	-	47~80	SKG-22	4.8	1	SK20
	-135		95	-		5.1			1		
-165	125		-	5.4		1					
-200	160		-	5.8		1					
-SK25-105	7.5~25.4	65	-	55	-	50~85	SKG-28	4.8	1	SK25	
-135		95	-		5.2			1			
-165		125	-		5.6			1			
-200		160	-		6.0			1			

★Collet, adjust screw (G No.) and spanner are available as an option.

The Code No. of the spanner is SK6 (C=φ18) : SKL-6, SK6 (C=φ19.5) : SKL-6W, SK10: SKL-10, SK13: 9HC12A, SK16: 9HC16, SK20: 9HC22, SK25: 9HC25

★Please refer P.43 for SK collet and please refer P.49 for J type nut.

★Please refer P.153 for the center through coolant type and flange through coolant type.



High Speed SLIM CHUCK



GH Handle P.48

Code No.	MAX. (min <sup>-1</sup> )	Code No.	MAX. (min <sup>-1</sup> )
IT40X-SK 6- 60P, 90P, 120P	30,000	IT50X-SK 6-105P, 165P	20,000
-SK10- 60P, 90P, 120P		-SK10-105P, 165P	
-SK13- 60P, 90P, 120P		-SK13-105P, 165P	
-SK16- 60P, 90P, 120P	25,000	-SK16-105P, 165P	15,000
-SK20- 90P, 120P		-SK20-105P, 165P	
-SK25- 90P, 120P	20,000	-SK25-105P, 165P	

★The extended gauge length (L) is available. Please contact with us.

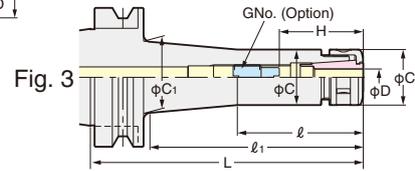
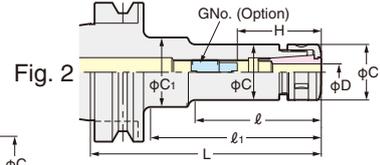
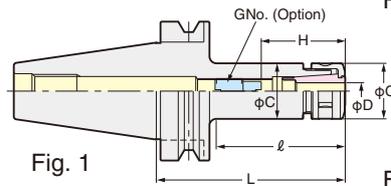
IT/CAT

# IT SLIM CHUCK CENTRE THROUGH TYPE

PAT. **NIKKEN**



High precision  
High speed  
Powerful gripping



## SK-C

When SK J type nut is used, the total chuck length will be extended by 6mm.

TAPER	Code No.	D <sub>1</sub>	H <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	C <sub>1</sub>	C <sub>2</sub>	G No. (Option)	Weight (kg)	SK Collet
No.40	IT40-SK 6C- 90	4~6	26~31	48	-	19.5	-	SKG6-6HG	1.1	SK 6
	-120			62	82		32		1.2	
	-SK10C- 90	5~10	33~41	50	-	27.5	-	SKG10-10HG	1.2	SK10
	-120			60	82		32		1.4	
	-SK13C- 90	5~13	39~51	50	-	33	-	SKG13-10HG	1.4	SK13
	-120			80	-		-		1.6	
	-SK16C- 90	10~16	45~57	54	-	40	-	SKG16-12HG	1.5	SK16
	-120			84	-		-		1.7	
-SK20C- 90	10~20	47~63	70	-	48.5	-	SKG20-18HG	1.7	SK20	
-120			100	-		-		1.9		
-SK25C- 90	16~25	60~65	70	-	55	-	SKG25-18HGD	1.8	SK25	
-120			100	-		-		2.0		
No.50	IT50-SK 6C-105	4~6	26~31	60	-	19.5	-	SKG6-6HG	3.7	SK 6
	-165			62	117		32		4.1	
	-SK10C-105	5~10	33~41	65	-	27.5	-	SKG10-10HG	4.2	SK10
	-165			75	125		32		4.6	
	-SK13C-105	5~13	39~51	65	-	33	-	SKG13-10HG	4.5	SK13
	-165			92	125		45		4.8	
	-SK16C-105	10~16	45~57	65	-	40	-	SKG16-12HG	4.7	SK16
	-165			90	125		50		5.1	
	-SK20C-105	10~20	47~63	65	-	48.5	-	SKG20-18HG	4.8	SK20
	-165			125	-		-		5.4	
	-SK25C-105	16~25	60~70	65	-	55	-	SKG25-24HG	4.8	SK25
	-165			125	-		-		5.6	

## IT SLIM CHUCK FLANGE THROUGH TYPE

### SK-F

TAPER	Code No.	D	H	l	l <sub>1</sub>	C	C <sub>1</sub>	G No. (Option)	Weight (kg)	SK Collet
No.40	IT40-SK 6F- 90	4~6	26~31	48	-	19.5	-	SKG6-6HG	1.1	SK 6
	-120			62	82		32		1.2	
	-SK10F- 90	5~10	33~41	50	-	27.5	-	SKG10-10HG	1.2	SK10
	-120			60	82		32		1.4	
	-SK13F- 90	5~13	39~51	50	-	33	-	SKG13-10HG	1.4	SK13
	-120			80	-		-		1.6	
	-SK16F- 90	10~16	45~50	54	-	40	-	SKG16-12HGB	1.5	SK16
	-120			84	-		-		1.7	
-SK20F- 90	10~20	57~63	70	-	48.5	-	SKG20-18HGB	1.7	SK20	
-120			100	-		-		1.9		
-SK25F-120	16~25	55~65	100	-	55	-	SKG25-24HGA	2.0	SK25	
No.50	IT50-SK 6F-105	4~6	26~31	60	-	19.5	-	SKG6-6HG	3.7	SK 6
	-165			62	117		32		4.1	
	-SK10F-105	5~10	33~41	65	-	27.5	-	SKG10-10HG	4.2	SK10
	-165			75	125		32		4.6	
	-SK13F-105	5~13	39~51	65	-	33	-	SKG13-10HG	4.5	SK13
	-165			92	125		45		4.8	
	-SK16F-105	10~16	45~57	65	-	40	-	SKG16-12HG	4.7	SK16
	-165			90	125		50		5.1	
	-SK20F-105	10~20	47~63	65	-	48.5	-	SKG20-18HG	4.8	SK20
	-165			125	-		-		5.4	
	-SK25F-105	16~25	55~62	65	-	55	-	SKG25-24HGA	4.8	SK25
	-165			125	-		-		5.6	

\*Collet, adjust screw (G No.) and spanner are available as an option.  
The Code No. of the spanner is SK6 (C=φ19.5) : SKL-6W, SK10:  
SKL-10, SK13: 9HC12A, SK16: 9HC16,  
SK20: 9HC22, SK25: 9HC25

\*Please refer P.43 for SK collet and  
please refer P.49 for J type nut.



High Speed SLIM CHUCK



GH Handle P.48

Code No.	MAX. (min <sup>-1</sup> )	Code No.	MAX. (min <sup>-1</sup> )
IT40X-SK 6- 60P, 90P, 120P	30,000	IT50X-SK 6-105P, 165P	20,000
-SK10- 60P, 90P, 120P		-SK10-105P, 165P	
-SK13- 60P, 90P, 120P		-SK13-105P, 165P	
-SK16- 60P, 90P, 120P	-SK16-105P, 165P		
-SK20- 90P, 120P	25,000	-SK20-105P, 165P	
-SK25- 90P, 120P	20,000	-SK25-105P, 165P	

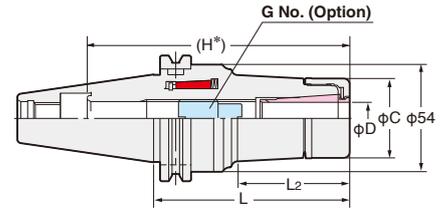
\*The extended gauge length (L) is available. Please contact with us.



### Difference of the swarfs



Please use Jet Coolant Splash for better swarf generation. ☞ P.34, P.43



(H\*) : MAX. H without adjust screw.

## MDSK

TAPER	Code No.	D	L <sub>2</sub>	C	H	H <sub>1</sub>	G No. (Option)	Weight (kg)	SK Collet					
No.40	NIT40N-MDSK 6-60	3.0~6.0	18	19.5	86	21~35	SKG-8	0.8	SK 6-A					
	-75		33		101			0.9						
	-90		48		116			1.1						
	-105		63		131			1.2						
	-120		78		146			1.4						
	-MDSK10-60		3.0~10.0		19			27.5		86	30~50	SKG-12L	1.1	SK10-A
	-75	33		101	1.3									
	-90	48		116	1.5									
	-105	63		131	1.6									
	-120	78		146	1.8									
	-150	110		176	2.2									
	-180	141.2	206	2.4										
	-MDSK13-65	3.0~13.0	24	33	86	31~60	SKG-15	1.2	SK13-A					
	-75		33		101			1.4						
	-90		48		116			1.7						
	-105		63		131			1.8						
	-120		78		146			2.0						
	-150		110		176			2.4						
	-180	144	206	2.6										
	-MDSK16-65	3.0~16.0	24	40	86	45~60	SKG-18L	1.2	SK16-A					
	-75		33		101			1.5						
	-90		48		116			1.9						
	-105		64		131			2.0						
	-120		80		146			2.2						
-150	113		176		2.5									
-180	144.6	206	2.8											
-MDSK20-75	4.0~20.0	41.2	48	80	50~73	SKG-12	1.9	SK20-A						
-90		55		95		2.1								
-105		70		110		2.3								
-120		85		125		2.6								
-135		116		146		3.6								
-150		146		176		4.4								
-165	195	206	5.3											
-180	255	235	6.7											
-195	335	265	8.5											
No.50	NIT50N-MDSK 6-105	3.0~6.0	48	19.5	116	21~35	SKG-8	3.6	SK 6-A					
	-120		63		131			3.7						
	-135		78		146			3.9						
	-MDSK10-105		3.0~10.0		48			27.5		116	30~50	SKG-12L	4.3	SK10-A
	-120				63.2					131			4.4	
	-135				78.2					146			4.7	
	-165	110.2		176	5.0									
	-195	141.2		206	5.3									
	-MDSK13-105	3.0~13.0		48	33	116	31~60		SKG-15	4.2			SK13-A	
	-120		63	131		4.7								
	-135		78	146		5.0								
	-165		110	176		5.3								
	-195		144	206		5.6								
	-MDSK16-105		3.0~16.0	48		40		116		45~70	SKG-18L	4.1		SK16-A
	-120	64		131	4.9									
	-135	80.1		146	5.2									
	-165	114.7		176	5.5									
	-195	144.6		206	5.8									
	-MDSK20-105	4.0~20.0		42	48		159	47~80	SKG-22			4.9	SK20-A	
	-135		72	175		5.3								
	-165		102	205		5.9								
	-195		132	235		6.7								
	-MDSK25-105		8.0~25.4	42		55	159			55~85	SKG-28	4.9		SK25-A
	-135			74			175					5.7		
-165	105	205		6.5										
-195	135	235		7.5										

★Please use A type SK collet that is available as an option for end milling operation. ☞ P.43

★Please refer ☞ P.49 for Jet coolant J type nut and cap.

★GH Handle is available as an option. ☞ P.48 Please order with the Code No. GH10 : MDSK10, GH12 : MDSK13, GH16 : MDSK16, GH20 : MDSK20, GH25 : MDSK25.

★Please add "P" at the end of Code No. for high speed holder, e.g. NIT40N-MDSK10-60P.

★φC2 of NIT40N is larger than the dimension of the IT40 standard.



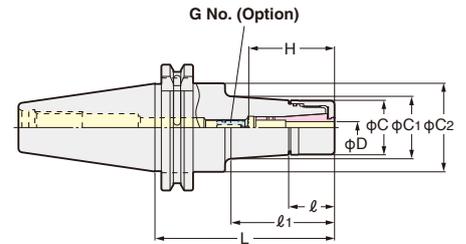
# IT ANNIVERSARY TYPE VC HOLDER

PAT.



VC

With TiN Bearing Nut  
 MAX.30,000min<sup>-1</sup> & G2.5  
 Run-Out Accuracy : 3μm at 4D



TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	C <sub>2</sub>	H	G No. (Option)	Weight (kg)	MAX. (min <sup>-1</sup> )	Collet	
No.40	IT40X-VC 6- 60	2.0~6.0	60	23	23	27.5	27.5	44.7	35~45	VCG 6- 8A	1.1	30,000	VCK 6	
	- 90		90		51.9		31.5				1.3			
	-120		120		81.9		35.7				1.5			
	-VC13- 60	3.0~12.0	60	29	70	40	40.0		50~60	VCG13-15A	1.2		1.5	VCK13
	- 90		90	70	44.7	1.5								
	-120		120	100	44.7	1.9								
No.50	IT50X-VC 6-105	2.0~6.0	105	23	64.9	27.5	33.4	70.1	35~45	VCG 6- 8A	3.9	20,000	VCK 6	
	-135		135		94.9		37.6				4.1			
	-165		165		124.9		41.8				4.4			
	-VC13-105	3.0~12.0	105	29	64.9	40	45.0		50~60	VCG13-15A	4.1		4.5	VCK13
	-135		135	94.9	49.2	4.5								
	-165		165	124.9	53.4	4.9								

- ★TiN Bearing Nut is supplied as standard.
- ★When the axial stopper is required, please use Adjust Screw (G No.)
- ★Please add "-RP" at the end of Code No. for Rust Proof Treatment VC Holder. e.g. IT40X-VC13-60-RP
- ★Please use VC J type Nut & Cap for Centre Through Coolant.
- ★When VC J type Nut is used, the total holder length will be extended to 6mm.
- ★Please refer P.36 for VCK Collet.

- ★IT40X-VC6-150, IT40X-VC13-150, IT50X-VC13-90, -120 are available as semi-standard.
- ★Collet, adjust screw (G No.) and GH Handle are available as an option. P.48
- ★All series are for High Speed Rotation.



# IT MINI-MINI CHUCK

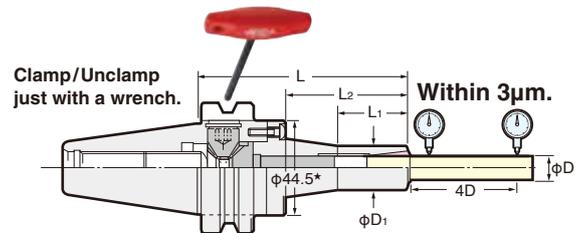
PAT.

The best chuck for the small dia. cutting tool



MMC

MAX. 30,000min<sup>-1</sup> & G2.5  
 Gripping from Front Nose  
 Run-Out Accuracy : 3μm at 4D



★ : MMC12 = φ52.4

TAPER	Code No.	Chucking Range φD	L	φD <sub>1</sub>	L <sub>1</sub>	Collet	MAX.(min <sup>-1</sup> )	Weight(kg)	
No.40	IT40X-MMC 4 - 90-AA	1 ~ 4	90	15	30	MPK 4	30,000	1.2	
	-MMC 8C- 90-AA	2 ~ 8	90	20	33	PMK 8	30,000	1.4	
	-120-AA		120		40	VMK 8		1.5	
	-MMC12C- 90-AA	4 ~ 12	90	30	35	PMK12	30,000	1.7	
	-120-AA		120		60	VMK12		1.8	
No.50	IT50X-MMC 4 -105-AA	1 ~ 4	105	15	30	MPK 4	20,000	3.8	
	-MMC 8C-105-AA	2 ~ 8	105	20	33	PMK 8	20,000	4.4	
	-135-AA		135		40			VMK 8	4.5
	-165-AA		165		40			VMK 8	4.6
	-MMC12C-105-AA	4 ~ 12	105	30	35	PMK12	20,000	4.6	
	-135-AA		135		60			VMK12	4.7
	-135-AA		135		60			VMK12	4.7
	-165-AA		165		70			VMK12	4.8

- ★Wrench is supplied as standard.
- ★MPK, PMK, VMK collet is not included with MINI-MINI Chuck. Please refer P.38
- ★MMC8C, MMC12C : Centre through type.
- ★Please add "F" for the flange through tool coolant type; IT40X-MMC 8F- 90-AA,120-AA IT50X-MMC 8F-105-AA,120-AA -MMC12F- 90-AA,120-AA -MMC12F-105-AA,120-AA

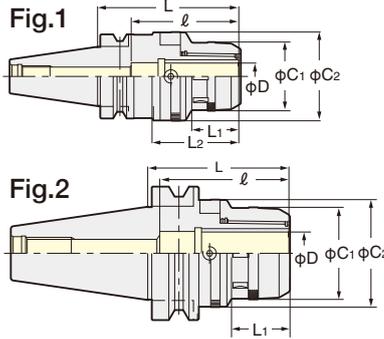
# IT ZERO FIT TYPE MILLING CHUCK

PAT.

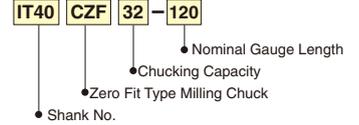


**CZF**

Photo. shows BT shank.



Explanation of the Code No.



TAPER	Code No.	C1	C2	L	L1	L2	l	Weight (Kg)	Fig.	Collet
No.40	IT40-CZF20-105	51.5	66.5	105	35	70	80	2.1	1	KM20 CCK20
	-CZF25-105	59.5	74.5	105	35	70	80	2.4		KM25 CCK25
	-CZF32-120	69	80.5	120	42	85	105	2.8		KM32 CCK32
No.50	IT50-CZF20-105	51.5	66.5	105	35	-	80	4.7	2	KM20 CCK20
	-CZF25-105	59.5	74.5	105	35	-	80	5		KM25 CCK25
	-CZF32-120	69	80.5	120	42	-	105	5.3		KM32 CCK32

★Spanner is available as an option.

CZF20 type : 9HC22, CZF25 type : 9HC25, CZF32 type : 9HC32

★Please note that the acceptable shank tolerance is  $h_8/k_7$ .

★Please add "P" at the end of Code No. for the high speed type. e.g. IT40-CZF25-105P

★Wrench to adjust run-out (9ZFL) is available as an option.

★Multi-Cam style is available. e.g. IT40-CZF32-120-C3. (3 Cams) Please contact us for more detail.

★Please refer P.33, P.34 for KM, CCK collet.

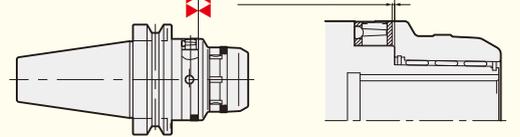
Wrench to adjust  
**9ZFL**



- In case of CZF (Milling Chuck) style, please rotate the Adjust Cam to the free position. Then, tighten the nose ring until face contact. If the face contact is not completed, the Adjust Cam can not function. (Free run) If the Adjust Cam is not at the free position before tightening, you can not tighten the nose ring until face contact correctly.
- For the safety reason, the Cam Ring Lock Screws can not be loosen to remove to the outside. Please loose the Cam Ring Lock Screws slightly to rotate the Cam Ring.

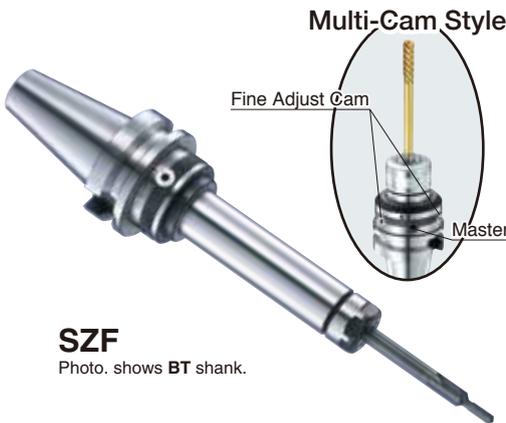
Please make sure the nose ring contacts with the chuck body perfectly

There are clearance between Nose Ring and Cam Ring



# IT ZERO FIT TYPE SLIM CHUCK

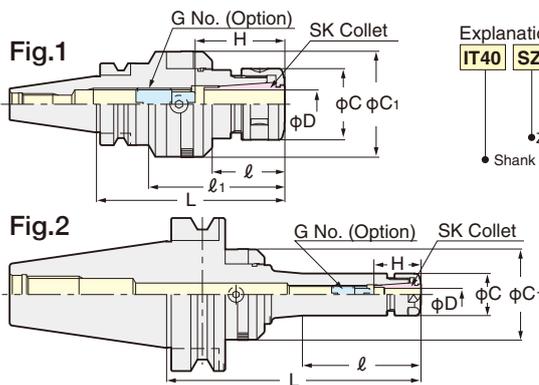
PAT.



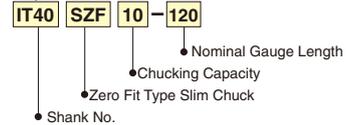
**SZF**

Photo. shows BT shank.

Multi-Cam Style



Explanation of the Code No.



TAPER	Code No.	D	L	l	l1	C	C1	H	G No. (Option)	Weight (Kg)	Fig.	Collet
No.40	IT40-SZF 6- 90, 150	0.7~6.0	90, 150	45, 89	-	19.5	40.5	21~35	SKG- 8	1.3, 1.7	2	SK 6
	-SZF10-120, 150	1.75~10.0	120, 150	57, 87	-	27.5	48.5	30~50	SKG-12L	1.6, 1.9	2	SK10
	-SZF16-120, 150	2.75~16.0	120, 150	51, 81	-	40	59.5	40~70	SKG-18L	1.9, 2.2	2	SK16
	-SZF25-120, 150	16.0~25.4	120, 150	49, 79	85, 115	55	66.5	55~85	SKG-28	2.4, 2.9	1	SK25
No.50	IT50-SZF 6-105, 165	0.7~6.0	105, 165	60, 67	-	19.5	40.5, 59.5	21~35	SKG- 8	4.0, 4.2	2	SK 6
	-SZF10-105, 165	1.75~10.0	105, 165	60, 65	-	27.5	48.5, 59.5	30~50	SKG-12L	4.5, 4.9	2	SK10
	-SZF16-105, 165	2.75~16.0	105, 165	60, 120	-	40	59.5	40~70	SKG-18L	5.0, 5.4	2	SK16
	-SZF25-120, 165	7.5~25.4	120, 165	75, 120	-	55	66.5	55~85	SKG-28	5.7, 6.0	2	SK25

★Adjust screw (G No.), wrench to adjust run-out (9ZFL) and SKL spanner are available as an option. SZF6: SKL-6W, SZF10: SKL-10, SZF16: 9HC16, SZF25: 9HC25

★Please use "P" class or "A" type SK collet. P.43

★For centre through coolant application please use SK J type nut and cap for your preference. Please note that the length of J type nut is 6mm longer than the standard SK nut.

★For High Speed type, Code No. is "SZF-P". e.g. IT40-SZF10-120P

★Multi-Cam style is available. e.g. IT40-SZF16-120-C3. (3 Cams) Please contact us for more detail.

IT/CAT

# UNIVERSAL MICRO TOUCH

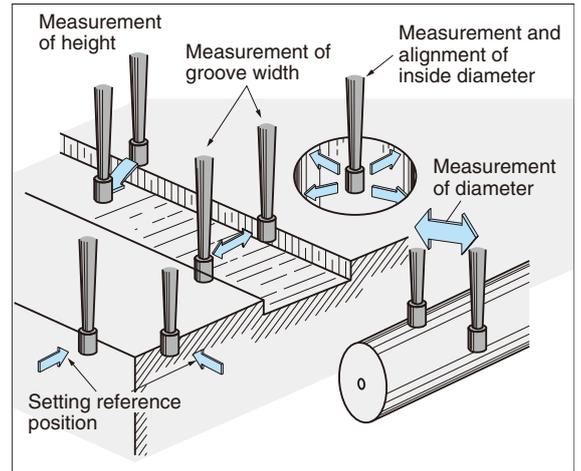


## 3D Electronic Edge Detector of Basic Point

- Precision Touch Sensor  
Repeatability  $\pm 2$  micron.
- Long Safety Over-Travel Distance protects from damage. X, Y =  $\pm 7$ mm Z = 3mm
- Red lamp and electronic beep sound notice the touching position. When touching to the work piece, red lamp immediately lights up all around. The one with BT shank gives the electric beep sound also to make double notices.

### How to obtain touching position

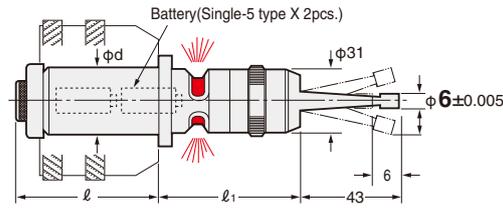
Make the stylus slowly get near to the measuring surface of work piece and the red lamp will light at the moment when the former touches the latter. A position where 3mm is compensated from that position (because of 6mm stylus diameter), is the touching position to be obtained.



## Straight Shank UMT MICRO TOUCH



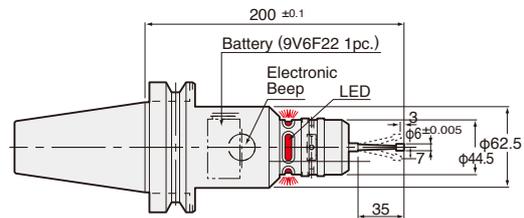
UMT



Code No.	$\phi d$	$l$	$l_1$	Weight (Kg)
<b>S20-UMT</b>	20	68	61	0.4
<b>S32-UMT</b>	32	65	65	0.7
<b>MT2-UMT</b>	MT2	66.5	75	0.4

★Ball type  $\phi 6$ mm stylus is also available : **S32-UMTB**

## BT-UMT-W MICRO TOUCH



TAPER	Code No.	Weight (Kg)
<b>No. 30</b>	<b>BT30-UMT200W</b>	2.1
<b>No. 40</b>	<b>BT40-UMT200W</b>	2.7
<b>No. 50</b>	<b>BT50-UMT200W</b>	5.0

★Ball type  $\phi 6$ mm stylus is also available : **BT40-UMTB200**  
★**IT40-UMT200W** and **IT50-UMT200W** are also available.

## BT-UMTH MICRO TOUCH for ring sensor

For Machining Centre with ring sensor, the electric circuits are different from standard, please purchase this through M/C Builder.



## Universal Micro Sensor



UMS

- Repeatability  $\pm 1$  micron
- Perfect water/dust proof
- Inductive signal transmission type (No need for battery)
- The sensor signal can be managed with ultra high speed.
- Because of its internal circuit contact type, this sensor can be used for any materials of components.
- Interchangeable stylus. 50mm (standard), 100mm (Option)

### BT30-UMS200

### BT40-UMS200

### BT50-UMS200

Please contact with us for more details.

Specification	
X-Y Over-Travel	10mm
Z Over-Travel	6mm
Stylus	$\phi 6$ Ball
Transmission	Inductive

# UNIVERSAL MICRO TOUCH with INTERNAL CONTACT SYSTEM **NIKKEN**

**Internal Contact System - can be used for not conductive work piece.**

- Precision Touch Sensor  
Repeatability  $\pm 2$  micron.
- Long Safety Over-Travel Distance protects from damage. X, Y =  $\pm 7$ mm Z = 3mm
- Not conductive work piece can be measured. Internal contact system is built-in.  
Blue lamp and electronic beep sound notice the touching position. After touching to the work piece, blue lamp lights up all around. The one with BT shank gives the electric beep sound also to make double notices.

## How to obtain touching position

Make the stylus slowly get near to the measuring surface of work piece and the blue lamp will light at the moment when the former touches the latter. A position where 2mm is compensated from that position (because of 4mm stylus diameter), is the touching position to be obtained.



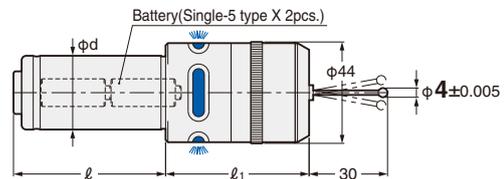
Photo shows with ruby stylus (option).

## Straight Shank UMTX MICRO TOUCH



### UMTX

Ruby stylus is available as an option.



Code No.	$\phi d$	$l$	$l_1$	Weight (Kg)
<b>S20-UMTX</b>	20	68	64	0.5
<b>S32-UMTX</b>	32	65	64	0.8
<b>MT2-UMTX</b>	MT2	66.5	64	0.5

★Battery is supplied as standard.

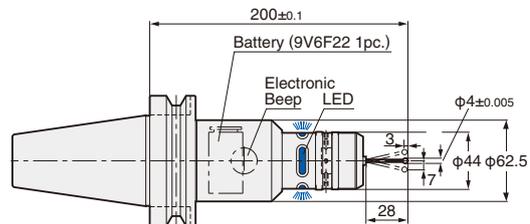
★The delay of the system is within 0.01mm, because of the internal contact system.

## BT-UMTX MICRO TOUCH



### BT-UMTX

Ruby stylus is available as an option.



TAPER	Code No.	Weight (Kg)
<b>No. 30</b>	<b>BT30-UMTX200W</b>	2.3
<b>No. 40</b>	<b>BT40-UMTX200W</b>	2.9
<b>No. 50</b>	<b>BT50-UMTX200W</b>	5.2

★Battery is supplied as standard.

★The delay of the system is within 0.01mm, because of the internal contact system.

## Specification

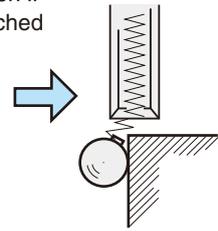
Measuring Pressure	X, Y = 0.35N Z = 0.8N	
Battery	Straight Shank	An alkali dry cell Model 5 1.5V 2pcs
	BT Shank	Manganese dry cell 6F33 X 9V 1pcs
	36 Hours	
Stylus	Standard : $\phi 4$ mm steel stylus Option : $\phi 4$ , $\phi 3$ , $\phi 2$ and $\phi 1$ mm ruby stylus The ruby stylus can not be ordered alone. Please order the Micro Touch with the ruby stylus. When ordering, please add (RB○) at the end of the Micro Touch Code No.	
	<p><b>e.g. BT30-UMTX200W (RB2)</b> └─ With <math>\phi 2</math>mm ruby stylus</p> <p><b>S32-UMTX (RB4)</b> └─ With <math>\phi 4</math>mm ruby stylus</p>	

## High Sensitive Position Sensor

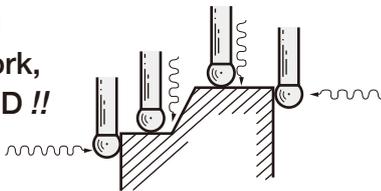


- Instant Indication of red LED Lamp.
- Instant Indication by red LED lamp at very light contact of Sensor Ball with Workpiece.
- Ideal for Centre Detecting with Milling Machine, Boring Mill, Drilling Machine and Machining Centre.
- Repeatability: within 2 micron.
- Safety Mechanism against Overrun !!

The ball is pulled up by spring. Even if overrun happens, ball will be detached from the ball seat.



- Easy Checking Location of Work, Face, OD and ID !!

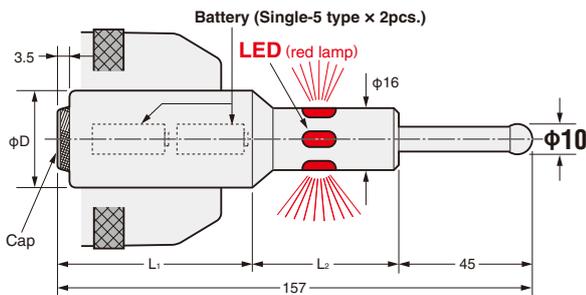


### Straight Shank TOUCH POINT



#### TP

- Can be connected to NIKKEN Milling Chuck C20, C32



Code No.	φD	L <sub>1</sub>	L <sub>2</sub>	Weight (Kg)
TP-20	20	77	35	0.2
TP-32	32	71	41	0.5

★No Z-axis float in straight shank type TOUCH POINT.  
If float is needed, please order UMT series (S20,S32-UMT). P.157

### φ10 Shank TOUCH POINT



#### S10-TP8

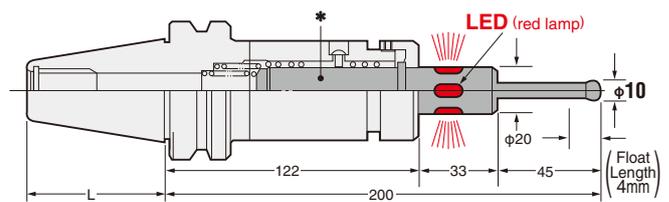
- Compact and slim type.
- It can be used for the narrow space and deep groove.
- It's suitable for HSK25A, 32A, 40A and 50A.
- No Z-axis float.

### TOUCH POINT for machining centre (with Z-axis Float Mechanism)



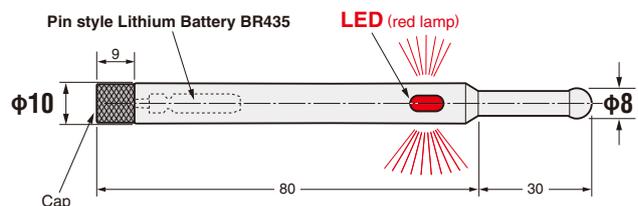
#### BT-TP

- The Ball End is located 200mm distant from Gauge Line, and can be used as Gauge Line Reference of Z-axis. Ultra precision Float Mechanism in the Thrust Direction enables Soft Touch Detection.



TAPER	Code No.	L	Float Length	Weight (Kg)
No.40	BT40-TP200	65.4	4	1.9
No.50	BT50-TP200	101.8	4	4.5

★No applicable to Non-conductive work piece (Plastic, Bakelite and so on).  
★Included Battery (Single-5 type × 2pcs.)  
★IT40-TP200 and IT50-TP200 are also available.  
★The Code No. of Touch Point marked \* for the spare part is 9TP200S.



Pin style Lithium Battery BR435

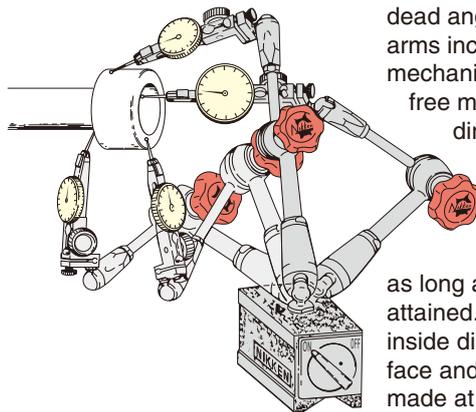
# UNIVERSAL MICRO STAND

**NIKKEN**



UDS-1

## Long Reach 300mm



Free flexing with single knob, no dead angle and long reach, two arms incorporating ball joint mechanism at both ends provide free movement in any direction such as vertical, lateral, longitudinal or rotational etc. If stretched horizontally, a reach as long as **300mm** can be attained. Measurements of inside dia., outside dia., end face and back face etc, can be made at will.



UDS-2

## Remote Fine Adjusting Knob (UDS-2)

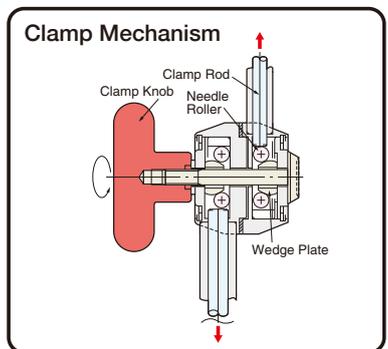
The base is made by heavy and precision casting and arms are clamped by a remote knob with fine adjustment. Measurement position of dial gauge can be easily adjusted without losing setup of Universal Micro Stand.



Remote Adjusting Knob

## New mechanism permitting no looseness due to vibration

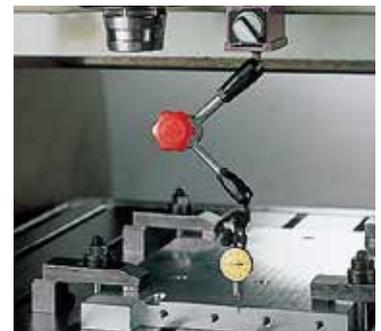
By only tightening the single red clamp knob, all articulated joints are locked firmly and no fine (micron) movement will occur even after being left as they are for 100 hours.



## Strong magnet base makes it possible to adapt to vertical, angular, uneven surface, etc.



On M/C

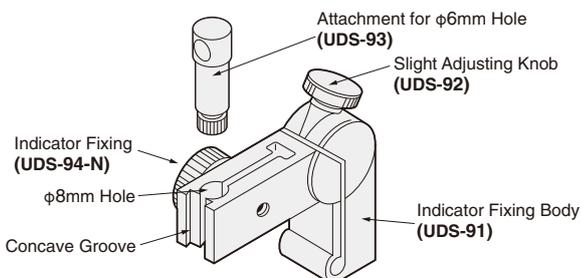


On Grinding Machine

Code No.	Style
UDS-1	With magnet base
UDS-2	With precision casting base

★Dial gauge is supplied as an option.

## Any dial gauge, pick tester can be connected with this attachment.



On NC Lathe



MEASUREMENT



Reference point of work piece can be measured very quickly and accurately without damage of tool teeth.

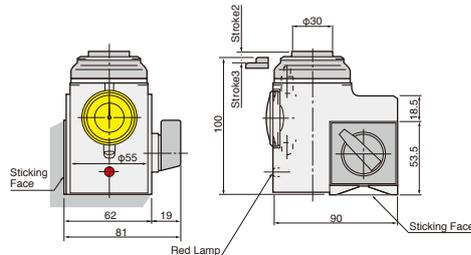
- High Precision Measurement
- Easy to measure tooling off-set values on the machine accurately.
- Hard wearing powerful magnetic Base.
- Powerful magnetic base (700N) makes it suitable for use on manual machine as well as Vertical/Horizontal Machining Centres and NC Lathes.

**■ Swarf Removal**  
The Magnetic Base can be switched on and off allowing the reference face to keep clean.

**■ Plunger Head is given a Anti-Rust Rubber Seal.**

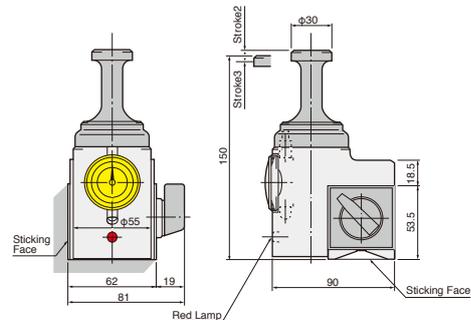
**■ Proximity Lamp**  
The red lamp is activated when the plunger comes within the measuring range of the reference height.

## HP-100



★2 of Batteries LR44(HC) are supplied as standard with both of HP-100 and HP-150.

## HP-150



HP-50K  
HEIGHT PRESETTER

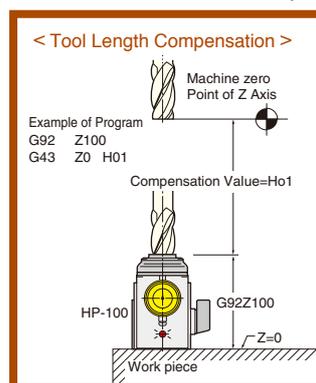


HP-50X  
INTERNAL CONTACT TYPE  
HEIGHT PRESETTER

- $\phi 0.2$ mm drill can be measured. (Feed rate must be lower than 5mm/min.)
- It can be used for not conductive machine and work piece.

### Adjustment of Reference Point

No setting gauge plate is required to adjust Zero Point. Push Plunger down by hand, and adjust the large hand to the Zero Scale of Dial Gauge. The small hand indicates “-3” at this time.)



Example of usage at Vertical Machining Centre.

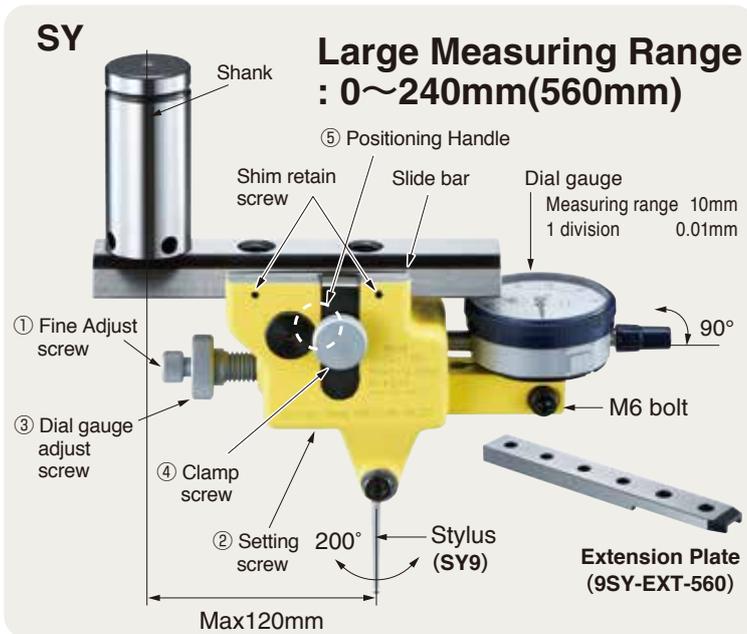


Example of usage at NC Lathe.



Also suitable for use of Micron Adjustment of Boring Arbor.

# CENTERING HOLDER



- No need of changing the setting of dial Gauge. Only by turning Knob, ID, OD and Parallelism can be easily measured.
- Large measuring range. Cross moving distance of stylus is 120mm in radius.
- Up to  $\phi 560\text{mm}$  can be measured by the extension plate. It can be used on your existing centering holder.

Centering Holder Code No.	ID of Milling Chuck	Measuring Range
SY20-120	$\phi 20$	0~ $\phi 240$
SY32-120	$\phi 32$	
SY42-120	$\phi 42$	

★0.01mm Dial Gauge is supplied as standard accessory.  
 ★MT Shank (MT2~6), and IT Shank (#40/#50) are available.

Explanation of the Code No.

- SY 32 - 120
- MAX. Measuring Radius
  - OD of Shank :  $\phi 22, 32, 42$
  - Symbol of Centering Holder

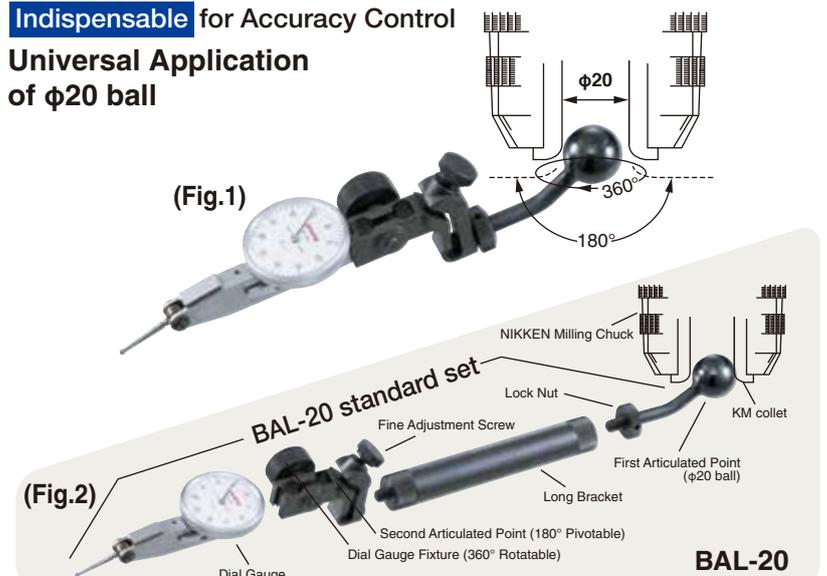
● Wide Range Measuring is possible both for ID and OD.



# BALL CENTRALIZER



Indispensable for Accuracy Control  
 Universal Application  
 of  $\phi 20$  ball



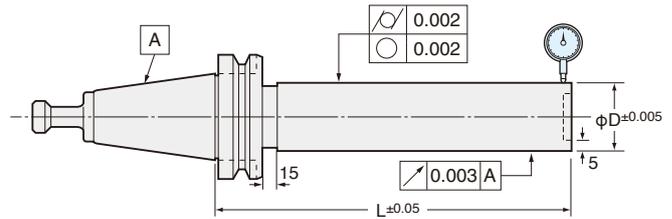
■ 0.01mm dial Gauge is supplied as standard accessory.

Code No.	Measuring Range	
	Using Fig.1	Using Fig.2
BAL-20	ID : $\phi 3.5 \sim \phi 320$	ID : $\phi 3.5 \sim \phi 520$
	OD : MAX. $\phi 300$	OD : MAX. $\phi 500$

# TEST BAR

**NIKKEN**

Indispensable for checking your machine spindle.  
Sub-zero treatment keeps accuracy to prevent from the deformation.  
Each test bar is provided in a safety wooden box.



TB

Exact size of  $\phi D$  and  $L$  are marked on each test bar.

TAPER	Code No.	$\phi D$	L	Weight (Kg)	Run-out at total length	Circularity, Cylindricity
No.15	BT15BR-TB15-110	15	110	0.25	Within 0.003mm	Within 0.002mm
No.30	BT30-TB40-150	40	150	1.7		
No.40	BT40-TB40-200	40	200	2.7		
No.50	BT50-TB50-300	50	300	7.7		

- ★The code No. for Test Bar without flange is **AST** instead of **BT**. e.g. Test Bar for #40-AST40-TB40-200
- ★It comes with Pull Stud, please specify Pull Stud Code No. Please refer P.303 for Pull Stud.
- ★The different dimension of  $\phi D$  and  $L$  are available. e.g. BT50-TB50-40  
But, the accuracy standard will be different. Please contact us.

The inspection certificate traceable to the national standard is available with charge.

# Tool Wagon

**NIKKEN**



TW

Photo shows wagon with E236N.  
E236N must be used on.

TAPER	Code No.	Wagon Storage	With E236N
BT30	TW30	60piece	40piece
BT40	TW40	48piece	32piece
BT50	TW50	40piece	28piece
NC5-46, HSK40A	TW-NC5- 46	48piece	32piece
NC5-63, HSK63A	TW-NC5- 63	48piece	32piece
NC5-85	TW-NC5- 85	40piece	28piece
NC5-100, HSK100A	TW-NC5-100	40piece	28piece

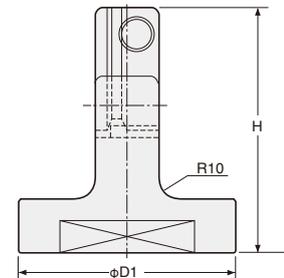
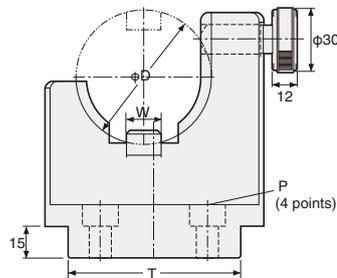
- ★TW40 can be used for the Tool Wagon of NC5-46 and NC5-63 Tools with Reduction Bush TWP-NC5-46 and TWP-NC5-63.
- ★TW50 can be used for the Tool Wagon of NC5-85 and NC5-100 Tools with Reduction Bush TWP-NC5-85 and TWP-NC5-100.
- ★For the Code No. of Taper Cleaner, please add "-Taper No." at the end of "NTP-CLE".  
e.g. NTP-CLE50



# TOOL CLAMPER

**NIKKEN**

NCL

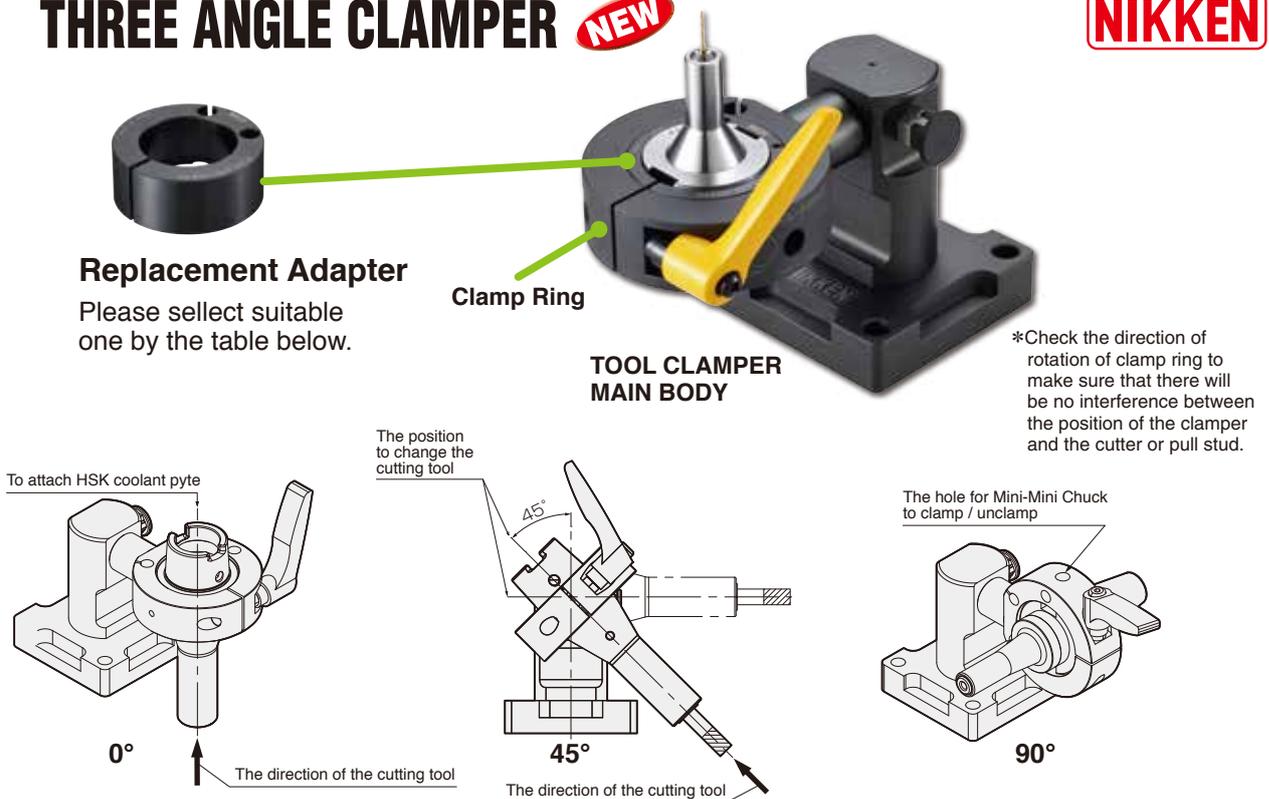


Code No.	$\phi D$	W	$\phi D1$	H	T	P	Pitch	Remark
NCL-BT30	46	15.9	102	110	80	$\phi 10.3$ (M10)	50 × 60	
-BT40	63	15.9	102	115	80		50 × 60	NC5- 63 can be used
-BT45	85	19.2	115	124	90		60 × 70	NC5- 85 can be used
-BT50	100	25.6	130	133	100		70 × 80	NC5-100 can be used
NCL-NC5-46	46	12	102	110	80		50 × 60	
-IT50	97.5	25.6	130	133	100		70 × 80	
-ICAT40	63.55	15.9	102	115	80		50 × 60	IT40, CAT40
-CAT50	98.45	25.6	130	133	100		70 × 80	

★Please refer P.164 for the TCL-GH Tool Clumper.

# THREE ANGLE CLAMPER NEW

**NIKKEN**



Clamper Code No.	BT40	BT50	IT40	CAT40	NC5-63	NC5-100	HSK63	HSK100	C6
TACL-B40H63	○	—	—	—	○	—	○	—	○
TACL-B50H100	—	○	—	—	—	○	—	○	—
TACL-ICAT40	—	—	○	○	—	—	—	—	—

## Replacement adapter

TACL-B40H63 Suitabele Clamper	Adaptation shank
9TACL63D-B30N46	BT30 NC5-46
9TACL63D-HSK50	HSK50 C5*1
9TACL63D-HSK40	HSK40 C4
9TACL63D-HSK32	HSK32
9TACL63D-HSK25	HSK25

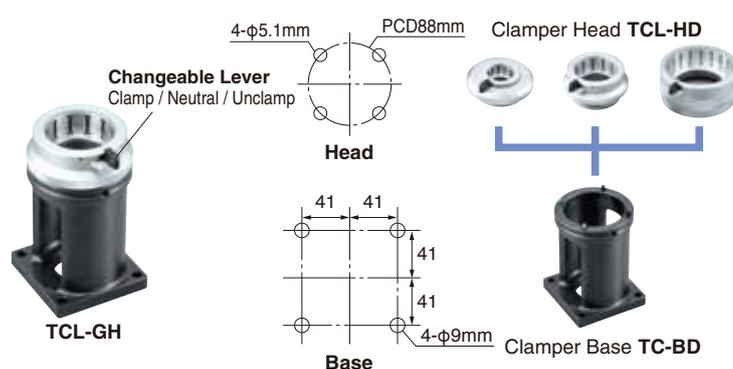
\*1 Length at  $\phi 50$  must be over 25.4mm.

## Replacement adapter for Straight Shank

TACL-B40H63 Suitabele Clamper	Adaptation shank
9TACL63D-S5/8	K5/8CM
9TACL63D-S3/4	K3/4CM ST3/4
9TACL63D-S20	K20CM ST20
9TACL63D-S25	K25CM ST25
9TACL63D-S1	K1CM ST1

# TOOL CLAMPER for HSK TOOLING

**NIKKEN**



TCL-GH clamper is designed for symmetrical holders without drive key slots or U-groove. The TCL-GH clamper is also suitable for the other shank tooling with same flange diameter as E & F type. e.g. TCL-GH63 is suitable for HSK63A, 63E, 63F, BT40 and NC5-63. By changing the clamper heads to the suitable sizes, the same TCL-BD base can be used for the other sizes of shank.

Clamper Code No.	Base Code No.	Head Code No.	Applicable Shank
TCL- 25GH	TCL-BD	TCL- 25HD	HSK 25E
TCL- 32GH		TCL- 32HD	HSK 32E
TCL- 40GH		TCL- 40HD	HSK 40A, 40E
TCL- 46GH		TCL- 46HD	BT30, NC5-46
TCL- 50GH		TCL- 50HD	HSK 50A, 50E
TCL- 63GH		TCL- 63HD	HSK 63A, 63E, 63F, BT40, NC5-63
TCL-100GH		TCL-100HD	HSK100A, BT50, NC5-100

MEASUREMENT

# TOOL PRESETTER E236N

**NIKKEN**



**Economy Type**

- **Rapid & Accurate Measurement Non-Contact Type**  
C MOS Sensor  
Autocollimation  
(The cutting edge is detected automatically and displayed.)  
Rapid Positioning & Fine Adjustment
- **Rapid Positioning & Fine Adjustment**  
Granite Column and Base
- **Spindle can be exchanged.**  
(BT, HSK, CAPTO TOOLING)
- **Fine and Easy Screen**  
5.7" LCD Monitor (80 X 60mm)  
Magnification: 20
- **Various Functions for Measurement**



Spindle (Option)



Printer WASP-PT



Measuring of the cutting edge



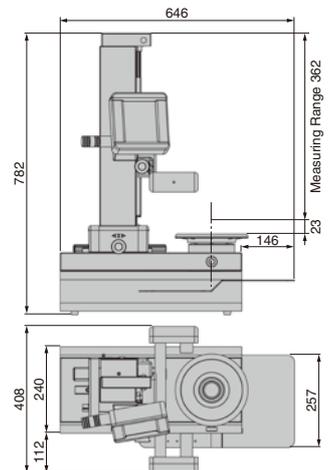
Angle of the cutting edge (Each 1 deg.)



Nose R of the cutting edge (Concentric circle by each 0.2mm)

## E236N

Item	Contents	E236N-40	E236N-50
Measuring Range	X Axis: Dia. of Tool	0~φ260mm	0~φ260mm
	Z Axis: Length of Tool	30~360mm	30~360mm
MIN. Reading	Reading Method MIN. Reading	X Axis	Scale Counter 0.001mm (Radius)
		Z Axis	Scale Counter 0.001mm
Monitor		Magnification: 20 5.7" LCD Monitor	
Tool Clamp		Not installed	
Spindle		NT40	NT50
Master Gauge*1		GN40K	GN50K
Spindle (Option)		The spindle can be exchanged. NT40, 50, HSK32, 40, 50, 63, 80, CAPTO TOOLING C4, 5, 6 Z stroke will be shortened for HSK and CAPTO TOOLING.	
Reduction Sleeve (Option)		TN430 : NT40-NT30	TN540 : NT50-NT40
Power		AC100~230V	



- ★The spindle for HSK100A, CAPTO TOOLING C8, 3LOCK, NC5-100 can not be supplied, please select E346I presetter P.166
- ★Box size : W x H x D = 900 x 550 x 600mm, Box weight : 53Kg
- ★Printer (WASP-PT) and 10 pcs of the roll papers with seal (WASP-PTP) are available as an option.
- ★\*1 Master gauge for BT40, BT50 are only standard accessory. Master gauge for HSK or CAPTO TOOLING is available as an option.
- ★Spindle for HSK32, 40, 50, 80 and CAPTO TOOLING C4, C5, C6 are order made spindles.

### ■ Working Desk E450N-STD (Option)

Working desk and the tool pot case (E450N-STD-MGH) can be supplied as an option. The tool pot case has 3 pots and the shank can be specified.  
e.g NT30-NT40-NT50

### ■ Spindle (Option)

No clamping mechanism for NT spindle of E236N

Manual clamping mechanism for HSK, Polygon taper and NC5 spindles



E236N-SP-30,40,50  
E236N-SP-HSK, C, NC5



E450N-SP-30,40,50  
Vacuum Clamping



Code No.	Shank No.	Presetter	Z Stroke (mm)	Master gauge
E236N-SP-30	NT30	E236N, E346I	0~360,460	GN30K
E450N-SP-30		E460N	0~600	
E236N-SP-40	NT40	E236N, E346I	0~360,460	GN40K
E450N-SP-40		E460N	0~600	
E236N-SP-50	NT50	E236N, E346I	0~360,460	GN50K
E450N-SP-50		E460N	0~600	
E236N-SP-HSK32	HSK32	E236N E346I E460N	0~358,433,573*1	GN-HSK32
- HSK40	HSK40		0~351,425,565	GN-HSK40
- HSK50	HSK50		0~343,418,558	GN-HSK50
- HSK63	HSK63		0~335,410,550	GN-HSK63
- HSK80	HSK80		0~333,408,548	GN-HSK80
E450N-SP-HSK100	HSK100		0~368,508	GN-HSK100
E236N-SP-C4	C4		0~324,399,539	GN-C4
- C5	C5		0~315,390,530	GN-C5
- C6	C6	0~293,368,508	GN-C6	
E450N-SP-C8	C8	0~348,488	GN-C8	
E236N-SP-NC5-46N	NC5-46	E236N E346I E460N	0~320,420,560	GNC5-46-150
- NC5-63	NC5-63		0~300,400,540	GNC5-63-150
- NC5-100	NC5-100		0~260,310,410	GNC5-100-150

★Spindles for HSK,C and NC5 can be exchanged only by a wrench.

★\*1 The Z measurement range is E236N, E346I, E460N from the left. ★Master gauge is available as an option.

# TOOL PRESETTER E346I



**E346I**

- **Rapid & Accurate Measurement Non-Contact Type**  
C MOS Sensor  
Autocollimation  
(The cutting edge is detected automatically and displayed.)  
Rapid Positioning & Fine Adjustment
- **Rapid Positioning & Fine Adjustment**  
Granite Column and Base
- **Spindle can be exchanged.**  
(BT, HSK, CAPTO TOOLING)
- **Fine and Easy Screen**  
9" LCD Monitor (110 X 200mm)  
Magnification: 25
- **Various Functions for Measurement**



Spindle (Option)



Printer WASP-PT



Fixed Feticule Mode



Circular Reticule Mode



Angle and Radius Mode



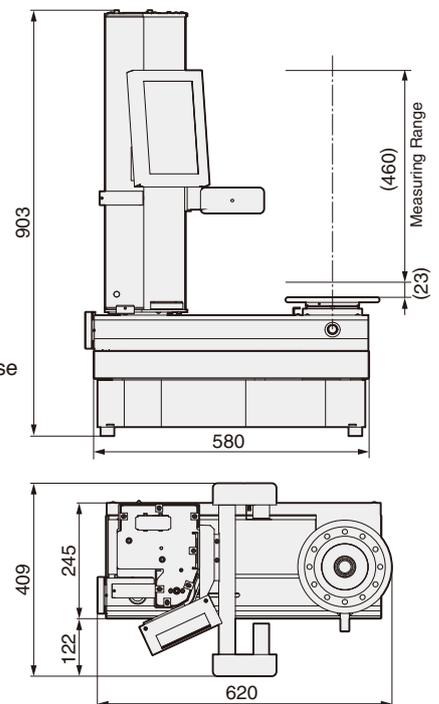
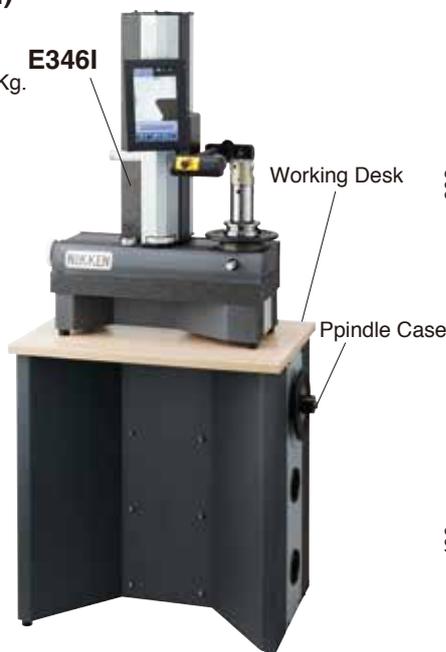
Inspection Tool Mode

Item	Contents	E346I-40	E346I-50
Measuring Range	X Axis: Dia. of Tool	0~φ360mm	0~φ360mm
	Z Axis: Length of Tool	30~460mm	30~460mm
MIN. Reading	Reading Method MIN. Reading	X Axis	Scale Counter 0.001mm (Radius)
		Z Axis	Scale Counter 0.001mm
Monitor		Magnification: 25 9" LCD Monitor (110x200mm)	
Tool Clamp		Not installed	
Spindle		NT40	NT50
Master Gauge		GN40K(option)	GN50K(option)
Spindle (Option)		The spindle can be exchanged. NT30,40,50,HSK32,40,50,63,80, CAPTO TOOLING C4, 5,6,8 Z stroke will be shortened for HSK and CAPTO TOOLING.	
Reduction Sleeve (Option)		TN430 : NT40-NT30	TN540 : NT50-NT40
Power		AC100~230V	

- ★Box size : W x H x D = 1200 x 820 x 800mm, Box weight : 105Kg, Presetter weight : 77Kg.
- ★Printer (WASP-PT) and 10 pcs of the roll papers with seal (WASP-PTP) are available as an option.
- ★Spindle for HSK32, 40, 50, 80, 100 and CAPTO TOOLING C4, C5, C6, C8 are order made spindles.

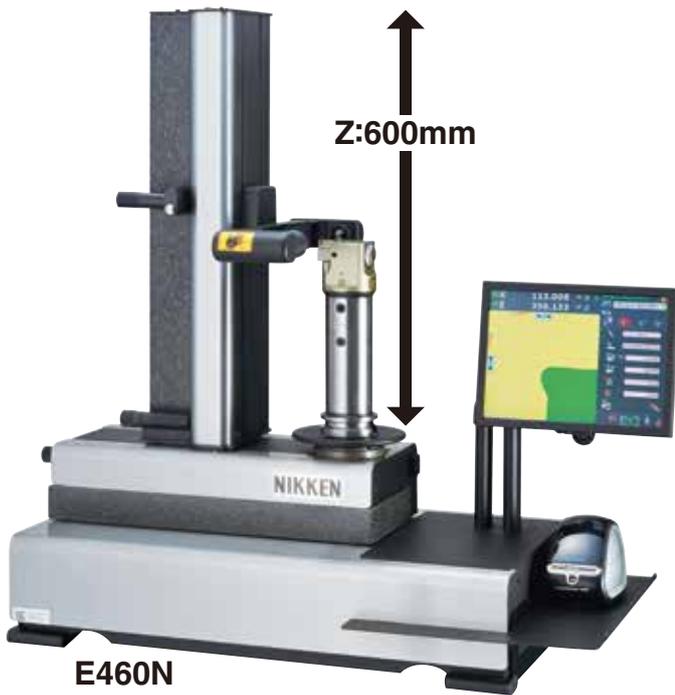
## ■ Working Desk E346I-STD (Option)

Working desk for **E346I** and **E236N**.  
(No fixing mechanism for E346I and E236N.)  
Size : W x H x D = 730 x 800 x 500, Weight : 58Kg.  
The spindle case has 3 pots.



MEASUREMENT

# TOOL PRESETTER E460N



**E460N**

- Super Precision & High Accuracy  
Granite Column and Base
- Touch Panel Display with Quick & Easy Operation  
Non-Contact Type Fine Screen -15" LCD Monitor  
Magnification: X30  
Changeable of C MOS Sensor/ Micro Scope

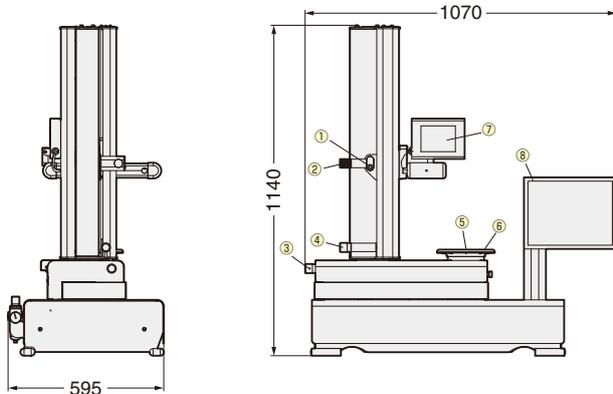
Micro Scope



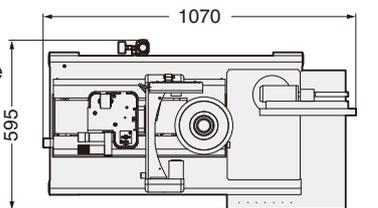
- Rapid & Accurate Measurement  
Changeable Clutch of Rapid/Fine Feed
- Vacuum Clamp System Independent from the pull stud type.  
The mechanical tool clamp system is installed on E236N for the double face contact tool such as 3LOCK tool, NC5 tool or HSK tool.
- Tool Management System "TD-SIX"  
M/C data: MAX.1000  
The management of the difference of the gauge line of M/C can be done.  
Tool Set (Layout) Data: MAX.1000  
Tool Data: MAX.1000

Item	Contents		E460N-40	E460N-50
Measuring range	X Axis : Diameter of Tool		0~φ400mm	0~φ400mm
	Z Axis : Length of Tool		35~600mm	35~600mm
Min. reading increment	Reading Method Min. reading	X Axis	Scale Counter 0.001mm (Radius) Changable of Radius/Diameter	
		Y Axis	Scale Counter 0.001mm	
Monitor			Magnification: X30 Changable of C MOS Sensor/ Micro Scope 10.4" LCD Monitor	
Tool Clamp			Vacuum Clamp (Air: 0.5MPa) The mechanical tool clamp system *1 is available as an option.	
Spindle			NT40	NT50
Master Gauge			GN40K(option)	GN50K(option)
Inter-changeable spindle (Option)			Vacuum clamping for NT30, 40 and 50. Manual clamping for HSK, C and NC5 <b>P.134</b>	
Reduction Sleeve (Option)			TN430V : NT40-NT30	TN540V : NT50-NT40
External Output			USB (3 ports) Tool management software (Option)	
Power			AC100~230V	

★ \*1 Master gauge is available as an option.



- ① Z/X Axis Rapid Positioning SW
- ② Z/X Axis Rapid Positioning Handle
- ③ X Axis Fine Adjustment Knob
- ④ Z Axis Fine Adjustment Knob
- ⑤ Spindle
- ⑥ Handle for Spindle Rotation
- ⑦ 15" LCD Monitor
- ⑧ Operation Panel



Box size: W X H X D: 1,070 X 1,140 X 595mm  
Presetter Weight: 135Kg, Box Weight: 160Kg

- Exclusively designed for multiple function tool measuring system rather than just measuring the length and diameter.

- Automatic measurement (Automatic scanning of the tool edge)
- Display of angular grid (1 degree incremental) for checking the tool edge.
- Display of reference circle for checking Nose R.
- Multiple calculation functions  
e.g. calculation for radius from 5 points, angle from 2 lines, or distance of 2 points



# TOOL PRESETTER E4060L NEW



**E4060L**

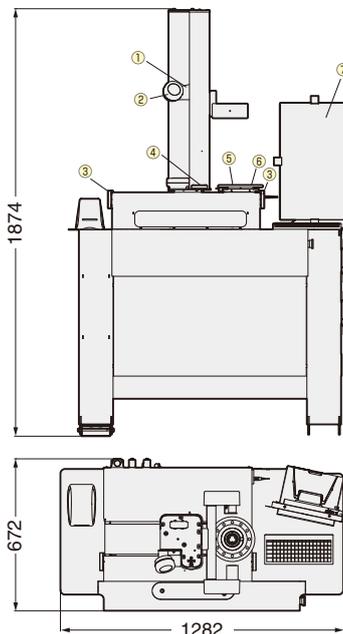
- Super Precision & High Accuracy Granite Column and Base
- Touch Panel Display with Quick & Easy Operation Non-Contact Type Fine Screen -22" FULL HD Monitor Magnification: X26 Changeable of C MOS Sensor/ Micro Scope

Micro Scope



- Rapid & Accurate Measurement Changeable Clutch of Rapid/Fine Feed
- Universal Mechanical Tool Clamping System. Servo controlled clamping system provides a strong clamping force of 250-300kg.
- Tool Management System "TD-SIX Pro"
  - M/C data: MAX.1000
  - The management of the difference of the gauge line of M/C can be done.
  - Tool Set (Layout) Data: MAX.1000
  - Tool Data: MAX.1000

Item	Contents		E4060L-40	E4060L-50
Measuring range	X Axis : Diameter of Tool		0~φ400mm	0~φ400mm
	Z Axis : Length of Tool		35~600mm	35~600mm
Min. reading increment	Reading Method Min. reading	X Axis	Scale Counter 0.001mm (Radius) Changable of Radius/Diameter	
		Y Axis	Scale Counter 0.001mm	
Monitor			Magnification: X26 Changable of C MOS Sensor/ Micro Scope 22" FULL HD Monitor	
Tool Clamp			Universal Mechanical Tool Clamping System.	
Spindle			NT40	NT50
Master Gauge			GN40K(option)	GN50K(option)
Inter-changeable spindle (Option)			<b>E4060L-SP-40</b>	<b>E4060L-SP-50</b>
			<b>Manual clamping for HSK, C and NC5</b>	
External Output Power			USB (4 ports) LAN (1 ports), TD-SIX PRO (TONE UP) AC100~230V	



- ① Z/X Axis Rapid Positioning SW
- ② Z/X Axis Rapid Positioning Handle
- ③ X Axis Fine Adjustment Knob
- ④ Z Axis Fine Adjustment Knob
- ⑤ Spindle
- ⑥ Handle for Spindle Rotation
- ⑦ 22" FULL HD Monitor

- Exclusively designed for multiple function tool measuring system rather than just measuring the length and diameter.

- Automatic measurement (Automatic scanning of the tool edge)
- Display of angular grid (1 degree incremental) for checking the tool edge.
- Display of reference circle for checking Nose R.
- Multiple calculation functions
  - e.g. calculation for radius from 5 points, angle from 2 lines, or distance of 2 points
- SP-ID(Spindle Identification system)**
- Multi-Edge Report (creating, saving, and printing)**



Box size: W X H X D: 1,282 X 1,874 X 672mm  
 Presetter Weight: 255Kg, Box Weight: 280Kg

MEASUREMENT

# 3LOCK TOOLING SYSTEM

JAPAN, USA, UK, GERMANY, KOREA PAT.



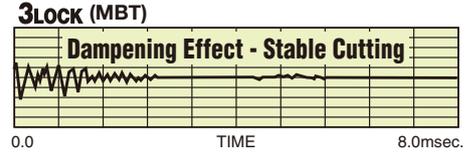
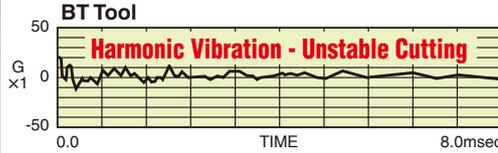
**3LOCK** (triple contact) can be done on the BT double face contact spindle.

High Speed

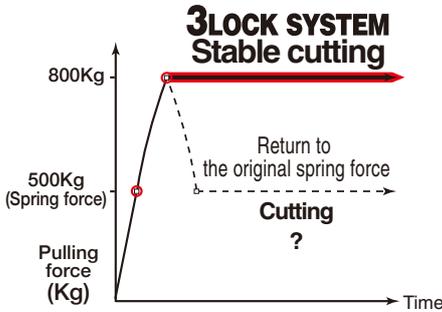
Tool Life  
3 to 5 times

## 1. Power of Dampening Effect.

Performance enhancement due to the dampening effect are already universally recognized when using Nikken's DREAM-CUT Holder.  
- Extended tool life of 3 to 5 times.



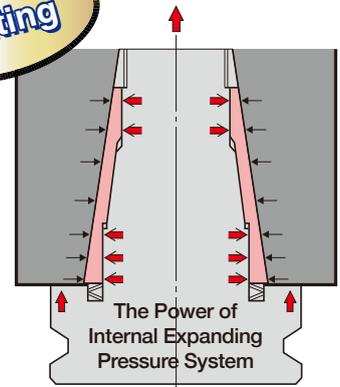
## 2. The mechanism which generates the excellent cutting performance -Internal Expanding Pressure System



### Internal Expanding Mechanism System for instantly locking the maximum pulling force

- Tool clamping mechanism that use a disc springs experience lower clamping force during continuous use.
- **3LOCK** is a system for locking the maximum pulling force that is instantly produced during tool pulling.
- Cutting torque is greatly reduced compared to BT tooling for more comfortable cutting.

Cutting



Machine spindle expansion due to the centrifugal force at the high speed rotation or heat expansion

## 3. The taper sleeve follows the expansion and maintains perfect contact with the taper and flange.

**Taper Contact : Flange Contact = 90% : 10%**

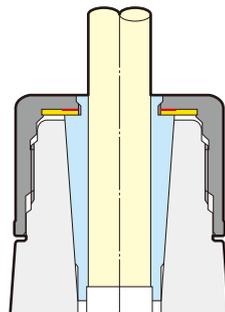
Run-Out Accuracy

ATC Repeatability



## 4. 2LOCK } Power of TiN Bearing Nut 3LOCK }

Rigidity



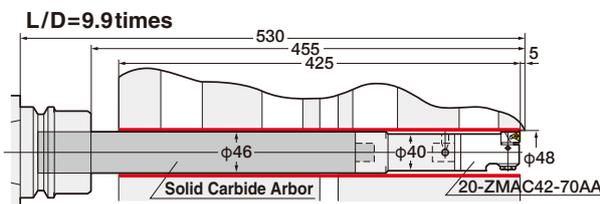
## 5. Excellent Rigidity

**3LOCK** tool performs the excellent rigidity, when the extended tool is used on the horizontal M/C.

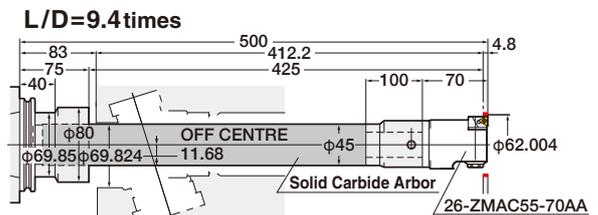
Solid Carbide Arbor ZMAC X Head



## Deep Hole Boring



Material: Aluminum V : 450m/min.  
Stock Removal: 0.23~0.27mm/dia. S : 3,000min<sup>-1</sup>  
F : 180mm/min.



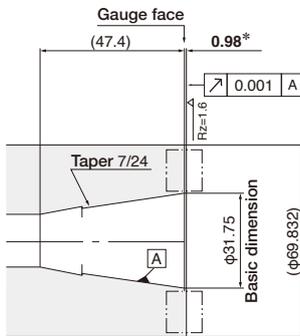
Material: Aluminum V : 545m/min.  
Stock Removal: 0.5mm/dia. S : 3,000min<sup>-1</sup>  
F : 210mm/min.

# BT DOUBLE FACE CONTACT SPINDLE

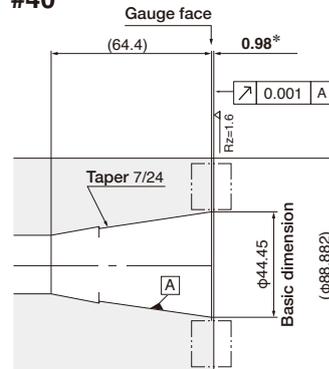


The NIKKEN **3LOCK** tooling can be used as the triple face contact (taper, flange and internal taper expansion) on the M/C with BT double face contact spindle. The NIKKEN **2LOCK** tooling can be used as the double face contact on the M/C with BT double face contact spindle.

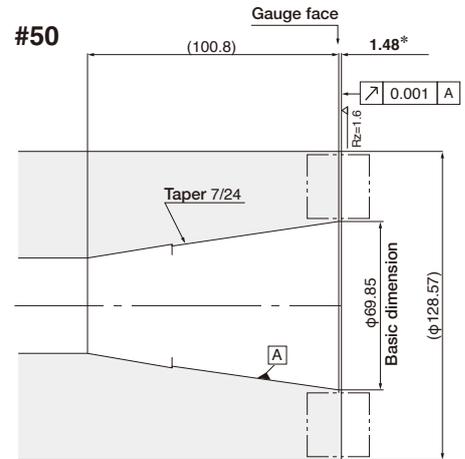
#30



#40

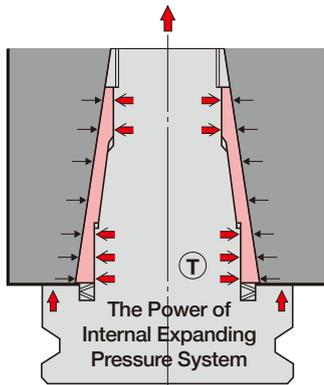


#50



\* mark: The tolerances of the extension of the spindle flange from gauge face depend on the M/C.

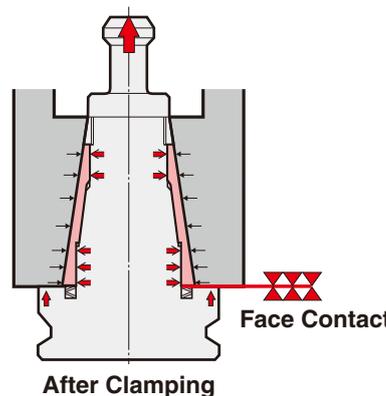
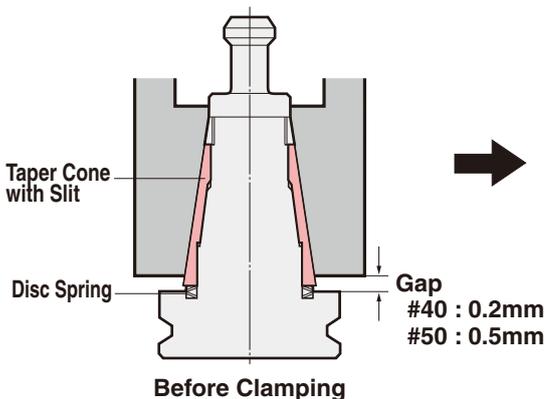
## 3LOCK TECHNICAL INFORMATION



1. When **3LOCK** tool is inserted into **3LOCK** spindle (before clamping), the gap between the spindle flange and the tool flange is ; #40 : 0.2mm, #50 : 0.5mm
2. When the tool is clamped, the taper cone pre-loaded by the disc springs deforms radially and slides to reach the face contact between the spindle flange and the tool flange.

### Deep Profiling Tool for Die Mould

Strong track record even for plunge cutting cutters with a long expanded length



# 3LOCK MBT MULTI LOCK MILLING CHUCK

**NIKKEN**



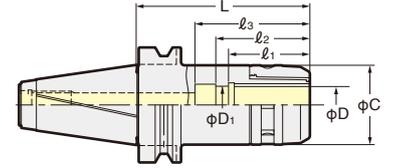
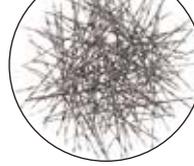
**C**  
Centre Through  
MAX. 7MPa

The cutting chips show us the actual machining capability.

Quiet,  
high speed, heavy milling



Stable finishing



## Standard

3LOCK tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

TAPER	Code No.	D	D <sub>1</sub>	C	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight (kg)	Collet
No.40	MBT40 -C12- 90,120	12	12	33	90, 120	48	53	58	1.6, 1.9	KM12 CCK12
	-C16- 60, 90,120	16	16	44	63, 90, 120	50	58	65	1.4, 1.7, 2.0	KM16 CCK16
	-C20- 70, 90,120	20	20	52	71, 90, 120	57	66	80	1.6, 1.8, 2.2	KM20 CCK20 CCNK20
	-C25- 70, 90,120	25	25	60	70, 90, 120	60	72		1.8, 2.1, 2.5	KM25 CCK25 CCNK25
	-C32- 85*,105,120	32	32,25,25	69	85, 105, 120	64,70,70	71,81,81	75,81,81	2.1, 2.5, 2.8	KM32 CCK32 CCNK32
No.50	MBT50 -C12-105,165	12	12	33	105, 165	48	53	58	4.0, 4.6	KM12 CCK12
	-C16-105,165,200	16	16	44	105, 165, 200	50	58	65	4.2, 4.8, 5.1	KM16 CCK16
	-C20-105,165,200	20	20	52		57	66	80	4.5, 5.1, 5.7	KM20 CCK20 CCNK20
	-C25-105,135,165	25	25	60	105, 135, 165	60	72		4.8, 5.2, 5.6	KM25 CCK25 CCNK25
	-C32- 90,105,120,135,165 -200,250,300	32	25	69	90,105,120,135,165 200,250,300	70	81	81	4.3,4.6,5.1,5.6, 6.4,7.8,9.2,10.6	KM32 CCK32 CCNK32
	-C42- 95*,120,135,165 -200,250,300	42	42	86	95,120,135,165 200,250,300	73	80,105, 115	85,110,125,125, 125,125,125	5.5,6.6,7.2,8.6 9.5,11.7,14.0	KM42 CCK42 CCNK42

★Spanner is available as an option.

C12 : 9HC12A C16 : 9HC16 C20 : 9HC22  
C25 : 9HC25 C32 : 9HC32 C42 : 9HC42

★Please note the acceptable shank tolerance is h6~7.

★For heavy duty milling, please grip the cutter shank longer than l<sub>1</sub>.

★NK and CCNK collet can not be used for the chucks marked \*.

★For C32, l<sub>2</sub> dimension longer than standard is available.

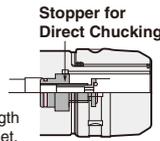
MBT40-C32D-105 MBT50-C32D-105

★Centre through tool coolant is available for all models. When the cutter shank length is shorter than l<sub>1</sub>, please use the stopper for direct chucking or CCK/CCNK collet.

The Code No. of the Stopper for direct chucking is : C20 : 9MC20, C25 : 9MC25, C32 : 9MC32, C42 : 9MC42

★Please refer P.172 for KM and CCK collet.

★Please add "F" for the flange through tool coolant type.



Explanation of the Code No.

MBT40 - C20 - 70

- Nominal Gauge Length
- Chucking Capacity
- Symbol of Milling Chuck
- Shank No.

# 3LOCK MBT HIGH SPEED MILLING CHUCK

**NIKKEN**

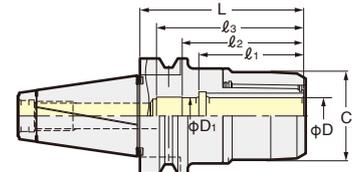


**C-G**  
Centre Through  
MAX. 7MPa

## ANNIVERSARY Type

— Powerful gripping torque —

- High rigidity
- High precision
- Compact design



## High Speed

3LOCK tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

TAPER	Code No.	D	D <sub>1</sub>	C	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight (kg)	MAX. (min <sup>-1</sup> )	Collet
No.40	MBT40 -C12- 90G	12	12	33	90	48	53	58	1.6	25,000	KM12 CCK12
	-C16- 60G, 90G	16	16	40	63, 90	50	58	65	1.4, 1.7		KM16 CCK16
	-C20- 70G, 90G	20	20	48	71, 90	57	66	80	1.6, 1.8	KM20 CCK20 CCNK20	
	-C25- 70G, 90G,120G	25	25	55	70,90,120	60	72		1.8, 2.1, 2.5	KM25 CCK25 CCNK25	
	-C32- 85G*,105G	32	32,25	68	85, 105	64,70	71,81	75,81	2.1, 2.5	20,000	KM32 CCK32 CCNK32
No.50	MBT50 -C12-105G	12	12	33	105	48	53	58	4.0	20,000	KM12 CCK12
	-C16-105G	16	16	40		50	58	65	4.2		KM16 CCK16
	-C20-105G	20	20	48		57	66	80	4.5	KM20 CCK20 CCNK20	
	-C25-105G	25	25	55	60	72	4.8		KM25 CCK25 CCNK25		
	-C32- 90G,105G,120G	32	25	68	90,105,120	70	81	81	4.3,4.6,5.1	15,000	KM32 CCK32 CCNK32
	-C42- 95P*,120P	42	42	86	95,120	73	80,105	85,110	5.5,6.6	12,000	KM42 CCK42 CCNK42

★Please note the acceptable shank tolerance is h6.

★Please refer P.172 for KM and CCK collet.

★GH Handle is available as an option. P.48

C12G : GH12, C16G : GH16, C20G : GH20, C25G : GH25, C32G : GH32

★Spanner for C42P is 9HC42.

★NK and CCNK collet can not be used for the chucks marked \*.

★Centre through tool coolant is available for all models. When the cutter shank length is shorter than l<sub>1</sub>, please use the stopper for direct chucking or CCK/CCNK collet.

The Code No. of the Stopper for direct chucking is : C20 : 9MC20, C25 : 9MC25, C32 : 9MC32, C42 : 9MC42

Explanation of the Code No.

MBT40 - C20 - 70 G

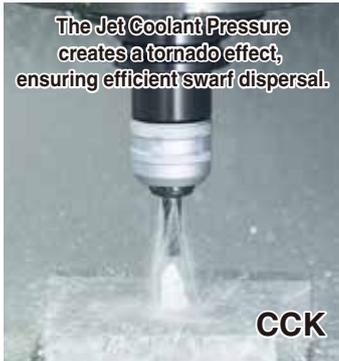
- Symbol of High Speed
- Nominal Gauge Length
- Chucking Capacity
- Symbol of Milling Chuck
- Shank No.

# CENTRE COOLANT STRAIGHT COLLET



PAT.

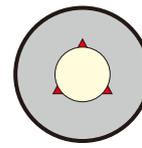
Suitable for all models of the NIKKEN MILLING CHUCK



CCK Collet

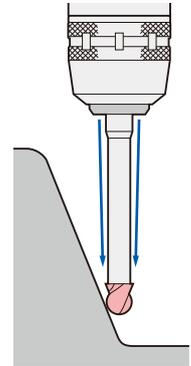


Front Nut

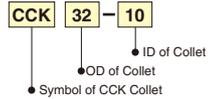


Jet Coolant

Prevention of Swarf entering the collet through the slots



Explanation of the Code No.



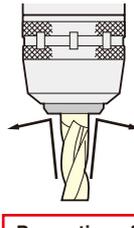
- CCK : Centre Coolant
- CCNK : Centre Coolant, Adjustable
- KM : Standard
- NK : Adjustable
- ONK : Oil Hole Drill
- OJK-A : Jet Coolant
- OJK-S : Multiple Nozzles



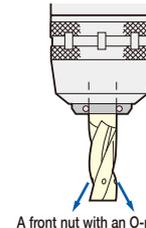
For grooving.



For cutters with cutting diameter which is larger than the shank diameter.



Prevention of the swarf contamination.



A front nut with an O-ring seal, for use with oil hole cutter, is also available as option.



CKFN-MN



CKFN-C

CCK Collet CKFN front nut and CCKL spanner are available as an option.



Photo shows with front nut.

CCK

Style	CCK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCK12</b>	<b>CCK12-3, 4, 5, 6, 8, 10</b>	CKFN12
<b>CCK16</b>	<b>CCK16-3, 4, 5, 6, 8, 10, 12</b>	CKFN16
<b>CCK20</b>	<b>CCK20-6, 8, 10, 12, 16</b>	CKFN20
<b>CCK25</b>	<b>CCK25-6, 8, 10, 12, 16, 20</b>	CKFN25
<b>CCK32</b>	<b>CCK32-6, 8, 10, 12, 16, 20, 25</b>	CKFN32, CKFN32T
<b>CCK42</b>	<b>CCK42-6, 8, 10, 12, 16, 20, 25, 32</b>	CKFN42

- ★Above bold figures indicate "ANNIVERSARY" type CCK Collet.
- ★Please note the acceptable shank tolerance is  $h_6-h_7$ .
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1·1/8, 1·1/4, 1·1/2" are also available.



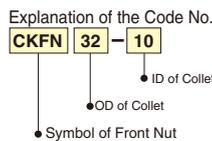
Photo shows with front nut.

CCNK

Style	CCK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCNK20</b>	<b>CCNK20-6, 8, 10, 12, 16</b>	CKFN20
<b>CCNK25</b>	<b>CCNK25-6, 8, 10, 12, 16, 20</b>	CKFN25
<b>CCNK32</b>	<b>CCNK32-6, 8, 10, 12, 16, 20, 25</b>	CKFN32, CKFN32T
<b>CCNK42</b>	<b>CCNK42-6, 8, 10, 12, 16, 20, 25, 32</b>	CKFN42

- ★Please note the acceptable shank tolerance is  $h_6-h_7$ .
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1·1/8, 1·1/4, 1·1/2" are also available.

Front Nut CKFN



Style	φD <sub>2</sub>	L <sub>2</sub>	Front Nut Code No.
<b>CKFN12</b>	19.5	7	<b>CKFN12</b> -3, 4, 5, 6, 8, 10
<b>CKFN16</b>	28.5	8	<b>CKFN16</b> -3, 4, 5, 6, 8, 10, 12
<b>CKFN20</b>	33	8	<b>CKFN20</b> -6, 8, 10, 12, 16
<b>CKFN25</b>	39	8.5	<b>CKFN25</b> -6, 8, 10, 12, 16, 20
<b>CKFN32</b>	46.5	9	<b>CKFN32</b> -6, 8, 10, 12, 16, 20, 25
<b>CKFN32T</b>	43	9	<b>CKFN32T</b> -6, 8, 10, 12, 16, 20, 25
<b>CKFN42</b>	59.5	9	<b>CKFN42</b> -6, 8, 10, 12, 16, 20, 25, 32



- ★The front nut for direct chucking is also available. e.g. CKFN20-20D, CKFN25-25D, CKFN32-32D
- ★The Code No. fitted with O-ring is ; e.g. CKFN20-20DC, CKFN25-25DC, CKFN32-32DC

- ★For C32 there are 2 sizes, CKFN32 = for nose ring diameter of φ69mm, CKFN32T = for nose ring diameter of φ64mm.
- ★Jet Coolant type for the cutter with a cutter dia. larger than shank dia. is also available. CKFN25-20MN, CKFN32-25MN, CKFN42-32M
- ★Front Nut fitted with an O-ring is also available. e.g. The Code No. is CKFN32-10C
- ★The spanner is available as an option.
- CKFN12 : CCKL12, CKFN16 : CCKL16
- CKFN20 : CCKL20
- CKFN25, CKFN32T : CCKL25
- CKFN32 : CCKL32, CKFN42 : CCKL42



KM Photo shows ANNIVERSARY type KM Collet.

KM

Style	KM Collet Code No. (OD-ID)
<b>KM12</b>	<b>KM12-2, 3, 4, 5, 6, 7, 8, 9, 10</b>
<b>KM16</b>	<b>KM16-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12</b>
<b>KM20</b>	<b>KM20-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>KM25</b>	<b>KM25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>KM32</b>	<b>KM32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30</b>
<b>KM42</b>	<b>KM42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 40</b>

- ★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1·1/8, 1·1/4, 1·1/2" are also available.
- ★The collets with bold character are the "ANNIVERSARY" type KM Collet.
- Ordinary KM Collet can be used with "ANNIVERSARY" type Milling Chuck, but better performance can be found with the "ANNIVERSARY" type KM Collet.
- ★Please note the acceptable shank tolerance is  $h_6-h_7$ .

Cutter length adjustment on the collet is possible from front and back.



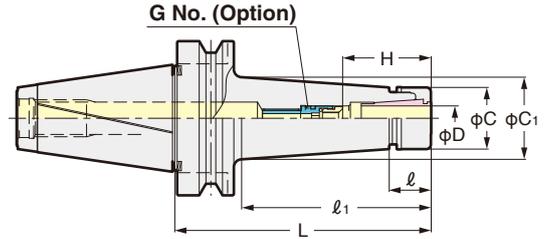
NK

Style	NK Collet Code No. (OD-ID)
<b>NK20</b>	<b>NK20-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>NK22</b>	<b>NK22-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18</b>
<b>NK25</b>	<b>NK25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>NK32</b>	<b>NK32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26</b>
<b>NK42</b>	<b>NK42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32</b>

- ★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1·1/8, 1·1/4, 1·1/2" are also available.
- ★The collets with bold character are standard.
- ★Please note the acceptable shank tolerance is  $h_6-h_7$ .
- ★Collet removal (9CKR) is available as an option.
- ★Please refer P.33, P.34 for more detail of the straight collet.

# 3LOCK MBT SLIM CHUCK

**NIKKEN**



**SKT**  
Centre Through  
MAX. 7MPa

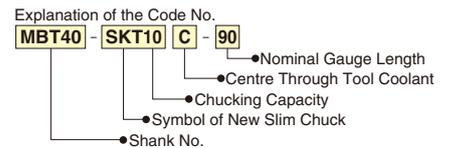
**Standard** 3LOCK tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

When SK J type nut is used, the total chuck length will be extended by 6mm.

**PAT.**

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	SK Collet
No.40	MBT40-SKT 6C- 90	0.7~6.0	90	19.8	60	19.5	25.2	26~31	SKG 6- 6HG	1.1	SK 6
	-120		120		90		29.4			1.4	
	-SKT10C- 90	1.75~10.0	90	22	60	27.5	32.9	35~41	SKG10-10HG	1.2	SK10
	-120		120		90		37.1			1.4	
	-150		150		120		41.3			1.6	
	-SKT13C- 90	2.75~13.0	90	26	60	33	37.8	39~51	SKG13-10HG	1.4	SK13
	-120		120		90		42.0			1.6	
	-150		150		120		46.2			1.8	
	-SKT16C- 90	2.75~16.0	90	27	60	40	44.7	45~57	SKG16-12HG	1.5	SK16
	-120		120		90		48.9			1.7	
	-150		150		120		53.1			1.9	
	-SKT20C- 90	3.5~20.0	90	28.5	60	48.5	53.0	47~63	SKG20-18HG	1.6	SK20
-120	120		92		57.4		2.0				
-SKT25C- 90	7.5~25.4	90	31	62.6	55	59.5	60~65	SKG25-18HGD	1.8	SK25	
-120		120		92.2		59.3			2.4		
No.50	MBT50-SKT 6C-105	0.7~6.0	105	19.8	62	19.5	25.5	26~31	SKG 6- 6HG	3.8	SK 6
	-165		165		122		33.8			4.0	
	-SKT10C-105	1.75~10.0	105	22	62	27.5	33.1	35~41	SKG10-10HG	4.2	SK10
	-165		165		122		41.5			4.6	
	-SKT13C-105	2.75~13.0	105	26	62	33	38.1	39~51	SKG13-10HG	4.5	SK13
	-165		165		122		46.5			4.9	
	-SKT16C-105	2.75~16.0	105	27	62	40	44.9	45~57	SKG16-12HG	4.7	SK16
	-165		165		122		53.3			5.1	
	-SKT20C-105	3.5~20.0	105	28.5	62	48.5	53.2	47~63	SKG20-18HG	4.3	SK20
	-165		165		122		61.6			5.0	
	-SKT25C-105	7.5~25.4	105	31	62	55	59.4	60~70	SKG25-24HG	5.2	SK25
	-165		165		122		67.8			5.6	

- ★ Collet, adjust screw (G No.) and GH Handle are available as an option.
- ★ Please refer P.43, P.44 for SK Collet and SK-AC Collet.  
The Code No. of the GH Handle is SKT6C-P: GH6, SKT10C-P: GH10, SKT13C-P: GH12, SKT16C-P: GH16, SKT20C-P: GH20, SKT25C-P: GH25
- ★ Please use P class collet or A type collet. P.175
- ★ All models are high pressure centre through tool coolant type.  
SKT6: φ4~φ6, SKT10: φ6~φ10, SKT16: φ10~φ16, SKT20: φ6~φ20, SKT25: φ16~φ25
- ★ Please add "F" for the flange through tool coolant type;  
e.g. MBT40-SK10F-90
- ★ Please refer P.52 for the adjust screw (G No.)

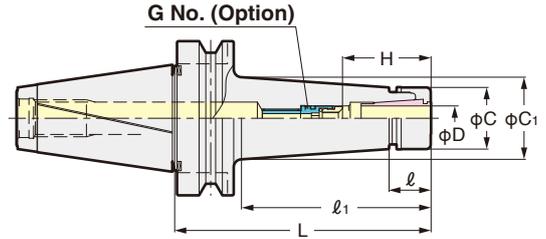


# 3LOCK MBT HIGH SPEED SLIM CHUCK

**NIKKEN**



**SKT-P**  
Centre Through  
MAX. 7MPa



High Speed **3LOCK** tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.  
When SK J type nut is used, the total chuck length will be extended by 6mm.

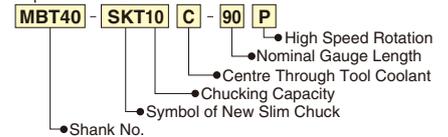
**PAT.**

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	SK Collet
No.40	MBT40-SKT 6C- 90P	0.7~6.0	90	19.8	60	19.5	25.2	26~31	SKG 6- 6HG	1.1	SK 6
	-120P		120		90		29.4			1.4	
	-SKT10C- 90P	1.75~10.0	90	22	60	27.5	32.9	35~41	SKG10-10HG	1.2	SK10
	-120P		120		90		37.1			1.4	
	-150P		150		120		41.3			1.6	
	-SKT13C- 90P	2.75~13.0	90	26	60	33	37.8	39~51	SKG13-10HG	1.4	SK13
	-120P		120		90		42.0			1.6	
	-150P		150		120		46.2			1.8	
	-SKT16C- 90P	2.75~16.0	90	27	60	40	44.7	45~57	SKG16-12HG	1.5	SK16
	-120P		120		90		48.9			1.7	
	-150P		150		120		53.1			1.9	
	-SKT20C- 90P	3.5~20.0	90	28.5	60	48.5	53.0	47~63	SKG20-18HG	1.6	SK20
	-120P		120		92		57.4			2.0	
	-SKT25C- 90P	7.5~25.4	90	31	62.6	55	59.5	60~65	SKG25-18HGD	1.8	SK25
-120P	120		92.2		59.3		2.4				
No.50	MBT50-SKT 6C-105P	0.7~6.0	105	19.8	62	19.5	25.5	26~31	SKG 6- 6HG	3.8	SK 6
	-165P		165		122		33.8			4.0	
	-SKT10C-105P	1.75~10.0	105	22	62	27.5	33.1	35~41	SKG10-10HG	4.2	SK10
	-165P		165		122		41.5			4.6	
	-SKT13C-105P	2.75~13.0	105	26	62	33	38.1	39~51	SKG13-10HG	4.5	SK13
	-165P		165		122		46.5			4.9	
	-SKT16C-105P	2.75~16.0	105	27	62	40	44.9	45~57	SKG16-12HG	4.7	SK16
	-165P		165		122		53.3			5.1	
	-SKT20C-105P	3.5~20.0	105	28.5	62	48.5	53.2	47~63	SKG20-18HG	4.3	SK20
	-165P		165		122		61.6			5.0	
	-SKT25C-105P	7.5~25.4	105	31	62	55	59.4	60~70	SKG25-24HG	5.2	SK25
	-165P		165		122		67.8			5.6	

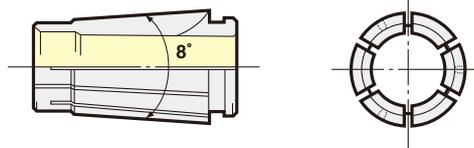
- ★ Collet, adjust screw (G No.) and GH Handle are available as an option.
- ★ Please refer P.43, P.44 for SK Collet and SK-AC Collet.  
The Code No. of the GH Handle is SKT6C-P: GH6, SKT10C-P: GH10, SKT13C-P: GH12, SKT16C-P: GH16, SKT20C-P: GH20, SKT25C-P: GH25
- ★ Please use P class collet or A type collet. P.175
- ★ All models are high pressure centre through tool coolant type.  
SKT6: φ4~φ6, SKT10: φ6~φ10, SKT16: φ10~φ16, SKT20: φ6~φ20, SKT25: φ16~φ25
- ★ Please refer P.52 for the adjust screw (G No.)



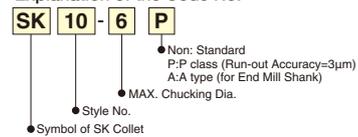
Explanation of the Code No.



# SLIM CHUCK COLLET



Explanation of the Code No.



**SK** “A” type SK collet (for End Mill Shank) are marked **●**. The acceptable shank tolerance is h8. Code No. is e.g. SK10-10A  
 “P” class SK collet (for drill) are available for all series. e.g. SK10-10P

Code No.	Chucking D
SK 6- 0.8	0.7 ~ 0.8
- 1	0.9 ~ 1.0
- 1.25	1.15~ 1.25
- 1.5	1.3 ~ 1.5
- 1.75	1.55~ 1.75
- 2	1.8 ~ 2.0
- 2.25	2.05~ 2.25
- 2.5	2.3 ~ 2.5
- 2.75	2.55~ 2.75
- 3	2.8 ~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
SK10- 2	1.75~ 2.0
- 2.25	2.0 ~ 2.25
- 2.5	2.25~ 2.5
- 2.75	2.5 ~ 2.75
- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
-10	9.5 ~10.0

Code No.	Chucking D
SK13- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~10.0
- 10.5	10.0~10.5
- 11	10.5~11.0
- 11.5	11.0~11.5
- 12	11.5~12.0
- 12.5	12.0~12.5
- 13	12.5~13.0

Code No.	Chucking D
SK16- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~10.0
- 10.5	10.0~10.5
- 11	10.5~11.0
- 11.5	11.0~11.5
- 12	11.5~12.0
- 12.5	12.0~12.5
- 13	12.5~13.0
- 13.5	13.0~13.5
- 14	13.5~14.0
- 14.5	14.0~14.5
- 15	14.5~15.0
- 15.5	15.0~15.5
- 16	15.5~16.0

Code No.	Chucking D
SK20- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~ 10.0
- 10.5	10.0~ 10.5
- 11	10.5~ 11.0
- 11.5	11.0~ 11.5
- 12	11.5~ 12.0
- 12.5	12.0~ 12.5
- 13	12.5~ 13.0
- 13.5	13.0~ 13.5
- 14	13.5~ 14.0
- 14.5	14.0~ 14.5
- 15	14.5~ 15.0
- 15.5	15.0~ 15.5
- 16	15.5~ 16.0
- 16.5	16.0~ 16.5
- 17	16.5~ 17.0
- 17.5	17.0~ 17.5
- 18	17.5~ 18.0
- 18.5	18.0~ 18.5
- 19	18.5~ 19.0
- 19.5	19.0~ 19.5
- 20	19.5~ 20.0

Code No.	Chucking D
SK25- 8	7.5~8.0
- 10	9.5~10.0
- 12	11.5~12.0
- 16	15.5~16.0
- 16.5	16.0~16.5
- 17	16.5~17.0
- 17.5	17.0~17.5
- 18	17.5~18.0
- 18.5	18.0~18.5
- 19	18.5~19.0
- 19.5	19.0~19.5
- 20	19.5~20.0
- 20.5	20.0~20.5
- 21	20.5~21.0
- 21.5	21.0~21.5
- 22	21.5~22.0
- 22.5	22.0~22.5
- 23	22.5~23.0
- 23.5	23.0~23.5
- 24	23.5~24.0
- 24.5	24.0~24.5
- 25	24.5~25.0
- 25.4	25.0~25.4

★SK6 collet with the special internal dia. is also available.



Collet removal (SKR-6) is supplied as standard only for SK6. SKR-10, SKR-16 and SKR-25 are available as an option. Collet removal is not necessary for the new types of collet (SK10 to SK25 collet including SK13 and SK20).

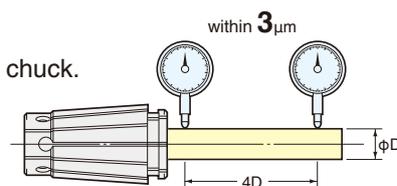
★Please refer P.44 for SK Coolant Collet (AC).

## “P” class SK collet for drill

It guarantees the Run-out accuracy within 3 micron at the nose (4D) from the chuck. Additionally Collet Set is also available.

## “A” type SK collet for endmill

The acceptable shank tolerance is h8.



SK Collet A Type
SK 6-3A, 4A, 5A, 6A
SK10-3A, 4A, 5A, 6A, 8A, 10A
SK13-3A, 4A, 5A, 6A, 8A, 10A, 12A, 13A
SK16-3A, 4A, 5A, 6A, 8A, 10A, 12A, 16A
SK20-4A, 5A, 6A, 8A, 10A, 12A, 16A, 20A
SK25-8A, 10A, 12A, 16A, 20A, 25A

SK Collet A Type (Inch)
SK 6 -1/8A, 3/16A
SK10 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A
SK13 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A
SK16 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A
SK20 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A, 3/4A
SK25 -3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 5/8A, 3/4A, 25.4A

# 3LOCK MBT MINI-MINI CHUCK ADVANCED ALPHA NEW NIKKEN

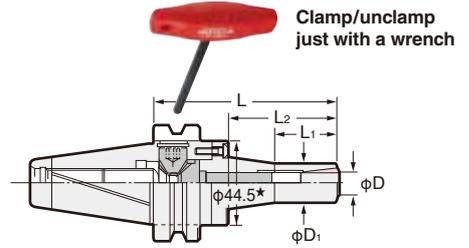
JAPAN PAT.



MMC

The best chuck for the small dia. cutting tool

30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-Out Accuracy : 3µm at 4D



Clamp/unclamp just with a wrench

★ MMC12 : φ52.4

High Speed 3LOCK tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system. PAT.

TAPER	Code No.	Chucking Range φD	φD <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	Collet	MAX. (min <sup>-1</sup> )	Weight (kg)
No.40	MBT40-MMC 4- 90-AA	1~ 4	15	90	30	43	MPK 4	30,000	1.2
	-MMC 8- 90-AA	2~ 8	20		36	42	PMK 8 VMK 8		1.4
	-120-AA			120	43	72	1.5		
	-MMC12- 90-AA	4~12	30	90	35	44	PMK12 VMK12		1.7
	-120-AA			120	60	74	1.8		
No.50	MBT50-MMC 4-105-AA	1~ 4	15	105	30	43	MPK 4	20,000	3.8
	-MMC 8-105-AA	2~ 8	20		36	42	PMK 8 VMK 8		4.4
	-135-AA			135	43	72			4.5
	-165-AA	165	102	4.6					
	-MMC12-105-AA	4~12	30	105	35	44	PMK12 VMK12		4.6
	-135-AA			135	60	74			4.7
	-165-AA	165	70	104	4.8				

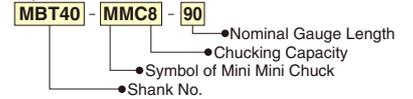
★Wrench is supplied as standard.

★MPK, PMK, VMK collet is available as an option. Please refer P.38

★Please add "C" for the centre through tool coolant type. e.g. MBT40-MMC8C-90-AA

★Please add "F" for the flange through tool coolant type; MBT40-MMC 8F- 90-AA,120-AA MBT50-MMC 8F-105-AA,135-AA,165-AA  
-MMC12F- 90-AA,120-AA -MMC12F-105-AA,135-AA,165-AA

Explanation of the Code No.

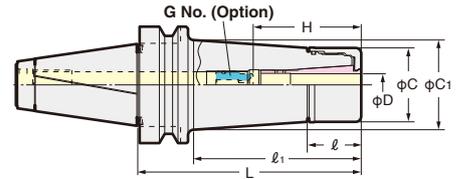


# 3LOCK MBT VC HOLDER NIKKEN



VC

Centre Through  
MAX. 7MPa



High Speed 3LOCK tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system. PAT.

TAPER	Code No.	D	L	l	l <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	MAX. (min <sup>-1</sup> )	Collet
No.40	MBT40-VC 6- 60	2.0~6.0	60	23	30	27.5	30.0	35~45	VCG 6- 8A	1.1	30,000	VCK 6
	- 90		90		60		32.7			1.3		
	-120		120		90		36.9			1.5		
	-VC13- 60	3.0~12.0	60	31	40.3	1.2	VCG13-15A	1.5				
	- 90		90	60	44.3	1.9						
-120	120	90	48.5	1.5								
No.50	MBT50-VC 6-105	2.0~6.0	105	23	62	27.5	33.0	35~45	VCG 6- 8A	3.9	20,000	VCK 6
	-135		135		92		37.1			4.1		
	-165		165		122		41.3			4.4		
	-VC13-105	3.0~12.0	105	62	44.6	4.1	VCG13-15A	4.1				
	-135		135	92	48.8	4.5						
	-165		165	122	53.0	4.9						

★Collet, adjust screw (G No.) and GH Handle are available as an option. The Code No. of the GH Handle is VC6: GH10, VC13: GH16

★When the axial stopper is required, please use Adjust Screw (G No.)

★MBT40-VC 6-150, MBT40-VC13-150, MBT50-VC13- 90, -120 are available as semi-standard.

★TiN Bearing Nut is supplied as standard.

★Please add "-RP" at the end of Code No. for Rust Proof Treatment VC Holder. e.g. MBT40-VC13-60-RP

★Please use VC J type Nut & Cap for Centre Through Coolant.

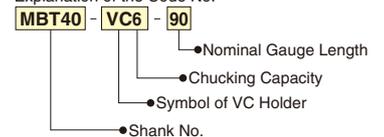
When VC J type Nut is used, the total holder length will be extended to 6mm.

★Please refer P.36 for VCK collet.



Please refer P.48

Explanation of the Code No.



# 3LOCK ZMAC ADVANCED BORING ARBOR (ZMAC-V)

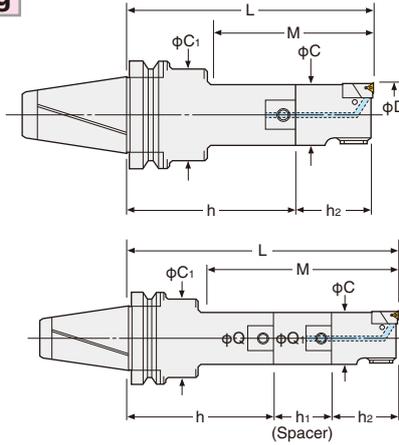
**NIKKEN**

PAT.

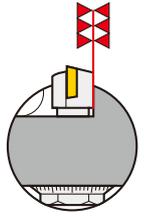
Boring for Finishing



**ZMAC-V**  
Photo shows ZMAC $\alpha$ -V.



No Micro Vibration due to Double-Contact Support of Cartridge. Long Tool-Life & High Accuracy.

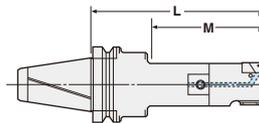


Only for ZMAC16-V

All codes shown are for heads with triangular inserts For heads with rhomboid inserts please add the letter "R" to the code No. e.g. MBT40-ZMAC32 R -150V

TAPER	Code No. MBTNo.- Min.D - L	Boring Range D	Boring Depth M	Cupling Dia M	C	C1	P.119		Weight (kg)
							Head No. Q- Min.D -h2	Insert No.	
No.40	MBT40-ZMAC 16-125V, 135V	15.9~20.2	38, 48	12	15	24	12-ZMAC16-45V, 55V		1.9, 1.9
	-ZMAC 20-120V, 135V, 150V	19.8~25.2	45, 67, 75	9	19	30	9-ZMAC20-40V	3MP-C,B	1.9, 1.9, 2.0
	-ZMAC 25-120V, 150V, 165V	24.8~32.2	52, 90, 97	12	24	35	12-ZMAC25-40V		2.0, 2.1, 2.1
	-ZMAC 32-150V, 180V, 195V	31.8~42.2	77, 110, 122	16	31	42	16-ZMAC32-55V	4MP-C,B	2.5, 2.7, 2.7
	-ZMAC 42-150V, 180V, 210V	41.8~55.2	97, 130, 157	20	40	50	20-ZMAC42-70V	6MP-C,B	3.0, 3.2, 3.5
	-ZMAC 55-165V, 210V, 225V	54.8~70.2	135, 180, 195	26	53	50	26-ZMAC55-70V		3.9, 4.6, 4.6
	-ZMAC 70-165V, 180V, 225V	69.8~85.2	165, 180, 225	34	67	64	34-ZMAC70-70V		5.4, 5.8, 6.8
	-ZMAC 85-195V	84.8~100.2	195	42	83	62	42-ZMAC85-100V		9.0
No.50	MBT50-ZMAC 16-140V, 150V	15.9~20.2	38, 48	12	15	24	12-ZMAC16-45, 55V		4.7, 4.7
	-ZMAC 20-150V, 165V, 180V	19.8~25.2	45, 67, 75	9	19	40	9-ZMAC20-40V	3MP-C,B	4.8, 4.8, 4.9
	-ZMAC 25-135V, 165V, 180V	24.8~32.2	52, 90, 97	12	24	44	12-ZMAC25-40V		4.8, 4.8, 4.9
	-ZMAC 32-180V, 210V, 225V	31.8~42.2	77, 110, 122	16	31	50	16-ZMAC32-55V	4MP-C,B	5.5, 5.6, 5.7
	-ZMAC 42-180V, 195V, 225V, 240V	41.8~55.2	97, 130, 142, 157	20	40	60	20-ZMAC42-70V	6MP-C,B	6.0, 6.0, 6.4, 6.5
	-ZMAC 55-210V, 240V, 270V	54.8~70.2	117, 182, 177	26	53	65	26-ZMAC55-70V		7.5, 7.6, 8.1
	-ZMAC 70-240V, 270V, 300V	69.8~85.2	190, 220, 250	34	67	80	34-ZMAC70-70V		10.0, 10.6, 11.5
	-ZMAC 85-225V, 290V, 315V	84.8~100.2	182, 247, 272				42-ZMAC85-100V		12.5, 15.0, 16.0
	-ZMAC100-225V, 290V*	99.5~140.5	225, 290	42	83	83	42-ZMAC100-100V		13.8, 16.5
-ZMAC140-225V, 290V*	139.5~180.5					42-ZMAC140-100V	14.6, 17.3		

- ★MIN. dial readout : ZMAC25-V & smaller is 0.02mm on diameter. ZMAC32-V and larger are 0.01mm on diameter.
- ★"C" grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron. Please refer P.117 for cutting condition.
- ★Please refer P.179 for Shank, and P.102 for Spacer, and P.87 for Head.
- ★Centre Through Tool Coolant function is available as standard.
- ★When L length is required longer than standard, please specify boring depth M.
- ★\* : MBT50-ZMAC100-325V, 375V, 425V, 475V are also available.  
MBT50-ZMAC140-325V, 375V, 425V, 475V



High Pressure Coolant Through Tool

**High Speed Boring ZMAC $\alpha$ -V**  
Special Hardened Light Alloy Metal Head with Balancing for Anti-Vibration.  
MAX12,000min<sup>-1</sup>

**ZMAC-V for Multi-Stage Boring Bar**

Please contact us for the special boring bar.



Photo. shows NC5 shank.

Please add "AA" at the end of Code No. for the boring arbor with ZMAC $\alpha$ -V head. P.88 e.g. MBT40-ZMAC42-150AAV

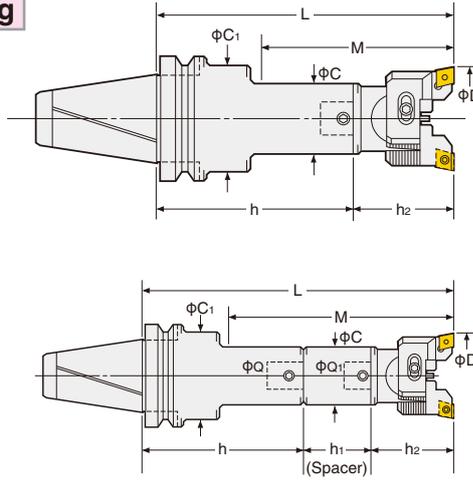
# 3BLOCK BALANCE-CUT BORING ARBOR

**NIKKEN**

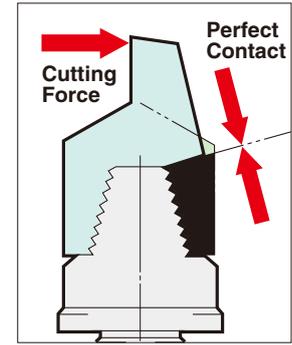


RAC

**Boring for Roughing**



**Power of Shoulder Support**

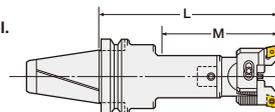


3Block

TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C1	P.74		Weight (kg)
							Head No.	Insert No.	
	MBTNo.- Min.D -L						Q- Min.D -h2		
No.40	MBT40-RAC 25-135E, 165E, 180E	25~32	67, 105, 112	12	24	35	12-RAC 25- 55E	CC07-C	2.0, 2.1, 2.1
	-RAC 32-150E, 180E, 195E	32~45	77, 110, 122	16	31	42	16-RAC 32- 55E	CC08-C	2.4, 2.6, 2.6
	-RAC 43-150E, 180E, 210E	43~55	97, 130, 157	20	40	50	20-RAC 43- 70E	CC12-C	2.7, 2.9, 3.2
	-RAC 53-165E, 210E, 225E	53~70	135, 180, 195	26	50	50	26-RAC 53- 70E		2.5, 3.3, 3.2
	-RAC 70-180E, 195E, 240E	70~100	180, 195, 240	34	64	64	34-RAC 70- 85E		4.8, 5.2, 6.2
	-RAC100-195E	100~130	195	42	83	62	42-RAC100-100E		6.8
No.50	MBT50-RAC 25-150E, 180E, 195E	25~32	67, 105, 112	12	24	44	12-RAC 25- 55E	CC07-C	4.7, 4.9, 4.8
	-RAC 32-180E, 210E, 225E	32~45	77, 110, 122	16	31	50	16-RAC 32- 55E	CC08-C	5.4, 5.6, 5.6
	-RAC 43-180E, 195E, 225E, 240E	43~55	97, 130, 142, 157	20	40	60	20-RAC 43- 70E	CC12-C	5.7, 5.8, 6.1, 6.2
	-RAC 53-210E, 240E, 270E	53~70	117, 182, 177	26	50	65	26-RAC 53- 70E		6.9, 7.0, 7.6
	-RAC 70-255E, 285E, 315E	70~100	205, 235, 265	34	64	80	34-RAC 70- 85E		9.5, 9.9, 10.9
	-RAC100-225E, 290E, 325E *	100~130	225, 290, 325	42	83	83	42-RAC100-100E		12.5, 12.5, 16.5

- ★“C” grade (Coated) inserts are supplied as standard with the head. P.74 Please refer P.116 for cutting condition.
- ★Please refer P.179 for base holder, P.102 for spacer and P.79 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. MBT40-RAC53-165E-C
- ★Cartridges & Insert tips for the Heavy Duty Boring of Iron and Cast Iron (No letter), for Aluminum (A), and for Through Hole & Multiple Sheets (K) are available. Please refer P.80 for cartridges. Please add the letter “No letter”, “A” or “K” at the end of Code No. e.g. MBT40-RAC53-165A
- ★When L length is required longer than standard, please specify the boring depth M.
- ★Cartridge & Insert for Alloy Steel (E) is recommended for boring on steel and stainless steel.
- ★\* : MBT50-RAC100-375E, 425E and 475E are also available.

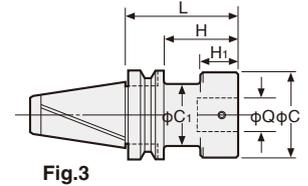
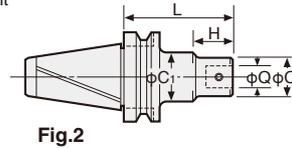
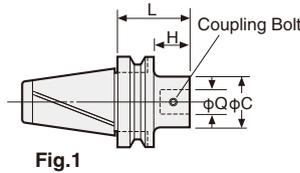
Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.71, P.72



**High Pressure Coolant Through Tool**

# 3LOCK MODULAR TYPE BORING BASE HOLDER

**NIKKEN**



Q

**3LOCK** tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

TAPER	Code No.	Coupling φQ	L	C	C <sub>1</sub>	H	H <sub>1</sub>	Coupling Bolt No.	Fig.	Weight (kg)
No.40	MBT40-Q26- 50,95,140	26	50, 95,140	50	-	20,65,110	-	B26N	1	1.1, 1.7, 2.5
	(MIT40)-Q34- 95,110	34	95,110	64	62	68,83	55,70	B34	3	2.2, 2.6
	-Q42- 95	42	95	83	62	68	55	B42		2.8
No.50	MBT50-Q26- 65,140,170N	26	65,140,170	50	65	27,47,112	-	B26N	1,2,2	3.7, 5.3, 5.4
	(MIT50)-Q34-140,170,200	34	140,170,200	64	80	102,120,150	-	B34		5.6, 6.5, 7.1
	-Q42-125,190	42	125,190	83	-	87,152	-	B42	1	6.5, 9.1

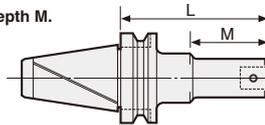
★φC of Q26 base holder has been increased from 45mm to 50mm due to improvement of its rigidity.

★All base holders have a centre through-tool coolant hole.

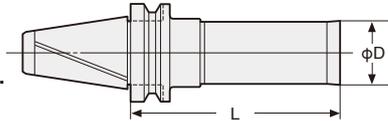
★The Coupling screw & wrench are supplied as standard.

★When L length is required longer than standard, please specify the boring depth M.

★MBT50-Q42-225A, 275A, 325A and 375A are the arbor with tapered shape.



Q No.



Please specify ;  
· Hardness of arbor : Raw or HRC40±2

· φD×L

e.g. φD=50mm, L=200mm MBT50-BLK50-200

★Blank arbor with **3LOCK** shank is available.  
MIN. order quantity of blank arbor is 5 off.

# 3LOCK DJ BORING HEAD with DJ BORING BIT

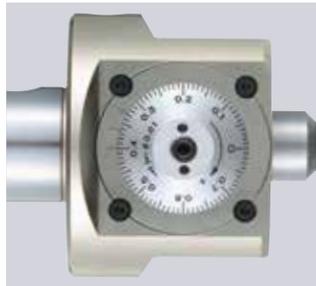
**NIKKEN**

High Pressure Coolant Through type is available Please contact with us.

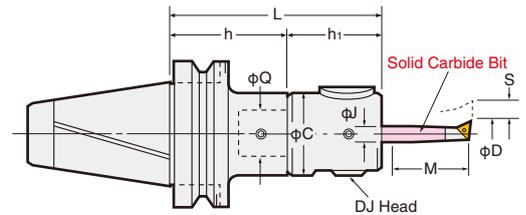
Easy to Set **Micron Accuracy**



DJ



▲1Graduation:0.01mm on dia.



TAPER	Code No.	Boring Range	Boring Depth	L	C	Bit Hole Size	Shank Code No.	Head Code No.	Bit Stroke	Insert Tip Code No.
	MBTNo.-MinD-L	D	M			J				
No.40	MBT40-DJ3- 90A	3~28	14~ 80	90	50	10	MBT40-Q26- 50	Q26-DJ3-40A	5.2	J10
	(MIT40) -135A			135						
	-DJ8- 94AN	3~50	14~130	94	59	16	MBT40-Q26- 50	-DJ8-44AN	6.0	J16
	-139AN			139						
No.50	MBT50-DJ3-105A	3~28	14~ 80	105	50	10	MBT50-Q26- 65	Q26-DJ3-40A	5.2	J10
	(MIT50) -210A			210						
	-DJ8-109AN	3~50	14~130	109	59	16	MBT50-Q26- 65	-DJ8-44AN	6.0	J16
	-214AN			214						

★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.

★Each boxed set of DJ3 and DJ8 Boring Bars include 4 pcs of DJ Boring Bits as standard.

Bits included for MBT40-DJ8-94A : J16-8-40, J16-18-80, J16-28-85, J16-38-85

Bits included for MBT40-DJ8-94AN : J16-8-40, J16-18-80, J16-28-85, J16-38-85

★DJ Boring Bar without Boring Bits is also available. Please add "-BD" at the end of Code No. e.g. MBT40-DJ3-90A-BD

★Shank and DJ Head (including Boring Bits) are delivered in separate packages.

★Please refer P.106 for Boring Bits. Please refer P.118 for cutting condition.

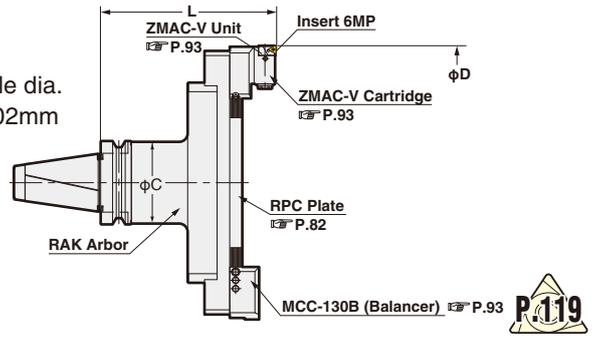
# 3LOCK BALANCE-CUT BAC ADVANCED BORING ARBOR for LARGE DIA. NIKKEN



BAC-V

## For Finishing

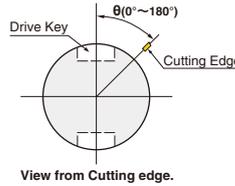
- Min. dial read out: main scale dia. 0.02mm, sub scale dia. 0.002mm
- Boring Dia:  $\phi 130 \sim 595\text{mm}$



Boring Dia:  $\phi 130 \sim 595\text{mm}$  for Finishing.

TAPER	Code.No	D		L	C	Arbor No.	RPC Plate No	Cartridge (Balancer)	Weight (kg)
		MIN.~MAX.							
No.40	MBT40 -BAC130-205V	130~195	205	205	61	MBT40-RAK-130A	RPC-130	MCCZ-130V (MCC-130B)	6.8
	(MIT40)-BAC180-205V	180~245					-180		7.8
No.50	MBT50 -BAC130-185V, 235V, 285V	130~195	185, 235, 285	285	90	MBT50-RAK-110A, -160A, -210A	RPC-130	MCCZ-130V (MCC-130B)	13.0, 14.5, 17.5
	(MIT50)-BAC180-185V, 235V, 285V	180~245					-180		13.5, 15.0, 18.0
	-BAC230-185V, 235V, 285V	230~295					-230		14.0, 15.5, 18.5
	-BAC280-185V, 235V, 285V	280~345	210 (220*)	98	MBT50-RAK330-125 MIT50-RAK330-135	-280	Insert Tip 6MP	14.5, 16.0, 19.0	
	-BAC330-210V*	330~395				RPC-330		16.2	
	-BAC380-210V*	380~445				-380		16.5	
	-BAC430-210V*	430~495				-430		17.5	
	-BAC480-210V*	480~545				-480		18.5	
	-BAC530-210V*	530~595	-530	19.5					

- ★“C” grade (Coated) Inserts are supplied as standard. Please refer P.117 for cutting condition.
- ★Unit “M5HZ-55V” is provided as standard, please refer P.82 for Arbor (RAK) and Plate (RPC).
- ★Arbor, Plate and Cartridge are delivered in separate packages.
- ★When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★The location of cutting edge is same as drive key in standard.
- The different location is available, please specify  $\theta$  in Code No. e.g. MBT50-BAC180-235V (90°)
- ★The boring arbors marked\*with MIT50, L (gauge length) is 220. e.g. MIT50-BAC330-220V



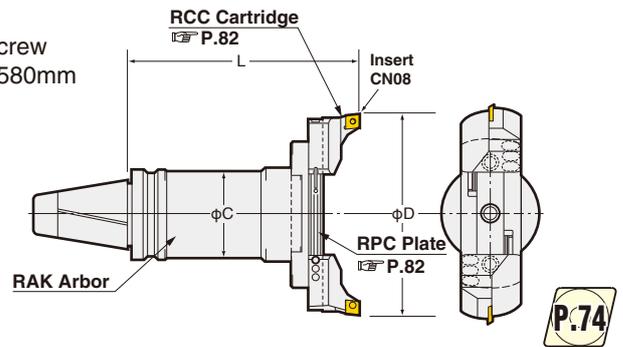
# 3LOCK BALANCE-CUT RAC BORING ARBOR for LARGE DIA. NIKKEN



RAC

## For Roughing

- With slight adjust screw
- Boring Dia:  $\phi 130 \sim 580\text{mm}$



Boring Dia:  $\phi 130 \sim 580\text{mm}$  for Roughing.

TAPER	Code.No	D		L	C	Arbor No.	RPC Plate No.	Cartridge No. for Large dia.	Weight (kg)
		MIN.~MAX.							
No.40	MBT40 -RAC130-205	130~180	205	205	61	MBT40-RAK-130A	RPC-130		6.8
	(MIT40)-RAC180-205	180~230					-180		7.8
No.50	MBT50 -RAC130-185, 235, 285	130~180	185, 235, 285	285	90	MBT50-RAK-110A, -160A, -210A	RPC-130	For Heavy Duty Boring of Iron and Cast Iron	11.3, 12.8, 15.8
	(MIT50)-RAC180-185, 235, 285	180~230					-180		11.8, 13.3, 16.3
	-RAC230-185, 235, 285	230~280					-230		12.3, 13.8, 16.8
	-RAC280-185, 235, 285	280~330	210 (220*)	98	MBT50-RAK330-125 MIT50-RAK330-135	-280	RCC-130 x2	12.8, 14.3, 17.3	
	-RAC330-210*	330~380				RPC-330		15.5	
	-RAC380-210*	380~430				-380		16.5	
	-RAC430-210*	430~480				-430		17.5	
	-RAC480-210*	480~530				-480		18.5	
	-RAC530-210*	530~580	-530	19.5					

- ★The Code No. on above table are the boring arbors with RCC-130 cartridge (Insert tip: CN08) the Heavy Duty Boring of Iron and Cast Iron. Please refer P.116 for cutting condition.
- ★Boring arbor with cartridges & insert for Steel, Stainless Steel and Cast Iron (E), for Aluminum (A) and for Through Hole & Multi Sheets (K) are available. Please refer P.82 for cartridges. e.g. MBT50-RAC130-185E
- ★Please refer P.82 for Arbor (RAK) and Plate (RPC).
- ★Arbor, Plate and Cartridge are delivered in separate packages.
- ★When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★The location of cutting edge is same as drive key in standard.
- The different location is available, please specify  $\theta$  in Code No. e.g. MBT50-RAC180-235 (90°)
- ★The boring arbors marked\*with MIT50, L (gauge length) is 220. e.g. MIT50-RAC330-220

# 3LOCK MBT FACE MILL ARBOR / SHOULDER CUTTER ARBOR



## FMA

Photo. shows with face mill cutter.

## JIS B4113 Face Mill Cutter

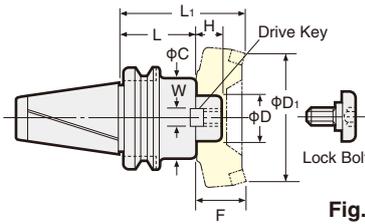


Fig.1

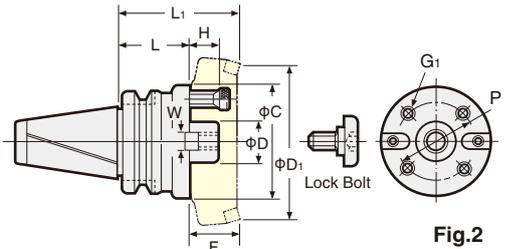


Fig.2

**3LOCK** tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

TAPER	Code No. ( $\phi D$ -L)	Arbor			Weight (kg)	With Cutter			Drive Key	Lock Bolt	Fig.
		H	C	W		L <sub>1</sub>	D <sub>1</sub>	F			
No.40	MBT40-FMA25.4 - 45, 90	22	50	9.5	1.5, 3.1	95,140	80	50	FW 5	FM12	1
	-FMA31.75 - 45, 75	30	60	12.7	1.7, 3.1	105,135	100		FW13	FM16	
	-FMA38.1 - 60	34	80	15.9	2.9	120	125	60	FW18	FM20	
No.50	MBT50-FMA25.4 - 45, 90,150	22	58	9.5	3.7, 4.6, 5.5	95,140,200	80	50	FW 5	FM12	1
	-FMA31.75 - 45, 75,105	30	70	12.7	4.5, 5.3, 6.1	105,135,165	100		FW12,13	FM16	
	-FMA38.1 - 45, 75	34	80	15.9	4.3, 5.6		125	60	FW18,19	FM20	
	-FMA50.8 - 45, 75	36	100	19	4.9, 6.8	105,135	160		FW23,24	FM24	
	-FMA47.625- 75*	38	128.57	25.4	7.7	135	200		FW26	*	

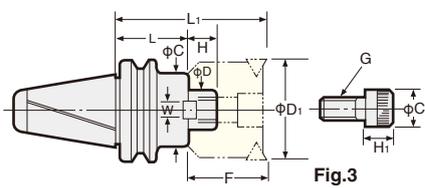


Fig.3

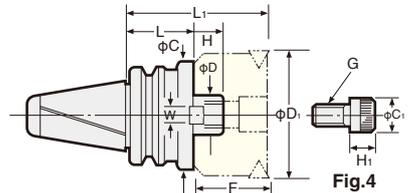


Fig.4

**3LOCK** tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

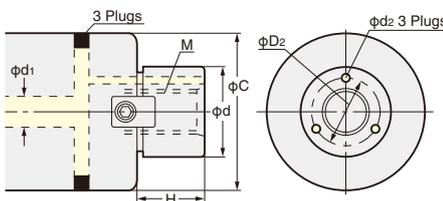
## FMC

TAPER	Code No. ( $\phi D$ -L)	Arbor			Weight (kg)	With Cutter				C <sub>1</sub>	H <sub>1</sub>	Fig.
		H	C	W		L <sub>1</sub>	D <sub>1</sub>	F	G Cap Bolt			
No.40	MBT40-FMC22-45, 90	18	45	10	1.3, 2.0	85, 130	50	40	M10×30	16	10	3
	-FMC27-60, 90	20	60	12	1.5, 2.2	110, 140	80		M12×35	18	12	4
	-FMC32-60, 75	22	85	14	2.3, 2.6	110, 125	125	50	M16×35	24	16	
No.50	MBT50-FMC22-60,105,150	18	45	10	4.2, 4.7, 5.3	100,145,190	50	40	M10×30	16	10	3
	-FMC27-45, 90,150	20	70	12	4.1, 5.5, 7.3	95,140,200	80		M12×35	18	12	
	-FMC32-45, 75,105	22	85	14	4.2, 5.5, 7.0	95,125,155	125	50	M16×35	24	16	

- ★ Drive keys, L wrench and bolt are supplied as standard.
- ★ The arbor weight is only for the arbor.
- ★ The different type of the cap bolt may be used for the recent cutter. Please check the specification.
- ★ The arbor marked \* requires 4 fixing bolts (FMA47.625 : M16, P=101.6)
- ★ Extended length is available as an option. MBT50-FMA25.4 -200, 250, ...500  
-FMA31.75-150, 200, ...500  
-FMA38.1 -150, 200, ...500



## High Feed Cutter Arbor with Coolant Hole



Code No.	Cutter Dia.	$\phi d$	$\phi C$	M	H	Coolant Hole		
						$\phi D_2$	$\phi d_1$	$\phi d_2$
FMH22 (22.225)	$\phi 50, \phi 52$	22(22.225)	47	M10×1.5	18(17)	16	6~8	3
	$\phi 63, \phi 66$		60					
FMH27 (25.4)	$\phi 80$	27(25.4)	76(70)	M12×1.75	20(22)	19.5(18.5)	8~10	3.5
FMH32 (31.75)	$\phi 100$	32(31.75)	96	M16×2.0	22(30)	24	10~13	4
FMH40 (38.1)	$\phi 125$	40(38.1)	100	M20×2.5	26(34)	30(29)	10~15	5
FMH50.8	$\phi 160$	50.8		M24×3.0	36	37.5	15~20	7

★ Fixing dimension is basically based on FMA/FMC. ★ The combination of the other cutter dia. are also available.

**3LOCK** tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

## FMH High Feed Cutter Arbor with Coolant Hole

TAPER	Code No. ( $\phi D$ - $\phi C$ -L)	Arbor						Weight (kg)	Drive Key	Lock Bolt	G Cap Bolt
		H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>				
No.40	MBT40-FMH22 - 47(60)-45	18	47(60)	10	16		10	1.3(1.4)	FW 8		M10×30
	-FMH27 - 60(76)-60	20	60(76)	12	18		12	1.8(2.2)	FW11		M12×35
	-FMH32 - 96-60	22	96	14	24		16	2.9	FW16		M16×35
	-FMH40 -100-60	26	100	16	50	27	14	6	3.1	FW22	FM20
No.50	MBT50-FMH22 - 47(60)-60	18	47(60)	10	16		10	4.2(4.5)	FW 8		M10×30
	-FMH27 - 60(76)-45	20	60(76)	12	18		12	3.9(4.1)	FW10		M12×35
	-FMH32 - 96-45	22	96	14	24		16	4.2	FW15		M16×35
	-FMH40 -100-45	26		16	50	27	6	5.1	FW20	FM20	
	-FMH50.8 -100-45	36	100	19	65	37	14	10	4.4	FW23	FM24

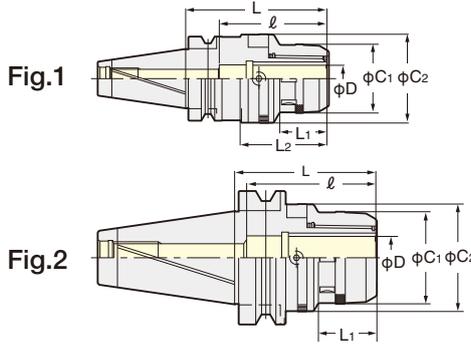
★ FMH22.225, FMH25.4, FMH31.75, FMH38.1 are also available.

★ For FMH22, there are two types of  $\phi C$ ,  $\phi 47$  and  $\phi 60$ .  
For FMH27, there are two types of  $\phi C$ ,  $\phi 60$  and  $\phi 76$ .

# 3LOCK MBT ZERO FIT TYPE MILLING CHUCK



CZF



Explanation of the Code No.

**MBT40 - CZF20 - 105**

- Nominal Gauge Length
- Chucking Capacity  $\phi D$
- Zero Fit Type Milling Chuck
- Shank No.

**3LOCK** tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

PAT.

TAPER	Code No.	C1	C2	L	L1	L2	l	Weight(kg)	Fig.	Collet
No.40	MBT40-CZF20-105, 120	51.5	66.5	105, 120	35	64.5	80	2.1, 2.5	1	KM20 CCK20
	-CZF25-105, 120	59.5	74.5			68		2.4, 2.9		KM25 CCK25
	-CZF32-120	69	80.5	120	42	81		105		2.8
No.50	MBT50-CZF20-105, 165	51.5	66.5	105, 165	35	-	80	4.6, 6.0	2	KM20 CCK20
	-CZF25-105, 165	59.5	74.5			-		5.0, 6.8		KM25 CCK25
	-CZF32-105, 165	69	80.5	42	105	5.3, 7.4		KM32 CCK32		

★Spanner is available as an option.

CZF20 type : 9HC22, CZF25 type : 9HC25, CZF32 type : 9HC32

★Wrench to adjust run-out(9ZFL) is available as an option.

Wrench to adjust

9ZFL



★Multi-Cam style is available. e.g. MBT40-CZF32-120-C3. (3 Cams) Please contact us for more detail.

★Please note that the acceptable shank tolerance is  $h_6 \sim h_7$ .

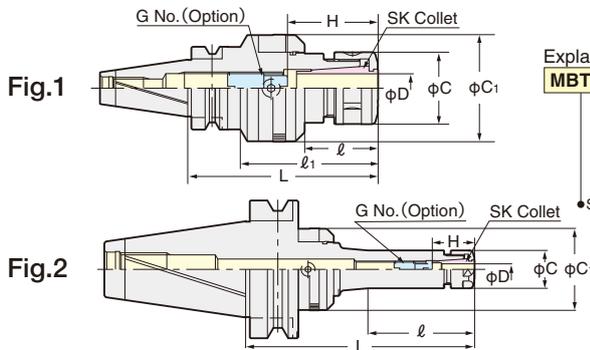
★Please add "P" at the end of Code No. for the high speed type. e.g. MBT40-CZF25-105P

★Please refer P.33, P.34 for KM, CCK collet.

# 3LOCK MBT ZERO FIT TYPE SLIM CHUCK



SZF



Explanation of the Code No.

**MBT40 - SZF10 C - 90**

- Nominal Gauge Length
- High Pressure Centre Through
- Chucking Capacity
- Zero Fit Type Slim Chuck
- Shank No.

**3LOCK** tooling (MBT) can be used as the triple contact tooling on the M/C where spindle is BT double face contact system.

PAT.

TAPER	Code No.	D	L	l	l1	C	C1	H	G No.(Option)	Weight(Kg)	Fig.	Collet
No.40	MBT40-SZF 6C- 90,150	0.7~6.0	90, 150	37, 60	-	19.5	40.5, 48.5	26~31	SKG 6- 6HG	1.3, 1.7	2	SK 6
	-SZF10C- 90,150	1.75~10.0		37, 97		27.5	48.5	35~41	SKG10-10HG	1.5, 1.9		SK10
	-SZF16C- 90,150	2.75~16.0	40	59.5	45~57	SKG16-12HG	1.8, 2.2	SK16				
	-SZF25C-120,150	7.5~25.4	120, 150	55, 86	84, 114	55	66.5	60~65	SKG25-18HGD	2.4, 2.9	1	SK25
No.50	MBT50-SZF 6C-105,165	0.7~6.0	105, 165	41, 63	-	19.5	40.5, 59.5	26~31	SKG 6- 6HG	4.0, 4.2	2	SK 6
	-SZF10C-105,165	1.75~10.0		41, 101		27.5	48.5	35~41	SKG10-10HG	4.5, 4.9		SK10
	-SZF16C-105,165	2.75~16.0	40	59.5	45~57	SKG16-12HG	5.0, 5.4	SK16				
	-SZF25C-135,165	7.5~25.4	135, 165	71, 101	55	66.5	60~70	SKG25-24HG	5.8, 6.0	SK25		

★Adjust screw(G No.), wrench to adjust run-out(9ZFL) and SKL spanner are available as an option. SZF6C: SKL-6W, SZF10C: SKL-10, SZF16C: 9HC16, SZF25C: 9HC25

★Please use "P" class or "A" type SK collet. P.175

★For centre through coolant application please use SK J type nut and cap for your preference. Please note that the length of J type nut is 6mm longer than the standard SK Nut. P.49

★For High Speed type, Code No. is "SZF-P". e.g. MBT40-SZF10C-90P

In this case, GH Handle is required. P.48

★Multi-Cam style is available. e.g. MBT40-SZF16C-90-C3. (3 Cams) Please contact us for more detail.

• Drill chuck, side lock holder or morse taper sleeve are not supplied with 3LOCK shank. To prevent the swarf contamination to the gap between spindle flange and tool flange, these kinds of chucks with 2LOCK shank is available.

# 3LOCK SPINDLE FLANGE CLEANER

**NIKKEN**

JAPAN PAT.P

Spindle Flange Cleaner for **3LOCK** Tooling and NC5 Tooling.

■ Let's clean your spindle flange just before the fine machining to keep ATC repeatability accuracy higher.

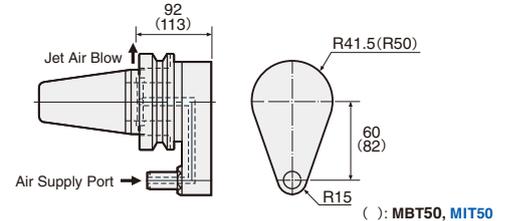
Do not rotate your spindle, just supply the 0.5MPa dry air from the stopper block in approx. 30sec., then the intermittent jet air blow from the spindle flange cleaner will clean your spindle flange surface.

**MBT40-CLEF- 92**

**MBT50-CLEF-113**

**MIT40-CLEF- 92**

**MIT50-CLEF-113**



**CLEF**



★Stopper Block is not included. When ordering, please specify the name of M/C builder, model No. and the drawing of the spindle flange. P.282

# SPINDLE TAPER CLEANER

**NIKKEN**

■ Let's clean your spindle taper just before the fine machining.

Rotate your spindle at 50~150min<sup>-1</sup>, then the spindle cleaner will rotate to clean your spindle taper.

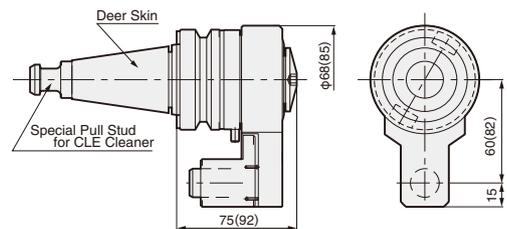
Please be careful, MAX. rotation speed of your spindle is 150min<sup>-1</sup>.

**BT40-CLE-100**

**BT50-CLE-120**

**IT40-CLE-100**

**IT50-CLE-120**



**CLE**



★Special Pull Stud for CLE Cleaner is supplied as standard. Please specify the Pull Stud Code No.

★Stopper Block is not included. When ordering, please specify the name of M/C builder, model No. and the drawing of the spindle flange. P.308

# AUTOMATIC OIL SUPPLY HOLDER

**NIKKEN**

■ For Improvement of Tap run-out accuracy and extended tap life.

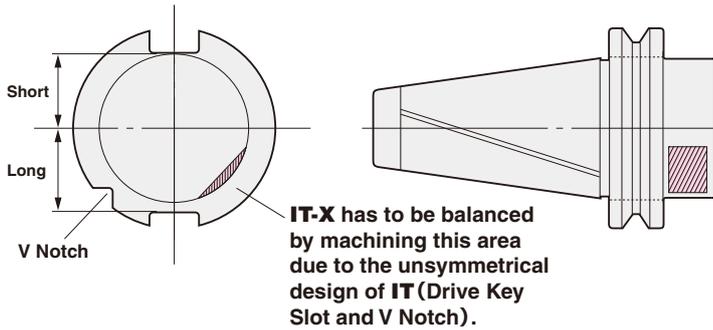
Automatic oil or grease supply of a required amount can be done with this holder before your tapping operation.

**ZP**



TAPER	Code No.	φD <sub>1</sub>	φD <sub>2</sub>	L	Capacity of tank	Discharge /Stroke	Weight (Kg)	Nozzle (Standard Accessories)
<b>No.30</b>	<b>BT30-ZP60-200</b>	60	64	200	100cm <sup>3</sup>	0~3.0cm <sup>3</sup>	1.2	ZP-10, ZP-10G, ZP-20
<b>No.40</b>	<b>BT40-ZP80-279</b>	80	84	279	300cm <sup>3</sup>	0~3.5cm <sup>3</sup>	3.3	ZP-10, ZP-10G, ZP-20, ZP-30
<b>No.50</b>	<b>BT50-ZP95-312</b>	96	100	312	500cm <sup>3</sup>	0~3.5cm <sup>3</sup>	6.0	

## What is MIT Shank Tooling?



MIT Shank is **3LOCK SYSTEM** for IT shank. IT shank is based on ISO 7388/1-'83 (DIN69871-'90) and its flange has an unsymmetrical shape.

- Depth of Drive Key Slots are different.
- V Notch on one side.

Therefore, MIT shank Multi-Lock Milling Chuck, MINI-MINI Chuck, Slim Chuck and VC Holder have a flat cut just under the V flange for mass balancing as standard.

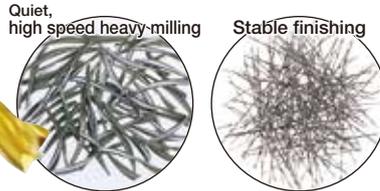
3LOCK

## 3LOCK MIT MULTI LOCK MILLING CHUCK



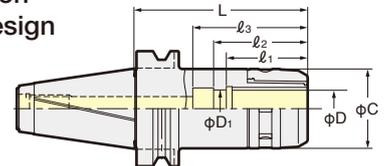
**C**  
Centre Through  
MAX. 7MPa

The cutting chips show us the actual machining capability.



### ANNIVERSARY Type

- Powerful gripping torque -
- High rigidity
- High precision
- Compact design



TAPER	Code No.	C <sub>1</sub>	D	D <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Collet	Weight (kg)	
No.40	MIT40-C12- 90	33	12	12	90	48	53	58	KM12 CCK12	1.6	
	-120*1				120					1.9	
	-C16- 60	44	16	16	60	51	58	65	KM16 CCK16	1.4	
					- 90*1					90	1.7
	-C20- 80	52	20	20	120	59	66	80	KM20 CCK20 CCNK20	2.0	
					- 80					80	1.6
					- 90					90	1.8
	-C25- 85	60	25	25	120	61	70	75	KM25 CCK25 CCNK25	2.2	
					- 85					85	2.1
					-120					120	2.5
-C32- 95*	64	32	25	95	67	82	-	KM32 CCK32 CCNK32	2.1		
				-105					105	2.5	
				-120					120	2.8	
				-120					120	2.8	
No.50	MIT50-C12-105	33	12	12	105	48	53	58	KM12 CCK12	4.0	
	-165*1				165					4.6	
	-C16-105	44	16	16	105	51	58	65	KM16 CCK16	4.2	
					-165*1					165	4.8
					-200*1					200	5.1
	-C20-105	52	20	20	105	59	66	80	KM20 CCK20 CCNK20	4.5	
					-165*1					165	5.1
					-200*1					200	5.7
	-C25-105	60	25	25	105	61	72	80	KM25 CCK25 CCNK25	4.8	
					-135*1					135	5.2
					-165*1					165	5.6
	-C32- 90	69	32	25	90	70	81	107	KM32 CCK32 CCNK32	4.3	
					-105					105	4.6
					-120					120	5.1
					-135					135	5.6
	-C42- 95*	86	42	42	165	74	80	85	KM42 CCK42 CCNK42	6.4	
					-95*					95	5.5
					-120*1					120	6.6
-135*1					135					7.2	
-165*1					165					8.6	

★Spanner is available as an option. C12(φ30) : 9HC12, C12A(φ33) : 9HC12A, C16:9HC16, C20:9HC20, C25:9HC25, C32&φC1=64:9HC25, C32:9HC32, C42:9HC42  
 ★Please note the acceptable shank tolerance is h7.  
 ★Please refer to P.172 for KM, CCK and CCNK collets.  
 ★For heavy duty milling, please grip the end mill shank longer than l<sub>1</sub>.  
 ★Stopper for direct chucking can not be used for MIT40-C32-95\* and MIT50-C42-95\* The Code No. of the stopper C20:9MC20, C25:9MC25, C32:9MC32, C42:9MC42  
 ★NK and CCNK Collet can not be used for MIT50-C42-95\*.  
 ★MIT Milling Chucks marked \*1 are available as an option.  
 ★MIT50-C32-200, 250 and MIT50-C42-200, 250 are available as an option.  
 ★C22 style is available.  
 ★Please add 'F' for the flange through tool coolant type;  
 MIT40-C20F- 90, MIT50-C20F-105  
 -C25F- 90, -C25F-105  
 -C32F-105, -C32F-105  
 -C42F-120

# 3LOCK MIT HIGH SPEED MILLING CHUCK



**NIKKEN**



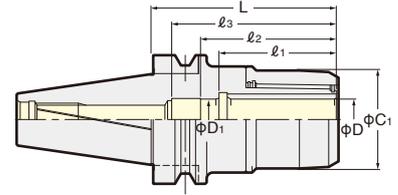
**C-G**

Centre Through  
MAX. 7MPa

**ANNIVERSARY Type**

– Powerful gripping torque –

- High rigidity
- High precision
- Compact design



High Speed **3LOCK** tooling (MIT) can be used as the triple contact tooling on the M/C where spindle is IT double face contact system. **PAT.**

TAPER	Code No.	C <sub>1</sub>	D	D <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	MAX. (min <sup>-1</sup> )	Collet	Weight (kg)
No.40	<b>MBT40-C12- 90G</b>	33	12	12	90	48	53	58	30,000	<b>KM12 CCK12</b>	1.6
	<b>-C16- 60G</b>	44	16	16	60	50	57	65	25,000	<b>KM16 CCK16</b>	1.4
	<b>-C20- 80G</b>	52	20	20	80	59	66	80	25,000	<b>KM20 CCK20 CCNK20</b>	1.6
	<b>-C25- 85G</b>	60	25	25	85	61	70	75	20,000	<b>KM25 CCK25 CCNK25</b>	2.1
	<b>-C32- 95G*</b>	64	32	25	95	67	82	-	20,000	<b>KM32 CCK32 CCNK32</b>	2.1
	<b>-105G</b>				105						81
No.50	<b>MBT50-C12-105G</b>	33	12	12	105	48	53	58	20,000	<b>KM12 CCK12</b>	4.0
	<b>-C16-105G</b>	44	16	16		51	58	65	20,000	<b>KM16 CCK16</b>	4.2
	<b>-C20-105G</b>	52	20	20		59	66	80	20,000	<b>KM20 CCK20 CCNK20</b>	4.5
	<b>-C25-105G</b>	60	25	25		61	72	80	20,000	<b>KM25 CCK25 CCNK25</b>	4.8
	<b>-C32- 90G*</b>	69	32	25	90	70	81	107	15,000	<b>KM32 CCK32 CCNK32</b>	4.3
	<b>-105G</b>				105						4.6
	<b>-120G</b>				120						5.1
	<b>-C42- 95P*</b>	86	42	42	95	74	80	85	15,000	<b>KM42 CCK42 CCNK42</b>	5.5

- ★Please note the acceptable shank tolerance is h<sub>6</sub>.
- ★Please refer P.172 for KM and CCK collet.
- ★GH Handle is available as an option. P.48
- C12G : GH12, C16G : GH16, C20G : GH20, C25G : GH25, C32G : GH32
- ★Spanner for C42P is 9HC42.
- ★Please note the acceptable shank tolerance is h<sub>7</sub>.
- ★Please refer P.172 for KM, CCK and CCNK collets.
- ★For heavy duty milling, please grip the end mill shank longer than l<sub>1</sub>.
- ★Stopper for direct chucking cannot be used for MIT40-C32-95\* and MIT50-C42-95\*  
The Code No. of the stopper C20:9MC20, C25:9MC25, C32:9MC32, C42:9MC42
- ★NK and CCNK Collet can not be used for MIT50-C42-95\*.



Explanation of the Code No.

**MIT40**

**-C20-**

**70**

**G**

- Symbol of High Speed
- Nominal Gauge Length
- Chucking Capacity
- Symbol of Milling Chuck
- Shank No.

# 3LOCK MIT MINI-MINI CHUCK ADVANCED ALPHA

**NEW**

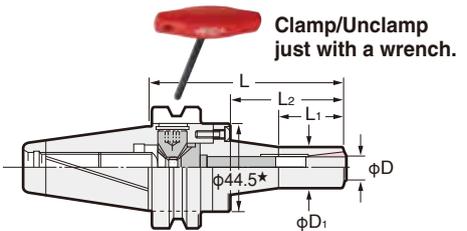
**NIKKEN**



Centre Through  
MAX. 7MPa

The best chuck for  
the small dia. cutting tool

MAX. 30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-Out Accuracy: 3μm at 4D



Clamp/Unclamp  
just with a wrench.

**MMC**

**PAT.** ★ : MMC12=φ52.4

TAPER	Code No.	Chucking Range φD	L	φD <sub>1</sub>	L <sub>1</sub>	Collet	MAX. (min <sup>-1</sup> )	Weight (kg)
No.40	<b>MIT40-MMC 8C- 90-AA</b>	2~ 8	90	20	33	<b>PMK 8</b>	30,000	1.4
	<b>-120-AA</b>		120		40	<b>PMK 8</b>		1.5
	<b>-MMC12C- 90-AA</b>	4~12	90	30	35	<b>PMK12</b>	30,000	1.7
	<b>-120-AA</b>		120		60	<b>VMK12</b>		1.8
No.50	<b>MIT50-MMC 8C-105-AA</b>	2~ 8	105	20	33	<b>PMK 8</b>	20,000	4.4
	<b>-135-AA</b>		135		40	<b>PMK 8</b>		4.5
	<b>-165-AA</b>		165		40	<b>PMK 8</b>		4.6
	<b>-MMC12C-105-AA</b>	4~12	105	30	35	<b>PMK12</b>	20,000	4.6
	<b>-135-AA</b>		135		60	<b>PMK12</b>		4.7
	<b>-165-AA</b>		165		70	<b>VMK12</b>		4.8

- ★Wrench is supplied as standard.
- ★MPK, PMK, VMK collet is available as an option. Please refer P.38
- ★Please add "F" for the flange through tool coolant type; MIT40-MMC 8F-90-AA,120-AA -MIT50-MMC 8F-105-AA,120-AA  
-MMC12F-90-AA,120-AA -MMC12F-105-AA,120-AA

# 3LOCK MIT SLIM CHUCK



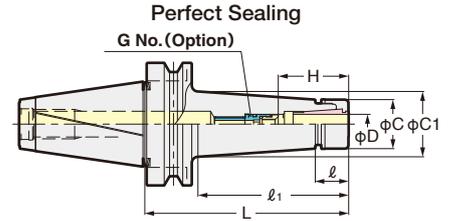
SK

Centre Through  
MAX. 7MPa



10,000min<sup>-1</sup>

Dampening effect  
+  
Jet Spray Coolant Supply  
||  
Over 3 times of extended Tool life  
(for HSS & Carbide Drills)



When SK J type nut is used, the total chuck length will be extended by 6mm. PAT.

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	SK Collet
No.40	MIT40-SKT 6C- 90	0.7~6.0	90	19.8	60	19.5	25.2	26~31	SKG 6- 6HG	1.1	SK 6
	-120		120		90		29.4			1.4	
	-SKT10C- 90	1.75~10.0	90	22	60	27.5	32.9	35~41	SKG10-10HG	1.2	SK10
	-120		120		90		37.1			1.4	
	-150		150		120		41.3			1.6	
	-SKT13C- 90	2.75~13.0	90	26	52	33.0	36.6	39~51	SKG13-10HG	1.4	SK13
	-120		120		85		41.2			1.6	
	-150		150		110		44.7			1.8	
	-SKT16C- 90	2.75~16.0	90	27	60	40.0	44.7	45~57	SKG16-12HG	1.5	SK16
	-120		120		90		48.9			1.7	
	-150		150		120		53.1			1.9	
	-SKT20C- 90	3.5~20.0	90	28.5	60	48.5	53.0	47~63	SKG20-18HG	1.6	SK20
	-120		120		92		57.4			2.0	
	-SKT25C- 90	7.5~25.4	90	31	62.6	55.0	59.5	60~65	SKG25-18HGD	1.8	SK25
-120	120		92.2		59.3		2.4				
No.50	MIT50-SKT 6C-105	0.7~6.0	105	19.8	62	19.5	25.5	26~31	SKG 6- 6HG	3.8	SK 6
	-165		165		122		33.8			4.0	
	-SKT10C-105	1.75~10.0	105	22	62	27.5	33.1	35~41	SKG10-10HG	4.2	SK10
	-165		165		122		41.5			4.6	
	-SKT13C-105	2.75~13.0	105	26	65	33.0	38.4	39~51	SKG13-10HG	4.0	SK13
	-165		165		125		46.8			4.3	
	-SKT16C-105	2.75~16.0	105	27	62	40.0	44.9	45~57	SKG16-12HG	4.7	SK16
	-165		165		122		53.3			5.1	
	-SKT20C-105	3.5~20.0	105	28.5	62	48.5	53.2	47~63	SKG20-18HG	4.3	SK20
	-165		165		122		61.6			5.0	
	-SKT25C-105	7.5~25.4	105	31	62	55.0	59.4	60~70	SKG25-24HG	5.2	SK25
	-165		165		122		67.8			5.6	

★ Collet, adjust screw (G No.) and GH Handle are available as an option.  
The Code No. of the GH Handle is SKT6C-P: GH6, SKT10C-P: GH10, SKT13C-P: GH12, SKT16C-P: GH16, SKT20C-P: GH20, SKT25C-P: GH25

★ Please refer P.175 for SK collet and please refer P.49 for J type nut.

★ All chucks are high pressure centre through tool coolant type.

SK6C:φ4~φ6, SK10C:φ6~φ10, SK16C:φ10~φ16, SK25C:φ16~φ25

★ Please add "F" for the flange through tool coolant type;

MIT40-SK 6F- 90,120    MIT50-SK 6F-105,165  
-SK10F- 90,120    -SK10F-105,165  
-SK13F- 90,120    -SK13F-105,165  
-SK16F- 90,120    -SK16F-105,165  
-SK25F-120        -SK25F-105,165



High Speed SLIM CHUCK



GH Handle P.48

Code No.	MAX. (min <sup>-1</sup> )	Code No.	MAX. (min <sup>-1</sup> )
MIT40-SKT 6C- 90P, 120P	30,000	MIT50-SKT 6C-105P, 165P	20,000
-SKT10C- 90P, 120P		-SKT10C-105P, 165P	
-SKT13C- 90P, 120P		-SKT13C-105P, 165P	
-SKT16C- 90P, 120P	25,000	-SKT16C-105P, 165P	15,000
-SKT20C- 90P, 120P		-SKT20C-105P, 165P	
-SKT25C- 90P, 120P	20,000	-SKT25C-105P, 165P	

★ The extended gauge length (L) is available. Please contact with us.

3LOCK

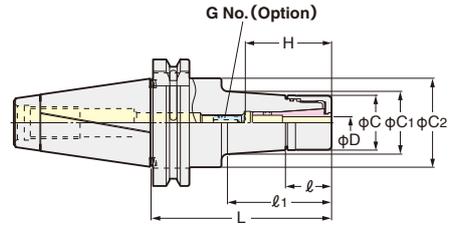
IT/CAT

# 3LOCK MIT VC HOLDER



**VC**  
Centre Through  
MAX. 7MPa

With TiN Bearing Nut  
MAX. 40,000min<sup>-1</sup> & G2.5  
Run-Out Accuracy: 3µm at 4D



PAT.

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	C <sub>2</sub>	H	G No. (Option)	Weight (kg)	MAX. (min <sup>-1</sup> )	Collet		
No.40	MIT40-VC 6- 60	2.0~6.0	60	23	23	27.5	27.5	44.7	35~45	VCG 6- 8A	1.1	30,000	VCK 6		
	- 90										1.3				
	-120										1.5				
	-VC13- 60	3.0~12.0	60	29	70	40	40.0		44.7	50~60	VCG13-15A		1.2	VCK13	
													- 90		1.5
													-120		1.9
No.50	MIT50-VC 6-105	2.0~6.0	105	23	23	27.5	33.4	70.1	35~45	VCG 6- 8A	3.9	20,000	VCK 6		
	-135										4.1				
	-165										4.4				
	-VC13-105	3.0~12.0	105	29	94.9	40	45.0		49.2	50~60	VCG13-15A		4.1	VCK13	
													-135		4.5
													-165		4.9

- ★TiN Bearing Nut is supplied as standard.
- ★When the axial stopper is required, please use Adjust Screw (G No.)
- ★Please add "-RP" at the end of Code No. for Rust Proof Treatment VC Holder. e.g. MIT40-VC13-60-RP
- ★Please use VC J type Nut & Cap for Centre Through Coolant.
- When VC J type Nut is used, the total holder length will be extended to 6mm.
- ★MIT40-VC 6-150, MIT40-VC13-150, MIT50-VC13- 90, -120 are available as semi-standard.
- ★Please refer P.36 for VCK collet.
- ★Collet, Adjust Screw (G No.) and GH Handle are available as an option.
- ★All series are for High Speed Rotation.



GH Handle P.48

# 3LOCK MIT FACE MILL ARBOR



Photo. shows with face mill cutter.

JIS B4113 Face Mill Cutter

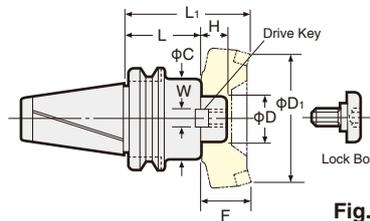


Fig.1

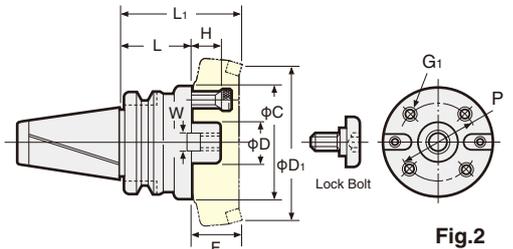
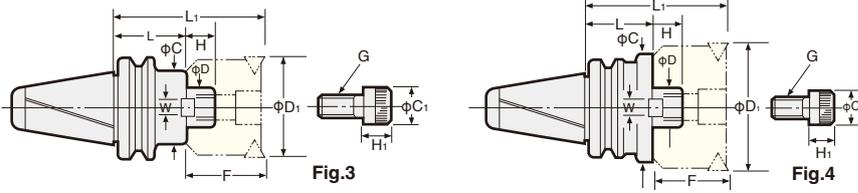


Fig.2

3LOCK tooling (MIT) can be used as the triple contact tooling on the M/C where spindle is IT double face contact system.

FMA

TAPER	Code No. (φD-L)	Arbor			Weight (kg)	With Cutter			Drive Key	Lock Bolt	Fig.	
		H	C	W		L <sub>1</sub>	D <sub>1</sub>	F				
No.40	MIT40-FMA25.4 - 45	22	50	9.5	1.5	95	80	50	FW 5	FM12	1	
	- 90				3.1							
	-FMA31.75 - 45	30	60	12.7	1.7	105	100	60	FW12	FM16		
	- 75				3.1							
	-FMA38.1 - 60				2.9							
No.50	MIT50-FMA25.4 - 45	22	58	9.5	3.7	95	80	50	FW 5	FM12	1	
	- 90				4.6							
	-150				5.5							
	-FMA31.75 - 45	30	70	12.7	4.5	105	100	60	FW12	FM16		
	- 75				5.3							
	-105				6.1							
	-FMA38.1 - 45	34	80	15.9	4.3	105	125	60	FW18	FM20		
	- 75				5.6							
	-FMA50.8 - 45	36	100	19	4.9	105	160	60	FW23	FM24		
	- 75				6.8							
	-FMA47.625- 75	38	128.57	25.4	7.7	135	200	60	FW26	*		2



**3BLOCK** tooling (MIT) can be used as the triple contact tooling on the M/C where spindle is IT double face contact system.

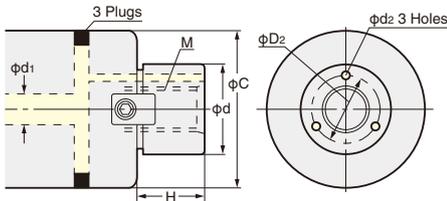
## FMC FMA For SANDVIK T-MAX Shoulder Face Mill/SUMITOMO CHE5,000 Series

TAPER	Code No. (φD-L)	Arbor			Weight (kg)	With Cutter			C <sub>1</sub>	H <sub>1</sub>	Fig.		
		H	C	W		L <sub>1</sub>	D <sub>1</sub>	F				G Cap Bolt	
No.40	MIT40-FMC22- 45	18	45	10	1.3	85	50	40	M10 × 30	16	10	3	
	- 90				2.0								130
	-FMC27- 60	20	60	12	1.5	110	80	50	M12 × 35	18	12		
	- 90				2.2								140
	-FMC32- 60	22	85	14	2.3	110	125	50	M16 × 35	24	16		
- 75	2.6				125								
No.50	MIT50-FMC22- 60	18	45	10	4.2	100	50	40	M10 × 30	16	10	3	
	-105				4.7								145
	-150				5.3								190
	-FMC27- 45	20	70	12	4.1	95	80	50	M12 × 35	18	12		
	- 90				5.5								140
	-150				7.3								200
	-FMC32- 45	22	85	14	4.2	95	125	50	M16 × 35	24	16		
	- 75				5.5								125
	-105				7.0								155

- ★ Drive keys, L wrench and bolt are supplied as standard.
- ★ The arbor weight is only for the arbor.
- ★ The different type of the cap bolt may be used for the recent cutter. Please check the specification.
- ★ The arbor marked \* requires 4 fixing bolts (FMA47.625 : M16, P=101.6)
- ★ Extended length is available as an option. MIT50-FMA25.4 -200, 250, ...500  
-FMA31.75-150, 200, ...500  
-FMA38.1 -150, 200, ...500



## High Feed Cutter Arbor with Coolant Hole



Code No.	Cutter Dia.	φd	φC	M	H	Coolant Hole		
						φD <sub>2</sub>	φd <sub>1</sub>	φd <sub>2</sub>
FMH22 (22.225)	φ50, φ52	22(22.225)	47	M10×1.5	18(17)	16	6~8	3
	φ63, φ66		60					
FMH27 (25.4)	φ80	27(25.4)	76(70)	M12×1.75	20(22)	19.5(18.5)	8~10	3.5
FMH32 (31.75)	φ100	32(31.75)	96	M16×2.0	22(30)	24	10~13	4
FMH40 (38.1)	φ125	40(38.1)	100	M20×2.5	26(34)	30(29)	10~15	5
FMH50.8	φ160	50.8	100	M24×3.0	36	37.5	15~20	7

★ Fixing dimension is basically based on FMA/FMC. ★ The combination of the other cutter dia. are also available.

**3BLOCK** tooling (MIT) can be used as the triple contact tooling on the M/C where spindle is IT double face contact system.

## FMH High Feed Cutter Arbor with Coolant Hole

TAPER	Code No. (φD-L)	Arbor							Weight (kg)	Drive Key	Lock Bolt	G Cap Bolt
		H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>				
No.40	MIT40-FMH22 - 47- 45	18	47	10	16	-	10	-	1.3	FW 8	-	M10 × 30
	- 60- 45								1.4			
	-FMH27 - 60- 60	20	60	12	18	-	12	-	1.8	FW11	-	M12 × 35
	- 76- 60								2.2			
	-FMH32 - 96- 60	22	96	14	24	-	16	-	2.9	FW16	-	M16 × 35
-FMH40 -100- 60	3.1								FW22			
No.50	MIT50-FMH22 - 47- 60	18	47	10	16	-	10	-	4.2	FW 8	-	M10 × 30
	- 60- 60								4.5			
	-FMH27 - 60- 45	20	60	12	18	-	12	-	3.9	FW10	-	M12 × 35
	- 76- 45								4.1			
	-FMH32 - 96- 45	22	96	14	24	-	16	-	4.2	FW15	-	M16 × 35
	-FMH40 -100- 45								5.1			
	-FMH50.8 -100- 45	36	100	19	65	37	14	10	4.4	FW23	FM24	-

★ FMH22.225, FMH25.4, FMH31.75, FMH38.1 are also available.

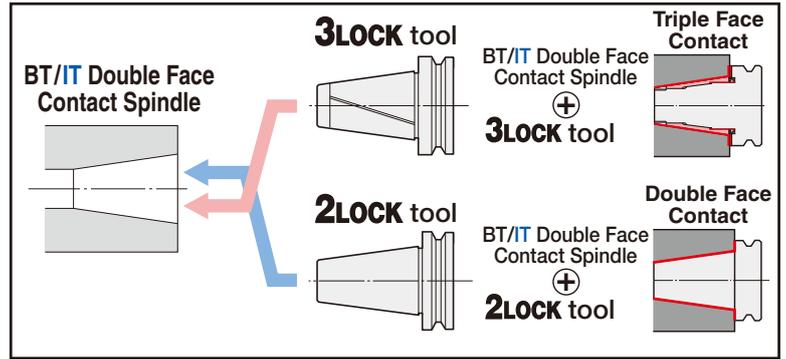
★ For FMH22, there are two types of φC, φ47 and φ60.  
For FMH27, there are two types of φC, φ60 and φ76.

# 2LOCK TOOLING SYSTEM



**2LOCK** tool(NBT)is created from the technology of the **3LOCK** tool(MBT)with its acclaimed cutting and safe and reliable triple contact type. A series of MAJOR DREAM Holders and high speed tooling were created using the **2LOCK** tool system.

- MIN. Z-axis displacement at high speed rotation
- Improved run-out accuracy of ATC repeatability

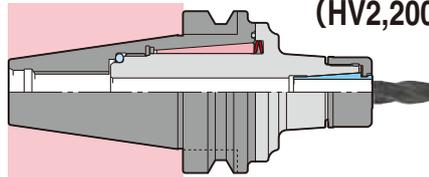


**2LOCK** tool can also be used on the machine with BT/IT standard spindle.

The Nikken **2LOCK** tooling system is not a simple taper/flange double face contact tool. The built-in dampening mechanism and front chucking mechanism have a variety of features.

## MAJOR DREAM Holder P199 ··· Dampening Mechanism ⊕ TiN Bearing Nut (HV2,200)

The dampening effect generates the excellent cutting.



## High Speed Milling Chuck P191



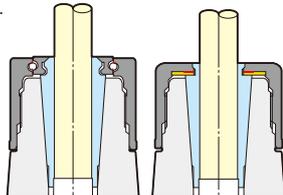
Same Appearance, but a remarkable improvement can be found when cutting.

## High Speed Slim Chuck P196, Anniversary type VC Holder P201

Unstable accuracy caused by tightening torque and the possibility of rust.

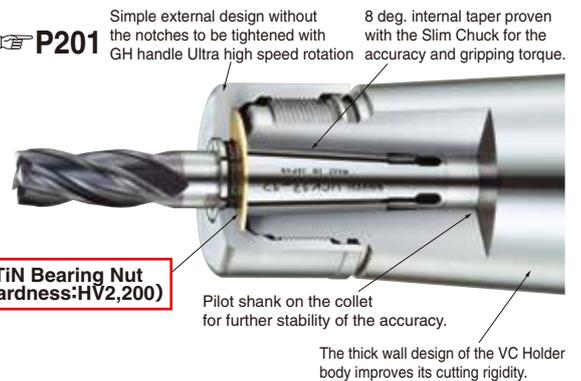


The Tin coated bearing plate reduced friction. This is the best for the thrust load.



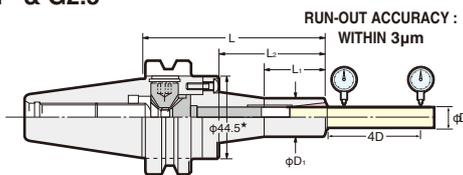
Competitors

NIKKEN

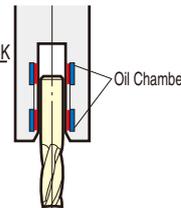


## Mini-Mini Chuck P193 ··· Expert for Small Dia. End Milling

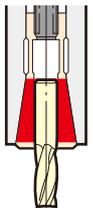
30,000min<sup>-1</sup> & G2.5



× HYDRAULIC CHUCK  
No Gripping at Front Nose  
Gripping Torque?



○ MINI-MINI CHUCK  
Gripping from Front Nose  
Powerful Gripping Torque/3times



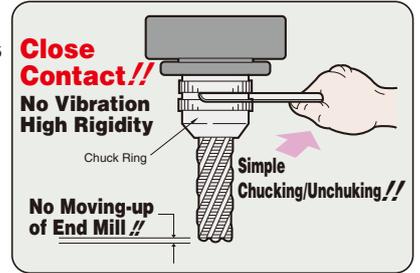
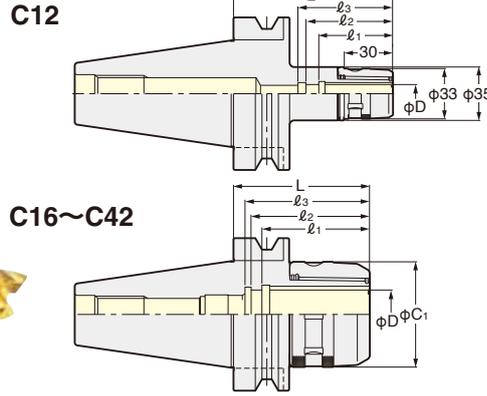
**⚠ Caution Please read.**

If chattering instability occurs during processing with the BT/IT double face contact tool(eg, if the M/C pulling force is reduced), be sure to select the **3LOCK** tool of the internal expanding mechanism. This enables stable cutting by the taper, flange and the internal expanding mechanism.

MBT40, MIT40: Pulling force of 500 kg or greater

MBT50, MIT50: Pulling force of 1,500 kg or greater

# 2LOCK MILLING CHUCK



C

Centre Through  
MAX. 7MPa

**2LOCK** tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
**2LOCK** tooling can also be used on the M/C with BT standard spindle.

TAPER	Code No.	C <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Collet	Weight(kg)
No.30	NBT30-C12- 55	33	58	48	53	58	CCK12 KM12	0.6
	-C16- 55, 70	44	57, 70	50	58	65	CCK16 KM16	0.7, 0.8
	-C20- 65*1, 75	52	67, 75	57	66	80	CCK20 CCNK20 KM20 NK20	1.0, 1.1
	-C25- 75*2, 80, 90	55*4	75, 82, 90	56,56,60	65,65,72	68,68,80	CCK25 CCNK25 KM25 NK25	1.2, 1.3, 1.4
	-C32- 90*3, 100	64*4	90, 100	67	66,77	68,76	CCK32 CCNK32 KM32 NK32	1.4, 1.5
No.40	NBT40-C12- 65, 90, 120	33	65,90,120	48	53	58	CCK12 KM12	1.3, 1.6, 1.9
	-C16- 60, 75, 90,105,120	44	63,75,90,105,120	50	58	65	CCK16 KM16	1.4, 1.6, 1.7, 1.9, 2.0
	-C20- 70, 90,105,120	52	71,90,105,120	57	66	80	CCK20 CCNK20 KM20 NK20	1.6, 1.8, 2.0, 2.2
	-C25- 70, 90,105,120	60	70,90,105,120	60	72		CCK25 CCNK25 KM25 NK25	1.8,2.1,2.3,2.5
	-C32- 85,105,120,135	69	85,105,120,135	64,70 70,70	77,81 81,81	77,81 81,81	CCK32 CCNK32 KM32 NK32	2.1,2.5,2.8,3.1
No.50	NBT50-C12-105,135,165	33	105,135,165	48	53	58	CCK12 KM12	4.0, 4.3, 4.6
	-C16-105,135,165,200	44	105,135,165,200	50	58	65	CCK16 KM16	4.2, 4.5, 4.8,5.2
	-C20-105,135,165,180,200	52	105,135,165,180,200	57	66	80	CCK20 CCNK20 KM20 NK20	4.5, 4.8, 5.1, 5.4,5.6
	-C25-105,135,165,200	60	105,135,165,200	60	72		CCK25 CCNK25 KM25 NK25	4.8, 5.2, 5.6,6.1
	-C32- 90,105,120,135,165 -200,250,300,400,500	69	90,105,120,135,165 200,250,300,400,500	70	81	81	CCK32 CCNK32 KM32 NK32	4.3, 4.6, 5.1, 5.6, 6.4 7.8, 9.2, 10.6, 13.4, 16.2
	-C42- 95,105,120,135,165 -200,250,300,400,500	86	95,105,120,135,165 200,250,300,400,500	73	115	125	CCK42 CCNK42 KM42 NK42	5.5, 5.8, 6.6, 7.2, 8.6 9.5, 11.7, 14.0, 18.4, 22.8

★MULTI LOCK Milling Chuck is a Base Holder for machining centre.

The following straight shank tooling to suit Milling Chucks are available.

[S-C] Milling Chuck (Extension Type) P.33

[K-MMP] MINI-MINI Chuck P.37

[K-MMC] MINI-MINI Chuck P.37

[K-SK] Slim Chuck P.47

[S-SK] Long Size Slim Chuck P.47

[D-NPU] NC Drill Chuck P.53

[NZ] Tapper Chuck P.64

[K-MT] Morse Taper Socket P.55

[K-ZMAC-V] ZMAC-V Boring Bar P.105

[K-RAC] RAC Boring Bar P.105

[S-ZMACX-V] ZMAC-V Boring Bar for Deep Hole P.106

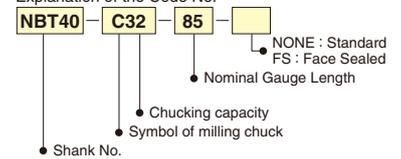
[K-DJ] DJ Boring Bar P.107

[K-SCA] Stub Arbor P.90

[S-MDPE] PRO-END MILL P.127

[MSO-AO-O] Straight shank shrink fit holder P.203

Explanation of the Code No.



★Please refer P.190 for heavy duty type milling chuck with larger arbor diameter.

★\*5 NK32 and CCNK32 collet can not be used on NBT30-C32-90.

★Please refer P.192 for KM, NK, CCK, CCNK collet.

★CKFN-D and CKFN-DC (With O-ring) can be used for the direct chucking application, when centre through tool coolant. CCK collet and CKFN nut can be used for collet application.

★For "L" dimension of centre through coolant type milling chuck is same as the above standard, however, refer P.129 for Code No.

★For "L" dimension of flange through coolant type milling chuck is same as the above standard, however, refer P.131 for Code No.

★Spanner is available as an option. C12 : 9HC12A, C16: 9HC16, C20: 9HC22, C25 (φC1=55mm) : 9HC22, C25 (φC1=60mm) , C32 (φC1=64mm) : 9HC25, C32 (φC1=69mm) : 9HC32, C42: 9HC42  
\*4 C25(φC1=55mm): 9HC22, \*4 C32(φC1=64mm): 9HC25.

★Please note the acceptable shank tolerance is h7.

★The milling chucks marked \*1, \*2 and \*3 may not be used by the restriction of the diameter under V flange of your M/C.

★FS (Face Seal) types are available for C25~C42 of BT40/BT50. There are 2 types; FSJ: With J groove, FS: Without J groove

★Heavy duty type milling chucks with larger arbor diameter are available. Please add "R" at the end of Code No.

NBT50-C32-200R, 250R, 300R

-C42-200R, 250R, 300R



**FS type**  
For machining  
of aluminum  
**PAT.**

2LOCK

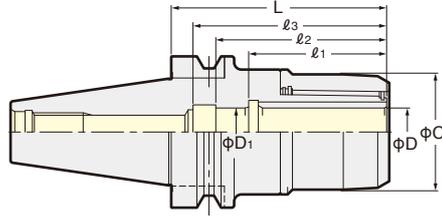
# 2LOCK HIGH SPEED MILLING CHUCK



Anniversary type & High Speed  
Applicable for High Pressure  
Centre Through Coolant by CCK Collet



C-G



GFS type  
For machining  
of aluminum  
PAT.

Centre Through  
MAX. 7MPa

2LOCK tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
2LOCK tooling can also be used on the M/C with BT standard spindle.

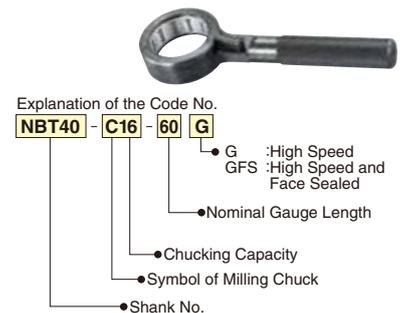
High Speed

TAPER	Code No.	D	D <sub>1</sub>	C <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	MAX. (min <sup>-1</sup> )	Collet	Weight (kg)
No.30	NBT30-C12- 55G	12	12	33	58	48	53	58	40,000	CCK12 KM12	0.5
	-C16- 55G, 70G	16	16	40	57, 70	50	58	65		CCK16 KM16	0.6, 0.7
	-C20- 65G*1, 75G	20	20	48	67, 75	57	66	80	30,000	CCK20 CCNK20 KM20 NK20	0.9, 1.0
	-C25- 75G*2, 80G, 90G	25	25	55	75, 82, 90	56, 56, 60	65	68, 68, 80		CCK25 CCNK25 KM25 NK25	1.2, 1.3
	-C32- 90G*3, 100G	32	32, 25	62	90, 100	67	66, 77	68, 76		CCK32 CCNK32*5 KM32 NK32*5	1.4, 1.5
No.40	NBT40-C12- 65G, 90G	12	12	33	65, 90	48	53	58	30,000	CCK12 KM12	1.1, 1.3
	-C16- 60G, 75G, 90G -105G, 120G	16	16	40	63, 75, 90 105, 120	50	58	65		25,000	CCK16 KM16
	-C20- 70G, 90G -105G, 120G	20	20	48	71, 90 105, 120	57	66	80	CCK20 CCNK20 KM20 NK20		1.4, 1.7, 1.9 2.1
	-C25- 70G, 90G, 105G -120G	25	25	55	70, 90 105, 120	60	72	80	CCK25 CCNK25 KM25 NK25		1.6, 2.0, 2.3 2.6
	-C32- 85G, 105G, 120G -135G	32	25	68	85, 105 120, 135	64, 70 70, 70	77, 81 81, 81	107	20,000	CCK32 CCNK32 KM32 NK32	1.9, 2.3, 2.9 3.2
No.50	NBT50-C12-105G, 135G, 165G	12	12	33	105, 135, 165	48	53	58		20,000	CCK12 KM12
	-C16-105G, 135G, 165G -200G	16	16	40	105, 135 165, 200	50	58	65	CCK16 KM16		4.1, 4.4, 4.7 5.1
	-C20-105G, 135G, 165G -180G, 200G	20	20	48	105, 135 165, 180, 200	57	66	80	15,000	CCK20 CCNK20 KM20 NK20	4.4, 4.8, 5.2 5.4, 5.7
	-C25-105G, 135G, 165G -200G	25	25	55	105, 135 165, 200	60	72	80		CCK25 CCNK25 KM25 NK25	4.6, 5.2, 5.8 6.3
	-C32- 90G, 105G, 120G -135G, 165G, 200G	32	25	68	90, 105, 120 135, 165, 200	70	81	107		CCK32 CCNK32 KM32 NK32	4.3, 4.7, 5.2, 5.7 6.5, 7.6
	-C42- 95P, 105P, 120P	42	42	86	95, 105, 120	73	115	125	12,000	CCK42 CCNK42 KM42 NK42	5.5, 5.8, 6.6

- ★GH Handle is available as an option. Please refer P.48
- C12-G:GH12, C16-G:GH16, C20-G:GH20, C25-G:GH25, C32-G (φC1=68mm):GH32, C32-G (φC1=62mm):GH32S,
- ★Please note the acceptable shank tolerance is h8.
- ★Please add "RP" at the end of Code No. for Rust Proof Treatment Milling Chuck. e.g. NBT40-C32-85G-RP
- ★Centre Through Coolant application:  
For direct chucking, CKFN-D nut is recommended.  
With a collet, CCK collet and CKFN nut are recommended.
- ★NBT30-C20-65G marked \*1 may not be used by the M/C restriction. In this case, please use NBT30-C20-75G.
- ★NBT50-C42-110P is also available.
- ★Please refer P.192 for KM, NK, CCK and CCNK collet.
- ★The milling chucks marked \*1, \*2 and \*3 may not be used by the restriction of the diameter under V flange of your M/C.
- ★\*5 NK32 and CCNK32 collet can not be used on NBT30-C32-90.



CCK collet & CKFN nut  
The Jet Coolant Pressure  
creates a tornado effect,  
ensuring efficient swarf  
dispersal.



# CENTRE COOLANT STRAIGHT COLLET



PAT.

The Jet Coolant Pressure creates a tornado effect, ensuring efficient swarf dispersal.



CCK

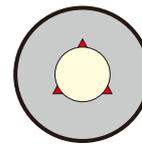
Suitable for all models of the NIKKEN MILLING CHUCK



CCK Collet

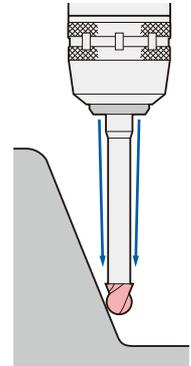


Front Nut

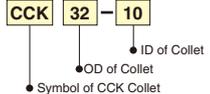


Jet Coolant

Prevention of Swarf entering the collet through the slots



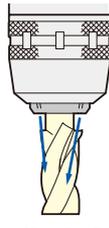
Explanation of the Code No.



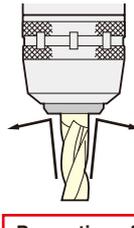
- CCK : Centre Coolant
- CCNK : Centre Coolant, Adjustable
- KM : Standard
- NK : Adjustable
- ONK : Oil Hole Drill
- OJK-A: Jet Coolant
- OJK-S: Multiple Nozzles



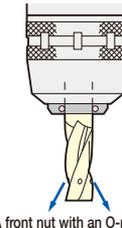
For grooving.



For cutters with cutting diameter which is larger than the shank diameter.



Prevention of the swarf contamination.



A front nut with an O-ring seal, for use with oil hole cutter, is also available as option.



CKFN-MN



CKFN-C

CCK Collet CKFN front nut and CCKL spanner are available as an option.



Photo shows with front nut.

CCK

Style	CCK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCK12</b>	<b>CCK12-3, 4, 5, 6, 8, 10</b>	<b>CKFN12</b>
<b>CCK16</b>	<b>CCK16-3, 4, 5, 6, 8, 10, 12</b>	<b>CKFN16</b>
<b>CCK20</b>	<b>CCK20-6, 8, 10, 12, 16</b>	<b>CKFN20</b>
<b>CCK25</b>	<b>CCK25-6, 8, 10, 12, 16, 20</b>	<b>CKFN25</b>
<b>CCK32</b>	<b>CCK32-6, 8, 10, 12, 16, 20, 25</b>	<b>CKFN32, CKFN32T</b>
<b>CCK42</b>	<b>CCK42-6, 8, 10, 12, 16, 20, 25, 32</b>	<b>CKFN42</b>

- ★Above bold figures indicate "ANNIVERSARY" type CCK Collet.
- ★Please note the acceptable shank tolerance is h<sub>e</sub>~h<sub>7</sub>.
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.



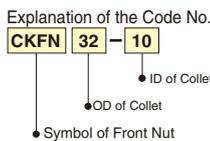
Photo shows with front nut.

CCNK

Style	CCNK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCNK20</b>	<b>CCNK20-6, 8, 10, 12, 16</b>	<b>CKFN20</b>
<b>CCNK25</b>	<b>CCNK25-6, 8, 10, 12, 16, 20</b>	<b>CKFN25</b>
<b>CCNK32</b>	<b>CCNK32-6, 8, 10, 12, 16, 20, 25</b>	<b>CKFN32, CKFN32T</b>
<b>CCNK42</b>	<b>CCNK42-6, 8, 10, 12, 16, 20, 25, 32</b>	<b>CKFN42</b>

- ★Please note the acceptable shank tolerance is h<sub>e</sub>~h<sub>7</sub>.
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.

Front Nut CKFN



Style	φD <sub>2</sub>	L <sub>2</sub>	Front Nut Code No.
<b>CKFN12</b>	19.5	7	<b>CKFN12</b> -3, 4, 5, 6, 8, 10
<b>CKFN16</b>	28.5	8	<b>CKFN16</b> -3, 4, 5, 6, 8, 10, 12
<b>CKFN20</b>	33	8	<b>CKFN20</b> -6, 8, 10, 12, 16
<b>CKFN25</b>	39	8.5	<b>CKFN25</b> -6, 8, 10, 12, 16, 20
<b>CKFN32</b>	46.5	9	<b>CKFN32</b> -6, 8, 10, 12, 16, 20, 25
<b>CKFN32T</b>	43	9	<b>CKFN32T</b> -6, 8, 10, 12, 16, 20, 25
<b>CKFN42</b>	59.5	9	<b>CKFN42</b> -6, 8, 10, 12, 16, 20, 25, 32



★The front nut for direct chucking is also available. e.g. CKFN20-20D, CKFN25-25D, CKFN32-32D

★The Code No. fitted with O-ring is: e.g. CKFN20-20DC, CKFN25-25DC, CKFN32-32DC

- ★For C32 there are 2 sizes, CKFN32 = for nose ring diameter of φ69mm, CKFN32T = for nose ring diameter of φ64mm.
- ★Jet Coolant type for the cutter with a cutter dia. larger than shank dia. is also available. CKFN25-20MN, CKFN32-25MN, CKFN42-32M
- ★Front Nut fitted with an O-ring is also available. e.g. The Code No. is CKFN32-10C
- ★The spanner is available as an option. CKFN12:CCKL12, CKFN16:CCKL16 CKFN20:CCKL20 CKFN25, CKFN32T:CCKL25 CKFN32:CCKL32, CKFN42:CCKL42



KM Photo shows ANNIVERSARY type KM Collet.

Style	KM Collet Code No. (OD-ID)
<b>KM12</b>	<b>KM12-2, 3, 4, 5, 6, 7, 8, 9, 10</b>
<b>KM16</b>	<b>KM16-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12</b>
<b>KM20</b>	<b>KM20-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>KM25</b>	<b>KM25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>KM32</b>	<b>KM32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30</b>
<b>KM42</b>	<b>KM42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 40</b>

- ★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.
- ★The collets with bold character are the "ANNIVERSARY" type KM Collet.
- Ordinary KM Collet can be used with "ANNIVERSARY" type Milling Chuck, but better performance can be found with the "ANNIVERSARY" type KM Collet.
- ★Please note the acceptable shank tolerance is h<sub>e</sub>~h<sub>7</sub>.

Cutter length adjustment on the collet is possible from front and back.



NK

Style	NK Collet Code No. (OD-ID)
<b>NK20</b>	<b>NK20-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>NK22</b>	<b>NK22-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18</b>
<b>NK25</b>	<b>NK25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>NK32</b>	<b>NK32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26</b>
<b>NK42</b>	<b>NK42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32</b>

- ★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.
- ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.
- ★The collets with bold character are standard.
- ★Please note the acceptable shank tolerance is h<sub>e</sub>~h<sub>7</sub>.
- ★Collet removal (9CKR) is available as an option.
- ★Please refer P.33, P.34 for more detail of the straight collet.

2Lock

# 2LOCK MINI-MINI CHUCK ADVANCED ALPHA NEW NIKKEN

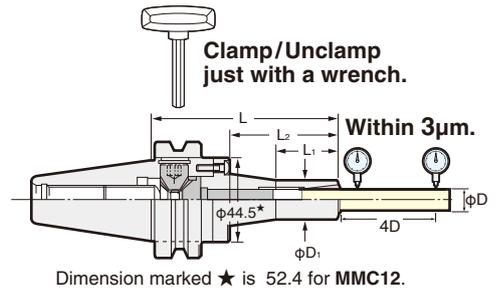


**MMC**

Extra-long sizes are added

**EXPERT for SMALL DIA. END MILLING**

30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-Out Accuracy :  
3μm at 4D



**2LOCK** tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
**2LOCK** tooling can also be used on the M/C with BT standard spindle.

**High Speed**

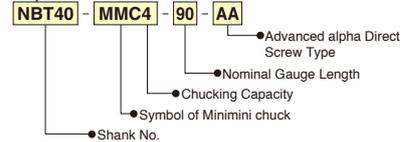
**PAT.**

TAPER	Code No.	D	L	D <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	Collet	MAX.min <sup>-1</sup>	Weight(kg)
No.30	NBT30-MMC 4 -105-AA	1~4	105	15	30	43	MPK 4	30,000	0.9
	MMC 8C-105-AA	2~8		20	33	42	PMK 8 VMK 8		0.9
	MMC12C-105-AA	4~12		30	35	44	PMK12 VMK12		1.1
No.40	NBT40-MMC 4 - 90-AA	1~4	90	15	30	43	MPK 4	30,000	1.2
	8C- 90-AA	2~8			33	42	PMK 8 VMK 8		1.2
	-120-AA		120	20	40	72			1.3
	-150-AA		150	70	102	1.4			
	-180-AA	180	70	132	1.5				
	12C- 90-AA	4~12	90	30	35	44	PMK 8 VMK 8		1.4
	-120-AA		120		60	74			1.5
	-150-AA		150		70	104			1.6
	-180-AA		180		100	134			1.7
No.50	NBT50-MMC 4 -105-AA	1~4	105	15	30	43	MPK 4	20,000	3.8
	8C-105-AA	2~8			33	42	PMK 8 VMK 8		3.8
	-135-AA		135	20	40	72			3.9
	-165-AA		165	70	102	4.0			
	-195-AA	195	70	132	4.1				
	12C-105-AA	4~12	105	30	35	44	PMK12 VMK12		4.0
	-135-AA		135		60	74			4.1
	-165-AA		165		70	104			4.2
	-195-AA		195		100	134			4.3

- ★Wrench EA573KL-6 : MMC4, MMC8C MMCL12-M6T62 : MMC12 is attached as standard.
- ★Extra-long sizes are added \*Extra-long sizes : longer +30~90mm than conventional.
- ★Collet is available as an option. Please refer P.38
- ★Center through tool coolant type MINI-MINI Chuck is available for MMC8 and MMC12 type only.  
Please add the letter "C" to the Code No. e.g. BT40-MMC8C-90  
Please refer P.37



Explanation of the Code No.

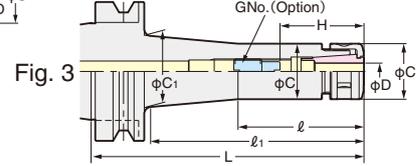
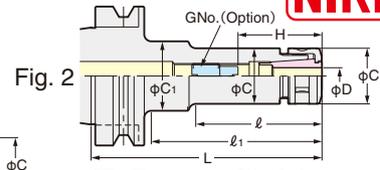
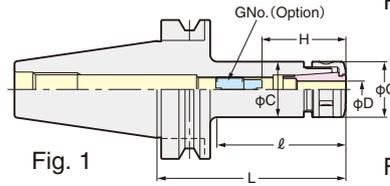


# 2LOCK SLIM CHUCK



**SK**  
Photo shows SK10 type.

Centre Through  
MAX. 7MPa



**2LOCK** tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
**2LOCK** tooling can also be used on the M/C with BT standard spindle.

When SK J type nut is used, the total chuck length will be extended by 6mm.

**PAT.**

TAPER	Code No.	D	L	l	l <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	Fig	Collet	
<b>No.30</b>	<b>NBT30-SK 6C- 60</b>	0.7 ~ 6.0	60	33	33	19.5	19.5	26~31	SKG 6- 6HG	0.7	1	<b>SK 6</b>	
	- 90		90	56	65		32			0.7	2		
	-120		120	62	95		32			0.8			
	<b>-SK10C- 45</b>	1.75~10.0	45	22	22	27.5	27.5	33~41	SKG10-10HG	0.8	1	<b>SK10</b>	
	- 60		60	35	35					0.9			
	- 75		75	50	50					1.0			
	- 90		90	65	65					1.0			
	<b>-SK13C- 60</b>	2.75~13.0	60	35	35	33	33	39~51	SKG13-10HG	1.0	1	<b>SK13</b>	
	- 75		75	50	50					1.1			
	- 90		90	65	65					1.1			
	<b>-SK16C- 60</b>	2.75~16.0	60	37	37	40	40	47~52	SKG16-12HGE	1.1	1	<b>SK16</b>	
	- 75		75	52	52			45~52	SKG16-10HG	1.2			
	- 90		90	67	67			45~57	SKG16-12HG	1.2			
	-120		120	97	97				1.3				
	<b>-SK20 - 60*</b>	3.5~20.0	60	37	37	48.5	48.5	65~70	SKG-12S	0.7	1	<b>SK20</b>	
	<b>-SK20C- 75</b>		75	52	52			50~55	SKG20-12HGE	0.9			
	- 90		90	67	67			47~63	SKG20-12HG	1.2			
	<b>-SK25 - 90*</b>	7.5~25.4	90	67	67	55	55	55~75	SKG-12	1.5	1	<b>SK25</b>	
<b>No.40</b>	<b>NBT40-SK 6C- 60</b>	0.7 ~ 6.0	60	30	30	19.5	19.5	26~31	SKG 6- 6HG	1.0	1	<b>SK 6</b>	
	- 90		90	51	60		32			1.1	2		
	-120		120	60	90		25			1.4	3		
	-150		150	60	120		25			1.5			
	<b>-SK10C- 60</b>	1.75~10.0	60	32	32	27.5	27.5	33~41	SKG10-10HG	1.1	1	<b>SK10</b>	
	- 75		75	45	45					40	1.2		2
	- 90		90	48	60						34.5		1.4
	-120		120	90	90					1.6			3
	-150		150	118	118		39	1.6	1				
	-180		180	73	148			2.0					
	-200		200	168	168			2.3					
	-250		250	218	218			2.6					
	<b>-SK13C- 60</b>	2.75~13.0	60	28	28	33	33	39~51	SKG13-10HG	1.2	1	<b>SK13</b>	
	- 75		75	43	43					40			1.3
	- 90		90	58	58								250
	-120		120	88	88		1.6			3			
	-150		150	118	118								
	-180		180	88	148		1.8						
	<b>-SK16C- 60</b>	2.75~16.0	60	32	32	40	40	45~52	SKG16-10HG	1.3	1	<b>SK16</b>	
	- 75		75	43	43			45~57	1.5				
	- 90		90	58	58				SKG16-12HG	1.5			
	-120		120	88	88			1.7					
	-150		150	118	118			1.9					
	-180		180	148	148			2.0					
	-200		200	168	168			2.3					
	-250		250	218	218			2.8					
	<b>-SK20C- 60</b>	3.5~20.0	60	32	32	48.5	48.5	57~63	SKG20-16HG	1.3	1	<b>SK20</b>	
	- 75		75	45	45			47~63	1.4				
	- 90		90	60	60				SKG20-18HG	1.6			
	-120		120	90	90			2.0					
	<b>-SK25C- 75</b>	7.5~25.4	75	47	47	55	55	60~65	SKG25-18HGE	1.7	1	<b>SK25</b>	
	- 90		90	61	61			SKG25-18HGD	1.8				
	-120		120	91	91			60~70	SKG25-24HG	2.0			

2LOCK

# 2LOCK SLIM CHUCK

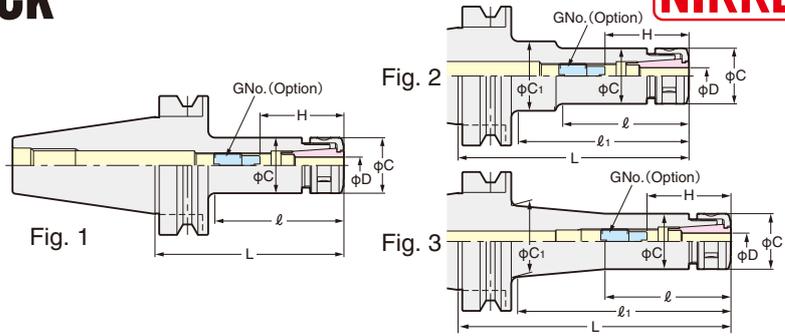


**SK**

Photo shows SK16 type.

Centre Through  
MAX. 7MPa

**2LOCK** tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
**2LOCK** tooling can also be used on the M/C with BT standard spindle.



When SK J type nut is used, the total chuck length will be extended by 6mm.

**PAT.**

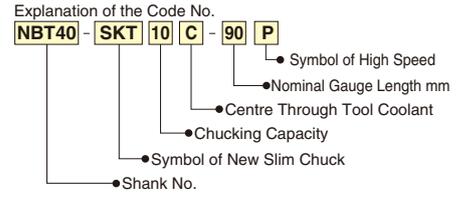
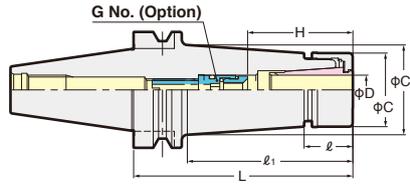
TAPER	Code No.	D	L	l	l <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	Fig	Collet
No.50	<b>NBT50-SK 6C-105</b>	0.7 ~ 6.0	105	55	64	19.5	32	26~31	SKG 6- 6HG	3.8	2	SK 6
	-135		135	60	92					3.9		
	-165		165	60	114					4.0		
	-200		200	60	151					4.2		
	<b>-SK10C-105</b>	1.75~10.0	105	57	57	27.5	36	33~41	SKG10-10HG	4.2	3	SK10
	-135		135	70	92					4.4		
	-165		165	70	114					4.6		
	-200		200	75	151					4.8		
	-225		225	75	178					5.0		
	-250		250	75	207					5.2		
	-300		300	75	257					5.5		
	<b>-SK13C-105</b>		2.75~13.0	105	62					62		
	-135	135		92	92	4.7						
	-165	165		92	122	4.9						
	-200	200		92	157	5.2						
	-250	250		92	207	5.7						
	-300	300		92	257	6.7						
	<b>-SK16C-105</b>	2.75~16.0	105	62	62	40	50	45~57	SKG16-12HG	4.7	3	SK16
	-135		135	92	92					4.9		
	-165		165	90	122					5.1		
	-200		200	90	157					5.5		
	-250		250	90	207					6.2		
	-300		300	90	257					6.7		
	<b>-SK20C-105</b>	3.5~20.0	105	62	62	48.5	48.5	47~63	SKG20-18HG	4.3	1	SK20
	-135		135	92	92					4.6		
	-165		165	122	122					5.0		
	-200		200	157	157					5.4		
	-250		250	207	207					6.2		
-300	300		257	257	7.0							
<b>-SK25C-105</b>	7.5~25.4	105	62	62	55	55	60~70	SKG25-24HG	5.2	1	SK25	
-135		135	92	92					5.4			
-165		165	122	122					5.6			
200		200	157	157					6.0			
-250		250	207	207					6.8			
-300		300	257	257					7.5			

- ★Please refer P.65 for use as Tap Holder for Synchronized Tapping.
- ★Collet, adjust screw (G No.) and spanner are available as an option.
- ★Please refer P.196, P.197 for High Speed Slim Chuck (40,000min<sup>-1</sup>)
- ★All Slim Chucks can be used for Centre Through Coolant type. Please refer P.52 for Centre Through Coolant Adjust Screw and P.304 for Centre Through Pull Stud.
- ★Please refer P.131 for Flange Through Coolant type.
- ★NBT40-SK10-200, 250 NBT50-SK10-250, 300 are also available as semi-standard.
- ★Please add "-RP" at the end of Code No. for Rust Proof Treatment Slim Chuck. e.g. NBT40-SK10-90-RP
- ★Extended gauge length slim chucks with the straight arbor like as Fig.1 are available.
- NBT50-SK10C-200ST, -250ST, -300ST
- SK13C-200ST, -250ST, -300ST
- SK16C-200ST, -250ST, -300ST

# 2LOCK HIGH SPEED SLIM CHUCK (TAPER TYPE)



## MAX.40,000min<sup>-1</sup> & G2.5



**SKT-P**

Centre Through  
MAX. 7MPa

**2LOCK** tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
**2LOCK** tooling can also be used on the M/C with BT standard spindle.

When SK J type nut is used, the total chuck length will be extended by 6mm.

**PAT.**

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	MAX. min <sup>-1</sup>	Collet	Weight (kg)						
No.30	NBT30-SKT 6C- 60P	0.7~6.0	60	19.8	35	19.5	21.7	26~31	SKG6-6HG	40,000	SK 6	0.7						
	- 75P				50							23.8	0.7					
	- 90P				65							25.9	0.7					
	-SKT10C- 60P	1.75~10.0	60	22	35	27.5	31.5	35~41	SKG10-10HG		30,000	SK10	0.9					
	- 75P				50								33.6	1.0				
	- 90P				65								36.4	1.0				
	-SKT13C- 60P	2.75~13.0	60	26	35	33	36.4	39~51	SKG13-10HG			25,000	SK13	1.0				
	- 75P				50									38.5	1.1			
	- 90P				65									41.4	1.1			
	-SKT16C- 60P	2.75~16.0	60	27	37	40	43.6	45~52	SKG16-12HGE				20,000	SK16	1.1			
	- 75P				52.6										45	1.2		
	- 90P				62.8										45~57	1.2		
No.40	NBT40-SKT 6C- 60P	0.7~6.0	60	19.8	30	19.5	21.0	26~31	SKG6-6HG	30,000				SK 6	1.0			
	- 75P				45										23.1	1.1		
	- 90P				60										25.2	1.1		
	-SKT10C- 60P	1.75~10.0	60	22	30	27.5	30.8	35~41	SKG10-10HG		25,000			SK10	1.4			
	- 75P				45										30.8	1.1		
	- 90P				60										32.9	1.2		
	-SKT13C- 60P	2.75~13.0	60	26	30	33	37.1	39~51	SKG13-10HG			20,000		SK13	1.4			
	- 75P				45										41.3	1.6		
	- 90P				60										44.7	1.3		
	-SKT16C- 60P	2.75~16.0	60	27	30	40	53.1	45~52	SKG16-10HG				15,000	SK16	1.3			
	- 75P				45										48.9	1.5		
	- 90P				60										53.1	1.7		
	-SKT20C- 60P	3.5~20.0	60	28.5	30	48.5	57.4	57~63	SKG20-16HG					15,000	SK20	1.9		
	- 75P				45											50.9	1.3	
	- 90P				60											53.0	1.4	
	-SKT25C- 75P	7.5~25.4	75	31	47	55	59.5	60~65	SKG25-18HGE		15,000				SK25	1.6		
	- 90P				62.6											59.5	2.0	
	-SKT25C- 90P				90											63.6	57.4	1.7
	No.50	NBT50-SKT 6C-105P	0.7~6.0	105	19.8	62	19.5	25.5	26~31			SKG6-6HG			15,000	SK 6	3.8	
		-135P				92											29.6	3.9
		-165P				122											33.8	4.0
		-SKT10C-105P	1.75~10.0	105	22	62	27.5	33.1	35~41			SKG10-10HG	20,000			SK10	4.2	
		-135P				92											37.3	4.4
		-165P				122											41.5	4.6
-SKT13C-105P		2.75~13.0	105	26	62	33	38.1	39~51	SKG13-10HG	15,000		SK13		4.5				
-135P					92									42.3		4.7		
-165P					122									46.5		4.9		
-SKT16C-105P		2.75~16.0	105	27	62	40	44.9	45~57	SKG16-12HG		15,000	SK16		4.7				
-135P					92									49.1		4.9		
-165P					122									53.3		5.1		
-SKT20C-105P		3.5~20.0	105	28.5	62	48.5	53.2	47~63	SKG20-18HG			15,000		SK20		4.3		
-135P					92											57.4	4.6	
-165P					122											61.6	5.0	
-SKT25C-105P		7.5~25.4	105	31	62	55	59.4	60~70	SKG25-24HG				15,000	SK25		5.2		
-135P					92											63.6	5.4	
-165P					122											67.8	5.6	

★Please refer P.49 for TiN Bearing Nut. ★Please add "RP" at the end of the Code No. for Rust Proof Treatment Slim Chuck. e.g. NBT40-SKT10C-90P-RP  
 ★Collet, adjust screw (G No.) and GH Handle are available as an option. ★Please use MDSK J type nut & cap for the Centre through tool coolant. P.49  
 The Code No. of the GH Handle is SKT6C-P: GH6, SKT10C-P: GH10, SKT13C-P: GH12, SKT16C-P: GH16, SKT20C-P: GH20, SKT25C-P: GH25  
 ★P class or A type SK collet is highly recommended to use. P.198



GH Handle  
P.48

2LOCK

# 2LOCK HIGH SPEED SLIM CHUCK (STRAIGHT TYPE)

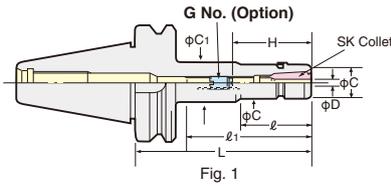


## MAX.40,000min<sup>-1</sup> & G2.5



**SK-P**

Centre Through  
MAX. 7MPa



Explanation of the Code No.

**NBT40** - **GSK** **10** - **90** **P**

- Symbol of High Speed
- Nominal Gauge Length mm
- Chucking Capacity
- Symbol of New Slim Chuck
- Shank No.

**2LOCK** tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
**2LOCK** tooling can also be used on the M/C with BT standard spindle.

When SK J type nut is used, the total chuck length will be extended by 6mm.

**PAT.**

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	MAX. min <sup>-1</sup>	Collet	Weight (kg)		
No.30	NBT30-SK 6C- 60P	0.7 ~ 6.0	60	33	33	19.5	19.5	26~31	SKG 6- 6HG	40,000	SK 6	0.7		
	- 90P		90	56	65		32					0.7		
	-SK10C- 45P	1.75~10.0	45	22	22	27.5	27.5	33~41	SKG10-10HG		30,000	SK10	0.8	
	- 60P		60	35	35								0.9	
	- 75P		75	50	50								1.0	
	- 90P		90	65	65								1.0	
	-SK13C- 60P	2.75~13.0	60	35	35	33	33	39~51	SKG13-10HG		25,000	SK13	1.0	
	- 75P		75	50	50								1.1	
	- 90P		90	65	65								1.1	
	-SK16C- 60P	2.75~16.0	60	37	37	40	40	47~52	SKG16-12HGE		20,000	SK16	1.1	
	- 75P		75	52	52			45~52					1.2	
	- 90P		90	67	67			45~57					1.2	
-SK20 - 60P*	3.5~20.0	60	37	37	48.5	48.5	65~70	SKG-12S	15,000	SK20	0.7			
-SK20C- 75P		75	52	52			50~55				0.9			
- 90P		90	67	67			47~63				1.2			
-SK25 - 90P*	7.5~25.4	90	67	67	55	55	55~75	SKG-12		SK25	1.5			
No.40	NBT40-SK 6C- 60P	0.7 ~ 6.0	60	30	30	19.5	19.5	26~31	SKG 6- 6HG	30,000	SK 6	1.0		
	- 90P		90	51	60		32					1.1		
	-120P	120	60	90	27.5	27.5	33~41	SKG10-10HG	25,000		SK10	1.4		
	-SK10C- 60P	60	32	32								40	1.1	
	- 75P	75	45	45	34.5	34.5	39~51	SKG13-10HG	20,000		SK13	1.2		
	- 90P	90	48	60								40	1.2	
	-120P	120	73	90	40	40	45~52	SKG16-10HG	15,000		SK16	1.4		
	-150P	150	73	118								45~57	1.6	
	-SK13C- 60P	2.75~13.0	60	28	28	33	33	39~51	SKG13-10HG		10,000	SK13	1.2	
	- 75P		75	43	43								45~52	1.3
	- 90P		90	58	58								45~57	1.4
	-120P	120	88	88	40	40	45~57	SKG16-12HG	5,000		SK16	1.6		
	-150P	150	118	118								45~57	1.7	
	-SK20C- 60P	2.75~16.0	60	32	32	40	40	45~52	SKG16-10HG		2,000	SK20	1.3	
	- 75P		75	43	43			45~57					1.5	
	- 90P		90	58	58			45~57					1.5	
	-120P	120	88	88	48.5	48.5	45~57	SKG16-12HG	1,000		SK16	1.7		
	-150P	150	118	118			45~57					1.9		
	-SK20C- 60P	3.5~20.0	60	32	32	48.5	48.5	57~63	SKG20-16HG		500	SK20	1.3	
	- 75P		75	45	45			47~63					1.4	
	- 90P		90	60	60			47~63					1.6	
	-120P	120	90	90	55	55	47~63	SKG20-18HG	200		SK20	2.0		
	-120P	120	90	90			47~63					2.0		
	-SK25C- 75P	7.5~25.4	75	47	47	55	55	60~65	SKG25-18HGE		100	SK25	1.7	
- 90P	90		61	61	60~65			1.8						
-120P	120		91	91	60~70			2.0						
No.50	NBT50-SK 6C-105P	0.7 ~ 6.0	105	55	64	19.5	32	26~31	SKG 6- 6HG	20,000	SK 6	3.8		
	-135P		135	60	92							32	3.9	
	-165P	165	60	114	27.5	27.5	33~41	SKG10-10HG	10,000		SK10	4.0		
	-SK10C-105P	105	57	57								32	4.2	
	-135P	135	70	92	33	33	39~51	SKG13-10HG	5,000		SK13	4.4		
	-165P	165	75	114								32	4.6	
	-SK13C-105P	2.75~13.0	105	62	62	40	40	45~57	SKG16-12HG		2,000	SK16	4.5	
	-135P		135	92	92								45~57	4.7
	-165P		165	92	122								45~57	4.9
	-SK16C-105P	2.75~16.0	105	62	62	40	40	45~57	SKG16-12HG		1,000	SK16	4.7	
	-135P		135	92	92			45~57					4.9	
	-165P		165	90	122			45~57					5.1	
	-SK20C-105P	3.5~20.0	105	62	62	48.5	48.5	47~63	SKG20-18HG		500	SK20	4.3	
	-135P		135	92	92			47~63					4.6	
	-165P		165	122	122			47~63					5.0	
	-SK25C-105P	7.5~25.4	105	62	62	55	55	60~70	SKG25-24HG		200	SK25	5.2	
	-135P		135	92	92			60~70					5.4	
	-165P		165	122	122			60~70					5.6	

★Please refer P.49 for TiN Bearing Nut.

★Please add "RP" at the end of the Code No. for Rust Proof Treatment Slim Chuck. e.g. NBT40-SKT10C-90P-RP

★Collet, adjust screw (G No.) and GH Handle are available as an option.

★Please use MDSK J type nut & cap for the Centre through tool coolant. P.49

The Code No. of the GH Handle is SK6C-P: GH6, SK10C-P: GH10, SK13C-P: GH12, SK16C-P: GH16, SK20C-P: GH20, SK25C-P: GH25

★P class or A type SK collet is highly recommended to use. P.198

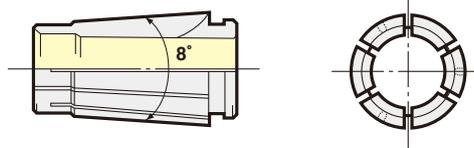
★Code No. marked \* are not centre coolant tool coolant type.



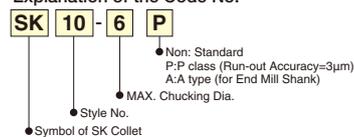
GH Handle  
P.48

2LOCK

# SLIM CHUCK COLLET



Explanation of the Code No.



**SK** "A" type SK collet (for End Mill Shank) are marked **P**. The acceptable shank tolerance is h8. Code No. is e.g. SK10-10A  
 "P" class SK collet (for drill) are available for all series. e.g. SK10-10P

Code No.	Chucking D
SK 6- 0.8	0.7 ~ 0.8
- 1	0.9 ~ 1.0
- 1.25	1.15~ 1.25
- 1.5	1.3 ~ 1.5
- 1.75	1.55~ 1.75
- 2	1.8 ~ 2.0
- 2.25	2.05~ 2.25
- 2.5	2.3 ~ 2.5
- 2.75	2.55~ 2.75
- 3	2.8 ~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
SK10- 2	1.75~ 2.0
- 2.25	2.0 ~ 2.25
- 2.5	2.25~ 2.5
- 2.75	2.5 ~ 2.75
- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
-10	9.5 ~10.0

Code No.	Chucking D
SK13- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~10.0
- 10.5	10.0~10.5
- 11	10.5~11.0
- 11.5	11.0~11.5
- 12	11.5~12.0
- 12.5	12.0~12.5
- 13	12.5~13.0

Code No.	Chucking D
SK16- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~10.0
- 10.5	10.0~10.5
- 11	10.5~11.0
- 11.5	11.0~11.5
- 12	11.5~12.0
- 12.5	12.0~12.5
- 13	12.5~13.0
- 13.5	13.0~13.5
- 14	13.5~14.0
- 14.5	14.0~14.5
- 15	14.5~15.0
- 15.5	15.0~15.5
- 16	15.5~16.0

Code No.	Chucking D
SK20- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~ 10.0
- 10.5	10.0~ 10.5
- 11	10.5~ 11.0
- 11.5	11.0~ 11.5
- 12	11.5~ 12.0
- 12.5	12.0~ 12.5
- 13	12.5~ 13.0
- 13.5	13.0~ 13.5
- 14	13.5~ 14.0
- 14.5	14.0~ 14.5
- 15	14.5~ 15.0
- 15.5	15.0~ 15.5
- 16	15.5~ 16.0
- 16.5	16.0~ 16.5
- 17	16.5~ 17.0
- 17.5	17.0~ 17.5
- 18	17.5~ 18.0
- 18.5	18.0~ 18.5
- 19	18.5~ 19.0
- 19.5	19.0~ 19.5
- 20	19.5~ 20.0

Code No.	Chucking D
SK25- 8	7.5~8.0
- 10	9.5~10.0
- 12	11.5~12.0
- 16	15.5~16.0
- 16.5	16.0~16.5
- 17	16.5~17.0
- 17.5	17.0~17.5
- 18	17.5~18.0
- 18.5	18.0~18.5
- 19	18.5~19.0
- 19.5	19.0~19.5
- 20	19.5~20.0
- 20.5	20.0~20.5
- 21	20.5~21.0
- 21.5	21.0~21.5
- 22	21.5~22.0
- 22.5	22.0~22.5
- 23	22.5~23.0
- 23.5	23.0~23.5
- 24	23.5~24.0
- 24.5	24.0~24.5
- 25	24.5~25.0
- 25.4	25.0~25.4

★SK6 collet with the special internal dia. is also available.



Collet removal (SKR-6) is supplied as standard only for SK6. SKR-10, SKR-16 and SKR-25 are available as an option. Collet removal is not necessary for the new types of collet (SK10 to SK25 collet including SK13 and SK20).

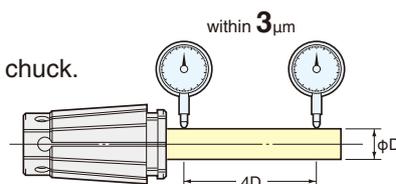
★Please refer P.44 for SK Coolant Collet (AC).

## ■ "P" class SK collet for drill

It guarantees the Run-out accuracy within 3 micron at the nose (4D) from the chuck. Additionally Collet Set is also available.

## ■ "A" type SK collet for endmill

The acceptable shank tolerance is h8.



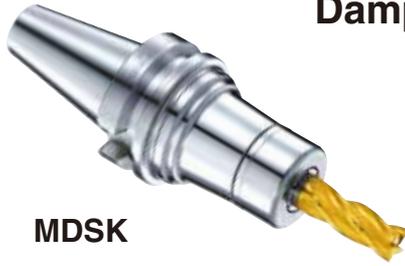
SK Collet A Type
SK 6-3A, 4A, 5A, 6A
SK10-3A, 4A, 5A, 6A, 8A, 10A
SK13-3A, 4A, 5A, 6A, 8A, 10A, 12A, 13A
SK16-3A, 4A, 5A, 6A, 8A, 10A, 12A, 16A
SK20-4A, 5A, 6A, 8A, 10A, 12A, 16A, 20A
SK25-8A, 10A, 12A, 16A, 20A, 25A

SK Collet A Type (Inch)
SK 6 -1/8A, 3/16A
SK10 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A
SK13 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A
SK16 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A
SK20 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A, 3/4A
SK25 -3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 5/8A, 3/4A, 25.4A

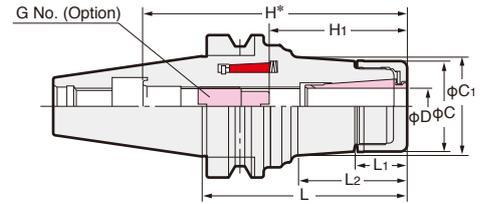
2Lock

Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.

**Dampening Effect  
TiN Bearing Effect**



MDSK



H : MAX. Cutter Shank Length to be inserted

**2LOCK tool can be used on the M/C with BT standard spindle.**

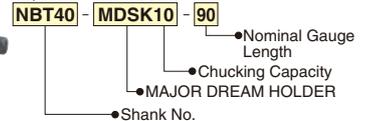
**PAT.**

TAPER	Code No.	D	L	L1	L2	C	C1	H*	H1	G No. (Option)	Weight (kg)	Collet
No.30	NBT30-MDSK 6- 50	3.0~6.0	50	16.2	19.5	19.5	20.0	73	21~35	SKG- 8	0.5	SK 6 A
	- 60		60		25.5		20.8	83			0.6	
	- 75		75		40.5		22.9	98			0.7	
	- 90		90		55.5		25.0	113			0.8	
	-MDSK10- 50	3.0~10.0	50	18.0	19.0	27.5	27.5	72	30~50	SKG-12L	0.5	SK10 A
	- 60		60		25.7		28.6	82			0.6	
	- 75		75		42.9		31.0	97			0.8	
	- 90		90		58.7		33.2	112			0.8	
	-MDSK13- 60	3.0~13.0	60	22.0	29.0	33.0	34.0	83	31~43	SKG-15	0.8	SK13 A
	- 75		75		45.0		36.2	98			0.8	
	- 90		90		60.0		38.3	113	0.8			
	-MDSK16- 75	3.0~16.0	75	23.0	47.5	40.0	40.0	60	45~60	SKG-12L	1.1	SK16 A
- 90	90		62.5		40.0		75	45~70	SKG-12	1.3		
No.40	NBT40-MDSK 6- 60	3.0~6.0	60	16.2	18.0	19.5	19.5	86	21~35	SKG- 8	0.8	SK 6 A
	- 75		75		33.0		21.9	101			0.9	
	- 90		90		48.0		24.0	116			1.1	
	-105		105		63.0		26.1	131			1.2	
	-120		120		78.0		28.2	146			1.4	
	-MDSK10- 60	3.0~10.0	60	18.0	19.0	27.5	27.5	86	30~50	SKG-12L	1.1	SK10 A
	- 75		75		33.0		29.6	101			1.3	
	- 90		90		48.0		31.7	116			1.5	
	-105		105		63.0		33.8	131			1.6	
	-120		120		78.0		35.9	146			1.8	
	-150	150	110.0	40.4	176	2.2						
	-MDSK13- 65	3.0~13.0	65	22.0	24.0	33.0	33.0	91	31~60	SKG-15	1.2	SK13 A
	- 75		75		33.0		34.6	101			1.4	
	- 90		90		48.0		36.7	116			1.7	
	-105		105		63.0		38.8	131			1.8	
	-120		120		78.0		40.9	146			2.0	
	-150	150	110.0	45.4	176	2.4						
	-180	180	144.0	50.1	206	2.6						
	-MDSK16- 65	3.0~16.0	65	23.0	24.0	40.0	40.0	91	45~60	SKG-18L	1.2	SK16 A
	- 75		75		33.0		41.4	101	1.5			
	- 90		90		48.0		43.5	116	1.9			
	-105		105		64.0		45.8	131	2.0			
	-120		120		80.0		48.0	146	2.2			
	-150	150	113.0	52.6	176	2.5						
-MDSK20- 75	4.0~20.0	75	25.2	41.2	48.0	51.3	80	50~73	SKG-12	1.9	SK20 A	
- 90		90		55.0		53.2	95		2.1			
-105		105		70.0		52.2	110		2.3			
-120		120		85.0		53.2	125		2.6			

- ★Please use A type SK collet for the end milling operation. (P.200)
- ★Please refer (P.49) for the Jet coolant system, J type nut and cap.
- ★GH handle is available as an option. (P.48) Please order with the Code No. GH6 : MDSK6 &, GH10 : MDSK10, GH12 : MDSK13, GH16 : MDSK16, GH20 : MDSK20, GH25 : MDSK25
- ★Please add "P" at the end of Code No. for high speed specification, e.g NBT40-MDSK10-60P
- ★Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.



Explanation of the Code No.



**MAX. min<sup>-1</sup>**

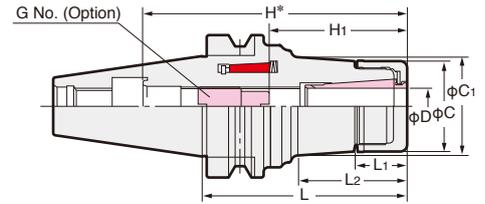
Code No.	MAX. min <sup>-1</sup>	Code No.	MAX. min <sup>-1</sup>	Code No.	MAX. min <sup>-1</sup>
NBT30-MDSK 6-P	30,000	NBT40-MDSK 6-P	25,000	NBT50-MDSK 6-P	20,000
-MDSK10-P		-MDSK10-P		-MDSK10-P	
-MDSK13-P		-MDSK13-P		-MDSK13-P	
-MDSK16-P	25,000	-MDSK16-P	20,000	-MDSK16-P	
		-MDSK20-P		-MDSK20-P	
				-MDSK25-P	

Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.

**Dampening Effect  
TiN Bearing Effect**



MDSK



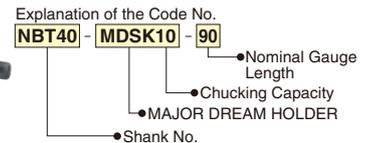
H : MAX. Cutter Shank Length to be inserted

**2LOCK tool can be used on the M/C with BT standard spindle.**

**PAT.**

TAPER	Code No.	D	L	L1	L2	C	C1	H*	H1	G No. (Option)	Weight (kg)	Collet	
No.50	<b>NBT50-MDSK 6-105</b>	3.0~6.0	105	16.2	48.0	19.5	24.0	116	21~35	SKG- 8	3.6	SK 6 A	
	-120		120		63.0		26.1				131		3.7
	<b>-MDSK10-105</b>	3.0~10.0	105	18.2	48.0	27.5	31.7	116	30~50	SKG-12L	4.3	SK10 A	
	-120		120		63.2		33.8				131		4.4
	-135		135		78.2		35.9				146		4.7
	-165		165		110.2		40.4				176		5.0
	<b>-MDSK13-105</b>	3.0~13.0	105	22.0	48.0	33.0	36.7	116	31~60	SKG-15	4.2	SK13 A	
	-120		120		63.0		38.8				131		4.7
	-135		135		78.0		40.9				146		5.0
	-165		165		110.0		45.4				176		5.3
	<b>-MDSK16-105</b>	3.0~16.0	105	23.0	48.0	40.0	43.5	116	45~70	SKG-18L	4.1	SK16 A	
	-120		120		64.0		45.8				131		4.9
	-135		135		80.1		48.0				146		5.2
	-165		165		114.7		52.6				176		5.5
	<b>-MDSK20-105</b>	4.0~20.0	105	25.2	42.3	48.0	51.4	159	47~80	SKG-22	4.9	SK20 A	
	-135		135		72.0		55.6				175		5.3
	-165		165		102.0		59.8				205		5.9
	-195		195		132.0		64.0				235		6.7
	<b>-MDSK25-105</b>	8.0~25.4	105	27.0	42.3	55.0	57.2	159	55~85	SKG-28	4.9	SK25 A	
	-135		135		74.0		61.6				175		5.7
	-165		165		105.0		66.0				205		6.5
	-195		195		135.0		70.2				235		7.5

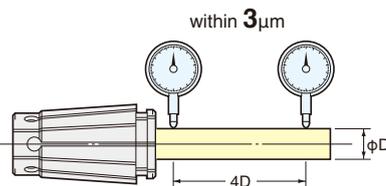
- ★Please use A type SK collet for the end milling operation.
- ★Please refer P.49 for the Jet coolant system, J type nut and cap.
- ★GH handle is available as an option. P.48 Please order with the Code No. GH6 : MDSK6 &, GH10 : MDSK10, GH12 : MDSK13, GH16 : MDSK16, GH20 : MDSK20, GH25 : MDSK25
- ★Please add "P" at the end of Code No. for high speed specification, e.g NBT40-MDSK10-60P
- ★Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.



**A TYPE SLIM COLLET**



SK



SK Collet A Type
SK 6-3A, 4A, 5A, 6A
SK10-3A, 4A, 5A, 6A, 8A, 10A
SK13-3A, 4A, 5A, 6A, 8A, 10A, 12A, 13A
SK16-3A, 4A, 5A, 6A, 8A, 10A, 12A, 16A
SK20-4A, 5A, 6A, 8A, 10A, 12A, 16A, 20A
SK25-8A, 10A, 12A, 16A, 20A, 25A

★The acceptable shank tolerance of A Type collet is h8.

Inch	mm	Collet	Inch	mm	Collet
1/8	3.175	3.5	7/16	11.113	11.5
3/16	4.763	5	1/2	12.7	13
1/4	6.35	6.5	5/8	15.875	16
5/16	7.938	8.0	3/4	19.05	19.5
3/8	9.525	10	1	25.4	25.4

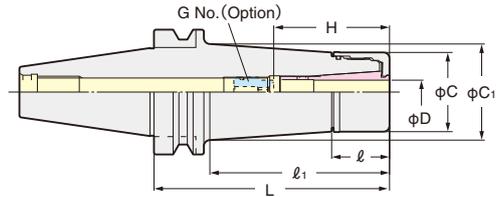
SK Collet A Type (Inch)
SK 6 -1/8A, 3/16A
SK10 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A
SK13 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A
SK16 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A
SK20 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A, 3/4A
SK25 -3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 5/8A, 3/4A, 25.4A

2LOCK

# 2LOCK ANNIVERSARY TYPE VC HOLDER



With TiN Bearing Nut  
 MAX. 40,000min<sup>-1</sup> & G2.5  
 Run-Out Accuracy : Within 3µm at 4D



Centre Through  
 MAX. 7MPa

**2LOCK** tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
**2LOCK** tooling can also be used on the M/C with BT standard spindle.

High Speed

PAT.

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	MAX. min <sup>-1</sup>	Collet
No.30	NBT30-VC 6- 45	2.0~ 6.0	45	23	23	27.5	27.5	35~45	VCG 6- 8A	0.5	40,000	VCK 6
	- 60		60		35		31.7			0.6		
	- 90		90		65		33.4			0.8		
	-VC13- 60	3.0~12.0	60	29	37	40	41.3	VCG13-15A	0.7			
	- 90		90		67				41.3	0.9		
-120	120	97	42.4	1.2								
No.40	NBT40-VC 6- 60	2.0~ 6.0	60	23	30	27.5	30.0	35~45	VCG 6- 8A	1.1	30,000	VCK 6
	- 90		90		60		32.7			1.3		
	-120		120		90		36.9			1.5		
	-VC13- 60	3.0~12.0	60	29	31	40	44.3	VCG13-15A	1.2			
	- 90		90		60				44.3	1.5		
-120	120	90	48.5	1.9								
No.50	NBT50-VC 6-105	2.0~ 6.0	105	23	62	27.5	33.0	35~45	VCG 6- 8A	3.9	20,000	VCK 6
	-135		135		92		37.1			4.1		
	-165		165		122		41.3			4.4		
	-VC13-105	3.0~12.0	105	29	62	40	44.6	VCG13-15A	4.1			
	-135		135		92				48.8	4.5		
-165	165	122	53.0	4.9								

★TiN Bearing Nut is supplied as standard.

★Collet, Adjust Screw (G No.) and GH Handle are available as an option.

★Please add "-RP" at the end of Code No. for Rust Proof Treatment VC Holder. e.g:NBT40-VC13-60-RP

★Please use VC J type Nut & Cap for Centre Through Coolant. When VC J type Nut is used, the total holder length will be extended to 6mm.

★NBT40-VC 6-150, NBT40-VC13-150, NBT50-VC13- 90, -120 are available as semi-standard.

★When the axial stopper is required, please use Adjust Screw (G No.)

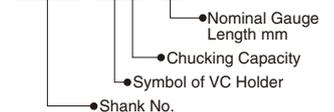
★All series are for High Speed Rotation.



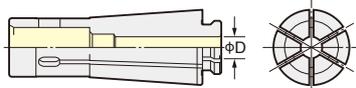
GH Handle P.48

Explanation of the Code No.

NBT40 - VC6 - 90



## VCK Collet



■ Jet coolant splash with J type Nut.



Cap with triangular grooves  
 The jet coolant pressure creates a tornado effect.

Cap with O-ring  
 For oil hole cutting tool



VCK Collet Code No.
VCK 6-2, 3, (3.175), 4, 5, 6
VCK13-3, (3.175), 4, 5, 6, 7, 8, 9, 10, 11, 12

VCK Collet (Inch) Code No.
VCK 6 -1/8, 3/16, 1/4
VCK13 -1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2

★The acceptable shank tolerance of VCK collet is he.

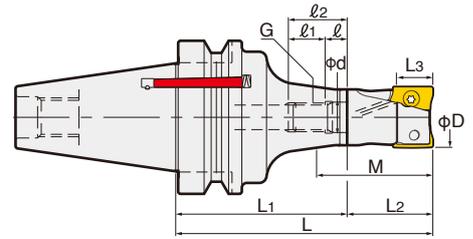
★VCK6-3.175 is same as VCK6-1/8 : VCK13-3.175 is same as VCK13-1/8.

## J type NUT Code.

Style	J-type NUT	GH Handle	Cap	Wenche
VC 6	VCN- 6BJ	GH10	Cap With triangular grooves SKJ10-○.○	SKJL-10
			Cap With O-ring SKJ10-○.○C	
VC13	VCN-13BJ	GH16	Cap With triangular grooves SKJ16-○.○	SKJL-16
			Cap With O-ring SKJ16-○.○C	

■ Easy, safe and reliable handling with GH Handle P. 48





NBT-MDPE (Arbor+Head)

TAPER	Code No.	φD	L	L1	L2	MAX. Depth L3	M	Arbor Code No.	Head Code No.
No.30	NBT30-MDPE16- 75	16	75	45	30	10	37.5	NBT30-MDPE-M 8- 45	M 8-MDPE16-30
	-MDPE20- 75	20						-MDPE-M10- 45	M10-MDPE20-30
	-MDPE25- 80	25	80	35	15	43.4	-MDPE-M12- 45	M12-MDPE25-35	
	-MDPE32- 95	32	95	55	40	52.5	-MDPE-M16- 55	M16-MDPE32-40	
No.40	NBT40-MDPE16- 85,105,120	16	85,105,120	55, 75, 90	30	10	37.4	NBT40-MDPE-M 8- 55, 75, 90	M 8-MDPE16-30
	(NIT40)-MDPE20- 90,105,120	20	90,105,120	60, 75, 90				40.0	-MDPE-M10- 60, 75, 90
	-MDPE25- 90,105,120	25	90,105,120	55, 70, 85	35	15	45.3,47.5,47.5	-MDPE-M12- 55, 70, 85	M12-MDPE25-35
	-MDPE32-105,120,135	32	105,120,135	65, 80, 95	40	52.5	-MDPE-M16- 65, 80, 95	M16-MDPE32-40	
No.50	NBT50-MDPE16-100,120,135	16	100,120,135	70, 90,105	30	10	37.4	NBT50-MDPE-M 8- 70, 90,105	M 8-MDPE16-30
	(NIT50)-MDPE20-105,120,135	20	105,120,135	75, 90,105				40.0	-MDPE-M10- 75, 90,105
	-MDPE25-105,120,135	25	105,120,135	70, 85,100	35	15	45.3,47.5,47.5	-MDPE-M12- 70, 85,100	M12-MDPE25-35
	-MDPE32-120,135,150	32	120,135,150	80, 95,110	40	52.5	-MDPE-M16- 80, 95,110	M16-MDPE32-40	

★2pcs of tip clamp bolt and tip clamp wrench are supplied as standard.  
★Insert tip is available as an option.  
★Centre through tool coolant is available for all series.

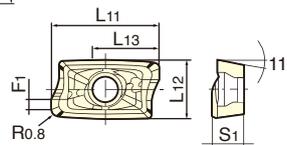
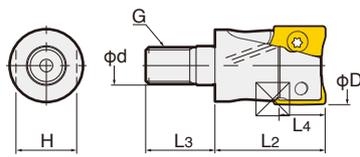
★Please refer P.258 for cutting condition.

NBT-MDPE-M (Arbor)

TAPER	Code No.	φD	L1	ID φd	Arbor Front Dia.	ℓ	ℓ1	ℓ2	Screw G
No.30	NBT30-MDPE-M 8- 45	16	45	8.5	14.7	9	11	20	M 8
	-MDPE-M10- 45	20		10.5	18.7		12	21	M10
	-MDPE-M12- 45	25		12.5	23.0		15	24	M12
	-MDPE-M16- 55	32		17.0	30.0		16	25	M16
No.40	NBT40-MDPE-M 8- 55, 75, 90	16	55, 75, 90	8.5	14.7		11	20	M 8
	(NIT40)-MDPE-M10- 60, 75, 90	20	60, 75, 90	10.5	18.7		12	21	M10
	-MDPE-M12- 55, 70, 85	25	55, 70, 85	12.5	23.0		15	24	M12
	-MDPE-M16- 65, 80, 95	32	65, 80, 95	17.0	30.0		16	25	M16
No.50	NBT50-MDPE-M 8- 70, 90,105	16	70, 90,105	8.5	14.7		11	20	M 8
	(NIT50)-MDPE-M10- 75, 90,105	20	75, 90,105	10.5	18.7		12	21	M10
	-MDPE-M12- 70, 85,100	25	70, 85,100	12.5	23.0		15	24	M12
	-MDPE-M16- 80, 95,110	32	80, 95,110	17.0	30.0		16	25	M16

★Head is available as an option. ★Centre through tool coolant is available for all series.  
★This is interchangeable with DEPO. When the connection interface (Screw G and ID φd) is same, the cutter head of other carbide makers can be used.

INTERCHANGABLE PRO-ENDMILL HEAD



AOMT (Insert Tip)

Insert Tip Code No.	L11	L12	L13	S1	F1
AOMT123608PEER-M	12	6.6	10	3.6	1.2
AOMT184808PEER-M	18	9	15	4.8	1.4

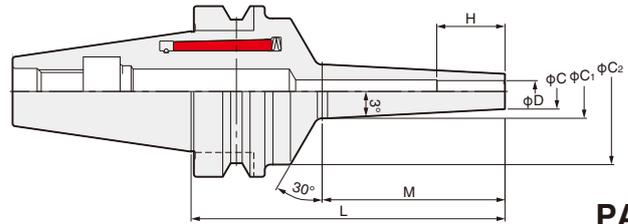
★Only Nose R = 0.8 is available. Please contact Mitsubishi for the rigid type insert tip and the insert tip with other Nose R.  
★Only grade of VP15TF (for steel, cast iron, hardened steel) is available. Please contact Mitsubishi for VP20RT (for stainless steel) and TF15 (for aluminum).  
★Minimum order quantity: 10pcs.

M-MDPE (Head)

φD	Code No.	L2	L3	MAX. Depth L4	φd	G	No. of Teeth	Insert Tip	Tip Clamp Bolt	Tip Clamp wrench	Spanner Width H
16	M 8-MDPE16-30	30	18	10	8.5	M 8	2	AOMT123608PEER-M	TPS-25	TIP07F	10
20	M10-MDPE20-30		19		10.5	M10	3				14
25	M12-MDPE25-35	35	22	15	12.5	M12	2	AOMT184808PEER-M	TPS-4	TIP15W	19
32	M16-MDPE32-40				23	17.0	M16				3

★2pcs of tip clamp bolt and tip clamp wrench are supplied as standard.  
★Insert tip is available as an option.  
★Centre through tool coolant is available for all series.

★Please refer P.258 for cutting condition.



S Slim Style

PAT.

TAPER	Code No.	φD	φC	φC <sub>1</sub>	φC <sub>2</sub>	L	M	H
No.30	NBT30-MDMS 3S- 80, -105	3	6	10.2, 12.8	41	80, 105	42, 67	10
	-MDMS 4S- 80, -105	4	7	11.2, 13.8				13
	-MDMS 6S- 80, -105	6	9	13.2, 15.8		19		
	-MDMS 8S- 80, -105	8	13	17.2, 19.8		25		
	-MDMS10S- 80	10	16	20.2		80	42	31
No.40	NBT40-MDMS 3S- 90, -115	3	6	10.2, 12.8	54	90, 115	42, 67	10
	(NIT40)-MDMS 4S- 90, -115	4	7	11.2, 13.8				13
	-MDMS 6S- 90, -115	6	9	13.2, 15.8				19
	-MDMS 8S- 90, -115	8	13	17.2, 19.8				25
	-MDMS10S- 90, -115	10	16	20.2, 22.8				31
	-MDMS12S- 90, -115	12	19	23.2, 25.8				31
No.50	NBT50-MDMS 3S-130	3	6	12.8	54	130	67	10
	(NIT50)-MDMS 4S-105, -130	4	7	11.2, 13.8		105, 130	42, 67	13
	-MDMS 6S-105, -130	6	9	13.2, 15.8				19
	-MDMS 8S-105, -130	8	13	17.2, 19.8				25
	-MDMS10S-105, -130	10	16	20.2, 22.8				31
	-MDMS12S-105, -130	12	19	23.2, 25.8				31

R Standard

TAPER	Code No.	φD	φC	φC <sub>1</sub>	φC <sub>2</sub>	L	M	H
No.30	NBT30-MDMS 4R- 80, -105	4	10	14.2, 16.8	41	80, 105	42, 67	13
	-MDMS 6R- 80, -105	6	12	16.2, 18.8				19
	-MDMS 8R- 80, -105	8	18	22.2, 24.8				25
	-MDMS10R- 80, -105	10	22	26.2, 28.8				31
No.40	NBT40-MDMS 4R- 90	4	10	14.2	54	90	42	13
	(NIT40)-MDMS 6R- 90, -115	6	12	16.2, 18.8		90, 115	42, 67	19
	-MDMS 8R- 90, -115	8	18	22.2, 24.8				25
	-MDMS10R- 90, -115	10	22	26.2, 28.8				31
	-MDMS12R- 90, -115	12	26	30.2, 32.8				31
No.50	NBT50-MDMS 6R-105, -130	6	12	16.2, 18.8	54	105, 130	42, 67	19
	(NIT50)-MDMS 8R-105, -130	8	18	22.2, 24.8				25
	-MDMS10R-105, -130	10	22	26.2, 28.8				31
	-MDMS12R-105, -130	12	26	30.2, 32.8				31

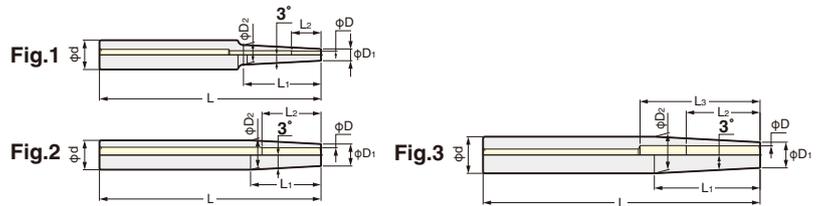
- ★Please note the acceptable shank tolerance is h6.
- ★Carbide tool can be used and HSS tool can not be used.
- ★The tool will become very hot during heat shrinking. Please use glove for safety.
- ★HSK shank masamune shrink fit holder are available. Please contact with us.

- ★ID=φ16, φ20 and φ25mm are available.
- ★The capacity of the drier is approx. 3kW.
- ★Inductive style of the heat shrinking unit is recommended.

STRAIGHT SHANK MASAMUNE SHRINK FIT HOLDER



MS-A



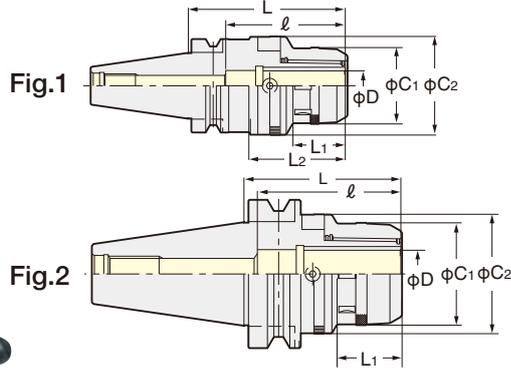
Style d	Code No.	L	φD	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	D <sub>1</sub>	D <sub>2</sub>	Fig	
10	MS10-A 3- 90	90	3	27	10	—	6	8.7	1	
	-A 4- 90		4		13		7	9.7		
16	MS16-A 4-120	120	4	42	13	—	7	11.2	1	
	-A 6-120		6		19		10	14.2		
	-A 8-120		8		25		12	16.0	2	
20	MS20-A 6-150	150	6	72	19	—	10	17.4	1	
	-A 8-150		8		25		12	19.4		
	-A10-150		10		31		63	14	20.0	3
	-A12-150		12		38		37	78	16	

- ★Please note the acceptable shank tolerance is h6.
- ★Carbide tool can be used and HSS tool can not be used.
- ★Minimum insertion length is L<sub>2</sub>.
- ★Maximum insertion length is L<sub>3</sub>. If cutting tool is inserted longer than L<sub>3</sub>, the cutting tool bottom will be contacted to holder. Then, the run-out accuracy will be worse.
- ★The tool will become very hot during heat shrinking. Please use glove for safety.
- ★ID=φ16, φ20 and φ25mm are available.
- ★Inductive style of the heat shrinking unit is recommended.
- ★The capacity of the drier is approx. 3kW.

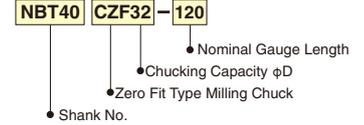
# 2LOCK NBT ZERO FIT TYPE MILLING CHUCK



CZF



Explanation of the Code No.



MAX. run-out at 100mm	
CZF20	0.050mm / dia.
CZF25	0.050mm / dia.
CZF32	0.030mm / dia.

PAT.

TAPER	Code No.	C <sub>1</sub>	C <sub>2</sub>	L	L <sub>1</sub>	L <sub>2</sub>	ℓ	Weight(Kg)	Fig.	Collet
No.30	NBT30-CZF20-100	51.5	66.5	100	35	68	80	1.5	1	KM20 CCK20
	-CZF25-100	59.5	74.5					1.6		KM25 CCK25
No.40	NBT40-CZF20-105, 120	51.5	66.5	105, 120	35	64.5	80	2.1, 2.5	1	KM20 CCK20
	(NIT40)-CZF25-105, 120	59.5	74.5			68		2.4, 2.9		KM25 CCK25
	-CZF32-120	69	80.5	120	42	78	105	2.8		KM32 CCK32
No.50	NBT50-CZF20-105, 165	51.5	66.5	105, 165	35	-	80	4.6, 6.0	2	KM20 CCK20
	(NIT50)-CZF25-105, 165	59.5	74.5					5.0, 6.8		KM25 CCK25
	-CZF32-105, 165	69	80.5	42	105	5.3, 7.4	KM32 CCK32			

- ★Please refer P.33, P.34 for KM, CCK collet.
- ★Spanner is available as an option.
- CZF20 type : 9HC22, CZF25 type : 9HC25, CZF32 type : 9HC32
- ★Wrench to adjust run-out(9ZF) is available as an option.

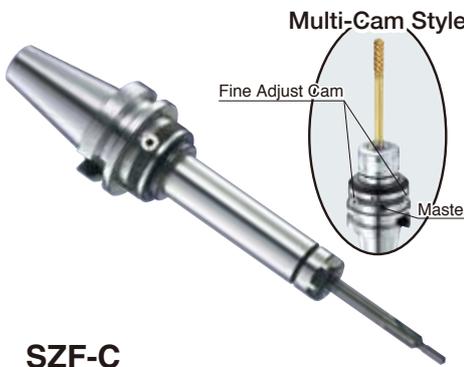
- ★Please note that the acceptable shank tolerance is h<sub>6</sub>~h<sub>7</sub>.
- ★Please add "P" at the end of Code No. for the high speed type. e.g. NBT40-CZF25-105P



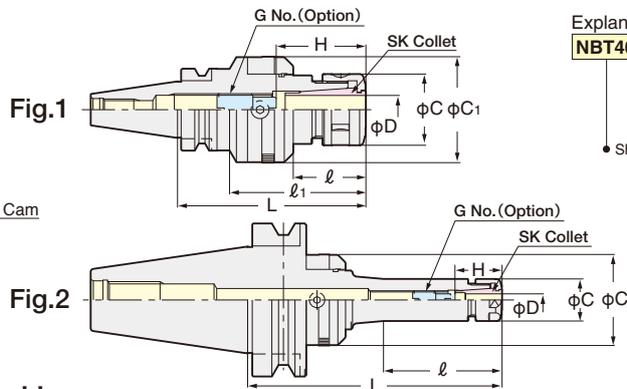
Wrench to adjust  
9ZF

★Multi-Cam style is available. e.g. NBT40-CZF32-120-C3. (3 Cams) Please contact us for more detail.

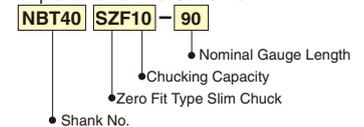
# 2LOCK NBT ZERO FIT TYPE SLIM CHUCK



SZF-C  
High Pressure Centre Through Coolant type



Explanation of the Code No.



MAX. run-out at 100mm		
SZF 6	L < 150	0.050mm / dia.
	L ≥ 150	0.040mm / dia.
SZF10		0.050mm / dia.
SZF16		0.040mm / dia.
SZF25		0.025mm / dia.

PAT.

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (Kg)	Fig.	Collet
No.30	NBT30-SZF 6C- 90	0.7~6.0	90	42	-	19.5	40.5	26~31	SKG 6- 6HG	0.9	2	SK 6
	-SZF10C- 90	1.75~10.0		35	61	27.5	48.5	35~41	SKG10-10HG	1.3	1	SK10
	-SZF16C-105	2.75~16.0		40	76	40	59.5	45~57	SKG16-12HG	1.6		SK16
No.40	NBT40-SZF 6C- 90,150	0.7~6.0	90, 150	37, 60	-	19.5	40.5, 48.5	26~31	SKG 6- 6HG	1.3, 1.7	2	SK 6
	(NIT40)-SZF10C- 90,150	1.75~10.0		37, 97		27.5	48.5	35~41	SKG10-10HG	1.5, 1.9		SK10
	-SZF16C- 90,150	2.75~16.0	120, 150	55, 86	84, 114	40	59.5	45~57	SKG16-12HG	1.8, 2.2	1	SK25
	-SZF25C-120,150	7.5~25.4				55	66.5	60~65	SKG25-18HGD	2.4, 2.9		SK25
No.50	NBT50-SZF 6C-105,165	0.7~6.0	105, 165	41, 63	-	19.5	40.5, 59.5	26~31	SKG 6- 6HG	4.0, 4.2	2	SK 6
	(NIT50)-SZF10C-105,165	1.75~10.0		41, 101		27.5	48.5	35~41	SKG10-10HG	4.5, 4.9		SK10
	-SZF16C-105,165	2.75~16.0	135, 165	71, 101	-	40	59.5	45~57	SKG16-12HG	5.0, 5.4	1	SK16
	-SZF25C-135,165	7.5~25.4				55	66.5	60~70	SKG25-24HG	5.8, 6.0		SK25

- ★Adjust screw(G No.), wrench to adjust run-out(9ZF) and SKL spanner are available as an option. SZF6C: SKL-6W, SZF10C: SKL-10, SZF16C: 9HC16, SZF25C: 9HC25

★Please use "P" class or "A" type SK collet. P.198

★For centre through coolant application please use SK J type nut and cap for your preference. Please note that the length of J type nut is 6mm longer than the standard SK Nut. P.49

★For High Speed type, Code No. is "SZF-P". e.g. NBT40-SZF10C-90P

In this case, GH Handle is required. P.48

★Multi-Cam style is available. e.g. NBT40-SZF16C-90-C3. (3 Cams) Please contact us for more detail.

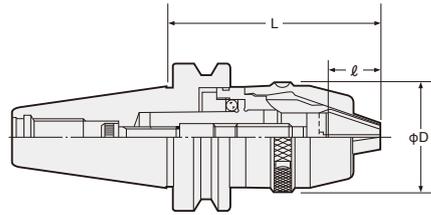
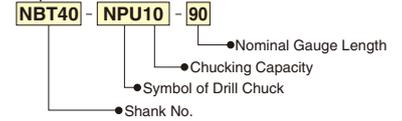
2Lock

# 2LOCK NC DRILL CHUCK



Being given favorable reception its Compactness, High Precision & High Rigidity.

Explanation of the Code No.



l : Chucking Length  
 NPU 8 : 18.8mm  
 NPU13 : 26.5

NPU

TAPER	Code No.	Chucking Dia	D	L		Weight(kg)
				MIN.	MAX.	
No.30	NBT30-NPU 8- 70	0.3~8	38	76.5	83.5	0.7
	-NPU13- 95	1~13	48.5	102.1	113.1	1.2
No.40	NBT40-NPU 8- 70	0.3~8	38	76.5	83.5	1.2
	(NIT40) -110			115.5	122.5	1.5
	-155			160.5	167.5	1.7
	-NPU13- 80	1~13	48.5	86.1	97.1	1.5
	-130			137.1	148.1	2.2
	-175			182.1	193.1	2.7
No.50	NBT50-NPU 8- 85	0.3~8	38	87.5	94.5	3.8
	(NIT50) -110			115.5	122.5	3.9
	-170			175.5	182.5	4.3
	-NPU13- 90	1~13	48.5	97.1	108.1	4.1
	-130			137.1	148.1	4.6
	-190			197.1	208.1	5.2

★Wrench is available as an option. NPU 8: NPUL- 8  
 NPU13: NPUL-13

# 2LOCK SIDE LOCK HOLDER



SLA

A TYPE (for END MILL)

Fig.1

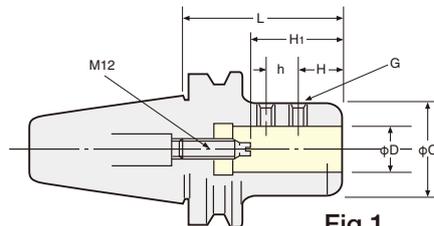


Fig.1

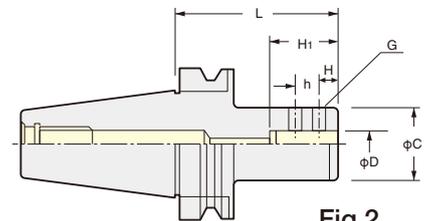


Fig.2

TAPER	Code No.	D	L	C	h	H	H <sub>1</sub>	G	Weight(kg)
							MIN.~MAX.		
No.30	NBT30-SLA20- 75	20	75	50	21	15	55~ 70	M14 P=1.5	1.3
No.40	NBT40-SLA20- 90	20	90	50	21	24	55~ 70	M14 P=1.5	1.8
	(NIT40)-SLA25- 90	25							1.7
No.50	-SLA32- 90,135*	32	90,135	60	25	25	55~ 70	M16 P=1.5	1.9,2.3
	NBT50-SLA20-105,135*	20	105,135	50	21	24			4.8,5.2
	(NIT50)-SLA25-105,135*,165*	25	105,135,165						4.7,5.2,5.7
	-SLA32-105,135*,165*	32	105,135,165	60	25	25			65~ 80
	-SLA42-115*,150*	42	115,150	90	32	30	85~100	M20 P=2.0	6.6,7.5

★Code No. of Side Lock Holder for Combination Shank is DM.  
 ★The Code No. of Centre Through Coolant type is "SLOC". P.130

NBT50-DM32-120  
 -DM50.8-120



★★ marked is available semi-astandard.

B TYPE (for DRILL)

Fig.2

TAPER	Code No.	D	L	C	h	H	H <sub>1</sub>	G	Weight(kg)	Collet
No. 40	NBT40-SL20C- 90	20	90	50	16	12	44.5	M10	1.8	—
	-SL25C- 90	25		55	17	14	54.5	M12 P1.25	1.7	OK25
	-SL32C- 90	32		60	16	15	59.5	M12 P1.25	1.9	OK32
No. 50	NBT50-SL20C-105	20	105	50	16	12	44.5	M10	4.8	—
	-SL25C-105	25		55	17	14	54.5	M12 P1.25	4.7	OK25
	-SL32C-105	32		60	16	15	59.5	M12 P1.25	4.9	OK32
	-SL40C-105	40		88	19	18	70	M12 P1.25	5.2	OK40

★Please refer P.135 for Collet and Sleeve.

# 2LOCK MORSE TAPER ADAPTER A TYPE

**NIKKEN**

■ Taper contact area of more than 80% ensures high repeatability run-out accuracy.



MTA

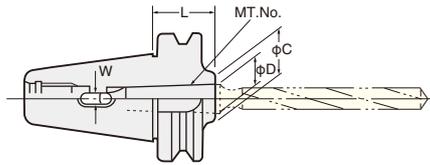


Fig. 1

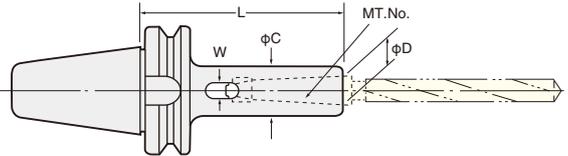


Fig. 2

TAPER	Code No. -L	MT. No.	D	L	C	W	Fig	Weight(kg)
No.30	NBT30-MTA1- 45, 105	1	12.065	45, 105	20, 25	5.6	1, 2	0.8, 0.9
	-MTA2- 60, 120	2	17.780	60, 120	30	6.6		0.9, 1.2
	-MTA3- 80	3	23.825	80	40	8.4	1	1.0
No.40	NBT40-MTA1- 45, 120	1	12.065	45, 120	25	5.6	1, 2	1.0, 1.3
	(NIT40)-MTA2- 60, 120	2	17.780	60, 120	32	6.6		1.1, 1.4
	-MTA3- 75, 135	3	23.825	75, 135	40	8.4		1.2, 1.8
	-MTA4- 95, 165	4	31.267	95, 165	50	12.4		1.4, 2.4
No.50	NBT50-MTA1- 45, 120, 180	1	12.065	45, 120, 180	25	5.6	1, 2, 2	4.0, 4.3, 4.3
	(NIT50)-MTA2- 45, 135, 180	2	17.780	45, 135, 180	32	6.6		4.0, 4.4, 4.6
	-MTA3- 45, 150, 180	3	23.825	45, 150, 180	40	8.4	1, 2	3.9, 4.7, 4.9
	-MTA4- 75, 180	4	31.267	75, 180	50	12.4		4.0, 5.4
	-MTA5-105	5	44.399	105	65	16.5	1	4.6

# 2LOCK MORSE TAPER ADAPTER B TYPE with DRAW BOLT

**NIKKEN**

■ Taper contact area of more than 80% ensures high repeatability run-out accuracy.



MTB

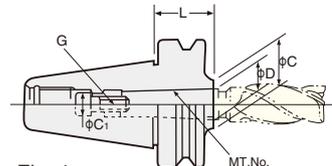


Fig. 1

Draw bolt type

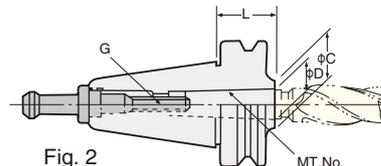


Fig. 2

Pull stud draw bolt type.

TAPER	Code No.	MT.No.	D	L	C	C <sub>1</sub>	G	Fig	Weight(Kg)
No.30	NBT30-MTB1- 45	1	12.065	45	25	10	M 6X1	1	0.8
	-MTB2- 25	2	17.780	25	32	—	M10X1.5	2	0.8
	-MTB3- 80	3	23.825	80	40		M12X1.75		1.0
No.40	NBT40-MTB1- 45	1	12.065	45	25	10	M 6X1	1	1.0
	-MTB2- 60	2	17.780	60	32	13.5	M10X1.5	2	1.1
	-MTB3- 45	3	23.825	45	40	—	M12X1.75		1.1
	-MTB4- 85	4	31.267	85	50		M16X2	1.3	
No.50	NBT50-MTB1- 45	1	12.065	45	25	10	M 6X1	1	3.9
	-MTB2- 45	2	17.780		32	16	M10X1.5		3.9
	-MTB3- 60	3	23.825	60	40	18	M12X1.75		3.9
	-MTB4- 75	4	31.267	75	50	20.5	M16X2		3.9
	-MTB5-105-M16	5	44.399	105	70	—			M20X2.5
	-MTB5-120-M20			120			4.6		
	-MTB5-105			105			4.0		

★Adapter in Fig.1 is supplied with a special draw bolt.

★Morse Taper Adapters B type as illustrated in Fig.2 need the special pull stud. The pull stud is optional accessory. When ordering, please specify the pull stud code number.

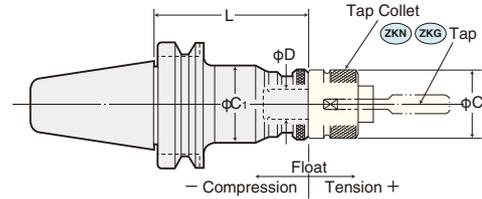
2LOCK

# 2LOCK TAPPER CHUCK

**NIKKEN**



- Most suitable for tapping gas threads, blind-end threads and light alloys.
- When normal rotation of machine is stopped at specified position, the Tapper Chuck runs idle after progressing by its elongation (4mm for ZL12 type). Simply rotate the machine in the reverse direction, and the tap depth will be made uniform within a high-precision.



AUTO. DEPTH CONTROL

FLOATING

## ZL AUTO. DEPTH CONTROL

TAPER	Code No.	Tapping Capability			D	L	C	Float		Tap Collet	Weight (kg)
		M	U	P				F <sub>1</sub>	F <sub>2</sub>		
No.40	NBT40-ZL 8-120* <sup>1</sup>	M 2~ 8	1/8~1/4	—	13	120	34	3	3	ZKN 8* <sup>1</sup>	1.6
	(NIT40)-ZL12-100	M 2~12	1/8~1/2	P1/16~1/4	19	100	58	5	4	ZKG12	1.9
	-ZL12-130					130					2.3
	-ZL16-150	M 3~16	1/8~5/8	P1/8~3/8	25	150	60			ZKG16	2.9
	-ZL24-160	M 8~24	1/2~ 1	P1/4~5/8	30	160	73	6	7	ZKG24	3.3
	-ZL38-190	M18~38	3/4~13/8	P3/8~ 1	45	190	92	8	10	ZKN38	6.0
No.50	NBT50-ZL 8-130* <sup>1</sup>	M 2~ 8	1/8~1/4	—	13	130	34	3	3	ZKN 8* <sup>1</sup>	4.2
	(NIT50)-ZL12- 85	M 2~12	1/8~1/2	P1/16~1/4	19	85	58	5	4	ZKG12	3.4
	-ZL12-130					130					4.3
	-ZL16-135	M 3~16	1/8~5/8	P1/8~3/8	25	135	60			ZKG16	4.6
	-ZL24-100	M 8~24	1/2~ 1	P1/4~5/8	30	100	73	6	7	ZKG24	4.5
	-ZL24-142					142					5.8
-ZL38-150	M18~38	3/4~13/8	P3/8~ 1	45	150	92	8	10	ZKN38	6.9	

★In case of NIT40, NIT40-ZL16-160 and NIT40-ZL24-175 are standard.

★In case of NIT50, NIT50-ZL12-130, NIT50-ZL24-142 and NIT50-ZL38-180 are standard.

★Marked \*1 ZL8 Tapper Chuck and ZK8 Tap Collet are available as semi-standard.

★Please refer to P.59 (ZKG)~P.60 (ZK) for ISO, IMPERIAL, DIN Tap Collet, P.61 (ZKG)~P.62 (ZKN) for JIS Tap Collet, and P.63 for Long Size Tap Collet.

## Z FLOATING

TAPER	Code No.	Tapping Capability			D	L	C	C <sub>1</sub>	Float		Tap Collet	Weight (kg)
		M	U	P					F <sub>1</sub>	F <sub>2</sub>		
No.40	NBT40-Z 8- 90* <sup>1</sup>	M 2~ 8	1/8~1/4	—	13	90	23	33	5	15	ZKN 8* <sup>1</sup>	1.4
	(NIT40)-Z12- 90	M 2~ 12	1/8~1/2	P1/16~1/4	19	90	32	45	5	15	ZKG12	1.5
	-Z12-130					130			1.6			
	-Z16-109	M 3~ 16	1/8~5/8	P1/8~3/8	25	109	39	55	8	20	ZKG16	2.0
	-Z24-100	M 8~ 24	1/2~ 1	P1/4~5/8	30	100	46	68	10	20	ZKG24	2.1
	-Z24-187					187			63			20
-Z38-140	M18~ 38	3/4~13/8	P3/8~ 1	45	140	78	85	8	22	ZKN38	6.7	
No.50	NBT50-Z 8-105* <sup>1</sup>	M 2~ 8	1/8~1/4	—	13	105	23	33	5	15	ZKN 8* <sup>1</sup>	4.2
	(NIT50)-Z12-130	M 2~ 12	1/8~1/2	P1/16~1/4	19	130	32	45	15	15	ZKG12	4.3
	-Z12-175					175						4.8
	-Z12-220					220						5.0
	-Z16-135	M 3~ 16	1/8~5/8	P1/8~3/8	25	135	39	55	8	20	ZKG16	5.2
	-Z24-142	M 8~ 24	1/2~ 1	P1/4~5/8	30	142	46	63	20	20	ZKG24	5.8
	-Z24-187					187						6.2
	-Z38-175	M18~ 38	3/4~13/8	P3/8~ 1	45	175	78	98	10	25	ZKN38	8.3
-Z65-160	M36~100	1~33/4	P1~ 3	68	160	<sup>110*2</sup> <sub>(125)</sub>	110	10	25	ZKN65	9.0	

★In case of NIT40, IT40-ZL8-95\*<sup>1</sup> and NIT40-ZL24-1255 are standard.

★In case of NIT50, IT50-ZL8-105\*<sup>1</sup>, NIT50-ZL38-187 and NIT50-ZL65-165 are standard.

★Marked \*1 Z8 Tapper Chuck and ZK8 Tap Collet are available as semi-standard.

★Please refer to P.59 (ZKG)~P.60 (ZK) for ISO, IMPERIAL, DIN Tap Collet, P.61 (ZKG)~P.62 (ZKN) for JIS Tap Collet, and P.63 for Long Size Tap Collet.

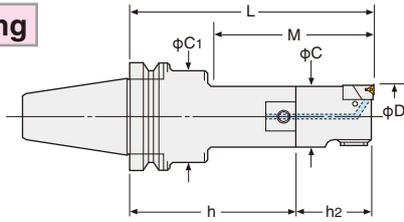
★Marked \*2 ( ) dimension is for M65 or more size of ZK Tap Collet.

# 2LOCK ZMAC ADVANCED BORING ARBOR (ZMAC-V) **NIKKEN**

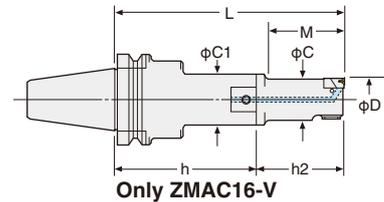
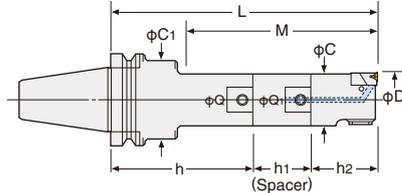
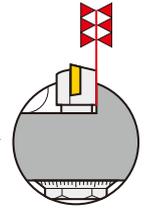
PAT.



**Boring for Finishing**



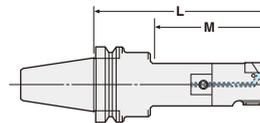
No Micro Vibration due to Double-Contact Support of Cartridge. Long Tool-Life & High Accuracy.



All codes shown are for heads with triangular inserts For heads with rhomboid inserts please add the letter "R" to the code No. e.g. NBT40-ZMAC32 R -150V

TAPER	Code No. NBTNo.- Min.D - L	Boring Range D	Boring Depth M	Cupling Dia Q	C	C1	P.119		Weight (kg)
							Head No. Q- Min.D -h2	Insert No.	
No.40	NBT40-ZMAC 16-125V, 135V	15.9~20.2	38, 48	12	15	24	12-ZMAC16-45V, 55V	3MP-C,B	1.9, 1.9
	(NIT40)-ZMAC 20-120V, 135V, 150V	19.8~25.2	45, 67, 75	9	19	30	9-ZMAC20-40V		1.9, 1.9, 2.0
	-ZMAC 25-120V, 150V, 165V	24.8~32.2	52, 90, 97	12	24	35	12-ZMAC25-40V		2.0, 2.1, 2.1
	-ZMAC 32-150V, 180V, 195V	31.8~42.2	77, 110, 122	16	31	42	16-ZMAC32-55V	6MP-C,B	2.5, 2.7, 2.7
	-ZMAC 42-150V, 180V, 210V	41.8~55.2	97, 130, 157	20	40	50	20-ZMAC42-70V		3.0, 3.2, 3.5
	-ZMAC 55-165V, 210V, 225V	54.8~70.2	135, 180, 195	26	53		26-ZMAC55-70V		3.9, 4.6, 4.6
	-ZMAC 70-165V, 180V, 225V	69.8~85.2	165, 180, 225	34	67	64	34-ZMAC70-70V		5.4, 5.8, 6.8
	-ZMAC 85-195V	84.8~100.2	195	42	83	62	42-ZMAC85-100V	9.0	
No.50	NBT50-ZMAC 16-140V, 150V	15.9~20.2	38, 48	12	15	24	12-ZMAC16-45V, 55V	3MP-C,B	4.7, 4.7
	(NIT50)-ZMAC 20-150V, 165V, 180V	19.8~25.2	45, 67, 75	9	19	40	9-ZMAC20-40V		4.8, 4.8, 4.9
	-ZMAC 25-135V, 165V, 180V	24.8~32.2	52, 90, 97	12	24	44	12-ZMAC25-40V		4.8, 4.8, 4.9
	-ZMAC 32-180V, 210V, 225V	31.8~42.2	77, 110, 122	16	31	50	16-ZMAC32-55V	6MP-C,B	5.5, 5.6, 5.7
	-ZMAC 42-180V, 195V, 225V, 240V	41.8~55.2	97, 130, 142, 157	20	40	60	20-ZMAC42-70V		6.0, 6.0, 6.4, 6.5
	-ZMAC 55-210V, 240V, 270V	54.8~70.2	117, 182, 177	26	53	65	26-ZMAC55-70V		7.5, 7.6, 8.1
	-ZMAC 70-240V, 270V, 300V	69.8~85.2	190, 220, 250	34	67	80	34-ZMAC70-70V		10.0, 10.6, 11.5
	-ZMAC 85-225V, 290V, 315V	84.8~100.2	182, 247, 272	42	83	83	42-ZMAC85-100V	12.5, 15.0, 16.0	
	-ZMAC100-225V, 290V*	99.5~140.5	225, 290				42-ZMAC100-100V	13.8, 16.5	
-ZMAC140-225V, 290V*	139.5~180.5	42-ZMAC140-100V					14.6, 17.3		

- ★MIN. dial readout : ZMAC25-V & smaller is 0.02mm on diameter. ZMAC32-V and larger are 0.01mm on diameter.
- ★"C" grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). Please refer for cutting condition. We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.
- ★Please refer P.210, P.102 for Shank&Spacer, and P.87, P.88 for Head.
- ★Centre Through Tool Coolant function is available as standard.
- ★For NBT30, modular connection system is applied. Please refer P.210 for Base Holder.
- ★When L length is required longer than standard, please specify boring depth M.
- ★\* : NBT50-ZMAC100-325V, 375V, 425V, 475V are also available. NBT50-ZMAC140-325V, 375V, 425V, 475V



High Pressure Coolant Through Tool

## High Speed Boring ZMAC X-V

Special Hardened light alloy metal head with balancing for preventing from high frequency vibration.  
Ultra high speed boring: MAX. 12,000min<sup>-1</sup>



## ZMAC-V for Multi-Stage Boring Bar

Please contact us for the special boring bar.



Photo. shows NC5 shank.

Please contact us for your application with the boring diameter. P.88  
e.g. NBT40-ZMAC42-150AAV  
Boring dia.: φ43.5mm

2Lock

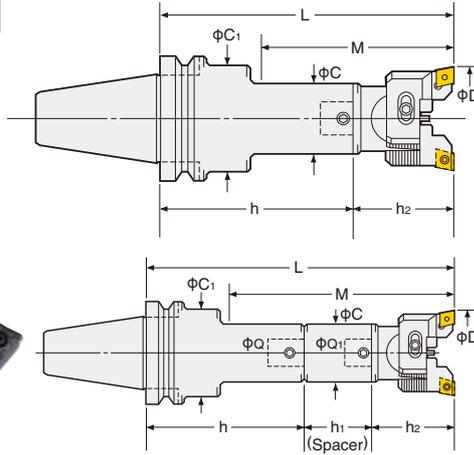
# 2LOCK BALANCE-CUT BORING ARBOR



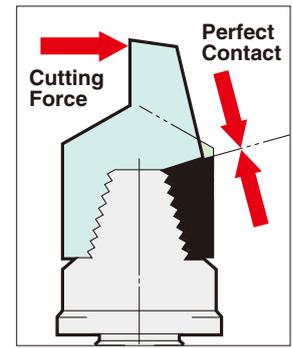
## Boring for Roughing



RAC



## Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	Coupling Dia Q	C	C1	P.74		Weight (kg)
							Head No.	Tip No.	
	NB TNo.- Min.D -L						Q- Min.D -h2		
No.40	NBT40-RAC 25-135E, 165E, 180E	25~32	67, 105, 112	12	24	35	12-RAC 25- 55E	CC07-C	2.0, 2.1, 2.1
	(NIT40)-RAC 32-150E, 180E, 195E	32~45	77, 110, 122	16	31	42	16-RAC 32- 55E	CC08-C	2.4, 2.6, 2.6
	-RAC 43-150E, 180E, 210E	43~55	97, 130, 157	20	40	50	20-RAC 43- 70E	CC12-C	2.7, 2.9, 3.2
	-RAC 53-165E, 210E, 225E	53~70	135, 180, 195	26	50		26-RAC 53- 70E		2.5, 3.3, 3.2
	-RAC 70-180E, 195E, 240E	70~100	180, 195, 240	34	64	64	34-RAC 70- 85E		4.8, 5.2, 6.2
	-RAC100-195E	100~130	195	42	83	62	42-RAC100-100E		6.8
No.50	NBT50-RAC 25-150E, 180E, 195E	25~32	67, 105, 112	12	24	44	12-RAC 25- 55E		CC07-C
	(NIT50)-RAC 32-180E, 210E, 225E	32~45	77, 110, 122	16	31	50	16-RAC 32- 55E	CC08-C	5.4, 5.6, 5.6
	-RAC 43-180E, 195E, 225E, 240E	43~55	97, 130, 142, 157	20	40	60	20-RAC 43- 70E	CC12-C	5.7, 5.8, 6.1, 6.2
	-RAC 53-210E, 240E, 270E	53~70	117, 182, 177	26	50	65	26-RAC 53- 70E		6.9, 7.0, 7.6
	-RAC 70-255E, 285E, 315E	70~100	205, 235, 265	34	64	80	34-RAC 70- 85E		9.5, 9.9, 10.9
	-RAC100-225E, 290E, 325E*	100~130	225, 290, 325	42	83	83	42-RAC100-100E		12.5, 15.2, 16.5

\*"C" grade (Coated) inserts are supplied as standard with the head. P.74 Please refer P.116 for cutting condition.

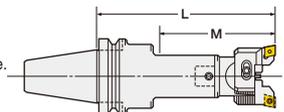
\*Please refer P.210 for base holder, P.102 for spacer and P.79 for head.

\*For centre through tool coolant type, please add "C" at the end of Code No. e.g. NBT40-RAC53-165-C

\*Cartridges & Insert tips for the Heavy Duty Boring of Iron and Cast Iron (No letter), for Aluminum (A), and for Through Hole & Multiple Sheets (K) are available. Please refer P.80 for cartridges. Please add the letter "No letter", "A" or "K" at the end of Code No. e.g. NBT40-RAC53-165A

\*\* : NBT50-RAC100-375E, 425E and 475E are also available.

Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.71, P.72



# 2LOCK MAJOR DREAM HOLDER BASE HOLDER for MODULAR TYPE



## MDQ

Photo shows with A1 spacer and ZMACX-V head.

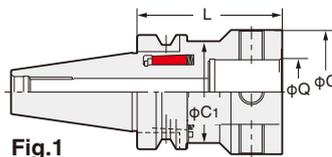


Fig.1

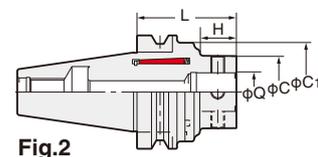


Fig.2

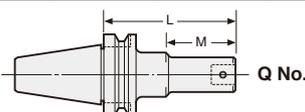
TAPER	Code No.	Q	L	C	C1	H	Weight (kg)	ZMAC-V Boring Range	Fig
No.30	NBT30-MDQ26- 60	26	60	50	50	37.5	-	16~70	1
No.40	NBT40-MDQ26- 65	26	65	50	54	30.0	1.3	16~70	2
	(NIT40)-MDQ26- 65								
No.50	NBT50-MDQ26- 80	26	80	50	87	22.0	4.6	16~70	2
	(NIT50)-MDQ34- 90	34	90	64	87	32.0	4.9	16~85	
	-MDQ42-100	42	100	83	87	45.0	5.7	16~180	

\*All base holders are used for centre through tool coolant.

\*Coupling bolt and wrench are supplied as standard.

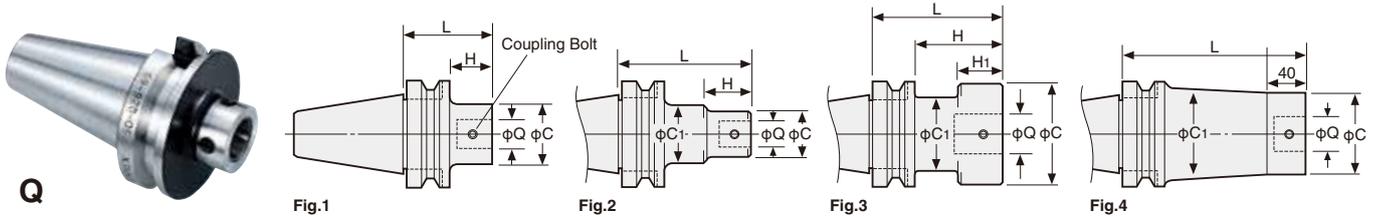
\*ZMACX-V head is recommended to use with the MAJOR DREAM base holder for anti-vibration.

\*When L length is required longer than standard, please specify the boring depth M and Q No.



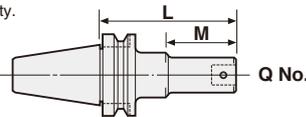
# 2LOCK BASE HOLDER for MODULAR TYPE

**NIKKEN**



TAPER	Code No.	Coupling Dia Q	L	C	C <sub>1</sub>	H	H <sub>1</sub>	Coupling Bolt No.	Fig.	Weight(kg)
No.30	NBT30-Q 9- 50	9	50	19	30	20	-	B19	2	0.5
	-Q12- 65	12	65	24	-	40		B12	1	
	-Q16- 50	16	50	31	-	25		B16		
	-Q20- 50	20		40	26	B20				
	-Q26- 40	26	40	50	45	18	6	B26N	3	
No.40	NBT40-Q 9- 80, 95N	9	80,95	19	30	5,27	-	B19	2	1.2, 1.2
	(NIT40)-Q12- 80,110	12	80,110	24	35	12,50		B12		1.2, 1.3
	-Q16- 95,125	16	95,125	31	42	22,55		B16	1.5, 1.6	
	-Q20- 80,110	20	80,110	40	50	27,60		B20	1.5, 1.7	
	-Q26- 50, 95,140	26	50,95,140	50	-	20,65,110		B26N	1	1.1, 1.8, 2.4
	-Q34- 95,110	34	95,110	64	62	68,83	55,70	B34	3	2.2, 2.6
	-Q42- 95	42	95	83	62	68	55	B42	3	2.8
No.50	NBT50-Q 9-110,125N	9	110,125	19	40	5,27	-	B19	2	4.1, 4.1
	(NIT50)-Q12- 95,125	12	95,125	24	44	12,50		B12		4.0, 4.0
	-Q16-125N,155	16	125,155	31	50	22,55		B16		4.5, 4.6
	-Q20-110,125	20	110,125	40	60	27,60		B20	4.6, 4.5	
	-Q26- 65,140,170N	26	65,140,170	50	65	27,47,112		B26N	1,2,2	3.7, 5.3, 5.4
	-Q34-140,170,200	34	140,170,200	64	80	102,120,150		B34	1,2,2	5.6, 6.5, 7.1
	-Q42-125,190	42	125,190	83	-	87,152	B42	1	6.5, 9.1	
-Q42-225A,275A 325A,375A	42	225,275 325,375	83	98	-	B42	4	12.9, 15.6 18.3, 21.0		

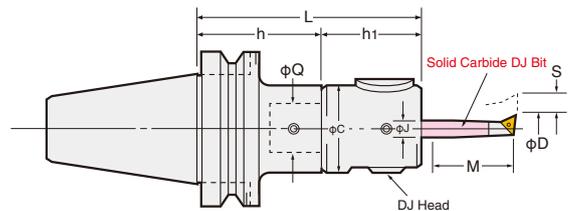
- ★φC of Q26 base holder has been increased from 45mm to 50mm due to improvement of its rigidity.
- ★All base holders have a centre through-tool coolant hole.
- ★The Coupling screw & wrench are supplied as standard.
- ★When L length is required longer than standard, please specify the boring depth M.



# 2LOCK DJ BORING BAR

**NIKKEN**

For both wide range small quantity production and mass production  
Boring Head with **Power of Solid Carbide DJ Bit**



TAPER	Code No.	Boring Range	Boring Depth	L	C	Bit Hole Size	Shank Code No.	Head Code No.	Bit Stroke	DJ Bit Code No.
	NBTNo.-MinD-L	D	M			J	NBTNo.Q-h	Q-MinD-h <sub>1</sub>	S	
No.30	NBT30-DJ3- 80A	3~28	14~ 80	80	50	10	NBT30-Q26- 40	Q26-DJ3-40A	5.2	J10
	-DJ8- 84AN	3~50	14~130	84	59	16		-DJ8-44AN	6.0	J16
No.40	NBT40-DJ3- 90A	3~28	14~ 80	90	50	10	NBT40-Q26- 50	Q26-DJ3-40A	5.2	J10
	(NIT40) -135A			135						
	-DJ8- 94AN	3~50	14~130	94	59	16	NBT40-Q26- 50	-DJ8-44AN	6.0	J16
	-139AN			139						
No.50	NBT50-DJ3-105A	3~28	14~ 80	105	50	10	NBT50-Q26- 65	Q26-DJ3-40A	5.2	J10
	(NIT50) -210A			210						
	-DJ8-109AN	3~50	14~130	109	59	16	NBT50-Q26- 65	-DJ8-44AN	6.0	J16
	-214AN			214						

- ★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.
- ★Each boxed set of DJ3 and DJ8 Boring Bars include 4 pcs of DJ Boring Bits as standard.
- ★Bits included for NBT40-DJ8-94A : J16-8-40, J16-18-80, J16-28-85, J16-38-85
- ★Bits included for NBT40-DJ8-94AN : J16-8-40, J16-18-60, J16-28-65, J16-38-65
- ★DJ Boring Bar without Boring Bits is also available. Please add“-BD”at the end of Code No. e.g. NBT40-DJ3-90A-BD
- ★Shank and DJ Head(including Boring Bits)are delivered in separate packages.
- ★Please refer P.100 for Boring Bits. Please refer P.118 for cutting condition.

2LOCK

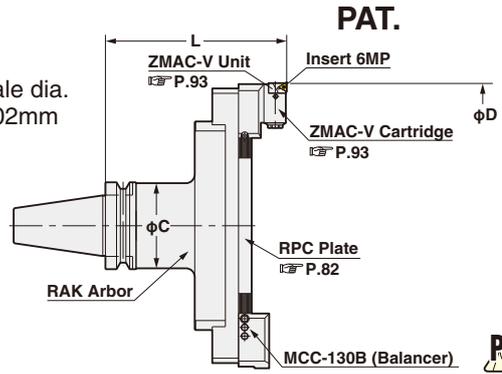
# 2LOCK BALANCE-CUT BAC ADVANCED BORING ARBOR for LARGE DIA. NIKKEN



BAC-V

### For Finishing

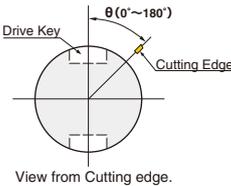
- Min. dial read out: main scale dia. 0.02mm, sub scale dia. 0.002mm
- Boring Dia:  $\phi 130 \sim 595\text{mm}$



Boring Dia:  $\phi 130 \sim 595\text{mm}$  for Finishing.

TAPER	Code.No	D		L	C	RAK Arbor Code No.	PPC Plante No	Cartridge (Balancer)	Weight (kg)
		MIN.	MAX.						
No.40	NBT40 -BAC130-205V	130	195	205	61	NBT40-RAK-130A	RPC-130	MCCZ-130V (MCC-130B)	6.8
	(NIT40) -BAC180-205V	180	245						7.8
No.50	NBT50 -BAC130-185V, 235V, 285V	130	195	185, 235, 285	90	NBT50-RAK-110A, 160A, 210A	RPC-130	MCCZ-130V (MCC-130B) Insert Tip 6MP	13.0, 14.5, 17.5
	(NIT50) -BAC180-185V, 235V, 285V	180	245						13.5, 15.0, 18.0
	-BAC230-185V, 235V, 285V	230	295						14.0, 15.5, 18.5
	-BAC280-185V, 235V, 285V	280	345	14.5, 16.0, 19.0					
	-BAC330-210V*	330	395	210 (220*)	98	NBT50-RAK330-125 NIT50-RAK330-135*	RPC-330		16.2
	-BAC380-210V*	380	445						16.5
	-BAC430-210V*	430	495						17.5
	-BAC480-210V*	480	545						18.5
-BAC530-210V*	530	595	19.5						

- \*"C" grade (Coated) Inserts are supplied as standard. ★Please refer P.117 for cutting condition.
- ★Unit "M5HZ-55V" is provided as standard, please refer P.82 for Arbor (RAK) and Plate (RPC).
- ★Arbor, Plate and Cartridge are delivered in separate packages.
- ★When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★The location of cutting edge is same as drive key in standard.
- The different location is available, please specify  $\theta$  in Code No. e.g. NBT50-BAC180-235V (90°)
- ★The boring arbors marked\*with NIT50, L (gauge length) is 220. e.g. NIT50-BAC330-220V



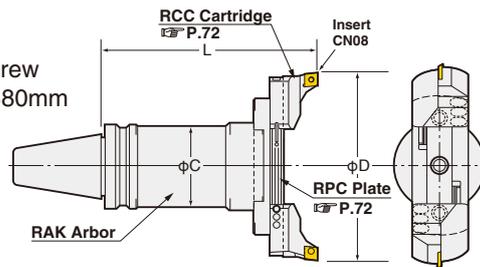
# 2LOCK BALANCE-CUT RAC BORING ARBOR for LARGE DIA. NIKKEN



RAC

### For Roughing

- With slight adjust screw
- Boring Dia:  $\phi 130 \sim 580\text{mm}$



Boring Dia:  $\phi 130 \sim 580\text{mm}$  for Roughing.

TAPER	Code.No	D		L	C	RAK Arbor Code No.	PPC Plante No	Cartridge No. for Large dia.	Weight (kg)
		MIN.	MAX.						
No.40	NBT40 -RAC130-205	130	180	205	61	NBT40-RAK-130A	RPC-130	For Heavy Duty Boring of Iron and Cast Iron	6.8
	(NIT40) -RAC180-205	180	230						7.8
No.50	NBT50 -RAC130-185, 235, 285	130	180	185, 235, 285	90	NBT50-RAK-110A, 160A, 210A	RPC-130	RCC-130 x2 Insert Tip CN08	11.3, 12.8, 15.8
	(NIT50) -RAC180-185, 235, 285	180	230						11.8, 13.3, 16.3
	-RAC230-185, 235, 285	230	280						12.3, 13.8, 16.8
	-RAC280-185, 235, 285	280	330	12.8, 14.3, 17.3					
	-RAC330-210*	330	380	210 (220*)	98	NBT50-RAK330-125 NIT50-RAK330-135*	RPC-330		15.5
	-RAC380-210*	380	430						16.5
	-RAC430-210*	430	480						17.5
	-RAC480-210*	480	530						18.5
-RAC530-210*	530	580	19.5						

- ★The Code No. on above table are the boring arbors with RCC-130 cartridge (Insert tip: CN08) the Heavy Duty Boring of Iron and Cast Iron . Please refer P.116 for cutting condition.
- ★Boring arbor with cartridges & insert for Steel, Stainless Steel and Cast Iron (E), for Aluminum (A) and for Through Hole & Multi Sheets (K) are available.
- Please refer P.82 for cartridges. e.g. NBT50-RAC130-185E
- ★Arbor, Plate and Cartridge are delivered in separate packages. ★When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★The location of cutting edge is same as drive key in standard. The different location is available, please specify  $\theta$  in Code No. e.g. NBT50-RAC180-235 (90°)
- ★The boring arbors marked\*with NIT50, L (gauge length) is 220. e.g. NIT50-RAC330-220

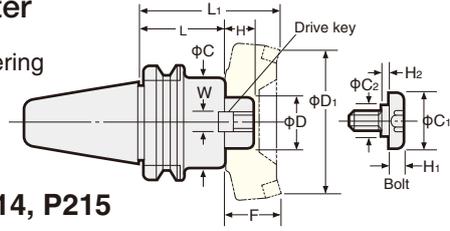
# 2LOCK FACE MILL ARBOR



FMA

For JIS B4113 Face Mill Cutter

Taper contact area of more than 80% ensures reliable milling with no chattering accompanied

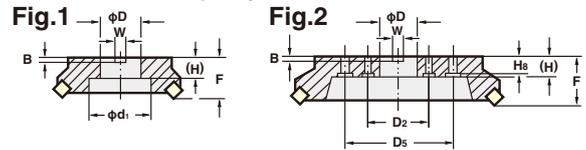


FMH Arbor for High Feed with Coolant Through P.214, P215

TAPER	Code No. ( $\phi D$ -L)	Dimensions								Weight (kg)	Dimension of Arbor with cutter			Drive Key	Bolt
		H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	L <sub>1</sub>		D <sub>1</sub>	F			
No.30	NBT30-FMA25.4 - 45	22	50	9.5	33	23	10	2	1.3	95	80	50	FW 5	FM12	
	NBT40-FMA25.4 - 45	22	50	9.5	33	23	10	2	1.5	95	80	50	FW 5	FM12	
No.40	-FMA25.4 - 90								3.1	140			FW 5		
	-FMA31.75 - 45	30	60	12.7	40	23	10	6	1.7	105	100	60	FW13	FM16	
	-FMA31.75 - 75								3.1	135					
	-FMA38.1 - 60	34	80	15.9	50	27	14	6	2.9	120	125	60	FW18	FM20	
No.50	NBT50-FMA25.4 - 45								3.7	95					
	-FMA25.4 - 90	22	58	9.5	33	23	10	2	4.6	140	80	50	FW 5	FM12	
	-FMA25.4 -150								5.5	200					
	-FMA31.75 - 45								4.5	105			FW12		
	-FMA31.75 - 75	30	70	12.7	40	23	10	6	5.3	135	100	60	FW13	FM16	
	-FMA31.75 -105								6.1	165					
	-FMA38.1 - 45	34	80	15.9	50	27	14	6	4.3	105	125	60	FW18	FM20	
	-FMA38.1 - 75								5.6	135			FW19		
	-FMA50.8 - 45	36	100	19	65	37	14	10	4.9	105	160	60	FW23	FM24	
	-FMA50.8 - 75								6.8	135			FW24		
	-FMA47.625- 75	38	128.57	25.4	—	—	—	—	7.7	135	200	60	FW26	*	

- ★ Drive keys, L-Wrench & Bolt are supplied as standard.
- ★ The arbor marked \*requires 4 fixing bolts.
- ★ Above weight is for Arbor only. (Not include Face Mill Cutter)
- ★ FMA25.4 type Arbor is suitable for NIKKEN PRO-END MILL  $\phi 60$  (PE60HC) and  $\phi 80$  (PE80HC).
- ★ FMA31.75 type Arbor is suitable for NIKKEN PRO-END MILL  $\phi 100$  (PE100HC). Please refer to P.127.
- ★ Code No. of Centre Through Coolant type FMA Arbor for NIKKEN PRO-END MILL is : e.g. NBT40-FMA25.4C-45
- ★ Extended length Face Mill Arbors are available on request.
- NBT50-FMA25.4 -200,-250
- FMA31.75-150,-200
- FMA38.1 -150,-200
- ★ Diameter  $\phi C$  of NBT50-FMA25.4 and NBT50-FMA31.75 are enlarged.

In case of the special cutter, please specify the dimensions below.

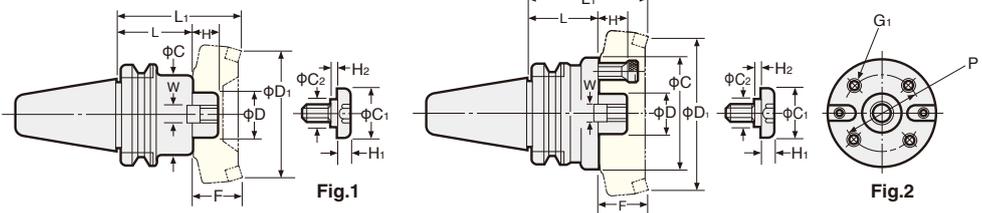


# 2LOCK FACE MILL ARBOR



FMB

Taper contact area of more than 80% ensures reliable milling with no chattering accompanied



Inch Series

(●) figures for Metric Series

Metric Series

TAPER	Code No. ( $\phi D$ -L)	Dimensions											Weight (kg)	Dimension of Arbor with cutter			Fig.	Code No. ( $\phi D$ -L)
		H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	G <sub>1</sub>	P	L <sub>1</sub>	D <sub>1</sub>		F				
No.30	NBT30-FMB25.4 - 45	26	80	9.5(12)	33	23	10	2	—	—	1.7	95	80	50	1	NBT30-FMB27 - 45		
	NBT40-FMB25.4 - 60										2.5	110	80	50	1	NBT40-FMB27 - 60		
No.40	-FMB25.4 - 90	26	80	9.5(12)	33	23	10	2	—	—	4.7	140				-FMB27 - 90		
	-FMB38.1 - 60		85	15.9(16)	50	27	14	6	—	—	7.4	123	125	63		-FMB40 - 60		
	NBT50-FMB25.4 - 45										4.0	95			1	NBT50-FMB27 - 45		
No.50	-FMB25.4 - 90		80	9.5(12)	33	23	10	2	—	—	5.8	140	80	50	1	-FMB27 - 90		
	-FMB25.4 -150										8.2	200				-FMB27 -150		
	-FMB38.1 - 45										4.7	108				-FMB40 - 45		
	-FMB38.1 - 75	26									6.1	138			1	-FMB40 - 75		
	-FMB38.1 -105		85	15.9(16)	50	27	14	6	—	—	8.7	168	125	63		-FMB40 -105		
	-FMB38.1F- 75		110								M12	66.7				-FMB40F- 75		
	-FMB60 - 75	25	140	25.4	—	—	—	—			M16	101.6			2	-FMB60 - 75		
												7.9	138	200	63			

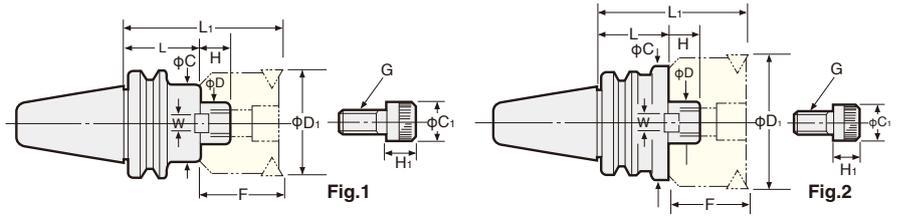
- ★ Drive keys, L-Wrench & Bolt are supplied as standard.
- ★ Above weight is for Arbor only. (Not include Face Mill Cutter)

2Lock

# 2LOCK SHOULDER CUTTER ARBOR



Taper contact area of more than 80% ensures reliable Milling with no chattering accompanied.



## FMC

### Inch Series

(●) figures for Metric Series

### Metric Series

TAPER	Dimensions				Weight (kg)	Dimensions of Arbor with cutter				C <sub>1</sub>	H <sub>1</sub>	Fig	Code No. (φD -L)
	Code No. (φD -L)	H	C	W		L <sub>1</sub>	D <sub>1</sub>	F	G CAP bolt				
No.30		18	45	10	1.4	80	50	40	M10×30	16	10	1	NBT30-FMC22- 40
		18	45	10	1.3	85	50	40	M10×30	16	10	1	NBT40-FMC22- 45
		20	60	9.4(12)	2.0	130	80	50	M12×35	18	12	2	FMC22- 90
No.40	NBT40-FMC25.4- 60	20	60	9.4(12)	1.5	110	80	50	M12×35	18	12	2	FMC27- 60
	-FMC25.4- 90	22	85	15.5(14)	2.2	140	125	50	M16×35	30(24)	15(16)		FMC27- 90
	-FMC38.1- 60				2.3	110							FMC32- 60
	-FMC38.1- 75				2.6	125							FMC32- 75
					4.2	100							NBT50-FMC22- 60
No.50		18	45	10	4.7	145	50	40	M10×30	16	10	1	FMC22-105
					5.3	190							FMC22-150
	NBT50-FMC25.4- 45				4.1	95							FMC27- 45
	-FMC25.4- 90	20	70	9.4(12)	5.5	140	80	50	M12×35	18	12		FMC27- 90
	-FMC25.4-150				7.3	200							FMC27-150
	-FMC38.1- 45				4.2	95							FMC32- 45
	-FMC38.1- 75	22	85	15.5(14)	5.5	125	125	50	M16×40(35)	30(24)	15(16)		FMC32- 75
	-FMC38.1-105				7.0	155							FMC32-105

- ★ Drive keys, L-Wrench & Bolt are supplied as standard.
- ★ Above weight is for Arbor only. (Not include Face Mill Cutter)
- ★ FMC22 type Arbor is suitable for NIKKEN PRO-END MILL φ50 (PE50HC). 参考 P.127
- ★ Code No. of Centre Through Coolant type FMC Arbor for NIKKEN PRO-END MILL is e.g. NBT40-FMC22C-45.

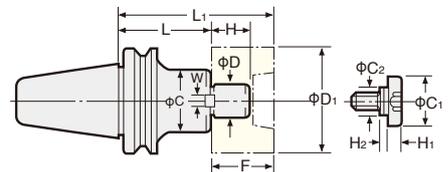
# 2LOCK SHELL END MILL ARBOR



SMA

## JIS B4214 for SHELL END MILL

Taper contact area of more than 80% ensures reliable Milling with no chattering accompanied.



### Inch Series

(●) figures for Metric Series

### Metric Series

TAPER	Dimensions								Weight (kg)	Dimensions of Arbor with cutter			Code No. (φD -L)
	Code No. (φD -L)	H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>		L <sub>1</sub>	D <sub>1</sub>	F	
No.30	NBT30-SMA15.875-30	17	34	8	20	15	7	2	0.9	60	35	30	NBT30-SMA16-30
	-SMA22.225-30	27	42	8	28	18	9	2	1.0	75	45(50)	45	-SMA22-30
No.40	NBT40-SMA15.875-60,120	17	34	8	20	15	7	2	1.3-1.7	90-150	35(40)	30	NBT40-SMA16-60,120
	-SMA22.225-60,120	27	42	8	28	18	9	2	1.4-2.1	105-165	45(50)	45	-SMA22-60,120
	-SMA25.4 -45,105	36	50	10	33	23	10	6	1.4-2.3	105-165	60(75)	60	-SMA27-45,105
	-SMA31.75 -45,75	38	60	10	40			6	1.6-2.3	106-135	100	60	-SMA32-45,75
	-SMA38.1 -60	80	12	50	27	14		6	3.0	120	125		-SMA40-60
No.50	NBT50-SMA15.875-75,120	17	34	8	20	15	7	2	4.2-5.8	105-150	35(40)	30	NBT50-SMA16-75,120
	-SMA22.225-75,120,180	27	42	8	28	18	9	2	4.3-4.8-5.5	120-165-225	45(50)	45	-SMA22-75,120,180
	-SMA25.4 -60,105,150	36	50	10	33	23	10	6	4.3-5.2-5.8	120-165-210	60(75)	60	-SMA27-60,105,150
	-SMA31.75 -45,75,105	38	60	10	40			6	4.2-5.2-6.2	105-135-165	100	60	-SMA32-45,75,105
	-SMA38.1 -45,75	80	12	50	27	14		6	4.3-5.5	105-135	125		-SMA40-45,75

## SMB

### Inch Series

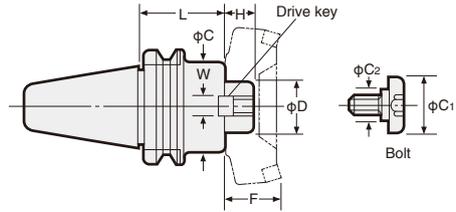
TAPER	Dimensions								Weight (kg)	Dimensions of Arbor with cutter		
	Code No. (φD -L)	H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>		L <sub>1</sub>	D <sub>1</sub>	F
No.30	NBT30-SMB22.225-50	17	40	8	28	18	9	2	1.0	65	50	35
No.40	NBT40-SMB22.225-45,120	17	45	8	28	18	9	2	1.3-2.2	80-155	50	35
	-SMB31.75 -45,75	30	60	12.7	40	23	10	6	1.6-2.3	95-125	75	50
	-SMB38.1 -60	36	80	15.9	50	27	14	6	2.8	120	100	60
No.50	NBT50-SMB22.225-60,120,180	17	45	8	28	18	9	2	4.3-5.0-5.7	95-155-215	50	35
	-SMB31.75 -45,75,105	30	60	12.7	40	23	10	6	4.2-5.2-6.2	95-125-155	75	50
	-SMB38.1 -45,75,	36	80	15.9	50	27	14	6	4.3-5.5	105-135	100	60

- ★ Above weight is for Arbor only. (Not include Face Mill Cutter)

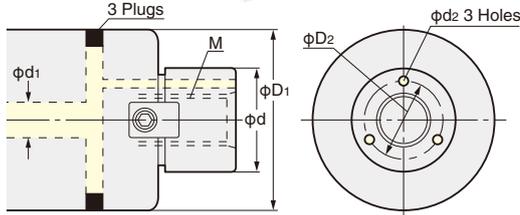
# 2LOCK FMH FACE MILL ARBOR



■ For Oil Hole Cutter  
■ For High Feed Cutter



FMH



Code No.	Cutter Dia.	φd	φD1	M	Coolant Hole		
					φD2	φd1	φd2
<b>FMH22 (22.225)</b>	φ50, φ52 φ63, φ66	22(22.225)	47 60	M10×1.5	16	6~8	3
<b>FMH27 (25.4)</b>	φ80	27(25.4)	76(70)	M12×1.75	19.5(18.5)	8~10	3.5
<b>FMH32 (31.75)</b>	φ100	32(31.75)	96	M16×2.0	24	10~13	4
<b>FMH40 (38.1)</b>	φ125	40(38.1)	100	M20×2.5	30(29)	10~15	5
<b>FMH50.8</b>	φ160	50.8	100	M24×3.0	37.5	15~20	7

★Fixing dimension is basically based on FMA/FMC. ★The combination of the other cutter dia. are also available.

## FMH Inch Series

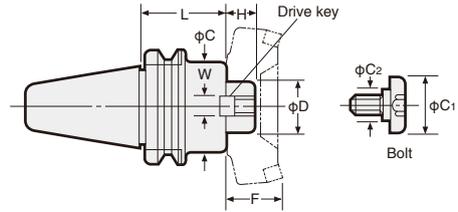
TAPER	Code No.	Arbor						Drive Key	Lock Bolt	G Cap Bolt	Weight (kg)
		D	L	H	C	C1	W				
No.40	<b>NBT40-FMH22.225- 47 - 45</b> <b>(NIT40)</b>	22.225	45	17	47	28	8	FW 3	FM10	—	1.3
	- 60		60								1.5
	- 90		90								1.9
	-150		150								2.7
	-FMH22.225- 60 - 45	22.225	45	17	60	28	8	FW 3	FM10	—	1.5
	- 60		60								1.8
	- 90		90								2.5
	-FMH25.4 - 70 - 60	25.4	60	22	70	33	9.5	FW 5	FM12	—	2.0
	- 90		90								2.7
	-105		105								3.1
	-FMH31.75 - 76 - 60	31.75	60	30	76	40	12.7	FW13	FM16	—	2.2
	- 90		90								2.9
	-FMH31.75 - 96 - 60	31.75	60	30	96	40	12.7	FW13	FM16	—	2.5
	No.50	<b>NBT50-FMH22.225- 47 - 60</b> <b>(NIT50)</b>	22.225	60	17	47	28	8	FW 3	FM10	—
-105		105		4.7							
-150		150		5.3							
-200		200		6.0							
-250		250		6.6							
-300		300		7.7							
-350		350	8.9								
-FMH22.225- 60 - 60		22.225	60	17	60	28	8	FW 3	FM10	—	4.2
-105			105								5.2
-150			150								6.2
-200			200								7.4
-250			250								8.5
-300			300								9.6
-350		350	10.6								
-FMH25.4 - 70 - 45		25.4	45	22	70	33	9.5	FW 5	FM12	—	4.0
- 60			60								4.5
- 90			90								5.4
-150			150								7.2
-200			200								8.7
-250			250								10.3
-300		300	11.8								
-FMH31.75 - 76 - 45		31.75	45	30	76	40	12.7	FW12	FM16	—	4.1
- 75			75					5.2			
-105			105					6.3			
-150			150					7.9			
-200			200					9.7			
-250			250					11.6			
-300		300	13.4								
-FMH31.75 - 96 - 45		31.75	45	30	96	40	12.7	FW13	FM16	—	4.3
- 75			75								6.0
-105			105								7.7
-150			150								10.3
-200			200								13.1
-250			250								16.4
-300	300	19.2									
-FMH38.1 -100 - 45	38.1	45	34	100	50	15.9	FW19	FM20	—	4.4	
- 75		75								6.3	
-105		105								8.1	
-150		150								10.9	
-200		200								14.5	
-250		250								17.5	
-300	300	20.5									
-FMH50.8 -100 - 45	50.8	45	36	100	65	19	FW23	FM24	—	4.4	

★Drive keys, L-Wrench & Bolt are supplied as standard.  
★Above weight is for Arbor only. (Not include Face Mill Cutter)

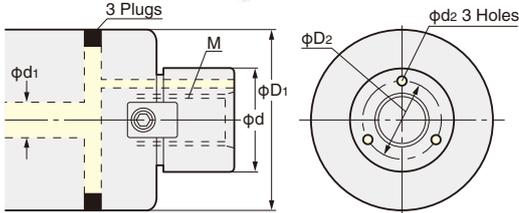
# 2LOCK FMH FACE MILL ARBOR



■ For Oil Hole Cutter  
■ For High Feed Cutter



FMH



Code No.	Cutter Dia.	φd	φD1	M	Coolant Hole		
					φD2	φd1	φd2
FMH22 (22.225)	φ50, φ52 φ63, φ66	22 (22.225)	47 60	M10×1.5	16	6~8	3
FMH27 (25.4)	φ80	27 (25.4)	76 (70)	M12×1.75	19.5 (18.5)	8~10	3.5
FMH32 (31.75)	φ100	32 (31.75)	96	M16×2.0	24	10~13	4
FMH40 (38.1)	φ125	40 (38.1)	100	M20×2.5	30 (29)	10~15	5
FMH50.8	φ160	50.8	100	M24×3.0	37.5	15~20	7

★ Fixing dimension is basically based on FMA/FMC. ★ The combination of the other cutter dia. are also available.

## FMH Metric Series

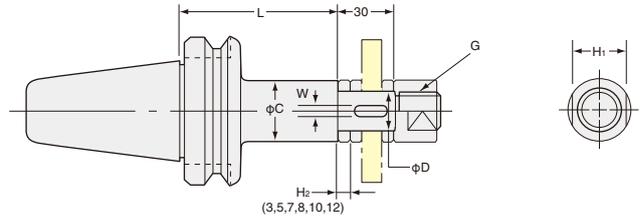
TAPER	Code No.	Arbor						Drive Key	Lock Bolt	G Cap Bolt	Weight (kg)
		D	L	H	C	C1	W				
No.30	NBT30-FMH16- 37 - 35	16	35	17	37	20	8	FW 3	FM 8	—	0.6
	-FMH22- 47 - 45	22	45	18	47	16	10	FW 8	—	M10 × 30	0.8
	-FMH27- 60 - 45	27	45	20	60	18	12	FW11	—	M12 × 35	1.0
No.40	NBT40-FMH16- 37 - 40	16	40	17	37	20	8	FW 3	FM 8	—	1.1
	(NIT40)-FMH22- 47 - 45		45								1.3
	- 60		60	18	47	16	10	FW 8	—	M10 × 30	1.5
	- 90		90								1.9
	-150		150								2.7
	-FMH22- 60 - 45		45								1.5
	- 60	22	60	18	60	16	10	FW 8	—	M10 × 30	1.8
	- 90		90								2.5
	-FMH27- 60 - 45		45								1.5
	- 60	27	60	20	60	18	12	FW11	—	M12 × 35	1.8
	- 90		90								2.5
	-FMH27- 76 - 60		60	20	76	18	12	FW11	—	M12 × 35	2.1
- 90		90								2.8	
-FMH32- 96 - 60		60	22	96	24	14	FW16	—	M16 × 35	2.4	
No.50	NBT50-FMH16- 37 - 60		60								3.8
	(NIT50) -105		105	17	37	20	8	FW 3	FM 8	—	4.1
	-150		150								4.5
	-200		200								4.9
	-FMH22- 47 - 60		60								4.1
	-105		105								4.7
	-150		150								5.3
	-200	22	200	18	47	16	10	FW 8	—	M10 × 30	6.0
	-250		250								6.7
	-300		300								7.8
	-350		350								8.9
	-FMH22- 60 - 60		60								4.2
	-105		105								5.2
	-150		150								6.3
	-200	22	200	18	60	16	10	FW 8	—	M10 × 30	7.4
	-250		250								8.5
	-300		300								9.6
	-350		350								10.7
	-FMH27- 60 - 45		45								3.9
	- 90		90								5.0
	-150		150								6.3
	-200	27	200	20	60	18	12	FW11	—	M12 × 35	7.4
	-250		250								8.5
	-300		300								9.6
	-FMH27- 76 - 45		45								4.0
	- 90		90								5.6
	-150		150								7.8
-200	27	200	20	76	18	12	FW11	—	M12 × 35	9.7	
-250		250								11.4	
-300		300								13.2	
-FMH32- 96 - 45		60								4.2	
- 90		90								6.8	
-150		150								10.2	
-200	32	200	22	96	24	14	FW16	—	M16 × 35	13.3	
-250		250								16.1	
-300		300								19.0	
-FMH40-100 - 45		45								4.4	
- 75	40	75	26	100	50	16	FW22	FM20	—	6.2	
-105		105								8.1	

★ Drive keys, L-Wrench & Bolt are supplied as standard.  
★ Above weight is for Arbor only. (Not include Face Mill Cutter)

■ Taper contact area of more than 80% ensures reliable milling with no chattering accompanied.



SCA



Inch Series

(●)figures for Metric Series

Metric Series

TAPER	Code No.(φD-L)	H <sub>1</sub>	C	W	G	Weight(kg)	Code No.(φD-L)
No.30	NBT30-SCA12.7 -60	17	20	—	M12	1.0	NBT30-SCA13-60
	-SCA15.875-60	23	26	3.18 (4)	M14	1.1	-SCA16-60
	-SCA22.225-60	29	34	3.18 (6)	M20	1.2	-SCA22-60
	-SCA25.4 -60	32	40	6.35 (7)	M24	1.3	-SCA27-60
No.40	NBT40-SCA12.7 -75	17	20	—	M12	1.2	NBT40-SCA13-75
	-105					-105	
	(NIT40)-SCA15.875-75	23	26	3.18 (4)	M14	1.4	-SCA16-75
	-105					-105	
	-SCA22.225-75	29	34	3.18 (6)	M20	1.7	-SCA22-75
	-120					-120	
	-SCA25.4 -75	32	40	6.35 (7)	M24	2.0	-SCA27-75
	-120					-120	
-SCA31.75 -90	41	46	7.92 (8)	M30	2.6	-SCA32-90	
No.50	NBT50-SCA12.7 -75	17	20	—	M12	4.0	NBT50-SCA13-75
	-105					-105	
	(NIT50)-SCA15.875-90	23	26	3.18 (4)	M14	4.2	-SCA16-90
	-120					-120	
	-SCA22.225-90	29	34	3.18 (6)	M20	4.4	-SCA22-90
	-135					-135	
	-SCA25.4 -90	32	40	6.35 (7)	M24	4.4	-SCA27-90
	-135					-135	
	-SCA31.75 -90	41	46	7.92 (8)	M30	4.5	-SCA32-90
	-135					-135	
	-SCA38.1 -90	46	55	9.52 (10)	M36	4.7	-SCA40-90
	-135					-135	
						4.9	
						5.2	
						4.9	
						5.9	

★JIS B4206, JIS B4107, JIS B4219, JIS B4109 cutters can be attached.  
 ★Key and Collars(H<sub>2</sub>=3, 5, 7, 8, 10, 12) are supplied as standard. P.128  
 ★The Code No. of Nut is unified from "GN" to "GNT".

# 2LOCK HIGH SPEED SPINDLE SPEEDER

**NIKKEN**

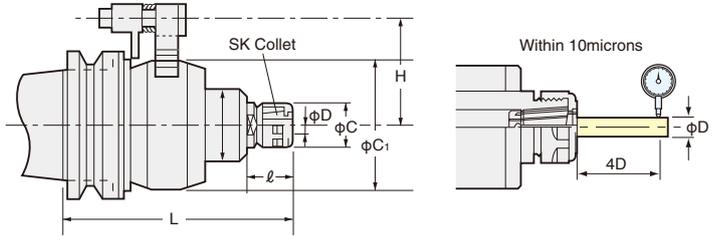


**10,000~40,000min<sup>-1</sup>**

- NIKKEN NX increases the spindle speed by 4 or 5 times, so economically convert your standard M/C to high speed M/C.
- Inside gears are mirror-finish ground by NIKKEN original Fluid-Dynamic Grinding Process.
- Run-out accuracy is more stable due to TiN Bearing Nut (standard accessory).

**NX, PX**

Explanation of the Code No.  
**NBT40-NX 5 160**  
 • Length  
 • Ratio  
 • NX:4times, 5 times  
 • PX:6times, 10 times  
 • Shank



TAPER	Code No.	D	L	C	C <sub>1</sub>	ℓ	H	Ratio	MAX. min <sup>-1</sup>	Weight(kg)	Collet	
No.30	NBT30-NX 5-153	1.75~10	153	27.5	85	32	55	5	20,000	2.9	SK 10A	
	NBT40-NX 5-153		153							5.0		
No.40	(NIT40)-PX 6-150GX	0.5~8.0	149	22	76	14.5	60	6	30,000	4.1	ETS14	
	-PX10-160GX		162.5							98		10
No.50	NBT50-NX 4-192	2.75~16	192	40	118	46	82	4	10,000	11.0	SK 16A	
	(NIT50)-NX 5-151	1.75~10	151	27.5	85			5	20,000	7.0	SK 10A	
	-PX 6-140GX	0.5~8.0	142	22	76			14.5	6	30,000	6.8	ETS14
	-PX10-155GX		155.5						98	10	40,000	

**NX type**

- ★For End Mill, please use SK A type collet. For Drill, please use SK-P class collet. P.198
- ★Wrench, Collet Extractor and A type SK Collets are supplied as standard.
- NX5: SK10-6A, 8A, 10A NX4: SK16-8A, 10A, 12A, 16A
- ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.
- ★Air Cylinder for Cooling (NXE-COOL) is highly recommended to use for the stable milling.



**Air Cylinder for Cooling with ON/OFF Magnet NXE-COOL**

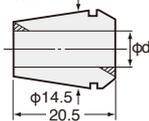
The best cooling is to cool the speeder body directly.



**PX type**

- ★Grease lubrication is standard.
- ★Please add "MX" instead of "GX" at the end of Code No. for the oil mist lubrication. e.g. NBT40-PX6-130MX
- ★ETS collet is supplied as an option.

**ETS Collet**



Explanation of the Code No.

**ETS 14 - 0.5**

- MAX. Chucking Dia.
- Style No.
- Symbol of ETS Collet

- ★φd=0.5~1.0: Each 0.1mm(Gripping range:0.1mm) e.g. ETS14-0.5:0.4~0.5mm
- ★φd=1.25~2.5: Each 0.25mm(Gripping range:0.25mm)
- ★φd=3.0~8.0: Each 0.5mm(Gripping range:0.5mm)

# 2LOCK AIR TURBINE SPINDLE TOOL

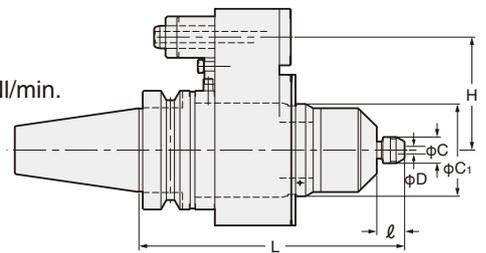
**NIKKEN**



**150,000min<sup>-1</sup>**

**Run-out Accuracy of the Spindle: Within 1μm**

Air Pressure, Consumption:0.5MPa, 90NI/min.  
 Collet Size:MAX φ4.0mm



**HTS**

Explanation of the Code No.  
**NBT40-HTS1500-140**  
 • Nominal Gauge Length  
 • 150,000min<sup>-1</sup>  
 • Symbol of Air Turbine Spindle  
 • Shank No.

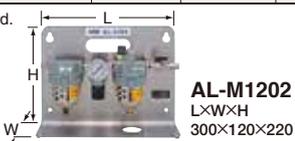
HSK shank is also available.

**HSK 50A-HTS1500-158**  
**HSK 63A-HTS1500-160**  
**HSK100A-HTS1500-167**

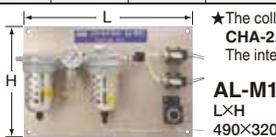
**Please do not rotate the machine spindle.**

TAPER	Code No.	D	L	C	C <sub>1</sub>	ℓ	H	MAX. min <sup>-1</sup>	Weight(kg)	Collet
No.30	NBT30-HTS1500-148	0.5~4	148	13.9	49	15	55	150,000	2.7	CHA-□ (Internal dia.)
	-HTS1500-152B		152				40		2.7	
No.40	NBT40-HTS1500-140	140	60	3.2						
No.50	NBT50-HTS1500-146	146	82	6.0						

- ★Collet CHA-4.0 and spanner are supplied as standard.
- ★Air line kit(AL-M1202/AL-M1203BS2), the lubrication oil(K-211)and the stopper block are available as an option.



**AL-M1202**  
 L×W×H  
 300×120×220



★The collet which internal dia. excepts φ4.0mm is available as an option.  
**CHA-2.35, 3.0, 3.175**  
 The internal dia. range is each 0.1mm incremental from φ0.5 to φ4.0mm.  
**AL-M1203BS2(DC24V ON/OFF)**  
 L×H  
 490×320

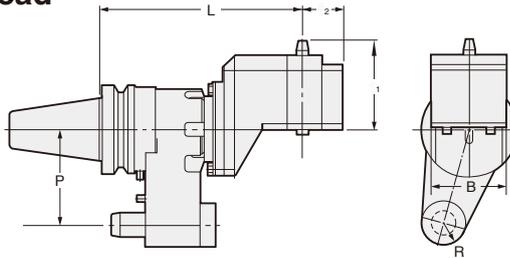
# 2LOCK QUICK TYPE ANGULAR HEAD (Free Positioning in 360°)



## Quick type Off-Set Angular Head



AFT



Explanation of the Code No.

**NBT40 - AF T 30 - 200**

- Length from Gauge Line
- Taper No. of Adapter
- Quick type
- Off-Set type Angular Head
- Shank

MAX2,000min<sup>-1</sup>

TAPER	Code No.	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	B	R	Adapter	Weight(kg)
No.40	<b>NBT40</b> <b>(NIT40)</b> -AFT30-200	NBT40	200	65	85	35	70	17.5	<b>AHK30</b>	7.5
No.50	<b>NBT50</b> <b>(NIT50)</b> -AFT35-230	NBT50	230	110	85	45	84	25	<b>AHK35</b>	16.0

- ★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling)
- ★All types are available with Oil Hole System. ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.
- ★NIT40-AFT30-200 and NIT50-AFT35-230 are also available. ★When M/C spindle rotates CW, the cutter rotates CW.

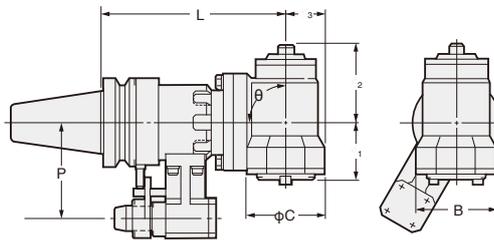
- ★For adapter, please refer P.142.
- ★Test bar is attached as standard.



## Quick type 90° Angular Head



AHT



Explanation of the Code No.

**NBT40 - AH T 30 - 160 - 90**

- Angle
- Length from Gauge Line
- Taper No. of Adapter
- Quick type
- Symbol of Angular Head
- Shank

MAX2,000min<sup>-1</sup>

TAPER	Code No. L -θ	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	C	B	θ	Adapter	Weight(kg)
No.40	<b>NBT40-AHT30-160 - 90</b> <b>(NIT40)</b>	NBT40	160	65	58	61	37	86	80	90	<b>AHK30</b>	6.5
	<b>-250* -90</b>	NBT40	250									10.5
No.50	<b>NBT50-AHT35-210 - 90</b> <b>(NIT50)</b>	NBT50	210	110	65	88	45	100	90	90	<b>AHK35</b>	17.0
	<b>-300* -90</b>	NBT50	300									22.0

- ★Taper Connection System is applied to Stopper Block. (Different from the another FA tooling)
- ★All types are available with Oil Hole System.
- ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.
- ★Models with \* mark : Detailed discussion is needed. ★When M/C spindle rotates CCW, the cutter rotates CW.

- ★For adapter, please refer P.142.
- ★Test bar is attached as standard.

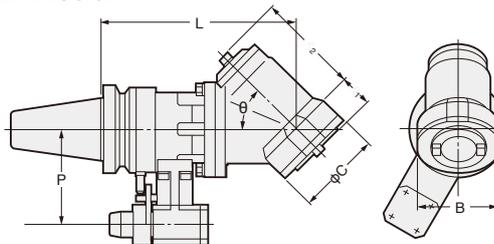


## Quick type 30°, 45°, 60° Angular Head



AHT

Photo shows 30° type.



Explanation of the Code No.

**NBT40 - AH T 30 - 170 - 45**

- Angle
- Length from Gauge Line
- Taper No. of Adapter
- Quick type
- Symbol of Angular Head
- Shank

MAX2,000min<sup>-1</sup>

TAPER	Code No. L -θ	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	C	B	θ	Adapter	Weight(kg)	
No.40	<b>NBT40-AHT30-205 - 30</b> <b>(NIT40)</b>	NBT40	205	65	35	88	86	80	30	<b>AHK30</b>	6.5	
	<b>-170 - 45</b>		170						45		6.5	
	<b>-160 - 60</b>		160						60		6.5	
	No.40	<b>-250* -30</b>	NBT40	250	65	35	88	86	80	30	<b>AHK30</b>	10.5
		<b>-45</b>								45		10.5
		<b>-60</b>								60		10.5
No.50	<b>NBT50-AHT35-258 - 30</b> <b>(NIT50)</b>	NBT50	258	110	26	110	100	90	30	<b>AHK35</b>	17.0	
	<b>-225 - 45</b>		225						45		17.0	
	<b>-210 - 60</b>		210						60		17.0	
	No.50	<b>-300* -30</b>	NBT50	300	110	26	110	100	90	30	<b>AHK35</b>	22.0
		<b>-45</b>								45		22.0
		<b>-60</b>								60		22.0

- ★Taper Connection System is applied to Stopper Block. (Different from the another FA tooling)
- ★All types are available with Oil Hole System.
- ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.
- ★Models with \* mark : Detailed discussion is needed. ★When M/C spindle rotates CCW, the cutter rotates CW.

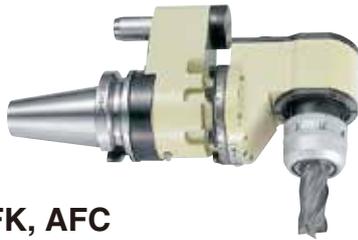
- ★For adapter, please refer P.142.
- ★Test bar is attached as standard.



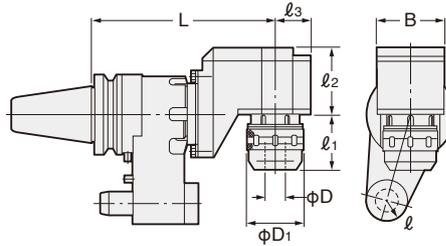
# 2LOCK SOLID TYPE ANGULAR HEAD (Free Positioning in 360°)



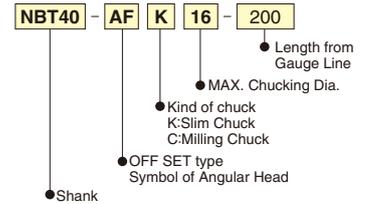
## Solid OFF SET type Angular head



AFK, AFC



Explanation of the Code No.



TAPER	Code No. -L	D	D <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	B	R	min <sup>-1</sup>	Weight(kg)	Collet
No.40	NBT40-AFK16-200	2.75~16	40	50	85	35	70	17.5	2,000	8.5	SK 16
	(NIT40)-AFC20-200	2~20	52	56						8.7	KM 20
No.50	NBT50-AFC20-230	2~20	52	58	85	45	84	25	2,000	17.0	KM 20
	(NIT50)-AFC32-230	3~32	69	65						17.2	KM 32

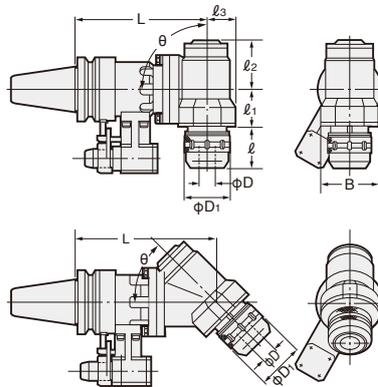
★When M/C spindle rotates CW, the cutter rotates CW.

★Test bar is attached as standard.

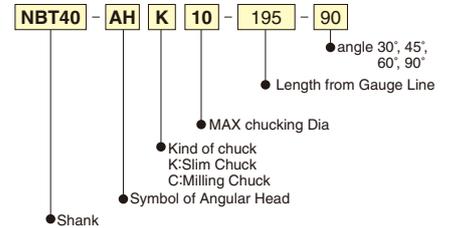
## Solid - 90°, 45° type Angular head



AHK, AHC



Explanation of the Code No.



TAPER	Code No. -L -	D	D <sub>1</sub>	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	B	min <sup>-1</sup>	Weight(kg)	Collet
No.30	NBT30-AHK10-120-90	1.75~10	27.5	20	49	50	27.5	55	2,000	3.0	SK 10
No.40	NBT40-AHK10-180,220*-90	1.75~10	27.5	18	45	57	32	60	4,000	8.0, 9.0	SK 10
	(NIT40)-AHK16-180,220*-90	2.75~16	40	25	41	58	35	70	4,000	8.7, 9.7	SK 16
No.50	-AHC20-160,250*-90	2~20	52	57	58	61	37	80	2,000	7.1, 11.1	KM20
	NBT50-AHK10-200,240*-90	1.75~10	27.5	18	45	57	32	60	4,000	15.0, 16.0	SK 10
	(NIT50)-AHK16-200,240*-90	2.75~16	40	25	41	58	35	70	4,000	15.7, 16.7	SK 16
	-AHK25-210,300*-90	7.5~25.4	55	57	60	82	45	90	2,000	17.2, 22.2	SK 25
-AHC32-210,300*-90	3~32	69	17.5, 22.5							KM32	

★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling)

★All types are available with Oil Hole System.

★Test bar is attached as standard.

★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.

★For (SK10) (SK16) (SK25), please refer P.198. For (KM20) (KM25) and (KM32), please refer P.192.

★Angle 30°, 45°, 60° are also available as an option. ★\*Mark is for light cutting.

★When M/C spindle rotates CCW, the cutter rotates CW.

★Please contact with us for the dimension of 30°, 45°, 60° type.

# 2LOCK MODULAR TYPE ANGULAR HEAD

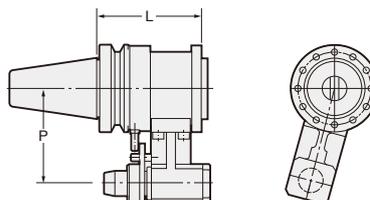


## Modular type Angular Head

AHM



AHM



MAX6,000min<sup>-1</sup>

TAPER	Code No. -L	L	P	Weight(kg)	Suitable Modular Head
No.40	NBT40 (NIT40)-AHM-100	100	65	4.5	
No.50	NBT50 (NIT50)-AHM-120	120	110	11.5	

★Taper Connection System is applied to Stopper Block.(Different from the another FA Tooling)

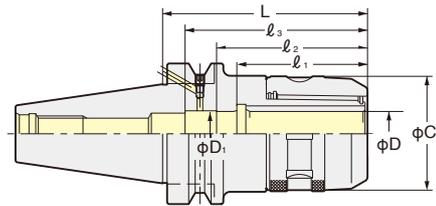
★All types are available with Oil Hole System.

★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.

# 2LOCK FLANGE THROUGH COOLANT TYPE HOLDER



## MILLING CHUCK for Flange Through PAT.



TAPER	Code No.	C <sub>1</sub>	D <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Stopper (Option)	Collet	Weight(kg)
No.40	NBT40-C20F- 90,105	52	20	58	66	80	9MC20H	<b>CCK20</b> <b>CCNK20</b>	1.9, 2.0
	-C25F- 90,105	60	25	61	70		9MC25H	<b>CCK25</b> <b>CCNK25</b>	2.0, 2.2
	-C32F-105,120	69		70	81		107	9MC32H	<b>CCK32</b> <b>CCNK32</b>
No.50	NBT50-C20F-105,135,165	52	20	58	66	80	9MC20H	<b>CCK20</b> <b>CCNK20</b>	4.2, 4.4, 4.8
	-C25F-105,135,165	60	25	61	72		9MC25H	<b>CCK25</b> <b>CCNK25</b>	4.5, 5.1, 5.7
	-C32F-120,135,165	69		70	81		107	9MC32H	<b>CCK32</b> <b>CCNK32</b>
	-C42F-120,135,165	86	42		105, 115, 115		125	9MC42H	<b>CCK42</b> <b>CCNK42</b>

★Spanner is available as an option. C20 : 9HC22, C25 : 9HC25  
C32 : 9HC32, C42 : 9HC42

★Shank of High Speed Milling Chuck (G) is **2LOCK** . e.g. NBT40-C20F-105G  
GH Handle P.48 is necessary for High Speed Milling Chuck.

★Please refer P.192 for CCK Collet and CCNK Collet.

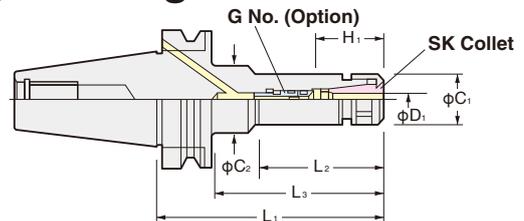
★In case of Heavy End Milling operation, please chuck the End Mill longer than l<sub>1</sub> without using stopper. P.129

★Please add "RP" at the end of Code No. for Rust Proof Treatment Milling Chuck. e.g. NBT40-C20F-75-RP.

★Please note the acceptable shank tolerance is h7.



## SLIM CHUCK for Flange Through



TAPER	Code No.	D <sub>1</sub>	H <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	C <sub>1</sub>	C <sub>2</sub>	G No. (Option)	Weight (kg)	Collet
No.40	NBT40-SK 6F- 90,120	4~6	26~31	51,60	60,90	19.5	32,32	SKG6-6HG	1.1,1.4	<b>SK 6</b>
	-SK10F- 90,120,150,180	5~10	33~41	48,73,73,73	60,90,118,148	27.5	40,40,34.5,39	SKG10-10HG	1.2,1.4,1.6,1.6	<b>SK10</b>
	-SK13F- 90,120,150,180	5~13	39~51	58,88,88,88	-,-,118,148	33	-,-,40,40	SKG13-10HG	1.4,1.7,1.8,1.8	<b>SK13</b>
	-SK16F- 90	10~16	45~50	58	-	40	-	SKG16-12HGB	1.5	<b>SK16</b>
	-SK16F-120,150,180		45~57	88,118,148				SKG16-12HG	1.7,1.9,2.0	
	-SK20F- 90,120	10~20	57~63,47~63	60,90	-	48.5	-	SKG20-18HGB,SKG20-18HG	1.4,2.0	<b>SK20</b>
	-SK25F- 90,120	16~25	50~58,55~65	61,91				55	SKG25-18HGC,SKG25-24HGA	1.8,2.0
No.50	NBT50-SK 6F-105,165	4~6	26~31	55,60	64,114	19.5	32,32	SKG6-6HG	3.8,4.0	<b>SK 6</b>
	-SK10F-105,165,200,225	5~10	33~41	57,75,75,75	-,114,151,178	27.5	-,32,36,40	SKG10-10HG	4.2,4.6,4.8,5.1	<b>SK10</b>
	-SK13F-105,165,200	5~13	39~51	62,92,92	-,122,157	33	-,45,45	SKG13-10HG	4.5,4.9,5.2	<b>SK13</b>
	-SK16F-105,165,200	10~16	45~57	62,90,90	-,122,157	40	-,50,52	SKG16-12HG	4.7,5.1,5.5	<b>SK16</b>
	-SK20F-105,165	10~20	47~63	62,122	-	48.5	-	SKG20-18HG	4.3,5.0	<b>SK20</b>
	-SK25F-105,165	16~25	55~65,55~70	62,122				55	SKG25-24HGA,SKG25-24HG	5.2,5.6

★Collet, adjust screw (G No.) and spanner are available as an option.

The Code No. of the spanner is SK6F (C=φ18) : SKL-6, SK6F (C=φ19.5) : SKL-6W, SK10F: SKL-10, SK13F: 9HC12A, SK16F: 9HC16, SK20F: 9HC22, SK25F: 9HC25

★Shank of High Speed Slim Chuck (P) is **2LOCK** . e.g. NBT40-SK10F-90P GH Handle P.48 is necessary for High Speed Slim Chuck.

★Please add "RP" at the end of Code No. for Rust Proof Treatment Slim Chuck. e.g. BT40-SK10F-90-RP.

★Please refer P.198 for SK Collet.

★When cutter shank dia. is smaller than MIN. of D<sub>1</sub>, special adjust screw (G No.) is required. P.49



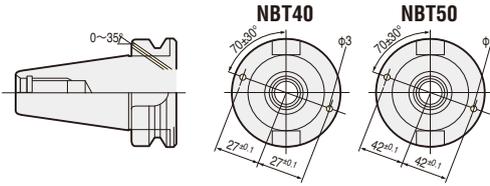
- The special pull stud with Oring is required for the M/C with flange through coolant capability.
- When the stroke of the coolant nozzles at the spindle flange on the M/C with flange through coolant capability is shorter, it may be a collision between flange of 2LOCK tool and the nozzles. Please check the specification on your M/C.

# 2LOCK FLANGE THROUGH COOLANT TYPE HOLDER



## High Pressure Coolant Through Flange

The Flange Through Coolant System is a solution against the spindle rust and the dust problems of Centre Through Coolant System. These Tool Holder are used for Machine has Flange Through Holes and standard as **DIN69871/B**.



## RPT (Rust Proof Treatment) P.130

Pull Stud (with O-ring) for Flange Through type is also available.

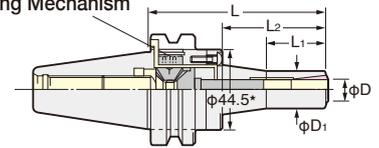


## MINI-MINI CHUCK for Flange Through

PAT.

30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-out Accuracy: Within 3µm

New Locking Mechanism



High Speed

★ : MMC12 : phi52.4

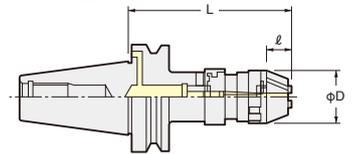
TAPER	Code No.	φD	φD <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	Collet	MAX. min <sup>-1</sup>	Weight (kg)
No.40	NBT40-MMC 8F- 90, 120	2~ 8	20	33, 40	42, 72	VMK 8J	30,000	1.4, 1.5
	-MMC12F- 90, 120	4~12	30	36, 60	44, 74	VMK12J		1.7, 1.8
No.50	NBT50-MMC 8F-105, 135, 165	2~ 8	20	33, 40, 40	42, 72, 102	VMK 8J	20,000	4.4, 4.5, 4.6
	-MMC12F-105, 135, 165	4~12	30	36, 60, 70	44, 74, 104	VMK12J		4.6, 4.7, 4.8

★Wrench is supplied as standard. Collet is available as an option P.192.

★Please use VMK Collet for the cutter with oil hole, and use VMK-J Collet for the cutter without oil hole.  
★Photo shows MINI-MINI Chuck & VMK Collet chucking with phi2.7mm oil hole drill.



## NPU DRILL CHUCK for Flange Through



TAPER	Code No.	φDmm	φD <sub>1</sub>	ℓ	L	Weight (kg)
No.40	NBT40-NPU13F-105	6~ 13	48.5	26.5	112.1~123.1	1.9
	150				157.1~168.1	2.4
No.50	NBT50-NPU13F-110	6~ 13	48.5	26.5	117.1~128.1	4.4
	150				157.1~168.1	4.8

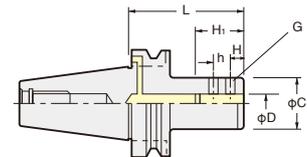
★Wrench is available as an option. NPU8: NPUL-8, NPU13: NPUL-13.

★MIN. Chucking Dia. for center through coolant is phi6mm.

★Please use Slim Chuck P.131 for high pressure coolant (MAX. 7Mpa).



## SIDE LOCK HOLDER (for DRILL) for Flange Through

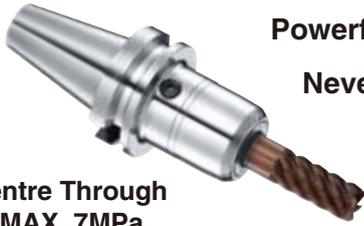


TAPER	Code No.	D	L	C	h	H	H <sub>1</sub>	G	Collet	Weight (kg)
No. 40	NBT40-SL20F- 90	20	90	50	16	12	44.5	M10	—	1.8
	-SL25F- 90	25	90	55	17	14	54.5	M12 P1.25	OK25	1.7
	-SL32F- 90	32	90	60	16	15	59.5	M12 P1.25	OK32	1.9
No. 50	NBT50-SL20F-105	20	105	50	16	12	44.5	M10	—	4.8
	-SL25F-105	25	105	55	17	14	54.5	M12 P1.25	OK25	4.7
	-SL32F-105	32	105	60	16	15	59.5	M12 P1.25	OK32	4.9
	-SL40F-105	40	105	88	19	18	70	M12 P1.25	OK40	5.2

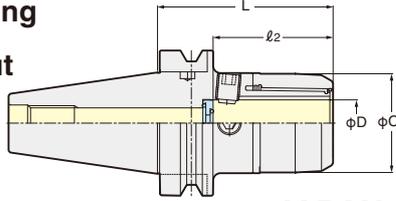
★For OK25, OK32 and OK40 Collet, please refer P.135.

2LOCK

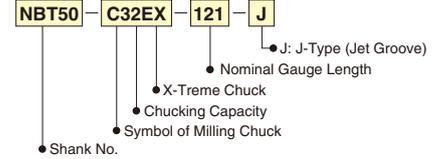
# X-Treme Shank 2LOCK NBT X-Treme Chuck **NEW** NIKKEN



Powerful Gripping  
&  
Never Pull-out



Explanation of the Code No.



Centre Through  
MAX. 7MPa

JAPAN, USA, EU PAT. CHINA PAT.P

TAPER	Code No. ( $\phi D$ - L)	C <sub>1</sub>	L	l <sub>2</sub>	End mill with oil hole		Handle (Option)	Weight (kg)
					Stopper*	Face cap*		
No.40	NBT40-C12EX- 86	40	86	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	1.6
	-C16EX- 96	48	96	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	1.7
	-C20EX- 96	55	96	71	9MC20HEX- 7L	9C20 -FS-EX-A1	GH25	1.8
No.50	NBT50-C12EX- 96	40	96	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	4.0
	-C16EX-106	48	106	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	4.4
	-C20EX-116	55	116	71	9MC20HEX- 12L	9C20 -FS-EX-A1	GH25	5.0
	-C25EX-116	55	116.3	77.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	4.8
	-C32EX-121	68	121.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	5.3
	-C42EX-126	86	126	86	9MC42HEX- 9L	9C42SL-FS-EX-A1	9HC42	6.3

Please use direct chucking without KM collet.

- ★MAX. 7MPa of center through coolant is available with the stopper.
- ★Please use J-type X-Treme chuck, when end mill without oil hole is used. eg) NBT50-C32EX-121-J  
In case of J-type X-Treme chuck, J-type stopper and J-type face cap (with Jet grooves) are attached. 9MC32HEX-7L-J, 9C32L-FS-EX-J
- J-type X-Treme chuck is used for the pocket milling and side milling.
- ★Extended length X-Treme chuck is also available. NBT50-C20EX-135, NBT50-C25EX-135, NBT50-C32EX-135



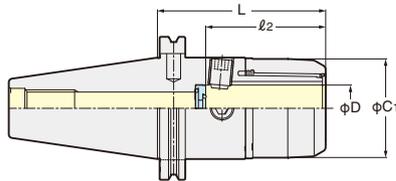
GH Handle P. 48

2LOCK tooling (NBT) can be used as the double face contact tooling on the M/C where spindle is BT double face contact system.  
2LOCK tooling can also be used on the M/C with BT standard spindle.

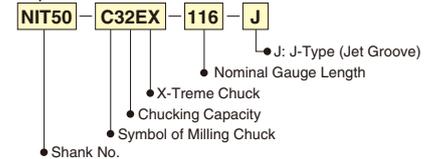
# X-Treme Shank 2LOCK NIT/NCAT X-Treme Chuck **NEW** NIKKEN



Photo shows NIT Shank.



Explanation of the Code No.



Centre Through  
MAX. 7MPa

JAPAN, USA, EU PAT. CHINA PAT.P

TAPER	Code No. ( $\phi D$ - L)	C <sub>1</sub>	L	l <sub>2</sub>	End mill with oil hole		Handle (Option)	Weight (kg)
					Stopper*	Face cap*		
NIT50	NIT50 -C12EX- 96	40	96	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	3.4
	-C16EX-106	48	106	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	3.8
	-C20EX-106	55	106	71	9MC20HEX- 12L	9C20 -FS-EX-A1	GH25	4.3
	-C25EX-111	55	111.3	77.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	4.2
	-C32EX-116	68	116.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	4.7
	-C42EX-126	86	136	86	9MC42HEX- 9L	9C42SL-FS-EX-A1	9HC42	6.0
NCAT50	NCAT50-C12EX- 96U	40	96	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	3.4
	-C16EX-106U	48	106	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	3.8
	-C20EX-106U	55	106	71	9MC20HEX- 12L	9C20 -FS-EX-A1	GH25	4.3
	-C25EX-111U	55	111.3	77.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	4.2
	-C32EX-116U	68	116.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	4.7
	-C42EX-126U	86	126	86	9MC42HEX- 9L	9C42SL-FS-EX-A1	9HC42	6.0

Please use direct chucking without KM collet.

- ★MAX. 7MPa of center through coolant is available with the stopper.
- ★Please use J-type X-Treme chuck, when end mill without oil hole is used. eg) NCAT50-C32EX-116U-J  
In case of J-type X-Treme chuck, J-type stopper and J-type face cap (with Jet grooves) are attached. 9MC32HEX-7L-J, 9C32L-FS-EX-J
- J-type X-Treme chuck is used for the pocket milling and side milling.



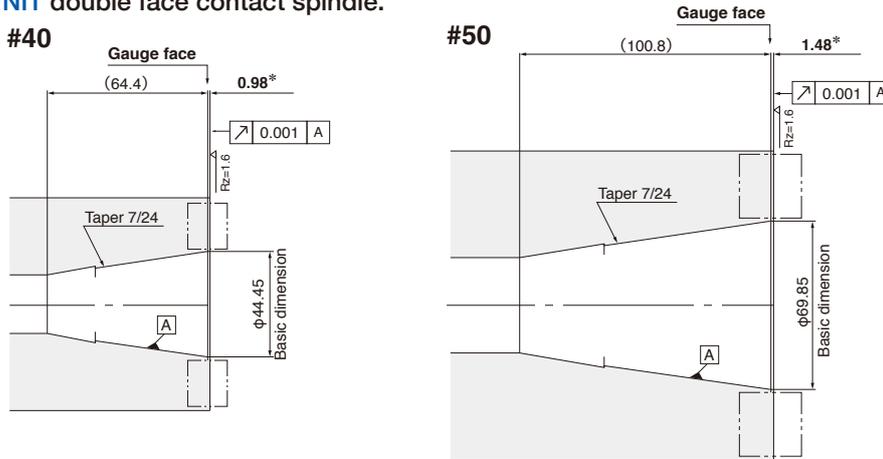
GH Handle P. 48

2LOCK

# 2LOCK NIT DOUBLE FACE CONTACT SPINDLE



The NIKKEN **3LOCK** tooling can be used as the triple face contact (taper, flange and internal taper expansion) on the M/C with **NIT** double face contact spindle. The NIKKEN **2LOCK** tooling can be used as the double face contact on the M/C with **NIT** double face contact spindle.



\* mark: The tolerances of the extension of the spindle flange from gauge face depend on the M/C.



Please be careful to check your M/C specification especially for ATC arm and magazine, when **NIT** tooling is going to use on the M/C with **IT** standard spindle. Because, the flange thickness of **NIT** tooling is 1.7mm (**NIT50**) or 2.2mm (**NIT40**) larger than the thickness of the **IT** standard tooling.

# 2LOCK NIT MULTI LOCK MILLING CHUCK



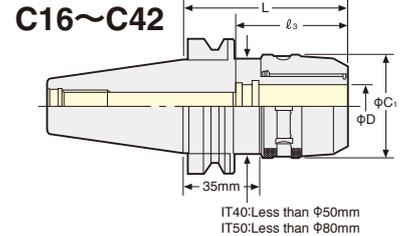
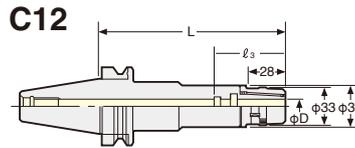
## ANNIVERSARY Type

— Powerful gripping torque —

- High rigidity
- High precision
- Compact design



**C**  
Centre Through  
MAX. 7MPa



IT40: Less than φ50mm  
IT50: Less than φ80mm

TAPER	ITNo. -D -L	Code No.	C <sub>1</sub>	L	l <sub>3</sub>	Collet	Weight (kg)
<b>No.40</b>	<b>NIT40-C12- 65, 90<sup>*1</sup>, 120<sup>*1</sup></b>		33	65, 90, 120	58	<b>KM12 CCK12</b>	1.3, 1.6, 1.8
	<b>-C16- 60, 90<sup>*1</sup>, 120<sup>*1</sup></b>		44	60, 90, 120	65	<b>KM16 CCK16</b>	1.4, 1.7, 2.0
	<b>-C20- 80, 90, 105, 120<sup>*2</sup></b>		52	80, 90, 105, 120	80	<b>KM20 CCK20 CCNK20</b>	1.6, 1.8, 2.0, 2.2
	<b>-C25- 85, 105, 120</b>		60	85, 105, 120	80	<b>KM25 CCK25 CCNK25</b>	2.1, 2.3, 2.5
	<b>-C32- 95, 105, 120</b>		64	95, 105, 120	77, 81, 81	<b>KM32 CCK32 CCNK32</b>	2.1, 2.5, 2.8
<b>No.50</b>	<b>NIT50-C12-105, 135, 165<sup>*1</sup></b>		33	105, 135, 165	58	<b>KM12 CCK12</b>	4.0, 4.3, 4.6
	<b>-C16-105, 135, 165<sup>*1</sup></b>		44	105, 135, 165	65	<b>KM16 CCK16</b>	4.2, 4.6, 5.1
	<b>-C20-105, 135, 165, 180<sup>*1</sup></b>		52	105, 135, 165, 180	80	<b>KM20 CCK20 CCNK20</b>	4.5, 5.1, 5.7, 6.0
	<b>-C25-105, 135, 165</b>		60	105, 135, 165	80	<b>KM25 CCK25 CCNK25</b>	4.8, 5.2, 5.6
	<b>-C32- 85, 105, 120, 135, 165</b>		69	85, 105, 120, 135, 165	81	<b>KM32 CCK32 CCNK32</b>	4.1, 4.6, 5.1, 5.6, 6.4
	<b>-C42- 95<sup>*2</sup>, 105, 135<sup>*1</sup>, 165<sup>*1</sup></b>		86	95, 105, 135, 165	125	<b>KM42 CCK42 CCNK42</b>	5.2, 5.5, 7.2, 8.6

- ★Spanner is available as an option.
- C12 : 9HC12A, C16:9HC16, C20: 9HC20, C25: 9HC25, C32&φC1=64:9HC25, C32:9HC32, C42:9HC42
- ★Please note the acceptable shank tolerance is h7.
- ★Please refer to P.192 for KM, CCK, CCNK Collet.
- ★For heavy duty milling, please grip the end mill shank longer than l<sub>3</sub>.
- ★For Milling Chucks marked \*2, NK Collet, CCNK Collet, ONK Collet and OJK Collet can not be used.
- ★Milling chucks marked \*1 are available as an option.
- ★NIT50-C32-200, 250 and NIT50-C42-200,250 are also available as an option.
- ★Please add "F" for the flange through tool coolant type.
- NIT40-C20F- 90, 120<sup>\*1</sup>      NIT50-C20F-105, 135, 165<sup>\*1</sup>
- C25F- 90, 120<sup>\*1</sup>      -C25F-105, 135, 165<sup>\*1</sup>
- C32F-105
- C32F-105, 135, 165
- C42F-120



## High Speed Milling Chuck



**GH Handle** P.48

Code No.	MAX. (min <sup>-1</sup> )	Code No.	MAX. (min <sup>-1</sup> )
<b>NIT40-C12- 65G, 90G</b>	30,000	<b>NIT50-C12-105G, 135G<sup>*1</sup></b>	20,000
<b>-C16- 60G, 90G</b>	25,000	<b>-C16-105G, 135G<sup>*1</sup></b>	
<b>-C20- 80G, 90G</b>	20,000	<b>-C20-105G, 135G<sup>*1</sup></b>	
<b>-C25- 85G</b>		<b>-C25-105G, 135G<sup>*1</sup></b>	
<b>-C32- 95G, 105G</b>	15,000	<b>-C32- 85G, 105G, 120G</b>	
		<b>-C42- 95P<sup>*2</sup>, 105P</b>	

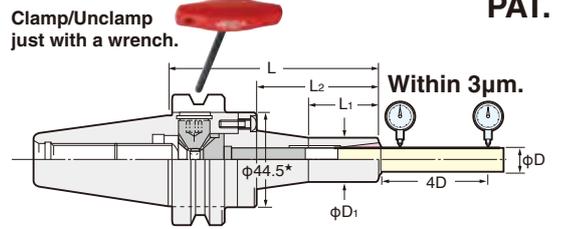
- ★For Milling Chucks except \*2, Stopper for Direct Chucking, ONK Collet and OJK Collet can be used.
- ★The extended gauge length (L) is available. Please contact with us.
- ★The end mill shank tolerance is recommended to be h7.

# 2LOCK NIT MINI-MINI CHUCK ADVANCED ALPHA NEW NIKKEN



The best chuck for the small dia. cutting tool

MAX. 30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-Out Accuracy:3μm at 4D



★MMC12=φ52.4

## MMC

TAPER	Code No.	Chucking Range φD	L	φD <sub>1</sub>	L <sub>1</sub>	Collet	MAX.(min <sup>-1</sup> )	Weight(kg)
No.40	NIT40-MMC 4- 90-AA	1~ 4	90	15	30	MPK 4	30,000	1.2
	-MMC 8- 90-AA,120-AA	2~ 8	90,120	20	33,40	PMK 8 VMK 8	30,000	1.4, 1.5
	-MMC12- 90-AA,120-AA	4~12	90,120	30	35,60	PMK12 VMK12	30,000	1.7, 1.8
No.50	NIT50-MMC 4-105-AA	1~ 4	105	15	30	MPK 4	20,000	3.8
	-MMC 8-105-AA,135-AA,165-AA	2~ 8	105,135,165	20	33,40,40	PMK 8 VMK 8	20,000	4.4,4.5,4.6
	-MMC12-105-AA,135-AA,165-AA	4~12	105,135,165	30	35,60,70	PMK12 VMK12	20,000	4.6,4.7,4.8

★Wrench is supplied as standard. ★MPK, PMK, VMK collet is available as an option. Please refer to P.193  
★Please add "C" for the centre through tool coolant type. e.g. NIT40-MMC8C-90-AA  
★Please add "F" for the flange through tool coolant type; NIT40-MMC 8F- 90-AA,120-AA NIT50-MMC 8F-105-AA,120-AA  
-MMC12F- 90-AA,120-AA -MMC12F-105-AA,120-AA

# 2LOCK NIT SLIM CHUCK

High precision  
High speed  
Powerful gripping

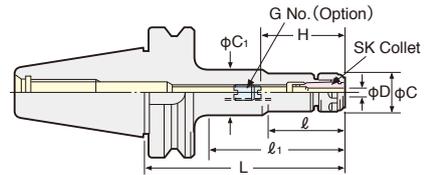


SK  
Centre Through  
MAX. 7MPa



10,000min<sup>-1</sup>

Dampening effect  
+  
Jet Spray Coolant Supply  
||  
Over 3 times of extended Tool life  
(for HSS & Carbide Drills)



When SK J type nut is used, the total chuck length will be extended by 6mm. PAT.

TAPER	Code No.	D	H	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	G No. (Option)	Weight (kg)	SK Collet
No.40	NIT40-SK 6C- 60, 90,120,150	0.7~6.0	26~31	38,48,62,60	-, ,82,112	19.5	-, ,32,25	SKG 6- 6HG	1.0, 1.1, 1.2, 1.4	SK 6
	-SK10C- 60, 90,120,150,180	1.75~10.0	33~41	40,50,60,73,73	-, ,82,112,144	27.5	-, ,32,33.5,39	SKG10-10HG	1.1, 1.2, 1.4, 1.6, 1.6	SK10
	-SK13C- 60, 90,120,150,180	2.75~13.0	39~51	40,50,80,88,88	-, ,-, ,114,144	33	-, ,-, ,40,40	SKG13-10HG	1.3, 1.4, 1.6, 1.8, 1.8	SK13
	-SK16C- 60, 90,120,150,180	2.75~16.0	45~57 <sup>*1</sup>	40,54,84,114,144	-	40	-	SKG16-12HG <sup>*1</sup>	1.4, 1.5, 1.7, 2.0, 2.0	SK16
	-SK20C- 90, 120	3.5~20.0	47~63	70,100	-	48.5	-	SKG20-18HG	1.7, 1.9	SK20
	-SK25C- 90, 120	7.5~25.4	60~70 <sup>*2</sup>	70,100	-	55	-	SKG25-24HG <sup>*2</sup>	1.8, 2.0	SK25
No.50	NIT50-SK 6C-105,135,165,200	0.7~6.0	26~31	60,62,62,60	-, ,93,117,154	19.5	-, ,32,32,30	SKG 6- 6HG	3.7,3.9,4.1,4.3	SK 6
	-SK10C-105,135,165,200	1.75~10.0	33~41	65,70,75,75	-, ,95,125,154	27.5	-, ,32,32,36	SKG10-10HG	4.2, 4.4, 4.6, 5.0	SK10
	-SK13C-105,135,165,200	2.75~13.0	39~51	60,100,92,102	-, ,125,160	33	-, ,45,45	SKG13-10HG	4.5, 4.7, 4.8, 5.3	SK13
	-SK16C-105,135,165,200	2.75~16.0	45~57	65,95,90,90	-, ,125,160	40	-, ,50,50	SKG16-12HG	4.7, 4.9, 5.1, 5.5	SK16
	-SK20C-105,135,165	3.5~20.0	47~63	65,95,125	86,116,146	48.5	70.9	SKG20-18HG	4.8, 5.1, 5.4	SK20
	-SK25C-105,135,165,200	7.5~25.4	60~70	65,95,125,160	-	55	-	SKG25-24HG	4.8, 5.2, 5.6, 6.0	SK25

★Dimension for NIT40-SK16C-60 marked\*1, H=45~52 SKG16-10HG  
NIT40-SK25C-90 marked\*2, H=60~65 SKG25-18HG  
★Collet, adjust screw(G No.)and SKL spanner are available as an option.  
SK6(C=φ18):SKL-6, SK6(C=φ19.5):SKL-6W, SK10:SKL-10, SK13:9HC12A, SK16:9HC16, SK20:9HC22, SK25:9HC22.  
★Please refer to P.198 for SK collet and please refer to P.49 for J type nut.  
★Please add "F" for the flange through tool coolant type.  
NIT40-SK 6F- 90,120 NIT50-SK 6F-105,165  
-SK10F- 90,120 -SK10F-105,165  
-SK13F- 90,120 -SK13F-105,165  
-SK16F- 90,120 -SK16F-105,165  
-SK20F- 90,120 -SK20F-105,165  
-SK25F-120 -SK25F-105,165



High Speed SLIM CHUCK



GH Handle P.48

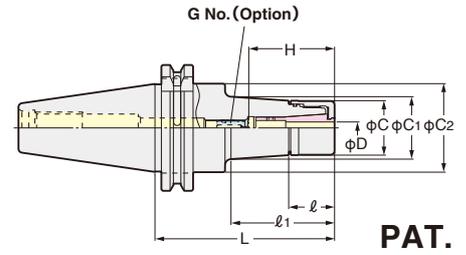
Code No.	MAX. (min <sup>-1</sup> )	Code No.	MAX. (min <sup>-1</sup> )
NIT40-SK 6C- 60P, 90P, 120P	30,000	NIT50-SK 6C-105P, 165P	20,000
-SK10C- 60P, 90P, 120P		-SK10C-105P, 165P	
-SK13C- 60P, 90P, 120P		-SK13C-105P, 165P	
-SK16C- 60P, 90P, 120P	-SK16C-105P, 165P		
-SK20C- 90P, 120P	25,000	-SK20C-105P, 165P	
-SK25C- 90P, 120P	20,000	-SK25C-105P, 165P	

★The extended gauge length (L) is available. Please contact with us.

# 2LOCK NIT ANNIVERSARY TYPE VC HOLDER



With TiN Bearing Nut  
MAX.30,000min<sup>-1</sup> & G2.5  
Run-Out Accuracy:3μm at 4D



VC

PAT.

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	C <sub>2</sub>	H	G No. (Option)	Weight (kg)	MAX. (min <sup>-1</sup> )	Collet	
No.40	NIT40X-VC 6- 60	2.0~6.0	60	23	23	27.5	27.5	44.7	35~45	VCG 6- 8A	1.1	30,000	VCK 6	
	- 90		90		51.9		31.5				1.3			
	-120		120		81.9		35.7				1.5			
	-VC13- 60	3.0~12.0	60	29	29	40	40.0		50~60	VCG13-15A	1.2		1.5	VCK13
	- 90		90		70		44.7				1.5			
	-120		120		100						1.9			
No.50	NIT50X-VC 6-105	2.0~6.0	105	23	64.9	27.5	33.4	70.1	35~45	VCG 6- 8A	3.9	20,000	VCK 6	
	-135		135		94.9		37.6				4.1			
	-165		165		124.9		41.8				4.4			
	-VC13-105	3.0~12.0	105	29	64.9	40	45.0		50~60	VCG13-15A	4.1		4.5	VCK13
	-135		135		94.9		49.2				4.5			
	-165		165		124.9		53.4				4.9			

- ★TiN Bearing Nut is supplied as standard.
- ★When the axial stopper is required, please use Adjust Screw(G No.)
- ★Please add "-RP" at the end of Code No. for Rust Proof Treatment VC Holder. e.g. NIT40X-VC13-60-RP
- ★Please use VC J type Nut & Cap for Centre Through Coolant. When VC J type Nut is used, the total holder length will be extended to 6mm.
- ★Please refer P.201 for VCK Collet.

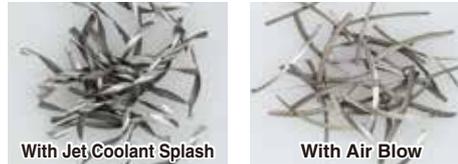
- ★NIT40X-VC6-150, NIT40X-VC13-150, NIT50X-VC13-90, -120 are available as semi-standard.
- ★Collet, adjust screw (G No.) and GH Handle are available as an option. P.48 The Code No. of the GH Handle is VC6: GH10, VC13: GH16
- ★All series are for High Speed Rotation.



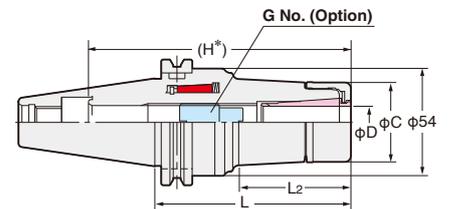
# 2LOCK NIT MAJOR DREAM HOLDER



Difference of the swarfs



Please use Jet Coolant Splash for better swarf generation. P.34, P.43



(H\*) : MAX. H without adjust screw.

PAT.

TAPER	Code No.	D	L <sub>2</sub>	C	H*	H <sub>1</sub>	G No. (Option)	Weight (kg)	Collet
No.40	NIT40N-MDSK 6- 60, 75, 90	3.0~ 6.0	18,33,48	19.5	86,101,116	21~35	SKG- 8	0.8,0.9,1.1	SK 6-A
	-105,120		63,78		131,146			1.2,1.4	
	-MDSK10- 60, 75, 90,105	3.0~10.0	19,33,48,63	27.5	86,101,116,131	30~50	SKG-12L	1.1,1.3,1.5,1.6	SK10-A
	-120,150,180		78,110,141.2		146,176,206			1.8,2.2,2.4	
	-MDSK13- 65, 75, 90,105	3.0~13.0	24,33,48,63	33	86,101,116,131	31~60	SKG-15	1.2,1.4,1.7,1.8	SK13-A
	-120,150,180		78,110,144		146,176,206			2.0,2.4,2.6	
	-MDSK16- 65	3.0~16.0	24	40	86	45~60	SKG-18L	1.2	SK16-A
	- 75, 90,105		33,48,64		101,116,131	1.5,1.9,2.0			
	-120,150,180		80,113,144.6		146,176,206	2.2,2.5,2.8			
	-MDSK20- 75, 90	4.0~20.0	41.2,55	48	80,95	50~73	SKG-12,SKG-12-55L	1.9,2.1	SK20-A
-105,120	70,85		110,125		2.3,2.6				
No.50	NIT50 -MDSK 6-105,120,135	3.0~ 6.0	48,63,78	19.5	116,131,146	21~35	SKG- 8	3.6,3.7,3.9	SK 6-A
	-MDSK10-105,120,135	3.0~10.0	48,63,2,78.2	27.5	116,131,146	30~50	SKG-12L	4.3,4.4,4.7	SK10-A
	-165,195		110.2,141.2		176,206			5.0,5.3	
	-MDSK13-105,120,135	3.0~13.0	48,63,78	33	116,131,146	31~60	SKG-15	4.2,4.7,5.0	SK13-A
	-165,195		110,144		176,206			5.3,5.6	
	-MDSK16-105,120,135	3.0~16.0	48,64,80.1	40	116,131,146	45~70	SKG-18L	4.1,4.9,5.2	SK16-A
	-165,195		114.7,144.6		176,206			5.5,5.8	
	-MDSK20-105,135		4.0~20.0		42,72			48	
	-165,195	102,132		205,235	5.9,6.7				
	-MDSK25-105,135	8.0~25.4		42,74	55	159,175	55~85		SKG-28
-165,195	105,135		205,235	6.5,7.5					

- ★Please use A type SK collet that is available as an option for end milling operation. P.198
- ★Please refer P.49 for Jet coolant J type nut and cap.
- ★GH Handle is available as an option. P.48 Please order with the Code No. GH10:MDSK10, GH12:MDSK13, GH16:MDSK16, GH20:MDSK20, GH25:MDSK25.
- ★Please add "P" at the end of Code No. for high speed holder, e.g. NIT40N-MDSK10-60P.
- ★φC<sub>2</sub> of NIT40N is larger than the dimension of the IT40 standard.



# 2LOCK NIT FACE MILL ARBOR TYPE A/SHOULDER CUTTER ARBOR



Photo. shows with face mill cutter.

## JIS B4113 Face Mill Cutter

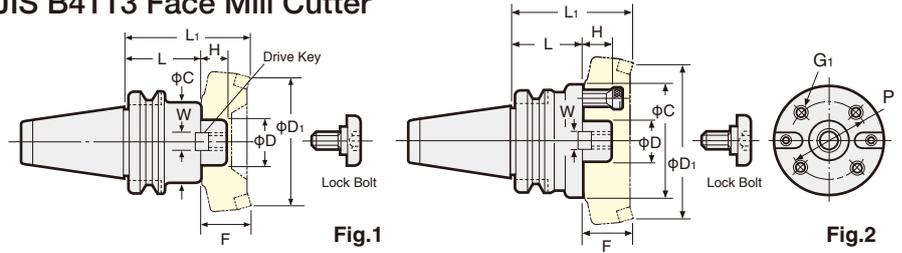


Fig.1

Fig.2

## FMA

TAPER	Code No. (φD-L)	Arbor			Weight (kg)	With Cutter			Drive Key	Lock Bolt	Fig.
		H	C	W		L <sub>1</sub>	D <sub>1</sub>	F			
No.40	NIT40-FMA25.4 - 45, 90	22	50	9.5	1.5, 3.1	95,140	80	50	FW 5	FM12	1
	-FMA31.75 - 45, 75	30	60	12.7	1.7, 3.1	105,135	100	60	FW13	FM16	
	-FMA38.1 - 60	34	80	15.9	2.9	120	125	60	FW18	FM20	
No.50	NIT50-FMA25.4 - 45, 90,150	22	58	9.5	3.7, 4.6, 5.5	95,140,200	80	50	FW 5	FM12	1
	-FMA31.75 - 45, 75,105	30	70	12.7	4.5, 5.3, 6.1	105,135,165	100	60	FW12,13	FM16	
	-FMA38.1 - 45, 75	34	80	15.9	4.3, 5.6	105,135	125	60	FW18,19	FM20	
	-FMA50.8 - 45, 75	36	100	19	4.9, 6.8	105,135	160	60	FW23,24	FM24	
	-FMA47.625- 75*	38	128.57	25.4	7.7	135	200	60	FW26	*	

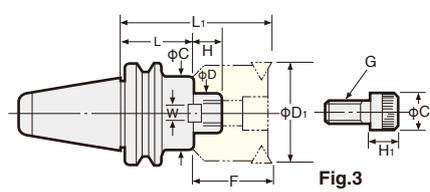


Fig.3

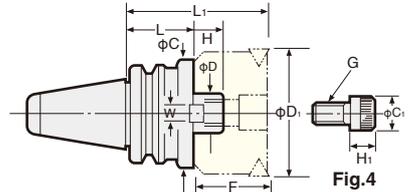


Fig.4

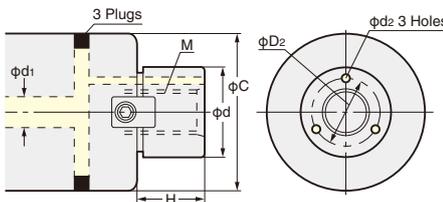
## FMC FMA For SANDVIK T-MAX Shoulder Face Mill/SUMITOMO CHE5,000 Series

TAPER	Code No. (φD-L)	Arbor			Weight (kg)	With Cutter			C <sub>1</sub>	H <sub>1</sub>	Fig.	
		H	C	W		L <sub>1</sub>	D <sub>1</sub>	F				G Cap Bolt
No.40	NIT40-FMC22-45, 90	18	45	10	1.3, 2.0	85, 130	50	40	M10×30	16	10	3
	-FMC27-60, 90	20	60	12	1.5, 2.2	110, 140	80	50	M12×35	18	12	4
	-FMC32-60, 75	22	85	14	2.3, 2.6	110, 125	125	50	M16×35	24	16	
No.50	NIT50-FMC22-60,105,150	18	45	10	4.2, 4.7, 5.3	100,145,190	50	40	M10×30	16	10	3
	-FMC27-45, 90,150	20	70	12	4.1, 5.5, 7.3	95,140,200	80	50	M12×35	18	12	
	-FMC32-45, 75,105	22	85	14	4.2, 5.5, 7.0	95,125,155	125	50	M16×35	24	16	

- ★Drive keys, L wrench and bolt are supplied as standard.
- ★The arbor weight is only for the arbor.
- ★The different type of the cap bolt may be used for the recent cutter. Please check the specification.
- ★The arbor marked \* requires 4 fixing bolts (FMA47.625 : M16, P=101.6)
- ★Extended length is available as an option. NIT50-FMA25.4 -200, 250, ...500  
-FMA31.75-150, 200, ...500  
-FMA38.1 -150, 200, ...500



## FMH High Feed Cutter Arbor with Coolant Hole



Code No.	Cutter Dia.	φd	φC	M	H	Coolant Hole		
						φD <sub>2</sub>	φd <sub>1</sub>	φd <sub>2</sub>
FMH22 (22.225)	φ50, φ52 φ63, φ66	22(22.225)	47 60	M10×1.5	18(17)	16	6~8	3
FMH27 (25.4)	φ80	27(25.4)	76(70)	M12×1.75	20(22)	19.5(18.5)	8~10	3.5
FMH32 (31.75)	φ100	32(31.75)	96	M16×2.0	22(30)	24	10~13	4
FMH40 (38.1)	φ125	40(38.1)	100	M20×2.5	26(34)	30(29)	10~15	5
FMH50.8	φ160	50.8	100	M24×3.0	36	37.5	15~20	7

- ★Fixing dimension is basically based on FMA/FMC.
- ★The combination of the other cutter dia. are also available.

## FMH

TAPER	Code No. (φD-L)	Arbor							Weight (kg)	Drive Key	Lock Bolt	G Cap Bolt
		H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>				
No.40	NIT40-FMH22 - 47(60)-45	18	47(60)	10	16	—	10	—	1.3(1.4)	FW 8	—	M10×30
	-FMH27 - 60(76)-60	20	60(76)	12	18	—	12	—	1.8(2.2)	FW11	—	M12×35
	-FMH32 - 96-60	22	96	14	24	—	16	—	2.9	FW16	—	M16×35
	-FMH40 -100-60	26	100	16	50	27	14	6	3.1	FW22	FM20	—
No.50	NIT50-FMH22 - 47(60)-60	18	47(60)	10	16	—	10	—	4.2(4.5)	FW 8	—	M10×30
	-FMH27 - 60(76)-45	20	60(76)	12	18	—	12	—	3.9(4.1)	FW10	—	M12×35
	-FMH32 - 96-45	22	96	14	24	—	16	—	4.2	FW15	—	M16×35
	-FMH40 -100-45	26	100	16	50	27	14	6	5.1	FW20	FM20	—
	-FMH50.8 -100-45	36	100	19	65	37	14	10	4.4	FW23	FM24	—

- ★FMH22.225, FMH25.4, FMH31.75, FMH38.1 are also available.

- ★For FMH22, there are two types of φC, φ47 and φ60.  
For FMH27, there are two types of φC, φ60 and φ76.

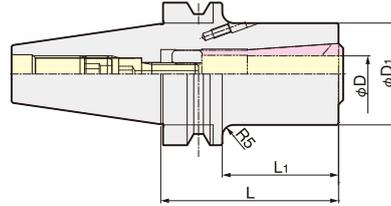
# 2LOCK MINI-MINI MASTER CHUCK



## MINI-MINI MASTER CHUCK



MMC-ATB



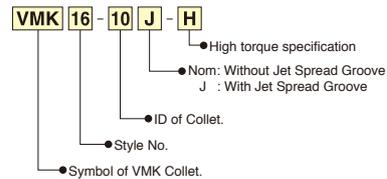
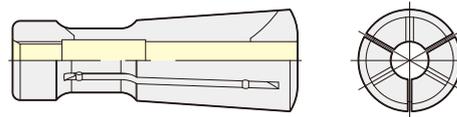
TAPER	Code No.	φD	L	φD1	L1	Collet	Weight (kg)
<b>NBT40</b>	<b>NBT40-MMC16C-80-ATB</b>	10~16	80	45	51	<b>VMK16-SF</b> <b>VMK16-H</b>	1.4
	<b>-MMC20C-85-ATB</b>	12~20	85	50	56	<b>VMK20-SF</b> <b>VMK20-H</b>	1.5
<b>NBT50</b>	<b>NBT50-MMC16C-80-ATB</b>	10~16	80	45	40	<b>VMK16-SF</b> <b>VMK16-H</b>	3.9
	<b>-MMC20C-85-ATB</b>	12~20	85	50	45	<b>VMK20-SF</b> <b>VMK20-H</b>	4.0

- ★VMK-H collet for high torque is recommended.
- ★Wrench is attached as standard.
- ★Balance adjustment screw is available as an option. The Code No. of the screw is 9SFB-ASC-M4-3, 4, 6
- ★Mounting handle is available as an option. The Code No. of the handle is 9SFB-AL-M2
- ★Set Code for handle and all screws are S.9SFB-ASC-M4

## High torque specification VMK-H Collet



VMK-H



VMK-H Collet Code No.	Min.Gripping Length
<b>VMK16-10, 12, 16-H</b>	40, 42, 42
<b>VMK20-12, 16, 20-H</b>	47, 47, 47

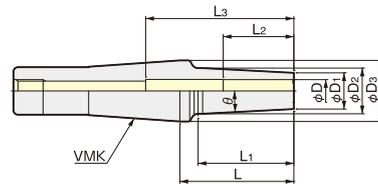
VMK-H Collet Code No.	Min.Gripping Length
<b>VMK16-10J, 12J, 16J-H</b>	40, 42, 42
<b>VMK20-12J, 16J, 20J-H</b>	47, 47, 47

★Please note the acceptable shank tolerance is h6~h8.

## VMK-SF Shrink Fit Holder



VMK-SF



### Standard Type

TAPER	Code No.	φD	φD1	φD2	φD3	θ	L	L1	L2	L3	Weight (kg)		
<b>VMK16</b>	<b>VMK16-SF 3S- 50</b>	3	6	10.2	27	3°	50	42	10	-	0.3		
	<b>-SF 4S- 50</b>	4	7	11.2					13				
	<b>-SF 6S- 50</b>	6	9	13.2					19				
	<b>-SF 8S- 50</b>	8	13	17.2					25				
	<b>-SF10S- 50,80,110</b>	10	16	20.2, 23.4, 27					31			65	0.3, 0.4, 0.5
	<b>-SF12S- 50,80,110</b>	12	19	23.2, 27, 27								50	0.3, 0.4, 0.5
<b>-SF16S- 50,80,110</b>	16	24	27	33	50	0.4, 0.5, 0.6							

### High Rigidity Type

TAPER	Code No.	φD	φD1	φD2	φD3	θ	L	L1	L2	L3	Weight (kg)
<b>VMK20</b>	<b>VMK20-SF10R- 50,80,110</b>	10	22	26.2, 29.4, 32	32	3°	50, 80, 110	42, 72, 95.4	31	65	0.5, 0.6, 0.8
	<b>-SF12R- 50,80,110</b>	12	26	30.2, 32, 32						80	0.5, 0.7, 0.9
	<b>-SF16R- 50,80,110</b>	16	32	32						-	50, 80, 110

★Hybride Shrink Fit Holder can be built by Mini-Mini Chuck Master and VMK-SF Shrink Fit Holder.

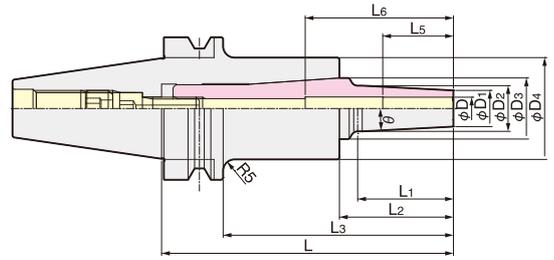
# 2LOCK HIBRID SHRINK-FIT HOLDER

**NIKKEN**



MMSF-B

MMSF-B holder is pre-balanced by the balance adjusting screws.  
G2.5 30,000min<sup>-1</sup>



## Standard Type

TAPER	Code No.	φD	φD <sub>1</sub>	φD <sub>2</sub>	φD <sub>3</sub>	φD <sub>4</sub>	φD <sub>5</sub>	θ	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	Weight (kg)																													
NBT40	NBT40-MMSF 3S-128B	3	6	10.2	27	45	-	3°	128	42	50	101	-	10	-	1.7																													
	-MMSF 4S-128B	4	7	11.2										13																															
	-MMSF 6S-128B	6	9	13.2										19																															
	-MMSF 8S-128B	8	13	17.2										25																															
	-MMSF10S-128B	10	16	20.2										65			1.8																												
	-158B			23.4																																									
	-188B			27														1.9																											
	-MMSF12S-128B	12	19	23.2										31			1.7																												
	-158B			158														72	80	131	1.8																								
	-188B			188														105	110	161	1.9																								
	-MMSF16S-128B			128														42	50	101	1.7																								
	NBT50	NBT50-MMSF 3S-128B	3	6										10.2			27	45	-	3°	128	42	50	90	-	10	-	4.2																	
		-MMSF 4S-128B	4	7										11.2												13																			
		-MMSF 6S-128B	6	9										13.2												19																			
-MMSF 8S-128B		8	13	17.2	25																																								
-MMSF10S-128B		10	16	20.2	65	4.3																																							
-158B				23.4																																									
-188B				27			4.4																																						
-MMSF12S-128B		12	19	23.2	31	4.2																																							
-158B				158			76.4	80	120	4.3																																			
-188B				188			110	150	4.4																																				
-MMSF16S-128B				128			42	50	90	4.2																																			
NBT50		NBT50-MMSF 10R-133B	10	22	26.2	32	50	-	3°	133	42	50	106	-	31	65										2.0																			
		-163B			29.4																								163	72	80	136	2.1												
		-193B			32																								193	95.4	110	166	2.3												
	-MMSF12R-133B	12	26	30.2	32												50	-	3°	133	42	50	106	-	31		80	2.0																	
	-163B			163																									57.3	80	136	2.2													
	-193B			193																									110	166	2.4														
	-MMSF16R-133B			133																									50	50	106	2.1													
	NBT50	NBT50-MMSF 10R-133B	10	22	26.2												32	50	-	3°	133	42	50	95	-		31	65	4.5																
		-163B			29.4																									163	72	80	125	4.6											
		-193B			32																									193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B			163																																					57.3	80	125	4.7
		-193B			193																																					110	155	4.9	
		-MMSF16R-133B			133																																					50	50	95	4.6
NBT50		NBT50-MMSF 10R-133B	10	22	26.2	32	50	-	3°	133	42	50	95	-	31	65										4.5																			
		-163B			29.4																									163	72	80	125	4.6											
		-193B			32																									193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B			163																																					57.3	80	125	4.7
		-193B			193																																					110	155	4.9	
		-MMSF16R-133B			133																																					50	50	95	4.6
	NBT50	NBT50-MMSF 10R-133B	10	22	26.2												32	50	-	3°	133	42	50	95	-		31	65	4.5																
		-163B			29.4																									163	72	80	125	4.6											
		-193B			32																									193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B			163																																					57.3	80	125	4.7
		-193B			193																																					110	155	4.9	
		-MMSF16R-133B			133																																					50	50	95	4.6
NBT50		NBT50-MMSF 10R-133B	10	22	26.2	32	50	-	3°	133	42	50	95	-	31	65										4.5																			
		-163B			29.4																									163	72	80	125	4.6											
		-193B			32																									193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B			163																																					57.3	80	125	4.7
		-193B			193																																					110	155	4.9	
		-MMSF16R-133B			133																																					50	50	95	4.6
	NBT50	NBT50-MMSF 10R-133B	10	22	26.2												32	50	-	3°	133	42	50	95	-		31	65	4.5																
		-163B			29.4																									163	72	80	125	4.6											
		-193B			32																									193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B			163																																					57.3	80	125	4.7
		-193B			193																																					110	155	4.9	
		-MMSF16R-133B			133																																					50	50	95	4.6
NBT50		NBT50-MMSF 10R-133B	10	22	26.2	32	50	-	3°	133	42	50	95	-	31	65										4.5																			
		-163B			29.4																									163	72	80	125	4.6											
		-193B			32																									193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B			163																																					57.3	80	125	4.7
		-193B			193																																					110	155	4.9	
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	NBT50	NBT50-MMSF 10R-133B	10	22	26.2												32	50	-	3°	133	42	50	95	-		31	65	4.5																
		-163B			29.4																									163	72	80	125	4.6											
		-193B			32																									193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B			163																																					57.3	80	125	4.7
		-193B			193																																					110	155	4.9	
		-MMSF16R-133B			133																																					50	50	95	4.6
NBT50		NBT50-MMSF 10R-133B	10	22	26.2	32	50	-	3°	133	42	50	95	-	31	65										4.5																			
		-163B			29.4																									163	72	80	125	4.6											
		-193B			32																									193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B			163																																					57.3	80	125	4.7
		-193B			193																																					110	155	4.9	
		-MMSF16R-133B			133																																					50	50	95	4.6

## High Rigidity Type

TAPER	Code No.	φD	φD <sub>1</sub>	φD <sub>2</sub>	φD <sub>3</sub>	φD <sub>4</sub>	φD <sub>5</sub>	θ	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	Weight (kg)																													
NBT40	NBT40-MMSF10R-133B	10	22	26.2	32	50	-	3°	133	42	50	106	-	31	65	2.0																													
	-163B			29.4													163	72	80	136	2.1																								
	-193B			32													193	95.4	110	166	2.3																								
	-MMSF12R-133B	12	26	30.2													32	50	-	3°	133	42	50	106	-	31	80	2.0																	
	-163B			163																									57.3	80	136	2.2													
	-193B			193																									110	166	2.4														
	-MMSF16R-133B			133																									50	50	106	2.1													
	NBT50	NBT50-MMSF10R-133B	10	22													26.2	32	50	-	3°	133	42	50	95	-	31	65	4.5																
		-163B															29.4													163	72	80	125	4.6											
		-193B															32													193	95.4	110	155	4.8											
		-MMSF12R-133B	12	26													30.2													32	50	-	3°	133	42	50	95	-	31	80	4.5				
		-163B															163																									57.3	80	125	4.7
		-193B															193																									110	155	4.9	
		-MMSF16R-133B															133																									50	50	95	4.6
NBT50		NBT50-MMSF10R-133B	10	22	26.2	32	50	-	3°	133	42	50	95	-	31	65	4.5																												
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		-MMSF12R-133B	12	26	30.2																									32	50	-	3°	133	42	50	95	-	31	80	4.5				
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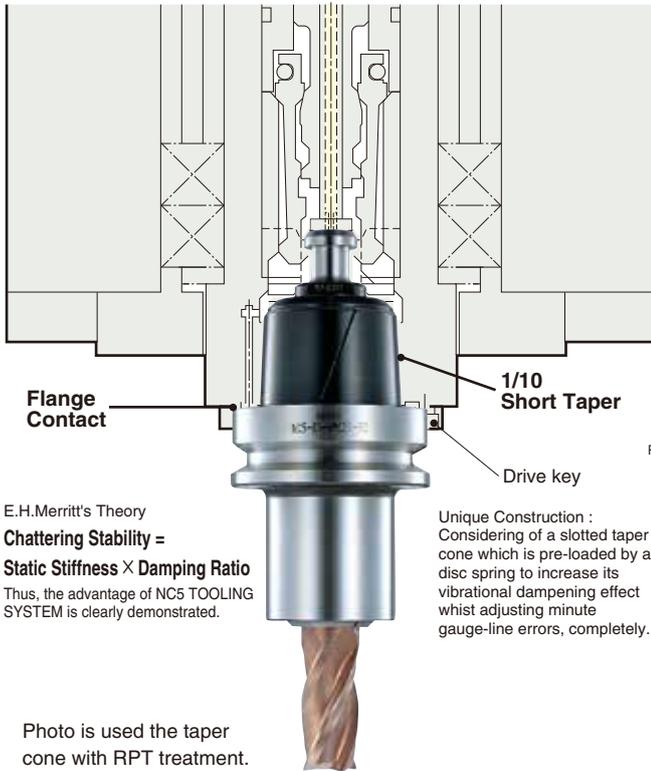
★Hibride Shrink Fit Holder can be built by Mini-Mini Chuck Master and VMK-SF Shrink Fit Holder. P.227

2LOCK

## Innovational Design! Double Contact · 1/10 Short Taper

Since the launch of the NC5 TOOLING SYSTEM at JIMTOF'94, OSAKA the system has proven its outstanding ability is a wide cross-sector of Japanese Industry, with ever-increasing expectation of its being adapted as the Next Generation Tooling Interface.

Please take a moment to look at the NC5 TOOLING SYSTEM before you purchase your next machine. P.279~281



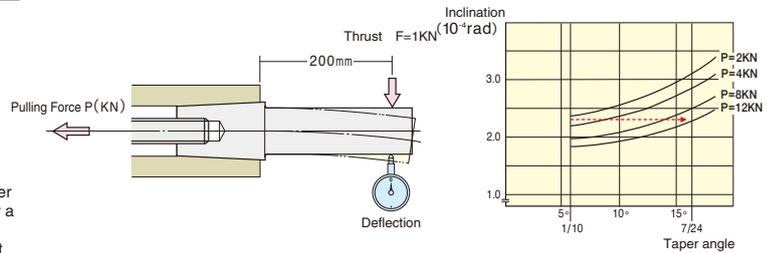
E.H.Merritt's Theory  
**Chattering Stability =**  
**Static Stiffness × Damping Ratio**  
Thus, the advantage of NC5 TOOLING SYSTEM is clearly demonstrated.

Unique Construction :  
Considering of a slotted taper cone which is pre-loaded by a disc spring to increase its vibrational dampening effect whilst adjusting minute gauge-line errors, completely.

NC5 is an abbreviation of New Century arbor with 1/10 taper (5°43' 29").

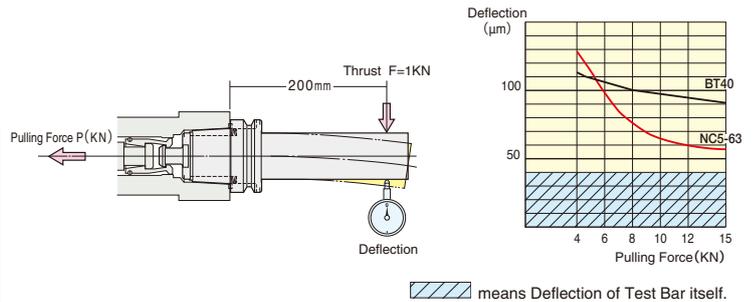
### 1/10 and 7/24 Taper

The following diagrams show the correlation between Pulling Force/ Taper Angle and their Static Stiffness. As can be seen, using the same Pulling Force, the smaller the Taper Angle, the greater the Static Stiffness. Therefore, the larger the Taper Angle, the greater the Pulling Force is required. For example, 12KN of Pulling Force is required for a 7/24 taper to obtain the same value of Static Stiffness as a 1/10 taper using a 4KN Pulling Force.



### Pulling Force and Static Stiffness

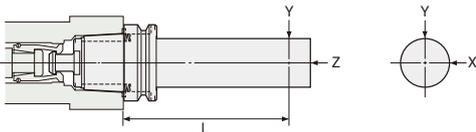
The NC5-63 takes advantage of the taper/Pulling Force to increase its Static Stiffness such that under a force of 5.5 KN the Static Stiffness of an NC5-63 and BT40 are almost the same. But at 12KN the Static Stiffness of an NC5-63 is three times that of a BT40.



means Deflection of Test Bar itself.

### Repeatability

Higher Repeatability is accomplished due to run-out accuracy of contact flange for taper is within 0.002mm.

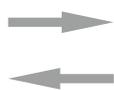
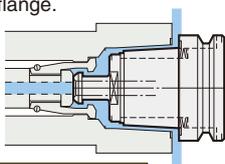


TAPER	Equivalent	L	Repeatability		
			X	Y	Z
NC5- 46	BT30	70	0.003	0.003	0.002
- 63	BT40	120	0.003	0.003	0.002
- 85	BT45	150	0.003	0.003	0.002
-100	BT50	180	0.003	0.003	0.002

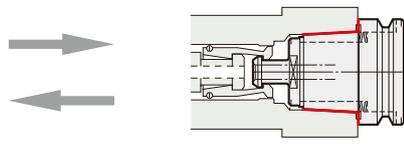
### ATC

**Clamp Action** ... Cleaning Air is same as Unclamp Action.

- When tool is inserted into a spindle, there is no contact between the taper or flange.
- Taper makes contact and centres.



- Further retraction causes simultaneous contact of the taper and the flange with spindle.



**Unclamp Action**

- Taper is detached and air blast cleans the taper.
- Flange is detached slightly and high pressure air blast cleans the flange.



- As the pull stud is released, an air blast is activated inside the spindle.



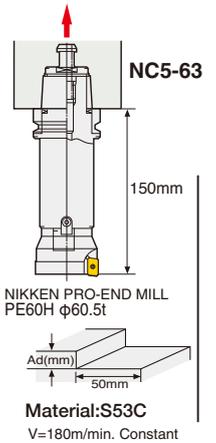
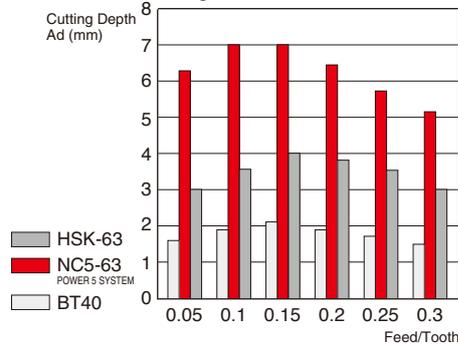
## Innovational Design! Double Contact · 1/10 Short Taper

### Face Milling



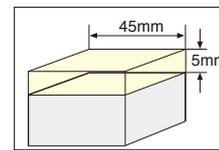
S53C

Comparison of Milling Capability using extended cutter

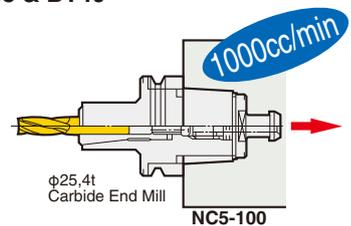


Comparison between HSK-63, NC5-63 & BT40

### End Milling



Material:SCM415  
V=300m/min. f=0.3mm/tooth  
S=3800min<sup>-1</sup> F=4560mm/min.



1 to 1 Scale Swarf of SCM415

## Stiffness & Dampening Effect

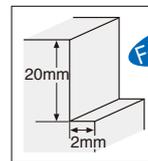
### Drilling



SCM435



S53C

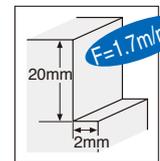


NC5-63

Material:S53C  
V=500m/min. f=0.25mm/tooth  
S=10000min<sup>-1</sup> F=10000mm/min.

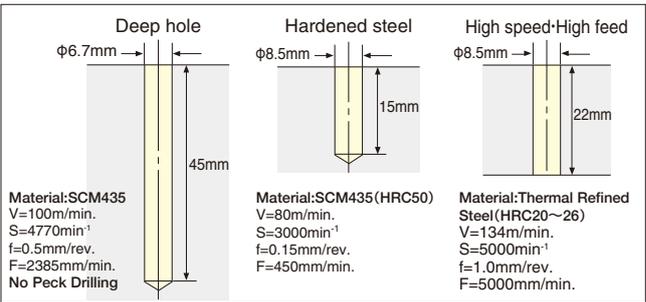


TITAN



NC5-63

Material:TITAN  
V=75m/min. f=0.18mm/tooth  
S=1500min<sup>-1</sup> F=1700mm/min.



Material:SCM435  
V=100m/min.  
S=4770min<sup>-1</sup>  
f=0.5mm/rev.  
F=2385mm/min.  
No Peck Drilling

Material:SCM435 (HRC50)  
V=80m/min.  
S=3000min<sup>-1</sup>  
f=0.15mm/rev.  
F=450mm/min.

Material:Thermal Refined Steel (HRC20~26)  
V=134m/min.  
S=5000min<sup>-1</sup>  
f=1.0mm/rev.  
F=5000mm/min.

### Boring



Current developments in inserts (coated TiAlN & CBN) and their improved capability for high speed cutting is remarkable. However, the results are based on using these inserts with high-speed cutting conditions (their performance is reduced when used for medium or low cutting speeds). The ZMAC Boring Head has been designed to optimise this new high-speed cutting technology.

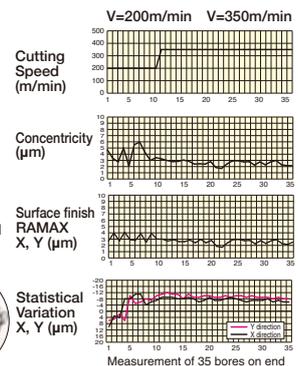
■ Cutting data  
M/C : VC8  
Holder : NC5-63-Q26-50  
SP26-12-30  
12-ZMAC16-45  
External coolant  
Insert : 3MP-C Nose/R=0.2  
Coating (Coated TiAlN)

Cutting Speed: V=200m/min, 350m/min.  
f=0.05mm/rev. for both  
Feed : 0.5mm on dia.

V=350m/min. gave better finish & accuracy

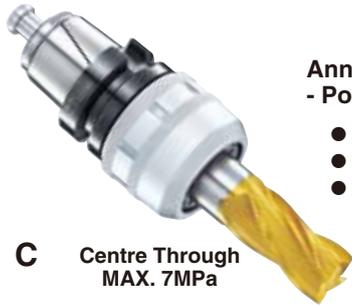
Material:S53C Thermal refined carbon steel.

Material:S53C Thermal refined carbon steel



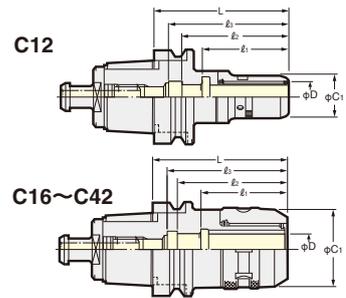
NC5

# NC5 MILLING CHUCK



Anniversary Type  
- Powerful Gripping Torque -

- High Rigidity
- High Precision
- Compact Design



**C** Centre Through  
MAX. 7MPa

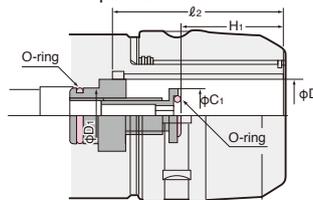
TAPER	Code No.	D	C1	l1	l2	l3	L	Collet	Stopper	Weight(kg)
NC5- 46	NC5- 46-C12- 55	33	12	49	53	58	58	(KM12) (CCK12)	—	0.6
	-C16- 70, 120	44	16	50, 51	58	63,65	70, 120	(KM16) (CCK16)	—	0.8, 1.2
	-C20- 80	52	20	58	57	72	80	(KM20) (CCK20) (CCNK20)	9MC20HS	1.0
	-C25- 90	60	25	61	66	80	90	(KM25) (CCK25) (CCNK25)	9MC25H	1.3
	-C32-100*	64	32	67	72	75	100	(KM32)	—	1.6
NC5- 63	NC5- 63-C12- 65	33	12	49	53	58	65	(KM12) (CCK12)	—	1.2
	-C16- 60, 70,120,150	44	16	51	58,61,58,58	65,76,65,65	63,70,120,150	(KM16) (CCK16)	—	1.4, 1.5, 2.0, 2.3
	-C20- 70, 80,120,150	52	20	58	66	79,80,80,80	71,80,120,150	(KM20) (CCK20) (CCNK20)	9MC20H	1.6, 1.7, 2.3, 2.6
	-C25- 70, 90,120,150	60	25	61	71,72,72,72	79,80,80,80	82,90,120,150	(KM25) (CCK25) (CCNK25)	9MC25H	1.9, 2.1, 2.7, 3.0
	-C32- 80*, 90,120,150	69	32	66,68,71,71	68,77,81,81	71,96,107,107	82,90,120,150	(KM32) (CCK32) (CCNK32)	9MC32HS, 9MC32H, 9MC32H	2.1, 2.3, 2.9, 3.2
NC5- 85	NC5- 85-C12- 80	33	12	49	53	58	80	(KM12) (CCK12)	—	2.2
	-C16- 80, 120,160	44	16	51	58	65	80,120,160	(KM16) (CCK16)	—	2.6, 3.0, 3.3
	-C20- 80, 120,160	52	20	58	66	80	80,120,160	(KM20) (CCK20) (CCNK20)	9MC20HL, 9MC20H, 9MC20H	2.8, 3.3, 3.6
	-C25- 80, 120,160	60	25	61	72	80	80,120,160	(KM25) (CCK25) (CCNK25)	9MC25H	2.9, 3.7, 4.0
	-C32- 85, 100,160,200	69	32	68,71,71,71	77,77,81,81	96,81,107,107	87,100,160,200	(KM32) (CCK32) (CCNK32)	9MC32HS, 9MC32H, 9MC32H, 9MC32H	3.2, 3.6, 5.3, 5.8
	-C42-105*, 125,160,200	86	42	74	89,109,115,115	93,113,125,125	105,125,160,200	(KM42) (CCK42) (CCNK42)	9MC42HS, 9MC42H, 9MC42H	4.8, 5.3, 6.6, 7.0
NC5-100	NC5-100-C12-105	33	12	49	53	58	105	(KM12) (CCK12)	—	4.1
	-C16-105, 135,165,200	44	16	51	58	65	105,135,165,200	(KM16) (CCK16)	—	4.4, 4.7, 5.0, 5.3
	-C20-105, 165,200	52	20	58	66	80	105,165,200	(KM20) (CCK20) (CCNK20)	9MC20H	4.6, 5.5, 5.8
	-C25-105, 165,200	60	25	61	72	80	105,165,200	(KM25) (CCK25) (CCNK25)	9MC25H	5.0, 6.1, 6.4
	-C32- 90, 105,165,200	69	32	71	81	102,107,107,107	90,105,165,200	(KM32) (CCK32) (CCNK32)	9MC32HS, 9MC32H, 9MC32H, 9MC32H	4.8, 5.4, 7.1, 7.5
	-C42- 95*, 115,165,200	86	42	74	101,115,115,115	105,125,125,125	95,115,165,200	(KM42) (CCK42) (CCNK42)	9MC42HS, 9MC42H, 9MC42H	5.5, 6.1, 8.6, 9.0

- ★For High Speed type, please add "G" at the end of Code No. e.g. NC5-63-C16-60G
- ★Spanner is available as an option. C12 : 9HC12A, C16:9HC16, C20:9HC20, C25:9HC25, C32(φ64):9HC25, C32(φ69):9HC32, C42:9HC42
- ★NC5-63-C32-80 may not be used by the M/C restriction. ★Milling Chuck for Oil Mist is also available. Please contact with us.
- ★CCNK collet and the stopper can not be used for the chucks marked \*. The cutter shank length must be longer than l2 in case of the direct chucking and centre through coolant application.
- ★CCNK collet can be used for the all chucks except marked \*. The stopper (optional accessory) is required, if the cutter shank length is shorter than l2 and direct chucking.
- ★The "D" in the Code No. shows ID of the chuck. ★Please note the acceptable shank tolerance is h7. ★Please refer to P.232 for KM, CCK, CCNK Collet.

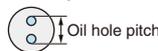
## Stopper for Direct Chucking

Direct chucking means that chucking φ32mm shank tool into φ32mm ID chuck. If tool shank length is longer than R1, the stopper is not required.

Chuck	Stopper	H1	C1
C20C	9MC20H	42~47	17
	9MC20HS		
C25C	9MC25H	50~55	22
	9MC25HS		
C32C	9MC32H	49~59	24
	9MC32HS		
C42	9MC42H	57~67	24

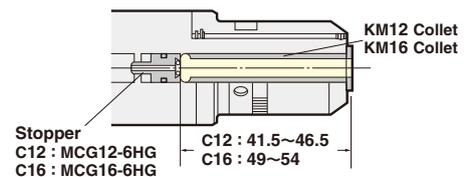


- ★For heavy milling, please insert the cutter shank longer than l2 into the chuck body. Do not use the stopper.
- ★When the oil hole pitch of the back end is larger than the dia. of O-ring, please contact with us.



## C12 and C16 Milling Chuck with Special Stopper

C12 and C16 Milling Chucks with the stopper to use with KM Collets are available as special option. e.g. NC5-63-C12-65S, NC5-63-C16-70S



- For the types with O-ring on the end flange add the O-ring type at end of the Code No. e.g. MCG16-6HG-S6
- For the steel type, add "FE" at the end of Code No. e.g. MCG16-6HG-FE

## High Speed milling Chuck

Please add "G" at the end of Code No. for High Speed Milling Chuck.



GH Handle P.48

- ★The extended tool length is available as an option. Please contact with us.
- ★The stopper can not be used for the chucks marked \*. The cutter shank length must be longer than l2 in case of the direct chucking and centre through coolant application.
- ★All chucks except marked \* can be used for high pressure centre through coolant application. The stopper (optional accessory) is required, if the cutter shank length is shorter than l2 and direct chucking.

TAPER	Code No.	MAX. (min <sup>-1</sup> )	TAPER	Code No.	MAX. (min <sup>-1</sup> )
NC5-46	NC5- 46-C12- 55G	40,000	NC5-85	NC5- 85-C12- 80G	15,000
	-C16- 70G				
	-C20- 80G	-C20- 80G			
	-C25- 90G	-C25- 80G			
	-C32-100G*	10,000		-C42-105P*	12,000
NC5-63	NC5- 63-C12- 65G	20,000	NC5-100	NC5-100-C12-105G	15,000
	-C16- 60G, 70G				
	-C20- 70G, 80G	-C20-105G			
	-C25- 70G, 90G	-C25-105G			
	-C32- 80G*, 90G	15,000		-C32- 90G	12,000
				-C42- 95P*	

★GFS type P.32 is available for C25 and C32 except NC5-46 shank.

# CENTRE COOLANT STRAIGHT COLLET

PAT.



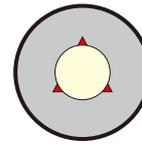
Suitable for all models of the NIKKEN MILLING CHUCK



CCK Collet

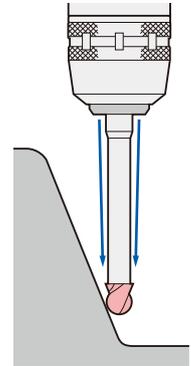


Front Nut

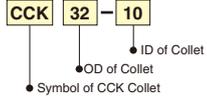


Jet Coolant

Prevention of Swarf entering the collet through the slots



Explanation of the Code No.



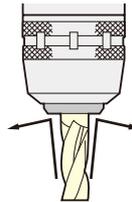
CCK : Centre Coolant  
 CCNK : Centre Coolant, Adjustable  
 KM : Standard  
 NK : Adjustable  
 ONK : Oil Hole Drill  
 OJK-A : Jet Coolant  
 OJK-S : Multiple Nozzles



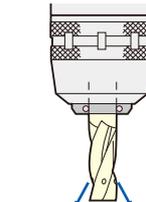
For grooving.



For cutters with cutting diameter which is larger than the shank diameter.



Prevention of the swarf contamination.



A front nut with an O-ring seal, for use with oil hole cutter, is also available as option.



CKFN-MN



CKFN-C

CCK Collet CKFN front nut and CCKL spanner are available as an option.



Photo shows with front nut.

**CCK**

Style	CCK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCK12</b>	<b>CCK12-3, 4, 5, 6, 8, 10</b>	CKFN12
<b>CCK16</b>	<b>CCK16-3, 4, 5, 6, 8, 10, 12</b>	CKFN16
<b>CCK20</b>	<b>CCK20-6, 8, 10, 12, 16</b>	CKFN20
<b>CCK25</b>	<b>CCK25-6, 8, 10, 12, 16, 20</b>	CKFN25
<b>CCK32</b>	<b>CCK32-6, 8, 10, 12, 16, 20, 25</b>	CKFN32, CKFN32T
<b>CCK42</b>	<b>CCK42-6, 8, 10, 12, 16, 20, 25, 32</b>	CKFN42

★Above bold figures indicate "ANNIVERSARY" type CCK Collet.  
 ★Please note the acceptable shank tolerance is  $h_6/h_7$ .  
 ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.



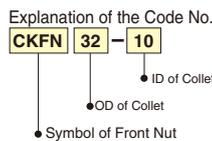
Photo shows with front nut.

**CCNK**

Style	CCNK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCNK20</b>	<b>CCNK20-6, 8, 10, 12, 16</b>	CKFN20
<b>CCNK25</b>	<b>CCNK25-6, 8, 10, 12, 16, 20</b>	CKFN25
<b>CCNK32</b>	<b>CCNK32-6, 8, 10, 12, 16, 20, 25</b>	CKFN32, CKFN32T
<b>CCNK42</b>	<b>CCNK42-6, 8, 10, 12, 16, 20, 25, 32</b>	CKFN42

★Please note the acceptable shank tolerance is  $h_6/h_7$ .  
 ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.

Front Nut CKFN



Style	φD <sub>2</sub>	L <sub>2</sub>	Front Nut Code No.
<b>CKFN12</b>	19.5	7	<b>CKFN12</b> -3, 4, 5, 6, 8, 10
<b>CKFN16</b>	28.5	8	<b>CKFN16</b> -3, 4, 5, 6, 8, 10, 12
<b>CKFN20</b>	33	8	<b>CKFN20</b> -6, 8, 10, 12, 16
<b>CKFN25</b>	39	8.5	<b>CKFN25</b> -6, 8, 10, 12, 16, 20
<b>CKFN32</b>	46.5	9	<b>CKFN32</b> -6, 8, 10, 12, 16, 20, 25
<b>CKFN32T</b>	43	9	<b>CKFN32T</b> -6, 8, 10, 12, 16, 20, 25
<b>CKFN42</b>	59.5	9	<b>CKFN42</b> -6, 8, 10, 12, 16, 20, 25, 32



★The front nut for direct chucking is also available.  
 e.g. CKFN20-20D, CKFN25-25D, CKFN32-32D

★The Code No. fitted with O-ring is:  
 e.g. CKFN20-20DC, CKFN25-25DC, CKFN32-32DC

★For C32 there are 2 sizes, CKFN32 = for nose ring diameter of φ69mm, CKFN32T = for nose ring diameter of φ64mm.  
 ★Jet Coolant type for the cutter with a cutter dia. larger than shank dia. is also available.  
 CKFN25-20MN, CKFN32-25MN, CKFN42-32M  
 ★Front Nut fitted with an O-ring is also available. e.g. The Code No. is CKFN32-10C  
 ★The spanner is available as an option.  
 CKFN12:CCKL12, CKFN16:CCKL16  
 CKFN20:CCKL20  
 CKFN25, CKFN32T:CCKL25  
 CKFN32:CCKL32, CKFN42:CCKL42



**KM** Photo shows ANNIVERSARY type KM Collet.

Style	KM Collet Code No. (OD-ID)
<b>KM12</b>	<b>KM12-2, 3, 4, 5, 6, 7, 8, 9, 10</b>
<b>KM16</b>	<b>KM16-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12</b>
<b>KM20</b>	<b>KM20-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>KM25</b>	<b>KM25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>KM32</b>	<b>KM32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30</b>
<b>KM42</b>	<b>KM42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 40</b>

★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.  
 ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.  
 ★The collets with bold character are the "ANNIVERSARY" type KM Collet.  
 Ordinary KM Collet can be used with "ANNIVERSARY" type Milling Chuck, but better performance can be found with the "ANNIVERSARY" type KM Collet.  
 ★Please note the acceptable shank tolerance is  $h_6/h_7$ .

Cutter length adjustment on the collet is possible from front and back.



**NK**

Style	NK Collet Code No. (OD-ID)
<b>NK20</b>	<b>NK20-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>NK22</b>	<b>NK22-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18</b>
<b>NK25</b>	<b>NK25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>NK32</b>	<b>NK32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26</b>
<b>NK42</b>	<b>NK42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32</b>

★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.  
 ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.  
 ★The collets with bold character are standard.  
 ★Please note the acceptable shank tolerance is  $h_6/h_7$ .  
 ★Collet removal(**9CKR**) is available as an option.  
 ★Please refer P.33, P.34 for more detail of the straight collet.

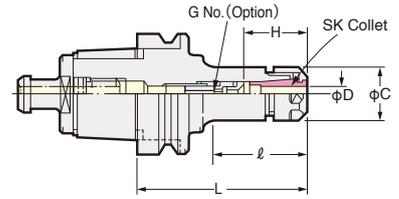
# NC5 SLIM CHUCK



Wide Variation  
of the Tool Length



Photo. shows  
with J type Nut.



SK

Centre Through  
MAX. 7MPa

When SK J type nut is used, the total chuck length will be extended by 6mm.

PAT.

TAPER	Code No.	Chucking Range φD	ℓ	C	H	G No. (Option)	Weight (kg)	SK Collet
NC5- 46	NC5- 46-SK 6C- 75, 90, 120	0.7 ~ 6.0	48, 56, 72	19.5	26 ~ 31	SKG6-6HG	0.4, 0.5, 0.7	SK 6
	-SK10C- 75, 90, 120	1.75 ~ 10.0	50, 65, 95	27.5	35 ~ 41	SKG10-10HG	0.5, 0.6, 0.8	SK 10
	-SK13C- 90, 120	2.75 ~ 13.0	65, 95	33	39 ~ 51	SKG13-10HG	0.7, 0.9	SK 13
	-SK16C- 90, 120	2.75 ~ 16.0	67, 97	40	50	SKG16-10HG	0.8, 1.0	SK 16
	-SK20C- 90, 120	3.5 ~ 20.0		48.5	50 ~ 55, 47 ~ 63	SKG20-12MFHG, -12HG	1.2, 1.6	SK 20
	-SK25 - 90*1	7.5 ~ 25.4	67	55	55 ~ 60	SKG-12MF	1.2	SK 25
NC5- 63	NC5- 63-SK 6C- 90, 150	0.7 ~ 6.0	51, 60	19.5	26 ~ 31	SKG6-6HG	1.2, 1.4	SK 6
	-SK10C- 90, 105, 120 135, 150, 200	1.75 ~ 10.0	48, 73, 73 73, 73, 73	27.5	35 ~ 41	SKG10-10HG	1.4, 1.5, 1.6 1.6, 1.7, 1.9	SK 10
	-SK13C- 90, 150, 200	2.75 ~ 13.0	58, 88, 88	33	39 ~ 51	SKG13-10HG	1.5, 1.7, 1.9	SK 13
	-SK16C- 90, 105, 120 135, 150, 200	2.75 ~ 16.0	58, 73, 88 103, 118, 168	40	45 ~ 57	SKG16-12HG	1.5, 1.6, 1.7 1.8, 2.0, 2.2	SK 16
	-SK20C-105, 150, 200	3.5 ~ 20.0	75, 120, 170	48.5	47 ~ 63	SKG20-18HG	2.0, 2.6, 3.3	SK 20
	-SK25C-135, 180	7.5 ~ 25.4	106, 151	55	60 ~ 65, 60 ~ 70	SKG25-18HGD, 24HG	2.5, 2.8	SK 25
NC5- 85	NC5- 85-SK 6C-105, 150	0.7 ~ 6.0	55, 60	19.5	26 ~ 31	SKG6-6HG	2.3, 2.7	SK 6
	-SK10C-105, 150, 200	1.75 ~ 10.0	70, 73, 75	27.5	35 ~ 41	SKG10-10HG	2.4, 2.8, 3.2	SK 10
	-SK13C-105, 150, 200	2.75 ~ 13.0	67, 92, 92	33	39 ~ 51	SKG13-10HG	2.6, 3.0, 3.4	SK 13
	-SK16C-105, 150, 200	2.75 ~ 16.0	65, 90, 90	40	45 ~ 57	SKG16-12HG	2.7, 3.2, 3.6	SK 16
	-SK20C-135, 165, 200	3.5 ~ 20.0	97, 127, 162	48.5	47 ~ 63	SKG20-18HG	3.5, 3.9, 4.3	SK 20
	-SK25C-135, 165, 200	7.5 ~ 25.4		55	60 ~ 65, 60 ~ 70, 60 ~ 70	SKG25-18HGD, -24HG, -24HG	3.5, 4.0, 4.4	SK 25
NC5-100	NC5-100-SK 6C-105, 165	0.7 ~ 6.0	55, 60	19.5	26 ~ 31	SKG6-6HG	3.9, 4.3	SK 6
	-SK10C-105, 165, 200	1.75 ~ 10.0	57, 75, 75	27.5	35 ~ 41	SKG10-10HG	4.0, 4.4, 4.8	SK 10
	-SK13C-105, 165, 200	2.75 ~ 13.0	62, 92, 92	33	39 ~ 51	SKG13-10HG	4.2, 4.7, 5.1	SK 13
	-SK16C-105, 165, 200	2.75 ~ 16.0	62, 90, 90	40	45 ~ 57	SKG16-12HG	4.3, 5.0, 5.4	SK 16
	-SK20C-135, 165, 200	3.5 ~ 20.0	92, 122, 157	48.5	47 ~ 63	SKG20-18HG	5.1, 5.5, 6.0	SK 20
	-SK25C-135, 165, 200	7.5 ~ 25.4		55	60 ~ 70	SKG25-24HG	5.1, 5.5, 5.9	SK 25

★The "D" of Code No. shows MAX. gripping diameter.

★The "H" dimension is a figure in case of the MAX. gripping diameter.

★All slim chucks except NC5-46-SK25-90 marked \*1 are High Pressure Centre Through Coolant type (MAX.7MPa).

★For NC5-46-SK25-90, the adjust screw SKG-12MFH is used for centre through coolant application (1MPa).

The Code No. of the adjust screw for J type nut is SKG-12MF-J.

★For the adjust screws for oil hole taps or smaller dia. cutters, please refer P.52.

★Collet, adjust screw (G No.) and spanner are available as an option.

The Code No. of the spanner is SK6C (C=φ18): SKL-6, SK6C (C=φ19.5): SKL-6W, SK10C: SKL-10, SK13C: 9HC12A, SK16C: 9HC16, SK20C: 9HC22, SK25C: 9HC25

★Please refer P.234 for SK collet and please refer P.49 for J type nut.

SK6C:φ4~φ6, SK10C:φ6~φ10, SK16C:φ10~φ16, SK25C:φ16~φ25

★Slim Chuck for Oil Mist is also available. Please contact with us.

## High Speed Slim Chuck

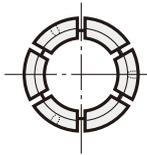
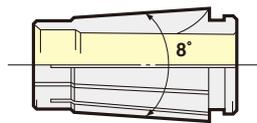
"SK-P" is the Code No. of High Speed Slim Chuck.



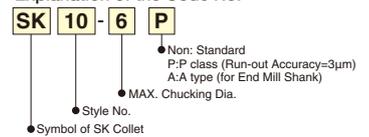
GH Handle P.48

TAPER	Code No.	MAX. (min <sup>-1</sup> )	TAPER	Code No.	MAX. (min <sup>-1</sup> )
NC5-46	NC5- 46-SK 6C- 75P, 90P, 120P	40,000	NC5-85	NC5- 85-SK 6C-105P, 150P	20,000
	-SK10C- 75P, 90P, 120P			-SK10C-105P, 150P, 200P	
	-SK13C- 90P, 120P			-SK13C-105P, 150P, 200P	
	-SK16C- 90P, 120P	-SK16C-105P, 150P, 200P			
	-SK20C- 90P, 120P	-SK20C-135P, 165P, 200P			
	-SK25 - 90P	-SK25C-135P, 165P, 200P			
NC5-63	NC5- 63-SK 6C- 90P, 150P	30,000	NC5-100	NC5-100-SK 6C-105P, 165P	20,000
	-SK10C- 90P, 150P, 200P	25,000		-SK10C-105P, 165P, 200P	
	-SK13C- 90P, 150P, 200P			-SK13C-105P, 165P, 200P	
	-SK16C-105P, 150P, 200P			-SK16C-105P, 165P, 200P	
	-SK20C-105P, 150P, 200P	20,000		-SK20C-135P, 165P, 200P	
	-SK25C-135P, 180P			-SK25C-135P, 165P, 200P	

# SLIM CHUCK COLLET



Explanation of the Code No.



**SK** "A" type SK collet (for End Mill Shank) are marked  . The acceptable shank tolerance is h8. Code No. is e.g. SK10-10A  
 "P" class SK collet (for drill) are available for all series. e.g. SK10-10P

Code No.	Chucking D
SK 6- 0.8	0.7 ~ 0.8
- 1	0.9 ~ 1.0
- 1.25	1.15~ 1.25
- 1.5	1.3 ~ 1.5
- 1.75	1.55~ 1.75
- 2	1.8 ~ 2.0
- 2.25	2.05~ 2.25
- 2.5	2.3 ~ 2.5
- 2.75	2.55~ 2.75
- 3	2.8 ~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
SK10- 2	1.75~ 2.0
- 2.25	2.0 ~ 2.25
- 2.5	2.25~ 2.5
- 2.75	2.5 ~ 2.75
- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
-10	9.5 ~10.0

Code No.	Chucking D
SK13- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~10.0
- 10.5	10.0~10.5
- 11	10.5~11.0
- 11.5	11.0~11.5
- 12	11.5~12.0
- 12.5	12.0~12.5
- 13	12.5~13.0

Code No.	Chucking D
SK16- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~10.0
- 10.5	10.0~10.5
- 11	10.5~11.0
- 11.5	11.0~11.5
- 12	11.5~12.0
- 12.5	12.0~12.5
- 13	12.5~13.0
- 13.5	13.0~13.5
- 14	13.5~14.0
- 14.5	14.0~14.5
- 15	14.5~15.0
- 15.5	15.0~15.5
- 16	15.5~16.0

Code No.	Chucking D
SK20- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~ 10.0
- 10.5	10.0~ 10.5
- 11	10.5~ 11.0
- 11.5	11.0~ 11.5
- 12	11.5~ 12.0
- 12.5	12.0~ 12.5
- 13	12.5~ 13.0
- 13.5	13.0~ 13.5
- 14	13.5~ 14.0
- 14.5	14.0~ 14.5
- 15	14.5~ 15.0
- 15.5	15.0~ 15.5
- 16	15.5~ 16.0
- 16.5	16.0~ 16.5
- 17	16.5~ 17.0
- 17.5	17.0~ 17.5
- 18	17.5~ 18.0
- 18.5	18.0~ 18.5
- 19	18.5~ 19.0
- 19.5	19.0~ 19.5
- 20	19.5~ 20.0

Code No.	Chucking D
SK25- 8	7.5~8.0
- 10	9.5~10.0
- 12	11.5~12.0
- 16	15.5~16.0
- 16.5	16.0~16.5
- 17	16.5~17.0
- 17.5	17.0~17.5
- 18	17.5~18.0
- 18.5	18.0~18.5
- 19	18.5~19.0
- 19.5	19.0~19.5
- 20	19.5~20.0
- 20.5	20.0~20.5
- 21	20.5~21.0
- 21.5	21.0~21.5
- 22	21.5~22.0
- 22.5	22.0~22.5
- 23	22.5~23.0
- 23.5	23.0~23.5
- 24	23.5~24.0
- 24.5	24.0~24.5
- 25	24.5~25.0
- 25.4	25.0~25.4

★SK6 collet with the special internal dia. is also available.



Collet removal (SKR-6) is supplied as standard only for SK6. SKR-10, SKR-16 and SKR-25 are available as an option. Collet removal is not necessary for the new types of collet (SK10 to SK25 collet including SK13 and SK20).

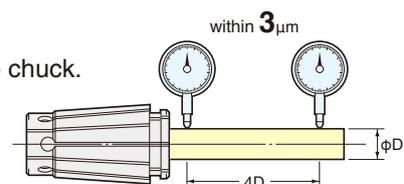
★Please refer P.44 for SK Coolant Collet (AC).

## ■ "P" class SK collet for drill

It guarantees the Run-out accuracy within 3 micron at the nose (4D) from the chuck. Additionally Collet Set is also available.

## ■ "A" type SK collet for endmill

The acceptable shank tolerance is h8.



SK Collet A Type
SK 6-3A, 4A, 5A, 6A
SK10-3A, 4A, 5A, 6A, 8A, 10A
SK13-3A, 4A, 5A, 6A, 8A, 10A, 12A, 13A
SK16-3A, 4A, 5A, 6A, 8A, 10A, 12A, 16A
SK20-4A, 5A, 6A, 8A, 10A, 12A, 16A, 20A
SK25-8A, 10A, 12A, 16A, 20A, 25A

SK Collet A Type (Inch)
SK 6 -1/8A, 3/16A
SK10 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A
SK13 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A
SK16 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A
SK20 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A, 3/4A
SK25 -3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 5/8A, 3/4A, 25.4A

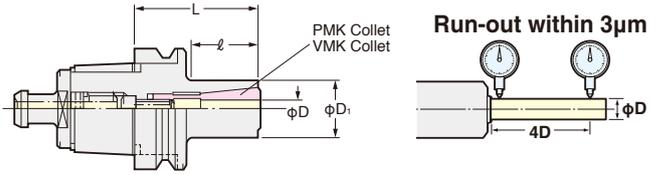
NCS

# NC5 VEGA CHUCK



## New Innovation for High Speed Milling

The setting of cutter can be done through the centre hole of the pull stud with wrench.



VMC

TAPER	Code No.	Chucking Range φD	D1	ℓ	Collet	MAX. (min <sup>-1</sup> )	Collet Removal Jig	Weight (kg)
NC5- 63	NC5- 63-VMC 8- 60, 120N	2~8	22	30, 30	PMK 8, VMK 8J	40,000	VML-63	1.1,1.4
	-VMC12- 65, 120	4~12	30	35, 47	PMK12, VMK12J			1.2,1.7
	-VMC16- 85, 120	4~16	40	53, 88	VMK16, VMK16J			1.4,1.8
	-VMC20- 85, 120	6~20	47	53, 88	VMK20, VMK20J			1.5,2.0
	-VMC25- 90, 120	8~25	55	60, 90	VMK25, VMK25J			1.7,2.3
NC5- 85	NC5- 85-VMC 8- 75N, 135	2~8	22	30, 30	PMK 8, VMK 8J	20,000	VML-85	2.3,2.7
	-VMC12- 75, 135	4~12	30	39, 42	PMK12, VMK12J			2.4,2.9
	-VMC16- 85, 135	4~16	40	47, 57	VMK16, VMK16J			2.5,3.3
	-VMC20- 85, 135	6~20	47	47, 97	VMK20, VMK20J			2.6,3.3
	-VMC25- 90, 135	8~25	55	52, 97	VMK25, VMK25J			2.8,3.6
	-VMC32-110	12~32	70	72	VMK32, VMK32J			3.6
NC5-100	NC5-100-VMC 8- 90N, 150N	2~8	22	30, 30	PMK 8, VMK 8J	20,000	VML-100	4.0,4.5
	-VMC12- 90, 150	4~12	30	49, 60	PMK12, VMK12J			4.1,4.6
	-VMC16- 90, 150	4~16	40	49, 80	VMK16, VMK16J			4.2,4.9
	-VMC20- 85, 150	6~20	47	42, 95	VMK20, VMK20J			4.2,5.3
	-VMC25- 90, 150	8~25	55	47, 107	VMK25, VMK25J			4.3,5.4
	-VMC32-105	12~32	70	57	VMK32, VMK32J			4.9

★The "D" of the Code No. shows MAX. gripping diameter.  
★Please add "P" at the end of Code No. for High Speed Chuck. e.g. NC5-63-VMC16-85P.

★Collet and collet removal jig are available as an option.

### Collet Removal Jig

VML



Push back the Pull Stud onto the VEGA Chuck and rotate the Chuck to tighten and release. Spanner is available as an option.  
NC5-53, NC5-63:9HC22,  
NC5-85:9HC32, NC5-100:9HC42



**PROTECTION MUST BE USED.**



Tightening

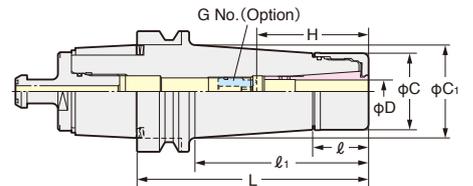
VMK Collet Code No.
VMK 8-2J, 3J, 4J, 5J, 6J, 8J
VMK12-4J, 5J, 6J, 8J, 10J, 12J
VMK16-4J, 5J, 6J, 8J, 10J, 12J, 16J
VMK20-6J, 8J, 10J, 12J, 16J, 20J
VMK25-8J, 10J, 12J, 16J, 20J, 25J
VMK32-12J, 16J, 20J, 25J, 32J

★Please note the acceptable shank tolerance is h.  
★VMK8-2J is Jet Spread Hole type.

# NC5 ANNIVERSARY TYPE VC HOLDER



With TiN Bearing Nut  
MAX.40,000min<sup>-1</sup> & G2.5  
Run-Out Accuracy:3μm at 4D



VC

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	MAX. (min <sup>-1</sup> )	Collet
NC5- 46	NC5- 46-VC 6- 45, 60, 90	2.0~6.0	45,60,90	23	23,35,65	28	27.5,31.7,33.4	-,-,35~45	-,VCG 6- 8A	0.5,0.6,0.8	40,000	VCK 6
	-VC13- 65, 90, 120	3.0~12.0	65,90,120	29	42,67,97	40	41.8,41.3,42.4	-,-,50~60	-,VCG13-15A	0.8,0.9,1.2		VCK13
NC5- 63	NC5- 63-VC 6- 60, 90, 120	2.0~6.0	60,90,120	23	30,60,90	28	30.0,32.7,36.9	35~45	VCG 6- 8A	1.3,1.5,1.7	30,000	VCK 6
	-VC13- 60, 90, 120	3.0~12.0		29	31,60,90	40	40.3,44.3,48.5	-50~60,50~60	-,VCG13-15A,VCG13-15A	1.4,1.7,2.1		VCK13
NC5- 85	NC5- 85-VC 6-105, 135, 165	2.0~6.0	105,135,165	23	67,97,127	28	33.7,37.8,42.0	35~45	VCG 6- 8A	2.6,2.8,3.1	20,000	VCK 6
	-VC13-105, 135, 165	3.0~12.0		29		45.3,49.5,53.7	50~60	VCG13-15A	2.8,3.2,3.6	VCK13		
NC5-100	NC5-100-VC 6-105, 135, 165	2.0~6.0	105,135,165	23	62,92,122	28	33.0,37.1,41.3	35~45	VCG 6- 8A	4.3,4.5,4.9	20,000	VCK 6
	-VC13-105, 135, 165	3.0~12.0		29		44.6,48.8,53.0	50~60	VCG13-15A	4.5,4.9,5.3	VCK13		

★Collet, adjust screw (G No.) and GH Handle are available as an option.

★Please refer P.49 for JET Coolant Splash with J type Nut.

The Code No. of the GH Handle is VC6: GH10, VC13: GH16

★When the axial stopper is required, please use Adjust Screw (G No.)

★Please add "-RP" at the end of Code No. for Rust Proof Treatment VC Holder. e.g : NC5-63-VC13-60-RP

★Please use VC J type Nut & Cap for Centre Through Coolant.

When VC J type Nut is used, the total holder length will be extended to 6mm.

★NC5-63-VC 6-150, NC5-63-VC13-150, NC5-100-VC13- 90, -120 are available as semi-standard.

★All series are for High Speed Rotation.

VCK Collet Code No.
VCK 6-2, 3, (3.175), 4, 5, 6
VCK13-3, (3.175), 4, 5, 6, 7, 8, 9, 10, 11, 12

★Please note the acceptable shank tolerance is h.

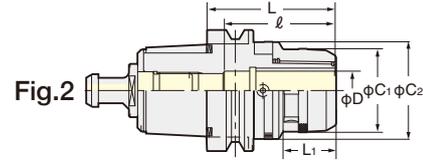
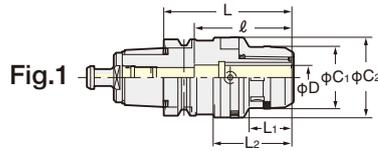
★Inch size is also available. VCK6-1/8, 3/16, 1/4 VCK13-1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2

★VCK6-3.175 and VCK13-3.175 are same as VCK6-1/8 and VCK13-1/8 respectively.  
Please order VCK6-1/8 or VCK13-1/8

# NC5 ZERO FIT TYPE MILLING CHUCK



CZF



PAT.

TAPER	Code No.	C1	C2	L	L1	L2	l	Weight(Kg)	Fig.	Collet	
NC5- 46	NC5- 46-CZF20-100	51.5	66.5	100	35	68	80	1.4	1	KM20 CCK20	
	-CZF25-100	59.5	74.5					1.5			KM25 CCK25
NC5- 63	NC5- 63-CZF20-105	51.5	66.5	105	35	65	80	2.1		2	
	-CZF25-105	59.5	74.5			68		2.4			KM25 CCK25
	-CZF32-120	69	80.5	120	42	81	105	2.9			
NC5-100	NC5-100-CZF20-105	51.5	66.5	105	35	-	80	4.9		2	KM20 CCK20
	-CZF25-105	59.5	74.5					5.3	KM25 CCK25		
	-CZF32-105	69	80.5	42	105	5.7	KM32 CCK32				

- ★Spanner is available as an option. CZF20 type:9HC22, CZF25 type:9HC25, CZF32 type:9HC32
- ★Wrench to adjust run-out (9ZFL) is available as an option. ★Please note that the acceptable shank tolerance is  $h_6-h_7$ .
- ★Please refer P.232 for KM, CCK collet.
- ★Please add "P" at the end of Code No. for High Speed Zero Fit Milling Chuck. e.g. NC5-63-CZF25-105P
- ★For center through coolant application: Please use CKFN-D Nut for the direct chucking. Please use CCK collet and CKFN nut for chucking with collet. P.232
- ★Multi-Cam style is available. e.g. NC5-63-CZF32-120-C3. (3 Cams) Please contact us for more detail.

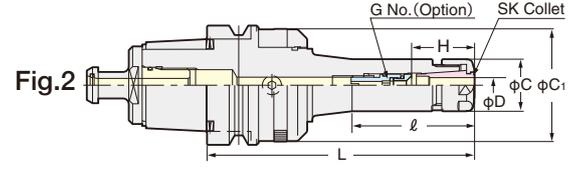
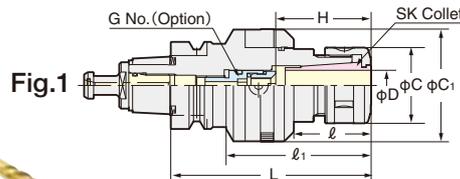
Wrench to adjust  
9ZFL



# NC5 ZERO FIT TYPE SLIM CHUCK



SZF



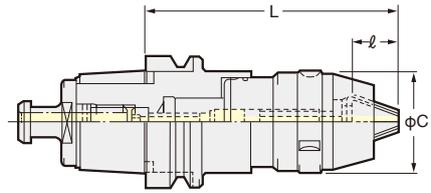
PAT.

TAPER	Code No.	D	L	l	l1	C	C1	H	G No. (Option)	Weight(kg)	Fig.	Collet
NC5- 46	NC5- 46-SZF 6C- 90	0.7~6.0	90	42	-	19.5	40.5	26~31	SKG6-6HG	0.8	2	SK 6
	-SZF10C- 90	1.75~10.0		27	61	27.5	48.5	35~41	SKG10-10HG	1.2	1	SK10
	-SZF16C-120	2.75~16.0		50	86	40	59.5	50	SKG16-10HG	1.7		SK16
NC5- 63	NC5- 63-SZF 6C- 90,150	0.7~6.0	90, 150	37, 60	-	19.5	40.5, 48.5	26~31	SKG6-6HG	1.3, 1.6	2	SK 6
	-SZF10C- 90,150	1.75~10.0		37, 97	27.5	48.5	35~41	SKG10-10HG	1.5, 1.7	SK10		
	-SZF16C-105,150	2.75~16.0	105, 150	52, 97	40	59.5	45~57	SKG16-12HG	1.7, 2.0	1	SK16	
	-SZF25C-135,180	7.5~25.4	135, 180	70, 115	99, 144	55	66.5	60~65	SKG25-18HGD, 24HG		2.6, 2.9	SK25
NC5-100	NC5-100-SZF 6C-105,165	0.7~6.0	105, 165	41, 63	-	19.5	40.5, 59.5	26~31	SKG6-6HG	4.1, 4.5	2	SK 6
	-SZF10C-105,165	1.75~10.0		41, 101	27.5	48.5	35~41	SKG10-10HG	4.3, 4.7	SK10		
	-SZF16C-105,165	2.75~16.0		41, 101	40	59.5	45~57	SKG16-12HG	4.6, 5.3	SK16		
	-SZF25C-135,165	7.5~25.4		135, 165	61, 101	55	66.5	60~70	SKG25-24HG	5.5, 5.9		SK25

- ★Adjust screw (G No.), wrench to adjust run-out (9ZFL) and SKL spanner are available as an option. SZF6C: SKL-6W, SZF10C: SKL-10, SZF16C: 9HC16, SZF25C: 9HC25
- ★NC5-85 is also available. NC5-85-SZF6C-105, -150 NC5-85-SZF10C-105, -150 NC5-85-SZF16C-105, -150 NC5-85-SZF25C-135, -165
- ★Please use "P" class or "A" type SK collet. P.234. ★Please add "P" at the end of Code No. for High Speed Zero Fit Slim Chuck. e.g. NC5-63-SZF10C-90P
- ★For centre through coolant application, please use SK J type nut and cap. P.49. Please note that the total tool length with J type nut is extended 6mm longer.
- ★Multi-Cam style is available. e.g. NC5-63-SZF16C-105-C3. (3 Cams) Please contact us for more detail.

NC5

# NC5 NPU DRILL CHUCK



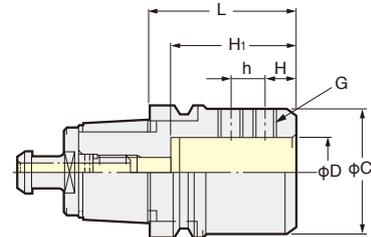
NPU

TAPER	Code No.	Chucking Dia. φD	C	ℓ	L MIN.	L MAX.	Weight(kg)
NC5- 46	NC5- 46-NPU 8-100	0.3~ 8	38	18.8	100	104.7	1.0
	-NPU13-120	1 ~13	48.5	26.5	120	131.7	1.4
NC5- 63	NC5- 63-NPU 8- 90	0.3~ 8	38	18.8	90	94.7	1.3
	-NPU13-110	1 ~13	48.5	26.5	110	121.7	1.7
NC5- 85	NC5- 85-NPU 8- 90	0.3~ 8	38	18.8	90	94.7	2.8
	-NPU13-110	1 ~13	48.5	26.5	110	121.7	3.4
NC5-100	NC5-100-NPU 8- 90	0.3~ 8	38	18.8	90	94.7	3.8
	-NPU13-110	1 ~13	48.5	26.5	110	121.7	4.1

★NPU8 can not be used for Centre Through Tool Coolant application.  
 ★Please add "C" to the Code No. for Centre Through Tool Coolant type NPU13(1MPa).  
 e.g. NC5-63-NPU13C-110

★Wrench is available as an option. NPU8: NPUL-8, NPU13: NPUL-13.  
 ★When it is used for centre through tool coolant holder, MIN. Chucking Dia. is 6mm.

# NC5 SIDE LOCK HOLDER



SL

Photo shows the holder with NIKKEN COMBATZ DRILL.  
 P.293

## SIDE LOCK HOLDER for Drill

TAPER	Code No.	C	h	H	H <sub>1</sub>	G	Weight (kg)
NC5- 63	NC5- 63-SL20C-55	50	—	14	45	M12(P=1.25)	1.4
	-SL25C-60	55	15	11	55		1.6
	-SL32C-70	61	20	12	60		1.7
	-SL40C-80	70	19	15	70		1.8
NC5- 85	NC5- 85-SL20C-70	50	16	12	45	M10(P=1.5)	2.8
	-SL25C-70	55	17	14	55	2.9	
	-SL32C-70	60	15	15	60	M12(P=1.25)	2.8
	-SL40C-80	84	19	18	70	3.7	
NC5-100	NC5-100-SL20C-80	50	16	12	45	M10(P=1.5)	4.2
	-SL25C-80	55	17	14	55	4.4	
	-SL32C-80	60	16	15	60	M12(P=1.25)	4.6
	-SL40C-80	88	19	15	70	5.9	

★All holders are High Pressure Centre Through Tool Coolant type. (7MPa).  
 The Code No. of SIDE LOCK HOLDER for Combination Shank Cutter is "DM".  
 e.g. NC5-100-DM50.8-120  
 NC5- 85-DM50.8-120



## SIDE LOCK HOLDER for End Mill

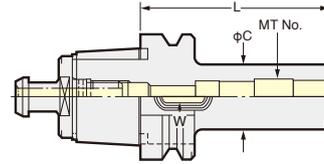
TAPER	Code No.	C	h	H	H <sub>1</sub>	G	Weight (kg)
NC5- 63	NC5- 63-SLS16- 60	48	—	24	60	M14(P=2)	1.4
	-SLS20- 75	52	—	25	70	M16(P=2)	1.7
	-SLS25- 90	63	25	24	75	M18(P=2)	1.9
	-SLS32-105	72	28	24	90	M20(P=2)	2.0
	-SLS42-115	90	32	30	95	M20(P=2)	4.7
NC5- 85	NC5- 85-SLS16- 70	48	—	24	60	M14(P=2)	2.7
	-SLS20- 70	52	—	25	70	M16(P=2)	3.2
	-SLS25- 95	65	25	24	75	M18(P=2)	3.6
	-SLS32-100	72	28	24	85	M20(P=2)	3.8
	-SLS42-115	90	32	30	95	M20(P=2)	4.7
NC5-100	NC5-100-SLS16- 75	48	—	24	60	M14(P=2)	4.0
	-SLS20- 75	52	—	25	70	M16(P=2)	4.5
	-SLS25- 75	65	25	24	75	M18(P=2)	4.7
	-SLS32- 75	72	28	24	90	M20(P=2)	4.9
	-SLS42-115	90	32	30	95	M20(P=2)	6.2
-SLS50-105	98	34.5	35	90	M24(P=2)	7.5	

★The above are suitable for JIS B4005 Shank End Mill.

# NC5 MORSE TAPER SLEEVE TYPE A



■ For Drill & Reamer  
with MT No.1~No.4 Shank.



MTA

TAPER	Code No.	MTNo.	C	W	Weight (kg)
NC5- 46	NC5- 46-MTA1- 85	MT1	25	5.6	0.9
	-MTA2- 95	MT2	32	6.6	1.1
	-MTA3-115	MT3	40	8.4	1.3
NC5- 63	NC5- 63-MTA1- 85	MT1	25	5.6	1.2
	-MTA2- 95	MT2	32	6.6	1.3
	-MTA3-115	MT3	40	8.4	1.6
	-MTA4-140	MT4	50	12.4	2.2

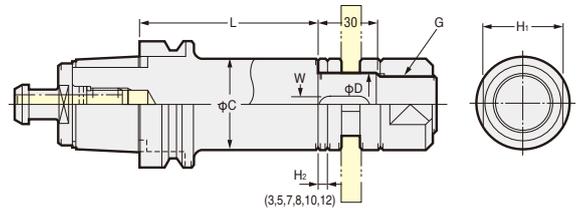
TAPER	Code No.	MTNo.	C	W	Weight (kg)
NC5- 85	NC5- 85-MTA1- 85	MT1	25	5.6	2.6
	-MTA2- 95	MT2	32	6.6	2.7
	-MTA3-115	MT3	40	8.4	3.0
	-MTA4-140	MT4	50	12.4	3.5
NC5-100	NC5-100-MTA1- 85	MT1	25	5.6	4.1
	-MTA2- 95	MT2	32	6.6	4.2
	-MTA3-115	MT3	40	8.4	4.5
	-MTA4-140	MT4	50	12.4	5.1

★The "D" of Code No. shows MT No. ★Please contact with us for the Centre Through Tool Coolant type Sleeve.

# NC5 STUB ARBOR



■ No Vibration at slotting.



SCA

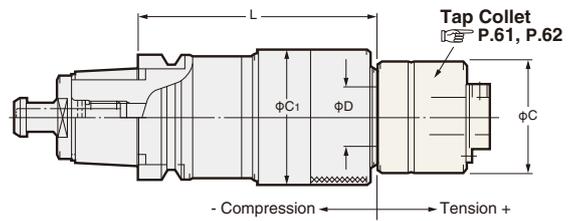
TAPER	Code No. (Inch)	H <sub>1</sub>	C	W	G	Weight (kg)	Code No. (Metric)
NC5- 63	NC5- 63-SCA12.7 -75	17	20	—	M12	1.2	NC5- 63-SCA13-75
	-SCA15.875-75	23	26	3.18(4)	M14	1.4	-SCA16-75
	-SCA22.225-75	29	34	3.18(4)	M20	1.7	-SCA22-75
	-SCA25.4 -75	32	40	6.35(7)	M24	2.0	-SCA27-75
	-SCA31.75 -90	41	46	7.92(8)	M30	2.6	-SCA32-90
NC5- 85	NC5- 85-SCA12.7 -75	17	20	—	M12	2.6	NC5- 85-SCA13-75
	-SCA15.875-90	23	26	3.18(4)	M14	2.8	-SCA16-90
	-SCA22.225-90	29	34	3.18(4)	M20	3.2	-SCA22-90
	-SCA25.4 -90, 135	32	40	6.35(7)	M24	3.5	-SCA27-90
	-SCA31.75 -90, 135	41	46	7.92(8)	M30	3.9	-SCA32-95
NC5-100	NC5-100-SCA12.7 -75	17	20	—	M12	4.0	NC5-100-SCA13-75
	-SCA15.875-90	23	26	3.18(4)	M14	4.2	-SCA16-90
	-SCA22.225-90	29	34	3.18(4)	M20	4.4	-SCA22-90
	-SCA25.4 -90	32	40	6.35(7)	M24	4.5	-SCA27-90
	-SCA31.75 -95, 135	41	46	7.92(8)	M30	4.7	-SCA32-90
	-SCA38.1 -95, 135	46	55	9.52(10)	M36	4.9	-SCA40-90

★The "D" of Code No. shows shaft diameter. ★Guide Key and Collars are supplied as standard. ★The figures in ( ) of W are for Metric.

# NC5 TAPPER CHUCK



■ Built-in Floating Mechanism and  
Torque-Limiter Mechanism on  
Tap Collet.



Z

TAPER	Code No.	Tapping Capability			D	C	C <sub>1</sub>	Tap Collet	Weight (kg)
		M	U	P					
NC5- 63	NC5- 63-Z12- 90	M 2~M12	1/8~1/2	P 1/16~1/4	19	32	45	ZKG12	1.5
	-Z16-120	M 3~M16	1/8~5/8	P 1/8~3/8	25	39	55	ZKG16	2.0
	-Z24-120	M 8~M24	1/2~ 1	P 1/4~5/8	30	46	68	ZKG24	2.1
	-Z38-160	M18~M38	3/8~1 3/8	P 3/8~ 1	45	78	85	ZKN38	6.7
NC5- 85	NC5- 85-Z12-105	M 2~M12	1/8~1/2	P 1/16~1/4	19	32	45	ZKG12	3.3
	-Z16-120	M 3~M16	1/8~5/8	P 1/8~3/8	25	39	55	ZKG16	4.5
	-Z24-120	M 8~M24	1/2~ 1	P 1/4~5/8	30	46	68	ZKG24	4.9
	-Z38-175	M18~M38	3/8~1 3/8	P 3/8~ 1	45	78	85	ZKN38	8.4
	-Z65-195	M36~M100	1~3 3/4	P 1~ 3	68	110(125)	110	ZKN65	8.7
NC5-100	NC5-100-Z12-130	M 2~M12	1/8~1/2	P 1/16~1/4	19	32	45	ZKG12	4.3
	-Z16-135	M 3~M16	1/8~5/8	P 1/8~3/8	25	39	55	ZKG16	5.2
	-Z24-125	M 8~M24	1/2~ 1	P 1/4~5/8	30	46	68	ZKG24	5.8
	-Z38-155	M18~M38	3/8~1 3/8	P 3/8~ 1	45	78	85	ZKN38	8.3
	-Z65-195	M36~M100	1~3 3/4	P 1~ 3	68	110(125)	110	ZKN65	9.0

★Please refer P.61, P.62 for Tap Collet.

★For Synchronized Tapping: ZH Tapper Chuck without tension/compression mechanism is available. It improves tap life remarkably by absorbing fine pitch error completely with the small floating mechanism. Please use ZH Tapper Chuck only with ZMK Tap Collet without torque-limiter mechanism. Please refer P.66.

★Centre through tool coolant type with high pressure or oil mist type is available. In these types, OZMK-OM collet is used.



ZH Tapper Chuck + ZMK Tap Collet

NC5- 63-ZH12- 90 NC5-100-ZH12- 90

-ZH24-105 -ZH24-105

NC5- 85-ZH12- 90

-ZH24-105

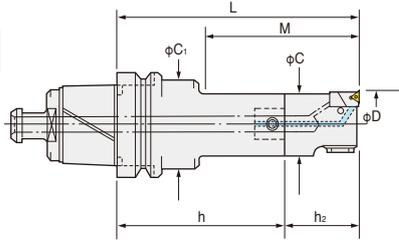
NC5

# NC5 ZMAC ADVANCED BORING ARBOR (ZMAC-V)

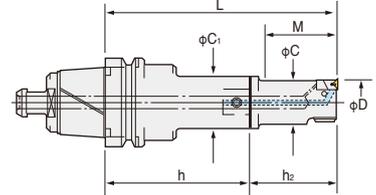
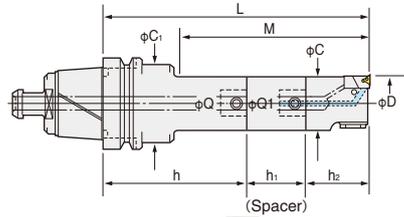
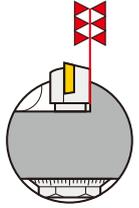


PAT.

Boring for Finishing



No Micro Vibration due to Double-Contact Support of Cartridge. Long Tool-Life & High Accuracy.



Only for ZMAC16-V

## ZMAC-V

Photo shows ZMAC $\alpha$ -V head with A1 spacer.

All codes shown are for heads with triangular inserts For heads with rhomboid inserts please add the letter "R" to the code No. e.g. NC5-63-ZMAC32 R -150V

TAPER	Code No.	Boring Range D	Boring Depth M	P.119		Weight (kg)	
				Head No.	Insert No.		
NC5-63	NC5- 63-ZMAC16-125V,135V	15.9~20.2	38, 48	12-ZMAC16-45V,55V	3MP-C,B	1.6, 1.6	
	-ZMAC20-120V, 135V, 150V	19.8~25.2	45, 67, 75	9-ZMAC 20- 40V		1.6, 1.6, 1.7	
	-ZMAC25-120V, 150V, 165V	24.8~32.2	52, 90, 97	12-ZMAC 25- 40V	1.7, 1.8, 1.8		
	-ZMAC32-150V, 180V, 195V	31.8~42.2	77, 110, 122	16-ZMAC 32- 55V	4MP-C,B	2.2, 2.4, 2.4	
	-ZMAC42-150V, 180V, 210V	41.8~55.2	97, 130, 157	20-ZMAC 42- 70V	6MP-C,B	2.7, 2.9, 3.2	
	-ZMAC55-165V, 210V, 225V	54.8~70.2	135, 180, 195	26-ZMAC 55- 70V		3.6, 4.3, 4.3	
	-ZMAC70-165V, 180V, 225V	69.8~85.2	165, 180, 225	34-ZMAC 70- 70V		5.1, 5.5, 6.5	
	-ZMAC85-195V	84.8~100.2	195	42-ZMAC 85-100V		8.7	
NC5-85	NC5- 85-ZMAC16-140V, 150V	15.9~20.2	38, 48	12-ZMAC16-45V,55V	3MP-C,B	2.9, 2.9	
	-ZMAC20-150V, 165V, 180V	19.8~25.2	45, 67, 75	9-ZMAC 20- 40V		3.0, 3.0, 3.1	
	-ZMAC25-135V, 165V, 180V	24.8~32.2	52, 90, 97	12-ZMAC 25- 40V	4MP-C,B	3.7, 3.8, 3.9	
	-ZMAC32-180V, 210V, 225V	31.8~42.2	77, 110, 122	16-ZMAC 32- 55V		6MP-C,B	4.2, 4.2, 4.6, 4.7
	-ZMAC42-180V, 195V, 225V, 240V	41.8~55.2	97, 130, 142, 157	20-ZMAC 42- 70V			5.7, 5.8, 7.3
	-ZMAC55-210V, 240V, 270V	54.8~70.2	117, 182, 177	26-ZMAC 55- 70V	8.2, 8.8, 9.7		
	-ZMAC70-240V, 270V, 300V	69.8~85.2	190, 220, 250	34-ZMAC 70- 70V	10.7, 13.2, 14.2		
		-ZMAC85-225V, 290V, 315V	84.8~100.2	187, 252, 277	42-ZMAC 85-100V	12.0, 14.7, 14.6	
	-ZMAC100-225V, 290V, 315V	99.5~140.5	225, 290, 315	42-ZMAC100-100V	12.8, 15.5, 16.2		
	-ZMAC140-225V, 290V, 315V	139.5~180.5		42-ZMAC140-100V			
NC5-100	NC5-100-ZMAC16-140V, 150V	15.9~20.2	38, 48	12-ZMAC16-45V,55V	3MP-C,B	3.9, 3.9	
	-ZMAC20-150V, 165V, 180V	19.8~25.2	45, 67, 75	9-ZMAC 20- 40V		4.0, 4.0, 4.1	
	-ZMAC25-135V, 165V, 180V	24.8~32.2	52, 90, 97	12-ZMAC 25- 40V	4MP-C,B	4.7, 4.8, 4.9	
	-ZMAC32-180V, 210V, 225V	31.8~42.2	77, 110, 122	16-ZMAC 32- 55V		6MP-C,B	5.2, 5.2, 5.6, 5.7
	-ZMAC42-180V, 195V, 225V, 240V	41.8~55.2	97, 130, 142, 157	20-ZMAC 42- 70V			6.7, 6.8, 8.3
	-ZMAC55-210V, 240V, 270V	54.8~70.2	117, 182, 177	26-ZMAC 55- 70V	9.2, 9.8, 10.7		
	-ZMAC70-240V, 270V, 300V	69.8~85.2	190, 220, 250	34-ZMAC 70- 70V	11.7, 14.2, 15.2		
		-ZMAC85-225V, 290V, 315V	84.8~100.2	187, 252, 277	42-ZMAC 85-100V	13.0, 15.7, 15.6	
		-ZMAC100-225V, 290V, 315V	99.5~140.5	225, 290, 315	42-ZMAC100-100V		13.8, 16.5, 17.2
	-ZMAC140-225V, 290V, 315V	139.5~180.5		42-ZMAC140-100V			

★MIN. dial readout : ZMAC25-V & smaller is 0.02mm on diameter. ZMAC32-V and larger are 0.01mm on diameter.

★"C" grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).

We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron. Please refer P.117 for cutting condition.

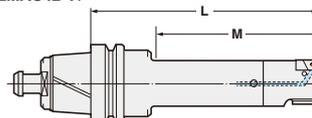
★Please refer P.242 for Shank, and P.102 for Spacer, and P.87, P.88 for Head.

★Centre Through Tool Coolant function is available as standard.

★When L length is required longer than standard, please specify boring depth M.

★For NC5-46, modular connection system is applied. Please refer P.242 for Base Holder.

★The location of the cutting edge is same as the drive key for ZMAC16-V to ZMAC42-V.



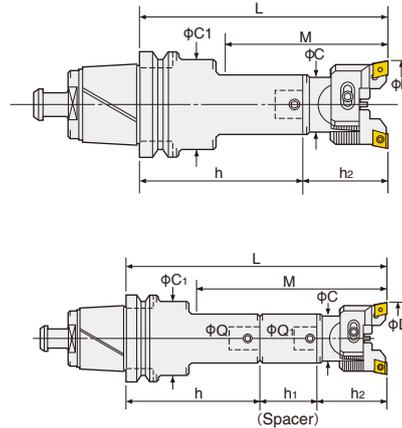
High Speed Boring ZMAC $\alpha$ -V P.88

# NC5 BALANCE-CUT BORING ARBOR

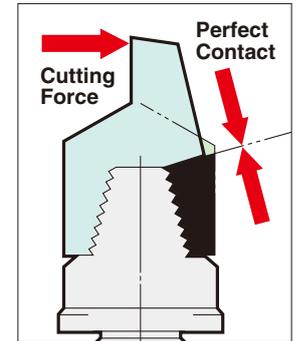


## RAC

Photo shows RAC head with A1 spacer.



## Power of Shoulder Support



TAPER	Code No.	Boring Range D	Boring Depth M	P.74		Weight (kg)
				Head No.	Insert No.	
NC5-63	NC5- 63-RAC 25-135E, 165E, 180E	25~32	67, 105, 112	12-RAC 25- 55E	CC07-C	1.7, 1.8, 1.8
	-RAC 32-150E, 180E, 195E	32~45	77, 110, 122	16-RAC 32- 55E	CC08-C	2.1, 2.3, 2.3
	-RAC 43-150E, 180E, 210E	43~55	97, 130, 157	20-RAC 43- 70E	CC12-C	2.4, 2.6, 2.9
	-RAC 53-165E, 210E, 225E	53~70	135, 180, 195	26-RAC 53- 70E		2.2, 3.0, 2.9
	-RAC 70-180E, 195E, 240E	70~100	180, 195, 240	34-RAC 70- 85E		4.5, 4.9, 5.9
	-RAC100-195E	100~130	195	42-RAC100-100E		6.5
NC5-85	NC5- 85-RAC 25-150E, 180E, 195E	25~32	67, 105, 112	12-RAC 25- 55E	CC07-C	2.9, 3.1, 3.0
	-RAC 32-180E, 210E, 225E	32~45	77, 110, 122	16-RAC 32- 55E	CC08-C	3.6, 3.8, 3.8
	-RAC 43-180E, 195E, 225E, 240E	43~55	97, 130, 142, 157	20-RAC 43- 70E	CC12-C	3.9, 4.0, 4.3, 4.4
	-RAC 53-210E, 240E, 270E	53~70	117, 182, 177	26-RAC 53- 70E		5.1, 5.2, 5.8
	-RAC 70-255E, 285E, 315E	70~100	205, 235, 265	34-RAC 70- 85E		7.7, 8.1, 9.1
	-RAC100-225E, 290E, 315E	100~130	187, 252, 277	42-RAC100-100E		10.7, 10.7, 14.1
NC5-100	NC5-100-RAC 25-150E, 180E, 195E	25~32	67, 105, 112	12-RAC 25- 55E	CC07-C	3.9, 4.1, 4.0
	-RAC 32-180E, 210E, 225E	32~45	77, 110, 122	16-RAC 32- 55E	CC08-C	4.6, 4.8, 4.8
	-RAC 43-180E, 195E, 225E, 240E	43~55	97, 130, 142, 157	20-RAC 43- 70E	CC12-C	4.9, 5.0, 5.3, 5.4
	-RAC 53-210E, 240E, 270E	53~70	117, 182, 177	26-RAC 53- 70E		6.1, 6.2, 6.8
	-RAC 70-255E, 285E, 315E	70~100	205, 235, 265	34-RAC 70- 85E		8.7, 9.1, 10.1
	-RAC100-225E, 290E, 315E	100~130	225, 290, 315	42-RAC100-100E		11.7, 11.7, 15.1

★ "C" grade (Coated) inserts are supplied as standard with the head. P.74 Please refer P.116 for cutting condition.

★ Please refer P.242 for base holder, P.102 for spacer and P.79 for head.

★ For centre through tool coolant type, please add "C" at the end of Code No. e.g. NC5-63-RAC53-165-C

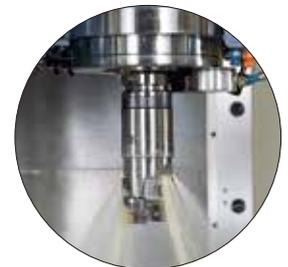
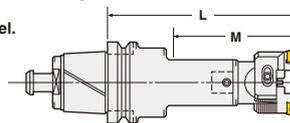
★ Cartridges & Insert tips for the Heavy Duty Boring of Iron and Cast Iron (No letter), for Aluminum (A), and for Through Hole & Multiple Sheets (K) are available. Please refer P.79 for cartridges. Please add the letter "No letter", "A" or "K" at the end of Code No. e.g. NC5-63-RAC53-165A

★ When L length is required longer than standard, please specify the boring depth M.

★ Cartridge & Insert for Alloy Steel (E) is recommended for boring on steel and stainless steel. e.g. NC5-63-RAC53-165E

★ For NC5-46, modular connection system is applied. Please refer P.242 for Base Holder.

Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.71, P.72



## High Pressure Coolant Through

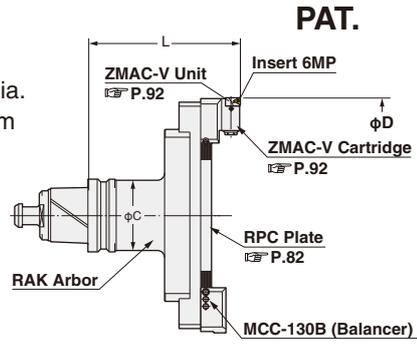
# NC5 BALANCE-CUT BAC ADVANCED BORING ARBOR for LARGE DIA. **NIKKEN**



**BAC-V**

## For Finishing

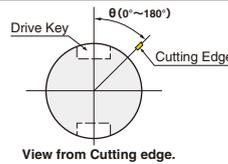
- Min. dial read out: main scale dia. 0.02mm, sub scale dia. 0.002mm
- Boring Dia:  $\phi 130 \sim 595$ mm



Boring Dia:  $\phi 130 \sim 595$ mm for Finishing.

TAPER	Code.No	D		L	C	Arbor No.	RPC Plate No	Cartridge (Balancer)	Weight (kg)
		MIN.	MAX.						
NC5- 63	NC5-63 -BAC130-205V	130	195	205	61	NC5-63-RAK-130A	RPC-130	MCCZ-130V (MCC-130B)	6.8
	-BAC180-205V	180	245				-180		7.8
NC5- 85 NC5-100	NC5-85 -BAC130-185V, 235V, 285V (NC5-100)	130	195	185, 235, 285	90	NC5-85-RAK-110A, 160A, 210A (NC5-100)	RPC-130	MCCZ-130V (MCC-130B) Insert Tip 6MP	13.0, 14.5, 17.5
	-BAC180-185V, 235V, 285V	180	245				-180		13.5, 15.0, 18.0
	-BAC230-185V, 235V, 285V	230	295				-230		14.0, 15.5, 18.5
	-BAC280-185V, 235V, 285V	280	345				-280		14.5, 16.0, 19.0
	-BAC330-210V	330	395	210	98	NC5-85-RAK330-125 (NC5-100)	RPC-330		16.2
	-BAC380-210V	380	445				-380		16.5
	-BAC430-210V	430	495				-430		17.5
	-BAC480-210V	480	545				-480		18.5
	-BAC530-210V	530	595				-530		19.5

- ★ "C" grade (Coated) Inserts are supplied as standard.
- ★ Arbor, Plate and Cartridge are delivered in separate packages.
- ★ When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★ The location of cutting edge is same as drive key in standard. The different location is available, please specify  $\theta$  in Code No. e.g. NC5-100-BAC180-235V ( $90^\circ$ )



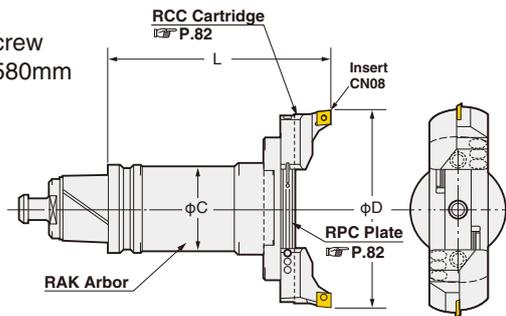
# NC5 BALANCE-CUT RAC BORING ARBOR for LARGE DIA. **NIKKEN**



**RAC**

## For Roughing

- With slight adjust screw
- Boring Dia:  $\phi 130 \sim 580$ mm



Boring Dia:  $\phi 130 \sim 580$ mm for Roughing.

TAPER	Code.No	D		L	C	Arbor No.	RPC Plate No	Cartridge No. for Large dia.	Weight (kg)
		MIN.	MAX.						
NC5- 63	NC5-63 -RAC130-205	130	180	205	61	NC5-63-RAK-130A	RPC-130	For Heavy Duty Boring of Iron and Cast Iron	6.8
	-RAC180-205	180	230				-180		7.8
NC5- 85 NC5-100	NC5-85 -RAC130-185, 235, 285 (NC5-100)	130	180	185, 235, 285	90	NC5-85-RAK-110A, 160A, 210A (NC5-100)	RPC-130	RCC-130 x2 Insert Tip CN08	11.3, 12.8, 15.8
	-RAC180-185, 235, 285	180	230				-180		11.8, 13.3, 16.3
	-RAC230-185, 235, 285	230	280				-230		12.3, 13.8, 16.8
	-RAC280-185, 235, 285	280	330				-280		12.8, 14.3, 17.3
	-RAC330-210	330	380	210	98	NC5-85-RAK330-125 (NC5-100)	RPC-330		15.5
	-RAC380-210	380	430				-380		16.5
	-RAC430-210	430	480				-430		17.5
	-RAC480-210	480	530				-480		18.5
	-RAC530-210	530	580				-530		19.5

- ★ The Code No. on above table are the boring arbors with RCC-130 cartridge (Insert tip: CN08) the Heavy Duty Boring of Iron and Cast Iron. Please refer P.116 for cutting condition.
- ★ Boring arbor with cartridges & insert for Steel, Stainless Steel and Cast Iron (E), for Aluminum (A) and for Through Hole & Multi Sheets (K) are available. Please refer P.82 for cartridges. e.g. NC5-100-RAC130-185E
- ★ When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★ Arbor, Plate and Cartridge are delivered in separate packages. ★ The location of cutting edge is same as drive key in standard. The different location is available, please specify  $\theta$  in Code No. e.g. NC5-100-RAC180-235 ( $90^\circ$ )

# NC5 MODULAR TYPE BASE HOLDER



Fig.1

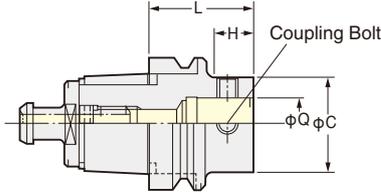


Fig.2

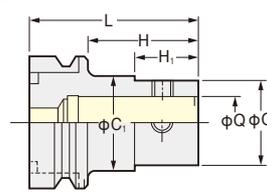
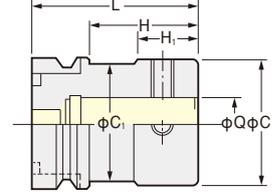
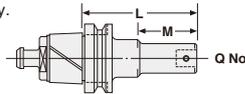


Fig.3



TAPER	Code No.	Coupling Dia Q	L	C	C <sub>1</sub>	H	H <sub>1</sub>	Coupling Bolt No.	Fig.	Weight(kg)
NC5- 46	NC5- 46-Q26- 40	26	40	50	45	18	6	B26N	3	0.4
	NC5- 63-Q 9- 80, 95	9	80, 95	19	30	48, 63	5, 27	B19	2	1.6, 1.7
NC5- 63	-Q12- 80, 110	12	80, 110	24	35	48, 78	12, 50	B12		1.6, 1.7
	-Q16- 95, 125	16	95, 125	31	42	63, 93	22, 55	B16		1.9, 2.1
	-Q20- 80, 110	20	80, 110	40	50	48, 78	27, 60	B20		2.0, 2.2
	-Q26- 50, 95, 140	26	50, 95, 140	50	—	20, 65, 110	—	B26N		0.9, 1.5, 2.3
	-Q34- 95, 110	34	95, 110	64	62	68, 83	55, 70	B34		3.0, 3.4
	-Q42- 95	42	95	83	62	68	55	B42	3.6	
NC5- 85	NC5- 85-Q 9-110, 125	9	110, 125	19	40	72, 87	5, 27	B19	2	2.9, 3.1
	-Q12- 95, 125	12	95, 125	24	44	57, 87	12, 50	B12		2.5, 3.2
	-Q16-125, 155	16	125, 155	31	50	87, 117	22, 55	B16		3.6, 3.8
	-Q20-110, 125	20	110, 125	40	60	72, 87	27, 60	B20		3.7, 3.8
	-Q26- 65, 140, 170	26	65, 140, 170	50	65	27, 102, 132	—, 40, 110	B26N	2.5, 4.6, 4.7	
	-Q34-140, 170, 200	34	140, 170, 200	64	80	102, 137, 167	—, 117, 147	B34	4.5, 6.4, 6.8	
	-Q42-125, 190	42	125, 190	83	—	87, 152	—	B42	8.0	
NC5-100	NC5-100-Q 9-110, 125	9	110, 125	19	40	67, 82	5, 27	B19	2	4.0, 4.2
	-Q12- 95, 125	12	95, 125	24	44	52, 82	12, 50	B12		4.1, 4.3
	-Q16-125, 155	16	125, 155	31	50	82, 112	22, 55	B16		4.7, 4.9
	-Q20-110, 125	20	110, 125	40	60	67, 82	27, 60	B20	4.8, 4.9	
	-Q26- 65, 140, 170	26	65, 140, 170	50	65	27, 97, 127	—, 45, 110	B26N	3.6, 5.7, 5.8	
	-Q34-140, 170, 200	34	140, 170, 200	64	80	97, 127, 157	—, 117, 147	B34	5.6, 7.5, 7.9	
	-Q42-125, 190	42	125, 190	83	—	87, 152	—	B42	9.1	

- ★φC of Q26 base holder has been increased from 45mm to 50mm due to improvement of its rigidity.
- ★All base holders have a centre through-tool coolant hole.
- ★The Coupling screw & wrench are supplied as standard.
- ★When L length is required longer than standard, please specify the boring depth M.

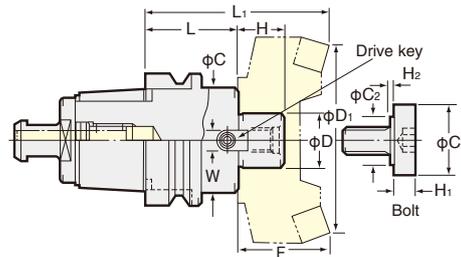


# NC5 FACE MILL ARBOR



For JIS B4113 Face Mill Cutter  
FMH arbor is available. Please contact us.

- For the Face Milling of  
φ80~φ200mm  
For the NIKKEN  
PRO-END MILL



TAPER	Code No. NC5 No. -φD -L	H	C	W	C <sub>1</sub>	C <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	Dimension of Arbor with cutter			Drive Key	Bolt	Weight (kg)
									L <sub>1</sub>	D <sub>1</sub>	F			
NC5- 46	NC5- 46-FMA25.4 -45	22	50	9.5	33	23	10	2	95	80	50	FW5	FM12	0.6
NC5- 63	NC5- 63-FMA25.4 -45,90	22	58	9.5	33	23	10	2	95, 140	80	50	FW5	FM12	1.6, 3.2
	-FMA31.75 -45,90	30	63	12.7	40	—	—	6	105, 150	100	60	FW13	FM16	1.7, 3.1
	-FMA38.1 -60	34	80	15.9	50	27	14	6	120	125	60	FW18	FM20	2.9
NC5- 85	NC5- 85-FMA25.4 -45,105	22	58	9.5	33	23	10	2	95, 155	80	50	FW5	FM12	2.7, 3.8
	-FMA31.75 -45,105	30	70	12.7	40	—	—	6	105, 165	100	60	FW12, FW13	FM16	3.0, 4.3
	-FMA38.1 -45,90	34	80	15.9	50	27	14	6	105, 150	125	60	FW18, FW19	FM20	3.4, 4.8
	-FMA47.625-70	38	128.57	25.4	—	—	—	—	130	200	60	FW26	*	6.3
	-FMA50.8 -65	36	100	19.05	65	37	14	10	125	160	60	FW23	FM24	5.0
NC5-100	NC5-100-FMA25.4 -45,105	22	58	9.5	33	23	10	2	95, 155	80	50	FW5	FM12	3.7, 5.0
	-FMA31.75 -45,105	30	70	12.7	40	—	—	6	105, 165	100	60	FW12, FW13	FM16	4.5, 6.2
	-FMA38.1 -45,95	34	80	15.9	50	27	14	6	105, 155	125	60	FW18, FW19	FM20	4.3, 5.8
	-FMA47.625-75	38	128.57	25.4	—	—	—	—	135	200	60	FW26	*	5.8
	-FMA50.8 -45	36	100	19.05	65	37	14	10	105	160	60	FW23	FM24	4.9

- ★The "D" in the Code No. shows centre bore dia. of the milling cutter.
- ★The above arbors are suitable for JIS B4113 milling cutter.
- ★The arbor marked \* requires 4 fixing bolts (M16).
- ★Drive keys, wrench and bolt are supplied as standard.
- ★The above weight is for arbor and pull stud only. (not including milling cutter.)
- ★FMC22 type arbor is suitable for the NIKKEN PRO-END MILL φ50 mm.
- ★NC5-46-FMC22-40, NC5-53-FMC22-40, NC5-63-FMC22-45, NC5-85-FMC22-45, NC5-100-FMC22-60
- ★Centre through coolant type arbor for the NIKKEN PRO-END MILL is also available.
- ★Please add "C" of the Code No. e.g. NC5-63-FMA25.4C-45
- ★Centre Through Tool Coolant type arbor except NIKKEN PRO-END MILL, please provide the drawing of milling cutters.
- ★For high speed application, balancing must be required after fixing the milling cutter.

# NC5 TAPER GAUGE · TEST BAR



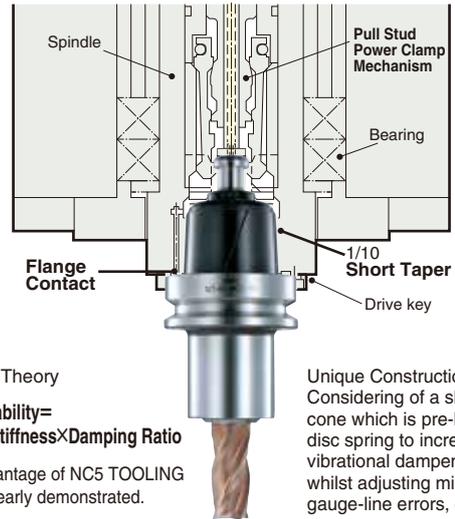
TAPER	Gauge	Test Bar(φD-L)
NC5- 46	NC5- 46-SGT	NC5- 46-TB40-200
NC5- 63	NC5- 63-SGT	NC5- 63-TB40-300
NC5- 85	NC5- 85-SGT	NC5- 85-TB40-300
NC5-100	NC5-100-SGT	NC5-100-TB40-300

★Above Code No. includes Ring GAUGE(SG-R) and Plug Gauge(SGT-P).  
★Dial Gauge is not included with the Ring Gauge.

**NC5 TOOLING SYSTEM** is basically developed for the Machine with Centre Through Tool Coolant capability, however, of course, the system is also suitable for the Machine without Centre Through Tool Coolant capability.

**NC5 TOOLING SYSTEM** takes advantage of the powerful pulling force to improve its static stiffness. Therefore, please ensure that at least the following pulling force figures in the table are required for each size of **NC5 TOOLING**. The Pulling Force Measuring Tool with special Pull Stud is available for the pulling force measurement.

For manufacturing of **NC5** Machine Spindle, we could supply the Gauge for Machine Spindle as well as any other know-how about Spindle Flange Cleaning, Drive Key Mechanism and so on. Please contact with us for any technical correspondences if required.



E.H.Merritt's Theory

$$\text{Chattering Stability} = \text{Static Stiffness} \times \text{Damping Ratio}$$

Thus, the advantage of **NC5 TOOLING SYSTEM** is clearly demonstrated.

Unique Construction:  
Considering of a slotted taper cone which is pre-loaded by a disc spring to increase its vibrational damping effect whilst adjusting minute gauge-line errors, completely.



## Pulling Force Measuring Tool

Even the use with 5m cable, it can be measured both manual tool change and ATC.

☞ P.303

### Pull Stud Power Clamp & Lock Mechanism

Please ask for the details of **NIKKEN POWER5 SYSTEM**, Powerful Pulling & Locking Mechanism in order to gain maximum performance of the **NIKKEN NC5 TOOLING System**.

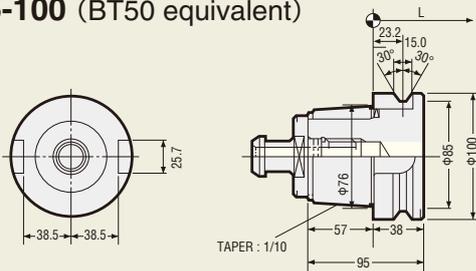
TAPER	Spindle ID	POWER 5 Code No.	Pulling Force (KN)	Measuring Tool	
				Code No.	Pull Stud
NC5- 46	30	POWER- 46-D30	4.5~ 7	NC5- 46-CLP-D30	PS-N46A
	35	-D35	5.5~ 8	-D35	-N46
NC5- 63	40	- 63-D40	11~14	- 63-CLP-D40	-N63A
	45	-D45	14~17	-D45	-N63
NC5- 85	50	- 85-D50	20~23	- 85-CLP-D50	-N85
NC5-100	55	-100-D55	24~27	-100-CLP-D55	-N100

★Pulling Force is only guideline and depends on the M/C specification. ★Pull Stud Code No. is without hole.

# DIMENSION of NC5 TOOL SHANK

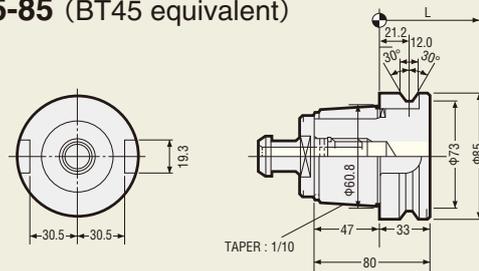


## NC5-100 (BT50 equivalent)



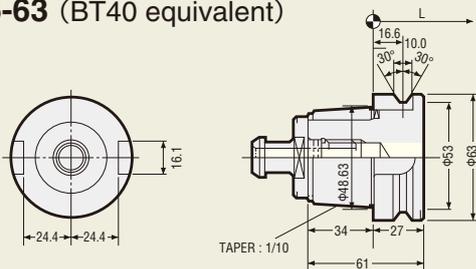
Dimensions of V Flange are same as BT50.

## NC5-85 (BT45 equivalent)



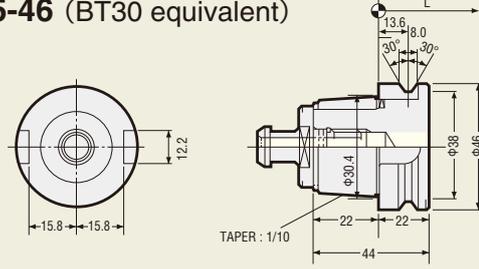
Dimensions of V Flange are same as BT45.

## NC5-63 (BT40 equivalent)



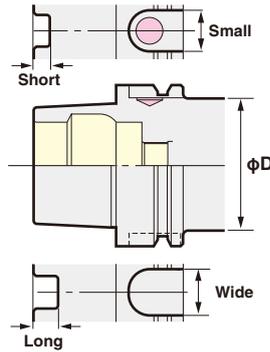
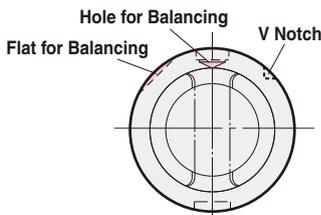
Dimensions of V Flange are same as BT40.

## NC5-46 (BT30 equivalent)



Dimensions of V Flange are same as BT30.  
(\*Width of drive key grooves are different.)

## ■ HSK A...HSK40A, HSK50A, HSK63A, HSK100A



HSK A shank is based on ISO12164-1 (DIN69893-1) and Hollow Shank Taper with 1/10 Taper and Double Contact System of Taper & Flange. Its dimension is unsymmetrical shape such as;

- Depth of Drive Keys Slots are different.
- Width of U Groove are different.
- V Notch on one side.

1. It's not well balanced due to above unsymmetrical shape, therefore NIKKEN HSK A Shank has a hole and a flat for mass balancing as standard.

2. Hole for manual clamp is not standardized for the size smaller or equal to HSK50A. HSK63A and HSK100A tools without a hole for manual clamp are also available for high speed application.
3. Hole for ID is not standardized for all models.
4. HSK tool is clamped to the main spindle with clamping force more than about 2 times of BT tool by intensifying clamp mechanism.

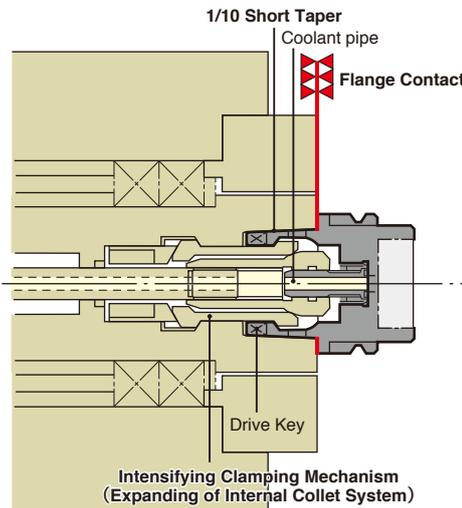
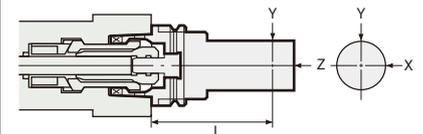
### ■ Clamping Force

TAPER	HSK40A	HSK50A	HSK63A	HSK100A
Clamp Force	6.8KN	11KN	18KN	45KN

5. A big clamping force and the double face contact system of 1/10 short taper & flange largely improved the static stiffness as the tool interface.
6. Higher repeatability of ATC is accomplished due to the run-out accuracy of contact flange for taper is within 0.002mm.

### ■ Repeatability of ATC

TAPER	L	Repeatability		
		X	Y	Z
HSK 25	40	0.002	0.002	0.002
32	50			
40	60			
50	75			
63	100			
100	150			



HSK Double Face Contact System

## ■ HSK E & HSK F...HSK25E, HSK32E, HSK40E, HSK50E, HSK63E, HSK63F

HSK-E type & HSK-F type holders are for High Speed Application and are manufactured to DIN69893-5 & -6 standard. The configuration of the holder is different to that of HSK-A type, the holder is designed symmetrically without drive key slots, U-groove, V-notch, holes in the taper for manual clamping and hole for I/D chip.

The tool flange diameter of HSK-E & -F are the same, but the taper size on HSK-F is one size smaller than HSK-E.

TCL-GH clamper is designed for symmetrical holders without drive key slots or U-groove.

The TCL-GH clamper is also suitable for the other shank tooling with same flange diameter as E & F type. P.266



HSK50E

HSK63F

### ⚠ Caution

- Always ensure that swarf does not attach at the spindle flange surface, because of the double contact system. Generally the inside of the machining envelope is always covered swarf. This means that there is a possibility that the flange of the tooling may collect swarf easily at the ATC. It is therefore important that the machining envelope is regularly cleaned (Clean the ATC arm, the route through which the tooling passes, the tool pot and the spindle surfaces etc.) at least every 3 months.
- Always ensure that M/C has the mechanism to confirm the perfect flange contact.
- Always ensure that M/C has the mechanism to clean the spindle flange surface.

HSK

# HSK HIGH SPEED MILLING CHUCK



## ANNIVERSARY Type

- Powerful gripping torque —
- High rigidity
- High precision
- Compact design

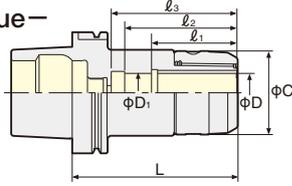


Fig.1

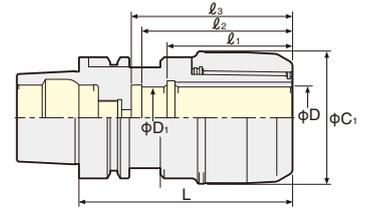


Fig.2

C

Centre Through  
MAX. 7MPa

Photo shows High Speed Milling Chuck

## High Speed

TAPER	Code No.	C <sub>1</sub>	D	D <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	MAX.min <sup>-1</sup>	Weight (kg)	Fig.	Collet
HSK 40A	HSK 40A-C12- 80G	33	12	12	80	49	53	58	30,000	0.5	2	(KM12) (CCK12)
	-C16- 80G	40	16	16	80	51	57	60		0.7		(KM16) (CCK16)
	-C20-100G*2	48	20	-	100	-	-	57		1.2		(KM20) (CCK20)
HSK 50A	HSK 50A-C12- 80G	33	12	12	80	49	53	56	30,000	0.8	1	(KM12) (CCK12)
	-C16- 90G	40	16	16	90	51	57	60		1.0		(KM16) (CCK16)
	-C20- 95G*2	48	20	20	95	58	65	68		1.2		(KM20) (CCK20)
HSK 63A	HSK 63A-C12- 90G	33	12	12	90	49	53	58	30,000	1.3	1	(KM12) (CCK12)
	-C16- 75G*2	40	16	-	75	-	-	50		1.2		
	- 90G			90	51	57	60	1.4		(KM16) (CCK16)		
	-120G			120	51	57	65	1.7				
	-C20- 85G*2	48	20	-	85	-	-	60		1.5		
	- 95G			95	65	68	1.6					
	-110G*2			110	58	66	80	1.8		(KM20) (CCK20)		
	-120G			120	58	66	80	1.9				
	-135G	135	66	80	83	2.1						
	-C25- 90G	55	25	25	90	59	62	65		1.7		
	-100G			100	61	72	75	1.9		(KM25) (CCK25)		
	-130G			130	61	72	80	2.3,2.6				
	-C32-110G	68	32	32	110	66	80	83		2.2		
-130G	130			70	81	103	2.6	(KM32) (CCK32)				
-150G	150			70	81	107	2.6					
HSK 100A	HSK100A-C16- 90G	40	16	16	90	52	56	60	20,000	2.4	1	(KM16) (CCK16)
	-135G,165G			135,165	52	56	65	3.0,3.4				
	-C20-115G	48	20	20	115	58	66	80		3.0		(KM20) (CCK20)
	-135G,165G			135,165	58	66	80	3.6,4.1				
	-C25-115G	55	25	25	115	61	72	80	15,000	3.3	(KM25) (CCK25)	
	-135G,165G			135,165	61	72	80	3.6,4.2				
	-C32-115G	68	32	25	115	66	78	83	12,000	3.2	1	(KM32) (CCK32)
	-135G,165G			135,165	70	81	103,107	4.0,4.8				
	-C42-115P	86	42	42	115	73	80	83		4.8		(KM42) (CCK42)
-135P,165P	135,165			73	80	83	5.9,7.0					

★Please note the acceptable shank tolerance is h<sub>6</sub>.

★Please refer P.221 for KM and CCK collet.

★GH Handle is available as an option. P.48

C12G : GH12, C16G : GH16, C20G : GH20, C25G : GH25, C32G : GH32

★NK, CCNK, ONK and OJK collet can not be used for the chucks marked \*2.

★Please contact us for the extra long length.

★GFS type P.32 is available for C25, C32 and C42.



GFS type  
For machining  
of aluminum  
PAT.

# HSK- E,F HIGH SPEED MILLING CHUCK

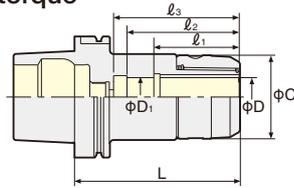


**NIKKEN**

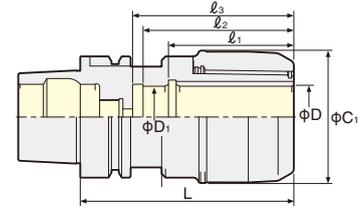


**C**  
Centre Through  
MAX. 7MPa  
Photo shows High Speed Milling Chuck

**ANNIVERSARY Type**  
– Powerful gripping torque –  
● High rigidity  
● High precision  
● Compact design



**Fig.1**



**Fig.2**

TAPER	Code No.	C <sub>1</sub>	D	D <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	MAX.min <sup>-1</sup>	Weight (kg)	Fig.	Collet
<b>HSK 40E</b>	<b>HSK 40E -C12- 80G</b>	33	12	12	80	49	53	58	30,000	0.5	2	<b>KM12 CCK12</b>
	<b>-C16- 80G</b>	40	16	16	80	51	57	60		0.7		<b>KM16 CCK16</b>
	<b>-C20-100G*2</b>	48	20	-	100	-	-	57		1.2		<b>KM20 CCK20</b>
<b>HSK 50E</b>	<b>HSK 50E -C12- 80G</b>	33	12	12	80	46	53	56	30,000	0.9	1	<b>KM12 CCK12</b>
	<b>-C16- 80G*3</b>	40	16	16	80	51	57	60		1.0		<b>KM16 CCK16</b>
	<b>-C20- 95G</b>	48	20	20	95	58	65	68		1.2		<b>KM20 CCK20</b>
<b>HSK 63E</b>	<b>HSK 63E -C12- 90G</b>	33	12	12	90	49	53	58	30,000	1.3	1	<b>KM12 CCK12</b>
	<b>-C16- 90G</b>	40	16	16	90	51	57	60				25,000
	<b>-C20- 95G, 110G</b>	48	20	20	95, 110	58	65, 72	68, 80	1.5, 1.8	<b>KM20 CCK20</b>		
	<b>-C25-100G</b>	55	25	25	100	61	72	75	20,000	1.9	<b>KM25 CCK25</b>	
	<b>-C32-110G</b>	68	32	32	110	66	80	83		2.2	<b>KM32 CCK32</b>	

TAPER	Code No.	C <sub>1</sub>	D	D <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	MAX.min <sup>-1</sup>	Weight (kg)	Fig.	Collet
<b>HSK 63F</b>	<b>HSK 63F -C12- 90G</b>	33	12	12	90	49	53	58	30,000	1.3	1	<b>KM12 CCK12</b>
	<b>-C16- 90G</b>	40	16	16	90	51	58	65	25,000	1.4		<b>KM16 CCK16</b>
	<b>-C20- 95G, 110G</b>	48	20	20	95, 110	58	65, 66	68, 80		1.5		<b>KM20 CCK20</b>
	<b>-C25-100G</b>	55	25	25	100	61	72	75	20,000	1.9	<b>KM25 CCK25</b>	
	<b>-C32-110G</b>	68	32	32	110	66	80	83		2.2	<b>KM32 CCK32</b>	

★Please note the acceptable shank tolerance is h<sub>8</sub>.

★Please refer P.221 for KM and CCK collet.

★GH Handle is available as an option. P.48

C12G : GH12, C16G : GH16, C20G : GH20, C25G : GH25, C32G : GH32

★NK, CCNK, ONK and OJK collet can not be used for the chucks marked \*2.

★Coolant pipe can not be used for the chuck marked \*3.

★Please contact us for the extra long length.



★GFS type P.32 is available for C25 and C32.



**GFS type**  
For machining  
of aluminum  
**PAT.**

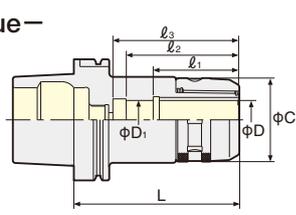
# HSK MILLING CHUCK

**NIKKEN**

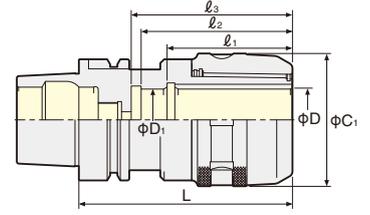


**C**  
Centre Through  
MAX. 7MPa

- ANNIVERSARY Type**  
— Powerful gripping torque —
- High rigidity
  - High precision
  - Compact design



**Fig.1**



**Fig.2**

TAPER	Code No.	C <sub>1</sub>	D	D <sub>1</sub>	L	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	Weight (kg)	Fig.	Collet
<b>HSK 40A</b>	HSK 40A-C12- 80	33	12	12	80	49	53	58	0.5	2	<b>KM12 CCK12</b>
	-C16- 80	44	16	16	80	51	57	60	0.7		<b>KM16 CCK16</b>
	-C20-100 <sup>*2</sup>	52	20	-	100	-	-	57	1.2		<b>KM20 CCK20</b>
<b>HSK 50A</b>	HSK 50A-C12- 80	33	12	12	80	49	53	56	0.8	1	<b>KM12 CCK12</b>
	-C16- 90	44	16	16	90	51	57	60	1.0	2	<b>KM16 CCK16</b>
	-C20- 95 <sup>*2</sup>	52	20	20	95	58	65	68	1.2		<b>KM20 CCK20</b>
	-C25-100	55 <sup>*1</sup>	25	25	100	56	72	75	1.5		<b>KM25 CCK25</b>
	-C32-115	64 <sup>*1</sup>	32	-	115	-	-	66	1.9		<b>KM32 CCK32</b>
<b>HSK 63A</b>	HSK 63A-C12- 90	33	12	12	90	49	53	58	1.3	1	<b>KM12 CCK12</b>
	-C16- 75 <sup>*2</sup>	44	16	-	75	-	-	50	1.2		<b>KM16 CCK16</b>
	- 90,120	44	16	16	90,120	51	57	60,65	1.4,1.7		
	-C20- 85 <sup>*2</sup>	52	20	-	85	-	-	60	1.5	2	<b>KM20 CCK20</b>
	- 95	52	20	20	95	58	65	68	1.6		<b>KM25 CCK25</b>
	-110,120,135	52	20	20	110,120,135	58	66	80	1.8,1.9,2.1		
	-C25- 90 <sup>*2</sup>	60	25	25	90	59	62	65	1.7		
	-100	60	25	25	100	61	72	75	1.9	<b>KM32 CCK32</b>	
	-130,150	60	25	25	130,150	61	72	80	2.3,2.6		
	-C32-110 <sup>*2</sup>	69	32	32	110	66	80	83	2.2		
	-130	69	32	25	130	70	81	107	2.6		
	-150	69	32	25	150	70	81	107	3.0		
<b>HSK 100A</b>	HSK100A-C16- 90	44	16	16	90	-	-	60	2.4	1	<b>KM16 CCK16</b>
	-135	44	16	16	135	52	56	65	3.0		<b>KM20 CCK20</b>
	-165	44	16	16	165	52	56	65	3.4		
	-C20-115	52	20	20	115	-	-	80	3.3	<b>KM25 CCK25</b>	
	-135	52	20	20	135	58	66	80	3.6		
	-165	52	20	20	165	58	66	80	4.1		
	-C25-115	60	25	25	115	61	72	80	3.3		
	-135	60	25	25	135	61	72	80	3.6	<b>KM32 CCK32</b>	
	-165	60	25	25	165	61	72	80	4.2		
	-C32-115	69	32	25	115	66	78	83	3.2		
	-135	69	32	25	135	66	78	103	4.0		
	-165	69	32	25	165	66	78	103	4.8		
	-200	69	32	25	200	70	81	107	5.7	2	<b>KM42 CCK42</b>
	-250	69	32	25	250	70	81	107	7.0		
	-300	69	32	25	300	70	81	107	8.9		
	-C42-115	86	42	42	115	73	80	83	4.8		
	-135	86	42	42	135	73	80	100	5.9		
	-165	86	42	42	165	73	80	100	7.0	2	<b>KM42 CCK42</b>
	-200	86	42	42	200	73	80	100	8.5		
	-250	86	42	42	250	73	80	100	10.8		
-300	86	42	42	300	73	80	100	12.4			

\*Spanner is available as an option.  
C12 : 9HC12A C16 : 9HC16 C20 : 9HC22  
C25 : 9HC25 C32 : 9HC32 C42 : 9HC42

\*1 C25 & φC<sub>1</sub>=55 : 9HC22, C32 & φC<sub>1</sub>=64 : 9HC25

\*Please note the acceptable shank tolerance is h6~7.

\*For heavy duty milling, please grip the cutter shank longer than l<sub>1</sub>.

★NK, CCNK, ONK and OJK collet can not be used for the chucks marked \*2.

★Please refer  P.221 for KM and CCK collet.

★C22 style is also available.



# CENTRE COOLANT STRAIGHT COLLET

PAT.



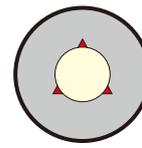
Suitable for all models of the NIKKEN MILLING CHUCK



CCK Collet

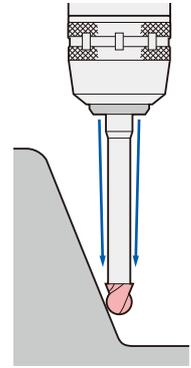


Front Nut

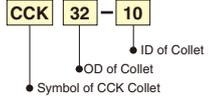


Jet Coolant

Prevention of Swarf entering the collet through the slots



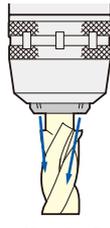
Explanation of the Code No.



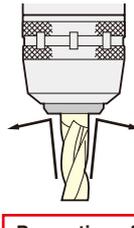
CCK : Centre Coolant  
 CCNK : Centre Coolant, Adjustable  
 KM : Standard  
 NK : Adjustable  
 ONK : Oil Hole Drill  
 OJK-A : Jet Coolant  
 OJK-S : Multiple Nozzles



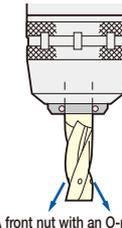
For grooving.



For cutters with cutting diameter which is larger than the shank diameter.



Prevention of the swarf contamination.



A front nut with an O-ring seal, for use with oil hole cutter, is also available as option.



CKFN-MN



CKFN-C

CCK Collet CKFN front nut and CCKL spanner are available as an option.



Photo shows with front nut.

CCK

Style	CCK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCK12</b>	<b>CCK12-3, 4, 5, 6, 8, 10</b>	CKFN12
<b>CCK16</b>	<b>CCK16-3, 4, 5, 6, 8, 10, 12</b>	CKFN16
<b>CCK20</b>	<b>CCK20-6, 8, 10, 12, 16</b>	CKFN20
<b>CCK25</b>	<b>CCK25-6, 8, 10, 12, 16, 20</b>	CKFN25
<b>CCK32</b>	<b>CCK32-6, 8, 10, 12, 16, 20, 25</b>	CKFN32, CKFN32T
<b>CCK42</b>	<b>CCK42-6, 8, 10, 12, 16, 20, 25, 32</b>	CKFN42

★Above bold figures indicate "ANNIVERSARY" type  $\text{Ⓢ}$  CCK Collet.  
 ★Please note the acceptable shank tolerance is  $h_6/h_7$ .  
 ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.



Photo shows with front nut.

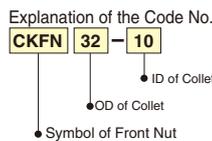
CCNK

Style	CCNK Collet Code No. (OD-ID)	Front Nut Code No.
<b>CCNK20</b>	<b>CCNK20-6, 8, 10, 12, 16</b>	CKFN20
<b>CCNK25</b>	<b>CCNK25-6, 8, 10, 12, 16, 20</b>	CKFN25
<b>CCNK32</b>	<b>CCNK32-6, 8, 10, 12, 16, 20, 25</b>	CKFN32, CKFN32T
<b>CCNK42</b>	<b>CCNK42-6, 8, 10, 12, 16, 20, 25, 32</b>	CKFN42

★Please note the acceptable shank tolerance is  $h_6/h_7$ .  
 ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.

Front Nut

CKFN



Style	$\phi D_2$	L <sub>2</sub>	Front Nut Code No.
<b>CKFN12</b>	19.5	7	<b>CKFN12</b> -3, 4, 5, 6, 8, 10
<b>CKFN16</b>	28.5	8	<b>CKFN16</b> -3, 4, 5, 6, 8, 10, 12
<b>CKFN20</b>	33	8	<b>CKFN20</b> -6, 8, 10, 12, 16
<b>CKFN25</b>	39	8.5	<b>CKFN25</b> -6, 8, 10, 12, 16, 20
<b>CKFN32</b>	46.5	9	<b>CKFN32</b> -6, 8, 10, 12, 16, 20, 25
<b>CKFN32T</b>	43	9	<b>CKFN32T</b> -6, 8, 10, 12, 16, 20, 25
<b>CKFN42</b>	59.5	9	<b>CKFN42</b> -6, 8, 10, 12, 16, 20, 25, 32



★The front nut for direct chucking is also available.  
 e.g. CKFN20-20D, CKFN25-25D, CKFN32-32D

★The Code No. fitted with O-ring is:  
 e.g. CKFN20-20DC, CKFN25-25DC, CKFN32-32DC

★For C32 there are 2 sizes, CKFN32 = for nose ring diameter of  $\phi 69$ mm, CKFN32T = for nose ring diameter of  $\phi 64$ mm.  
 ★Jet Coolant type for the cutter with a cutter dia. larger than shank dia. is also available.  
 CKFN25-20MN, CKFN32-25MN, CKFN42-32M  
 ★Front Nut fitted with an O-ring is also available. e.g. The Code No. is CKFN32-10C  
 ★The spanner is available as an option.  
 CKFN12:CCKL12, CKFN16:CCKL16  
 CKFN20:CCKL20  
 CKFN25, CKFN32T:CCKL25  
 CKFN32:CCKL32, CKFN42:CCKL42

KM

Photo shows ANNIVERSARY type KM Collet.



Style	KM Collet Code No. (OD-ID)
<b>KM12</b>	<b>KM12-2, 3, 4, 5, 6, 7, 8, 9, 10</b>
<b>KM16</b>	<b>KM16-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12</b>
<b>KM20</b>	<b>KM20-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>KM25</b>	<b>KM25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>KM32</b>	<b>KM32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 30</b>
<b>KM42</b>	<b>KM42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 40</b>

★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.  
 ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.  
 ★The collets with bold character are the "ANNIVERSARY" type  $\text{Ⓢ}$  KM Collet.  
 Ordinary KM Collet can be used with "ANNIVERSARY" type  $\text{Ⓢ}$  Milling Chuck, but better performance can be found with the "ANNIVERSARY" type  $\text{Ⓢ}$  KM Collet.  
 ★Please note the acceptable shank tolerance is  $h_6/h_7$ .

Cutter length adjustment on the collet is possible from front and back.

NK



Style	NK Collet Code No. (OD-ID)
<b>NK20</b>	<b>NK20-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16</b>
<b>NK22</b>	<b>NK22-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18</b>
<b>NK25</b>	<b>NK25-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</b>
<b>NK32</b>	<b>NK32-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26</b>
<b>NK42</b>	<b>NK42-3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32</b>

★[For Synchronous Tapping Program] : Special ID Collets for Tap Shank are also available.  
 ★Other metric sizes and imperial sizes, 1/8, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 13/16, 7/8, 1, 1-1/8, 1-1/4, 1-1/2" are also available.  
 ★The collets with bold character are standard.  
 ★Please note the acceptable shank tolerance is  $h_6/h_7$ .  
 ★Collet removal (9CKR) is available as an option.  
 ★Please refer  $\text{Ⓢ}$  P.33, P.34 for more detail of the straight collet.



# HSK HIGH SPEED SLIM CHUCK



**SK**  
Centre Through  
MAX. 7MPa

Photo shows High Speed HSK Slim Chuck

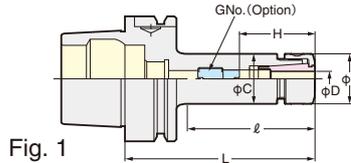


Fig. 1

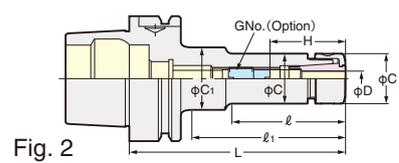


Fig. 2

H1: MAX. H without adjust screw

## High Speed

Please add "-J" at the end of code No. for the chuck with SK J type nut. (Cap is not included, please order separately) e.g. HSK63A-SK10C-105P-J  
When SK J type nut is used, the total chuck length will be extended by 6mm. **PAT.**

TAPER	Code No.	φD	H	H1	ℓ	ℓ1	C	C1	G No. (Option)	MAX. min <sup>-1</sup>	Weight (kg)	Fig.	SK Collet				
HSK 40A	HSK 40A-SK 6 - 60P*3	0.7~6.0	40	40	37	-	19.5	-	-	40,000	0.28	1	SK 6				
	-SK10 - 75P*2	1.75~10.0	29~36	43	52	-	27.5	-	SKG-6L		0.4		SK10				
	-SK13 - 75P*3	2.75~13.0	55	55	54	-	33	-	-		0.5		SK13				
	-SK16 - 80P*3	2.75~16.0	60	60	59	-	40	-	-		0.6		SK16				
HSK 50A	HSK 50A-SK 6 - 60P*3	0.7~6.0	37	37	31	-	19.5	-	-	30,000	0.4	1	SK 6				
	-SK 6C- 80P		26~31	46	51		SKG6-6HG		0.5		SK 6						
	-SK10 - 60P*3	1.75~10.0	35	35	33		27.5		-		-		0.5	SK10			
	-SK10 - 90P*3		35~41	65	63		SKG-12S		0.6		SK10						
	-SK13 - 70P*3	2.75~13.0	47	47	43		33		-		-		0.9	1	SK13		
	-SK13 - 90P*3		65	65	61		33		-		-		1.1				
	-SK13 - 105P*2	2.75~16.0	31~47	80	76		40		-		-		SKG-15	1.2	25,000	1	SK16
	-SK16 - 80P*3		52	52	53		40		-		-		0.6				
-SK16 - 105P*2	50~58	65	78	40	-	-	SKG-6L-25L	0.9	SK16								
HSK 63A	HSK 63A-SK 6 - 60P*3	0.7~6.0	38	38	31	-	19.5	-	-	30,000	0.7	1	SK 6				
	-SK 6 - 80P*2		21~35	58	51				-		0.8						
	-SK 6C-100P		26~31	46	62				71		32			SKG6-6HG	0.9		
	-SK 6C-120P			46	62				91		32			SKG6-6HG	1.0		
	-SK10 - 60P*3	1.75~10.0	35	35	31	-	27.5	-	-	30,000	0.7	1	SK10				
	-SK10C- 90P		33~36	53	53				-		SKG10-10HGG			1.0			
	-SK10C-105P		33~41	58	74				91		32			SKG10-10HG	1.1		
	-SK10C-120P			58	60				91		32			SKG10-10HG	1.3		
	-SK13 - 70P*3	2.75~13.0	45	45	43	-	33	-	-	25,000	0.9	1	SK13				
	-SK13 - 90P*3		64	64	61				-		1.1						
	-SK13 - 105P*2		31~47	80	74				33		SKG-15			1.2			
	-SK13C-120P		39~51	68	89				33		SKG13-10HG			1.5			
	-SK16 - 80P*3	2.75~16.0	52	52	51	-	40	-	-	25,000	1.1	1	SK16				
	-SK16 - 105P*2		50~58	65	76				40		SKG-8			1.3			
	-SK16C-120P		45~52	77	91				40		SKG16-10HG			1.6			
	-SK20 - 90P*3		3.5~20.0	59	59				63		-			48.5	-	-	25,000
	-SK20 - 105P*2	50~57		64	78	48.5	SKG-8	1.6									
	-SK20C-120P	50~55		74	93	108	48.5	SKG20-12MFHG	1.8								
	-SK20C-135P			74	108	108	48.5	SKG20-12MFHG	2.0								
	-SK25 - 90P*3	7.5~25.4	63	63	61	-	55	-	-	20,000	1.6	1	SK25				
-SK25C-135P	60~65		91	108	55				SKG25-18HGE		1.9						
HSK 100A	HSK100A-SK 6C-105P	0.7~6.0	26~31	46	62	71	19.5	40	SKG6-6HG	20,000	1.2	2	SK 6				
	-SK10C-105P	1.75~10.0	33~41	58	57	27.5	-		-		SKG10-10HG			2.6			
	-SK10C-120P				74			86		116		27.5	3.2				
	-SK10C-150P				80			116		116		27.5	3.2				
	-SK13 - 105P*3				63			63		71		33	-	2.7			
	-SK13C-120P	2.75~13.0	39~51	68	86	-	45	SKG13-10HG	3.1	1	SK13						
	-SK13C-150P				86				116			116	45	3.4			
	-SK16 - 105P*2	2.75~16.0	45~60	63	71	-	50	-	SKG-12-30L	2.7	2	SK16					
	-SK16C-120P				77				86	116			50	3.2			
	-SK16C-150P				84				90	116			50	3.5			
	-SK20C-120P				50~55				74	86			48.5	SKG20-12MFHG	3.1		
	-SK20C-150P	3.5~20.0	47~3	82	116	-	-	-	SKG20-12HG	3.5	1	SK20					
	-SK20C-200P				116				166	166			48.5	SKG20-18HG	4.2		
	-SK25 - 120P*2	7.5~25.4	55~75	76	86	-	55	-	SKG-12-30L	3.4	1	SK25					
	-SK25C-145P				60~65				91	111			55	SKG25-18HGE	4.8		

★Nut, adjust screw and collet extractor are supplied as standard. ★Please refer P.253 for SK collet and please refer P.49 for J type nut.  
★Collet, adjust screw (G No.) and GH Handle are available as an option. The Code No. of the GH Handle is SK6C-P:GH6, SK10C-P:GH10, SK13C-P:GH12, SK16C-P:GH16, SK20C-P:GH20, SK25C-P:GH25  
★All Slim Chucks are High Pressure centre Through Coolant type (MAX. 7MPa). SK6C:φ4~φ6, SK10C:φ6~φ10, SK16C:φ10~φ16, SK25C:φ16~φ25  
★Slim Chucks marked \*2 and \*3 can be used for the centre through coolant type with J type nut. ★No adjust screw is applied for the Slim Chucks marked \*3.  
★The "H1" is the MAX. dimension without the adjust screw. ★ is C type.



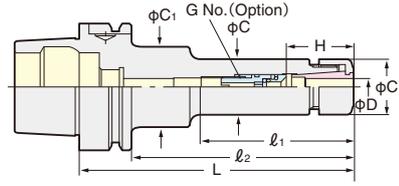
# HSK-E,F HIGH SPEED SLIM CHUCK



HSK63E



HSK63F



**SK-P**  
Centre Through  
MAX. 7MPa

**High Speed**

Please add "-J" at the end of code No. for the chuck with SK J type nut. (Cap is not included, please order separately) e.g. HSK63E-SK10C-105P-J  
When SK J type nut is used, the total chuck length will be extended by 6mm. **PAT.**

TAPER	Code No.	φD	H	H <sub>1</sub>	l	l <sub>1</sub>	C	C <sub>1</sub>	G No. (Option)	MAX. min <sup>-1</sup>	Weight (kg)	SK Collet	
HSK 25E	HSK 25E-SK 6 - 45P* <sup>3</sup>	0.7~6.0	30.5	30.5	35		19.5		-	50,000	0.1	SK 6	
	-SK10 - 55P* <sup>3</sup>	1.75~10.0	41	41	45		27.5				0.18	SK10	
HSK 32E	HSK 32E-SK 6 - 50P* <sup>3</sup>	0.7~6.0	32	32	29		19.5		-	50,000	0.17	SK 6	
	-SK10 - 60P* <sup>3</sup> , 75P* <sup>2</sup>	1.75~10.0	44, 29~36	44, 43	41, 54		27.5				-, SKG-6L	0.26, 0.30	SK10
HSK 40E	HSK 40E-SK 6 - 60P* <sup>3</sup>	0.7~6.0	40	40	37		19.5		-	40,000	0.28	SK 6	
	-SK10 - 60P* <sup>3</sup> , 75P* <sup>2</sup>	1.75~10.0	40, 29~36	40, 43	39, 54		27.5				-, SKG-6L	0.4, 0.5	SK10
	-SK13 - 75P* <sup>3</sup>	2.75~13.0	55	55	54		33				-	0.6	SK13
	-SK16 - 80P* <sup>3</sup>	2.75~16.0	59	59	59		40				-	0.6	SK16
HSK 50E	HSK 50E-SK 6 - 60P* <sup>3</sup>	0.7~6.0	40	40	33		19.5		-	30,000	0.5	SK 6	
	-SK 6C- 80P		26~31	46	51				SKG6-6HG		0.6		
	-SK10 - 60P* <sup>3</sup>	1.75~10.0	35	35	33		27.5	-	0.5				
	-SK10 - 90P* <sup>2</sup>		35~41	65	63		SKG-12S	0.6	SK10				
	-SK10C-105P	2.75~13.0	33~41	58	76		33		SKG10-10HG		0.7	1.0, 1.2	SK13
	-SK13 - 70P* <sup>3</sup> , 90P* <sup>3</sup>		47,65	47,65	43,61				-		1.3		
	-SK13 -105P* <sup>2</sup>	31~47	80	76	SKG-15		1.3	25,000	0.6		SK16		
	-SK16 - 80P* <sup>3</sup>	52	52	53	-		1.1						
-SK16C-120P	2.75~16.0	45~52	77	93	40	SKG16-10HG	1.1						
HSK 63E	HSK 63E-SK 6 - 80P* <sup>2</sup>	0.7~6.0	21~35	58	51		19.5		SKG8-18L	30,000	0.8	SK 6	
	-SK 6C-100P, 120P		26~31	46	62, 62				71, 91		32, 32		SKG6-6HG
	-SK10C- 90P	1.75~10.0	33~36	53	59		27.5		-		1.0	1.3, 1.5, 1.7	SK10
	-SK10C-105P, 120P, 150P		33~41	58	60, 75, 73				106, 121		32, 40, 34.5		
	-SK13 - 70P* <sup>3</sup> , 90P* <sup>3</sup>	2.75~13.0	45,64	45,64	43,61		33		-		1.3	1.6	SK13
	-SK13 -105P* <sup>2</sup>		31~47	80	74				SKG-15		1.3		
	-SK13C-120P	2.75~16.0	39~51	68	89		40		SKG13-10HG		1.6	1.7, 1.8	SK16
	-SK16C-120P, 150P		45~52	77	91, 121				SKG16-10HG		1.7, 1.8		
	-SK20C-120P, 135P	3.5~20.0	50~55	74	93, 108		48.5		SKG20-12MFHG		1.8, 2.0	SK20	
	-SK25C-135P	7.5~25.4	60~65	91	108		55		SKG25-18HGE		1.9	SK25	

TAPER	Code No.	φD	H	H <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	C	C <sub>1</sub>	G No. (Option)	MAX. min <sup>-1</sup>	Weight (kg)	SK Collet	
HSK 63F	HSK 63F-SK10 - 90P* <sup>3</sup>	1.75~10.0	35~45	-	59		27.5		SKG-12S	30,000	0.6	SK10	
	-SK10C-105P		33~41	58	74				SKG10-10HG		1.3		
	-SK13 - 70P* <sup>3</sup>	2.75~13.0	45	45	43		33		-		1.0	1.3	SK13
	-SK13 -105P* <sup>3</sup>		31~47	80	74				SKG-15		1.3		
	-SK13C-120P	2.75~16.0	39~51	68	89		40		SKG13-10HG		1.6	1.2	SK16
	-SK16 - 90P* <sup>3</sup>		67	67	61				-		1.2		
	-SK16 -105P* <sup>3</sup>	3.5~20.0	50~58	83	76		48.5		SKG-18S		1.7	1.8	SK20
	-SK16C-120P		45~52	77	91				SKG16-10HG		1.8		
	-SK20C-120P	7.5~25.4	50~55	74	93		55		SKG20-12MFHG		1.8	1.6	SK25
	-SK25 - 90P* <sup>3</sup>		67	67	61				-		20,000		

★Nut, adjust screw and collet extractor are supplied as standard.

★Please refer P.253 for SK collet and please refer P.49 for J type nut.

★Collet, adjust screw (G No.) and GH Handle are available as an option.

The Code No. of the GH Handle is SK6C-P: GH6, SK10C-P: GH10, SK13C-P: GH12, SK16C-P: GH16, SK20C-P: GH20, SK25C-P: GH25

★All Slim Chucks are High Pressure centre Through Coolant type (MAX. 7MPa). SK6C:φ4~φ6, SK10C:φ6~φ10, SK16C:φ10~φ16, SK25C:φ16~φ25

★Slim Chucks marked \*2 and \*3 can be used for the centre through coolant type with J type nut.

★No adjust screw is applied for the Slim Chucks marked \*3.

★H<sub>1</sub> means MAX.H without an adjust screw. ★ is C type. HSK63F-SK10C-105P



P.48

HSK

# HSK SLIM CHUCK



High Precision·High Speed  
Power of TiN Bearing Nut



**SK**  
Centre Through  
MAX. 7MPa

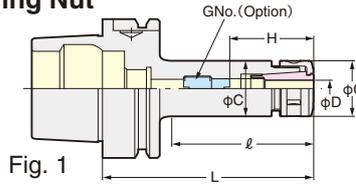


Fig. 2

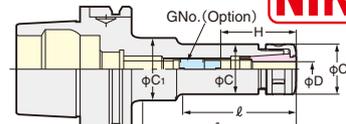
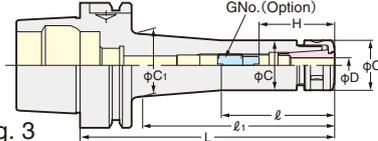


Fig. 3



Please add "-J" at the end of code No. for the chuck with SK J type nut. (Cap is not included, please order separately) e.g. HSK63A-SK10C-105-J  
When SK J type nut is used, the total chuck length will be extended by 6mm. **PAT.**

TAPER	Code No.	φD	H	H <sub>1</sub>	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	G No. (Option)	Weight (kg)	Fig.	SK Collet				
HSK 40A	HSK 40A-SK 6 - 60* <sup>3</sup>	0.7~6.0	40	40	37	-	19.5	-	-	0.28	1	SK 6				
	-SK 6C- 80		26~31	46	57				SKG6-6HG	0.32						
	-SK10 - 60* <sup>3</sup>	1.75~10.0	40	40	39	-	27.5	-	-	0.35	1	SK10				
	-SK10C-100		29~36	43	52				SKG-6L	0.4						
	-SK13 - 75* <sup>3</sup>	2.75~13.0	33~41	58	77	-	33	-	-	0.5	1	SK13				
	-SK13C-120		39~51	68	100				SKG10-10HG	0.5						
	-SK16 - 80* <sup>2</sup>	2.75~16.0	60	60	59	-	40	-	-	0.6	1	SK16				
	-SK16C-120		45~52	77	99				SKG13-10HG	0.8						
-SK16C-10HG	0.9															
HSK 50A	HSK 50A-SK 6 - 60* <sup>3</sup>	0.7~6.0	37	37	31	-	19.5	-	-	0.4	1	SK 6				
	-SK 6C- 80		26~31	46	51				SKG6-6HG	0.5						
	-SK10 - 60* <sup>3</sup>	1.75~10.0	35	35	33	-	27.5	-	-	0.5	1	SK10				
	-SK10 - 90* <sup>2</sup>		35~41	65	63				SKG-12S	0.6						
	-SK10C-105	35~41	58	76	-	33	-	-	0.9	1	SK13					
	-SK13 - 70* <sup>3</sup>	31~47	80	76				SKG10-10HG	0.7							
	-SK13 - 90* <sup>3</sup>	2.75~13.0	65	65	61	-	33	-	-	1.1	1	SK13				
	-SK13 - 105* <sup>2</sup>		39~51	68	89				SKG-15	1.2						
	-SK13C-120	39~51	68	89	-	40	-	-	0.6	1	SK16					
	-SK16 - 80* <sup>3</sup>	52	52	53				SKG-6L-25L	0.9							
	-SK16 - 105* <sup>2</sup>	2.75~16.0	50~58	65	78	-	40	-	-	0.9	1	SK16				
	-SK16C-120		45~52	77	93				SKG16-10HG	1.1						
HSK 63A	HSK 63A-SK 6 - 60* <sup>3</sup>	0.7~6.0	38	38	31	-	19.5	-	-	0.7	1	SK 6				
	-SK 6 - 80* <sup>2</sup>		21~35	58	51				SKG8-18L	0.8						
	-SK 6C-100		26~31	46	62				71	32			32	SKG6-6HG	0.9	2
	-SK 6C-120		26~31	46	62				91						1.0	
	-SK 6C-150	26~31	46	60	121	25	25	1.2	3							
	-SK10 - 60* <sup>3</sup>	1.75~10.0	35	35	31	-	27.5	-	-	0.7	1	SK10				
	-SK10C- 90		33~36	53	59				SKG10-10HGG	1.0						
	-SK10C-105		33~41	58	74				32	32			SKG10-10HG	1.1	2	
	-SK10C-120		33~41	58	60									91		1.3
	-SK10C-135		33~41	58	75				106	40			40	1.5	3	
	-SK10C-150	33~41	58	73	121	34.5	34.5	1.7	3							
	-SK13 - 70* <sup>3</sup>	2.75~13.0	45	45	43	-	33	-	-	0.9	1	SK13				
	-SK13 - 90* <sup>3</sup>		64	64	61				39	39			SKG-15	1.1		
	-SK13 - 105* <sup>2</sup>		31~47	80	74									1.2		
	-SK13C-120	2.75~13.0	39~51	68	89	-	40	-	-	1.5	3	SK13				
	-SK13C-150		39~51	68	88				119	39			39	1.8		
	-SK16 - 80* <sup>3</sup>	2.75~16.0	52	52	51	-	40	-	-	1.1	1	SK16				
	-SK16 - 105* <sup>2</sup>		50~58	65	76				SKG-8	1.3						
	-SK16C-120		45~52	77	91				SKG16-10HG	1.6						
	-SK16C-150		45~57	84	121				SKG16-12HG	1.7						
	-SK20 - 90* <sup>3</sup>	3.5~20.0	59	59	63	-	48.5	-	-	1.4	1	SK20				
	-SK20 - 105* <sup>2</sup>		50~57	64	78				SKG-8	1.6						
	-SK20C-120		50~55	74	93				SKG20-12MFHG	1.8						
	-SK20C-135		50~55	74	108					2.0						
-SK25 - 90* <sup>3</sup>	7.5~25.4	63	63	61	-	55	-	-	1.6	1	SK25					
-SK25C-135		60~65	91	108				SKG25-18HGE	1.9							

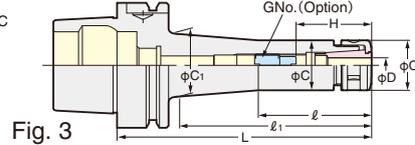
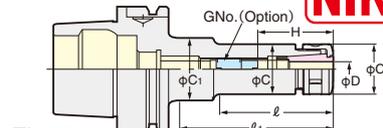
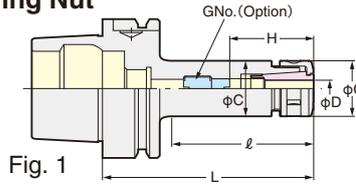
★ Collet, adjust screw (G No.) and spanner are available as an option. ★ Please refer P.253 for SK collet and please refer P.49 for J type nut.  
The Code No. of the spanner is SK6C (C=φ18): SKL-6, SK6C (C=φ19.5): SKL-6W, SK10C: SKL-10, SK13C: 9HC12A, SK16C: 9HC16, SK20C: 9HC22, SK25C: 9HC25  
★ H<sub>1</sub> means MAX.H without an adjust screw. ★ No adjust screw is applied for the Slim Chucks marked \*3.  
★ All Slim Chucks are High Pressure centre Through Coolant type (MAX. 7MPa). SK6C: φ4~φ6, SK10C: φ6~φ10, SK16C: φ10~φ16, SK25C: φ16~φ25  
★ Slim Chucks marked \*2 and \*3 can be used for the centre through coolant type with J type nut. ★ is C type. HSK40A-SK16C-120, HSK50A-SK6C-80, HSK63A-SK25C-135

# HSK SLIM CHUCK



High Precision·High Speed  
Power of TiN Bearing Nut

**SK**  
Centre Through  
MAX. 7MPa



Please add "-J" at the end of code No. for the chuck with SK J type nut. (Cap is not included, please order separately) e.g. HSK63A-SK10C-105-J  
When SK J type nut is used, the total chuck length will be extended by 6mm.

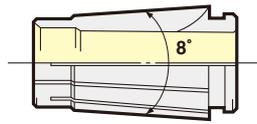
**PAT.**

TAPER	Code No.	φD	H	H <sub>1</sub>	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	G No. (Option)	Weight (kg)	Fig.	SK Collet	
<b>HSK 100A</b>	<b>HSK100A-SK 6C-105</b>	0.7~6.0	26~31	46	62	71	19.5	40	SKG6-6HG	1.2	2	<b>SK 6</b>	
	<b>-SK10C-105</b>	1.75~10.0	33~41	58	57	71	27.5	40	SKG10-10HG	2.6	2	<b>SK10</b>	
	<b>-SK10C-120</b>				74	86				2.9			
	<b>-SK10C-150</b>				80	116				3.2			
	<b>-SK10C-200</b>				75	166				3.5			
	<b>-SK13 -105*<sup>3</sup></b>	2.75~13.0	63	63	68	71	-	33	-	2.7	1	<b>SK13</b>	
	<b>-SK13C-120</b>					86	-			3.1			
	<b>-SK13C-150</b>					92	116			3.4			
	<b>-SK13C-200</b>					92	166			3.8			
	<b>-SK16 -105*<sup>3</sup></b>	2.75~16.0	45~60	63	77	71	-	40	-	SKG-12-30L	2.7	1	<b>SK16</b>
	<b>-SK16C-120</b>					86	-			3.2			
	<b>-SK16C-150</b>					90	116			3.5			
	<b>-SK16C-200</b>					90	166			3.8			
	<b>-SK20C-120</b>	3.5~20.0	50~55	74	82	86	-	48.5	-	SKG20-12MFHG	3.1	1	<b>SK20</b>
	<b>-SK20C-150</b>					116	-			3.5			
	<b>-SK20C-200</b>					166	-			4.2			
	<b>-SK25 -120*<sup>3</sup></b>	7.5~25.4	55~75	76	86	-	55	-	-	SKG-12-30L	3.4	1	<b>SK25</b>
	<b>-SK25C-145</b>									60~65	91		

★ Collet, adjust screw (G No.) and spanner are available as an option. ★ Please refer to P.253 for SK collet and please refer to P.49 for J type nut.  
The Code No. of the spanner is SK6C (C=φ18): SKL-6, SK6C (C=φ19.5): SKL-6W, SK10C: SKL-10, SK13C: 9HC12A, SK16C: 9HC16, SK20C: 9HC22, SK25C: 9HC25  
★ H<sub>1</sub> means MAX.H without an adjust screw. ★ No adjust screw is applied for the Slim Chucks marked \*<sup>3</sup>.  
★ All Slim Chucks are High Pressure centre Through Coolant type (MAX. 7MPa). SK6C: φ4~φ6, SK10C: φ6~φ10, SK16C: φ10~φ16, SK25C: φ16~φ25  
★ Slim Chucks marked \*<sup>2</sup> and \*<sup>3</sup> can be used for the centre through coolant type with J type nut. ★ is C type. HSK40A-SK16C-120, HSK50A-SK6C-80, HSK63A-SK25C-135

HSK

# SLIM CHUCK COLLET



Explanation of the Code No.

**SK 10 - 6 P**

- Non: Standard
- P: P class (Run-out Accuracy=3μm)
- A: A type (for End Mill Shank)
- MAX. Chucking Dia.
- Style No.
- Symbol of SK Collet

**SK** "A" type SK collet (for End Mill Shank) are marked **P**. The acceptable shank tolerance is h8. Code No. is e.g. SK10-10A  
 "P" class SK collet (for drill) are available for all series. e.g. SK10-10P

Code No.	Chucking D
SK 6- 0.8	0.7 ~ 0.8
- 1	0.9 ~ 1.0
- 1.25	1.15~ 1.25
- 1.5	1.3 ~ 1.5
- 1.75	1.55~ 1.75
- 2	1.8 ~ 2.0
- 2.25	2.05~ 2.25
- 2.5	2.3 ~ 2.5
- 2.75	2.55~ 2.75
- 3	2.8 ~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
SK10- 2	1.75~ 2.0
- 2.25	2.0 ~ 2.25
- 2.5	2.25~ 2.5
- 2.75	2.5 ~ 2.75
- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~ 10.0

Code No.	Chucking D
SK13- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~ 10.0
- 10.5	10.0~ 10.5
- 11	10.5~ 11.0
- 11.5	11.0~ 11.5
- 12	11.5~ 12.0
- 12.5	12.0~ 12.5
- 13	12.5~ 13.0

Code No.	Chucking D
SK16- 3	2.75~ 3.0
- 3.5	3.0 ~ 3.5
- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~ 10.0
- 10.5	10.0~ 10.5
- 11	10.5~ 11.0
- 11.5	11.0~ 11.5
- 12	11.5~ 12.0
- 12.5	12.0~ 12.5
- 13	12.5~ 13.0
- 13.5	13.0~ 13.5
- 14	13.5~ 14.0
- 14.5	14.0~ 14.5
- 15	14.5~ 15.0
- 15.5	15.0~ 15.5
- 16	15.5~ 16.0

Code No.	Chucking D
SK20- 4	3.5 ~ 4.0
- 4.5	4.0 ~ 4.5
- 5	4.5 ~ 5.0
- 5.5	5.0 ~ 5.5
- 6	5.5 ~ 6.0
- 6.5	6.0 ~ 6.5
- 7	6.5 ~ 7.0
- 7.5	7.0 ~ 7.5
- 8	7.5 ~ 8.0
- 8.5	8.0 ~ 8.5
- 9	8.5 ~ 9.0
- 9.5	9.0 ~ 9.5
- 10	9.5 ~ 10.0
- 10.5	10.0~ 10.5
- 11	10.5~ 11.0
- 11.5	11.0~ 11.5
- 12	11.5~ 12.0
- 12.5	12.0~ 12.5
- 13	12.5~ 13.0
- 13.5	13.0~ 13.5
- 14	13.5~ 14.0
- 14.5	14.0~ 14.5
- 15	14.5~ 15.0
- 15.5	15.0~ 15.5
- 16	15.5~ 16.0
- 16.5	16.0~ 16.5
- 17	16.5~ 17.0
- 17.5	17.0~ 17.5
- 18	17.5~ 18.0
- 18.5	18.0~ 18.5
- 19	18.5~ 19.0
- 19.5	19.0~ 19.5
- 20	19.5~ 20.0

Code No.	Chucking D
SK25- 8	7.5~ 8.0
- 10	9.5~ 10.0
- 12	11.5~ 12.0
- 16	15.5~ 16.0
- 16.5	16.0~ 16.5
- 17	16.5~ 17.0
- 17.5	17.0~ 17.5
- 18	17.5~ 18.0
- 18.5	18.0~ 18.5
- 19	18.5~ 19.0
- 19.5	19.0~ 19.5
- 20	19.5~ 20.0
- 20.5	20.0~ 20.5
- 21	20.5~ 21.0
- 21.5	21.0~ 21.5
- 22	21.5~ 22.0
- 22.5	22.0~ 22.5
- 23	22.5~ 23.0
- 23.5	23.0~ 23.5
- 24	23.5~ 24.0
- 24.5	24.0~ 24.5
- 25	24.5~ 25.0
- 25.4	25.0~ 25.4

★SK6 collet with the special internal dia. is also available.

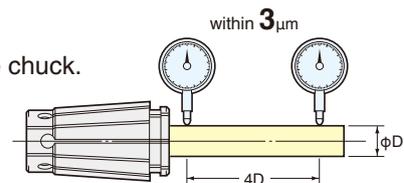


Collet removal (SKR-6) is supplied as standard only for SK6. SKR-10, SKR-16 and SKR-25 are available as an option. Collet removal is not necessary for the new types of collet (SK10 to SK25 collet including SK13 and SK20).

★Please refer P.44 for SK Coolant Collet (AC).

## ■ "P" class SK collet for drill

It guarantees the Run-out accuracy within 3 micron at the nose (4D) from the chuck. Additionally Collet Set is also available.



## ■ "A" type SK collet for endmill

The acceptable shank tolerance is h8.

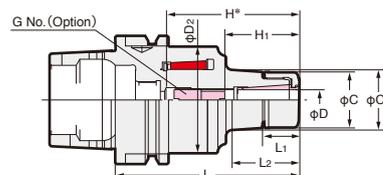
SK Collet A Type
SK 6-3A, 4A, 5A, 6A
SK10-3A, 4A, 5A, 6A, 8A, 10A
SK13-3A, 4A, 5A, 6A, 8A, 10A, 12A, 13A
SK16-3A, 4A, 5A, 6A, 8A, 10A, 12A, 16A
SK20-4A, 5A, 6A, 8A, 10A, 12A, 16A, 20A
SK25-8A, 10A, 12A, 16A, 20A, 25A

SK Collet A Type (Inch)
SK 6 -1/8A, 3/16A
SK10 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A
SK13 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A
SK16 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A
SK20 -1/8A, 3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 9/16A, 5/8A, 3/4A
SK25 -3/16A, 1/4A, 5/16A, 3/8A, 7/16A, 1/2A, 5/8A, 3/4A, 25.4A



**Dampening Effect TiN Bearing Effect**

H\* : MAX. Cutter Shank Length to be inserted



**MDSK**

**PAT.**

TAPER	Code No.	D	L	L1	L2	C	C1	C2	H*	H1	G No. (Option)	Weight (kg)	Collet
HSK 50A	HSK 50A-MDSK 6- 70	3.0~6.0	70	16.2	18.2	19.5	19.5	41.6	48	48	-	0.7	SK 6 A
	- 90		90		38.2		21.9		68	21~35	SKG- 8	1.0	
	-MDSK10- 70	3.0~10.0	70	18.2	19.2	27.5	27.5		46	46	-	0.7	SK10 A
	- 90		90		38.2		30.3		66	31~45	SKG-12S	1.0	
	-MDSK13- 90		90		22.0		40.0		33.0	35.6	66	66	
-MDSK16-115	3.0~16.0	115	23.0	24.0	40.0	40.0	54.0	91	45~70	SKG-18S	1.4	SK16 A	
HSK 63A	HSK 63A-MDSK 6- 75	3.0~6.0	75	16.2	18.0	19.5	19.5	52.4	50	21~28	SKG- 8	1.0	SK 6 A
	- 90		90		33.0		21.9		65	21~35		1.1	
	-105		105		48.0		24.0		80			1.4	
	-120		120		63.0		26.1		95			1.6	
	-MDSK10- 75	3.0~10.0	75	18.2	19.0	27.5	27.5		49	49	-	1.1	SK10 A
	- 90		90		33.0		29.6		64	31~40	1.4		
	-105		105		48.0		31.7		79	31~50	1.6		
	-120		120		63.0		33.8		94	30~50	1.8		
	-135		135		79.0		36.0		109		2.1		
	-MDSK13- 80	3.0~13.0	80	22.0	24.0	33.0	33.0		54	54	-	1.2	SK13 A
	- 90		90		33.0		34.6		64	64	1.5		
	-105		105		48.0		36.7		79	31~54	1.7		
	-120		120		63.0		38.8		94	SKG-15	1.9		
	-135		135		78.0		40.9		110		2.2		
	-MDSK16- 80	3.0~16.0	80	23.0	24.0	40.0	40.0		54	54	-	1.3	SK16 A
	- 90		90		34.2		41.6		64	64	1.5		
	-105		105		49.3		43.7		79	SKG-18S	1.7		
	-120		120		64.3		45.8		85		45~60	1.9	
	-135		135		79.0		47.9		105	SKG-18L	2.2		
	-MDSK20- 90	4.0~20.0	90	25.2	40.9	48.0	51.2		64	64	-	1.9	SK20 A
-105	105		54.3		51.1		79	79	2.1				
-120	120		70.0		50.6		94	SKG-22	2.4				
-135	135		85.8		51.2		105		2.5				
HSK 100A	HSK100A-MDSK 6-110		3.0~6.0		110		16.2	33.0	19.5	21.9	54.0	80	
	-125	125		48.0	24.0	95		4.0					
	-140	140		63.0	26.1	110		4.1					
	-165	165		88.0	29.6	135		4.5					
	-MDSK10-110	3.0~10.0	110	18.2	33.0	27.5	29.8	80	30~50	SKG-12L		4.0	SK10 A
	-125		125		48.0		31.7	95				4.1	
	-140		140		63.0		33.8	110				4.2	
	-165		165		89.0		37.4	135				4.6	
	-MDSK13-110		3.0~13.0		110		22.0	33.0				33.0	
	-125	125		48.0	36.7	90		4.4					
	-140	140		63.0	38.8	105		31~54	4.5				
	-165	165		88.0	42.3	130		5.0					
	-MDSK16-125	3.0~16.0		125	23.0	51.0		40.0	44.0	87			45~65
	-140		140	66.0		46.1	104		45~70	4.8			
	-165		165	91.0		49.6	129		40~70	5.3			
	-MDSK20-140	4.0~20.0	140	25.2	42.0	48.0	51.4	104	47~70	SKG-22		4.9	SK20 A
	-165		165		67.0		54.9	129	47~80			5.5	
	-MDSK25-140		8.0~25.4		140		27.0	43.0	55.0			57.3	
	-165	165		69.0	60.9	129		55~85		5.6			

★Please use A type SK collet for the end milling operation. P.253 ★Please refer P.49 for the Jet coolant system, J type nut and cap.  
 ★GH Handle is available as an option. P.48 Please order with the Code No. GH6: MDSK6 & GH10: MDSK10, GH12 : MDSK13, GH16: MDSK16, GH20: MDSK20, GH25: MDSK25  
 ★Please add "P" at the end of Code No. for high speed specification, e.g HSK63A-MDSK10-75P  
 ★Holder with an adjust screw for axial adjustment is supplied as an option. Please contact us.



# HSK MINI-MINI CHUCK ADVANCED ALPHA

**NEW**

**NIKKEN**

## MMC

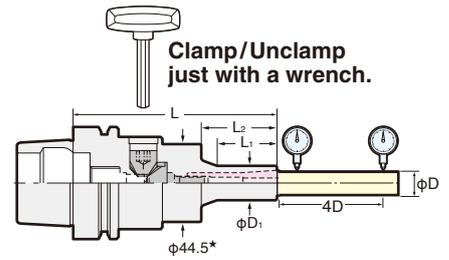
Centre Through  
MAX. 7MPa

Extra-long sizes  
are added

## High Speed



30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-Out Accuracy :  
3µm at 4D



Dimension marked ★ is 52.4 for MMC12. **PAT.**

TAPER	Code No.	φ D	L	φ D <sub>1</sub>	L <sub>1</sub>	Collet	MAX.min <sup>-1</sup>	Weight(kg)
HSK50A	HSK 50A - MMC 4 -128-AA	1~4	128	15	30	MPK 4	30,000	1.4
	8C -127-AA		127		33			1.4
	-157-AA	2~8	157	20	40	PMK 8 VMK 8		1.5
	-187-AA		187					1.6
	12C -129-AA	4~12	129	30	35	PMK12 VMK12		1.6
	-159-AA		159		60			1.7
-189-AA	189		70		1.8			
HSK63A	HSK 63A - MMC 4 -116-AA	1~4	116	15	30	MPK 4	30,000	1.4
	8C -115-AA		115		33			1.4
	-145-AA	2~8	145	20	40	PMK 8 VMK 8		1.5
	-175-AA		175					1.6
	12C -117-AA	4~12	117	30	35	PMK12 VMK12		1.6
	-147-AA		147		60			1.7
-177-AA	177		70		1.8			
HSK100A	HSK100A - MMC 4 -131-AA	1~4	131	15	30	MPK 4	20,000	2.9
	8C -130-AA		130		33			2.9
	-160-AA	2~8	160	20	40	PMK 8 VMK 8		3.0
	-190-AA		190					3.1
	12C -130-AA	4~12	130	30	35	PMK12 VMK12		3.1
	-160-AA		160		60			3.2
-190-AA	190		70		3.3			

TAPER	Code No.	φ D	L	φ D <sub>1</sub>	L <sub>1</sub>	Collet	MAX.min <sup>-1</sup>	Weight(kg)
HSK50E	HSK 50E - MMC 4 -128-AA	1~4	128	15	30	MPK 4	30,000	1.4
	8C -127-AA	2~8	127	20	33	PMK 8 VMK 8		1.4
	12C -129-AA	4~12	129	30	36	PMK12 VMK12		1.6
HSK63E	HSK 63E - MMC 4 -116-AA	1~4	116	15	30	MPK 4	30,000	1.4
	8C -115-AA	2~8	115	20	33	PMK 8 VMK 8		1.4
	12C -117-AA	4~12	117	30	36	PMK12 VMK12		1.6

TAPER	Code No.	φ D	L	φ D <sub>1</sub>	L <sub>1</sub>	Collet	MAX.min <sup>-1</sup>	Weight(kg)
HSK63F	HSK 63F - MMC 4 -128-AA	1~4	128	15	30	MPK 4	30,000	1.4
	MMC 8C -127-AA	2~8	127	20	33	PMK 8 VMK 8		1.4
	MMC12C -129-AA	4~12	129	30	36	PMK12 VMK12		1.6

★Wrench EA573KL-6 is attached as standard.

★Collet is available as an option. Please refer to P.38

★Extra-long sizes are added

\*Extra-long sizes : longer +30~90mm than conventional.



EA573KL-6

## Extra-long sizes are added\*



Photo shows  
HSK63A type

longer than +30~90mm  
than conventional.

Easy to approach a complicated work piece  
due to compact and extra-long design

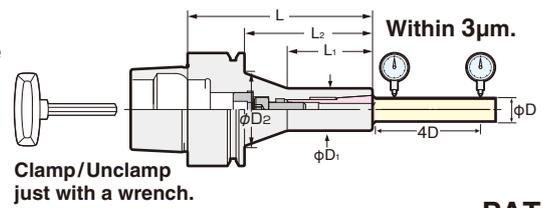
# HSK Direct Screw Type MINI-MINI CHUCK ADVANCED ALPHA

**NIKKEN**



**NEW**

30,000min<sup>-1</sup> & G2.5  
Gripping from Front Nose  
Run-Out Accuracy :  
3μm at 4D



**MMC-AT**

Centre Through  
MAX. 7MPa  
High Speed

**PAT.**

TAPER	Code No.	φD	L	φD <sub>1</sub>	φD <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	Collet	MAX.min <sup>-1</sup>	Weight(kg)
HSK25E	HSK 25EN-MMC 4 - 60-AT	1~4	60	15	19.3	30	50	MPK 4	30,000	0.1
HSK32E	HSK 32EN-MMC 4 - 65-AT		65		26.0		45			0.2
HSK40E	HSK 40EN-MMC 4 - 65-AT		70		31.2		44			0.25
HSK50E	HSK 50E -MMC 4 - 70-AT		70		31.2		44			0.5
HSK63E	HSK 63E -MMC 8C-107-AT	2~8	107	20	42.6	36	78	PMK 8 VMK 8	30,000	0.95
	-135-AT		135		64	106	1.0			
	HSK 63E -MMC12C-110-AT	4~12	110	30	51.8	43	83	PMK12 VMK12	30,000	1.2
-135-AT	135		68		108	1.3				
HSK63F	HSK 63F -MMC 4 - 70-AT	1~4	70	15	31.2	30	44	MPK 4	30,000	0.8
HSK40A	HSK 40AN-MMC 4 - 65-AT	1~4	65	15	26.0	30	45	MPK 4	30,000	0.25
HSK50A	HSK 50A -MMC 4 - 70-AT		70		31.2		44			0.5
HSK63A	HSK 63A -MMC 8C-107-AT	2~8	107	20	42.6	36	78	PMK 8 VMK 8	30,000	0.95
	-135-AT		135		64	106	1.0			
	HSK 63A -MMC12C-110-AT	4~12	110	30	51.8	43	83	PMK12 VMK12	30,000	1.2
	-135-AT		135		68	108	1.3			
HSK100A	HSK100A -MMC 8C-117-AT	2~8	117	20	46.3	36	85	PMK 8 VMK 8	20,000	2.35
	-145-AT		145		64	113	2.4			
	HSK100A -MMC12C-120-AT	4~12	120	30	55.5	43	90	PMK12 VMK12	20,000	2.7
-145-AT	145		68		115	2.8				

- ★Wrench is attached as standard MMC4:9ZFL,MMC8:EA573KL-15,MMC12:EA573KL-16
- ★Collet is available as an option. Please refer to P.38
- ★For the chucks marked\*1 coolant pipe can not be attached. Please use external cooling
- ★For the chucks marked\*2 center through tool Coolant is available.



## Direct Screw Type



Photo shows HSK40EN-MMC4-65-AT

High Accuracy and High Gripping  
Torque by rigid and smooth shape body

## Straight Shank MINI-MINI CHUCK

**NIKKEN**



Style	Code No.	φD	L	φD <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	Collet	Weight(kg)
16	K16-MMP 4- 70, 150	1~ 4	70, 150	15	50, 130	20	MPK 4	0.1, 0.2
20	K20-MMC 8-100	2~ 8	100	20	80	20	PMK 8 VMK 8	0.2
32	K32-MMC 8-122, 160	2~ 8	122, 160	20	67	40	PMK 8 VMK 8	0.5, 0.7
	K32-MMC12-170S	4~12	170	30	120	50	PMK12 VMK12	1.0

- ★Wrench is attached as standard Code No. is MMCL-40.
- ★Collet is available as an option. Please refer to P.38

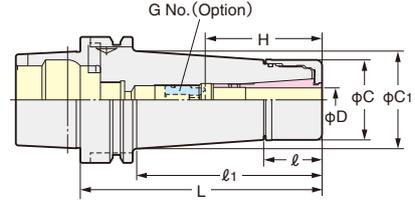


HSK

# HSK ANNIVERSARY TYPE VC HOLDER



With TiN Bearing Nut  
MAX.40,000min<sup>-1</sup> & G2.5  
Run-Out Accuracy:3μm at 4D



## High Speed

PAT.

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	MAX. min <sup>-1</sup>	Collet
HSK 40A	HSK 40A-VC 6- 65, 90	2.0	65,90	23	45,70	28	33.6	-35~45	-,VCG 6- 8A	0.4,0.6	40,000	(VCK 6)
	-VC13- 90, 120	3.0~12.0	90,120	29	70,100	40	40.0	-50~60	-,VCG13-15A	0.7,1.0		(VCK13)
HSK 50A	HSK 50A-VC 6- 70, 90, 120	2.0~6.0	70,90,120	23	41,61,91	28	33.8,32.8,37.0	-,35~45	-,VCG 6- 8A	0.6,0.8,0.9	40,000	(VCK 6)
	-VC13- 90, 120	3.0~12.0	90,120	29	64,94	40	40.0	-50~60	-,VCG13-15A	0.9,1.2		(VCK13)
HSK 63A	HSK 63A-VC 6- 70, 90, 120	2.0~6.0	70,90,120	23	41,61,91	28	33.8,32.8,37.0	-35~45,35~45	-,VCG 6- 8A,VCG 6- 8A	0.9,1.0,1.2	30,000	(VCK 6)
	-VC13- 90, 120	3.0~12.0	90,120	29	61,92	40	44.5,48.8	-50~60	-,VCG13-15A	1.2,1.6		(VCK13)
HSK 100A	HSK 100A-VC 6- 105, 135, 165	2.0~6.0	105,135,165	23	71,101,131	28	34.2,38.4,42.6	35~45	VCG 6- 8A	2.4,2.6,2.9	20,000	(VCK 6)
	-VC13- 105, 135, 165	3.0~12.0	105,135,165	29	40	45.9,50.1,54.3	-50~60,50~60	-,VCG13-15A,VCG13-15A	2.7,3.1,3.6	(VCK13)		

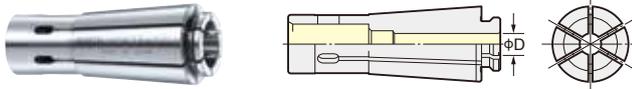
TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	MAX. min <sup>-1</sup>	Collet
HSK 40E	HSK 40E-VC 6- 65, 90	2.0~6.0	65,90	23	45,70	28	34	-35~45	-,VCG 6- 8A	0.5,0.7	40,000	(VCK 6)
	-VC13- 90, 120	3.0~12.0	90,120	29	70,100	40	40.0	-50~60	-,VCG13-15A	0.8,1.1		(VCK13)
HSK 50E	HSK 50E-VC 6- 70, 90, 120	2.0~6.0	70,90,120	23	41,61,91	28	33.8,32.8,37.0	-35~45,35~45	-,VCG 6- 8A,VCG 6- 8A	0.7,0.9,1.0	40,000	(VCK 6)
	-VC13- 90, 120	3.0~12.0	90,120	29	64,94	40	40.0	-50~60	-,VCG13-15A	1.0,1.3		(VCK13)
HSK 63E	HSK 63E-VC 6- 70, 90, 120	2.0~6.0	70,90,120	23	41,61,91	28	33.8,32.8,37.0	-35~45,35~45	-,VCG 6- 8A,VCG 6- 8A	1.0,1.1,1.3	30,000	(VCK 6)
	-VC13- 90, 120	3.0~12.0	90,120	29	61,92	40	44.5,48.8	-50~60	-,VCG13-15A	1.3,1.7		(VCK13)

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (kg)	MAX. min <sup>-1</sup>	Collet
HSK 63F	HSK 63F-VC 6- 65, 90, 120	2.0~6.0	65,90,120	23	37,61,91	28	27.5,30.6,34.8	-35~45,35~45	-,VCG 6- 8A,VCG 6- 8A	0.8,0.9,1.1	30,000	(VCK 6)
	-VC13- 90, 120	3.0~12.0	90,120	44	61,92	40	44.5,48.8	-50~60	-,VCG13-15A	1.2,1.5		(VCK13)

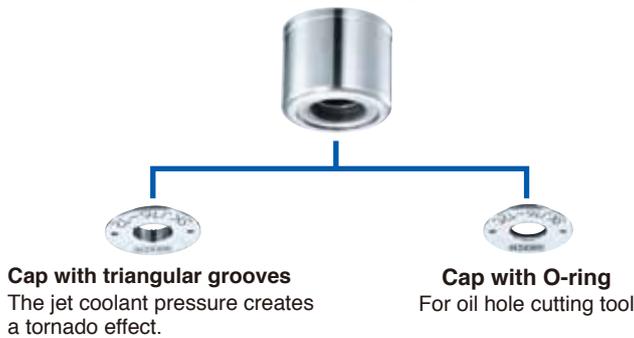
- ★TiN Bearing Nut is supplied as standard.
- ★When the axial stopper is required, please use Adjust Screw (G No.).
- ★Collet, adjust screw (G No.) and GH Handle are available as an option. P.48
- The Code No. of the GH Handle is VC6:GH10, VC13:GH16
- ★HSK63A-VC6-150, HSK63A-VC13-150, HSK100A-VC13-90, -120 are available as an option.
- ★Please use VC J type Nut & Cap P.49 for Centre Through Coolant application.
- The Code No. of VC J type Nut is VCN-6BJ, VCN-13BJ.
- The Code No. of the Cap is SKJ10-□, SKJ16-□
- When VC J type Nut is used, the total holder length will be extended to 6mm.
- ★All series are for High Speed Rotation.



## VCK Collet



### Jet coolant splash with J type Nut.



Cap with triangular grooves  
The jet coolant pressure creates a tornado effect.

Cap with O-ring  
For oil hole cutting tool



VCK Collet Code No.
VCK 6-2, 3, (3.175), 4, 5, 6
VCK13-3, (3.175), 4, 5, 6, 7, 8, 9, 10, 11, 12

VCK Collet (Inch) Code No.
VCK 6 -1/8, 3/16, 1/4
VCK13 -1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2

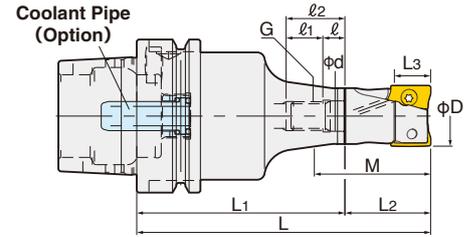
- ★The acceptable shank tolerance of VCK collet is hs.
- ★VCK6-3.175 is same as VCK6-1/8 : VCK13-3.175 is same as VCK13-1/8.

## J type NUT Code.

Style	J-type NUT	GH Handle	Cap	Wenche
VC 6	VCN- 6BJ	GH10	Cap With triangular grooves SKJ10-○.○	SKJL-10
			Cap With O-rong SKJ10-○.○C	
VC13	VCN-13BJ	GH16	Cap With triangular grooves SKJ16-○.○	SKJL-16
			Cap With O-rong SKJ16-○.○C	

Easy, safe and reliable handling with GH Handle P. 48





HSK-MDPE (Arbor+Head)

TAPER	Code No.	φD	L	L1	L2	MAX. Depth L3	M	Arbor Code No.	Head Code No.
HSK 63A	HSK 63A-MDPE16-100,120,135	16	100,120,135	70, 90,105	30	10	37.4	HSK 63A-MDPE-M 8- 70, 90,105	M 8-MDPE16-30
	-MDPE20-105,120,135	20	105,120,135	75, 90,105			40.0	-MDPE-M10- 75, 90,105	M10-MDPE20-30
	-MDPE25-105,120,135	25	105,120,135	70, 85,100	35	15	45.3,47.5,47.5	-MDPE-M12- 70, 85,100	M12-MDPE25-35
	-MDPE32-120,135,150	32	120,135,150	80, 95,110			52.5	-MDPE-M16- 80, 95,110	M16-MDPE32-40
HSK 100A	HSK100A-MDPE16-120,140,155	16	120,140,155	90,110,125	30	10	37.4	HSK100A-MDPE-M 8- 90,110,125	M 8-MDPE16-30
	-MDPE20-125,140,155	20	125,140,155	95,110,125			40.0	-MDPE-M10- 95,110,125	M10-MDPE20-30
	-MDPE25-125,140,155	25	125,140,155	90,105,120	35	15	45.3,47.5,47.5	-MDPE-M12- 90,105,120	M12-MDPE25-35
	-MDPE32-140,155,170	32	140,155,170	100,115,130			52.5	-MDPE-M16-100,115,130	M16-MDPE32-40

★2pcs of tip clamp bolt and tip clamp wrench are supplied as standard.  
★Please refer to P.258 for cutting condition.

★Insert tip is available as an option. Please refer to P.202.  
★Centre through tool coolant is available for all series.

HSK-MDPE-M (Arbor)

TAPER	Code No.	φD	L1	ID φd	Arbor Front Dia.	ℓ	ℓ1	ℓ2	Screw G
HSK 63A	HSK 63A-MDPE-M 8- 70, 90,105	16	70, 90,105	8.5	14.7	9	11	20	M 8
	-MDPE-M10- 75, 90,105	20	75, 90,105	10.5	18.7		12	21	M10
	-MDPE-M12- 70, 85,100	25	70, 85,100	12.5	23.0		15	24	M12
	-MDPE-M16- 80, 95,110	32	80, 95,110	17.0	30.0		16	25	M16
HSK 100A	HSK100A-MDPE-M 8- 90,110,125	16	90,110,125	8.5	14.7	9	11	20	M 8
	-MDPE-M10- 95,110,125	20	95,110,125	10.5	18.7		12	21	M10
	-MDPE-M12- 90,105,120	25	90,105,120	12.5	23.0		15	24	M12
	-MDPE-M16-100,115,130	32	100,115,130	17.0	30.0		16	25	M16

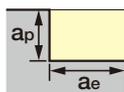
★Head is available as an option. P.202

★Centre through tool coolant is available for all series.

★This is interchangeable with DEPO. When the connection interface (Screw G and ID φd) is same, the cutter head of other carbide makers can be used.

CUTTING CONDITION of PRO-ENDMILL

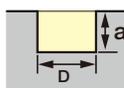
Side Milling



- The bold figures of cutting speed V (mm/min.) show the cutting speed when  $a_e=0.5 \times D$ . V (mm/min.) should be reduced to 80%, when  $a_e=0.75 \times D$ .
- Feed rate per 1 tooth/ 1 revolution f (mm/tooth) should be smaller, when  $a_p$  is getting larger. The feed rate of f (mm/tooth) shows the feed rate when  $a_e=0.5 \times D$  &  $a_p=MAX$ .

Material	Mild Steel (SS400, S10C)	Carbon Steel (S45C, SCM440)	Cast Iron (FC300)	Ductile Cast Iron (FCD450)	Hardened Steel HRC40~55 (SKD)
Cutting Speed V	220(140~270)	170(110~210)	170(110~210)	120(80~150)	85(50~100)
f	MDPE16	0.1(0.1~0.15)		0.07(0.07~0.1)	
	MDPE20	0.1(0.1~0.25)		0.07(0.07~0.2)	0.07(0.07~0.15)
	MDPE25	0.1(0.1~0.3)		0.07(0.07~0.25)	0.07(0.07~0.15)
	MDPE32	0.1(0.1~0.3)		0.07(0.07~0.25)	0.07(0.07~0.15)

Groove Milling



- Feed rate per 1 tooth/ 1 revolution f (mm/tooth) should be smaller, when  $a_p$  is getting larger. The feed rate of f (mm/tooth) shows the feed rate when  $a_e=0.5 \times D$  &  $a_p=MAX$ .
- MAX. ramping angle is MDPE16: 15°, MDPE20: 9°, MDPE25: 11°, MDPE32: 7°

Material	Mild Steel (SS400, S10C)	Carbon Steel (S45C, SCM440)	Cast Iron (FC300)	Ductile Cast Iron (FCD450)	Hardened Steel HRC40~55 (SKD)
Cutting Speed V	180(140~210)	140(110~160)	100(80~120)	100(80~120)	70(50~80)
f	MDPE16	0.1		0.07	
	MDPE20	0.07(0.07~0.1)		0.07	
	MDPE25	0.07(0.07~0.15)		0.07	
	MDPE32	0.07(0.07~0.15)		0.07	



• Please clamp the insert tip with the suitable torque.  
AOMT123608 : 1.0Nm , AOMT184808 : 4.0Nm

• For the guide line of insert tip life, the flank wear within 0.3mm under normal cutting will be recommended.

HSK

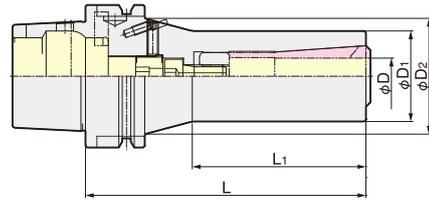
# HSK MINI-MINI MASTER CHUCK

**NIKKEN**

## MINI-MINI MASTER CHUCK



MMC-ATB



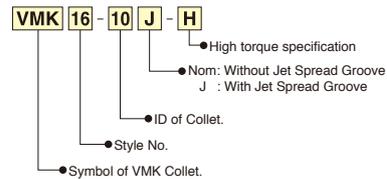
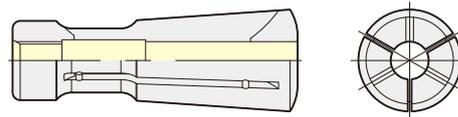
TAPER	Code No.	φD	L	φD1	L1	Collet	Weight (kg)
HSK63A	HSK 63A-MMC16C-125-ATB	10~16	125	40	76	VMK16-SF VMK16-H	1.4
	-MMC20C-125-ATB	12~20		47	89	VMK20-SF VMK20-H	1.6
HSK100A	HSK100A-MMC16C-132-ATB	10~16	132	40	73.5	VMK16-SF VMK16-H	2.8
	-MMC20C-132-ATB	12~20		47	85.3	VMK20-SF VMK20-H	3.0

- ★VMK-H collet for high torque is recommended.
- ★Wrench is attached as standard.
- ★Balance adjustment screw is available as an option. The Code No. of the screw is 9SFB-ASC-M4-3, 4, 6
- ★Mounting handle is available as an option. The Code No. of the handle is 9SFB-AL-M2
- ★Set Code for handle and all screws are S.9SFB-ASC-M4

## High torque specification VMK-H Collet



VMK-H



VMK-H Collet Code No.	Min.Gripping Length
VMK16-10, 12, 16-H	40, 42, 42
VMK20-12, 16, 20-H	47, 47, 47

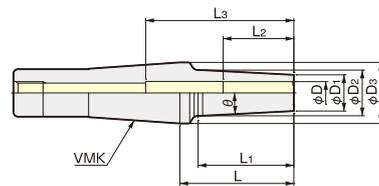
VMK-H Collet Code No.	Min.Gripping Length
VMK16-10J, 12J, 16J-H	40, 42, 42
VMK20-12J, 16J, 20J-H	47, 47, 47

★Please note the acceptable shank tolerance is h6~h8.

## VMK-SF Shrink Fit Holder



VMK-SF



### Standard Type

TAPER	Code No.	φD	φD1	φD2	φD3	θ	L	L1	L2	L3	Weight (kg)
VMK16	VMK16-SF 3S- 50	3	6	10.2	27	3°	50	42	10	-	0.3
	-SF 4S- 50	4	7	11.2					13		
	-SF 6S- 50	6	9	13.2					19		
	-SF 8S- 50	8	13	17.2					25		
	-SF10S- 50,80,110	10	16	20.2, 23.4, 27			50, 80, 110	42, 72, 105	31	65	0.3, 0.4, 0.5
	-SF12S- 50,80,110	12	19	23.2, 27, 27			50, 80, 110	42, 76.4, 76.4	50	50	0.3, 0.4, 0.5
	-SF16S- 50,80,110	16	24	27			50, 80, 110	28.7			33

### High Rigidity Type

TAPER	Code No.	φD	φD1	φD2	φD3	θ	L	L1	L2	L3	Weight (kg)	
VMK20	VMK20-SF10R- 50,80,110	10	22	26.2, 29.4, 32	32	3°	50, 80, 110	42, 72, 95.4	31	65	0.5, 0.6, 0.8	
	-SF12R- 50,80,110	12	26	30.2, 32, 32			50, 80, 110	42, 57.3, 57.3			80	0.5, 0.7, 0.9
	-SF16R- 50,80,110	16	32	32			50, 80, 110	50, 80, 110			33	50

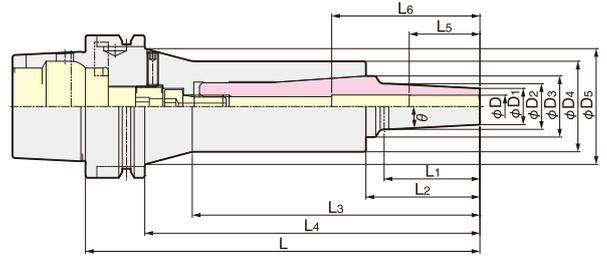
★Hybride Shrink Fit Holder can be built by Mini-Mini Chuck Master and VMK-SF Shrink Fit Holder.

# HSK HIBRID SHRINK-FIT HOLDER



MMSF-B

MMSF-B holder is pre-balanced by the balance adjusting screws.  
G2.5 30,000min<sup>-1</sup>



## Standard Type

TAPER	Code No.	φD	φD <sub>1</sub>	φD <sub>2</sub>	φD <sub>3</sub>	φD <sub>4</sub>	φD <sub>5</sub>	θ	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	Weight (kg)					
HSK63A	HSK 63A-MMSF 3S-173B	3	6	10.2	27	40	51.2	3°	173	42	50	126	147	10	-	1.7					
	-MMSF 4S-173B	4	7	11.2										13							
	-MMSF 6S-173B	6	9	13.2										19							
	-MMSF 8S-173B	8	13	17.2										25							
	-MMSF10S-173B	10	16	20.2										65							
	-203B			23.4																	
	-233B	27	31	1.8																	
	-MMSF12S-173B	12	19	23.2										50							
	-203B			203													76.4	1.7			
	-233B	233	110	186										207			1.8				
	-MMSF16S-173B	16	24	27										33			173	50	126	147	1.8
	-203B																203	28.7	80	156	177
-233B	233	110	186	207	2.0																
HSK100A	HSK100A-MMSF 3S-180B	3	6	10.2	27	40	55.5	3°	180	42	50	123.5	151	10	-	3.1					
	-MMSF 4S-180B	4	7	11.2										13							
	-MMSF 6S-180B	6	9	13.2										19							
	-MMSF 8S-180B	8	13	17.2										25							
	-MMSF10S-180B	10	16	20.2										65							
	-210B			23.4																	
	-240B	27	31	3.2																	
	-MMSF12S-180B	12	19	23.2										50							
	-210B			210													76.4	80	153.5	181	3.1
	-240B	240	110	183.5										211			3.2				
	-MMSF16S-180B	16	24	27										33			180	50	123.5	151	3.2
	-210B																210	28.7	80	153.5	181
-240B	240	110	183.5	211	3.4																

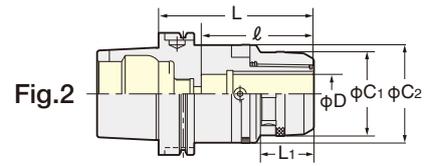
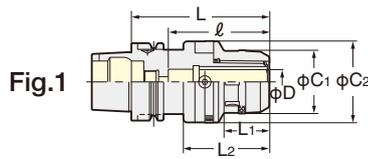
## High Rigidity Type

TAPER	Code No.	φD	φD <sub>1</sub>	φD <sub>2</sub>	φD <sub>3</sub>	φD <sub>4</sub>	φD <sub>5</sub>	θ	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	Weight (kg)																
HSK63A	HSK 63A-MMSF10R-173B	10	22	26.2	32	47	51.3	3°	173	42	50	139	147	31	65	2.1																
	-203B			29.4												203	72	80	169	177	2.2											
	-233B			32												233	95.4	110	199	207	2.4											
	-MMSF12R-173B	12	26	30.2												32	47	51.3	3°	173	42	50	139	147	31	80	2.1					
	-203B			203																							57.3	80	169	177	2.3	
	-233B			233																							110	199	207	2.5		
	-MMSF16R-173B	16	32	32												32	47	51.3	-	173	50	50	139	147	33	50	2.2					
	-203B																										203	80	80	169	177	2.3
	-233B																										233	110	110	199	207	2.5
HSK100A	HSK100A-MMSF10R-180B	10	22	26.2	32	47	55.5	3°	180	42	50	133.5	151	31	65	3.5																
	-210B			29.4												210	72	80	163.5	181	3.6											
	-240B			32												240	95.4	110	193.5	211	3.8											
	-MMSF12R-180B	12	26	30.2												32	47	55.5	3°	180	42	50	133.5	151	31	80	3.5					
	-210B			210																							57.3	80	163.5	181	3.7	
	-240B			240																							110	193.5	211	3.9		
	-MMSF16R-180B	16	32	32												32	47	55.5	-	180	50	50	133.5	151	33	50	3.6					
	-210B																										210	80	80	163.5	181	3.7
	-240B																										240	110	110	193.5	211	3.9

★Hibride Shrink Fit Holder can be built by Mini-Mini Chuck Master and VMK-SF Shrink Fit Holder. P.259

# HSK ZERO FIT TYPE MILLING CHUCK

**NIKKEN**



**CZF**

**PAT.**

TAPER	Code No.	C1	C2	L	L1	L2	ℓ	Weight(kg)	Fig.	Collet
HSK 50A	HSK 50A-CZF20-115	51.5	66.5	115	35	73	80	1.8	1	KM20 CCK20
	HSK 63A-CZF20-110			110				2		
HSK 63A	-CZF25-110	59.5	74.5	130	42	88	105	2.5		KM25 CCK25
	-CZF32-130	69	80.5	130	42	88	105	2.8		KM32 CCK32
HSK 100A	HSK 100A-CZF20-115	51.5	66.5	115	35	-	80	3.5	2	KM20 CCK20
	-CZF25-115	59.5	74.5		42			83		
	-CZF32-115	69	80.5	42	83	4	KM32 CCK32			

- ★Spanner is available as an option. CZF20 type:9HC22, CZF25 type:9HC25, CZF32 type:9HC32
- ★Please note that the acceptable shank tolerance is  $h_6-h_7$ .
- ★Wrench to adjust run-out (9ZFL) is available as an option.
- ★Please add "P" at the end of Code No. for High Speed Zero Fit Milling Chuck. e.g. HSK63A-CZF25-110P
- ★Multi-Cam style is available. e.g. HSK63A-CZF32-130-C3. (3 Cams) Please contact us for more detail.



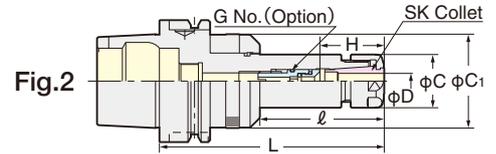
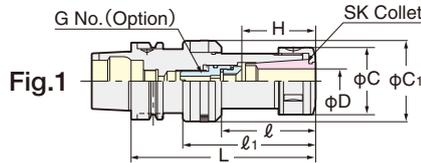
9ZFL

- ★Please refer P.248 for KM, CCK collet.
- ★For Center Through Coolant application: Please use CKFN-D Nut for the direct chucking. Please use CCK collet and CKFN nut for chucking with collet.

HSK

# HSK ZERO FIT TYPE SLIM CHUCK

**NIKKEN**



**SZF**

**PAT.**

TAPER	Code No.	D	L	ℓ	ℓ1	C	C1	H	G No. (Option)	Weight(kg)	Fig.	Collet
HSK 40A	HSK 40A-SZF 6C-105	0.7~6.0	105	32	70	19.5	40.5	26~31	SKG 6- 6HG	0.6	1	SK 6
	-SZF10C-105	1.75~10.0				27.5	48.5	35~41	SKG10-10HG	0.7		SK10
	-SZF16C-120	2.75~16.0				120	48	85	40	59.5		45~52
HSK 50A	HSK 50A-SZF 6C-120	0.7~6.0	120	68	-	19.5	40.5	26~31	SKG 6- 6HG	0.9	2	SK 6
	-SZF10C-120	1.75~10.0		46	78	27.5	48.5	35~41	SKG10-10HG	1.1		SK10
	-SZF16C-135	2.75~16.0	135	57	93	40	59.5	45~52	SKG16-10HG	1.5	1	SK16
-SZF25C-135	7.5~25.4	55				66.5	60~65	SKG25-18HGE	1.8	SK25		
HSK 63A	HSK 63A-SZF 6C-120	0.7~6.0	120	68	-	19.5	40.5	26~31	SKG 6- 6HG	1.2	2	SK 6
	-SZF10C-105, 150	1.75~10.0				105, 150	53, 98	27.5	48.5	35~41		SKG10-10HG
	-SZF16C-150	2.75~16.0	150	76	40	59.5	45~57	SKG16-12HG	2	1	SK16	
	-SZF25C-135	7.5~25.4	135	57	93	55	66.5	60~65	SKG25-18HGE		2.1	SK25
HSK 100A	HSK 100A-SZF 6C-120	0.7~6.0	120	54	-	19.5	40.5	26~31	SKG 6- 6HG	2.4	2	SK 6
	-SZF10C-150	1.75~10.0				150	85	27.5	48.5	35~41		SKG10-10HG
	-SZF16C-150	2.75~16.0	40	59.5	45~57			SKG16-12HG	3.7	1	SK16	
	-SZF25C-150	7.5~25.4	95	55	66.5	60~65	SKG25-18HGE	4.1	SK25			

- ★Adjust screw (G No.), wrench to adjust run-out (9ZFL) and SKL spanner are available as an option. SZF6C:SKL-6W, SZF10C:SKL-10, SZF16C:9HC16, SZF25C:9HC25
- ★Spanner for run-out adjustment is available as an option. Code No. is 9ZFL.
- ★Please use "P" class or "A" type SK collet. P.253
- ★For Centre Through Coolant application, please use SK J type nut and cap. P.49
- ★Please note that the total tool length with J type nut is extended 6mm longer.
- ★Multi-Cam style is available. e.g. HSK63A-SZF16C-150-C3. (3 Cams) Please contact us for more detail.

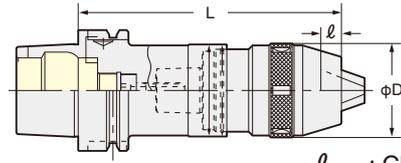


9ZFL

# HSK NC DRILL CHUCK

**NIKKEN**

■ Compact, High Accuracy and Rigidity



ℓ : Chucking Length  
 NPU 8 : 18.8mm  
 NPU13 : 26.5mm

NPU

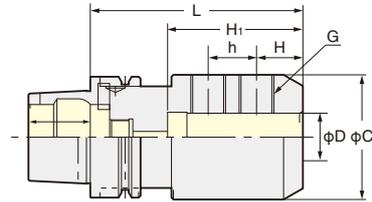
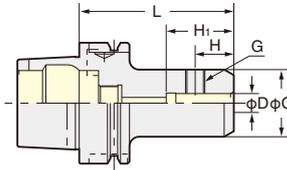
TAPER	Code No	Chucking Dia φ mm	D	L		Weight(kg)
				MIN.	MAX.	
HSK 40A	HSK 40A-NPU 8-114	0.3~8	38	114	121	0.8
	HSK 50A-NPU 8-118	0.3~8	38	118	125	1.0
HSK 50A	-NPU13-135	1~13	48.5	135	147	1.5
	HSK 63A-NPU 8-120	0.3~8	38	120	127	1.3
HSK 63A	-NPU13-135	1~13	48.5	135	147	1.9
	HSK100A-NPU 8-130	0.3~8	38	130	137	2.7
HSK100A	-NPU13-145	1~13	48.5	145	157	3.4

★Wrench is available as an option. The Code No. of wrench is NPU8:NPUL-8, NPU13:NPUL-13  
 ★Centre Through Coolant (MAX. 1MPa) is available for NPU13 style only. Please add "C" at the Code No. e.g. HSK63A-NPU13C-135  
 ★When it is used for centre through tool coolant holder, MIN. Chucking Dia. is 6mm.

# HSK SIDE LOCK HOLDER

**NIKKEN**

■ Simple and Rigid



SL

TAPER	Code No	φD	L	C	h	H	H1	G	Weight(kg)
HSK 63A	HSK 63A-SLS 6- 80	6	80	25	-	18	25	M6	0.9
	-SLS 8- 80	8		28			30	M8	0.9
	-SLS10- 80	10		35			42	M10	1.0
	-SLS12- 80	12		42		22.5	46	M12	1.2
	-SLS16- 80	16		48		24	52	M14	1.3
	-SLS20- 80	20		52		25	52	M16	1.4
	-SLS25-110	25	110	65	25	24	70	M18	1.8
-SLS32-110	32	72		28	75		M20	2.6	
HSK100A	HSK100A-SLS 6- 80	6	80	25	-	18	25	M6	2.3
	-SLS 8- 80	8		28			30	M8	2.3
	-SLS10- 80	10		35			42	M10	2.4
	-SLS12- 80	12		42		22.5	49	M12	2.6
	-SLS16-100	16		48		24	52	M14	3.0
	-SLS20-100	20		52		25	54	M16	3.1
	-SLS25-100	25	100	65	25	24	65	M18	3.7
	-SLS32-100	32		72	28		68	M20	3.9

★JIS B4005 end mill can be gripped.  
 ★The Code No. for ultra heavy duty combination shank end mill is "DM". e.g. HSK100A-DM50.8-120

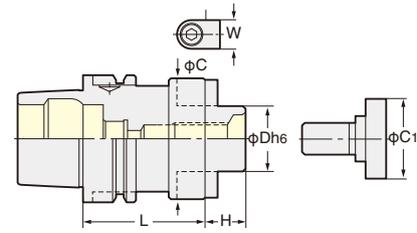


HSK

# HSK FACE MILL ARBOR / HSK SHOULDER CUTTER ARBOR



■ FMA: JIS B 4113 Face Mill Cutter  
 ■ FMC: Shoulder Cutter (SANDVIK, SUMITOMO etc.)



## FMA

TAPER	Code No.	Dimensions						Drive key	Lock bolt	Weight (kg)
		D	L	H	C	C1	W			
HSK 40A	HSK 40A-FMA25.4 -50	25.4	50	22	50	33	9.5	FW5	FM12	0.7
HSK 50A	HSK 50A-FMA25.4 -55	25.4	55	22	50	33	9.5	FW5	FM12	0.8
HSK 63A	HSK 63A-FMA25.4 -50	25.4	50	22	50	33	9.5	FW5	FM12	1.2
	-FMA31.75 -60	31.75	60	30	60	40	12.7	FW13	FM16	1.6
	-FMA38.1 -60	38.1		34	80	50	15.9	FW18	FM20	1.8
HSK100A	HSK100A-FMA25.4 -50	25.4	50	22	50	33	9.5	FW5	FM12	2.4
	-FMA31.75 -75	31.75	75	30	70	40	12.7	FW13	FM16	3.4
	-FMA38.1 -75	38.1		34	80	50	15.9	FW19	FM20	3.8
	-FMA50.8 -75	50.8		36	100	65	19	FW24	FM24	4.4
	-FMA47.625-75	47.625		38	128.57	-	25.4	FW26	9GM16-55	5.3

★The arbor marked \* requires 4 fixing bolts. (M16)

## FMC

TAPER	Code No.	Dimensions						Drive key	G Cap bolt	Weight (kg)
		D	L	H	C	C1	W			
HSK 40A	HSK 40A-FMC22-50	22	50	18	45	16	10	FW 8	M10×30	0.6
HSK 50A	HSK 50A-FMC22-50	22	50	18	45	16	10	FW 8	M10×30	0.7
	-FMC27-60	27	60	20	60	18	12	FW11	M12×35	1.1
HSK 63A	HSK 63A-FMC22-45, 60	22	45, 60	18	45	16	10	FW 8	M10×30	1.0, 1.2
	-FMC27-60	27	60	20	60	18	12	FW11	M12×35	1.4
	-FMC32-60	32		22	80	24	14	FW16	M16×35	1.9
HSK100A	HSK100A-FMC22-50	22	50	18	45	16	10	FW 8	M10×30	2.4
	-FMC27-50	27		20	60	18	12	FW11	M12×35	2.6
	-FMC32-75	32	75	22	80	24	14	FW16	M16×35	3.4

★Drive key, L-Wrench & Bolts are supplied as standard.

★The bolt may not be the same as above table, please use the bolt specified by the cutter maker.

★Extended length Face Mill Arbors are available as an option.

HSK100A-FMA25.4 -200, 250  
 -FMA31.75-150, 200  
 -FMA38.1 -150, 200

★Above weight is for arbor only. (Not include Face Mill Cutter)

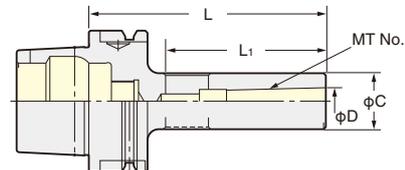
★In case of the special cutter, please specify the dimension below.

★In case of the special cutter, please specify the dimensions below.

# HSK MORSE TAPER ADAPTER A TYPE



■ For Drill & Reamer with MT1~MT5 Shank.  
 ■ With Side Lock Screw.



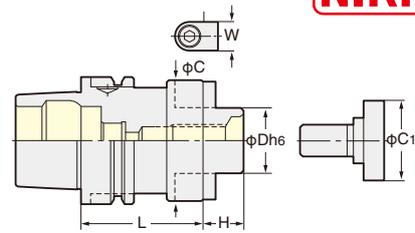
## MTA

TAPER	Code No.	MT.No.	D	C	L1	Weight(kg)
HSK 63A	HSK 63A-MTA1-105	1	12.065	25	74	0.9
	-MTA2-120	2	17.780	32	89	1.1
	-MTA3-150	3	23.825	40	119	1.6
	-MTA4-165	4	31.267	50	136	2.2
HSK100A	HSK100A-MTA1-110	1	12.065	25	71	2.3
	-MTA2-125	2	17.780	32	86	2.3
	-MTA3-140	3	23.825	40	106	2.8
	-MTA4-165	4	31.267	50	131	3.6
	-MTA5-195	5	44.399	65	161	4.9

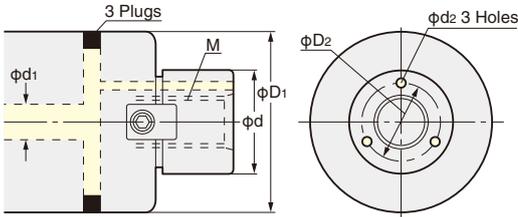
# HSK FMH FACE MILL ARBOR



■ For Oil Hole Cutter  
■ For High Feed Cutter



FMH



Code No.	Cutter Dia.	φd	φD1	M	Coolant Hole		
					φD2	φd1	φd2
<b>FMH22 (22.225)</b>	φ50, φ52 φ63, φ66	22(22.225)	47 60	M10×1.5	16	6~8	3
<b>FMH27 (25.4)</b>	φ80	27(25.4)	76(70)	M12×1.75	19.5(18.5)	8~10	3.5
<b>FMH32 (31.75)</b>	φ100	32(31.75)	96	M16×2.0	24	10~13	4
<b>FMH40 (38.1)</b>	φ125	40(38.1)	100	M20×2.5	30(29)	10~15	5
<b>FMH50.8</b>	φ160	50.8	100	M24×3.0	37.5	15~20	7

## FMH Inch Series

★Fixing dimension is basically based on FMA/FMC. ★The combination of the other cutter dia. are also available.

TAPER	Code No.	Arbor						Drive Key	Lock Bolt	G Cap Bolt	Weight (kg)
		D	L	H	C	C1	W				
HSK 63A	HSK 63A-FMH22.225 - 47 - 45	22.225	45	17	47	28	8	FW 3	FM10	—	1.1
	- 60		60								1.3
	- 90		90								1.7
	- 150	150	2.5								
	-FMH25.4 - 70 - 60	25.4	60	22	70	33	9.5	FW 5	FM12	—	1.8
	- 90		90								2.5
- 150	150		4.1								
-FMH31.75 - 76 - 60	31.75	60	30	76	40	12.7	FW13	FM16	—	2.0	
- 90		90								2.7	
- 150		150								2.7	
HSK100A	HSK100A-FMH22.225 - 47 - 105	22.225	105	17	47	28	8	FW 3	FM10	—	3.4
	- 150		150								4.0
	- 200		200								4.7
	- 250		250								5.3
	-FMH22.225 - 60 - 60	22.225	60	17	60	28	8	FW 3	FM10	—	2.9
	- 105		105								3.9
	- 150		150								4.9
	- 200		200								6.1
	- 250	250	7.2								
	-FMH25.4 - 70 - 60	25.4	60	22	70	33	9.5	FW 5	FM12	—	3.2
	- 90		90								4.1
	- 150		150								5.9
	- 200		200								7.4
	-FMH31.75 - 76 - 60	31.75	60	30	76	40	12.7	FW13	FM16	—	3.9
	- 90		90								5.5
	- 105		105								6.4
	- 150		150								9.0
	- 200	200	11.8								
-FMH38.1 - 100 - 60	38.1	60	34	100	50	15.9	FW19	FM20	—	4.1	
- 90		90								5.9	
- 105		105								6.8	
- 150		150								9.6	

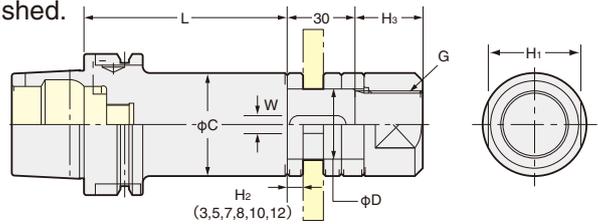
## FMH Metric Series

TAPER	Code No.	Arbor						Drive Key	Lock Bolt	G Cap Bolt	Weight (kg)
		D	L	H	C	C1	W				
HSK 63A	HSK 63A-FMH16 - 37 - 45	16	45	17	37	20	8	FW 3	FM 8	—	1.0
	-FMH22 - 47 - 45		45								1.1
	- 60	60	18	47	16	10	FW 8	—	M10×30	1.3	
	- 90	90								1.7	
	- 150	150								2.5	
-FMH27 - 60 - 60	27	60	20	60	18	12	FW11	—	M12×35	1.6	
- 90		90								2.3	
HSK100A	HSK100A-FMH22 - 47 - 105	22	105	18	47	16	10	FW 8	—	M10×30	3.4
	- 150		150								4.0
	- 200		200								4.7
	- 250		250								5.4
	-FMH22 - 60 - 60	22	60	18	60	16	10	FW 8	—	M10×30	2.9
	- 105		105								3.9
	- 150		150								5.4
	- 200		200								6.1
	- 250	250	7.2								
	-FMH27 - 60 - 60	27	60	20	60	18	12	FW11	—	M12×35	2.9
	- 90		90								3.7
	- 150		150								5.0
	-FMH27 - 76 - 60	27	60	20	76	18	12	FW11	—	M12×35	3.2
	- 90		90								4.3
	- 150		150								6.5
	-FMH32 - 96 - 60	32	60	22	96	24	14	FW16	—	M16×35	3.8
	- 90		90								5.5
	- 150		150								8.9
-FMH40 - 100 - 75	40	75	26	100	50	16	FW22	FM20	—	4.9	
- 105		105								6.8	

# HSK STUB ARBOR



■ Reliable Milling with No Chattering Accomplished.



## SCA

Inch Series

(●) shows for Metric Series.

Metric Series

TAPER	Code No.	D	L	C	W	H <sub>1</sub>	H <sub>3</sub>	G	Weight(kg)	Code No.
HSK 63A	HSK 63A-SCA25.4 -90	25.4 (27)	90	40	6.35 (7)	32	25	M24	1.8	HSK 63A-SCA27-90
	SCA31.75-90	31.75 (32)		46	7.92 (8)	41	30	M30	2.3	HSK 63A-SCA32-90
HSK100A	HSK100A-SCA25.4 -90	25.4 (27)	90	40	6.35 (7)	32	25	M24	3.2	HSK100A-SCA27-90
	SCA31.75-90	31.75 (32)		46	7.92 (8)	41	30	M30	3.7	HSK100A-SCA32-90

★JIS B4206, JIS B4107, JIS B4219, JIS B4109 cutters can be attached.

★Key and collars (H<sub>2</sub>=3, 5, 7, 8, 10, 12mm) are supplied as standard. For Code No. of collar and nut, please refer to P.128.

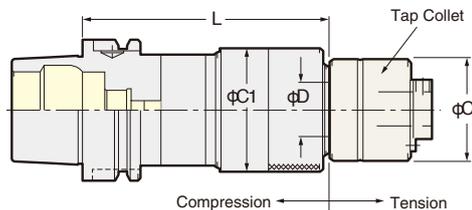
# HSK TAPPER CHUCK



■ With the axial NC floating system.



## Z



TAPER	Code No.	Tapping Capability			D	C	C <sub>1</sub>	Tap Collet	Weight (kg)
		M	U	P					
HSK 63A	HSK 63A-Z 8-115*1	M 2~M 8	1/8~1/4	—	13	23	33	ZKN 8	2.7
	-Z12-120	M 3~M12	1/8~1/2	P 1/8	19	32	45	ZKG12	3.2
	-Z16-130	M 3~M16	1/8~5/8	P 1/8~3/8	25	39	55	ZKG16	4.3
	-Z24-140	M 8~M24	1/2~1	P 1/4~5/8	30	46	68	ZKG24	4.7
	-Z38-190	M18~M38	3/8~1 3/8	P 3/8~1	45	78	85	ZKN38	8.2
HSK100A	HSK100A-Z 8-120*1	M 2~M 8	1/8~1/4	—	13	23	33	ZKN 8	3.5
	-Z12-125	M 3~M12	1/8~1/2	P 1/8	19	32	45	ZKG12	3.6
	-Z16-140	M 3~M16	1/8~5/8	P 1/8~3/8	25	39	55	ZKG16	5.0
	-Z24-150	M 8~M24	1/2~1	P 1/4~5/8	30	46	68	ZKG24	5.8
	-Z38-190	M18~M38	3/8~1 3/8	P 3/8~1	45	78	85	ZKN38	8.3
	-Z65-215	M36~M100	1~3 3/4	P 1~3	68	110(125)	110	ZKN65	9.0

★Marked \*1 Z8 Tapper Chuck and ZK8 Tap Collet are available as semi-standard.

★Please refer to P.59 for ZKG/ZKN tap collet.

★For Synchronized Tapping

ZH Tapper Chuck without tension/compression mechanism is available. It improves tap life remarkably by absorbing fine error completely with the small floating mechanism. Please use ZMK Tap Collet without torque-limited mechanism P.66 only for ZH Tapper Chuck.

★High pressure centre through tool coolant type and oil mist type are available. But, OZMK Tap Collet must be used. Please contact us.



ZH Tapper Chuck + ZMK Tap Collet

e.g. HSK 40A-ZH12CH-100  
 HSK 50A-ZH12CH-100  
 HSK 63A-ZH12CH-100  
 -ZH24CH-130  
 HSK100A-ZH12CH-105  
 -ZH24CH-130

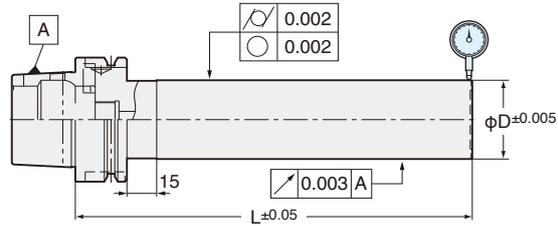
# HSK TEST BAR

**NIKKEN**

Indispensable for checking your machine spindle.  
Sub-zero treatment keeps accuracy to prevent from the deformation.  
Each test bar is provided in a safety wooden box.



TB



Exact size of  $\phi D$  and  $L$  are marked on each test bar.

TAPER	Code No.	$\phi D$	L	Weight (Kg)	Run-out at total length	Circularity, Cylindricity
<b>HSK 40A</b>	<b>HSK 40A-TB30-150</b>	30	150	1.0	Within 0.003mm	Within 0.002mm
<b>HSK 50A</b>	<b>HSK 50A-TB40-200</b>	40	200	2.2		
<b>HSK 63A</b>	<b>HSK 63A-TB40-200</b>	40	200	2.4		
<b>HSK100A</b>	<b>HSK100A-TB50-300</b>	50	300	6.3		

★The different dimension of  $\phi d$  and  $L$  are available. e.g. HSK100A-TB50-400  
But, the accuracy standard will be different. Please contact us.

The inspection certificate traceable to the national standard is available with charge.

# HSK LUBRICATION PIPE

**NIKKEN**



TAPER	Lubrication Pipe Code No.		Wrench Code No. for Movable type*1
	Movable	Stationary	
<b>HSK 40A</b>	<b>HSK 40-LP</b>	<b>HSK 40-LPS</b>	<b>HSK 40-LPL</b>
<b>HSK 50A</b>	<b>HSK 50-LP</b>	<b>HSK 50-LPS</b>	<b>HSK 50-LPL</b>
<b>HSK 63A</b>	<b>HSK 63-LP</b>	<b>HSK 63-LPS</b>	<b>HSK 63-LPL</b>
<b>HSK100A</b>	<b>HSK100-LP</b>	<b>HSK100-LPS</b>	<b>HSK100-LPL</b>

★Wrench for movable type marked \*1 is as an option.  
★Standard wrench can be used for stationary type.  
HSK40-LPS:W=5, HSK50-LPS:W=5, HSK63-LPS:W=6, HSK100-LPS:W=8  
★Stationary type is popular but, movable type is used for the M/C of JTEKT, TSUGAMI, KOMATSU NTC or TAKIZAWA. Please check your M/C specification.

## ⚠ Caution

- For the HSK M/C with centre through coolant delivered via the tool clamping system, please make sure that the lubrication pipe is fitted in the rear of the HSK tool. This will prevent coolant from flooding the hollow chamber of the HSK Tool.
- For the HSK M/C without centre through coolant facility, but only external coolant source, care must be taken to prevent coolant from entering the front nose of chuck or collet slots and so contaminating the hollow area of the chuck. Please fit recommended plug. Please add "-LPGP" at the end of HSK No. e.g. HSK63-LPGP

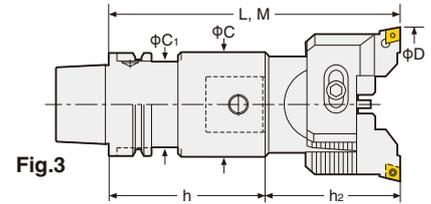
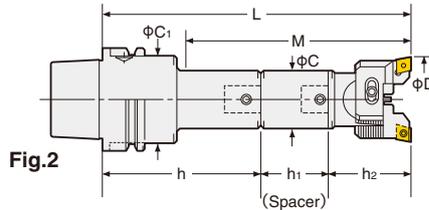
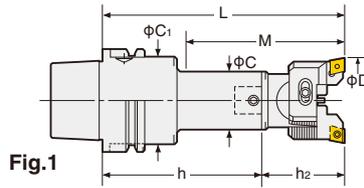
# HSK BALANCE-CUT BORING ARBOR (RAC-E)

**NIKKEN**

Rough Boring — For Steel, Stainless Steel and Cast Iron  
CC Insert (Positive type)



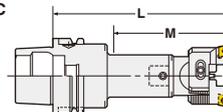
RAC-E



TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.268		Weight (kg)	Fig
								Head Code No.	Tip No.		
HSK63A	HSK 63A-RAC25-135E	25~32	67	15	24	HSK 63A-Q12- 80	—	12-RAC 25- 55E	CC07-C	1.7	1
	-165E		105			-Q12-110	—			1.8	
	-180E		112			-Q12- 80	SP12-12-45			1.8	
	-RAC32-150E	32~45	77	19	30	-Q16- 95	—	16-RAC 32- 55E	CC08-C	2.1	1
	-180E		110			-Q16-125	—			2.3	
	-195E		122			-Q16- 95	SP16-16-45			2.3	
	-RAC43-150E	43~55	97	40	50	-Q20- 80	—	20-RAC 43- 70E	CC12-C	2.4	1
	-180E		130			-Q20-110	—			2.6	
	-210E		157			-Q20- 80	SP20-20-60			2.9	
	-RAC53-165E	53~70	135	53	50	-Q26- 95	—	26-RAC 53- 70E	CC12-C	2.2	1
	-210E		180			-Q26-140	—			3.0	
	-225E		195			-Q26- 95	SP26-26-60			2.9	
	-RAC70-180E	70~100	180	64	52.4	-Q34- 95	—	34-RAC 70- 85E	CC12-C	4.5	3
	-195E		195			-Q34-110	—			4.9	
	-240E		240			-Q34- 95	SP34-34-60			5.9	
-RAC100-195E	100~130	195	83	—	-Q42- 95	—	42-RAC100-100E	—	6.5	—	

- ★“C” grade (Coated) inserts are supplied as standard with the head. P.268 Please refer P.116 for cutting condition.
- ★Please refer P.283 for base holder, P.102 for spacer and P.79 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. HSK63A-RAC53-165E-C
- ★For HSK40A or 50A, modular connection system is applied. Please refer P.283 for Base Holder.
- ★When L length is required longer than standard, please specify the boring depth M.

★Code No. of RAC25 and RAC32 are changed to RAC25E and RAC32E.  
e.g. HSK63A-RAC25-135 → HSK63A-RAC25-135E  
12-RAC25- 55 → 12-RAC25- 55E



High Pressure Coolant Through Tool

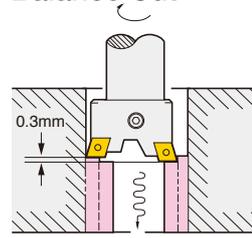
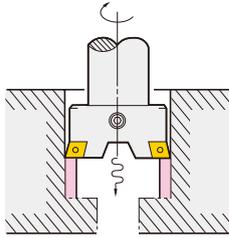
# HSK BALANCE-CUT BORING ARBOR (RAC-E)



Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is ideal for rough and medium boring.

■ **Double Cutting Capability** Please use RAC-K for through hole boring. P.273, P.274

■ **Example of 2 Stepped Balance Cut**



Approx. double removal of below cutting condition is possible by -0.3 Cartridge. P.80

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.268		Weight (kg)	Fig
								Head Code No.	Tip No.		
HSK100A	HSK100A-RAC 25-150E	25~32	67	15	24	HSK100A-Q12- 95	—	12-RAC 25- 55E	CC07-C	3.9	1
	-180E		105			-Q12-125				4.1	
	-195E		112			-Q12- 95				4.0	2
	-RAC 32-180E	32~45	77	31	50	-Q16-125N	—	16-RAC 32- 55E	CC08-C	4.6	1
	-210E		110			-Q16-155				4.8	
	-225E		122			-Q16-125N				4.8	2
	-RAC 43-180E	43~55	97	40	60	-Q20-110	—	20-RAC 43- 70E	—	4.9	1
	-195E		130			-Q20-125				5.0	
	225E		142			-Q20-110				5.3	2
	-240E	157	-Q20-110	5.4	—						
	-RAC 53-210E	53~70	117	53	65	-Q26-140	—	26-RAC 53- 70E	—	6.1	1
	-240E		182			-Q26-170N				6.2	
	-270E		177			-Q26-140				6.8	2
	-RAC 70-255E	70~100	202	64	80	-Q34-170	—	34-RAC 70- 85E	—	8.7	1
	-285E		232			-Q34-200				9.1	
	-315E		262			-Q34-170				10.1	2
	-RAC100-225E	100~130	225	83	83	-Q42-125	—	42-RAC100-100E	—	11.7	1
	-290E		290			-Q42-190				11.7	
-315E	315		-Q42-125			15.1				2	

★“C” grade (Coated) inserts are supplied as standard with the head. P.268 Please refer P.116 for cutting condition. ★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E.  
 ★Please refer P.283 for base holder, P.102 for spacer and P.79 for head. e.g. HSK100A-RAC25-150 → HSK100A-RAC25-150E  
 ★For centre through tool coolant type, please add“-C” at the end of Code No. 12-RAC25- 55 → 12-RAC25- 55E  
 ★For HSK40A or 50A, modular connection system is applied. Please refer P.283 for Base Holder. 12-RAC25- 55 → 12-RAC25- 55E  
 ★HSK100A-RAC100-375E, 425E and 475E are also available.

## Insert tip for RAC-E

● : best ○ : good

Material	Steel		Coated Carbide M	Coated Carbide K
	Stainless Steel	Cast Iron		
			Grade	C
			Material	
			Nose R	
Applicable Arbor	Dimension	Code No.	AC630M	AC410K
RAC25E		CC07-○0.4	●	●
		CC07-○0.8	●	●
RAC25E(CC08), RAC32E		CC08-○0.4	●	●
		CC08-○0.8	●	●
RAC43E - RAC530E		CC12-○0.4	●	●
		CC12-○0.8	●	●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. CC12-C8(AC630M)

★Minimum order quantity : 10pcs.

# HSK BALANCE-CUT BORING ARBOR (RAC)



Rough Boring — For Heavy Duty Boring of Iron and Cast Iron  
CN Insert (Negative type)



Heavy Duty Boring

RAC

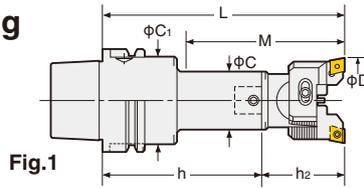


Fig.1

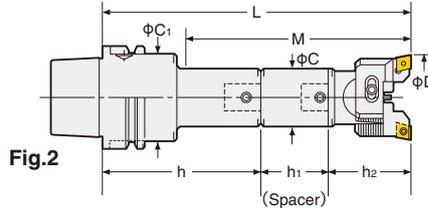


Fig.2

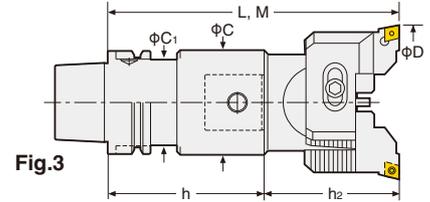


Fig.3

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.270		Weight (kg)	Fig
								Head Code No.	Tip No.		
HSK63A	HSK 63A-RAC43-150	43~55	97	40	50	HSK 63A-Q20- 80	—	20-RAC 43- 70	CN08-C	2.4	1
	-180		130			—	2.6				
	-210		157			SP20-20-60	2.9				
	-RAC53-165	53~70	135	53	-Q26- 95	—	26-RAC 53- 70	2.2	1		
	-210		180		-Q26-140	—		3.0			
	-225		195		-Q26- 95	SP26-26-60		2.9			
	-RAC70-180	70~100	180	64	-Q34- 95	—	34-RAC 70- 85	4.5	3		
	-195		195		-Q34-110	—		4.9			
	-240		240		-Q34- 95	SP34-34-60		5.9			
	-RAC100-195	100~130	195	83	-Q42- 95	—	42-RAC100-100	6.5			

★“C” grade (Coated) inserts are supplied as standard with the head. P.270 Please refer P.116 for cutting condition.

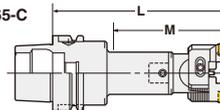
★Please refer P.283 for base holder, P.102 for spacer and P.79 for head.

★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. HSK63A-RAC53-165-C

★For HSK40A or 50A, modular connection system is applied. Please refer P.283 for Base Holder.

★When L length is required longer than standard, please specify the boring depth M.

★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer P.267, P.268



High Pressure Coolant Through Tool

# HSK BALANCE-CUT BORING ARBOR (RAC)

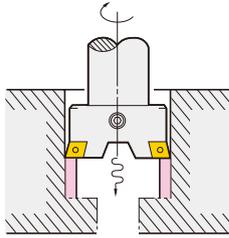


Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is ideal for rough and medium boring.

## Double Cutting Capability

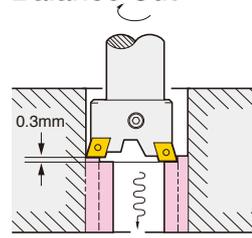
Please use RAC-K for through hole boring.

☞ P.273, P.274



## Example of 2 Stepped Balance Cut

Approx. double removal of below cutting condition is possible by -0.3 Cartridge. ☞ P.80



TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.270		Weight (kg)	Fig
								Head Code No.	Tip No.		
HSK100A	HSK100A-RAC 43-180	43~55	97	40	60	HSK100A-Q20-110	—	20-RAC 43- 70	CN08-C	4.9	1
	-195		130			-Q20-125				5.0	
	225		142			-Q20-110				5.3	
	-240		157			-Q20-110				5.4	
	-RAC 53-210		117			-Q26-140				6.1	
	-240	182	-Q26-170N	6.2	26-RAC 53- 70	1					
	-270	177	-Q26-140	6.8	2						
	-RAC 70-255	202	-Q34-170	8.7	34-RAC 70- 85	1					
	-285	232	-Q34-200	9.1							
	-315	262	-Q34-170	10.1			2				
	-RAC100-225	225	-Q42-125	11.7	42-RAC100-100	1					
	-290	290	-Q42-190	11.7							
	-315	315	-Q42-125	15.1			2				

★“C” grade (Coated) inserts are supplied as standard with the head. ☞ P.270 Please refer ☞ P.116 for cutting condition. ★Code No. of RAC25 and RAC32 with CC inserts are changed to RAC25E and RAC32E. Please refer ☞ P.267, P.268  
 ★Please refer ☞ P.283 for base holder, ☞ P.102 for spacer and ☞ P.79 for head.  
 ★For centre through tool coolant type, please add“-C”at the end of Code No. e.g. HSK100A-RAC53-210-C  
 ★For HSK40A or 50A, modular connection system is applied. Please refer ☞ P.283 for Base Holder.  
 ★HSK100A-RAC100-375, 425 and 475 are also available.

## Insert tip for RAC for Heavy Duty Boring

Material	Steel	●	
	Stainless Steel	●	
Aluminium	Cast Iron	●	
	Aluminium	●	
		Coated Carbide M	
		Grade	C
		Material	AC630M
Applicable Arbor	Dimension	Code No.	Nose R
RAC43 - RAC530		CN08-○8	0.8

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. CC08-C8(AC630M)

★Minimum order quantity : 10pcs.  
 ★When CN08 insert (CN○○1204○○) in the market is used, please use the eccentric bolt type cartridge (S.RCC-○○Q) ☞ P.113. Nikken CN08-○8 insert can be used on the eccentric bolt type cartridge.

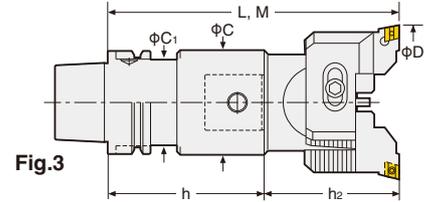
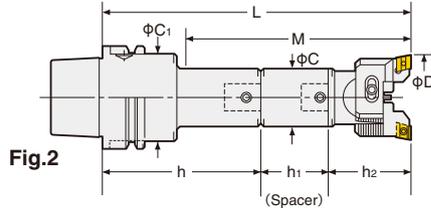
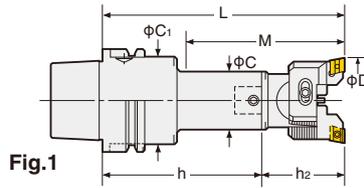
# HSK BALANCE-CUT BORING ARBOR (RAC-A)



Rough Boring—For Aluminium

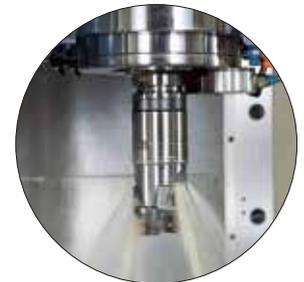
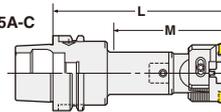


RAC-A



TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.272		Weight (kg)	Fig
								Head Code No.	Tip No.		
HSK63A	HSK 63A-RAC25-135A	25~32	67	15	24	HSK 63A-Q12- 80	—	12-RAC 25- 55A	AEG12	1.7	1
	-165A		105			-Q12-110	—			1.8	
	-180A		112			-Q12- 80	SP12-12-45			1.8	
	-RAC32-150A	32~45	77	19	30	-Q16- 95	—	16-RAC 32- 55A	AEG12	2.1	1
	-180A		110			-Q16-125	—			2.3	
	-195A		122			-Q16- 95	SP16-16-45			2.3	
	-RAC43-150A	43~55	97	40	50	-Q20- 80	—	20-RAC 43- 70A	AEG16	2.4	1
	-180A		130			-Q20-110	—			2.6	
	-210A		157			-Q20- 80	SP20-20-60			2.9	
	-RAC53-165A	53~70	135	53	50	-Q26- 95	—	26-RAC 53- 70A	AEG16	2.2	1
	-210A		180			-Q26-140	—			3.0	
	-225A		195			-Q26- 95	SP26-26-60			2.9	
	-RAC70-180A	70~100	180	64	52.4	-Q34- 95	—	34-RAC 70- 85A	AEG16	4.5	3
	-195A		195			-Q34-110	—			4.9	
	-240A		240			-Q34- 95	SP34-34-60			5.9	
-RAC100-195A	100~130	195	83	—	-Q42- 95	—	42-RAC100-100A	—	6.5	—	

- ★"F" grade inserts are supplied as standard with the head. P.272 Please refer P.116 for cutting condition.
- ★Please refer P.283 for base holder, P.102 for spacer and P.79 for head.
- ★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. HSK63A-RAC53-165A-C
- ★For HSK40A or 50A, modular connection system is applied. Please refer P.283 for Base Holder.
- ★When L length is required longer than standard, please specify the boring depth M.



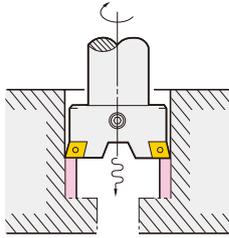
High Pressure Coolant Through Tool

# HSK BALANCE-CUT BORING ARBOR (RAC-A)

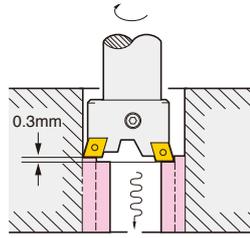


Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is Ideal for rough and medium boring.

## Double Cutting Capability



## Example of 2 Stepped Balance Cut



Approx. double removal of below cutting condition is possible by **-0.3 Cartridge**.  
 P.80

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.272		Weight (kg)	Fig
								Head Code No.	Tip No.		
HSK100A	HSK100A-RAC 25-150A	25~32	67	15	24	HSK100A-Q12- 95	—	12-RAC 25- 55A	AEG12	3.9	1
	-180A		105			-Q12-125				4.1	
	-195A		112			-Q12- 95				4.0	2
	-RAC 32-180A	32~45	77	-Q16-125N	—	16-RAC 32- 55A	4.6				
	-210A		110	-Q16-155			4.8				
	-225A		122	-Q16-125N			4.8	2			
	-RAC 43-180A	43~55	97	-Q20-110	—	20-RAC 43- 70A	4.9				
	-195A		130	-Q20-125			5.0				
	225A		142	-Q20-110			5.3	2			
	-240A	157	-Q20-110	5.4							
	-RAC 53-210A	53~70	117	-Q26-140	—	26-RAC 53- 70A	6.1				
	-240A		182	-Q26-170N			6.2				
	-270A		177	-Q26-140			6.8	2			
	-RAC 70-255A	70~100	202	-Q34-170	—	34-RAC 70- 85A	8.7				
	-285A		232	-Q34-200			9.1				
	-315A		262	-Q34-170			10.1	2			
	-RAC100-225A	100~130	225	-Q42-125	—	42-RAC100-100A	11.7				
	-290A		290	-Q42-190			11.7				
	-315A		315	-Q42-125			15.1	2			

- ★“F” grade inserts are supplied as standard with the head. P.272 Please refer P.116 for cutting condition.
- ★Please refer P.283 for base holder, P.116 for spacer and P.79 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. HSK100A-RAC53-210A-C
- ★For HSK40A or 50A, modular connection system is applied. Please refer P.283 for Base Holder.
- ★HSK100A-RAC100-375A, 425A and 475A are also available.

## Insert tip for RAC-A

Material	Steel		Code No.	Nose R	Material
	Stainless Steel	Cast Iron			
Material	Aluminium		●	●	Coated Carbide K
					Grade
Applicable Arbor	Dimension		Material	KW10	
RAC25A, RAC32A	 (AEGT090304L)	AEG12-○1	0.1	●	
		AEG12-○2	0.2	●	
		AEG12-○4	0.4	●	
RAC43A-RAC530A	 (AEGT150304L)	AEG16-○1	0.1	●	
		AEG16-○2	0.2	●	
		AEG16-○4	0.4	●	

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. AEG16-F2 (KW10)

★Minimum order quantity : 10pcs.

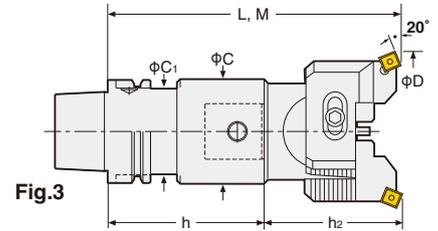
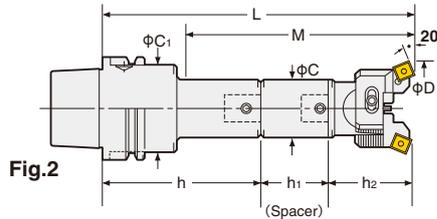
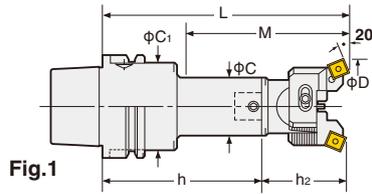
# HSK BALANCE-CUT BORING ARBOR (RAC-K)

**NIKKEN**

Rough Boring—For Through Hole and Multi Sheets

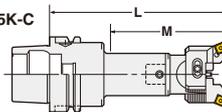


RAC-K



TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.274		Weight (kg)	Fig	
								Head Code No.	Tip No.			
HSK63A	HSK 63A-RAC25-135K	25~32	67	15	24	HSK 63A-Q12- 80	—	12-RAC 25- 55K	SC09	1.7	1	
	-165K		105			-Q12-110						1.8
	-180K		112			-Q12- 80						SP12-12-45
	-RAC32-150K	32~45	77	19	30	-Q16- 95	—	16-RAC 32- 55K	SC09	2.1	1	
	-180K		110			-Q16-125						2.3
	-195K		122			-Q16- 95						SP16-16-45
	-RAC43-150K	43~55	97	40	50	-Q20- 80	—	20-RAC 43- 70K	SC12	2.4	1	
	-180K		130			-Q20-110						2.6
	-210K		157			-Q20- 80						SP20-20-60
	-RAC53-165K	53~70	135	53	50	-Q26- 95	—	26-RAC 53- 70K	SC12	2.2	1	
	-210K		180			-Q26-140						3.0
	-225K		195			-Q26- 95						SP26-26-60
	-RAC70-180K	70~100	180	64	52.4	-Q34- 95	—	34-RAC 70- 85K	SC12	4.5	3	
	-195K		195			-Q34-110						4.9
	-240K		240			-Q34- 95						SP34-34-60
-RAC100-195K	100~130	195	83		-Q42- 95	—	42-RAC100-100K		6.5			

- ★“C” grade (Coated) inserts are supplied as standard with the head. P.274 Please refer P.116 for cutting condition.
- ★Please refer P.283 for base holder, P.102 for spacer and P.79 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. HSK63A-RAC53-165K-C
- ★For HSK40A or 50A, modular connection system is applied. Please refer P.283 for Base Holder.
- ★When L length is required longer than standard, please specify the boring depth M.



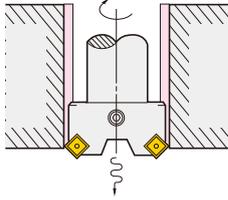
High Pressure Coolant Through Tool

# HSK BALANCE-CUT BORING ARBOR (RAC-K)

**NIKKEN**

Balance cut boring bar executes boring in 2 cartridge inserts absorbing the vibration each other. The faster the feed rate, the better swarf ejection. This is Ideal for rough and medium boring.

## Double Cutting Capability



TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Spacer Code No.	P.274		Weight (kg)	Fig
								Head Code No.	Tip No.		
HSK100A	HSK100A-RAC 25-150K	25~32	67	15	24	HSK100A-Q12- 95	—	12-RAC 25- 55K	SC09	3.9	1
	-180K		105			-Q12-125				4.1	
	-195K		112			-Q12- 95				SP12-12-45	4.0
	-RAC 32-180K	32~45	77	31	50	-Q16-125N	—	16-RAC 32- 55K	SC09	4.6	1
	-210K		110			-Q16-155				4.8	
	-225K		122			-Q16-125N				SP16-16-45	4.8
	-RAC 43-180K	43~55	97	40	60	-Q20-110	—	20-RAC 43- 70K	SC12	4.9	1
	-195K		130			-Q20-125				5.0	
	225K		142			-Q20-110				SP20-20-45	5.3
	-240K	53~70	157	53	65	-Q20-110	—	26-RAC 53- 70K	SC12	5.4	1
	-RAC 53-210K		117			-Q26-140				6.1	
	-240K		182			-Q26-170N				6.2	
	-270K	177	-Q26-140	SP26-26-60	6.8	2					
	-RAC 70-255K	70~100	202	64	80	-Q34-170	—	34-RAC 70- 85K	SC12	8.7	1
	-285K		232			-Q34-200				9.1	
	-315K		262			-Q34-170				SP34-34-60	10.1
	-RAC100-225K	100~130	225	83	83	-Q42-125	—	42-RAC100-100K	SC12	11.7	1
	-290K		290			-Q42-190				11.7	
	-315K		315			-Q42-125				SP42-42-90	15.1

- ★“C” grade (Coated) inserts are supplied as standard with the head. P.274 Please refer P.116 for cutting condition.
- ★Please refer P.283 for base holder, P.102 for spacer and P.79 for head.
- ★For centre through tool coolant type, please add “-C” at the end of Code No. e.g. HSK100A-RAC53-210K-C
- ★For HSK40A or 50A, modular connection system is applied. Please refer P.283 for Base Holder.
- ★HSK100A-RAC100-375K, 425K and 475K are also available.

## Insert tip for RAC-K

● : best ○ : good

Material	Steel		Coated Carbide M	Coated Carbide K	
	Stainless Steel	Cast Iron			
Aluminium					
Grade C					
Material					
Applicable Arbor	Dimension	Code No.	Nose R	AC630M	AC410K
RAC25K, RAC32K		SC09-○4	0.4	●	●
RAC43K-RAC100K		SC12-○8	0.8	●	●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. SC12-C8 (AC630M)

★Minimum order quantity : 10pcs.

HSK

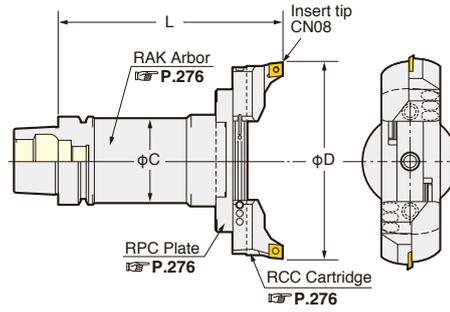
# HSK BALANCE-CUT RAC BORING ARBOR for LARGE DIA. **NIKKEN**

**For Roughing**

- With the screws for slight adjustment
- Boring Dia. :  $\phi 130 \sim \phi 580\text{mm}$



**RAC**



**Boring Dia.:  $\phi 130 \sim 580\text{mm}$**

TAPE	Code.No	D	L	C	RAK Arbor Code No.	RPC Plate No.	RCC Cartridge No.	Weight (Kg)
		MIN.~MAX.						
HSK 63A	HSK 63A-RAC130-205	130~180	205	61	HSK 63A-RAK-130A	RPC-130		6.5
	-RAC180-205	180~230						7.5
HSK100A	HSK100A-RAC130-185	130~180	185	90	HSK100A-RAK-110A	RPC-130	For Heavy Duty Boring of Iron and Cast Iron RCC-130 x2 Insert Tip CN08	9.3
	-235		235		-160A			11.8
	-285		285		-210A			14.5
	-335		335		-260A			17.2
	-385		385		-310A			19.9
	-435		435		-360A			22.6
	-485		485		-410A			25.3
	-RAC180-185		185		-RAK-110A			11.3
	-235	180~230	235		-160A	9.9		
			285		-210A	12.4		
			335		-260A	15.1		
			385		-310A	17.8		
			435		-360A	20.5		
			485		-410A	23.2		
			-RAC230-185		185	-RAK-110A		10.6
			-235		230~280	235		-160A
	285	-210A				15.8		
	335	-260A				18.5		
	385	-310A				21.2		
	435	-360A				23.9		
	485	-410A				26.6		
	-RAC280-185	185				-RAK-110A		11.2
	-235	280~330				235		-160A
			285		-210A	16.4		
			335		-260A	19.1		
			385		-310A	21.8		
			435		-360A	24.5		
			485		-410A	27.2		
-RAC330-210			330~380		RPC-330	17.8		
-RAC380-210			380~430	210	98	HSK100A-RAK330-125	-380	18.6
-RAC430-210	430~448	-430	19.5					
-RAC480-210	480~530	-480	20.4					
-RAC530-210	530~580	-530	21.2					

★The Code No. on above table are the boring arbors with **RCC-130** cartridge (Insert tip: **CN08**) the Heavy Duty Boring of Iron and Cast Iron. Please refer **P.116** for cutting condition.

★Boring arbor with cartridges & insert for Steel, Stainless Steel and Cast Iron (**E**), for Aluminum (**A**) and for Through Hole & Multi Sheets (**K**) are available. Please refer **P.276** for cartridges. e.g. **HSK100A-RAC130-185E**

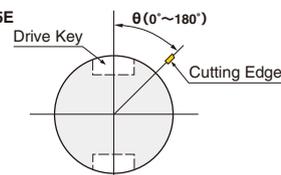
★Please refer **P.276** for **RAK** arbor and **RPC** plate.

★Arbor, plate and cartridges are delivered in separate packages.

★Please check the interference of the arbor with your M/C not to occur the interference in the tool magazine.

★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify  $\theta$ . e.g. **HSK100A-RAC180-235 (90°)**

★For centre through tool coolant type, please add“-C”at the end of Code No. e.g. **HSK100A-RAC130-185-C**



View from Cutting Edge



High Pressure Coolant Through Tool

# HSK MODULAR TYPE ARBOR



## BALANCE CUT RAK BORING ARBOR for LARGE DIA. <RAK Arbor>



RAK

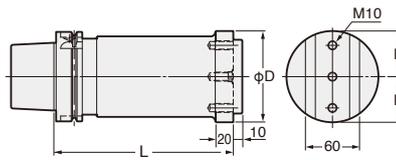


Fig.1

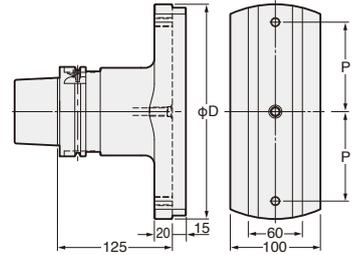


Fig.2

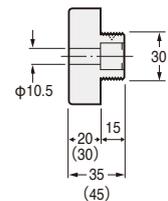
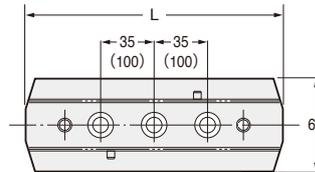
Code No.	Boring Range	L	D	P	Weight (Kg)	Applicable RPC Plate	Hex. Socket bolt	Fig.
HSK 63A-RAK-130A	130~230	130	102	35	4.3	RPC-130, 180	M1035	1
HSK100A-RAK-110A	130~330	110			6.7	RPC-130, 180, 230, 280		
-RAK-160A		160			9.2			
-RAK-210A		210			11.9			
-RAK-260A		260			14.6			
-RAK-310A		310			17.3			
-RAK-360A		360			20.0			
-RAK-410A	410	22.7						
-RAK330-125	330~580	125	240	100	11.3	RPC-330, 380, 430, 480, 530	M1045	2

★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify  $\theta$ . e.g. HSK100A-RAK-160A(90°)

★For centre through tool coolant type, please add "-C" at the end of Code No. e.g. HSK100A-RAK-160A-C 2 set of coolant nozzles are standard accessory.



## BALANCE CUT PLATE for LARGE DIA. <RPC Plate>



Dimensions in ( ) are for RPC-330, 380, 430, 480 and 530.

Code No.	Boring Range	L	Weight(Kg)	Code No.	Boring Range	L	Weight(Kg)	Code No.	Boring Range	L	Weight(Kg)
RPC-130	130~180	118	1.4	RPC-330	330~380	316	5.3	RPC-530	530~580	516	8.7
-180	180~230	166	2.0	-380	380~430	366	6.1				
-230	230~280	216	2.7	-430	430~480	416	7.0				
-280	280~330	266	3.3	-480	480~530	466	7.9				

## Accessories for Balance-Cut RAC

Steel, Stainless Steel and Cast Iron  
**RCC-130 (CN08)**



Heavy Duty Boring of Iron and Cast Iron  
**RCC-130E (CC12)**



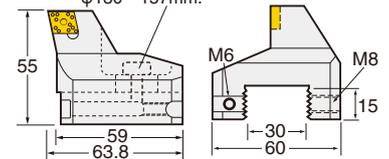
For aluminum  
**RCC-130A (AEG16)**



For Through Hole and Multi Sheets  
**RCC-130K (SC12)**



**Cartridge Lock Bolt**  
Please remove the bolt when using RAC-130 type for  $\phi 130 \sim 157$ mm.



Weight : 0.6Kg

Accessories	Insert Tip	Clamp Bolt	Adjust Screw	Adjust Wrench	Wrench for Insert	Set Screw (M8)	L-Wrench for M815 Bolt	Hex Socket Bolt	Applicable RPC Plate
Code No.	*	CSM-70	M540	M3	20S	M815	M4	M625	RPC-130, 180, 230, 280, 330, 380, 430, 480, 530

★\*: The insert tip is RCC-130:CN08 (P.270), RCC-130E:CC12 (P.268), RCC-130A:AEG16 (P.272), RCC-130K:SC12 (P.274) Please refer P.116 for cutting condition.

★There are two different types clamping system. One is eccentric system, the other is screw on system. Above parts are for screw on system.

★Code No. RCC-130 indicates a single cartridge. When ordering a pair cartridge, please appoint to us Code No. S.RCC-130.

★The Code No. of the cartridges for 2 stepped balance cut is SRCC-130-03

# HSK ZMAC ADVANCED BORING ARBOR (ZMAC-V)



## Boring for Finishing



ZMAC-V

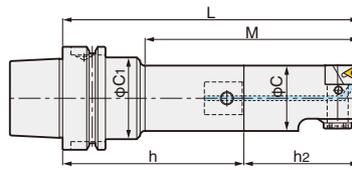


Fig.1

Only for ZMAC16-V

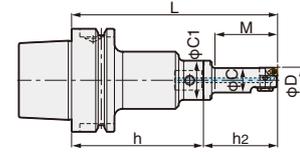


Fig.3

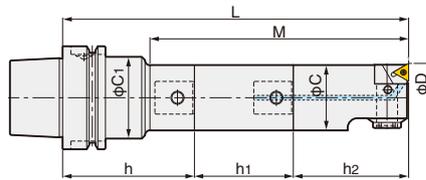


Fig.2

ZMAC100-V, 140-V

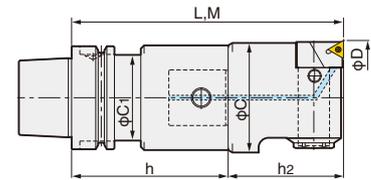


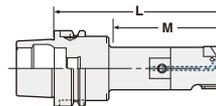
Fig.4

Code No. of the insert tip are shown.

PAT.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Extension Spacer Code No.	P.119		Weight (kg)	Fig
								Head No.	Insert No.		
HSK63A	HSK63A-ZMAC16-125V	15.8~20.2	38	15	24	HSK63A-Q12- 80	—	12-ZMAC16- 45V	3MP-C,B	1.6	3
	-135V		48					12-ZMAC16- 55V			
	-ZMAC20-120V	19.8~25.2	45	19	30	-Q 9- 80	—	9-ZMAC20- 40V	4MP-C,B	1.6	1
	-135V		67								
	-150V		75								
	-ZMAC25-120V	24.8~32.2	52	24	35	-Q12- 80	—	12-ZMAC25- 40V	6MP-C,B	1.7	2
	-150V		90								
	-165V		97								
	-ZMAC32-150V	31.8~42.2	77	31	42	-Q16- 95	—	16-ZMAC32- 55V	4MP-C,B	2.2	1
	-180V		110								
	-195V		122								
	-ZMAC42-150V	41.8~55.2	97	40	50	-Q20- 80	—	20-ZMAC42- 70V	6MP-C,B	2.7	1
	-180V		130								
	-210V		157								
	-ZMAC55-165V	54.8~70.2	135	53	50	-Q26- 95	—	26-ZMAC55- 70V	6MP-C,B	3.6	1
	-210V		180								
	-225V		195								
	-ZMAC70-165V	69.8~85.2	165	67	52.4	-Q34- 95	—	34-ZMAC70- 70V	6MP-C,B	5.1	2
	-180V		180								
	-225V		225								
-ZMAC85-195V	84.8~100.2	195	83	52.4	-Q42- 95	—	42-ZMAC85-100V	6MP-C,B	6.5	4	

- ★MIN. dial readout : ZMAC25-V & smaller is 0.02mm on diameter. ZMAC32-V and larger are 0.01mm on diameter.
- ★"C" grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). P.119 Please refer P.117 for cutting condition. We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.
- ★Please refer P.283 for base holder, P.102 for spacer and P.87, P.88 for head.
- ★Centre Through Tool Coolant function is available as standard.
- ★For HSK40A or 50A, modular connection system is applied. Please refer P.283 for Base Holder.
- ★When L length is required longer than standard, please specify boring depth M.



### Boring Arbor with Extension Spacer

### ZMAC-V for Multi-Stage Boring Bar P.107

Please contact us for the special boring bar.



High Pressure Coolant Through Tool

# HSK ZMAC ADVANCED BORING ARBOR (ZMAC-V)



■ With ZMAC $\alpha$ -V Boring Head  
Please add "AA" at the end of Code No.  
e.g. HSK63A-ZMAC42-150AAV



ZMAC $\alpha$ -V

Diameter can be adjusted easily and quickly by new handle with wrench.



Unlock

Adjust diameter

Lock

Code No. of the insert tip are shown.

PAT.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Extension Spacer Code No.	P.119		Weight (kg)	Fig	
								Head No.	Insert No.			
HSK100A	HSK100A-ZMAC 16-140V	15.8~20.2	38	15	24	HSK100A-Q12- 95	—	12-ZMAC 16- 45V	3MP-C,B	3.9	3	
	-150V		48					12-ZMAC 16- 55V				
	-ZMAC 20-150V	19.8~25.2	45	19	40	-Q 9-110	—	9-ZMAC 20- 40V		4.0	1	
	-165V		67							-Q 9-125N		4.0
	-180V		75								SP 9- 9-30	4.1
	-ZMAC 25-135V	24.8~32.2	52	24	44	-Q12- 95	—	12-ZMAC 25- 40V		4.0	1	
	-165V		90							-Q12-125		4.0
	-180V		97								SP12-12-45	4.1
	-ZMAC 32-180V	31.8~42.2	77	31	50	-Q16-125N	—	16-ZMAC 32- 55V		4.7	1	
	-210V		110							-Q16-155		4.8
	-225V		122								SP16-16-45	4.9
	-ZMAC 42-180V	41.8~55.2	97	40	60	-Q20-110	—	20-ZMAC 42- 70V		5.2	1	
	-195V		130							-Q20-125		5.2
	-225V		142								SP20-20-45	5.6
	-240V		157								SP20-20-60	5.7
	-ZMAC 55-210V		54.8~70.2							117	53	65
	-240V	182		-Q26-170N	6.8							
	-270V	177			SP26-26-60	8.3	2					
	-ZMAC 70-240V	69.8~85.2		187	67	80	-Q34-170	—		34-ZMAC 70- 70V		
	-270V		217	-Q34-200							9.8	
	-300V		247								SP34-34-60	10.7
	-ZMAC 85-225V	84.8~100.2	187	83	—	-Q42-125	—	42-ZMAC 85-100V		11.7	1	
	-290V		252							-Q42-190		14.2
	-315V		277								SP42-42-90	15.2
	-ZMAC100-225V	99.5~140.5	225	95	98	-Q42-125	—	42-ZMAC100-100V		11.6	4	
	-290V		290							-Q42-190		14.3
	-325V		325									-Q42-225A
	-375V		375							-Q42-275A		
	-425V		425									-Q42-325A
	-ZMAC140-225V		139.5~180.5							225		
-290V	290	-Q42-190		15.7								
-325V	325			-Q42-225A	18.4							
-375V	375	-Q42-275A			21.1							
-425V	425			-Q42-325A	23.8							

★MIN. dial readout : ZMAC25-V & smaller is 0.02mm on diameter. ZMAC32-V and larger are 0.01mm on diameter.  
★When L length is required longer than standard, please specify boring depth M. ★Centre Through Tool Coolant function is available as standard.  
★"C" grade (Coated) insert for Steel, Stainless&Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). P.119  
We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron. Please refer P.117 for cutting condition.  
★Please refer P.283 for base holder, P.102 for spacer and P.87, P.88 for head.

HSK

# HSK ZMAC ADVANCED BORING ARBOR (ZMAC-VR)



## Boring for Semi-Finishing—ZMAC-VR



ZMAC-VR

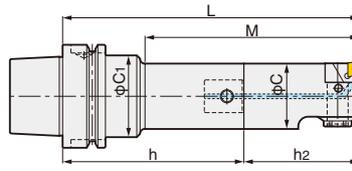


Fig.1

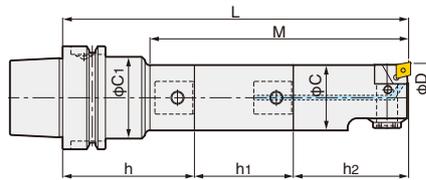


Fig.2

ZMAC100-VR, 140-VR

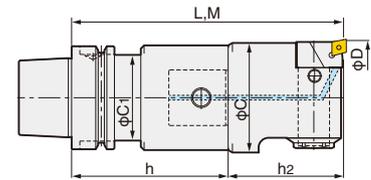


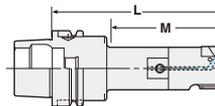
Fig.3

Code No. of the insert tip  are shown.

PAT.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Extension Spacer Code No.	P.280		Weight (kg)	Fig	
								Head No.	Insert No.			
HSK63A	HSK63A-ZMAC32R-150V	31.8~42.2	77	31	42	HSK63A-Q16- 95	—	16-ZMAC32R- 55V	CC06-C	2.2	1	
	-180V		110			-Q16-125						2.4
	-195V		122			-Q16- 95						SP16-16-45
	-ZMAC42R-150V	41.8~55.2	97	40	50	-Q20- 80	—	20-ZMAC42R- 70V	CC06-C	2.7	1	
	-180V		130			-Q20-110						2.9
	-210V		157			-Q20- 80						SP20-20-60
	-ZMAC55R-165V	54.8~70.2	135	53	50	-Q26- 95	—	26-ZMAC55R- 70V	CC06-C	3.6	1	
	-210V		180			-Q26-140						4.3
	-225V		195			-Q26- 95						SP26-26-60
	-ZMAC70R-165V	69.8~85.2	165	67	52.4	-Q34- 95	—	34-ZMAC70R- 70V	CC08-C	5.1	4	
	-180V		180			-Q34-110						5.5
	-225V		225			-Q34- 95						SP34-34-60
-ZMAC85R-195V	84.8~100.2		195			83						52.4

- ★MIN. dial readout : ZMAC25-VR & smaller is 0.02mm on diameter. ZMAC32-VR and larger are 0.01mm on diameter.
- ★"C" grade (Coated) insert for Steel, Stainless & Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life).  Please refer  P.117 for cutting condition. We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron.
- ★Please refer  P.283 for base holder,  P.102 for spacer and  P.87, P.88 for head.
- ★Centre Through Tool Coolant function is available as standard.
- ★For HSK40A or 50A, modular connection system is applied. Please refer  P.283 for Base Holder.
- ★When L length is required longer than standard, please specify boring depth M.



High Pressure Coolant Through Tool

### Boring Arbor with Extension Spacer



### ZMAC-V for Multi-Stage Boring Bar

Please contact us for the special boring bar.



# HSK ZMAC ADVANCED BORING ARBOR (ZMAC-VR)



## Insert Tip for ZMAC-VR

●:best ○:good

Material	Steel		●	○
	Stainless Steel		●	○
	Cast Iron		○	●
Material	Aluminium			
	High Speed finish for Cast Iron			
	Hardened Steel			
	High Speed finish for Aluminium			
			Coated Carbide M	Coated Carbide K
			Grade C	
			Material	
			Nose R	
			AC630M	AC410K

Applicable Arbor	Dimension	Code No.	Nose R	AC630M	AC410K
ZMAC32-VR, ZMAC42-VR, ZMAC55-VR		CC06-○4	0.4	●	●
		CC06-○8	0.8	●	●
		CC08-○4	0.4	●	●
ZMAC70-VR, ZMAC85-VR		CC08-○4	0.4	●	●
		CC08-○8	0.8	●	●
		CC12-○4	0.4	●	●
ZMAC100-VR, ZMAC140-VR		CC12-○4	0.4	●	●
		CC12-○8	0.8	●	●

Please add the grade indication into ○, and add the insert tip material indication at the end off the Code No. e.g. CC12-C8(AC630M)

There is the CBN insert tip which both corners can be used. Please refer P.119 for ISO code of the insert tip.



Code No. of the insert tip are shown.

TAPER	Code No.	Boring Range D	Boring Depth M	C	C <sub>1</sub>	Shank Code No.	Extension Spacer Code No.	P.280		Weight (kg)	Fig
								Head No.	Insert No.		
HSK100A	HSK100A-ZMAC 32R-180V	31.8~42.2	77	31	50	HSK100A-Q16-125N	—	16-ZMAC 32R- 55V	CC06-C	4.7	1
	-210V		110			-Q16-155				4.8	
	-225V		122			-Q16-125N				4.9	
	-ZMAC 42R-180V	41.8~55.2	97	40	60	-Q20-110	—	20-ZMAC 42R- 70V	CC06-C	5.2	1
	-195V		130			-Q20-125				5.2	
	-225V		142			-Q20-110				5.6	
	-240V		157			-Q20-110				5.7	
	-ZMAC 55R-210V	54.8~70.2	117	53	65	-Q26-140	—	26-ZMAC 55R- 70V	CC06-C	6.7	1
	-240V		182			-Q26-170N				6.8	
	-270V		177			-Q26-140				8.3	
	-ZMAC 70R-240V	69.8~85.2	187	67	80	-Q34-170	—	34-ZMAC 70R- 70V	CC08-C	9.2	1
	-270V		217			-Q34-200				9.8	
	-300V		247			-Q34-170				10.7	
	-ZMAC 85R-225V	84.8~100.2	187	83	—	-Q42-125	—	42-ZMAC 85R-100V	CC08-C	11.7	1
	-290V		252			-Q42-190				14.2	
	-315V		277			-Q42-125				15.2	
	-ZMAC100R-225V	99.5~140.5	225	95	83	-Q42-125	—	42-ZMAC100R-100V	CC12-C	11.6	4
	-290V		290			-Q42-190				14.3	
	-325V		325			-Q42-225A				17.0	
	-375V		375			-Q42-275A				19.7	
	-425V		425			-Q42-325A				22.4	
	-ZMAC140R-225V		139.5~180.5			225				135	
	-290V	290		-Q42-190	15.7						
	-325V	325		-Q42-225A	18.4						
-375V	375	-Q42-275A		21.1							
-425V	425	-Q42-325A		23.8							

★MIN. dial readout : ZMAC25-VR & smaller is 0.02mm on diameter. ZMAC32-VR and larger are 0.01mm on diameter.  
 ★When L length is required longer than standard, please specify boring depth M. ★Centre Through Tool Coolant function is available as standard.  
 ★"C" grade (Coated) Insert for Steel, Stainless&Cast Iron is supplied as Standard with the head (Smooth boring & Long tool-life). P.280  
 We would recommend "B" grade (CBN) insert for Hardened Steel & High Speed boring of Cast Iron. Please refer P.117 for cutting condition.  
 ★Please refer P.283 for base holder, P.102 for spacer and P.87, P.88 for head.

# HSK BALANCE-CUT BAC ADVANCED BORING ARBOR for LARGE DIA.

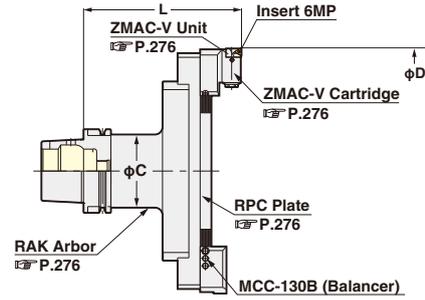


BAC-V

For Finishing

■ MIN. dial readout on dia. : 0.01mm

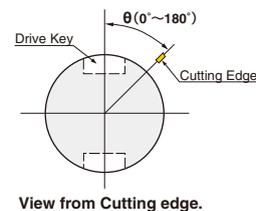
■ Boring Dia :  $\phi 130 \sim \phi 595\text{mm}$



Boring Dia:  $\phi 130 \sim 595\text{mm}$

TAPER	Code.No	D		L	C	RAK Arbor Code No.	PPC Plante No	Cartridge (Balancer)	Weight (Kg)
		MIN.	MAX.						
HSK 63A	HSK 63A-BAC130-205V	130	195	205	61	HSK 63A-RAK-130A	RPC-130		6.5
	-BAC180-205V	180	245						7.5
HSK100A	HSK100A-BAC130-185V	130	195	185	90	HSK100A-RAK-110A	RPC-130	MCCZ-130V (MCC-130B) Insert 6MP	9.5
	-235V			235		-160A			12.0
	-285V			285		-210A			14.7
	-335V			335		-260A			17.3
	-385V			385		-310A			20.1
	-435V			435		-360A			22.8
	-485V			485		-410A			25.5
	-BAC180-185V			185		-RAK-110A			10.1
	-235V	235	-160A	12.6					
	-285V	285	-210A	15.3					
	-335V	335	-260A	18.0					
	-385V	385	-310A	20.7					
	-435V	435	-360A	23.3					
	-485V	485	-410A	26.1					
	-BAC230-185V	185	-RAK-110A	10.8					
	-235V	235	-160A	13.3					
	-285V	285	-210A	16.0					
	-335V	335	-260A	18.7					
	-385V	385	-310A	21.3					
	-435V	435	-360A	24.1					
	-485V	485	-410A	26.8					
	-BAC280-185V	185	-RAK-110A	11.4					
	-235V	235	-160A	13.9					
	-285V	285	-210A	16.6					
-335V	335	-260A	19.3						
-385V	385	-310A	22.0						
-435V	435	-360A	24.7						
-485V	485	-410A	27.4						
-BAC330-210V	330	395	210	98	HSK100A-RAK330-125	RPC-330	18.0		
-BAC380-210V	380	445				-380	18.8		
-BAC430-210V	430	495				-430	19.7		
-BAC480-210V	480	545				-480	20.6		
-BAC530-210V	530	595				-530	21.4		

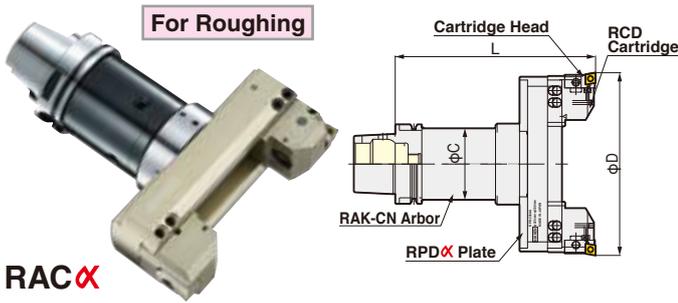
- ★ "C" grade (Coated) Inserts are supplied as standard. P.119 Please refer P.117 for cutting condition.
- ★ Unit "M5HZ-55V" is provided as standard, please refer P.276 for Arbor (RAK) and Plate (RPC).
- ★ Arbor, Plate and Cartridge are delivered in separate packages.
- ★ When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★ The location of cutting edge is same as drive key in standard.
- ★ The different location is available, please specify  $\theta$  in Code No. e.g. HSK100A-BAC180-235V (90°)
- ★ For centre through tool coolant type, please add "-C" at the end of Code No. e.g. HSK100A-BAC130-185V-C



High Pressure Coolant Through Tool

# BALANCE-CUT BORING ARBOR for LARGE DIA. ULTRA-LIGHT WEGHT **NIKKEN**

## RAC $\alpha$ BORING ARBOR



**RAC  $\alpha$**

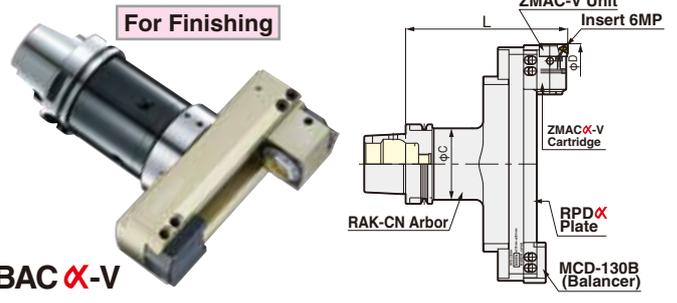
High Pressure Coolant Through Tool



TAPE	Code.No	D		L	Over Turning MIN.~MAX.
		MIN.~MAX.			
HSK63A	HSK 63A-RAC130-225AA	130~180		225	10~30
	-RAC180-225AA	180~230			30~80
HSK100A	HSK100A-RAC130-205AA			205	10~30
	-255AA			255	
	-305AA			305	
	-355AA	130~180		355	
	-405AA			405	
	-455AA			455	
	-505AA			505	
	-RAC180-205AA			205	
	-255AA			255	
	-305AA			305	
	-355AA	180~230		355	30~80
	-405AA			405	
	-455AA			455	
	-505AA			505	
	-RAC230-205AA			205	
	-255AA			255	
	-305AA			305	
	-355AA	230~280		355	
	-405AA			405	
	-455AA			455	
-505AA			505		
-RAC280-205AA			205	130~180	
-255AA			255		
-305AA			305		
-355AA	280~330		355		
-405AA			405		
-455AA			455		
-505AA			505		
-RAC330-220AA*	330~380				180~230
-RAC380-220AA*	380~430				230~280
-RAC430-220AA*	430~480		220 (230*)		280~330
-RAC480-220AA*	480~530			330~380	
-RAC530-220AA*	530~580			380~430	

- ★The Code No. on above table are the boring arbors with RCD-130 cartridge (Insert tip: CN08) the Heavy Duty Boring of Iron and Cast Iron. Please refer P.116 for cutting condition.
- ★Boring arbor with cartridges & insert for Steel, Stainless Steel and Cast Iron (E), for Aluminum (A) and for Through Hole & Multi Sheets (K) are available. Please refer P.96 for cartridges. e.g. HSK100A-RAC130-205AA-E
- ★Please refer P.96 for RAK arbor and RPD plate.
- ★Arbor, plate and cartridges are delivered in separate packages.
- ★Please check the interference of the arbor with your M/C not to occur the interference in the tool magazine.
- ★The location of the cutting edge is same as the drive key for standard. The different location is available, please specify  $\theta$ . e.g. HSK100A-RAC180-255AA (90°)

## BAC $\alpha$ ADVANCED BORING ARBOR



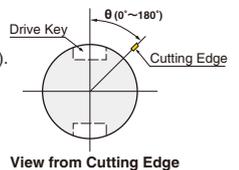
**BAC  $\alpha$ -V**

High Pressure Coolant Through Tool



TAPE	Code.No	D		L	Over Turning MIN.~MAX.
		MIN.~MAX.			
HSK63A	HSK 63A-BAC130-225AAV	130~195		225	10~30
	-BAC180-225AAV	180~245			30~80
HSK100A	HSK100A-BAC130-205AAV			205	10~30
	-255AAV			255	
	-305AAV			305	
	-355AAV	130~195		355	
	-405AAV			405	
	-455AAV			455	
	-505AAV			505	
	-BAC180-205AAV			205	
	-255AAV			255	
	-305AAV			305	
	-355AAV	180~245		355	30~80
	-405AAV			405	
	-455AAV			455	
	-505AAV			505	
	-BAC230-205AAV			205	
	-255AAV			255	
	-305AAV			305	
	-355AAV	230~295		355	
	-405AAV			405	
	-455AAV			455	
-505AAV			505		
-BAC280-205AAV			205	130~180	
-255AAV			255		
-305AAV			305		
-355AAV	280~345		355		
-405AAV			405		
-455AAV			455		
-505AAV			505		
-BAC330-220AAV*	330~395				180~230
-BAC380-220AAV*	380~445				230~280
-BAC430-220AAV*	430~495		220 (230*)		280~330
-BAC480-220AAV*	480~545			330~380	
-BAC530-220AAV*	530~595			380~430	

- ★"C" grade (Coated) Inserts are supplied as standard. P.119 Please refer P.116 for cutting condition.
- ★Unit "M10HZ-75V" is provided as semi-standard, please refer "M10HZ-85V" P.98 for Arbor (RAK) and Plate (RPD).
- ★Arbor, Plate and Cartridge are delivered in separate packages.
- ★When ordering, please let us know machine maker and model no. to avoid the interference with tool magazine of ATC.
- ★The location of cutting edge is same as drive key in standard. The different location is available, please specify  $\theta$  in Code No. e.g. HSK100A-BAC180-255AAV (90°)



HSK

# HSK BASE HOLDER for MODULAR TYPE

**NIKKEN**



Q

Fig.1

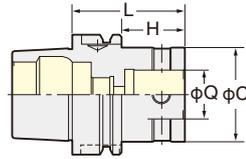


Fig.2

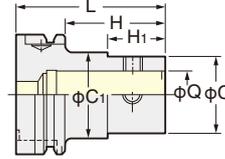
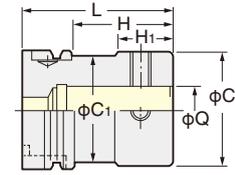
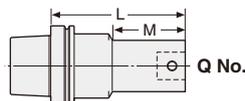


Fig.3



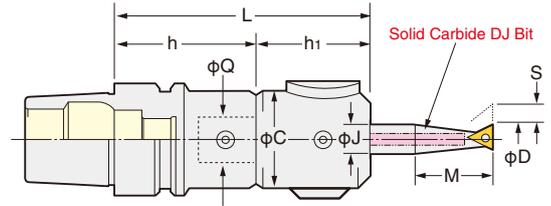
TAPER	Code No.	Q	L	C	C1	H	H1	Coupling Bolt No.	Fig.	Weight(kg)	
<b>HSK 40A</b>	<b>HSK 40A-Q26- 75</b>	26	75	50	33.6	55	40	B26N	3	0.8	
<b>HSK 50A</b>	<b>HSK 50A-Q26- 75</b>	26	75	50	41.6	48	33	B26N	3	1.1	
<b>HSK 63A</b>	<b>HSK 63A-Q 9- 80</b>	9	80	19	30	49	5	B19	2	0.7	
	<b>- 95N</b>		95			64	27			0.7	
	<b>-Q12- 80</b>	12	80	24	35	49	12	B12	2	0.8	
	<b>-110</b>		110			79	50			0.8	
	<b>-Q16- 95</b>	16	95	31	42	64	22	B16	2	1.0	
	<b>-125</b>		125			94	55			1.1	
	<b>-Q20- 80</b>	20	80	40	50	53	27	B20	2	1.4	
	<b>-110</b>		110			83	60			1.3	
	<b>-Q26- 60</b>	26	60	50	—	33	—	B26N	1	1.0	
	<b>- 95</b>		95			68				—	1.5
	<b>-140</b>		140			113				—	2.3
	<b>-Q34- 95</b>	34	95	64	52.4	68	53	B34	3	2.0	
	<b>-110</b>		110			83	68			2.4	
	<b>-Q42- 95</b>	42	95	83	52.4	68	35	B42	3	2.5	
<b>HSK100A</b>	<b>HSK100A-Q 9-110</b>	9	110	19	40	76	5	B19	2	2.3	
	<b>-125N</b>		125			91	27			2.3	
	<b>-Q12- 95</b>	12	95	24	44	61	12	B12	2	2.3	
	<b>-125</b>		125			91	50			2.3	
	<b>-Q16-125N</b>	16	125	31	50	91	22	B16	2	2.8	
	<b>-155</b>		155			121	55			2.9	
	<b>-Q20-110</b>	20	110	40	60	76	27	B20	2	3.0	
	<b>-125</b>		125			91	60			2.9	
	<b>-Q26- 65</b>	26	65	50	65	33	—	B26N	1	2.4	
	<b>-140</b>		140			106	45			2	4.5
	<b>-170N</b>		170			136	110				4.6
	<b>-Q34-140</b>	34	140	64	80	106	—	B34	1	4.4	
	<b>-170</b>		170			138	117			2	5.3
	<b>-200</b>		200			168	147				5.9
	<b>-Q42-125</b>	42	125	83	—	95	—	B42	1	5.3	
	<b>-190</b>		190			160				7.9	
	<b>-Q42-225A</b>	42	225	83	—	—	—	B42	1	11.7	
	<b>-275A</b>		275							14.4	
<b>-325A</b>	325		17.1								
<b>-375A</b>	375		19.8								

- ★φC of Q26 base holder has been increased from 45mm to 50mm due to improvement of its rigidity.
- ★All base holders have a centre through-tool coolant hole.
- ★The Coupling screw & wrench are supplied as standard.
- ★When L length is required longer than standard, please specify the boring depth M.



Q No.

# HSK DJ BORING BAR



DJ

High Pressure Coolant Through Tool is available.

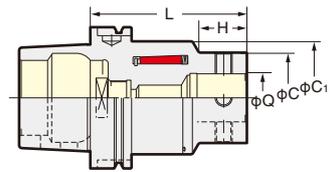


TAPER	Code No.	Boring Range	Boring Depth	L	C	Bit Hole Size	Shank Code No.	Head Code No.	Bit Stroke	DJ Bit Code No.
		D	M			J				
HSK 63A	HSK 63A-DJ3-100A	3~28	14~ 80	100	50	10	HSK 63A-Q26- 60	Q26-DJ3-40A	5.2	J10
	-135A			135						
	-DJ8-104AN	3~50	14~130	104	59	16	HSK 63A-Q26- 60	-DJ8-44AN	6.0	J16
	-139AN			139						
HSK100A	HSK100A-DJ3-105A	3~28	14~ 80	105	50	10	HSK100A-Q26- 65	Q26-DJ3-40A	5.2	J10
	-210A			210						
	-DJ8-109AN	3~50	14~130	109	59	16	HSK100A-Q26- 65	-DJ8-44AN	6.0	J16
	-214AN			214						

- ★MIN. dial readout on dia.: 0.01mm, Sub scale: 0.005mm, 0.8mm/rev.
- ★Each boxed set of DJ3 and DJ8 Boring Bars include 4 pcs of DJ Boring Bits as standard.
- Bits included to HSK63A-DJ8-104A : J16-8-40, J16-18-80, J16-28-85, J16-38-85
- Bits included to HSK63A-DJ8-104AN : J16-8-40, J16-18-60, J16-28-65, J16-38-65
- ★DJ Boring Bar without Boring Bits is also available. Please add"-BD" at the end of Code No. e.g. HSK63A-DJ3-100A-BD
- ★Shank and DJ Head (including Boring Bits) are delivered in separate packages.
- ★Please refer P.100 for Boring Bits. Please refer P.118 for cutting condition.

## MAJOR DREAM HOLDER

# HSK BASE HOLDER for MODULAR TYPE

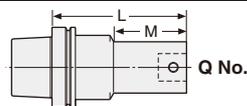


MDQ

Photo shows with spacer and ZMAC $\alpha$ -V head.

TAPER	Code No.	Q	L	C	C1	H	Weight(kg)	ZMAC-V Boring Range
HSK 50A	HSK 50A-MDQ26- 95	26	95	50	50	95.0	1.2	16~70
HSK 63A	HSK 63A-MDQ26-100	26	100	50	52.4	30.0	1.5	16~70
HSK100A	HSK100A-MDQ26-135	26	135	50	80	18.0	5.2	16~70
	-MDQ34-140	34	140	64		27.5	5.3	16~85
	-MDQ42-150	42	150	83		121	6.1	16~180

- ★All base holders have a centre through coolant hole.
- ★The coupling bolt and wrench are supplied as standard.
- ★When L length is required longer than standard, please specify the boring depth M and Q No.



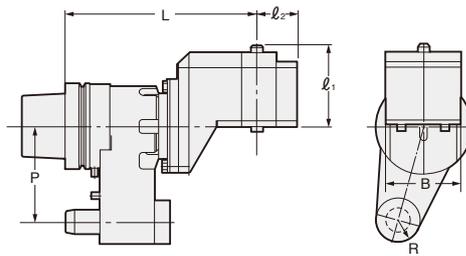
# QUICK TYPE ANGULAR HEAD (Free Positioning in 360°)



## Quick type Off-Set Angular Head



AFT



Explanation of the Code No.

HSK63A - AF T 30 - 210

- Length from Gauge Line
- Taper No. of Adapter
- Quick type
- Off-Set type Angular Head
- Shank

MAX2,000min<sup>-1</sup>

TAPER	Code No.	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	B	R	Adapter	Weight (kg)
HSK 63A	HSK 63A-AFT30-210	HSK 63A	210	65	85	35	70	17.5	AHK30	7.5
HSK100A	HSK100A-AFT35-237	HSK100A	237	110	85	45	84	25	AHK35	16.0

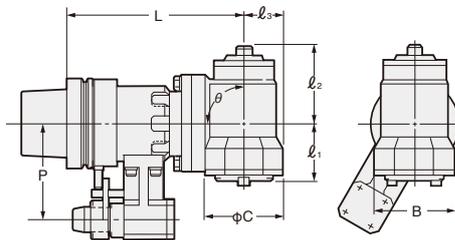
★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling) ★All types are available with Oil Hole System. ★Test bar is attached as standard.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.  
 ★When M/C spindle rotates CW, the cutter rotates CW.



## Quick type 90° Angular Head



AHT



Explanation of the Code No.

HSK63A - AH T 30 - 165 - 90

- Angle
- Length from Gauge Line
- Taper No. of Adapter
- Quick type
- Symbol of Angular Head
- Shank

MAX2,000min<sup>-1</sup>

TAPER	Code No.	L	-θ	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	C	B	θ	Adapter	Weight (kg)
HSK 63A	HSK 63A-AHT30-165 -90	65	-90	HSK 63A	165	58	61	37	86	80	90	90	AHK30	6.5
	HSK 63A			250	10.5									
HSK100A	HSK100A-AHT35-217 -90	110	-90	HSK100A	217	65	88	45	100	90	90	90	AHK35	17.0
	HSK100A			300	22.0									

★Taper Connection System is applied to Stopper Block. (Different from the another FA tooling) ★All types are available with Oil Hole System. ★Test bar is attached as standard.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.  
 ★Models with \* mark : Detailed discussion is needed. ★When M/C spindle rotates CCW, the cutter rotates CW.

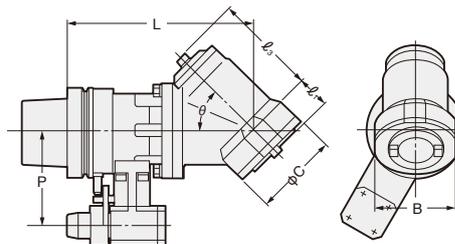


## Quick type 30°, 45°, 60° Angular Head



AHT

Photo shows 30° type.



Explanation of the Code No.

HSK63A - AH T 30 - 220 - 30

- Angle
- Length from Gauge Line
- Taper No. of Adapter
- Quick type
- Symbol of Angular Head
- Shank

MAX2,000min<sup>-1</sup>

TAPER	Code No.	L	-θ	Shank	L	P	l <sub>1</sub>	l <sub>2</sub>	C	B	θ	Adapter	Weight (kg)
HSK 63A	HSK 63A-AHT30-220 -30	65	-30	HSK 63A	220	65	1.5	122	86	80	30	AHK30	6.5
	-185 -45				185		35	88			45		6.5
	-175 -60				175		35	88			60		6.5
	-250* -30	HSK 63A	250	65	35	88	86	80	30	AHK30	10.5		
	-45								45		10.5		
	-60								60		10.5		
HSK 100A	HSK100A-AHT35-265 -30	110	-30	HSK100A	265	110	0	140	100	90	30	AHK35	17.0
	-232 -45				232		26	110			45		17.0
	-217 -60				217		40	105			60		17.0
	-300* -30	HSK100A	300	110	26	110	100	90	30	AHK35	22.0		
	-45								45		22.0		
	-60								60		22.0		

★Taper Connection System is applied to Stopper Block. (Different from the another FA tooling) ★All types are available with Oil Hole System. ★Test bar is attached as standard.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.  
 ★Models with \* mark : Detailed discussion is needed. ★When M/C spindle rotates CCW, the cutter rotates CW.



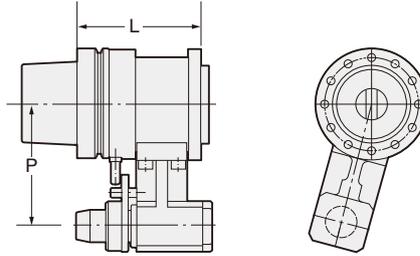
# MODULAR TYPE ANGULAR HEAD



## Modular type Angular Head AHM



AHM



MAX6,000min<sup>-1</sup>

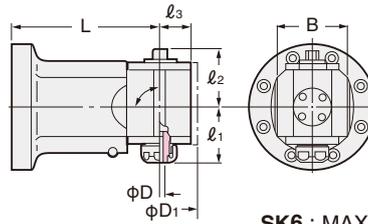
TAPER	Code No.	-L	L	P	Weight (kg)	Suitable Modular Head
HSK 63A	HSK 63A-AHM-115		100	65	4.5	
HSK100A	HSK100A-AHM-127		120	110	11.5	

★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling) ★All types are available with Oil Hole System.  
 ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.

## 90°type Modular Head AHM90



AHM



Explanation of the Code No.

AHM90 - SK6 - 80

- Length from Gauge Line
- Symbol of Slim Chuck
- Symbol of Modular Head 90°type

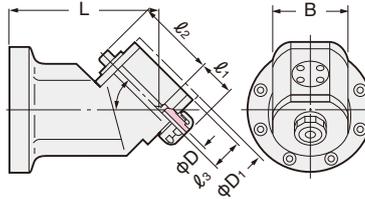
SK6 : MAX6,000min<sup>-1</sup> SK10,16 : MAX4,000min<sup>-1</sup>

Code No.	-L	D	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	D <sub>1</sub>	B	Weight (kg)	SK Collet
AHM90-SK 6-80, 120, 150*		0.7~6	42	35	22	50	48	3.0, 4.0, 4.5	SK 6
-SK10-80, 120, 150*		1.75~10	63	57	32	64	60	3.5, 4.5, 5.0	SK 10
-SK16-80, 120, 150*		2.75~16	66	58	35	74	70	4.2, 5.2, 5.7	SK 16

★★Mark is for light machining. ★For SK Collet, please refer P.253. ★When M/C spindle rotates CCW, the cutter rotates CW. ★Test bar is attached as standard.



AHM



Explanation of the Code No.

AHM45 - SK6 - 120

- Length from Gauge Line
- Symbol of Slim Chuck
- Symbol of Modular Head 45°type

SK6 : MAX6,000min<sup>-1</sup> SK10,16 : MAX4,000min<sup>-1</sup>

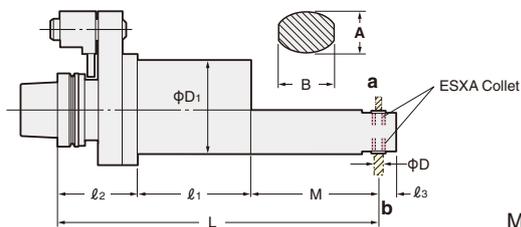
Code No.	-L	D	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	D <sub>1</sub>	B	Weight (kg)	SK Collet
AHM45-SK 6-120, 150*		0.7~6	27	67	22	50	52	3.0, 4.0, 4.5	SK 6
-SK10-120, 150*		1.75~10	39	80	30	64	60	3.5, 4.5, 5.0	SK 10
-SK16-120, 150*		2.75~16	38	90	35	74	70	4.2, 5.2, 5.7	SK 16

★★Mark is for light machining. ★For SK Collet, please refer P.253. ★Angle 30°, 60° are also available as an option. ★When M/C spindle rotates CCW, the cutter rotates CW. ★Test bar is attached as standard.

## Angular head for deep hole AHPL



AHPL



MAX3,500min<sup>-1</sup>

TAPER	Code No.	-L	D	D <sub>1</sub>	A	B	L	M	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	min <sup>-1</sup>	Weight (kg)	Applicable Collet
HSK 63A	HSK 63A-AHPL4-194		1.0~4.0	80	25	31	194	32	67.5	94.5	14.5	6,450	5.0	ESXA4
	-218	218					56	5.5						
	-242	242					80	6.0						
	-266	266					104	7.5						
	-AHPL6-203	202.5					46.5	5.0						
HSK 100A	-231	230.5	74.5	61.5	94.5	15	8,000	6.0	ESXA6					
	-259	258.5	102.5	8.0										
	HSK100A-AHPL6-206	205.5	46.5	7.0										
	-234	233.5	74.5	61.5	97.5	15	8,000	8.0						
	-262	261.5	102.5	10.0										
	-AHPL8-255	254.5	73	9.0										
	-287	286.5	105	78	103.5	20	6,000	10.0		ESXA8				
-307	306.5	125	11.0											

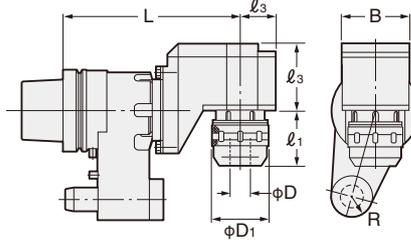
★ESXA Collet is supplied as an option. ★Different shape is possible, please contact with us for more detail.  
 ★When M/C spindle rotates cw, the cutter at a rotates CW and the cutter at b rotates CCW.

# HSK SOLID TYPE ANGULAR HEAD (Free Positioning in 360°) **NIKKEN**

## Solid OFF SET type Angular head



**AFK·AFC**



Explanation of the Code No.

**HSK63A** - **AF** **K** **16** - **210**

- Length from Gauge Line
- MAX. Chucking Dia.
- Kind of chuck  
K : Slim Chuck  
C : Milling Chuck
- OFF SET type  
Symbol of Angular Head
- Shank

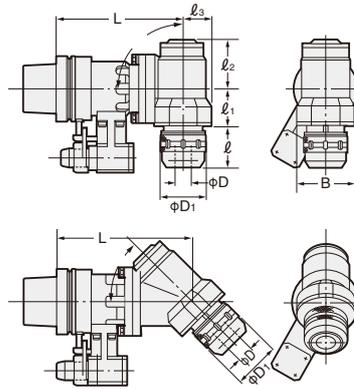
TAPER	Code No.	-L	D	D <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	B	R	min <sup>-1</sup>	Weight (kg)	Collet
HSK 63A	HSK 63A-AFK16-210	2.75~16	2.75~16	40	50	85	35	70	17.5	2,000	8.5	<b>SK 16</b>
	-AFC20-210	2~20	2~20	52	56						8.7	<b>KM 20</b>
HSK100A	HSK100A-AFC20-237	2~20	2~20	52	58	85	45	84	25	2,000	17.0	<b>KM 20</b>
	-AFC32-237	3~32	3~32	69	65						17.2	<b>KM 32</b>

- ★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling)
- ★All types are available with Oil Hole System.
- ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.
- ★For **(SK16)**, please refer **P.253**. For **(KM20)** and **(KM32)**, please refer **P.248**.
- ★Please advise name of M/C builder and model No. etc.
- ★Test bar is attached as standard.
- ★When M/C spindle rotates CW, the cutter rotates CW.

## Solid - 90°, 45° type Angular head



**AHK·AHC**



Explanation of the Code No.

**HSK63A** - **AH** **K** **10** - **195** - **90**

- angle 30°, 45°, 60°, 90°
- Length from Gauge Line
- MAX chucking Dia
- Kind of chuck  
K : Slim Chuck  
C : Milling Chuck
- Symbol of Angular Head
- Shank

TAPER	Code No.	-L	D	D <sub>1</sub>	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	B	min <sup>-1</sup>	Weight (kg)	Collet
HSK 63A	HSK 63A-AHK10-195 -90	1.75~10	1.75~10	27.5	18	45	57	32	60	4,000	8.0	<b>SK 10</b>
	-235* -90										9.0	
	-AHK16-195 -90	2.75~16	2.75~16	40	25	41	58	35	70	2,000	8.7	<b>SK 16</b>
	-235* -90										9.7	
	-AHC20-165 -90	2~20	2~20	52	57	58	61	37	80	7.1	<b>KM 20</b>	
-250* -90	11.1											
HSK100A	HSK100A-AHK10-207 -90	1.75~10	1.75~10	27.5	18	45	57	32	60	4,000	15.0	<b>SK 10</b>
	-247* -90										16.0	
	-AHK16-207 -90	2.75~16	2.75~16	40	25	41	58	35	70	2,000	15.7	<b>SK 16</b>
	-247* -90										16.7	
	-AHK25-217 -90	7.5~25.4	7.5~25.4	55	57	60	82	45	90	17.2	<b>SK 25</b>	
	-300* -90									22.2		
	-AHC32-217 -90	3~32	3~32	69	69	69	82	45	90	17.5	<b>KM 32</b>	
-300* -90	22.5											

- ★Taper Connection System is applied to Stopper Block. (Different from the another FA Tooling)
- ★All types are available with Oil Hole System.
- ★Stopper block is available as an option. When ordering, please inform your M/C maker and Model as well as your M/C spindle flange dimension.
- ★For **(SK10)**, **(SK16)**, **(SK25)**, please refer **P.253**. For **(KM20)**, **(KM25)** and **(KM32)**, please refer **P.248**.
- ★Angle 30°, 45°, 60° are also available as an option.
- ★When M/C spindle rotates CCW, the cutter rotates CW.
- ★Please contact with us for the dimension of 30°, 45°, 60° type.
- ★Test bar is attached as standard.
- ★\* Mark is for light cutting.

# HSK HIGH SPEED MILLING CHUCK (INCH)



**NIKKEN**



**C-G**  
Centre Through  
MAX. 7MPa  
Photo shows High Speed Milling Chuck

## ANNIVERSARY Type

- Powerful gripping torque -
- High rigidity
- High precision
- Compact design

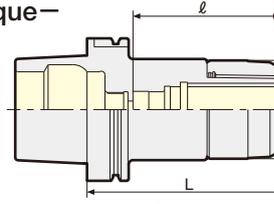


Fig. 1

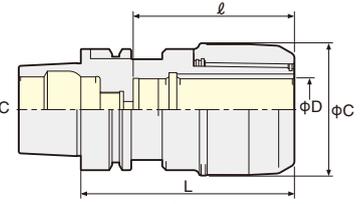


Fig. 2

TAPER	Code No.	C1	D	l	L	MAX.min <sup>-1</sup>	Weight (kg)	Fig.	Collet	Chucking	Handle (Option)
HSK 63A	HSK 63A-C3/4 - 95G	1.890	0.750	2.244	3.740	25,000	1.6	1	KM3/4	0.125~0.750	GH20
	-110G				4.331		1.8				
	-C1 -100G	2.165	1.000	2.362	3.937	20,000	1.9	2	KM1	0.125~1.000	GH25
	-130G				5.118		2.3				
	-C1 1/4 -110G				2.677		1.250				
-130G	2.756	5.118	2.6								
HSK100A	HSK100A-C 3/4 -115G	1.890	0.750	2.244	4.528		20,000				
	-135G				5.315	3.6					
	-C1 -115G	2.165	1.000	2.362	4.528	15,000	3.3	1	KM1	0.125~1.000	GH25
	-135G				5.315		3.6				
	-C1 1/4 -115G				2.677		1.250				
-165G	2.756	6.496	4.8								

★Please note the acceptable shank tolerance is h6  
★Please refer P.291 for KM collet.(inch)



GH Handle P. 48

# HSK MILLING CHUCK (INCH)



**NIKKEN**



**C**  
Centre Through  
MAX. 7MPa

## ANNIVERSARY Type

- Powerful gripping torque -
- High rigidity
- High precision
- Compact design

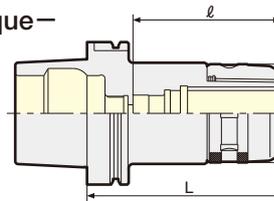


Fig. 1

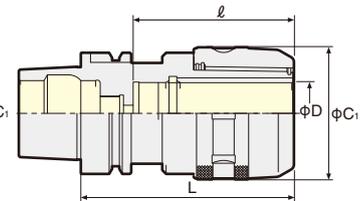


Fig. 2

TAPER	Code No.	C1	D	l	L	Weight (kg)	Fig.	Collet	Chucking	Spanner (Option)
HSK 63A	HSK 63A-C3/4 - 95	2.047	0.750	2.244	3.740	1.6	1	KM3/4	0.125~0.750	9HC22
	-110				4.331	1.8				
	-C1 -100	2.362	1.000	2.362	3.937	1.9	2	KM1	0.125~1.000	9HC25
	-130				5.118	2.3				
	-C1 1/4 -110				2.717	1.250				
-130	2.756	5.118	2.6							
HSK100A	HSK100A-C 3/4 -115	2.047	0.750	2.244	4.528	3.0				
	-135				5.315	3.6				
	-C1 -115	2.362	1.000	2.362	4.528	3.3	1	KM1	0.125~1.000	9HC25
	-135				5.315	3.6				
	-C1 1/4 -115				2.717	1.250				
-165	2.756	6.496	4.8							

★Please refer P.291 for KM collet.(inch)  
★Please note the acceptable shank tolerance is h6~7.

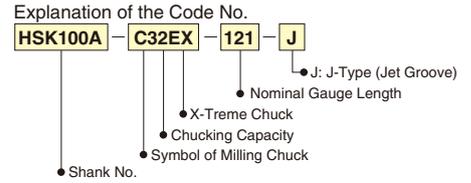
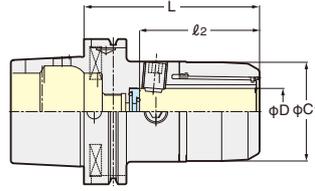


Spanner P. 48

# X-Treme Shank HSK X-Treme Chuck



Centre Through  
MAX. 7MPa



JAPAN, USA, EU PAT. CHINA PAT.P

TAPER	Code No. ( $\phi D$ - L)	C <sub>1</sub>	L	l <sub>2</sub>	End mill with oil hole		Handle (Option)	Weight (kg)
					Stopper*	Face cap*		
HSK63A	HSK 63A-C12EX- 96	40	96	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	1.3
	-C16EX-101	48	101	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	1.5
	-C20EX-106	55	106	71	9MC20HEX- 7L	9C20 -FS-EX-A1	GH25	1.7
HSK100A	HSK100A-C12EX- 96	40	96	58	9MC12HEX- 6L	9C12SL-FS-EX-A1	GH16	2.7
	-C16EX-106	48	106	68	9MC16HEX-6.5L	9C16SL-FS-EX-A1	GH20	3.0
	-C20EX-116	55	116	71	9MC20HEX- 12L	9C20 -FS-EX-A1	GH25	3.6
	-C25EX-116	55	116.3	76.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	3.5
	-C32EX-121	68	121.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	4.0
	-C42EX-136	86	136	86	9MC42HEX- 9L	9C42SL-FS-EX-A1	9HC42	5.7
HSK125A	HSK125A-C20EX-121S	55	121	71	9MC20HEX- 12L	9C20 -FS-EX-A1	GH25	5.4
	-C25EX-121S	55	121.3	77.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	5.3
	-C32EX-136S	68	136.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	6.3
	-C42EX-136S	86	136	86	9MC42HEX- 9L	9C42SL-FS-EX-A1	9HC42	7.1

Please use direct chucking without KM collet.

★ MAX. 7MPa of center through coolant is available with the stopper.

★ Please use J-type X-Treme chuck, when end mill without oil hole is used. eg) HSK125A-C32EX-136S-J

In case of J-type X-Treme chuck, J-type stopper and J-type face cap (with Jet grooves) are attached. 9MC32HEX-7L-J, 9C32L-FS-EX-J1  
J-type X-Treme chuck is used for the pocket milling and side milling.

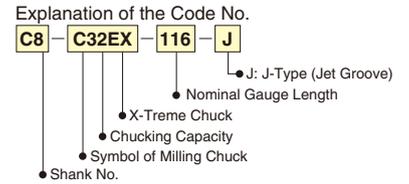
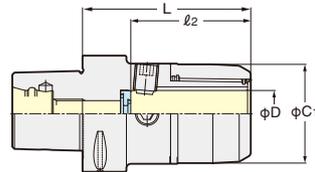


GH Handle P. 48

# X-Treme Shank C8 X-Treme Chuck



Centre Through  
MAX. 7MPa



JAPAN, USA, EU PAT. CHINA PAT.P

TAPER	Code No. ( $\phi D$ - L)	C <sub>1</sub>	L	l <sub>2</sub>	End mill with oil hole		Handle (Option)	Weight (kg)
					Stopper*	Face cap*		
C8	C8-C20EX-106	55	106	71	9MC20HEX- 7L	9C20 -FS-EX-A1	GH25	3.0
	-C25EX-111	55	111.3	77.3	9MC25HEX-6.2L	9C25SL-FS-EX-A1	GH25	3.0
	-C32EX-116	68	116.3	83.3	9MC32HEX- 7L	9C32SL-FS-EX-A1	GH32	3.5

Please use direct chucking without KM collet.

★ MAX. 7MPa of center through coolant is available with the stopper.

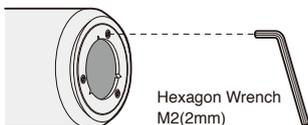
★ Please use J-type X-Treme chuck, when end mill without oil hole is used. eg) C8-C32EX-116-J

In case of J-type X-Treme chuck, J-type stopper and J-type face cap (with Jet grooves) are attached. 9MC32HEX-7L-J, 9C32L-FS-EX-J1  
J-type X-Treme chuck is used for the pocket milling and side milling.



GH Handle P. 48

## How to exchange the face caps



The face cap is fixed with 3 pieces of M2.5 screws. (C42EX: M3) The face cap must be centred or centralized, when exchanged. The special centering jig fixture and wrench are provided as an option.

	screw
C12EX, C16EX, C20EX	M2.5-6L
C25EX, C32EX	SNSS-M2.5 × 6-SD
C42EX	CBS3-6

Please refer P.3 the accessories such as the stopper and face cap.

# CAT MILLING CHUCK (INCH)

**NIKKEN**



CAT

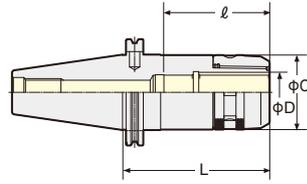


Fig. 1

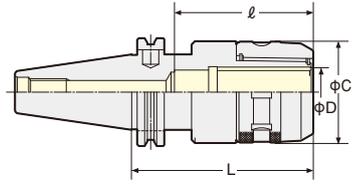


Fig. 2

TAPER	Code No.	C	D	l	L	Weight (kg)	Fig.	Collet	Chucking	Spanner (Option)		
CAT40	CAT40 -C3/4 - 70U	2.047	0.750	3.150	2.75	1.6	2	KM3/4	0.125~0.750	9HC22		
	- 85U				3.346	1.8						
	-105U				4.134	2.0						
	-120U				4.724	2.2						
	-C1 - 85U	2.362	1.000	3.150	3.346	2.1		KM1	0.125~1.000	9HC25		
	-105U				4.134	2.3						
	-C1 1/4SL- 85U				3.031	3.346					2.1	
	-105U				2.717	1.250					3.543	4.134
-120U	4.134	4.724	2.8	KM1 1/4	0.187~1.250	9HC32						
CAT50 -C 3/4 -105U	2.047	0.750	3.150				4.134	4.5	1	KM3/4	0.125~0.750	9HC22
-135U							5.315	4.8				
-160U							6.496	5.1				
-C1 -105U	2.362	1.000	3.150	4.134	4.8	KM1	0.125~1.000	9HC25				
-135U				5.315	5.2							
-C1 1/4 - 90U				2.717	1.250					4.134	3.543	4.3
-105U	4.134	4.6										
-135U	5.315	5.6										
-165U	6.496	6.4										

★Please refer P.291 for KM collet.(inch)  
★Please note the acceptable shank tolerance is h6~7.

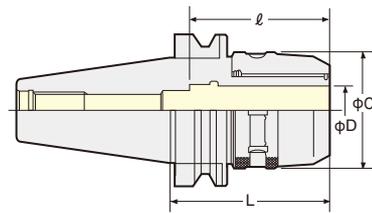


# BT MILLING CHUCK (INCH)

**NIKKEN**



BT



TAPER	Code No.	C	D	l	L	Weight (kg)	Collet	Chucking	Spanner (Option)			
BT40	BT40 -C3/4 - 70	2.047	0.750	3.150	2.756	1.6	KM3/4	0.125~0.750	9HC22			
	-105				4.134	2.0						
	-C1 - 70	2.362	1.000	3.150	2.756	1.8				KM1	0.125~1.000	9HC25
	- 90				3.543	2.1						
	-C1 1/4- 85				3.031	3.346						
-120	2.717	1.250	4.134	4.724	2.8	KM1 1/4	0.187~1.250	9HC32				
BT50 -C 3/4 -105	2.047	0.750	3.150	4.134	4.5				KM3/4	0.125~0.750	9HC22	
-135				5.315	4.8							
BT50	-C1 -105	2.362	1.000	3.150	4.134	4.8	KM1	0.125~1.000	9HC25			
	-135				5.315	5.2						
	-C1 1/4- 90				2.717	1.250				4.134	3.543	4.3
	-135	5.315	5.6									

★Please refer P.291 for KM collet.(inch)  
★Please note the acceptable shank tolerance is h6~7.



BT

IT/CAT

# CAT HIGH SPEED MILLING CHUCK (INCH)



**NIKKEN**



CAT

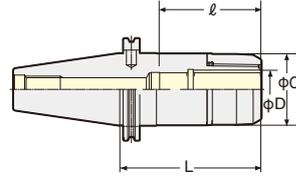


Fig. 1

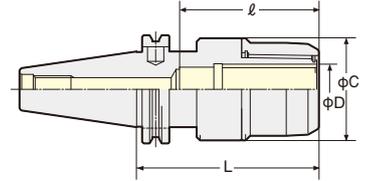


Fig. 2

TAPER	Code No.	C	D	ℓ	L	MAX. (min <sup>-1</sup> )	Weight (kg)	Fig.	Collet	Chucking	Handle (Option)
CAT40	CAT40-C3/4 - 85UG	1.890	0.750	3.150	3.346	25,000	1.8	2	KM3/4	0.125~0.750	GH20
					4.134		2.0				
	-C1 - 85UG	2.165	1.000	3.150	3.346	20,000	2.1		KM1	0.125~1.000	GH25
					4.134		2.3				
	-C1 1/4SL -105UG	2.677	1.250	2.500	4.134	15,000	2.5		KM1 1/4	0.187~1.250	GH32
					3.150		4.724				
CAT50	CAT50-C 3/4 -105UG	1.890	0.750	3.150	4.134	20,000	4.5	1	KM3/4	0.125~0.750	GH20
					5.315		4.8				
	-C1 -105UG	2.165	1.000	3.150	4.134	15,000	4.8		KM1	0.125~1.000	GH25
					5.315		5.2				
	-C1 1/4 -105UG	2.677	1.250	4.134	4.134	15,000	4.6		KM1 1/4	0.187~1.250	GH32
					5.315		5.6				

★Please note the acceptable shank tolerance is h<sub>6</sub>  
 ★Please refer P.291 for KM collet.(inch)



GH Handle P. 48

# STRAIGHT COLLET (INCH)

**NIKKEN**



KM phot shows ANNIVERSARY type KM Collet .

Style	KM Collet Code No.(OD-ID)
KM3/4	KM3/4 -1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8
KM1	KM1 -1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8
KM1 1/4	KM1 1/4 -1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, 1

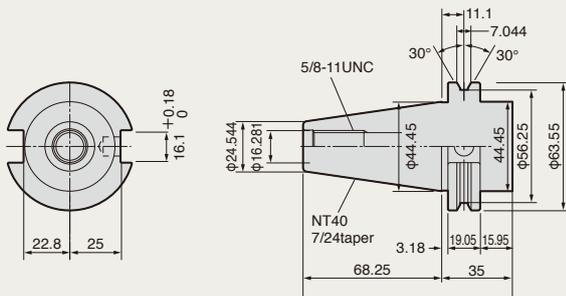
★Please note the acceptable shank tolerance is h<sub>6</sub>~h<sub>7</sub>.  
 ★KM collet with OD: Inch & ID: Metric is also available as an option.  
 ★Collet removal (9CKR) is an optional accessory for NC milling chuck.



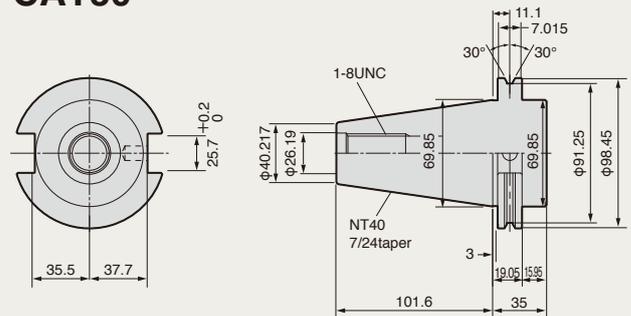
# DIMENSION of CAT TOOL SHANK

**NIKKEN**

CAT40

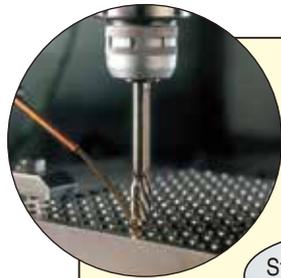


CAT50

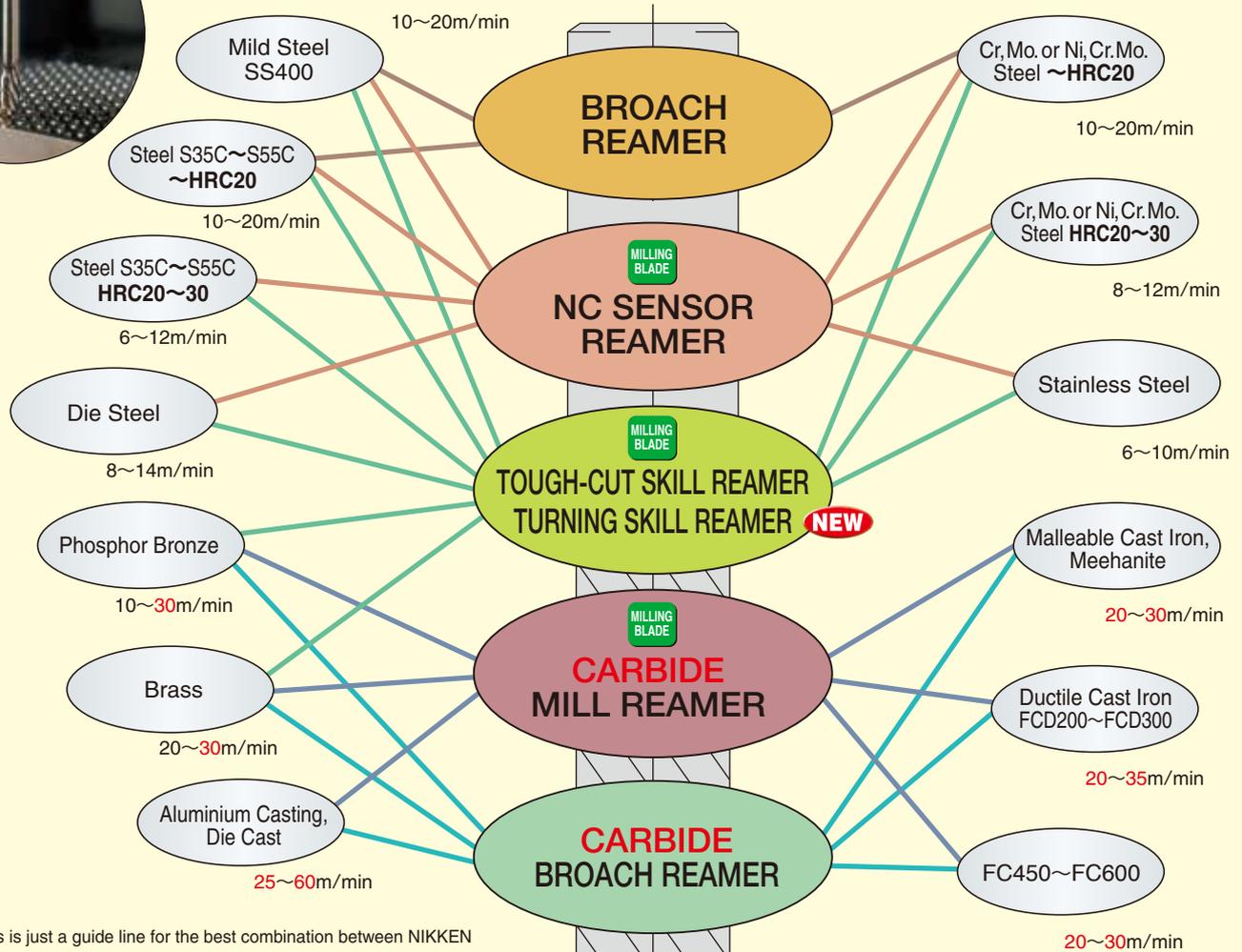


CAT standard is based on ASME B5-50-1985 (CATERPILLAR 1975).

Wide Product Range to meet Any Material Requirements  
Long Life • High Finishing Accuracy on Tough Materials



## Cutting Speed on Each Material for Oil Base Coolant Use



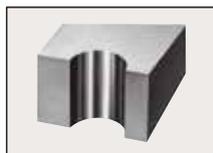
This is just a guide line for the best combination between NIKKEN reamers and each material, Therefore Broach reamer also can be used on die steel or non-alloy steel.

(The above cutting speed in red shows the cutting speed by carbide reamer.)

REAMER•DRILL

## REAMERS FOR THROUGH HOLE / STEPPED HOLE / BLIND HOLE

CAN BE SELECTED BY SHAPE OF THE HOLE



WHEN YOU CANNOT GET GOOD RESULT FOR BLIND HOLE BY USING ENDMILL, BORING ARBOR AND SO ON, PLEASE TRY "REAMERS FOR BLIND HOLE"

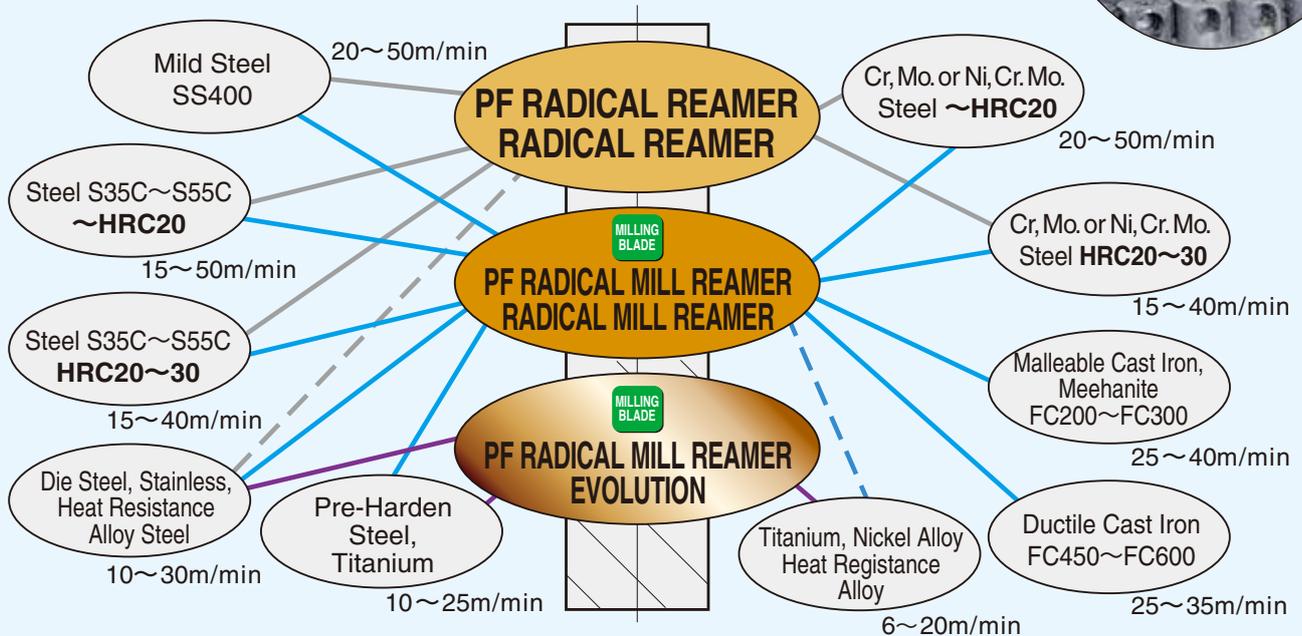
### PARTICULAR CASE

- \* Coated reamer is normally not suitable for the cast iron, however (PF)RADICAL REAMER / NC SENSOR REAMER may be suitable for FCD400-600.
- \* Under normal conditions, coated reamer is not suitable for the aluminium, however (PF)RADICAL REAMER may be suitable for ADC as well.
- \* For the cast iron with soluble coolant, CARBIDE MILL REAMER (K01 GRADE) may be used.

Wide Product Range to meet All Material Requirements  
Long Tool Life • High Finishing Accuracy on Tough Materials

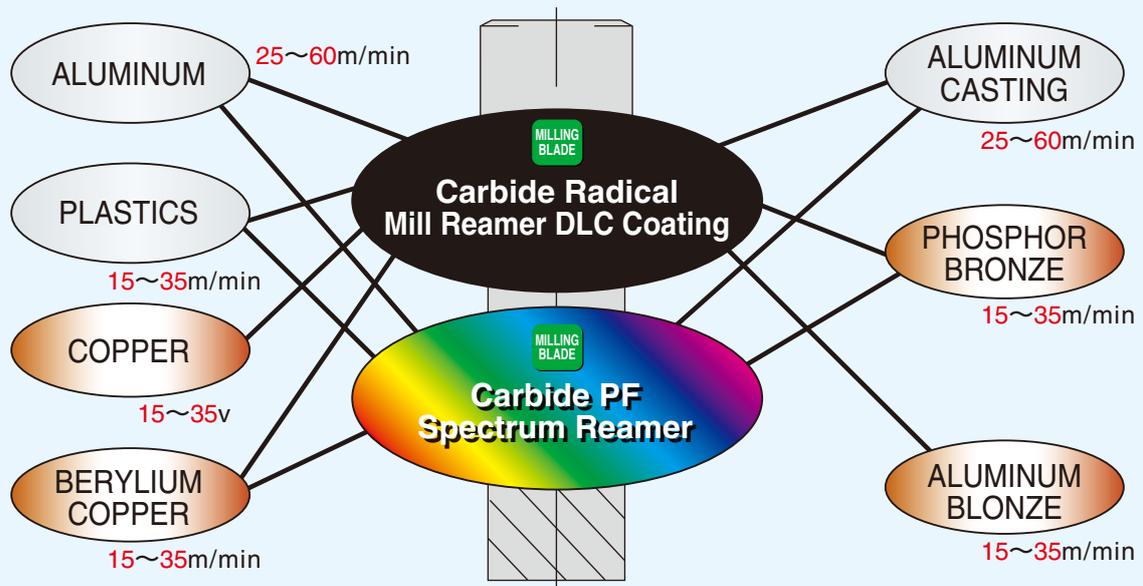


## Cutting Speed on Each Material for Soluble Coolant Use



- Please select the other reamers as PF radical reamer (below) for aluminium / copper / non-ferrous alloy.
- When using oil base coolant, you could get better accuracy and longer tool life.

## Cutting Speed on Each Material for Soluble Coolant Use

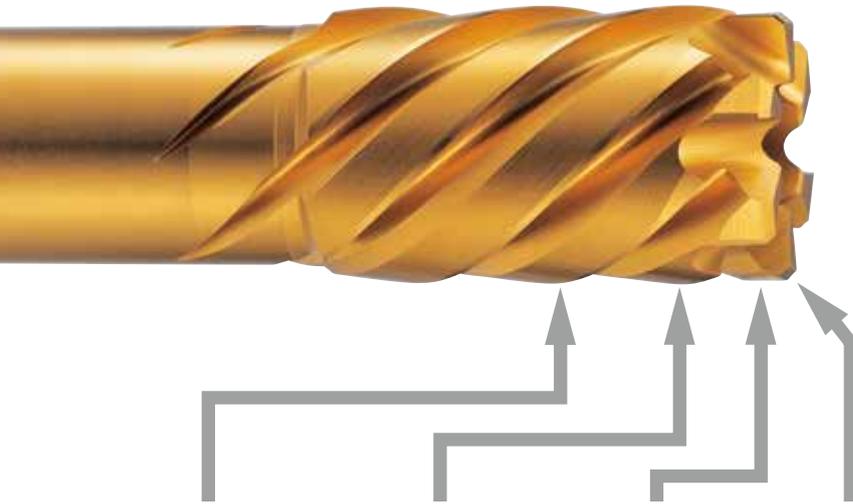


- Please select the other reamers for the other materials.
- With using oil base coolant, you could get better accuracy and longer tool life.

REAMER • DRILL

## CHARACTERISTICS of REAMER With MILLING BRLADE

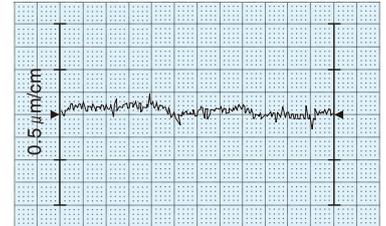
- Hole accuracy is not required for inspection (finished hole tolerance within H7)
- Outstanding surface roughness and durability (surface roughness within 3S)



### Plane roughness data of NCS-16.0

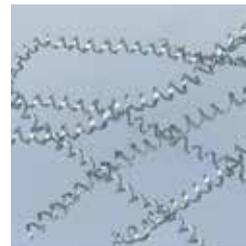
P-curve  
L=1.6mm

X20000  
X50



Material : S45C  
Cutting speed : 14.5m/min  
Feed rate : 0.35mm/rev.  
Drilled hole :  $\phi 15.5$  ( $\phi 0.5$  stock removal)

Burnishing	Reamer blade (finishing)	Pilot part	Milling blade (Semi-Finish)
This is a polishing section without a cutting edge to cleans up the roughness of the finished surface.	Smooth finish is achieved by reamer blade for the optimal finishing removal from milling blade.	NC sensor reamer moves forward guiding the pilot hole machined by milling blade.	Semi-finish (Optimal finishing removal) is achieved by milling blade from drilled hole variation.

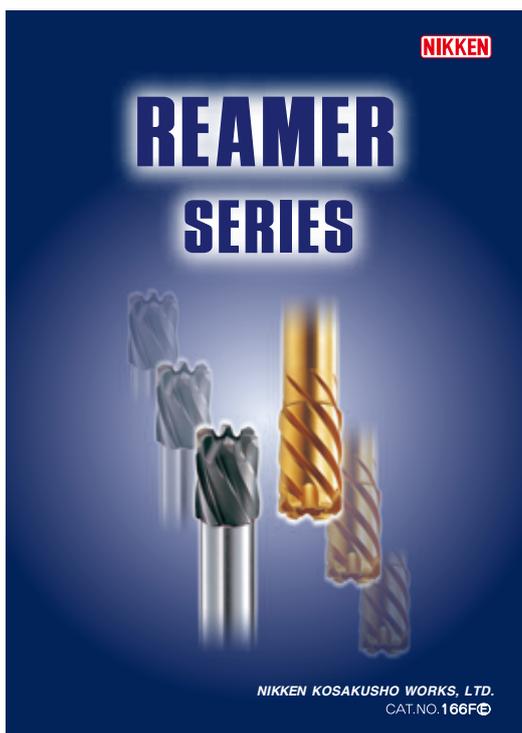


Swarf by milling blade



Swarf by reaming blade

# NIKKEN REAMER SERIES CATALOG



■ CARBIDE, HSS / With / Without MILLING BRLADE / from SMALL DIA. to LARGE DIA.

■ REAMER SERIES CATALOGUE CAT No.166F to cover all kinds of Reamers (Carbide / HSS, Without / With End Tooth, Diameter from  $\phi 2\text{mm}$  to  $\phi 100\text{mm}$ )

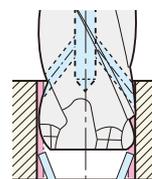
■ CARBIDE PF RADICAL MILL REAMER EVO

Specially designed for the tough material such as Inconel, Hastelly, Waspaloy and Titanium Smooth cutting capability and special coating to protect the base material from cutting heat and deposition.

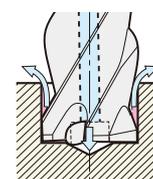
■ CARBIDE PF SPECTRUM REAMER SPX

The newest reamer for Aluminium and Nonferrous Metals Due to the high hardness level (6000HV) has been achieved using Hydrogen-Free DLC coating, the hardness of the SPX reamer closes to the hardness of the diamond.

■ Two types of OH reamer, through hole and blind hole, are line-up.



Through Hole



Blind Hole

OH shape of reamer with OH

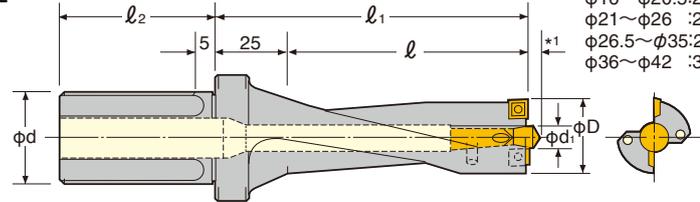
Please refer to REAMER SERIES Catalogue.

# COMBAT Z DRILL

Cost down can be achieved by improvement of drilling operation.



Dimensions of  $\phi 16 \sim 42$  mm  
COMBAT Z DRILL



\*1 Dimension  
 $\phi 16 \sim \phi 20.5$ : 2.1mm  
 $\phi 21 \sim \phi 26$ : 2.4mm  
 $\phi 26.5 \sim \phi 35$ : 2.8mm  
 $\phi 36 \sim \phi 42$ : 3.4mm

$\phi 16 \sim \phi 38$   
 $L/D=3$  or  $4$

$\phi 16 \sim \phi 35$ mm by every 0.5mm increment,  $\phi 36 \sim \phi 60$ mm by every 1mm increment,  $\phi 60 \sim \phi 80$ mm by every 5mm increment are standard.

Each 0.1mm increment drill is available as an option.

Drill Dia.	3D Series				4D Series				3D, 4D							
	Code No.			$l$	$l_1$	Code No.			$l$	$l_1$	$\phi d$	$l_2$	Pilot Drill	Insert Tip	Clamp Screw	Tip Clamp Handle
	$\phi d$	$\phi D$	$-l$			$\phi d$	$\phi D$	$-l$								
16	ST20-COMZ16	-50		50	75	ST20-COMZ16	-65	65	90	20	43	9CMD5 $d_1=\phi 5$	9CMT4 2 pcs	M1840	T-6	
16.5	-COMZ16.5	-50	-COMZ16.5			-65										
17	-COMZ17	-50	-COMZ17			-65										
17.5	-COMZ17.5	-50	-COMZ17.5	-65												
18	-COMZ18	-55	-COMZ18	-75												
18.5	-COMZ18.5	-55	-COMZ18.5	-75												
19	-COMZ19	-55	-COMZ19	-75												
19.5	-COMZ19.5	-60	-COMZ19.5	-80												
20	-COMZ20	-60	-COMZ20	-80												
20.5	-COMZ20.5	-60	-COMZ20.5	-80												
21	ST25-COMZ21	-60	60	85	ST25-COMZ21	-80	80	105	25	53	9CMD6 $d_1=\phi 6$	9CMT6 2 pcs	M2560	T-8		
21.5	-COMZ21.5	-60			-COMZ21.5	-80										
22	-COMZ22	-65			-COMZ22	-85										
22.5	-COMZ22.5	-65	-COMZ22.5	-85												
23	-COMZ23	-70	-COMZ23	-90												
23.5	-COMZ23.5	-70	-COMZ23.5	-90												
24	-COMZ24	-70	-COMZ24	-90												
24.5	-COMZ24.5	-70	-COMZ24.5	-90												
25	-COMZ25	-75	-COMZ25	-100												
25.5	-COMZ25.5	-75	-COMZ25.5	-100												
26	-COMZ26	-75	-COMZ26	-100												
26.5	ST32-COMZ26.5-80N		80	105	ST32-COMZ26.5-110N		110	135	32	58	9CMD8 $d_1=\phi 8$	9CMT7 2 pcs	M3070	T-10		
27	-COMZ27	-80			-COMZ27	-110										
27.5	-COMZ27.5	-80			-COMZ27.5	-110										
28	-COMZ28	-80			-COMZ28	-110										
28.5	-COMZ28.5	-90			-COMZ28.5	-120										
29	-COMZ29	-90			-COMZ29	-120										
29.5	-COMZ29.5	-90			-COMZ29.5	-120										
30	-COMZ30	-90			-COMZ30	-120										
30.5	-COMZ30.5	-90			-COMZ30.5	-120										
31	-COMZ31	-90			-COMZ31	-120										
31.5	-COMZ31.5	-90	-COMZ31.5	-120												
32	-COMZ32	-90	-COMZ32	-120												
32.5	-COMZ32.5	-90	-COMZ32.5	-120												
33	-COMZ33	-90	-COMZ33	-120												
33.5	-COMZ33.5	-90	-COMZ33.5	-120												
34	-COMZ34	-90	-COMZ34	-120												
34.5	-COMZ34.5	-90	-COMZ34.5	-120												
35	-COMZ35	-90	-COMZ35	-120												
36	-COMZ36	-100	100	125	-COMZ36	-140	125	125	32	58	9CMD10 $d_1=\phi 10$	9CMT9 2 pcs	M4090	T-15		
37	-COMZ37	-100			-COMZ37	-140										
38	-COMZ38	-100			-COMZ38	-140										

★2 off Pilot Drill, one set of Insert and Insert Clamp Handle are supplied as standard.

★Please refer P.130 for Centre Through Side Lock Holder, P.132 for Flange Through Side Lock Holder and P.135 for Oil Hole Holder for COMBAT Z Drill at M/C use.

REAMER-DRILL

# COMBAT Z DRILL

Cost down can be achieved by improvement of drilling operation.



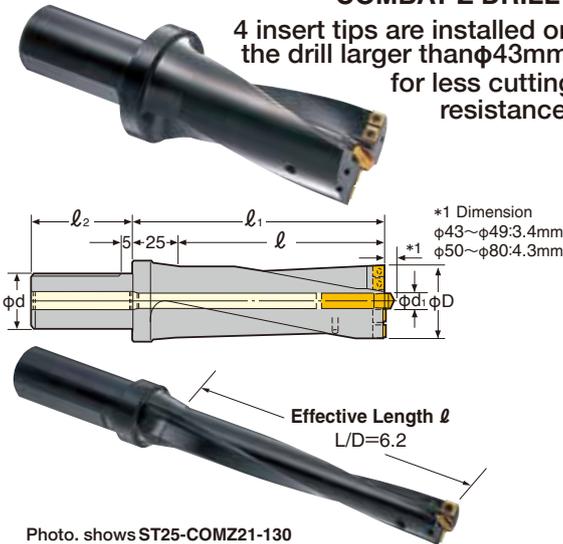
φ39~φ49 L/D=2, 3 or 4

Drill Dia.	2D Series				3D Series				4D Series			2D,3D,4D				
	Code No.	ℓ	ℓ <sub>1</sub>	Code No.	ℓ	ℓ <sub>1</sub>	Code No.	ℓ	ℓ <sub>1</sub>	φ <sub>d</sub>	ℓ <sub>2</sub>	Pilot Drill	Insert Tip	Clamp Screw	Tip Clamp Handle	
																φ <sub>d</sub> -φD -ℓ
39	ST32-COMZ39- 80	80	105	ST32-COMZ39-120	120	145	ST32-COMZ39-160	160	185	32	58	9CMD10 d <sub>1</sub> =φ10	9CMT9 2 pcs	M4090	T-15	
40	-COMZ40- 80															
41	-COMZ41- 80															
42	-COMZ42- 80															
43	-COMZ43- 80															
44	-COMZ44- 80															
45	-COMZ45- 80															
46	-COMZ46- 80															
47	-COMZ47- 80															
48	-COMZ48- 80															
49	-COMZ49- 80			-COMZ49-120			-COMZ49-160					9CMT6 4 pcs	M2560	T-8		

## Dimensions of φ43mm or larger

### COMBAT Z DRILL

4 insert tips are installed on the drill larger than φ43mm for less cutting resistance.



The extended drill longer than L/D=5 or with chamfering tool are available as an option.  
MIN. order quantity of special drill is 2 off.

φ50~φ80 L/D=2

Drill Dia.	2D Series				φ <sub>d</sub>	ℓ <sub>2</sub>	Pilot Drill	Insert Tip	Clamp Screw	Tip Clamp Handle
	Code No.	ℓ	ℓ <sub>1</sub>	φ <sub>d</sub> -φD -ℓ						
51	-COMZ51-100									
52	-COMZ52-100									
53	-COMZ53-100									
54	-COMZ54-100									
55	-COMZ55-100									
56	-COMZ56-110									
57	-COMZ57-110									
58	-COMZ58-110									
59	-COMZ59-110									
60	ST40-COMZ60-120	120	145	40	68	9CMD12 d <sub>1</sub> =φ12	9CMT7 4 pcs	M3070	T-10	
65	-COMZ65-120									
70	-COMZ70-130									
75	-COMZ75-130									
80	-COMZ80-150									
150	175									

★2 off Pilot Drill, one set of Insert and Insert Clamp Handle are supplied as standard.  
★Please refer P.128 for Centre Through Side Lock Holder, P.130 for Flange Through Side Lock Holder and P.133 for Oil Hole Holder for COMBAT Z Drill on M/C.

## Insert Tip for COMBAT Z DRILL

Code No.	Insert Tip					ISO Code No.	Grade	Material	Applicable Drill	
	Dimensions	φD	T	φ <sub>d</sub>	Nose Radius					
9CMT4		4.76	1.98	1.9	0.4	MPMT04T104	Coated (PR630)	Steel Cast Iron	COMZ16~20.5	
9CMT6		6.35	2.38	2.8					COMZ21~26 COMZ43~55	
9CMT7		7.94	3.18	3.4	0.8				MPMT070308	COMZ26.5~35 COMZ56~65
9CMT9		9.525		4.4					MPMT090308	COMZ36~42 COMZ66~80

★The Rhomboid insert tips are installed on the drill. Total 4 corners at 2 external and 2 internal diameters can be used. Please pay attention to install the insert into the pockets correctly.  
★The spare Insert Tips are available per a box (10 off).

## COMBAT Z DRILL Economical Cutting Condition

- For Steel/Cast Iron  
"40,000" is the basic figure for cutting speed, and the rotation speed could be obtained by dividing above figure by the drill diameter.  
e.g. for φ32mm diameter drill: 40,000 ÷ 32 = 1,250 (min<sup>-1</sup>)
- For Stainless Steel/Steel Plate SS41  
"25,000" is the basic figure for cutting speed, and the rotation speed could be obtained by dividing above figure by the drill diameter.  
e.g. for φ32mm diameter drill: 25,000 ÷ 32 = 780 (min<sup>-1</sup>)
- Feed Rate

Drill Dia	φ16~φ26	φ26.5~φ42	φ43~φ85
Mild Steel Feed per rev.	0.1~0.15	0.1~0.2	0.15~0.2
Cast Iron Feed per rev.	0.15~0.2	0.2~0.3	0.2~0.35

**⚠**

★How to install Insert Tips

★Coolant higher than 0.5MPa pressure must be supplied.

★For Stainless Steel/Steel Plate, even the cutting speed is reduced to meet with the materials, please do not reduce the feed rate and keep it as for steel.

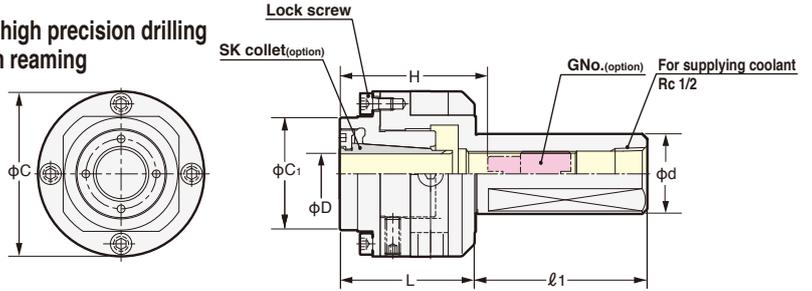
★For tough materials, e.g. steel plate, please use stepped feed (G73) for breaking the swarf.

★This drill is suitable for offset hole, or inter-merged twin bore, but not suitable for stacked plate drilling.

# ZERO-ZERO HOLDER FOR TURNING MACHINE PAT.P



Required for ultra-high precision drilling and ultra precision reaming

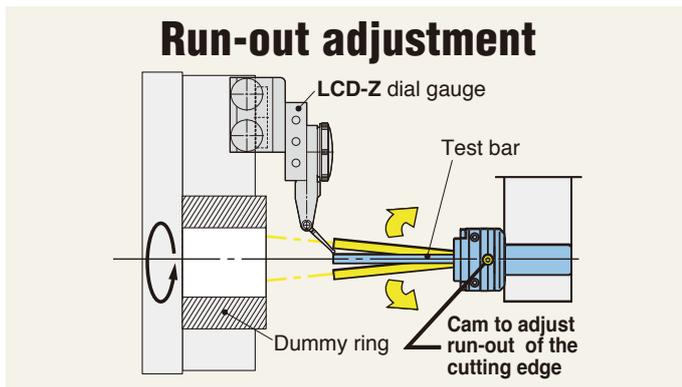


Code.No.	D	d	L	ℓ1	H	C	c1	G No. (Option)	Nut (Standard)	SK Collet	Spanner (Option)
LCH32-SZF10S-52	1.75~10	32	52.1	68	50	66	35	SKG-18-SZF10S	SKN-10SB	SK10	SKL-10S-P
LCH40-SZF10S-52		40								SK10-P	
LCH32-SZF10S-52-A		32							SK10-A		
LCH40-SZF16S-52-A		40							SK10-AC		
LCH32-SZF16S-55	2.75~16	32	54.3	68	70	66	45	SKG-18L	SKN-16SB	SK16	SKL-16S-P
LCH40-SZF16S-55		40								SK16-P	
LCH32-SZF16S-55-A		32							SK16-A		
LCH40-SZF16S-55-A		40							SK16-AC		

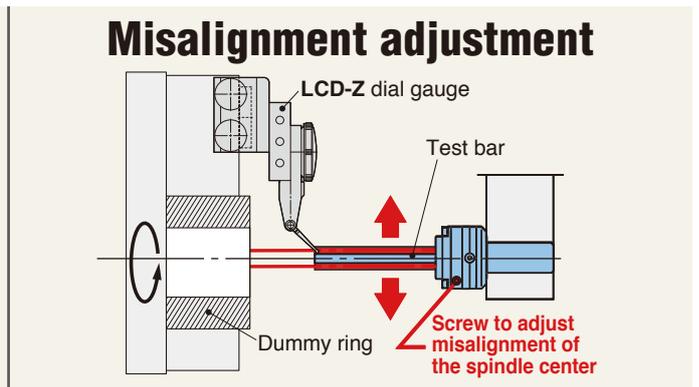
- ★Nut is supplied as standard.
  - ★Collet is available as an option. Please refer P.43, P44.
  - ★A Type and SK Coolant Collect : Chucking range : h8
  - ★Tightening Spanner SKL-10S-P, SKL-16S-P is available as an option.
  - ★Adjustment Wrench 9ZF is available as an option.
  - ★Dial Gauge LCD-Z is available as an option.
  - ★Test bar is available as an option.
- Code.No. is SZF-TB10-140, SZF-TB16-200

★There is also a ZERO-ZERO holder Pro set in which a collet, a tightening spanner and a wrench for swing adjustment are set in the ZERO-ZERO holder.

- Pro set with standard collet : S.LCH32-SZF16S, S.LCH40-SZF16S
- Pro set with coolant collet : S.LCH32-SZF16SC, S.LCH40-SZF16SC



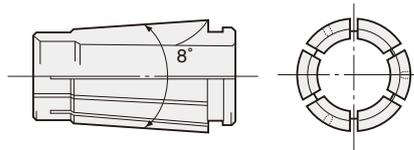
Run-out adjustment range at the tip of 100mm test bar : 0.05mm  
(Cam ring indication :  $\phi$  0.1mm)



Misalignment adjustment range : 0.5mm/diameter

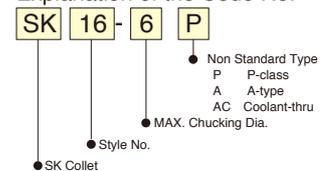
- Better Hole Diameter
- Better Surface Roughness
- Extend Tool Life

## COLLETS FOR ZERO-ZERO HOLDER



P.43, P44

Explanation of the Code No.



## HOW TO ADJUST

### Required Tools

Adjustment Wrench  
9ZF (Optional)



Tightening Spanner  
SKL-10S-P (Optional)  
SKL-16S-P (Optional)



Dial Gauge  
LCD-Z (Optional)

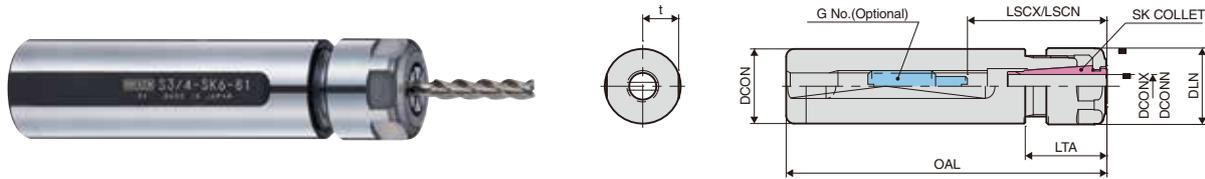


# HIGH PRECISION SLEEVE FOR CNC AUTOMATIC TURNING MACHINE



## SK SLEEVE (SLIM CHUCK)

High accuracy Slim Chuck makes it possible to achieve precise hole-making operation.



Code.No.	Tool Shank Dia. DCON	t	Chucking Dia. DCONN~DCONX	Total Length OAL	Stem Length LTA	Nut Dia. DLN	Adjustable Range LSCN~LSCX	G No. (Optional)	Weight (kg)	Collet	Wrench (Optional)
ST3/4(20)-SK 6- 81	19.05(20)	9	0.7 ~ 6.0	80.5	20.5	19.5	21 ~ 35	SKG-8	0.14	SK6	SKL-6W (SKL-6WS)
ST3/4(20)-SK 6-141				140.5							
ST3/4CM-SK 6- 97				96.5							
ST1(25) -SK10- 82	25.4(25)	11	1.75 ~ 10.0	82.1	22.1	27.5	30 ~ 57	SKG-12L	0.23	SK10	SKL-10
ST1(25) -SK10-142				142.1							
ST1CM -SK10- 97				97.1							
ST1CM -SK10- 97	25.4						30 ~ 60		0.30		

Nut is included.  
Collet is not included.

Please confirm the machine specification. The modification is sometimes required.  
Tool shank Dia 22mm and 15.875mm are available. (Optional) (Ex.) S22-SK6-141

FOR SK SLEEVE  
SK COLLET



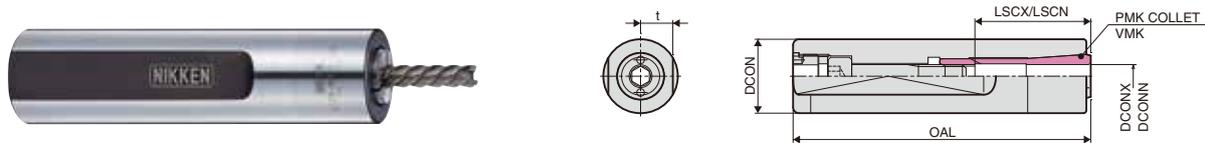
Code No.	Chucking Dia.	Code No.	Chucking Dia.
SK6 - 0.8	0.7 ~ 0.8	SK10- 2	1.75 ~ 2.0
- 1	0.9 ~ 1.0	- 2.25	2.0 ~ 2.25
- 1.25	1.15 ~ 1.25	- 2.5	2.25 ~ 2.5
- 1.5	1.3 ~ 1.5	- 2.75	2.5 ~ 2.75
- 1.75	1.55 ~ 1.75	- 3	2.75 ~ 3.0
- 2	1.8 ~ 2.0	- 3.5	3.0 ~ 3.5
- 2.25	2.05 ~ 2.25	- 4	3.5 ~ 4.0
- 2.5	2.3 ~ 2.5	- 4.5	4.0 ~ 4.5
- 2.75	2.55 ~ 2.75	- 5	4.5 ~ 5.0
- 3	2.8 ~ 3.0	- 5.5	5.0 ~ 5.5
- 3.5	3.0 ~ 3.5	- 6	5.5 ~ 6.0
- 4	3.5 ~ 4.0	- 6.5	6.0 ~ 6.5
- 4.5	4.0 ~ 4.5	- 7	6.5 ~ 7.0
- 5	4.5 ~ 5.0	- 7.5	7.0 ~ 7.5
- 5.5	5.0 ~ 5.5	- 8	7.5 ~ 8.0
- 6	5.5 ~ 6.0	- 8.5	8.0 ~ 8.5
		- 9	8.5 ~ 9.0
		- 9.5	9.0 ~ 9.5
		- 10	9.5 ~ 10.0

Wrench (Optional)  
SKL-6W, SKL-10



Small size wrench "SKL-6WS" is available when there is some interferences.

## MMC SLEEVE (MINI MINI CHUCK)



Code.No.	Tool Shank Dia. DCON	t	Chucking Dia. DCONN~DCONX	Total Length OAL	Adjustable Range LSCN~LSCX	Collet	Wrench (Optional)
K5/8CM-MMC4- 50	15.875	7	1.0 ~ 4.0	52.0	16 ~ 24	MPK4	Hex 4mm
K3/4CM-MMC8- 80	19.05	9	1.8 ~ 8.0	81.5	22 ~ 41	PMK8	Hex 6mm or EA573KL-6
K20CM -MMC8-100	20.0			101.5		VMK8	
K1CM -MMC8-100	25.4	11	101.5				

Both Collet and Wrench are not included.

FOR MMC4  
MPK COLLET



Code No.
MPK4-1, 1.5, 2, 2.5, 3, 3.5, 4

MPK Collet clamping range: h6

FOR MMC8  
PMK COLLET  
VMK



Code No.
PMK 8-2, 2.2, 2.4, ...3, ...4, ...5, ...6, ...7, ...8 (each 0.2mm)
VMK 8-2, 3, 4, 5, 6, 8, 10

Choosing exactly the same size with tool shank (tolerance h6) is highly recommended.  
PMK Collet Clamping Range: 0.2mm  
VMK Collet Clamping Range: h6~h8

Clamp / Unclamp from the back side of the tool

EA573KL-6



# CNC ROTARY TABLE with $\alpha$ 21 CONTROLLER

**NIKKEN**

**Minimum Command Increment: 0.001° or 1sec.**  
 $\alpha$ 21 controller can drive all models of NIKKEN CNC rotary table.

**Single M signal provides Various Automatic Operation.**  
 Any unequal dividing, equal dividing, arc cutting, lead cutting etc. can be done very easily.

**RS232C Interface is provided as standard.**  
 Block data/ parameter data can be up loaded/down loaded through RS232C interface. Moreover when the direct angle command interface is used, all program and management can be done on M/C side. **JAPAN PAT.**

**Upgrade of Water Proof Characteristic EMC Assessment**  
 The direct out type connection is applied for all models of CNC rotary table, and the EMC assessment is satisfied as the total system.

**Digital Servo System & Absolute Encoder  $\alpha$ 21 controller only**  
 Very excellent acceleration/deceleration characteristics, the powered up torque and the best suited servo parameter realize the high quality and long life.

 after Power ON or after releasing the emergency stop condition is not necessary. \*

**Plenty of Optional Functions**  
 True Closed Loop, Manual Pulse Generator, M Function (Input: 5/ Output: 5), External N Number Search, External Position Display, External Power ON/OFF, Pitch Error Compensation

**More than 30,000 sets working in the field.**  
 This fact ensures the highest reliability.

**Product compatible with ROHS2 commands**  
 Version equipped with a controller that can be shipped to EU member nations.

\* : The operation to establish the coordinate system is required at once, when turning the POWER ON at first time just after connecting the cable.



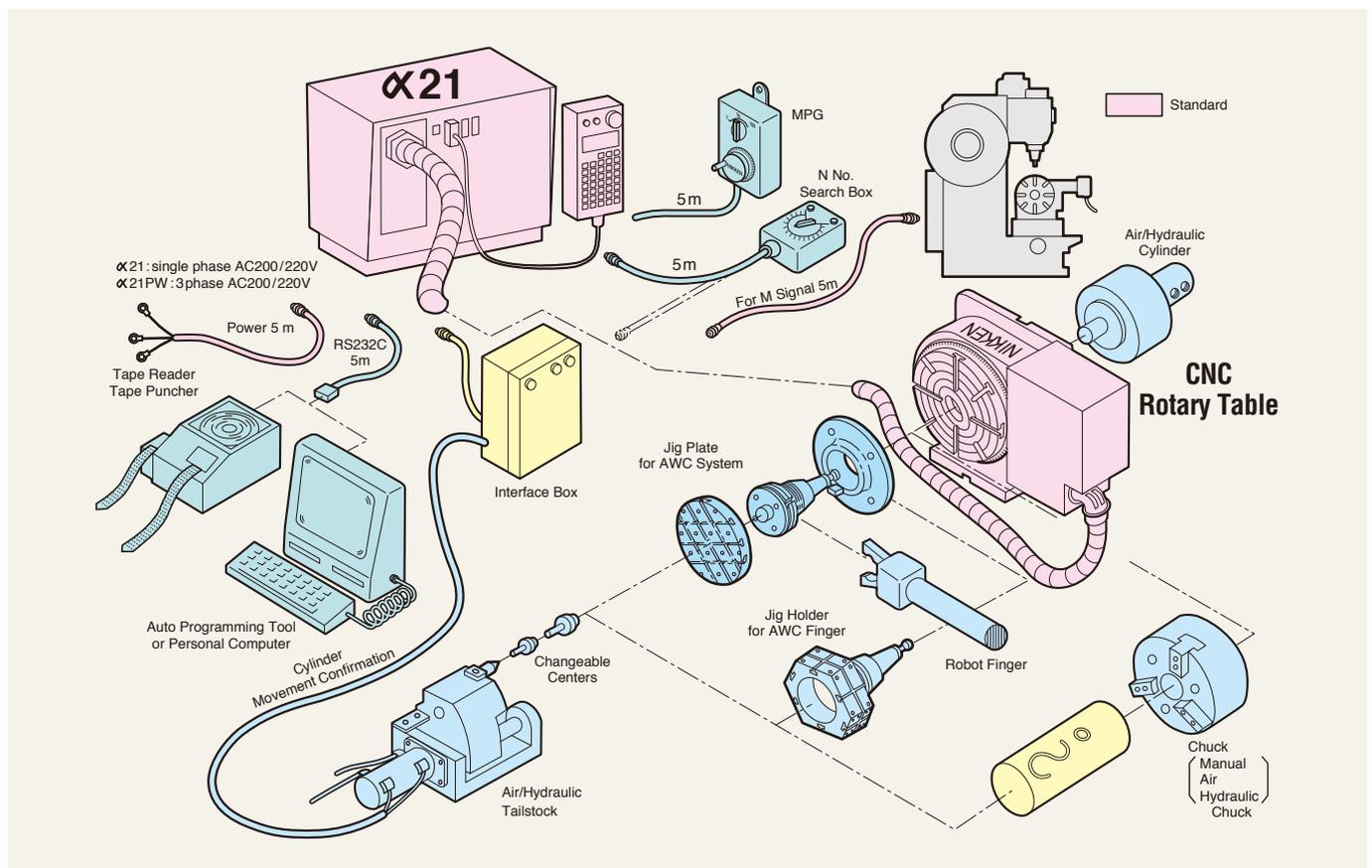
$\alpha$  21 controller  
 • Standard (400W, 750W), 300×280×285 10kg  
 • Single Phase AC200/220V



$\alpha$  21 PW controller  
 • Power up (1.3KW, 1.8KW) 540×360×400 28kg  
 • 3 phase AC200/220V



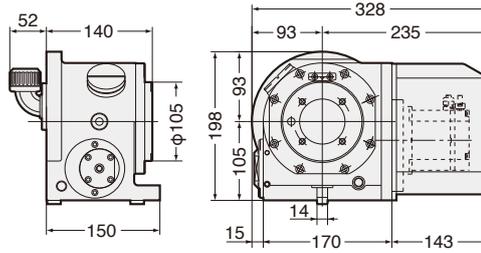
$\alpha$  21 controller for larger capacity  
 • (2.7KW, 4.4KW and 11kW) is available.  
 • 3 phase AC200/220V



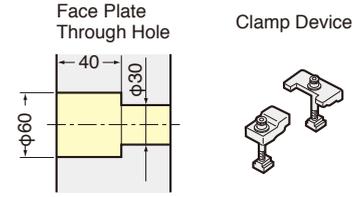
# CNC ROTARY TABLE with $\alpha$ 21 CONTROLLER



## CNC105AA21-04



Powerful Clamping Torque : 205Nm

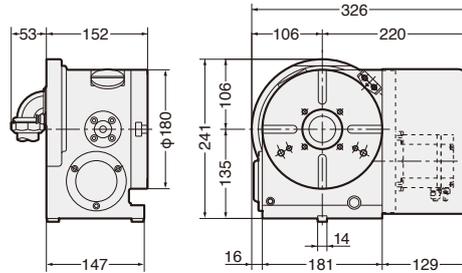


Air purge function is provided.

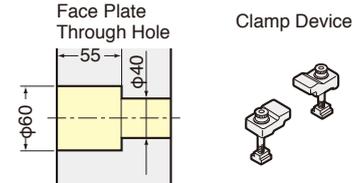
## CNC180AA21-04



CNC180AA21-04 (400W) is standard. CNC180AA21-08 (750W) and CNC180AA21-06 (High Torque) are available.



Powerful Clamping Torque : 303Nm

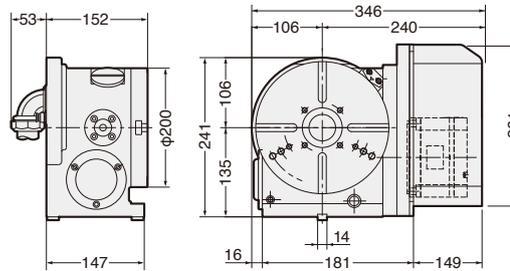


Air purge function is provided.

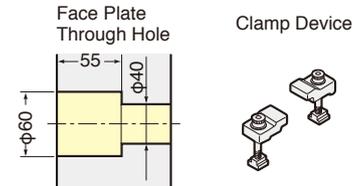
## CNC202AA21-08



CNC202AA21-08 (750W) is standard. CNC202AA21-06 (High Torque) is available.



Powerful Clamping Torque : 303Nm



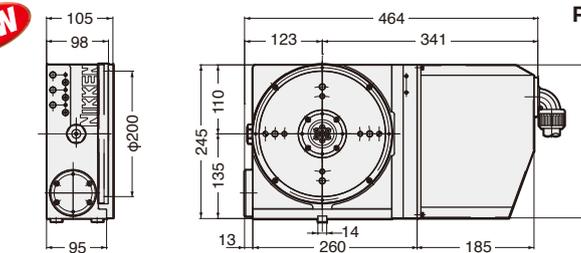
Air purge function is provided.

## CNC205AA21-05

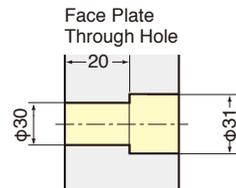
**NEW**



CNC205AA21-05 (450W) is standard. ★Built-in type rotary joint 6+1 can be mounted.



Powerful Clamping Torque : 380Nm

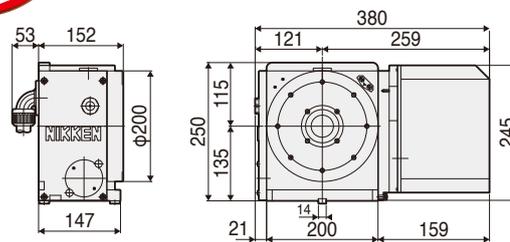


Air purge function is provided.

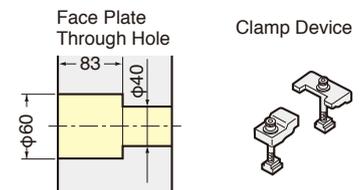
Rotary joint is included in the photo. (optional)

## NCT200AA21-08

**NEW**



Powerful Clamping Torque : 900Nm



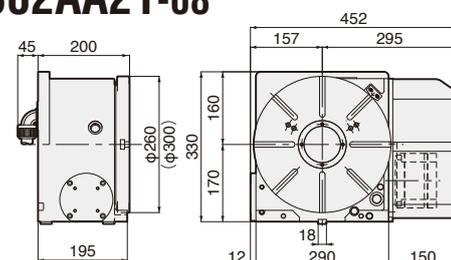
Air purge function is provided.

## CNC260AA21-08, 302AA21-08

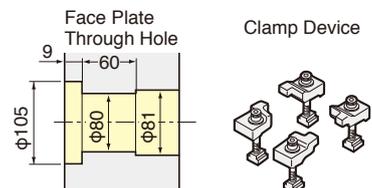
CNC260, 302AA21-08 (750W) is standard. CNC260, 302AA21-06 (High Torque) is available.



CNC260



Pneumatic Clamping Torque UP 588Nm



For the rotary table with pneumatic brake, air purge function is provided inside the motor cover as standard.

High speed rotation Z series is available for all models of CNC rotary table. e.g. CNCZ260AA21

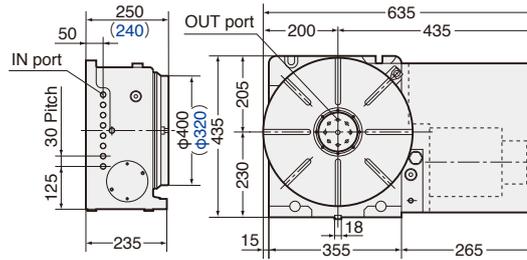
# CNC ROTARY TABLE with $\alpha 21$ CONTROLLER



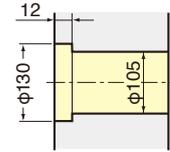
## CNC321, 401AA21-18



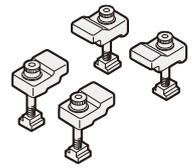
Rotary joint is included in the photo. (optional)



Face Plate Through Hole

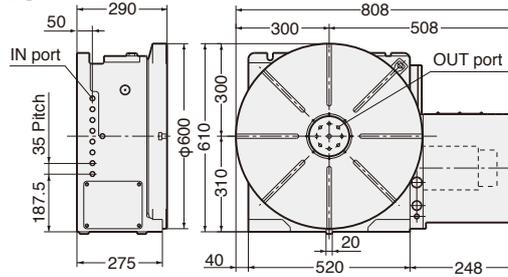
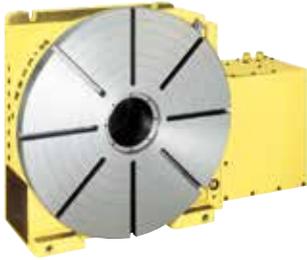


Clamp Device

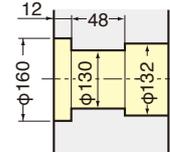


★ Please contact us for the dimension of CNC321A21-18.

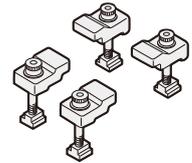
## CNC501, 601, 802AA21-18



Face Plate Through Hole



Clamp Device

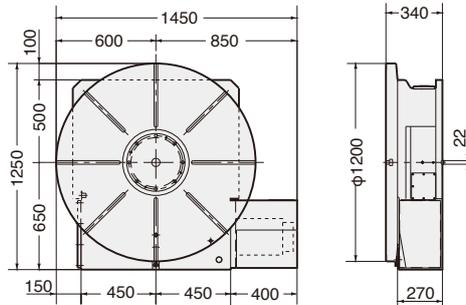


★ Please contact us for the dimension of CNC501, 802A21-18.

## CNC1000, 1200AA21



Center socket is included in the photo. (optional)

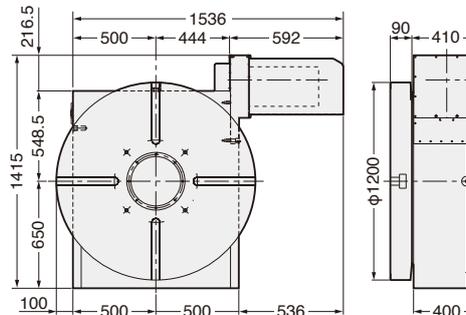
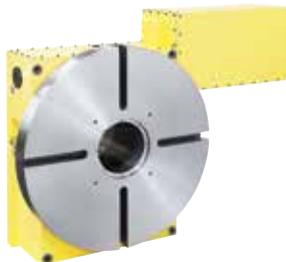


★ Ultra precision of  $\pm 3\text{sec.}$  is available as an option. There is no through hole on the rotary table due to the rotary encoder for ultra precision option.

★ Please contact us for the dimension of CNC1000A21.

★ Code No. will be varied according to the servo motor capacity. e.g CNC1000AA21-44 (4.4kW Motor)

## CNC1201AA21

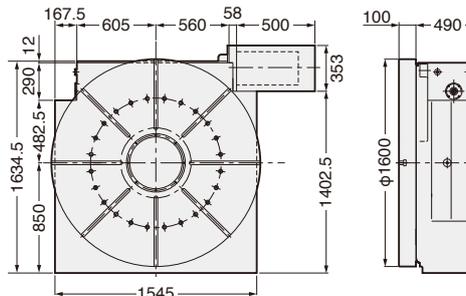
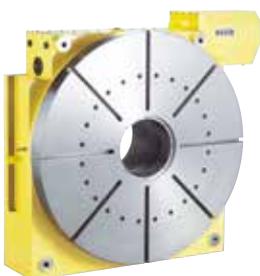


★ Ultra precision of  $\pm 3\text{sec.}$  is available as an option. There is no through hole on the rotary table due to the rotary encoder for ultra precision option.

★ Please contact us for the dimension of CNC1000A21.

★ Code No. will be varied according to the servo motor capacity. e.g CNC1201AA21-110 (11kW Motor)

## CNC1600AA21



★ Ultra precision of  $\pm 3\text{sec.}$  is available as an option. There is no through hole on the rotary table due to the rotary encoder for ultra precision option.

★ Please contact us for the dimension of CNC2000A21.

★ Code No. will be varied according to the servo motor capacity. e.g CNC1600AA21-44 (5kW Motor)

The specification of the large rotary table will be varied according to your application.

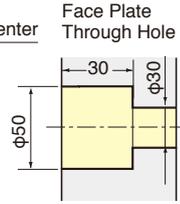
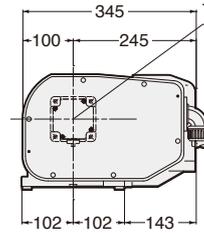
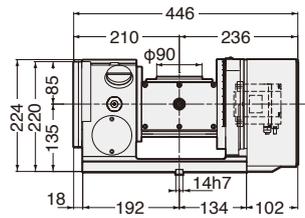
1. With/without T slot, Width of T slot
2. Spindle hole dimension...Center socket for centering is normally installed.
3. Layout of the rotary table...Vertical use, horizontal use, vertical and horizontal use
4. Total reduction ratio...Suitable capacity of the servo motor can be selected.



# Tilting Rotary Table with $\alpha 21$ Controller



## 5AX-100WAA21 **NEW**



Motor capacity of rotary axis and tilting axis are added at the end of Code No. e.g 5AX-100WAA21-0404

## 5AX-130WAA21

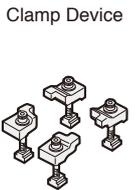
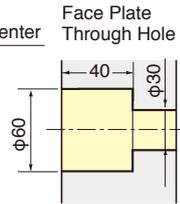
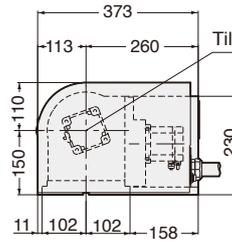
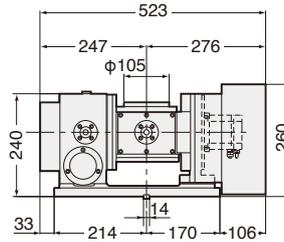
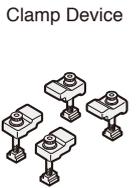
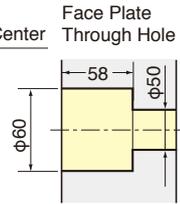
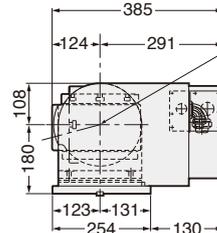
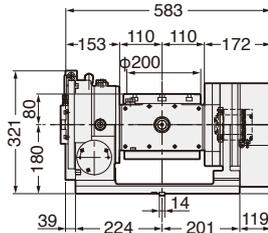


Photo with  $\phi 130$ mm plate.  
Rotary axis cable stays.

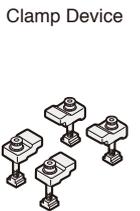
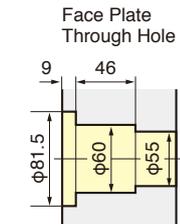
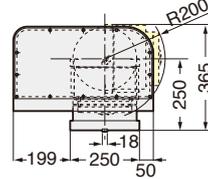
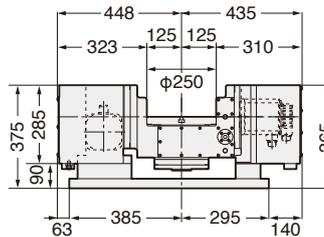
Motor capacity of rotary axis and tilting axis are added at the end of Code No. e.g 5AX-130WAA21-0404

## 5AX-201WAA21



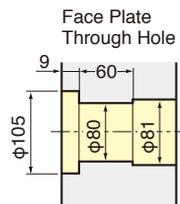
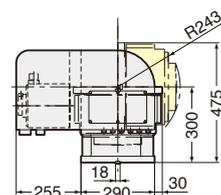
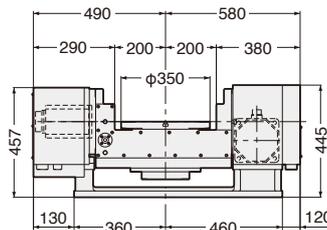
Motor capacity of rotary axis and tilting axis are added at the end of Code No. e.g 5AX-201WAA21-0408

## 5AX-250WAA21



Motor capacity of rotary axis and tilting axis are added at the end of Code No. e.g 5AX-250WAA21-1313

## 5AX-350WAA21



Motor capacity of rotary axis and tilting axis are added at the end of Code No. e.g 5AX-350WAA21-1318

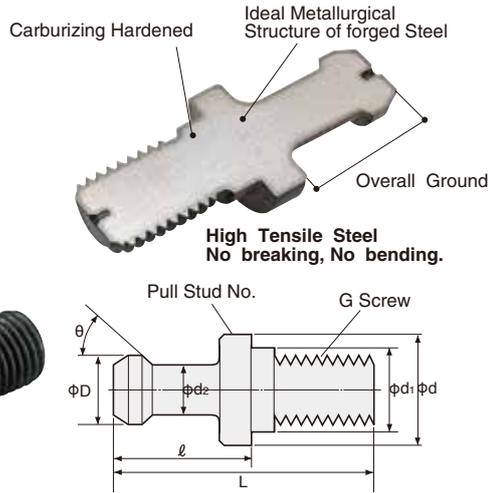


Please refer to CNC ROTARY TABLE Catalogue.

# PULL STUD



PS



●PULL STUDS of new standard are also available.

## Pulling Force Measuring Tool



Transducer size  
W X H X D = 100 X 140 X 200

We would strongly recommend that a regular check on the pulling force of your M/C should be carried out to identify any problems at early stage. The NIKKEN Pulling Force Measuring Tool - CLP comes complete with 5m cable and the pulling force of your machine can be measured with the CLP using either a manual tool change or A.T.C.

Pull Stud No.	D	d	d <sub>1</sub>	d <sub>2</sub>	L	ℓ	G	θ°	Type	Remarks
PS- 1	15	23	17	10	60	35	M16	45°	BT40 MAS-1 Standard Type	MAS P40T-1
60°								BT40 MAS-2 Standard Type	MAS P40T-2	
- 3	19	31	21	14	70	40	M20	45°	BT45 MAS-1 Standard Type	MAS P45T-1
60°								BT45 MAS-2 Standard Type	MAS P45T-2	
- 5	23	38	25	17	85	45	M24	45°	BT50 MAS-1 Standard Type	MAS P50T-1
- 6								60°	BT50 MAS-2 Standard Type	MAS P50T-2
-16	11	16.5	12.5	7	43	23	M12	45°	BT30 MAS-1 Standard Type	MAS P30T-1
-17								60°	BT30 MAS-2 Standard Type	MAS P30T-2
-18	13	20	8.5	48	28			45°	BT35 MAS-1 Standard Type	MAS P35T-1
-19								60°	BT35 MAS-2 Standard Type	MAS P35T-2
-5F	23	38	25	17	85	45	M24	45°	BT50 MAS-1	PS-5 Top face ground
-6F								60°	BT50 MAS-2	PS-6 Top face ground
-50	19	23	26.187	17	110	70	1-8UNC	45°	BT50	
-53									CAT50U	
-63	15	23	26	14	85.2	45.2	1-8UNC	60°	CAT50U	
-70										
-72	15	23	16.281	10	57.15	32.15	5/8-11UNC	45°	BT40	
-O									CAT40U	
-O8-1	23	38	25	17	85	45	M24	90°	BT50-90° Type	
-P	15	23	17	10	60	35	M16	90°	BT40-90° Type	
-P5-1	24	36	25	18	71	31	M24	90°	BT50 MITSUI SEIKI	
-P10	15	23	17	10	50	25	M16	90°	BT40 MITSUI SEIKI	
-U2	11	16	12.5	7	40	20	M12	90°	BT30 MITSUI SEIKI	
-G4	13.7	20	13	8.9	53	28	M12	60°	BT35 MATSUURA	
-G5	23	38	25	17	85	45	M24	90°	BT50 MAZAK	
-G58	15	23	17	10	54.6	29.6	M16	90°	BT40 MAZAK	
-G45	28.956	37	25	20.828	65.2	25.2	M24	45°	BT50 MAZAK Top face ground	PS-G41 w/o hole
-G60	18.796	22	17	12.446	44.1	19.106	M16	45°	BT40 MAZAK Top face ground	PS-G51 w/o hole
-O19	18.796	21.8	16.281	12.446	41.256	16.256	5/8-11UNC		CAT40U OKUMA	
-O47-2	23	38	25	17	85	45.2	1-8UNC	90°	CAT50U	
-P13									IT50 MORI SEIKI	
-H30	24	36	—	18	71	31	1-8UNC	90°	CAT50U MITSUI SEIKI	
-B1	15	23	16.281	10	57.2	32.2	5/8-11UNC	45°	CAT40U HITACHI SEIKI	
-809	22	38	25	16	112	72	M24	60°	BT50 OKUMA	
-805	28	38	25	21	74	34	M24	75°	BT50 Top face ground	JIS-B6339-89
-801	19	23	17	14	54	29	M16	75°	BT40 Top face ground	JIS-B6339-89
-J	12	16.5	12.5	8	43	23.4	M12	75°	BT30 Top face ground	JIS-B6339-89
-M10	14	20	13	8	45	23	M12	90°	BT35 KITAMURA	
-R3	14	16	12.5	10	40	22	M12	90°	CAT30S MAKINO SEIKI	
-C	10	18	13	7	43	25	M12	45°	BT35 ROKU-ROKU	
-301	21	39	25	15	105.1	63.1	M24	45°	BT50 HITACHI SEIKO	
-Q3	15	23	17	11	60	35	M16	60°	BT40 TSUGAMI	
-BR*1	16	16.5	12.5	12.5	31.8	11.8	M12	45°	BT30 OKADA	
-81	7	10	6.5	4	28	17	M 6	45°	BT15 BROTHER	
-581	12	16.5	12.5	8	44	24	M12	R4	BT30 CKD	
-302	28	36	25	21	74	34	M24	75°	IT50	DIN69872-B-1988
-122	19	23	17	14	54	26	M16	75°	IT40	DIN69872-A-1988
-S27	13	17	13	9	44	24	M12	75°	IT30	DIN69872-A-1988
-S27	18.95	22.5	17	12.95	44.25	19.25	M16	45°	BT40 SNK	

★When Pull Stud w/o hole is used on Centre Through Coolant M/C, please use the Pull Stud which Top Face is ground.  
★\*1 The monoblock style of BT15 Slim Chuck with PS-BR is recommended.

## PULL STUD with ID



Please add the abbreviation of ID maker on to the PULL STUD No.  
e.g. PS-6-IDB

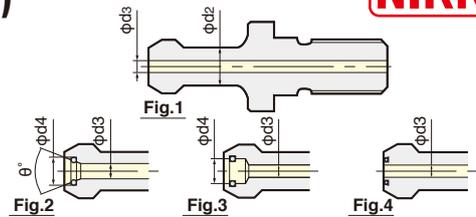
- OMRON V600-D23P53 (φ8×6) : -IDM
- V600-D23P54 (φ12×5) : -IDN
- BALLUFF BIS-C122-04/L (φ10×4.5) : -IDU
- BIS-C105-05 (φ12×6) : -IDB
- JAPAN ID SYSTEM WDD12B (φ12×6) : -IDQ

# PULL STUD (CENTRE THROUGH COOLANT)



**PS**  
(Centre Through Coolant)

The specification of the pull stud may be different depending on the machine specification and the machine serial number. Please confirm the specification of your machine and order the proper pull stud.



Pull Stud	Specification	Machine Maker	φd3	FIG	Remarks		
<b>PS-130E</b>	BT30 MAS- II Special <b>PS-17</b>	BROTHER, TOYOSK	2.5	1	φd2=7.5		
<b>-132</b>	BT30 MAS- I Special <b>PS-16</b>	FANUC	4	1	φd2=8		
<b>-114</b>		MORI SEIKI	2.5	2	φd4=6.5 θ=30°		
<b>-802</b>	BT30 JIS <b>PS-801</b>	MAZAK	4	1	PS-801 with hole		
<b>-876</b>			2.5	2	φd4=5.5 θ=30°		
<b>PS-73*1</b>	BT40 MAS-I <b>PS-1</b>	OKUMA HOWA	4	1	PS-1 with hole		
<b>-371</b>			3	2	φd4=7 θ=30°		
<b>-392</b>			3	3	φd4=7.3		
<b>-H28</b>			3	3	φd4=5		
<b>-75*1</b>			4	1	PS-2 with hole		
<b>-806-1</b>	BT40 MAS-II <b>PS-2</b>	MAKINO	6	1	PS-805 with φ6 hole		
<b>-813-1</b>			6	1	AS568-015 with O-ring		
<b>-854</b>			6	1	φ3 with air hole		
<b>-874</b>			6	2	φd4=10 θ=30°		
<b>-877</b>			3	3	φd4=7.3		
<b>-881</b>			3	2	φd4=7 θ=30°		
<b>-B62-1</b>			4	1	With O-ring S15		
<b>-366-D7</b>			BT40 Centre Through	DMG MORI	7	1	
<b>-366E-1</b>				MORI SEIKI	7	2	φd4=10 θ=30° <b>N29104*3</b>
<b>-G51</b>			BT40 ANSI <b>PS-G58</b>	MAZAK	7	1	PS-G58 with hole <b>34931900680*2</b>
<b>-G510</b>	BT40 ANSI <b>PS-G58</b>	MAZAK	7	3	PS-G51 High pressure <b>34261910160*2</b>		
<b>-309</b>			7	1	DIN 69872-A-1988		
<b>-380E</b>	IT40 DIN <b>PS-302</b>		7	1			
<b>-380E</b>	IT40 DIN Centre Through	MORI SEIKI	7	2	φd4=10 θ=30° <b>N29106*3</b>		
<b>-A1</b>	IT40 ISO A		7	1	ISO-7388/2-1984A		
<b>-A4</b>	IT40 ISO B		7.35	1	ISO-7388/2-1984B		
<b>-G52</b>	IT40 ANSI	MAZAK	7	1	<b>34931900660*2</b>		
<b>-G53</b>		MAZAK	7	1	<b>34931900670*2</b>		
<b>-B64-1</b>	CAT40U ANSI	OKUMA	4	1	With O-ring S15		
<b>-D72</b>			7	1	ANSI/ASME B5.50-1985		
<b>-381E</b>	CAT40U Centre Through	MORI SEIKI	7	2	φd4=10 θ=30° <b>N29105*3</b>		
<b>PS-5E</b>	BT50 MAS- I <b>PS-5</b>	MORI SEIKI	6	1	PS-5 with hole		
<b>-552</b>			JTEKT	6	3	φd4=10.4	
<b>-563</b>			YASDA, KOMATSU NTC	5.5	2	φd4=11.2 θ=60°	
<b>-595</b>			MORI SEIKI	8	2	φd4=11 θ=30° <b>N29120*3</b>	
<b>-5024</b>			OKUMA HOWA	6	2	φd4=9.5 θ=30°	
<b>-B66</b>			OKUMA	6	1	With O-ring P21	
<b>-5027</b>			OKK	6	4	With O-ring S9 at Face	
<b>-5030G</b>			TOSHIBA	4.5	1	With O-ring P21	
<b>-M16</b>			MAKINO	6	1	With O-ring P21	
<b>-H38-B</b>			HITACHI	3	4	With O-ring S5 at Face	
<b>PS-6E</b>			BT50 MAS- II <b>PS-6</b>	MORI SEIKI	6	1	PS-6 with hole
<b>-578</b>					JTEKT	6	3
<b>-579</b>	YASDA	5.5			2	φd4=11.2 θ=60°	
<b>-596</b>	MORI SEIKI	8			2	φd4=11 θ=30° <b>N29121*3</b>	
<b>-5016</b>	OKUMA HOWA	6			2	φd4=9.5 θ=30°	
<b>-5022G</b>	TOSHIBA	4.5			1	With O-ring P21	
<b>-5031</b>	OKK	6			4	With O-ring S9 at Face	
<b>-B60</b>	OKUMA	6			1	With O-ring P21	
<b>-H39-B</b>	HITACHI	3			4	With O-ring S5 at Face	
<b>-M23</b>	MAKINO	6			1	With O-ring P21	
<b>PS-O31</b>	BT50 90° <b>PS-O</b>	MORI SEIKI			6	1	PS-O with hole
<b>-O54</b>					OKUMA	6	1
<b>-O56</b>			MORI SEIKI	8	2	φd4=11 θ=30° <b>N29119*3</b>	
<b>-O67</b>			OKK	6	4	With O-ring S9 at Face	
<b>-O72</b>			OKUMA HOWA	6	2	φd4=9.5 θ=30°	
<b>-O48-B</b>			HITACHI	3	4	With O-ring S5 at Face	
<b>PS-810</b>	BT50 JIS <b>PS-809</b>	MAKINO	10	1	PS-809 with hole		
<b>-816-1</b>			6	1	With O-ring P21		
<b>-819</b>			JTEKT	6	3	φd4=10.4	
<b>-833</b>			YASDA	5.5	2	φd4=11.2 θ=60°	
<b>-850</b>			OKUMA	6	1	With O-ring P21	
<b>PS-P16</b>	BT50 MITSUI	MITSUI	8	1	PS-P with hole, Top surface ground		
<b>PS-G41</b>	BT50 ANSI <b>PS-G45</b>	MAZAK	10	4	With O-ring P12 at Face <b>44831901160*2</b>		
<b>-G63</b>			10	1	PS-G45 with hole, Top surface ground <b>32551901720*2</b>		
<b>-G410</b>			10	3	PS-G41 High pressure <b>34341901620*2</b>		
<b>-D92</b>			CAT50U ANSI		11.7	1	ANSI/ASME B5.50-1985
<b>PS-A3</b>	IT50 ISO A		11.5	1	ISO-7388/2-1984A		
<b>-A6</b>	IT50 ISO B		11.55	1	ISO-7388/2-1984B		
<b>-512</b>	IT50 DIN		11.5	1	DIN 69872-A-1988		

★When pull stud without hole is used on the M/C with the centre through tool coolant, please use the pull stud which top surface is ground.  
 ★JIS540 type pull stud (φd2=14) is recommended for the machine with the centre through tool coolant instead of MAS40 type pull stud marked \*1(φd2=10).  
 ★ \*2 shows the pull stud Code No. of MAZAK. ★ The top surface of the pull stud of Fig.2 is not ground. ★ \*3 shows the pull stud Code No. of MORI SEIKI. ★ \*4 φd3=φ7 is also available.

# PULL STUDS CODE NO.



□ :NC5 Spindle Available

Machine Maker	Machine Model	TAPER	Holder	Code No.
IKEGAI	TV4, 4F, 4L	No.40	BT40	PS-1
	TV-U4, 4LII H4 TH500 THU500	40	40	-805
	TV5, U5 MXseries BX110Pseries BX130Pseries TH600 THU600 AH6, 8	50	50	-5
IWASHITA INDUSTRIAL	IAMseries	No.40	BT40	PS-2
	IAMseries	50	50	-6
EGURO	E-32V E-32VLC	No.30	BT30	PS-16
	REVOLVER-32	30	NC5-46 Special	-837
	E-43V	40	BT40	-805
	APORO4	40	NC5-63	-834-1
ENSHU	S300 SS300 DT CENTERseries JE30S ES400	No.30	BT30	PS-16
	E-130 JE130 JE30S JE30G ES400 EV360, 360T	30	30	-17
	Super400, 450FV VMCseries HMCseries	40	40	-1
	JEseries ES450, 450T EV450, 530S GE460H, 480H	40	40	-2
	JE50	40	NC5-63	-N63AE
	EV650, 600MV VMCseries HMCseries VE65E	50	BT50	-5
OKUMA	JE80, 80G EV530 GE580, 590H	50	50	-6
	MA, MB, MC, MD, MF, MX-Aseries VH-40 VR-40 MP-46V GENOSseries	No.40	BT40	PS-2
	Centre Through (JIS)	40	40	-B62-1
	MX-55VA	40	NC5-63	-N63AE
OKUMA HOWA	MA, MB, MC, MD, MX-B, MCV-A, B, MCR, MU, MFseries MCM-B	50	BT50	-6
	Centre Through	50	50	-B60
	MILLAC Vseries, Hseries MAC TURNseries MM-300 ML-300	No.40	BT40	PS-1
	Centre Through	40	40	-371
	MILLAC VIIseries	40	40	-2
	Centre Through	40	40	-B62-1
	MILLAC Vseries, Hseries VTMseries VMP-10, 16	50	50	-6
	Centre Through	50	50	-5016
	MILLAC VIIseries	50	50	-6
	Centre Through	50	50	-B60
OKK	VTM-65, 100	50	NC5-100	-N100VE
	PM300, 350	No.30	BT30	PS-801
	PCV, TRC, VM, AMC, DGM, VP, GC, HM, HP, VCseries PG8 PM400III DV5, V1 VB53 GR400	40	40	-1
	MCV-350, 410/40 PCH-400, 500 HPV400 MPH-400	40	40	-08-1
	VM4, 5 PCV-40II PCV-55 VC8-Jr4, 5 HM 40 HC8-40 PM 400 PG 8	40	NC5-63	-N63VE
	KCV600/800 MCVseries VC8series HM 50, 63 MCH600 HC8-50, 63, 600	45	NC5-85	-N85VE
	MCV, MCH, MHA, KCV, ACM, DCM, VM, HMseries PCV-510, 620 VG5000 GC600 DV5	50	BT50	-0
	PCV50, 55, 60	50	50	-5
OHTORI	PM500II	50	NC5-100	-N100VE
	OSH-54 OSVseries OSU-545 BMVII-85	No.40	BT40	PS-1
	FTV-500, 500HV	40	40	-805
	BMV-40NC (OP), 400NC (OP), 500LNC, 500ANC OSV-139 FTV-1200	50	50	-5
OM	OMC-40HS	No.40	BT40	PS-1
	OMC-50V, 50HS	50	50	-5
	TDC, Omega-M, VTLex-M, Neo Xseries	50	50	-6
KITAMURA	Centre Through	50	50	-579
	HX-250G	No.30	BT30	PS-801
	Centre Through	30	30	-802
	Mycenter-3XG, 4XiF, 7X, HX400G, Supercell-400 Mytrunnion-5 JIGcenter-5	No.40	BT40	PS-805
	Centre Through	40	40	-806-1
KIRA	Mycenter-4XiF, 7X, HX500i, 630i, 800iL, 1000i, 1250i, BridgeCenter-8F, 10	No.50	BT50	PS-809
	Centre Through	50	50	-810
	VMC, HMC, Arik, KN, VTCseries PC-30E, 30F, 30H, 30W KPC30a, 30b HPC-30Vb PCV-30, 150	No.30	BT30	PS-16
	Centre Through	30	30	-802
KIWA	VTC-30a	30	NC5-46	-N46AE
	KV, Arik, VTC, KNseries PC40G	40	BT40	-1
	Centre Through	40	40	-806-1
KURASHIKI	KCW-5VR	No.30	BT30	PS-16
	Triple-V21i, V41 KNH-426 KH-41, 45 KCW-10V	40	40	-805
	Centre Through	40	40	-806-1
	KH-55	No.50	BT50	PS-809
KOMATSU NTC	Centre Through	50	50	-810
	KV-500, 500H, 700	No.40	BT40	PS-1
	KVseries KMVseries KBTseries KHseries CMNseries KHM-125 KBM11X	50	50	-5
SHIZUOKA	N, Zseries	No.30	BT30	PS-16
	TMC, NH, NV, H, N, Z, ZV, ZHseries	40	40	-1
	ZV5400 ZH4000, 5000 (Centre Through)	40	40	-371
	TMC, CNC, N, ZVseries	50	50	-5
	ZV5500 (Centre Through)	50	50	-563
SHIN NIPPON KOKI (SNK)	CM-210G, 350B CM300-A, 300-5A	No.30	BT30	PS-16
	Bseries CM-350 SSR-550 HSR-7, 10	40	40	-08-1
	Bseries SMVseries SG-600	50	50	-0
SUGINO MACHINE	SUPER HIGH SPEED MACHINE CMV	No.30	NC5-46	PS-N46
	CMV-50, 70T	40	BT40	-2
	CMV, DC, ESP FSP, HF, HPS, PS, RB, BFRseries PC-55V EXI-70K	50	50	-6
	REBO FLAME MACHINE, RAIL MACHINE	50	NC5-100	-N100VE
TAKIZAWA	PV640J	No.30	BT30	PS-16
	FA, FV, FVN, FXN, JV, PVseries e500H4, UX570	40	40	-1
	FH-40II	40	NC5-63	-N63AE
	FV, FVN, FHN, FXN, PV, BN, FH, FA, RB, SBseries SV-65 e500H5	50	BT50	-5
	DN-1V, 2V, 1H (Centre Through)	50	50	-52
TAKEDA KIKAI	Self Centre V15, NSV15, VC15, H15, H15B	No.30	BT30	PS-17
	MAC-V1E, 430VP VP10	No.40	BT40	-1
	MAC-V40, 40B Y520	40	40	-805
	MAC-V40, 40B Y520 (Centre Through)	40	40	-806-1
TSUGAMI	MAC-V40	40	NC5-63	-N63VE
	MV, TK-VSseries	No.40	BT40	PS-1
	VSseries	50	50	-6
TSUGAMI	VMA3-III VMC3-III VML3-III VA31H, 32H VA3	No.30	BT30	PS-16
	FMA3-III FMA5-III	40	40	-2
	VMA4-III	40	40	-1
	VMT4-III	40	40	-805

\*This table shows the standard Pull Stud Code No. for the newest M/C. Please refer old NIKKEN catalogue for the Pull Stud of the old M/C.  
 \*The Pull Stud Code No. depends on your M/C specification, therefore please check your M/C specification to select the proper Pull Stud.

# PULL STUDS CODE NO.



□ :NC5 Spindle Available

Machine Maker	Machine Model	TAPER	Holder	Code No.
TOSHIBA	JRV400, 450 NX76B	No.40	BT40	PS-1
	BMC, BTD, BP, MPC, MPE, MPF, MPH, VMC, BF, BTU, NX, BTH, BSF, BTFseries	50	50	PS-5
	MF-2020 MP-2635(5A)	45	NC5-85	PS-N85VE
	NX-76 MGF-21130	50	NC5-100	PS-N100VE
	BTD-110R13U	50	NC5-100	PS-831
TOYO SEIKI	TVT, TVMC, THMC, TTC, DTRseries	No.30	BT30	PS-17
	Centre Through	30	30	-130E
	VT 30SR TVMC 301 THMC 310 TVT310S TVT313M1.S, SL TVT302M1.S, L	30	NC5-46	-N46AE
	TVT 30SR Special TVMC 301 THMC 310 TVT310S TVT302M1.S, L	30	NC5-46	-N46E
	H-44, 45 THMC410 H-46	40	BT40	-1
NIIGATA	PN40, 40A SPN40 EF40H ENseries VNseries PNseries	No.40	BT40	PS-2
	HNseries BHNseries SPN50, 63 ULTY501, 701, 901 MPN-80	50	50	-6
	BFN-50, 63	40	NC5-63	-820-1
	SBS-2	40	-63	-358
	HFA-3 VFR-3 HAS-3 HLA-3 HLB-3	No.30	BT30	PS-16
NISHIDA KIKAI	HDB-3	30	NC5-46	-827
	HKD-3 HDB-3	30	-46	-N46E
	VS-4, HS-4C, 4M HT-4 HD-4 HW-4 HLE-4 HFA-4 HLB-4	40	BT40	-1
	HDC-4	40	NC5-63	-849
	HFB-4 HFC-4 HDC-4	40	-63	-N63AE
	HS-5C, 5M, 5D HP-5A, 5B HFA-5 HLB-3	50	BT50	-6
	V3, V3-5AX	No.30	NC5-46	PS-N46AE
HASEGAWA	FZ-16, 16L, 16E, 26, 26L DZ-16, 16L, 16LA	No.30	BT30	PS-16
	MC-3VA, 3VS, 4VS EN-3, 4, 6 EN-40 HN-40	40	40	-1
	MC-50V, 70V, 80V, 6V, 5VA, 6VA, 8VA T-80MH, 180MH	50	50	-5
FANUC	ROBO DRILL/DRILL MATEseries X-T14iA X-T21iD X-T21iE X-T21iF X-D14iA X-D21iA	No.30	BT30	PS-16
	Centre Through	30	30	-132
	X-T14iB X-T14iC X-T21iD X-T21iE X-T21iF	30	NC5-46	-123-AIR
	Centre Through	30	NC5-46	-123E
FUJI SEIKI	FMC-3V, 30V5, 35V5	No.40	BT40	PS-2
	Centre Through	40	40	-806-1
	FMC-6V, 6VR, VG, VP, 50HF, 300QT	50	50	-5
	Centre Through	50	50	-526
BROTHER	TC-201, 203, 203C, 20A	No.15	No.15	PS-BR
	TC-221, 225, 227, 229, 229N, 22A, 311, 312N, 31A, 321, 323, 324, 324N, 325, 32A, 32B, S2A, S2B, S2C, R2A, 22B, S2D, 32BN, 31B, R2B, S500X1, S700X1	30	30	-17
	Centre Through	30	30	-130E
	TC-22A, 32A, 32B	30	NC5-46	-N46AE
	TC-731, 731S	40	BT40	-1
HEIAN CORPORATION	REX, ER, NCseries	No.30	BT30	PS-16
	ER, NCseries	35	MAS BT35	PS-19
	NCseries	40	BT40	PS-2
HORKOS	HFN, HTNC, ESseries NJ50 RS50H PM70H RM70 ES50H ES50V-I	No.30	BT30	PS-16
	HFN, HTNC, RM, DM, HFNseries NS70 MOH630 THMC410 TM70H TG70H MBE	40	40	-1
	HFN-SAM40 HFN-SM30H RS50H	30	NC5-46	-N46E
	Centre Through	40	BT40	-73
	HFN, HTNCseries G50H C50H DM100H RM100H NM100 DM100H NM100	50	50	-5
HOWA	Centre Through	50	50	-5E
	MMN, MDT, MBN, MSN, MEN, MJN, MZN, MKNseries	No.30	BT30	PS-16
	Centre Through	30	30	-132
	MXN-600-VCJ	30	NC5-46	-N46AE
	MBN, MCN, MHNseries MCV-800	40	BT40	-1
	Centre Through	40	40	-73
	MBN-800 HS-500	50	50	-5
Centre Through	50	50	-5E	
HONDA ENGINEERING	SPOOL HOLE MACHINE	No.30	NC5-46 Special	PS-N46AE
	H-VS5000	30	NC5-46	-N46AE
	H-VT6000 SHAFT END MACHINE	40	NC5-63	-N63AE
	H-CR462	40	NC5-63 Special	Special
HOMMA	NN-S HB-LB461	50	NC5-100	PS-N100VE
	FM, TAC, STAC, HM, HTM, HGMseries	No.50	BT50	PS-5
MAKINO	a1, A, Vseries J55, 88 D300, 500, 800Z BH50	No.40	BT40	PS-805
	Centre Through	40	40	-813-1
	BNC, FNC, MCseries SF64 A55, 66, 88 FB127series	40	40	-1
	a1, A, V, GFseries	50	50	-809
	Centre Through	50	50	-816-1
MAKINO SEIKI	FDNC, FNC, GF, MC, MCC, MCD, MCFseries GN1712-A a71, 81 A77, 88, 99, 100 V77	50	50	-5
	MSA30, 40, 50 MS5A, 5B MSX30 PS1-W MSJ25 MSJX25 MSB58, 512, 516	No.30	BT30	PS-16
	MSA30, 40, 50 MS5A, 5B MSX30 MSB58, 512, 516, S5B	40	40	-1
	MSA30, 40, 50 MSB58	40	NC5-63	-N63VE
	Centre Through	40	BT40	-73
MATSUURA	LMMASTER, 400V-24, FX-1	No.30	BT-30	PS-17
	VX-0, -1 FX-0, 1G, 2 LX-0, 160 LF-160 LV-500	30	30	-801
	MC, RA, MAM, FXM, FX, H.Max, V.Max, H.Plus, R.Plus, V.Plusseries Mold Plus800 MX-520 VX-1000	40	40	-805
	MC-600VG, 600VDC RA-4G MAM-500HF	40	NC5-63	-N63AE
	MCseries RAseries MAMseries	40	NC5-63	-N63VE
	Centre Through	40	BT40	-806-1
	MC-1000V, 1250V, 1500V, 2000V MC900H, 900HG H.Plusseries	50	50	-6
RA-4G(#50) MC-1500VG(#50) MC-900HG LX-1500	50	50	-809	
MITSUI SEIKI	VS, HR, HT, HUservices VT3A VU50A	No.40	BT40	PS-P5-1
	Vertexseries	40	40	-805
	Centre Through	40	40	-813-E5
	VU, VJ, VS, H, HU, HS, HR, HPTseries	50	50	-P
	Centre Through	50	50	-P16
MITSUBISHI	V-360 M-V4C, V5C M-H4B, H5B MPAseries M-Vseries M-Hseries	No.40	BT40	PS-1
	V, M-V, M-H, M-VS, MPA, MAF, MVR, MHT, MKH, DHseries	50	50	-6
	Centre Through	50	50	-6E
	MAF	50	NC5-100	-N100VE
MECTRON (MIYANO)	MSV, MTV-C, , MTV-T, MTS, TSVseries MCH-80	No.30	BT30	PS-17
	MSV, MTV-C, MTV-T, TSVseries	40	40	-2

★This table shows the standard Pull Stud Code No. for the newest M/C. Please refer old NIKKEN catalogue for the Pull Stud of the old M/C.  
★The Pull Stud Code No. depends on your M/C specification, therefore please check your M/C specification to select the proper Pull Stud.

□:NC5 Spindle Available

Machine Maker	Machine Model	TAPER	Holder	Code No.
MORI SEIKI	TV-300, 400 ACCUMILL4000 ULTIMILL H3000, V3000 MILLTAP700 MAX3000	No.30	BT30	PS-16
	Centre Through	30	30	-114
	SV, SH, SLV, MV, MH, NV, NMV, NVD, NH, AFM, Dura Vertical, NVX, NHX, VS, NTseries	40	40	-O8-1
	Super TILT500 SVL5000, 5250	40	40	-366E-1
	Centre Through	40	40	-366E-1
	SV400	40	NC5-63	-N63AE
	SV500 SH50 SH500	40	NC5-63	-N63VE
	SV, SH, MV, MH, MB, NV, NH, NVX, NHX, VS, NMH, NMV, NTseries	50	BT50	-0
	MV1003	50	NC5-100	-N100VE
MV65B/50	50	-100	-835	
DMG MORI SEIKI	duo BLOCKseries	No.40	BT40	PS-366
		40	I T40	-302
	duo BLOCKseries Centre Through	40	BT40	-366-D7
		40	I T40	-309
HITACHI	VKseries VM-40, 50 VS-40, 50, 60 VKCseries VAseries HG-400 HSseries HK-630 HAseries	No.40	BT40	PS-1
	VS-50, 60	40	NC5-63	-N63AE
	Centre Through	40	BT40	-H28
	VS-40, 50, 60, HG- 800	45	NC5-85	-N85VE
	VK-45, 55, 65, 85 VAseries VGseries VFseries VS-50, 60 HSseries HK-630 HGseries HCseries	50	BT50	-0
	HS-630 HG-630 VF-23 VK-85	50	NC5-100	-N100
	Centre Through	50	BT50	-048B
YAMAZAKI MAZAK	IMPULSE30 TypeA, B, C UN-600V, 600H	No.30	BT30	PS-17
	VTC, V, VQC, AJV, FJV, FH, FF, VARIAXIS, NEXUS, INTEGREX, VCN, HCN, PFH, μseries ANGULAX900	40	40	-G58*1
	FF-510, 660	40	NC5-63	-N63AE
	VTC, V, VQC, AJV, FJV, SV, H, FH, MTV, HV, INTEGREX, VORIEX, VARIAXIS, VCN, HCN, VERSATECH, μseries	50	BT50	-G45*1
	H-12, 12N, 15, 20, 25 V12, 15, 20 VQC-10/15, 20/50	50	50	-G4
YASDA	YBM, YPC, VPCseries H30i H40	No.40	BT40	PS-1
	YBMVi40	40	40	-805
	Centre Through	40	40	-854
	YBM, YMCseries	50	50	-5
	Centre Through	50	50	-563
	YBM-700N, YBM-120N	50	NC5-100	-N100VE
ROKU-ROKU	LIBERO RXseries	No.30	BT30	PS-16
	LIBERO RXseries	30	NC5-46	-110
	GIGA LIBERO RXseries	30	NC5-46	-N46E
	KX, MX, LX, GR-655N VERTIMACseries RMseries GIGA	40	BT40	-1

★This table shows the standard Pull Stud Code No. for the newest M/C. Please refer old NIKKEN catalogue for the Pull Stud of the old M/C.

★The Pull Stud Code No. depends on your M/C specification, therefore please check your M/C specification to select the proper Pull Stud.

★\*1 Please order the pull stud Code No. of MAZAK P.304

## TECHNICAL INFORMATION for STOPPER PIN

This is typical information (guide line) of the stopper pin only for the Spindle Speeder and Oil Hole Holder. Be careful that the dimension of the stopper pin for Angular Head is different from this. Please refer your M/C specification very carefully for more detail.

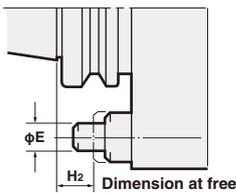


Fig.1

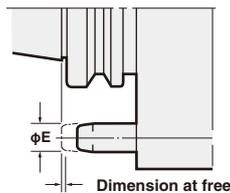
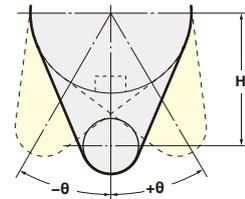


Fig.2



Machine Maker	Shank	H	E	H2	Fig.
ENSHU	BT30	50	12	4	1
	40	60	12	14	1
	50	82	18	22	1
OKUMA	BT40	65	18	0	2
	50	80	18	0	2
OKUMA HOWA	BT40	65	18	0	2
	50	80	18	11	2
OKK	BT40	65	12	16	1
	50	82	18	22	1
KITAMURA	BT40	65	18	0	2
	50	82	18	22	1
KURASHIKI	BT40	60	12	14	1
	50	145	18	0	2
SHIN NIPPON KOKI(SNK)	BT50	82	18	22	1
TOSHIBA	BT40	65	18	0	2
	50	145	24	24	2
JTEKT	BT40	65	18	0	2
	50	80	18	4	2
NIIGATA	BT40	65	18	0	2
	50	80	18	11	2

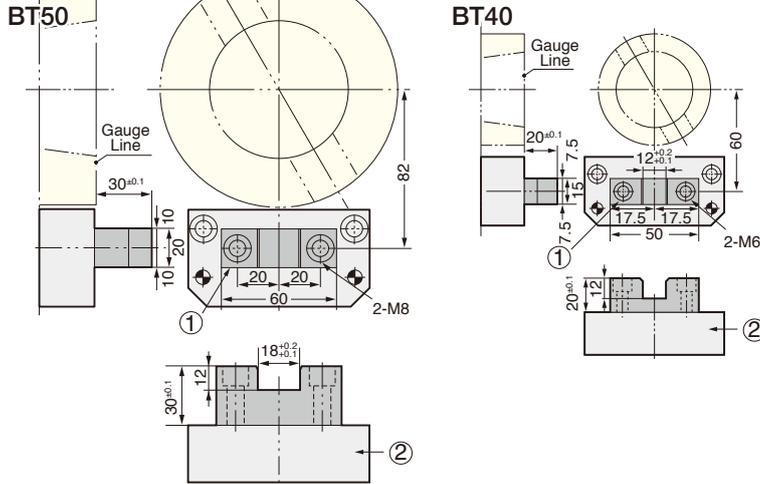
Machine Maker	Shank	H	E	H2	Fig.
MORI SEIKI (HITACHI SEIKI)	BT40	60	12	14	1
	50	82	18	22	1
BROTHER	BT30	40	12	12	1
	40	60	12	14	1
KIRA	BT30	55	12	-1	1
FANUC	BT30	55	12	29	1
MAKINO	BT40	65	18	2	2
	50	80	18	5	2
MATSUURA	BT40	60	12	28	1
	50	82	18	22	1
MITSUI SEIKI	BT40	60	12	14	1
	50	82	18	22	1
MITSUBISHI	BT40	65	18	0	2
	50	80	18	27.7	2
MORI SEIKI	BT40	65	18	4	2
	50	80	18	0	2
YAMAZAKI MAZAK	BT40	65	18	2	2
	50	80	18	0	2
ROKU-ROKU	BT40	65	18	9	2
YASDA	BT40	60	12	14	1
	50	82	18	22	1

# TECHNICAL INFORMATION for STOPPER BLOCK



This is the information for the stopper block when **NIKKEN Standard Spindle Speeder, Oil Hole Holder and Angular Head** are used. Please be careful that the pitch between the spindle centre and the centre of the hole of the stopper block varies depending on your M/C specification. When the stopper block has been already installed on your M/C, **please specify the drawing of the spindle flange on your M/C**, when ordering of the Spindle Speeder, Oil Hole Holder and Angular Head etc.

## For SPINDLE SPEEDER

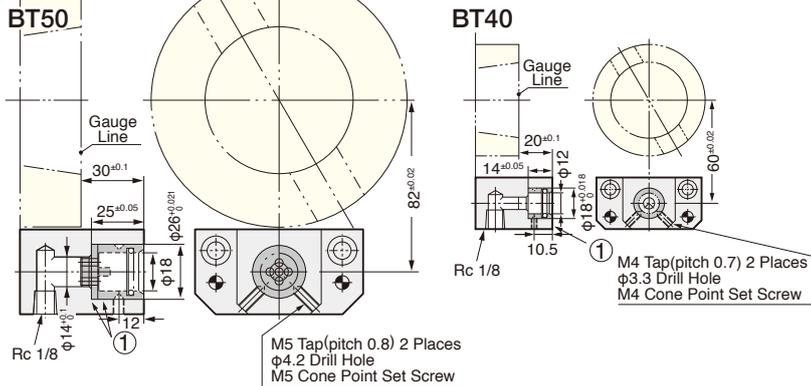


1. Please use **NIKKEN Original Stopper Block for Spindle Speeder** ① and make the **Stopper Block Base** ② by yourself.

**Code No. of Stopper Block**  
 #40:NX40-STB  
 #50:NX50-STB

2. How to make the Stopper Block Base
  - Make the suitable shape to meet with the tapped holes and the dowel pin holes on your M/C.
  - It's not necessary to be heat-treated.
3. The pitch between the spindle centre and the centre of stopper block has to be physically adjusted when the spindle speeder is clamped on the spindle.

## For OIL HOLE HOLDER

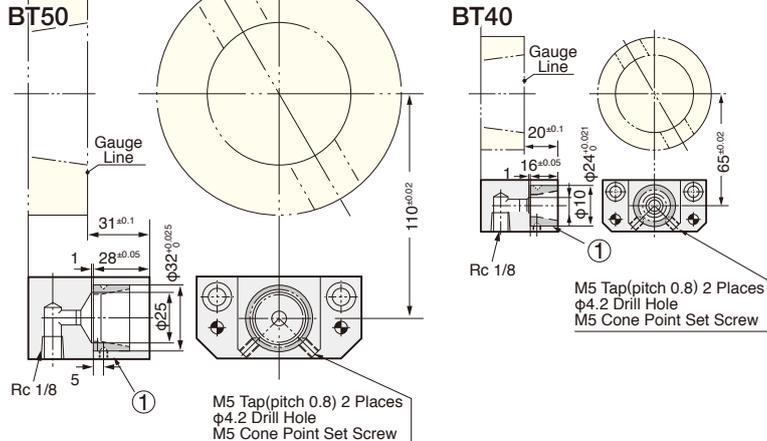


1. Please use **NIKKEN Bushing & Push Pin for the Oil Hole Holder** ① and make the Stopper Block by yourself.

**Code No. of Bushing & Push Pin**  
 #40:BK40BS-A with O-ring P12  
 #50:BK50BS-A & BK50PP-A with O-ring P18

2. How to make the Stopper Block.
  - Make the suitable shape to meet with the tapped holes and the dowel pin holes on your M/C.
  - It's not necessary to be heat-treated.
3. The pitch between the spindle centre and the centre of the hole of stopper block has to be physically adjusted when the oil hole holder is clamped on the spindle.

## For ANGULAR HEAD

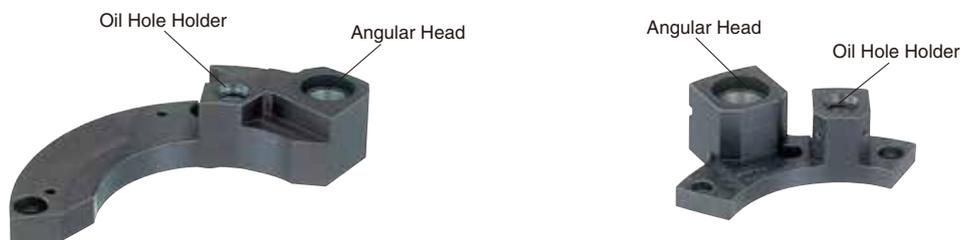


1. Please use **NIKKEN Bushing for the Angular Head** ① and make the Stopper Block by yourself.

**Code No. of Bushing**  
 #40:AHA-03000-01  
 #50:AHA-01000-02

2. How to make the Stopper Block
  - Make the suitable shape to meet with the tapped holes and the dowel pin holes on your M/C.
  - It's not necessary to be heat-treated.
3. The pitch between the spindle centre and the centre of the hole of stopper block has to be physically adjusted when the angular head is clamped on the spindle.

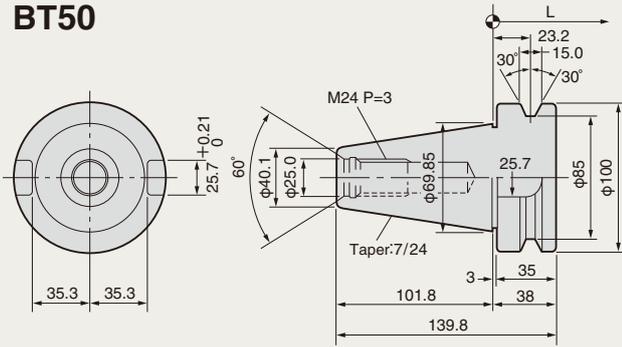
The combination stopper block is also available. Please specify the dimension when ordering.



# DIMENSIONS of ISO, DIN & MAS BT SHANK

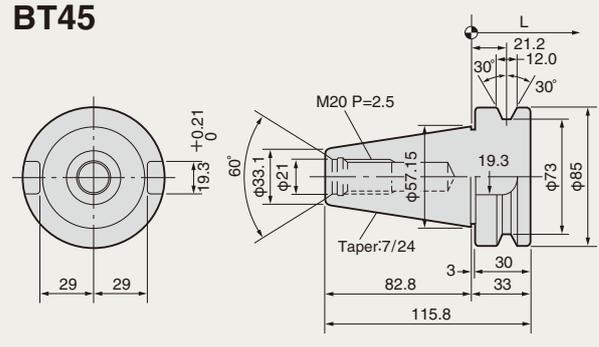
**NIKKEN**

## BT50



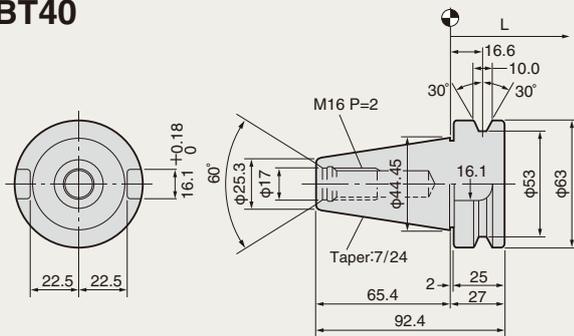
Pull Stud Code No. : PS-5, 6, 0, P, G41, G45, 50, 52

## BT45



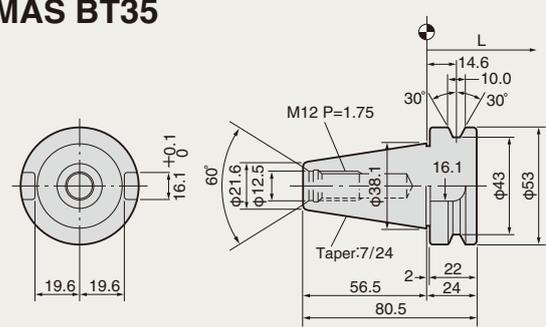
Pull Stud Code No. : PS-3, 4, 02, G1

## BT40



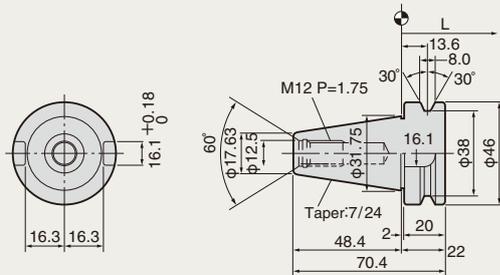
Pull Stud Code No. : PS-1, 2, 08, P5, G51, G58, G5, 301, 302

## MAS BT35



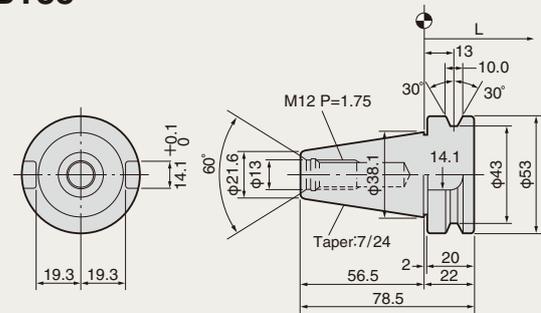
Pull Stud Code No. : PS-18, 19

## BT30



Pull Stud Code No. : PS-16, 17, 81, P10

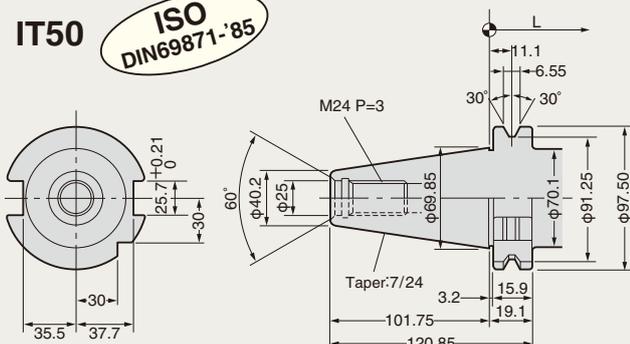
## BT35



Pull Stud Code No. : PS-U2, J

## IT50

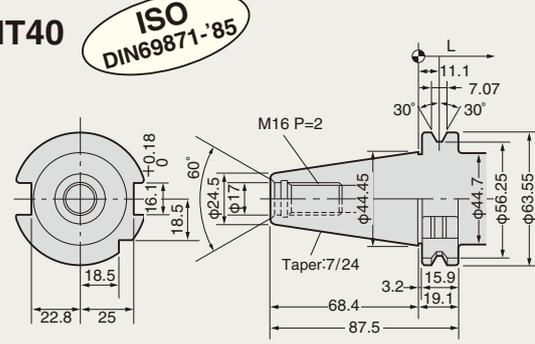
ISO  
DIN69871-85



Pull Stud Code No. : PS-A3, A6, 512

## IT40

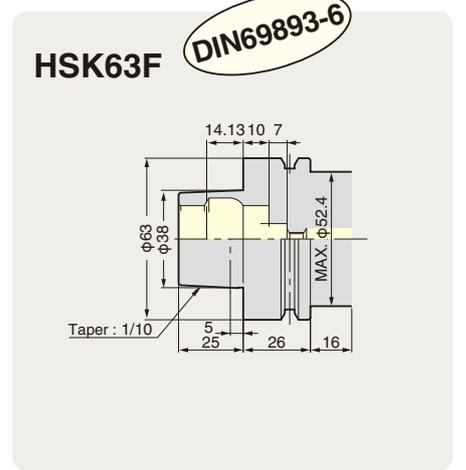
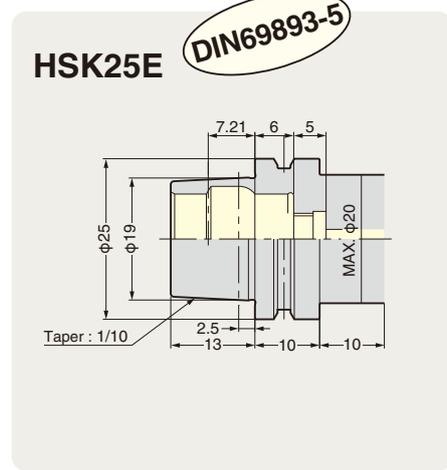
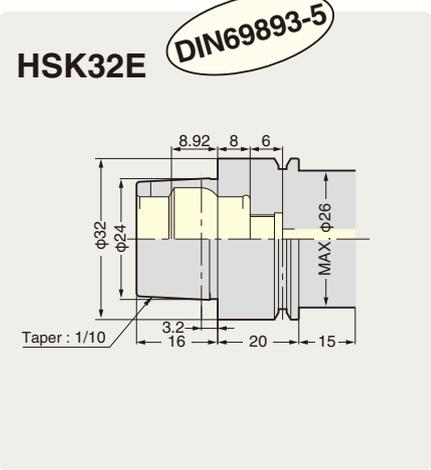
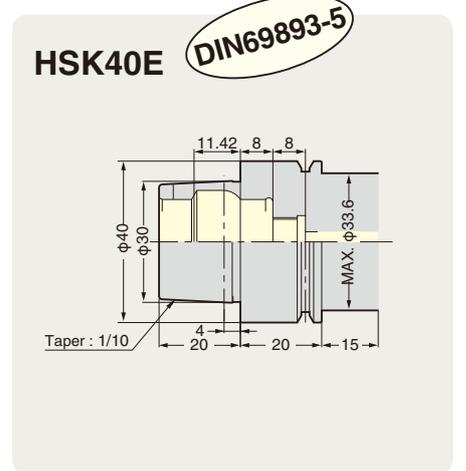
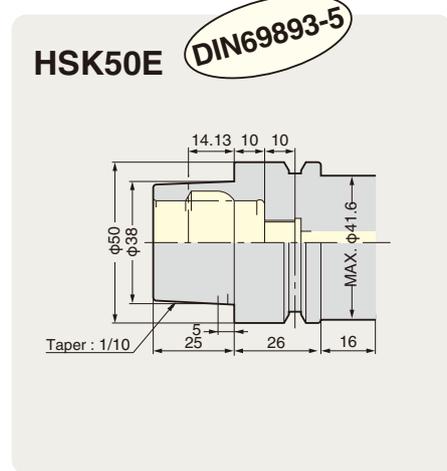
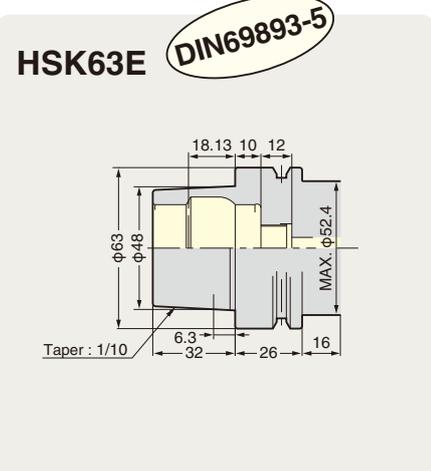
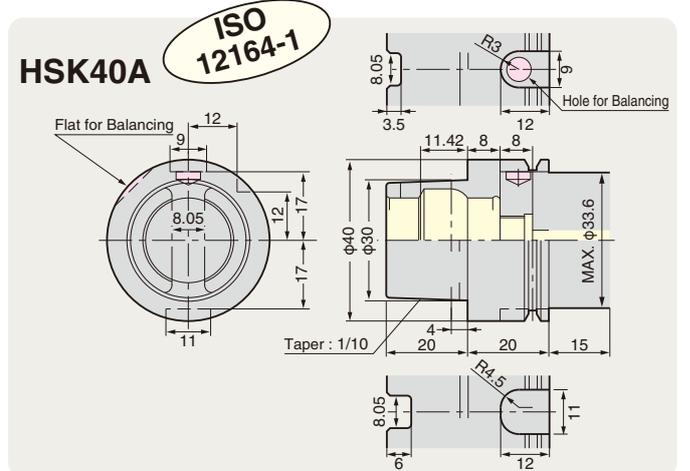
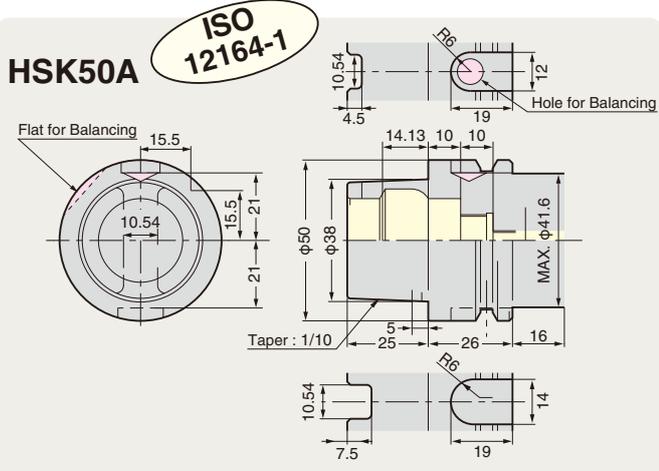
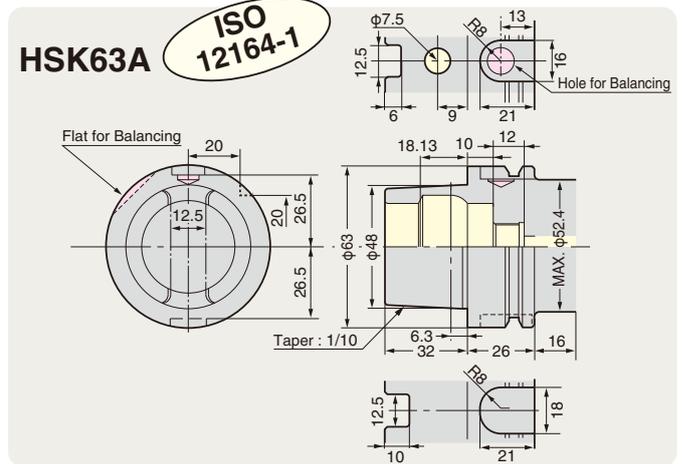
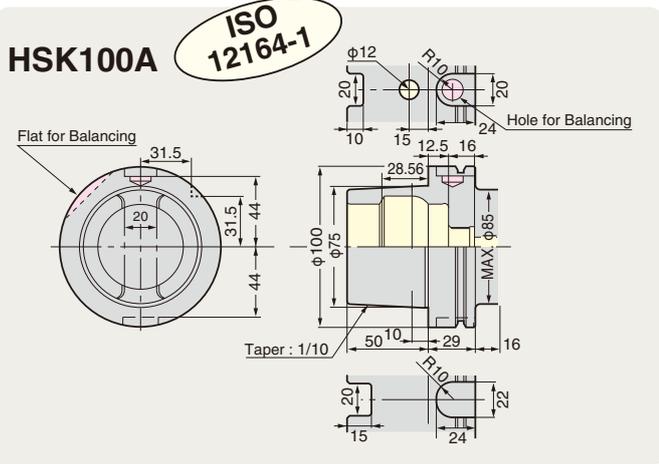
ISO  
DIN69871-85



Pull Stud Code No. : PS-A1, A4, 319



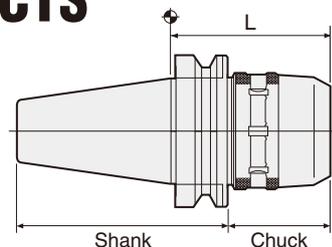
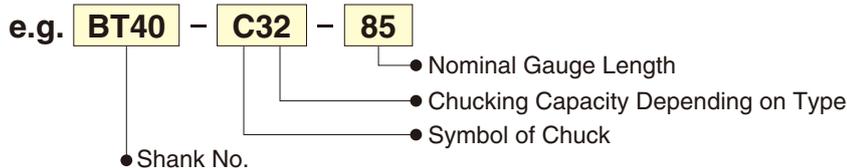
# DIMENSION of ISO, DIN & HSK SHANK



NIKKEN HSK Tooling has a hole and a flat for mass balancing as standard. Hole for manual clamp and hole for ID are not standardized. Special HSK\_A type which U grooves and drive key slots are symmetric design without V notch is also available. Please contact with us.

# ALPHABETICAL INDEX OF THE PRODUCTS

Explanation of Code No.



**BT/IT/CAT** BT/IT standard P.309, **CAT** P.291

Code No. "MBT□□" is **3Lock Toolig** for BT. P.169

Code No. "NBT□□" is **2Lock Toolig** for BT. P.189

Code No. "NC5-□□" is **NC5 Toolig**. P.229

Code No. "IT□□" is **IT Toolig**. P.151

Code No. "MIT□□" is **3Lock Toolig** for IT. P.184

Code No. "NIT□□" is **2Lock Toolig** for IT. P.223

Code No. "HSK□□" is **HSK Toolig**. P.244

Code No. "CAT□□" is **CAT Toolig**. P.290

When shank No. is **BT□□-**, please search by the symbol of chuck.

e.g. If Codo No. is **BT40-C32-85**, please refer **P.31** searched by **BT-C**.

## BT/IT-C□□ MULTI LOCK MILLING CHUCK ..... 31

When shank No. is started except **BT□□-**, please search by the shank No.

e.g. If Codo No. is **HSK63A-C32-115G**, please refer **P.245** searched by **HSK□□-C□□**.

## HSK□□-C□-G HIGH SPEED MULTI LOCK MILLING CHUCK ..... 245

### FIGURES

1MP	INSERT TIP	119
3MS	INSERT TIP	119
3P	INSERT TIP	121
3MP	INSERT TIP	119
4MP	INSERT TIP	119
5P	INSERT TIP	121
5AX-	CNC ROTARY TABLE	302
6MP	INSERT TIP	119
7P	INSERT TIP	121
9A	SPARE part of CHAMFERING TOOL	
9CKR	COLLET REMOVAL for MILLING CHUCK	33
9CMD	PILOT DRILL for COMBAT Z DRILL	295
9CMT	INSERT TIP for COMBAT Z DRILL	295
9DKT	INSERT TIP for PRO-END MILL	127
9HC	SPANNER	48
9HC-TW	BOTH HAND CLAMPING HANDL BENKEI	48
9MC	STOPPER for MILLING CHUCK	129
9PEM	LOCK BOLT for PRO-END MILL	127
9TP	SPARE PART for TOUCH POINT	159
9ZFL	WRENCH for ZERO FIT HOLDER	147
9□□	SPARE PART Code No.	
10MP	INSERT TIP	119
10P	INSERT TIP	121
□S	TIP CLAMP HANDLE	113

### A

A	CHAMFERING TOOL	
A21	ALPHA CONTROLLER CNC	299
A21PW	ALPHA CONTROLLER POWER UP	299
AB	BLADE of CHAMFERING TOOL	
AEG	INSERT TIP	76
BT/IT-AF□□	AUTOMATIC BACK SPOT FACING ARBOR	149
BT/IT-AFC□□	SOLID OFF-SET type ANGULAR HEAD	144
BT/IT-AFK□□	SOLID OFF-SET type ANGULAR HEAD	144
BT/IT-AFT□□	QUICK type OFF-SET ANGULAR HEAD	141
AHA	BUSHING for STOPPER BLOCK	308
BT/IT-AHC□□	SOLID type ANGULAR HEAD	144
BT/IT-AHK□□	SOLID type ANGULAR HEAD	144
AHK□□-□□	ADAPTER for QUICK type ANGULAR HEAD	142
BT/IT-AHM	MODULAR type ANGULAR HEAD	143
AHM□□-SK	MODULAR HEAD for ANGULAR HEAD	143
BT/IT-AHPL□□	ANGULAR HEAD for DEEP HOLE	143
BT/IT-AHPX□□	HIGH SPEED type ANGULAR HEAD	139
BT/IT-AHT□□	QUICK CHANGE type ANGULAR HEAD	141
AL-□□	AIR LINE KIT	138
AM□-□	CHAMFERING TOOL	
AS-□□	CHAMFERING TOOL	
AW□□-C□	AIR MASTER	
AWC	AWC SYSTEM	CNC
AWC-C□	CHAIN type AWC MAGAZINE	CNC
AWC-F□	FREE type AWC MAGAZINE	CNC

### B

B□□	SPARE PART Code No. for BCB UNIT	101
BT/IT-BAC□□□	BALANCE CUT BAC BORING ARBOR for LARGE DIA.	91
BAC□□□AAV	BALANCE CUT BAC X ADVANCED BORING ARBOR	97
BAL	BALL CENTRALIZER	162
□□-BCB□□	MICRO CUT BORING HEAD	104

BT/IT-BCB□□	MICRO CUT BORING HEAD for LARGE DIA.	92
BF	AUTOMATIC BACK SPOT FACING ARBOR	149
BK	BUSHING for STOPPER BLOCK	308
BM	BALANCE MASTER	
BT/IT-BOA□□	BORING BAR for CYLINDRICAL BORING TOOL	122
BRM	MORSE TAPER SHANK BROACH REAMER	FEAMER
BRS	STRAIGHT SHANK BROACH REAMER	FEAMER
BT/IT-BSA□□	BORING BAR for SQUARE BORING TOOL	122
BT/IT-BSB□□	BORING BAR for SQUARE BORING TOOL	122

### C

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<b>NBT□□-MMC□□C-□□-ATB</b>	MINI MINI MASTER CHUCK .....	227
<b>NBT□□-MMSF□□S-□□B</b>	HIBRID SHRINK-FIT HOLDER .....	228
<b>NBT□□-MTA□□</b>	MORSE TAPER ADAPTER A type .....	206
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<b>NBT□□-RAC□□</b>	BALANCE CUT RAC BORING ARBOR .....	209
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<b>NBT□□-SZF□□</b>	ZERO FIT type SLIM CHUCK .....	204
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<b>NBT□□-Z□□</b>	TAPPER CHUCK .....	207
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<b>MBT□□-FMA□□</b>	FACE MILL ARBOR (JIS) .....	181
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<b>MBT□□-MMC□□AA</b>	MINI-MINI CHUCK ADVANCED ALPHA .....	176
<b>MBT□□-PFL□□</b>	PFL MASTER HOLDER .....	179
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<b>MIT□□-MMC□□AA</b>	MINI-MINI CHUCK ADVANCED ALPHA .....	185
<b>MIT□□-SK□□</b>	SLIM CHUCK .....	186
<b>MIT□□-VC□□</b>	VC HOLDER .....	187

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<b>HSK□□-SCA□□</b>	STUB ARBOR .....	265
<b>HSK□□-SK□□</b>	SLIM CHUCK .....	251
<b>HSK□□-SK□□-P</b>	HIGH SPEED SLIM CHUCK .....	249
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<b>HSK□□-SZF□□</b>	ZERO FIT type SLIM CHUCK .....	261
<b>HSK□□-TB□□</b>	TEST BAR .....	266
<b>HSK□□-VC□□</b>	VC HOLDER .....	257
<b>HSK□□-Z□□</b>	TAPPER CHUCK .....	265
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<b>NC5-□□-MTA□□</b>	MORSE TAPER ADAPTER A type .....	238
<b>NC5-□□-NPU□□</b>	NC DRILL CHUCK .....	237
<b>NC5-□□-PFL□□</b>	PF MASTER HOLDER .....	242
<b>NC5-□□-Q□□</b>	BASE HOLDER for MODULAR type .....	242
<b>NC5-□□-RAC□□</b>	BALANCE CUT RAC BORING ARBOR .....	240
<b>NC5-□□-RAC□□□</b>	BALANCE-CUT RAC BORING ARBOR for LARGE DIA. ..	241
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<b>NC5-□□-SK□□</b>	SLIM CHUCK .....	233
<b>NC5-□□-SL□□</b>	SIDE LOCK HOLDER .....	237
<b>NC5-□□-SZF□□</b>	ZERO FIT type SLIM CHUCK .....	236
<b>NC5-□□-TB</b>	TEST BAR .....	243
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<b>NC5-□□-VC□□</b>	VC HOLDER .....	235
<b>NC5-□□-VMC□□</b>	VEGA CHUCK .....	235
<b>NC5-□□-Z□□</b>	TAPPER CHUCK .....	238
<b>NC5-□□-ZMAC□□</b>	ZMAC-V BORING ARBOR .....	239

## CAT

<b>CAT□□-C□□</b>	MILLING CHUCK (INCHI) .....	290
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<b>IT□□-CZF□□</b>	ZERO FIT type MILLING CHUCK .....	156
<b>IT□□-MDSK□□</b>	MAJOR DREAM HOLDER .....	154
<b>IT□□-MMC□□AA</b>	MINI-MINI CHUCK ADVANCED ALPHA .....	155
<b>IT□□-NC5-</b>	DREAM-CUT HOLDER .....	152
<b>IT□□-SK□□</b>	SLIM CHUCK .....	152
<b>IT□□-SK□□-P</b>	HIGH SPEED SLIM CHUCK .....	153
<b>IT□□-SZF□□</b>	ZERO FIT type SLIM CHUCK .....	156
<b>IT□□-VC□□</b>	VC HOLDER .....	155

## Code No. of Stop Production / Sales

<b>A</b>	
ANQ	ON NON STOP TOOL
<b>B</b>	
BT/IT-BCB□□	MICRO CUT BORING BAR (SOLID type)
BT/IT-BRB□□	RING type BORING BAR
BS50-□□	MAS Straight Shank TOOL
BT50T-□□	TOOL for TOSHIBA TURNING CENTRE
BTP50-□□	TOOL for SNK BOTTLE GRIP SHANK
BT/IT-BL□□	BALANCE CUT BORING BAR
BT/IT-LB□□	LB ARBAR for LARGE DIA.
<b>C</b>	
CAT30S-□□	TOOL for MAKINO SEIKI
CBT□□-□□	COMBINATION TOOL
CG	GERMAN COOLANT NOZZLE
BT/IT-CV	CV CHUCK
<b>D</b>	
BT/IT-DAC□□	DOUBLE CUT BORING BAR
BT/IT-DAC□□□	DOUBLE CUT BORING ARBOR for LARGE DIA.
DCD-□□	TOOL for HITACHI DRILLING CENTRE
DK□□-□□	DRILL MATRE COLLET
DS□-□□	DS type BORING HEAD
BT/IT-DW□□	DOUBLE ANGLE CHUCK (DRILL MATE CHUCK)
<b>E</b>	
E238-MBT	TOOL PRESETTER
EBA-□□-□□	NATIONAL TAPER BCB BORING BAR
EBK-□□-□□	Straight SHANK BCB BORING BAR
EBM-□□-□□	MORSE TAPER BCB BORING BAR
EBR-□□-□□	CENTURY TAPER BCB BORING BAR
EBT-□□-□□	QUICK CHANGE type BCB BORING BAR
<b>G</b>	
GSK□□	Old type HIGH SPEED SLIM CHUCK
<b>H</b>	
HA-□□-□□	FLANGE type QUICK CHANGE HOLDER
BT/IT-HC□□	HYDRAULIC CHUCK
HNA-□□	TOOL for HITACHI (1-8UNC) BOYTTLER GRIP SHANK
HNB-□□	TOOL for HITACHI (1-8UNC) BOYTTLER GRIP SHANK
HNC-□□	TOOL for HITACHI (M24) BOYTTLER GRIP SHANK
HSK□□-NC5-	DREAM CUT HOLDER
H□□U(M)-□□	FLANGE type QUICK CHANGE TOOL
<b>J</b>	
BT/IT-JB	JIG BORING HEAD
BT/IT-JBD	JIG BORING HEAD
<b>L</b>	
LB	LB ARBOR for LARGE DIA.
L□□-NPU□□	DRILL CHUCK for NC LATHE
<b>M</b>	
M□A(B, C)-□	DAC UNIT
MHP□-□□	MASTER BORING HEAD
MC□□-□□	Straight SHANK MILLING CHUCK (OLD Code No.)
MPA-□□	TOOL for MITSUBISHI BOTTLE GRIP SHANK
MTO	MOT SLEEVE for OIL HOLE HOLDER
<b>N</b>	
NC□□-□□	Adjustable Straight SHANK MILLING CHUCK
ND□□-JTA	Adjustable DRILL CHUCK ARBOR
NEB□□-□□	Adjustable Straight SHANK BCB BORING BAR
NG-□	GERMAN STAND
NK□□-MT□□	Adjustable MORSE TAPERCOLLET
<b>O</b>	
ON□□	ON ONON STOP TOOL
<b>P</b>	
PC□□	Straight SHANK PRO-CUT ENDMILL
BT/IT-PC□□	Straight SHANK PRO-CUT ENDMILL
<b>R</b>	
RH□□-BRB□□	MICRO CUT BORING BAR for LARGE DIA.
RH□□-BRS□□	SQUARE BYTE BORING BAR for LARGE DIA.

<b>S</b>	
BT/IT-SC□□	SC SLIM CHUCK
SC□□-□	SC SLIM CHUCK COLLET
SKN□	NUT for SLIM CHUCK
SKN-□J	J type NUT for SLIM CHUCK
BT/IT-SKZ□□	SLIM CHUCK for TAP with SQUARE HOLE
SKZ□-□	SLIM CHUCK COLLET for TAP with SQUARE HOLE
SQ□□×□□	SQUARE BYTE with MICRO CUT CARTRIDGE
ST□□-SK□□	SLIM CHUCK for SIDE LOCK type A
<b>T</b>	
BT/IT-TA□□	SEMI-AUTOMATIC BORING HEAD
TCL□□	TOOL CLAMPER
TCP	TOOL CLAMPING PRESETTER
TDC-□□	TOOL for FANUC DRILL MATE
BT/IT-TA□□	BT SHANK QUICK CHANGE HOLDER
<b>U</b>	
BT-UAR	AUTO REVERSE BFACING HEAD
UCA□□-□□	NATIONAL TAPER ULTRA MILL MILLING CHUCK
UCR□□-□□	CENTURY TAPER ULTRA MILL MILLING CHUCK
UCT□□-□□	QUICK CHANGE type ULTRA MILL MILLING CHUCK
BT-UC□□	ULTRA MILL MILLING CHUCK
UK□-□	ULTRA MILL COLLET
BT-UP□□	HIGH SPEED BASE CHUCK
UPA	UNIVERSAL BORING HEAD
UPK□-□	UPK COLLET for UP BASE CHUCK
<b>W</b>	
WASP	ECONOMY type PRESETTER
BT/IT-WE□□	SIDE LOCK HOLDER (USA)

### Ending of the Maintenance Duties of Nikken Controller for CNC Rotary Table

The maintenance duties of Nikken controller had been continued as long as the electric parts/boards could be supplied. But, the electric parts / boards for the controllers described below became impossible. Therefore, the maintenance duties is ended. Please exchange to new CNC rotary table with X 21 controller.

- Controllers for CNC rotary table ND5000, 8000DC, 8800DC, 9000DC ..... Ended at 2005. APR
- Controllers for NSV Index table NSV controller (M function/B function) ..... Ended at 2005. APR
- Controllers for CNC rotary table 8800DX, 8800AX ..... Ended at 2013. APR

## ⚠ Caution for Tooling

- Please use a **NIKKEN** collet for the **NIKKEN** chucks.
- Please use a **NIKKEN** chuck for the **NIKKEN** collets. **may not be performed 100% using on the other makers chucks.**
- Please be careful not to inflict personal injury at your handling of cutting tools.
- Please clean the contact surface on a holder & cutting tool shank.
- Please pay attention to prevent from the rust at the storage. We will recommend to use **NIKKEN TOOLINGS with RPT process for rust prevention.** Due to the optical system to detect the tool existing on the tool magazine of certain machines, **NIKKEN's RP treated tooling may not be detected.** Please check your machine's specifications very carefully to avoid this problem before you purchase our RP treated tooling. The taper connection of the tool shank with RP treatment is

Standard 8 years used      RPT 18 years used



more stuck than the taper connection of the tool shank without RP treatment. Then, the unclamping force for the tool with RP treatment is required 20% stronger than the unclamping force for the tool without RP treatment. Please be careful to check the unclamping force of your M/C, when the tool with RP treatment is chosen.

- Please do not use the tooling that has scratches, damaged or rusted on its taper. This may cause false accuracy readings and reduce cutting performance.
- Please pay attention not to inflict personal injury with the broken tools or swarfs.
- Please do not modify the holders by yourselves.
- Please do not touch the tool at its rotating.
- Please do not touch the tool just after machining, it might be very hot.
- Please check if the cutting tool is held with the holder properly before the machining.
- For high speed application, please use **NIKKEN HIGH SPEED TOOLINGS** or the pre-balanced toolings.

### MTA

- Please insert the tool shank into the bore of the holder with adjusting the tang location, and hold them with facing tool front end upwards, and hit the bottom end of the holder (pull stud end) by copper hammer hardly.
- For removal of the tool, insert a bar into tang hole and hit the bar by hammer with special care to prevent the tool from popping out.
- Please clamp side lock screw in case of coolant through application. **For high pressure coolant through application, please use milling chuck, slim chuck or side lock holder instead of MT adapter.**

### MTB

- Please insert the tool shank into the bore of the holder and tighten the draw bolt for the setting.
- For removal of the tool, loosen the bolt at couple rotation and hit the bolt head by a hammer in order to remove the taper fitness, then remove the bolt.

### SCA, SCC

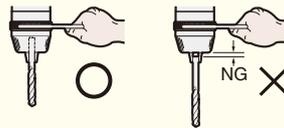
- When setting of side cutter or metal saw onto the arbor, please adjust the location of the drive key.

### JTA

- When setting drill chuck onto the arbor please put the chuck onto the arbor with adjusting the locations of male & female tapers and hit the bottom end of the holder (pull stud end) by copper hammer.
- Please use **NIKKEN SLIM CHUCK** for high precision and high speed operation.

### NPU

- Please insert the drill shank into the bottom, and chuck the shank with the total chucking length of **NPU**.
- Please check the run-out accuracy before machining especially for the small diameter drill.
- When setting the drill onto the chuck, set the drill into the chuck and tighten the chuck ring by hand then tighten the ring by attached spanner to complete.



### SL, SLA, SLB, SLS, DM

- When setting the tool onto the holder, adjust the locations between notches or flat face of the tool shank and side lock screws, and tighten the screws completely.
- The dimension of the flat portion of the cutter shank varies, therefore please select a proper holder according to the cutter shank dimension.
- Code No. of the side lock holder for oil hole drill is **SLOC. OK25~OK40** collet can be used for **SLOC**.

Type	Cutter	Axial Adjustment
SL	φ 6~φ16 Drill, Endmill	—
SLA	φ20~φ42 Endmill	○
SLS*	φ 6~φ50 Endmill	—
WE	Inch Size Endmill	—
SLB	Drill Used with DSA socket	○

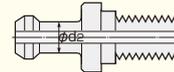
\*SLS is the holder for JIS B 4005 endmill or weldon type endmill.

### FMA, FMB, FMC, SMA, SMB, SMS

- Please use the bolt specified by the cutter maker.
- When setting the face milling cutter onto the arbor, insert the spigot of the arbor into the cutter bore and minimize the backlash between the drive key and the slot against the direction of rotation, then tighten the end bolt.
- For the cutter with coolant through the body, please check the coolant pass in the arbor and the cutter before machining.
- For high speed application, please perform the balancing operation with the cutter and insert tips fitted.

### PS

- The pull stud is considered to consumption item and should be replaced periodically. The guide line of replacement is :  
Without hole : 3 years or 150,000 times of ATC.  
With coolant hole : 2 years or 100,000 times of ATC.



## ⚠ Caution for 3LOCK · 2LOCK

- Always ensure that M/C has the mechanism to confirm the perfect flange contact.
- Always ensure that M/C has the mechanism to clean the spindle flange surface.
- Please ensure that the suitable spacer is fitted on the machine spindle flange when the **3LOCK** tooling is used on the standard BT/IT/CAT spindle machine. Please do not use the **3LOCK** tooling on the standard spindle machine without the suitable thickness of the spacer.

### Caution at Use

- Always ensure that swarf should not attach at the spindle flange surface of the double contact system. Generally the inside of the machining envelope is always covered with swarf. This means that there is a possibility that the flange of the tooling may collect swarf easily at the ATC. It is therefore important that the machine envelope is regularly cleaned (Clean the ATC arm, the route through which the tooling passes, the tool pot and the spindle surfaces etc.) at least every 3 months.
- The rust or fine swarf may be fitted on vacant pot inside. So, if ATC mechanism of your M/C is random pot change mechanism (the tool on the spindle is returned to the pot in which the next tool is stored), please insert the dummy tool into all vacant pots to protect this.
- Caution for centre through tool coolant application

There are 2 types of the sealing method of the coolant at pull stud, sealing of face contact and sealing of taper contact. please choose the proper pull stud for your M/C.  
• If your center through tool coolant M/C does not have the sealing mechanism at pull stud, the coolant stays inside the spindle and is sealed at BT/IT taper connection. tool can not seal the coolant at taper connection, because the taper cone of tool has the slit. Please select tooling instead.

### Pulling Force of the M/C

- If the pulling force of machine spindle decreases substantially, the **NIKKEN 3LOCK** tooling cannot perform 100% at its capability. We would recommend that regular inspection of the pulling force is carried out to prevent any reduction in the pulling force at an early stage. Please refer **P.303** for pulling force measurement tool.
- When the pulling force of the M/C became too low, **3LOCK** tool can not perform its capability. Please ensure the MIN. pulling force as follows:  
MBT40: 5KN  
MBT50: 15KN

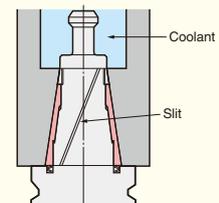
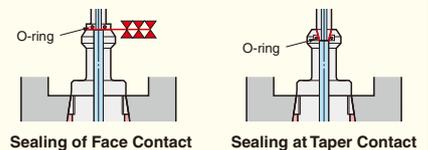
The periodical inspection of the pulling force is required.

### Rust Proof Treatment

- The taper connection of the tool shank with RP treatment is more stuck than the taper connection of the tool shank without RP treatment. Then, the unclamping force for the tool with RP treatment is required 20% stronger than the unclamping force for the tool without RP treatment. Please be careful to check the unclamping force of your M/C, when the tool with RP treatment is chosen.
- Therefore, the taper cone of **3LOCK** tool and **NC5** tool is changed to without RPT treatment as standard. And the special anti-rust treatment is applied to the taper cone of the **3LOCK** tool and **NC5** tool.

### M/C with Flange Trough Tool Coolant

- When the stroke of the coolant nozzle at spindle flange is not sufficient on BT/IT standard M/C, **2LOCK** tooling may not be used due to the collision. Please check the specification of your M/C.



Coolant can not be sealed at taper connection for **3LOCK** tooling. Please **2LOCK** tooling instead.

# NIKKEN WORLD WIDE SALES BRANCH



There are overseas Sales Branches in 12 countries. Each sales branch has stocks for toolings and CNC Rotary Tables, and service engineers look after the maintenance and service operation of our products. In the other region, e.g. East-South Asia, Ozaena, South America, Africa, etc., there are some distributors. At the production line in abroad, as there are many requirements for special tools and CNC Rotary Table to suit the special specifications, please ask us or distributors for spare tools and maintenance parts in advance.



LYNDEX-NIKKEN (U.S.A.)



HERRAMIENTAS LYNDEX-NIKKEN (MEXICO)



NIKKEN EUROPE & NIKKEN U.K. (UK)



NIKKEN SCANDINAVIA (SWEDEN)



NIKKEN DEUTSCHLAND (GERMANY)



PROCOMO-NIKKEN (FRANCE)



KOREA NIKKEN (KOREA)



VEGA INTERNATIONAL (ITALY)



OLASA (SPAIN)



CUTTING TOOL (SPAIN)



NIKKEN TURKEY (TURKEY)



NIKKEN CHINA (CHINA)



SIAM NIKKEN (THAILAND)



NIKKEN ASIA (SINGAPORE)



NIKKEN INDONESIA (INDONESIA)

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TEL:+62-(0)21-5702071 MAIL:zefry.i@nikken-kosakusho.co.jp

New Nikken facility was opened at Zhao Hua Road, Shanghai on 2004 JAN due to the Chinese business expansion. The standard items of NC tooling & CNC rotary table and each important spare parts are stocked for quick delivery.

You can access to Nikken China with Chinese, Japanese or English. Not only Chinese catalogue but also Chinese instruction manual are provided for Chinese domestic market. Our office has the show room to see and touch our products, and our presentation will be done more practically. Technical seminar of Nikken is also opened at user factory side.



Chinese engineer well trained in Japan is engaged in the service of our products. Different types of the NC controller for the CNC rotary table are provided for the trial running after repair. The most important spare parts are stocked. It is possible to stock the special spare parts of the custom-made tooling or CNC rotary table for further discussion. Please consider to make a contract of "Nikken Rotary Table Overseas Warantee Contract" for the CNC rotary table delivered to China.

The sales of nikken products through Internet is not started in China. For after service and the further maintenance, please purchase Nikken products through authorized distributors.

As North America's leading supplier of machine tool accessories, LYNDEX-NIKKEN is a wholly-owned subsidiary of NIKKEN Kosakusho Works., Ltd. - Japan. Backed by over a half century of experience, LYNDEX-NIKKEN sets the standard for high quality and high technology with a complete line of superior toolholders and machine tool accessories. From one source you can expect the best of both worlds: Extreme Quality and Advanced Technology.

LYNDEX-NIKKEN has a team of dedicated application and engineering staff available to advise you on your application and support our entire product line throughout the U.S., Canada, Mexico and South America. Our regional managers in Chicago, Los Angeles, Boston, Charlotte, Dallas and Seattle support our 1,000 plus distributors with machine tool accessories expertise. LYNDEX-NIKKEN provides expert process and product consultation for even the most demanding applications with full on-demand field support and ongoing training.

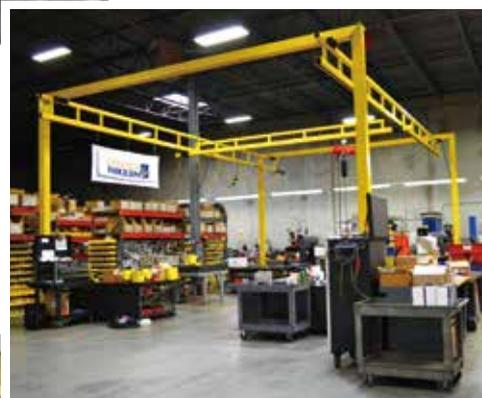
### North American Facility

The LYNDEX-NIKKEN North American headquarters is centrally located near Chicago Illinois. Our 50,000 sq ft. facility warehouses an inventory of over 12,000 machine tool accessories stocked for fast delivery. Over 95% of orders are shipped out same day. Our extensive inventory of products includes:



### Products

- **Rotary Tables** - NIKKEN's complete line of CNC Rotary Tables are known worldwide for their wear-resistance, rigidity and high-speed rotation. NIKKEN rotary tables are built to provide high accuracy, increased production and a trouble-free long life.
- **Advanced Toolholders** - Maximize the potential of your machine tools with LYNDEX-NIKKEN's advanced toolholders.
- **Standard Toolholders** - LYNDEX-NIKKEN's complete range of quality-driven toolholding solutions are designed to meet your strictest requirements.



- **Presettters** - Our full line of Presettters are full-featured for optimum accuracy in tooling setup, measurement and inspection.

### Service & Support

- Dedicated application and engineering support staff
- Support for entire product line spans the U.S., Canada, Mexico and South America
- On-demand field support and ongoing training
- Customer service and technical support staff
- Expert process and product consultation for even the most demanding applications
- Cutting trials and testing
- Service, repair and custom configuration completed on-site
- Attention to high-tech application demands, including high-speed and balanced toolholding solutions



The NIKKEN Euro Centre based in the UK was opened in 1999; from here we sell, distribute and support all products to our subsidiaries and dealers in over 20 countries around Europe. At the NIKKEN Euro Centre we take great pride in the consistent delivery of the four founding principles of our business: **Absolute Integrity, Uncompromising Quality, Unflinching Support**, and above all **“Total Commitment” to our customers.**

**NICE** ( NIKKEN Innovation Center Europe ) is established in AMRC park at the end of 2015, and user support of the difficulty cut materials processing for plane in particular, energy industry is enriched.



### Product Inventory

NIKKEN Euro Centre facilities has a warehouse space of 13,000m<sup>2</sup>. which holds over 50,000 individual items covering a range of some 4,000 product lines, including the latest generation of Single & Multi Axis CNC Rotary tables, thus making it the largest stock of NIKKEN products in Europe.

### Our Technical Support and Training Section provides our existing customers and potential customers access to:

- A Multimedia based training facility that ensures our customers, through comprehensive training, will realize the full productivity potential of their application.
- A wealth of engineering expertise covering all aspects of application set-up, optimization and implementation that is available for the full life of the NIKKEN product.



### Our machining centre equipped with Testing Facilities enables us to:

- Research, develop and optimize all of our tooling systems.
- Demonstrate to our potential customers the advantages of using both NIKKEN Tooling and CNC Rotary Tables in their applications.

### Our Service Department specializes in:

- Providing on-site inspections prior to rotary table repairs and refurbishment by our own NIKKEN trained service engineers.
- Providing tooling and rotary tables optimized to seamlessly integrate into any application.



Nikken Deutschland GmbH, a wholly owned subsidiary in Germany of NIKKEN Kosakusho Works, was established in 2003 to take over the sales activities of the previous distributor. Based in Russelsheim, which is a town made famous by the manufacturing complex of Opel, the company is located about 15 minutes away by car from Frankfurt airport. Germany has ranked at the top of the machine tool industry for many years, and is also the supply source of machine tools that are fuelling the significant expansion now taking place in Eastern Europe. Nikken Deutschland GmbH has its base at the centre of the huge market of Germany and Eastern Europe, and continues to broaden the range of the company's sales operations.

NIKKEN has achieved some impressive successes in Germany with its CNC rotary tables and tool holders thanks to a long sales history of the company's sales activities. A sales force consisting mainly of German personnel stands on the front line of this activity to address the sales and servicing needs of the entire country. More specifically, the company provides technical advice, repairs, aftersales support and other services to end users, distributors and machine dealers.



To enable speedy delivery of standard items in the German market and of popular products compliant with European standards, Nikken Deutschland GmbH works closely with Nikken Euro Centre to keep a full stock at its disposal. The company uses the most appropriate type of delivery in each case, including parcel post, DHL, door-to-door service and flash shipment, to meet the demands of customers.

The sales territory of Nikken Deutschland GmbH spans the vast area of eastern Europe and covers such countries as the Czech Republic, Slovakia, Austria, Russia, Poland, Hungary, Romania and Bulgaria, all countries in which Japanese companies are rapidly expanding their business. The service is not limited to sales, but engineers make on-site adjustments, repairs and service calls as well.



Nikken Deutschland GmbH has participated in and contributed to many trade shows and exhibitions held in Germany, including the EMO show, METAF, AMB and EURO MOULD. The company's fully furnished showroom is a Mecca of information to the constant stream of visitors who can inspect products and examples of machining, as well as receive application advice and technical training. They can handle NIKKEN's products for themselves, learn about the construction and capability of the CNC rotary tables, and learn about the accuracy and other features of NIKKEN's products.

A complete support organisation is in place to ensure that advice is relayed promptly by telephone and other rapid communication media, that repairs or delivery of tool holders and CNC rotary tables are carried out promptly with all due diligence, and that emergency service calls are responded to rapidly.

To make it possible to support all types of motors and controllers for NIKKEN's CNC rotary tables, the company has set up trial run equipment that accommodates many different motors, and offers a full range of accessories including tailstocks, support tables, scroll chucks and collet chucks adapted to the CNC rotary tables. The fact that NIKKEN's CNC rotary tables are endowed with outstanding durability and that a complete support service is provided instils confidence in users that the equipment will give outstanding service in the years ahead.

Procomo France S.A.S was established 30 years ago with the avowed intent to deliver the high-accuracy and high-quality tool holders and CNC rotary tables as well as related services, applications and after-sales servicing, into the hands of engineers in France. A major milestone in the company's history was marked in 2006 with the change of the company name to PROCOMO-NIKKEN, and the company took on a new lease of life as NIKKEN's wholly owned subsidiary in France.



In 2005, PROCOMO-NIKKEN embarked on a complete renovation of its buildings and facilities in order to make it possible for users to gain hands-on experience of NIKKEN's products in a bright and comfortable environment.



In the meeting room, which is fitted out with all the latest multimedia technology, technical seminars are regularly held so that attendees will come away with a clear understanding of NIKKEN's products and technology. The showroom is where videos of cutting operations are screened, and visitors can actually handle some of NIKKEN's products in this room as well. The machining centre, which is used for cutting trials, enables visitors to identify what makes NIKKEN's products different from those of other companies and to judge how impressive are the machining accuracy and advanced cutting capabilities of NIKKEN's products. As the top tool holder manufacturer, NIKKEN believes is that once customers have their own personal experience of the low machining noise, attractive-looking cut surfaces and uniform discharge of chips, they will be convinced that they can completely trust in and depend on the expertise and capabilities of the company.



The stocks of a large number of standard products are always on hand, enabling the products that customers need to be delivered in the shortest possible time. The NIKKEN Euro Centre and PROCOMO-NIKKEN retain constant and close contact; together they take on the challenge of how to machine products in a more rationalized manner, in a shorter time and to a higher accuracy so that France's engineers can meet every need of the French marketplace.

NIKKEN has already earned an enviable reputation in the global marketplace for the high accuracy and outstanding wear resistance of the company's CNC rotary tables. PROCOMO-NIKKEN has a team of five engineers dedicated full-time to providing users with application support prior to placing orders for tool holders and CNC rotary tables and to carrying out the preparation for shipment, education and training programs, maintenance and repairs, and servicing. This support network delivers a wide range of services, while willingly taking up the challenge of coming to grips with new applications.



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■Please give your order to the following agent.

D.NH.1

●Specifications are subject to change without notice.