

CUTTING TOOL CATALOGUE

Milling Cutters	244
Milling Cutter Denomination System	246
Overview of Milling Products	249
OD Product Series Face Milling Cutter	259
ON Product Series Face Milling Cutter	261
SE Product Series Face Milling Cutter	263
SD Product Series Face Milling Cutter	266
SN Product Series Face Milling Cutter	278
HN Product Series Face Milling Cutter	289
XN Product Series Face Milling Cutter	291
LN12/LN15 Cast Iron Finishing Milling Cutter	299
LN Product Series Square Shoulder Milling Cutter	302
WN Product Series Square Shoulder Milling Cutter	312
TD Product Series Square Shoulder Milling Cutter	319
SO Product Series Square Shoulder Milling Cutter	323
AO Product Series Square Shoulder Milling Cutter	326
AP Product Series Square Shoulder Milling Cutter	335
LN Series Helical Milling Cutter	340
AO Series Helical Milling Cutter	346
LNMX Series High Feed Milling Cutter	350
XD Series High Feed Milling Cutter	358
SD Series High Feed Milling Cutter	365
RPM Product Series Profile Milling Cutter	372
RO Product Series Profile Milling Cutter	374
SD Product Series Chamfer Milling Cutter	386

Milling Cutter Denomination System

A	FM	88	-	080	-	Z07	A	27	R	-	SN12	-	C
1	2	3		4		5	6	7	8		9		10

1- A--ACHTECK

2- Machining Method	
Face milling	FM
Square shoulder milling	SM
Profile milling	PM
High feed milling	HM
Side & face milling	DM
Thread milling	TM
Chamfer milling	CM
Finish milling	FF

3- Approach Angle (Kr)	
Figure	Angle
90	90°
88	88°
75	75°
60	60°
45	45°
42	42°
*	*
15	15°
00	Profile milling

4- Cutter Dia.	
025	25mm
063	63mm
080	80mm
*	*
250	250mm

5- Number of Teeth	
Z02	2 teeth
Z04	4 teeth
Z05	5 teeth
*	*
Z30	30 teeth

6- Connection Type	
A	Arbor
W	Weldon shank
C	Cylindrical shank
N	Whistle notch shank
M	Screw clamping modular head

7- Coupling Size
27-Coupling diameter 27mm

8- Direction of Tool	
R	Right
L	Left
N	Neutral

9- Insert Info
SN12-SN12 series insert

10- Others	
C	Internal coolant
M	Wedge clamping type
S	Carbide shim type
No mark	Without internal coolant

Helical Milling Cutter Denomination System

A	PE	90	063	Z04	A	27	R	LN13	L56	F	C
1	2	3	4	5	6	7	8	9	10	11	12

1- A--ACHTECK

2- Machining Method	
Helical Milling cutter	PE

3- Approach Angle (Kr)	
90	90°
88	88°
75	75°
60	60°
45	45°
42	42°
*	*

4- Cutter Dia.	
025	25mm
063	63mm
080	80mm
*	*
250	250mm

5- Number of Teeth	
Z02	2 teeth
Z04	4 teeth
Z05	5 teeth
*	*
Z30	30 teeth

6- Connection Type	
A	Arbor
W	Weldon shank
C	Cylindrical shank
N	Whistle notch shank
M	Screw clamping modular head

7- Coupling Size	
27-Coupling diameter 27mm	

8- Direction of Tool	
R	Right
L	Left
N	Neutral

9- Insert Info	
LN13--LN13 series insert	

10- Max.Cutting Depth	
L30	30mm
L45	45mm
L56	56mm

11- Tool Type	
F	Full teeth
H	Half teeth

12- Others	
C	Internal coolant
No mark	Without internal coolant

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Milling Cutters

Overview of Milling Products

Product family			AFM42-OD06	AFM40-ON05	AFM45-SE12	AFM45-SD09	AFM90-SD09
Page			P259	P261	P263	P266	P268
Approach angle			42°	40°	45°	45°	90°
Max.ap (mm)			3	2.5	6	4	7
Diameter range (mm)			∅50-160	∅50-160	∅32-250	∅16-125	∅25-100
Insert type			OD..0605..	ON..0504..	SE..12T3..	SD..09T3..EN..	SD..09T3..EN..
Application	Face milling		•	•	•	•	•
	Square shoulder milling						
	Slot milling						
	Ramping		•				
	Helical interpolate milling		•				
	Plunging						
	Profile milling						
	Chamfer milling					•	
	Pocket milling		•				

Remark: • Recommended application

Overview of Milling Products

Product family			AFM89-SD09	AFM45-SD12	AFM90-SD12	AFM89-SD12	AFM45-SN12
Page			P270	P272	P274	P276	P278
Approach angle			89.5°	45°	90°	89.5°	45°
Max.ap (mm)			7	6	11	9	6
Diameter range (mm)			∅25-80	∅50-125	∅50-125	∅50-125	∅50-315
Insert type			SD..09T3..N..	SD..1204..EN..	SD..1204..EN..	SD..1204..N..	SN..1206..
Application	Face milling		●	●	●	●	●
	Square shoulder milling						
	Slot milling						
	Ramping						
	Helical interpolate milling						
	Plunging						
	Profile milling						
	Chamfer milling			●			
	Pocket milling						

Remark: ● Recommended application

Overview of Milling Products

Product family			AFM75-SN12	AFM88-SN12	AFM45-SN19	AFM45-HN09	AFM45-XN07
Page			P281	P284	P287	P289	P291
Approach angle			75°	88°	45°	45°	45°
Max.ap (mm)			8	9	10	5	3.5
Diameter range (mm)			∅50-250	∅50-315	∅160-250	∅63-160	∅40-250
Insert type			SN..1206..	SN..1206..	SN..1909..	HN..0906..	XN..0705..
Application	Face milling		●	●	●	●	●
	Square shoulder milling						
	Slot milling						
	Ramping						
	Helical interpolate milling						
	Plunging						
	Profile milling						
	Chamfer milling						
	Pocket milling						

Remark: ● Recommended application

Overview of Milling Products

Product family			AFM45-XN09	AFM45-XN09(W)	AFF40-LN12	AFF40-LN15	ASM90-LN12
Page			P295	P296	P299	P299	P302
Approach angle			45°	45°	40°	40°	90°
Max.ap (mm)			5	5	0.5	0.5	5
Diameter range (mm)			∅63-315	∅80-315	∅80-100	∅125-250	∅63-250
Insert type			XN..0906..	XN..0906..	ON..0504.. LN..1204..	ON..0504.. LN..1504..	LN..1206..
Application	Face milling		●	●	●	●	●
	Square shoulder milling						●
	Slot milling						
	Ramping						
	Helical interpolate milling						
	Plunging						
	Profile milling						
	Chamfer milling						
	Pocket milling						

Remark: ● Recommended application

Overview of Milling Products

Product family			ASM90-LN09	ASM90-LN13	ASM90-LN16	ASM90-WN04	ASM90-WN08
Page			P304	P307	P310	P312	P314
Approach angle			90°	90°	90°	90°	90°
Max.ap (mm)			8	12	15	4	7
Diameter range (mm)			∅20-80	∅40-315	∅63-160	∅20-40	∅40-250
Insert type			LN..0904..	LN..1306..	LN..1607..	WN..0403..	WN..0806..
Application	Face milling		●	●	●	●	●
	Square shoulder milling		●	●	●	●	●
	Slot milling		●	●	●	●	●
	Ramping						
	Helical interpolate milling						
	Plunging						
	Profile milling						
	Chamfer milling						
	Pocket milling						

Remark: ● Recommended application

Overview of Milling Products

Product family			ASM90-WN08-N	ASM90-TD15	ASM90-SO12	ASM90-AP10	ASM90-AP17
Page			P317	P319	P323	P335	P337
Approach angle			90°	90°	90°	90°	90°
Max.ap (mm)			7	11	9	9	15.5
Diameter range (mm)			∅40-250	∅32-250	∅32-250	∅16-63	∅25-100
Insert type			WNMU 0806..	TD..1505..	SO..1204..	AP..1003..	AP..1705..
Application	Face milling		●	●	●	●	●
	Square shoulder milling		●	●	●	●	●
	Slot milling		●	●	●	●	●
	Ramping			●		●	●
	Helical interpolate milling			●		●	●
	Plunging						
	Profile milling						
	Chamfer milling						
	Pocket milling			●	●	●	●

Remark: ● Recommended application

Overview of Milling Products

Product family			ASM90-AO06	ASM90-AO10	ASM90-AO12	APE90-LN09	APE90-LN13
Page			P326	P328	P331	P340	P343
Approach angle			90°	90°	90°	90°	90°
Max.ap (mm)			5	9	10	46	56
Diameter range (mm)			∅10-25	∅16-40	∅20-80	∅25-50	∅40-80
Insert type			AO..0602..	AO..10T3..	AO..1204..	LN..0904..	LN..1306..
Application	Face milling		•	•	•	•	•
	Square shoulder milling		•	•	•	•	•
	Slot milling		•	•	•		
	Ramping		•	•	•		
	Helical interpolate milling		•	•	•		
	Plunging						
	Profile milling						
	Chamfer milling						
	Pocket milling		•	•	•		

Remark: • Recommended application

Overview of Milling Products

Product family			APE90-AO12	AHM20-LN06	AHM25-LN10	AHM15-XD09	AHM15-XD12
Page			P346	P350	P354	P358	P360
Approach angle			90°	20°	25°	15°	15°
Max.ap (mm)			84	0.65	1.2	1.2	1.6
Diameter range (mm)			∅25-80	∅16-63	∅25-125	∅25-50	∅32-125
Insert type			AO..1204..	LN..0604..	LN..1005..	XD..0904..	XD..1205..
Application	Face milling		•	•	•	•	•
	Square shoulder milling		•				
	Slot milling			•	•	•	•
	Ramping			•	•	•	•
	Helical interpolate milling			•	•	•	•
	Plunging			•	•	•	•
	Profile milling						
	Chamfer milling						
	Pocket milling			•	•	•	•

Remark: • Recommended application

Overview of Milling Products

Product family			AHM15-SD09	AHM15-SD12	APM00-RP	APM00-RO08	APM00-RO10
Page			P365	P369	P372	P374	P378
Approach angle			15°	15°	—	—	—
Max.ap (mm)			1.5	2.0	28	4	5
Diameter range (mm)			∅25-63	∅50-125	∅16-32	∅16-25	∅25-50
Insert type			SD..09T3..N..	SD..1204..N..	RPM 080/100/160	RO.. 0803..	RO..10T3..
Application	Face milling		•	•		•	•
	Square shoulder milling						
	Slot milling		•	•			
	Ramping		•	•	•	•	•
	Helical interpolate milling		•	•		•	•
	Plunging		•	•			
	Profile milling				•	•	•
	Chamfer milling						
	Pocket milling		•	•		•	•

Remark: • Recommended application

Overview of Milling Products

Product family			APM00-RO12	APM00-RO16	APM00-RO20	ACM45-SD09	ACM45-SD12
Page			P380	P382	P384	P386	P388
Approach angle			—	—	—	45°	45°
Max.ap (mm)			6	8	10	5.5	7.5
Diameter range (mm)			∅32-80	∅63-100	∅100-160	∅12-32	∅25-32
Insert type			RO..1204..	RO..1605..	RO..2006..	SD..09T3..N..	SD..1204..N..
Application	Face milling		•	•	•		
	Square shoulder milling						
	Slot milling						
	Ramping		•	•	•		
	Helical interpolate milling		•	•	•		
	Plunging						
	Profile milling		•	•	•		
	Chamfer milling					•	•
	Pocket milling		•	•	•		

Remark: • Recommended application

AFM42-OD06

42° Approach angle face milling cutter

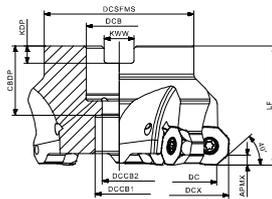
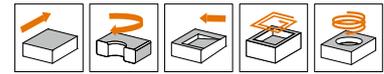


Fig. 1

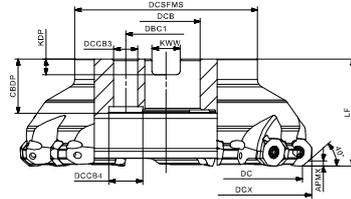


Fig. 2

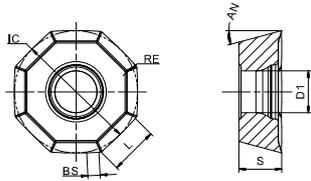
Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
AFM42-050-Z04-A16R-OD06-C	50	60.4	40	16	-	14	9	-	-	40	24	5.8	8.4	3		0.4	4	1	OD..0605..
063-Z05-A22R-OD06-C	63	73.4	48	22	-	18	11	-	-	40	26	6.5	10.4	3		0.5	5		
080-Z05-A27R-OD06-C	80	90.4	62	27	-	20	14	-	-	50	29	7.2	12.4	3		1.0	5		
080-Z06-A27R-OD06-C	80	90.4	62	27	-	20	14	-	-	50	29	7.2	12.4	3		1.1	6		
100-Z06-A32R-OD06-C	100	110.4	80	32	-	26	18	-	-	50	32	8.2	14.4	3		2.0	6		
100-Z07-A32R-OD06-C	100	110.4	80	32	-	26	18	-	-	50	32	8.2	14.4	3		2.0	7		
125-Z07-A40R-OD06-C	125	135.4	87	40	-	33	22	-	-	63	38	9.2	16.4	3		3.7	7		
125-Z08-A40R-OD06-C	125	135.4	87	40	-	33	22	-	-	63	38	9.2	16.4	3		3.7	8		
160-Z10-A40R-OD06	160	170.4	107	40	66.7	-	-	14	20	63	32	9.2	16.4	3		4.4	10	2	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø50-160			5.0Nm
	SP04512043	DT-TP20	

Milling Cutters

Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✖ Bad Conditions										
		Dimension (mm)							P	M	K			N	S				
		L	IC	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	ODET 0605APFN-FM2	6.3	16	5.56	0.8	1.6	5.5	15°										●	
	ODMT 060508EN-MM3	6.3	16	5.56	0.8	-	5.5	15°	●	●	●			●	●				
	ODMT 060512EN-MM3	6.1	16	5.56	1.2	-	5.5	15°	●			○							●
	ODHT 0605APEN-MM3	6.3	16	5.56	0.8	1.6	5.5	15°	●	●	●	●		●	●	●			●
	ODEW 0605APSR-HR2	6.5	16	5.56	-	1.6	5.5	15°						●	●				
	ODMW 060512EN-HR2	6.1	16	5.56	1.2	-	5.5	15°						●	●				

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	OD..0605..							
				ap		HR2		MM3		FM2	
						fz					
						(mm)					
		min	max	min	max	min	max	min	max		
P	Unalloyed steel	<600	<180	0.20	3.00	0.15	0.40	0.12	0.35	-	-
		<950	<280								
	Alloyed steel	700-950	200-280			0.12	0.35	0.10	0.30	-	-
		950-1200	280-355								
M	Duplex stainless steel	778	230			-	-	0.08	0.28	-	-
	Austenitic stainless steel	675	200								
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220			0.15	0.40	0.12	0.35	-	-
	Nodular cast iron	880	260								
	Malleable cast iron	800	250								
N	Aluminum	260	75			-	-	-	-	0.10	0.35
	Aluminum alloy	447	130								
S	Fe-based alloy	943	280	-	-	-	-	-	-		
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350								
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC	0.10	0.25	-	-	-	-		
	Chilled cast iron	-	55HRC								

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

AFM40-ON05

40° Approach angle face milling cutter

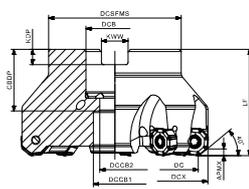


Fig. 1

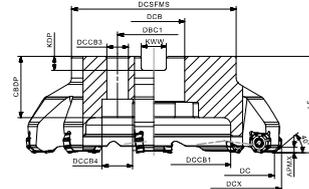


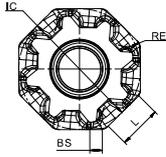
Fig. 2

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
AFM40-050-Z04-A22R-ON05-N-C	50	58.8	47	22	-	18	11	-	-	40	26	6.5	10.4	2.5		0.5	4	1	ON..0504..
050-Z06-A22R-ON05-N-C	50	58.8	47	22	-	18	11	-	-	40	26	6.5	10.4	2.5		0.5	6		
063-Z05-A22R-ON05-N-C	63	71.8	52	22	-	18	11	-	-	40	26	6.5	10.4	2.5		0.7	5		
063-Z06-A22R-ON05-N-C	63	71.8	52	22	-	18	11	-	-	40	26	6.5	10.4	2.5		0.7	6		
063-Z08-A22R-ON05-N-C	63	71.8	52	22	-	18	11	-	-	40	26	6.5	10.4	2.5		0.7	8		
080-Z06-A27R-ON05-N-C	80	88.8	62	27	-	20	14	-	-	50	29	7.2	12.4	2.5		1.4	6		
080-Z08-A27R-ON05-N-C	80	88.8	62	27	-	20	14	-	-	50	29	7.2	12.4	2.5		1.4	8		
080-Z09-A27R-ON05-N-C	80	88.8	62	27	-	20	14	-	-	50	29	7.2	12.4	2.5		1.4	9		
100-Z07-A32R-ON05-N-C	100	108.8	77	32	-	26	18	-	-	50	32	8.2	14.4	2.5		2.0	7		
100-Z09-A32R-ON05-N-C	100	108.8	77	32	-	26	18	-	-	50	32	8.2	14.4	2.5		2.1	9		
100-Z11-A32R-ON05-N-C	100	108.8	77	32	-	26	18	-	-	50	32	8.2	14.4	2.5		2.1	11		
125-Z07-A40R-ON05-N-C	125	133.8	90	40	-	33	22	-	-	63	38	9.2	16.4	2.5		3.8	7		
125-Z09-A40R-ON05-N-C	125	133.8	90	40	-	33	22	-	-	63	38	9.2	16.4	2.5		3.8	9		
125-Z14-A40R-ON05-N-C	125	133.8	90	40	-	33	22	-	-	63	38	9.2	16.4	2.5		3.8	14		
160-Z10-A40R-ON05-N	160	168.8	107	40	66.7	-	-	14	20	63	40	9.2	16.4	2.5		4.5	10		

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø50-160			4.0Nm
	SP040090	DT-TP15	

Compatible Inserts



		Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions										
		Dimension (mm)							P		M		K		N		S	
Insert shape	Product code	L	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	ONHU 050408-MM3	4.9	12.7	4.76	0.8	-	4.4	●										
	ONMU 050408-MM4	4.9	12.7	4.76	0.8	-	4.4	●	●				●	●	●			
	ONHU 0504ZNR-MM3	5.0	12.7	4.76	0.8	1.4	4.4	○			●							

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	ON..0504..									
				ap		Geometry							
						MM3		MM4					
				fz									
(mm)													
min		max		min		max							
P	Unalloyed steel	<600	<180	0.20	2.50								
		<950	<280										
	Alloyed steel	700-950	200-280							0.10	0.25	0.15	0.35
		950-1200	280-355										
M	Duplex stainless steel	778	230										
	Austenitic stainless steel	675	200			0.08	0.20	0.10	0.25				
	Precipitation-hardening stainless steel	1013	300										
K	Grey cast iron	700	220										
	Nodular cast iron	880	260			0.10	0.25	0.15	0.35				
	Malleable cast iron	800	250										
N	Aluminum	260	75										
	Aluminum alloy	447	130			-	-	-	-				
S	Fe-based alloy	943	280										
	Co-based alloy	1076	320										
	Ni-based alloy	1177	350	-	-	-	-						
	Ti-alloy	1262	370										
H	Hardened steel	-	50-60HRC										
	Chilled cast iron	-	55HRC										

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

AFM45-SE12

45° Approach angle face milling cutter

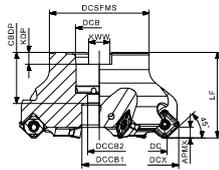


Fig. 1

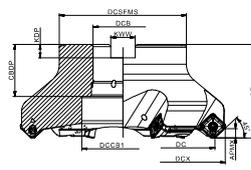


Fig. 2

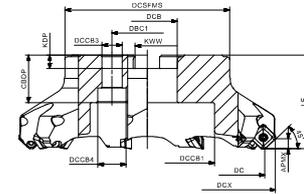
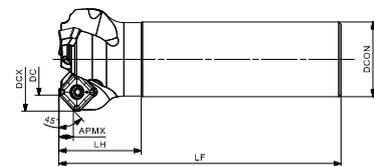


Fig. 3

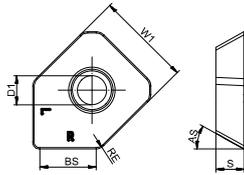
Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
AFM45-050-Z04-A22R-SE12-C-S	50	63	42	22	-	17	11	-	-	40	26	6.3	10.4	6		0.4	4		
063-Z04-A22R-SE12-C-S	63	76	47	22	-	17	11	-	-	40	26	6.3	10.4	6		0.6	4		
063-Z05-A22R-SE12-C-S	63	76	47	22	-	17	11	-	-	40	26	6.3	10.4	6		0.6	5	1	
080-Z04-A27R-SE12-C-S	80	93	58	27	-	20	13.5	-	-	50	30	7	12.4	6		1.2	4		
080-Z06-A27R-SE12-C-S	80	93	58	27	-	20	13.5	-	-	50	30	7	12.4	6		1.2	6		
100-Z05-A32R-SE12-C-S	100	113	66	32	-	45	-	-	-	50	30	8	14.4	6		1.5	5		
100-Z07-A32R-SE12-C-S	100	113	66	32	-	45	-	-	-	50	30	8	14.4	6		1.5	7	2	
125-Z06-A40R-SE12-C-S	125	138	85	40	-	55	-	-	-	63	35	9	16.4	6		3.0	6		SE..12T3..
125-Z08-A40R-SE12-C-S	125	138	85	40	-	55	-	-	-	63	35	9	16.4	6		3.0	8		
160-Z07-A40R-SE12-S	160	173	110	40	66.7	90	-	14	20	63	32	9	16.4	6		4.3	7		
160-Z10-A40R-SE12-S	160	173	110	40	66.7	90	-	14	20	63	32	9	16.4	6		4.2	10		
200-Z08-A60R-SE12-S	200	213	140	60	101.6	140	-	18	27	63	45	14	25.7	6		6.3	8		
200-Z12-A60R-SE12-S	200	213	140	60	101.6	140	-	18	27	63	45	14	25.7	6		6.5	12	3	
250-Z10-A60R-SE12-S	250	263	160	60	101.6	140	-	18	27	63	45	14	25.7	6		10.4	10		
250-Z14-A60R-SE12-S	250	263	160	60	101.6	140	-	18	27	63	45	14	25.7	6		10.6	14		



Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
AFM45-032-Z03-C32R-SE12-L120-C-S	32	45	32	120	35	6		0.6	3	SE..12T3..
040-Z03-C32R-SE12-L120-C-S	40	53	32	120	35	6		0.8	3	

Note: With internal coolant
 Without internal coolant

Compatible Inserts

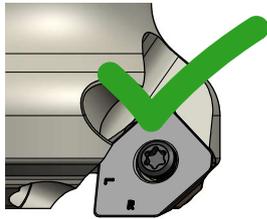


Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions											
		Dimension (mm)						P		M		K		N		S		H	
		W1	S	RE	BS	D1	AS	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC151K	AW100K	AP403S	AP151H		
	SEHT 12T3AEEN-W	13.4	3.97	1.5	7.8	4.1	29°	●						●					

● : Standard stock ○ : Made-to-Order

Precaution

When installing the wiper insert, refer to the left Fig. below (for example, the right-hand cutter); if installed as shown in the right Fig., the wiper effect will not be achieved.



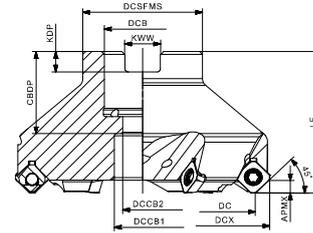
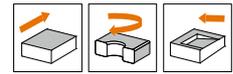
Milling Cutters

Materials				Cutting depth and feed										
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SE..12T3..										
				ap	Geometry				fz					
					MR6		MM4		MM3		FM2			
					(mm)									
min	max	min	max	min	max	min	max	min	max					
P	Unalloyed steel	<600	<180	0.20	6.00	0.10	0.35	0.10	0.30	0.05	0.28	-	-	
		<950	<280			0.15	0.30	0.12	0.28	0.05	0.28	-	-	
	Alloyed steel	700-950	200-280			0.05	0.40	0.05	0.40	0.10	0.40	-	-	
950-1200		280-355	0.10			0.40	0.10	0.40	0.10	0.40	-	-		
1200-1400		355-415	-			-	-	-	-	-	0.10	0.22		
M	Duplex stainless steel	778	230			-	-	-	-	-	-	-	-	-
	Austenitic stainless steel	675	200			-	-	-	-	-	-	-	-	-
	Precipitation-hardening stainless steel	1013	300			-	-	-	-	-	-	-	-	-
K	Grey cast iron	700	220			0.10	0.40	0.10	0.40	0.10	0.40	-	-	-
	Nodular cast iron	880	260			-	-	-	-	-	-	-	-	-
	Malleable cast iron	800	250	-	-	-	-	0.10	0.40	-	-	-		
N	Aluminum	260	75	-	-	-	-	-	-	-	-	-		
	Aluminum alloy	447	130	-	-	-	-	-	-	-	-	-		
S	Fe-based alloy	943	280	-	-	-	-	0.10	0.40	-	-	-		
	Co-based alloy	1076	320	-	-	-	-	-	-	-	-	-		
	Ni-based alloy	1177	350	-	-	-	-	-	-	-	-	-		
H	Ti-alloy	1262	370	-	-	-	-	-	-	-	-	-		
	Hardened steel	-	50-60HRC	-	-	0.10	0.30	0.10	0.30	-	-	-		
	Chilled cast iron	-	55HRC	-	-	-	-	-	-	-	-	-		

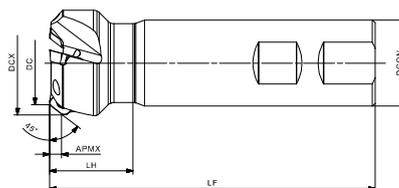
*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

AFM45-SD09

45° Approach angle face milling cutter

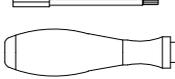


Product code	Dimension (mm)											Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
AFM45-032-Z04-A16R-SD09-C	32	41.6	30	16	14	9	40	24	5.8	8.4	4		0.3	4	SD..09T3..EN..
040-Z05-A16R-SD09-C	40	49.6	35	16	14	9	40	24	5.8	8.4	4		0.4	5	
050-Z05-A22R-SD09-C	50	59.6	42	22	18	11	40	26	6.5	10.4	4		0.5	5	
050-Z06-A22R-SD09-C	50	59.6	42	22	18	11	40	26	6.5	10.4	4		0.5	6	
063-Z05-A22R-SD09-C	63	72.6	42	22	18	11	40	26	6.5	10.4	4		0.7	5	
063-Z07-A22R-SD09-C	63	72.6	42	22	18	11	40	26	6.5	10.4	4		0.7	7	
080-Z06-A27R-SD09-C	80	89.6	42	27	20	14	50	29	7.2	12.4	4		1.4	6	
080-Z09-A27R-SD09-C	80	89.6	42	27	20	14	50	29	7.2	12.4	4		1.4	9	
100-Z07-A32R-SD09-C	100	109.6	80	32	26	18	50	32	8.2	14.4	4		2.3	7	
100-Z11-A32R-SD09-C	100	109.6	80	32	26	18	50	32	8.2	14.4	4		2.3	11	
125-Z08-A40R-SD09-C	125	134.6	87	40	33	22	63	38	9.2	16.4	4		4.1	8	

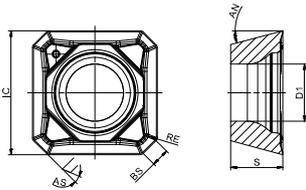


Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
AFM45-016-Z02-W16R-SD09-C	16	25.2	16	90	25	4		0.2	2	SD..09T3..EN..
020-Z02-W20R-SD09-C	20	29.2	20	110	27	4		0.3	2	
025-Z03-W25R-SD09-C	25	34	25	120	27	4		0.5	3	
032-Z03-W32R-SD09-C	32	41	32	120	31	4		0.7	3	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅16-32			3.5Nm
	ST040075	DT-T15	
∅40-125	SP040090	DT-TP15	

Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)							P		M		K		N		S	
		IC	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	SDMT 09T304EN-MM3	9.525	3.97	0.4	-	4.4	15°	●	●	●				●	●			
	SDMT 09T308EN-MM3	9.525	3.97	0.8	-	4.4	15°	●	●					●	●			
	SDGT 09T3AEEEN-MM4	9.252	3.97	0.3	1.4	4.4	15°	○	○									

● : Standard stock ○ : Made-to-Order

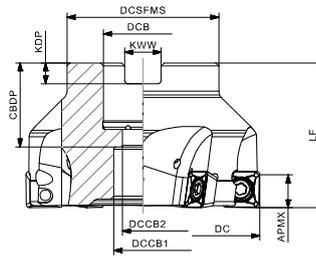
Milling Cutters

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..09T3..EN..							
				ap		Geometry					
						MM3		MM4			
				fz							
				(mm)							
min	max	min	max	min	max						
P	Unalloyed steel	<600	<180	0.20	4.00	0.08	0.30	0.10	0.32		
		<950	<280								
	Alloyed steel	700-950	200-280			0.05	0.28	0.08	0.30		
		950-1200	280-355								
	1200-1400	355-415									
M	Duplex stainless steel	778	230					0.05	0.25	0.08	0.28
	Austenitic stainless steel	675	200								
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220			0.08	0.30	-	-		
	Nodular cast iron	880	260								
	Malleable cast iron	800	250								
N	Aluminum	260	75			-	-	-	-		
	Aluminum alloy	447	130								
S	Fe-based alloy	943	280			-	-	-	-		
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350								
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC			-	-	-	-		
	Chilled cast iron	-	55HRC								

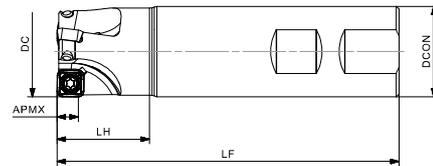
*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

AFM90-SD09

90° Approach angle face milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDBP	KDP	KWW	APMX				
AFM90-040-Z04-A16R-SD09-C	40	35	16	14	9	40	24	5.8	8.4	7		0.3	4	SD..09T3..EN..
050-Z05-A22R-SD09-C	50	42	22	18	11	40	26	6.5	10.4	7		0.4	5	
063-Z06-A22R-SD09-C	63	48	22	18	11	40	26	6.5	10.4	7		0.6	6	
080-Z08-A27R-SD09-C	80	52	27	20	14	50	29	7.2	12.4	7		1.2	8	
100-Z10-A32R-SD09-C	100	80	32	26	18	50	32	8.2	14.4	7		2.1	10	

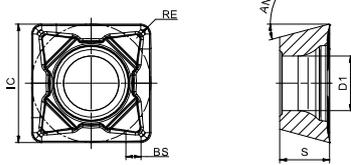


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
AFM90-025-Z02-W25R-SD09-C	25	25	120	27.7	7		0.4	2	SD..09T3..EN..
032-Z03-W32R-SD09-C	32	32	120	32.4	7		0.7	3	

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø25-32			3.5Nm
	ST040075	DT-T15	
Ø40-100	SP040090	DT-TP15	

Note: With internal coolant
 Without internal coolant

Compatible Inserts



		Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)						P		M		K		N		S	
Insert shape	Product code	IC	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AC301K	AP251K	AC151K	AW100K	AP403S
	SDMT 09T304EN-MM3	9.525	3.97	0.4	-	4.4	15°	●	●	●			●	●			
	SDMT 09T308EN-MM3	9.525	3.97	0.8	-	4.4	15°	●	●				●		●		
	SDGT 09T3PDER-MR6	9.516	3.97	0.8	1.2	4.4	15°	○	●					●			

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed											
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..09T3..EN..											
				ap		Geometry									
						MR6		MM3							
				fz											
(mm)															
min		max		min		max		min		max					
P	Unalloyed steel	<600	<180	0.20	7.00	0.10	0.35	0.08	0.30						
		<950	<280												
	Alloyed steel	700-950	200-280							0.08	0.30	0.05	0.28		
		950-1200	280-355												
	1200-1400	355-415													
M	Duplex stainless steel	778	230												
	Austenitic stainless steel	675	200			-	-	0.05	0.25						
	Precipitation-hardening stainless steel	1013	300												
K	Grey cast iron	700	220												
	Nodular cast iron	880	260												
	Malleable cast iron	800	250												
N	Aluminum	260	75												
	Aluminum alloy	447	130	-	-	-	-								
S	Fe-based alloy	943	280												
	Co-based alloy	1076	320												
	Ni-based alloy	1177	350	-	-	-	-								
	Ti-alloy	1262	370												
H	Hardened steel	-	50-60HRC												
	Chilled cast iron	-	55HRC	-	-	-	-								

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

AFM89-SD09

89° Approach angle face milling cutter

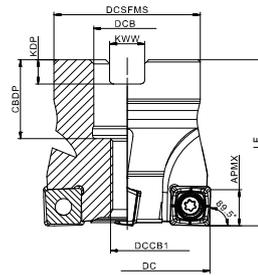


Fig. 1

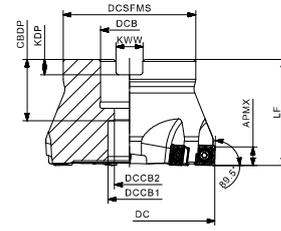
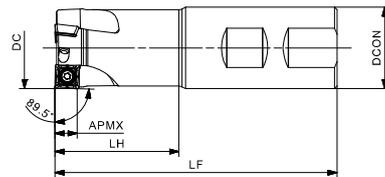


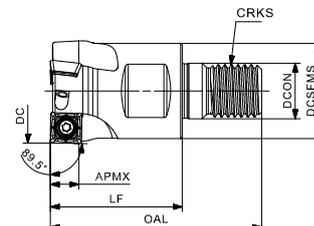
Fig. 2

Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX					
AFM89-040-Z04-A16R-SD09	40	35	16	M8	-	40	-	5.8	8.4	7		0.2	4	1	SD..09T3..N..
050-Z05-A22R-SD09	50	45	22	18	11	40	26	6.5	10.4	7		0.3	5	2	
063-Z06-A22R-SD09	63	48	22	18	11	40	26	6.5	10.4	7		0.5	6		
080-Z07-A27R-SD09	80	62	27	20	14	50	29	7.2	12.4	7		1.1	7		

Note: AFM89-040-Z04-A16R-SD09 is connected using a dowel screw.

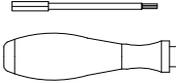


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
AFM89-025-Z02-W25R-SD09	25	25	100	42	7		0.3	2	SD..09T3..N..
032-Z03-W32R-SD09	32	32	110	48	7		0.6	3	
040-Z04-W40R-SD09	40	40	120	47	7		1.0	4	

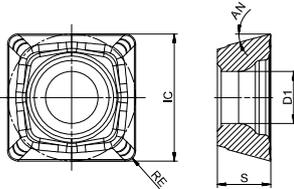


Product code	Dimension (mm)							Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCON	OAL	LF	CRKS	APMX				
AFM89-025-Z02-M12R-SD09	25	23	12.5	57	35	M12	7		0.1	2	SD..09T3..N..
032-Z02-M16R-SD09	32	29	17	64	40	M16	7		0.2	2	
032-Z03-M16R-SD09	32	29	17	64	40	M16	7		0.2	3	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø25-80			3.0Nm
	SP035086	DT-TP10	

Compatible Inserts



Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ⊕ Bad Conditions								
		IC	S	RE	D1	AN	Dimension (mm)								
							P	M	K	N	S				
	SDMT 09T308N-MM4	9.525	3.97	0.8	3.9	15°	●			●	●	●		●	
	SDMT 09T320N-MM4	9.520	3.97	2.0	3.9	15°	●			●	●	●		●	●
	SDMT 09T308N-MR2	9.525	3.97	0.8	3.9	15°	●			●	●	●		●	
	SDMT 09T320N-MR2	9.520	3.97	2.0	3.9	15°	●			●	●	●		●	

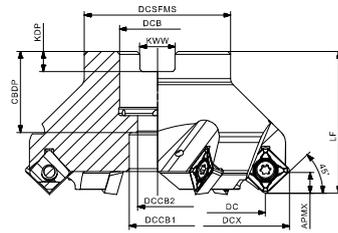
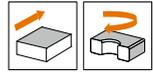
● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..09T3..N..					
				ap	Geometry				
					MM4		MR2		
					fz				
(mm)									
min	max	min	max	min	max	min	max		
P	Unalloyed steel	<600	<180	0.10	7.00	0.05	0.25	0.05	0.35
		<950	<280						
	Alloyed steel	700-950	200-280						
		950-1200	280-355						
M	Duplex stainless steel	778	230			-	-	0.08	0.35
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.08	0.30	0.08	0.30
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75	-	-	-	-		
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	0.05	0.30	-	-		
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-	-	-		
	Chilled cast iron	-	55HRC						

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

AFM45-SD12

45° Approach angle face milling cutter

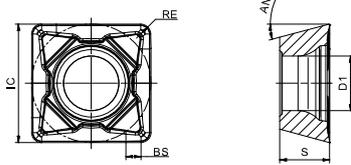


Product code	Dimension (mm)											Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CDDP	KDP	KWW	APMX				
AFM45-050-Z04-A22R-SD12-C	50	63	42	22	18	11	40	26	6.5	10.4	6		0.5	4	SD..1204..EN..
063-Z05-A22R-SD12-C	63	76	48	22	18	11	40	26	6.5	10.4	6		0.6	5	
080-Z06-A27R-SD12-C	80	93	52	27	20	14	50	29	7.2	12.4	6		1.1	6	
100-Z07-A32R-SD12-C	100	113	80	32	26	18	50	32	8.2	14.4	6		2.0	7	
125-Z08-A40R-SD12-C	125	138	87	40	33	22	63	38	9.2	16.4	6		3.8	8	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø50-125			5.0Nm
	SP04511555	DT-TP20	

Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✖ Bad Conditions											
		IC	S	RE	BS	D1	AN	Dimension (mm)												
								P	M	K			N	S						
	SDMT 120408EN-MM4	12.7	4.76	0.8	-	5.5	15°	●	●	●		●	●	●						
	SDMT 120412EN-MM3	12.7	4.76	1.2	-	5.5	15°	●	●	○				●						
	SDKT 1204AEEN-MR2	12.7	4.76	2.3	1.5	5.5	15°	○		●			●							

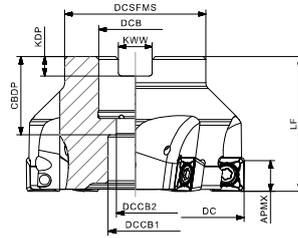
● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed								
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..1204..EN..								
				ap	Geometry						fz	
					MR2		MM4		MM3			
					(mm)							
				min	max	min	max	min	max	min	max	
P	Unalloyed steel	<600	<180	0.20	6.00	0.15	0.30	0.15	0.30	0.12	0.28	
		<950	<280									
	Alloyed steel	700-950	200-280			0.15	0.25	0.15	0.25	0.10	0.25	
		950-1200	280-355									
1200-1400	355-415											
M	Duplex stainless steel	778	230			0.12	0.25	0.10	0.25	0.08	0.20	
	Austenitic stainless steel	675	200									
	Precipitation-hardening stainless steel	1013	300									
K	Grey cast iron	700	220			0.12	0.28	0.10	0.25	0.10	0.22	
	Nodular cast iron	880	260									
	Malleable cast iron	800	250									
N	Aluminum	260	75			-	-	-	-	-	-	
	Aluminum alloy	447	130									
S	Fe-based alloy	943	280									
	Co-based alloy	1076	320			0.08	0.20	-	-			
	Ni-based alloy	1177	350									
	Ti-alloy	1262	370									
H	Hardened steel	-	50-60HRC									
	Chilled cast iron	-	55HRC									

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

AFM90-SD12

90° Approach angle face milling cutter

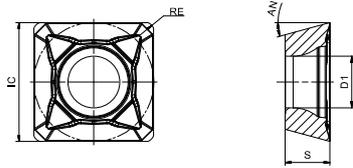


Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
AFM90-050-Z04-A22R-SD12-C	50	42	22	18	11	40	26	6.5	10.4	11		0.3	4	SD..1204..EN..
063-Z05-A22R-SD12-C	63	48	22	18	11	40	26	6.5	10.4	11		0.5	5	
080-Z06-A27R-SD12-C	80	52	27	20	14	50	29	7.2	12.4	11		1.1	6	
100-Z08-A32R-SD12-C	100	80	32	26	18	50	32	8.2	14.4	11		2.0	8	
125-Z10-A40R-SD12-C	125	87	40	33	22	63	38	9.2	16.4	11		3.8	10	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø50-125			5.0Nm
	SP04511555	DT-TP20	

Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions											
		IC	S	RE	BS	D1	AN	Dimension (mm)											
								P		M		K		N		S			
		AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S								
	SDMT 120408EN-MM4	12.7	4.76	0.8	-	5.5	15°	●	●	●		●	●						
	SDMT 120412EN-MM3	12.7	4.76	1.2	-	5.5	15°	●	●	○				●					

● : Standard stock ○ : Made-to-Order

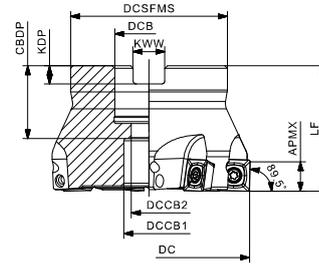
Materials				Cutting depth and feed											
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..1204..EN..											
				ap	Geometry										
					MM4		MM3								
					fz										
				(mm)											
				min	max	min	max	min	max	min	max				
P	Unalloyed steel	<600	<180	0.20	11.00	0.15	0.30	0.12	0.28						
		<950	<280												
	Alloyed steel	700-950	200-280							0.15	0.25	0.10	0.25		
		950-1200	280-355												
		1200-1400	355-415												
M	Duplex stainless steel	778	230							0.10	0.25	0.08	0.20		
	Austenitic stainless steel	675	200												
	Precipitation-hardening stainless steel	1013	300												
K	Grey cast iron	700	220							0.10	0.25	0.10	0.22		
	Nodular cast iron	880	260												
	Malleable cast iron	800	250												
N	Aluminum	260	75												
	Aluminum alloy	447	130												
S	Fe-based alloy	943	280	0.08	0.20	-	-								
	Co-based alloy	1076	320												
	Ni-based alloy	1177	350												
	Ti-alloy	1262	370												
H	Hardened steel	-	50-60HRC												
	Chilled cast iron	-	55HRC												

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling Cutters

AFM89-SD12

89° Approach angle face milling cutter



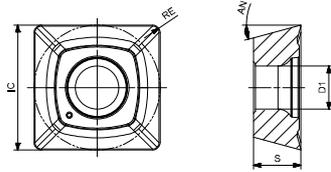
Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
AFM89-050-Z04-A22R-SD12	50	45	22	18	11	40	26	6.5	10.4	9		0.3	4	SD..1204..N..
063-Z05-A22R-SD12	63	48	22	18	11	40	26	6.5	10.4	9		0.5	5	
080-Z07-A27R-SD12	80	62	27	20	14	50	29	7.2	12.4	9		1.1	7	
100-Z08-A32R-SD12	100	80	32	26	18	50	32	8.2	14.4	9		1.7	8	
125-Z09-A40R-SD12	125	87	40	33	22	63	38	9.2	16.4	9		3.0	9	
125-Z10-A40R-SD12	125	87	40	33	22	63	38	9.2	16.4	9		3.0	10	

Note: With internal coolant

Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø50-125			3.5Nm
	SP040112	DT-TP15	

Compatible Inserts



		Machining conditions					● Good Conditions ● General Conditions ⊛ Bad Conditions									
		Dimension (mm)					P		M		K		N		S	
Insert shape	Product code	IC	S	RE	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	SDMT 120408N-MM4	12.7	4.76	0.8	4.4	15.3°	●			●	●	●		●		
	SDMT 120420N-MM4	12.7	4.76	2.0	4.4	15.3°	○					●				
	SDMT 120425N-MM4	12.7	4.76	2.5	4.4	15.3°				○	●					○
	SDMT 120430N-MM4	12.7	4.76	3.0	4.4	15.3°		○				●				
	SDMT 120408N-MR2	12.7	4.76	0.8	4.4	15.3°	●		●	●	●	●		●		

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..1204..N..					
				ap	Geometry				fz
					MM4		MR2		
				(mm)					
min	max	min	max	min	max	min	max		
P	Unalloyed steel	<600	<180	0.20	9.00	0.10	0.30	0.10	0.35
		<950	<280						
	Alloyed steel	700-950	200-280			0.12	0.25	0.10	0.30
		950-1200	280-355						
M	Duplex stainless steel	778	230			0.06	0.20	0.10	0.30
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.10	0.30	0.10	0.35
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75	-	-	-	-		
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	0.06	0.12	-	-		
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-	-	-		
	Chilled cast iron	-	55HRC						

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

AFM45-SN12

45° Approach angle face milling cutter

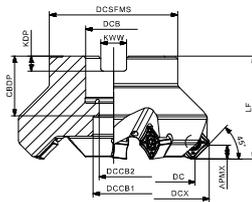


Fig. 1

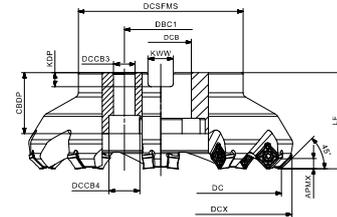
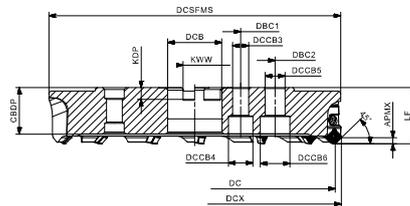


Fig. 2

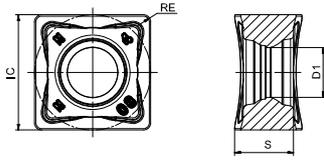
Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
AFM45-050-Z04-A22R-SN12-N-C	50	64	47	22	-	18	11	-	-	40	26	6.5	10.4	6		0.5	4	1	SN..1206ANN.. SN..1206..
050-Z06-A22R-SN12-N-C	50	64	47	22	-	18	11	-	-	40	26	6.5	10.4	6		0.5	6		
063-Z04-A22R-SN12-N-C	63	77	52	22	-	18	11	-	-	40	24.5	6.3	10.4	6		0.7	4		
063-Z06-A22R-SN12-N-C	63	77	52	22	-	18	11	-	-	40	26	6.5	10.4	6		0.6	6		
063-Z08-A22R-SN12-N-C	63	77	52	22	-	18	11	-	-	40	26	6.5	10.4	6		0.6	8		
080-Z04-A27R-SN12-N-C	80	94	62	27	-	20	14	-	-	50	30	7	12.4	6		1.3	4		
080-Z05-A27R-SN12-N-C	80	94	62	27	-	20	14	-	-	50	29	7.2	12.4	6		1.2	5		
080-Z07-A27R-SN12-N-C	80	94	62	27	-	20	14	-	-	50	29	7.2	12.4	6		1.2	7		
100-Z06-A32R-SN12-N-C	100	114	77	32	-	26	18	-	-	50	32	8.2	14.4	6		1.8	6		
100-Z08-A32R-SN12-N-C	100	114	77	32	-	26	18	-	-	50	32	8.2	14.4	6		1.8	8		
125-Z07-A40R-SN12-N-C	125	139	90	40	-	33	22	-	-	63	38	9.2	16.4	6		3.8	7		
125-Z08-A40R-SN12-N-C	125	139	90	40	-	33	22	-	-	63	38	9.2	16.4	6		3.8	8		
125-Z10-A40R-SN12-N-C	125	139	90	40	-	33	22	-	-	63	38	9.2	16.4	6		3.7	10		
160-Z10-A40R-SN12-N	160	174	107	40	66.7	-	-	14	20	63	30	9.2	16.4	6		4.7	10	2	
200-Z14-A60R-SN12-N	200	214	130	60	101.6	-	-	18	27	63	45	14.2	25.6	6		7.2	14		
250-Z16-A60R-SN12-N	250	264	180	60	101.6	-	-	18	27	63	45	14.2	25.6	6		13.0	16		



Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Inserts	
	DC	DCX	DCSFMS	DCB	DBC1	DBC2	DCCB3	DCCB4	DCCB5	DCCB6	LF	CBDP	KDP	KWW					APMX
AFM45-315-Z14-A60R-SN12-M	315	329	220	60	101.6	177.8	18	27	22	33	63	52	14.2	25.6	6		26.8	14	SN..1206ANN SN..1206..

Note: With internal coolant
 Without internal coolant

Compatible Inserts



Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions												
		IC	S	RE	BS	D1	Dimension (mm)												
							P		M		K		N		S				
		AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S								
	SNMX 120612-MM3	12.7	6.40	1.2	-	5.5	○	●	○		●	●	●						
	SNGX 120608-MM4	12.7	6.43	0.8	-	5.5	●	●	●			●	●	●					
	SNGX 120612-MM4	12.7	6.38	1.2	-	5.5	●												
	SNMX 120608-MM4	12.7	6.43	0.8	-	5.5	●	●				●	●	●					
	SNMX 120612-MM4	12.7	6.38	1.2	-	5.5	●	●	○			●	●	●					
	SNMX 120620-MM4	12.7	6.28	2.0	-	5.5		●	○			●	●	●					
SNMX 120630-MM4	12.7	6.14	3.0	-	5.5						●								
	SNMX 120612-MR6	12.7	6.41	1.2	-	5.5	●	●	●			●	●	●					
	SNMX 120612-RR2	12.7	6.44	1.2	-	5.5	●	●	○			●	●						
	SNMX 120620-RR2	12.7	6.34	2.0	-	5.5		●	●			●	●						
	SNMX 120612R-MM4	12.7	6.85	1.2	-	5.5	●	●	○		●	●	●						

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed												
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SN.. 1206..												
				ap	Geometry					fz						
					MM3		MM4		MR6		RR2		FM2			
					(mm)											
min		max		min		max		min		max		min		max		
P	Unalloyed steel	<600	<180	0.20	6.00	0.15	0.35	0.18	0.38	0.18	0.40	0.18	0.45	-	-	
		<950	<280													
	Alloyed steel	700-950	200-280			0.12	0.32	0.15	0.35	0.15	0.38	0.15	0.38	-	-	
		950-1200	280-355													
1200-1400	355-415															
M	Duplex stainless steel	778	230													
	Austenitic stainless steel	675	200			0.12	0.30	0.12	0.32	-	-	-	-	-	-	-
	Precipitation-hardening stainless steel	1013	300													
K	Grey cast iron	700	220													
	Nodular cast iron	880	260			0.15	0.35	0.18	0.38	0.18	0.40	0.18	0.45	-	-	
	Malleable cast iron	800	250													
N	Aluminum	260	75													
	Aluminum alloy	447	130	-	-	-	-	-	-	-	-	0.15	0.35			
S	Fe-based alloy	943	280													
	Co-based alloy	1076	320													
	Ni-based alloy	1177	350	0.10	0.25	0.12	0.28	-	-	-	-	-	-			
	Ti-alloy	1262	370													
H	Hardened steel	-	50-60HRC													
	Chilled cast iron	-	55HRC													

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

AFM75-SN12

75° Approach angle face milling cutter

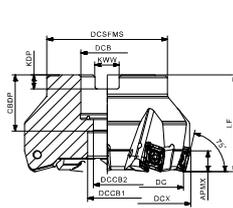


Fig. 1

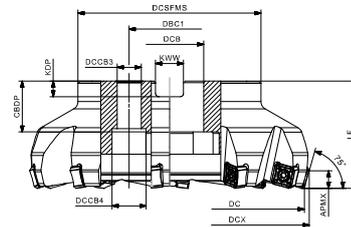


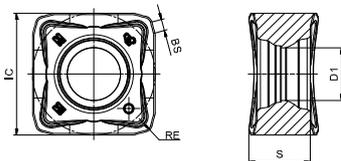
Fig. 2

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
AFM75-050-Z04-A22R-SN12-N-C	50	56	42	22	-	18	11	-	-	40	26	6.5	10.4	8		0.4	4	1	SN..1206ENN.. SN..1206..
063-Z06-A22R-SN12-N-C	63	69	52	22	-	18	11	-	-	40	26	6.5	10.4	8		0.6	6		
080-Z07-A27R-SN12-N-C	80	86	62	27	-	20	14	-	-	50	29	7.2	12.4	8		1.3	7		
100-Z08-A32R-SN12-N-C	100	106	67	32	-	26	18	-	-	50	32	8.2	14.4	8		1.9	8		
125-Z08-A40R-SN12-N-C	125	131	90	40	-	33	22	-	-	63	38	9.2	16.4	8		3.5	8		
125-Z10-A40R-SN12-N-C	125	131	90	40	-	33	22	-	-	63	38	9.2	16.4	8		3.8	10		
160-Z10-A40R-SN12-N	160	166	107	40	66.7	-	-	14	20	63	30	9.2	16.4	8		4.7	10	2	
200-Z14-A60R-SN12-N	200	206	130	60	101.6	-	-	18	27	63	45	14.2	25.6	8		7.4	14		
250-Z16-A60R-SN12-N	250	256	180	60	101.6	-	-	18	27	63	45	14.2	25.6	8		13.4	16		

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø50-250	 SP050120	 DT-TP20	3.5Nm

Compatible Inserts



Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions									
		IC	S	RE	BS	D1	Dimension (mm)									
							P	M	K	N	S					
	SNGX 1206ENN-MM3	12.7	6.36	0.8	1.2	5.5	●	●	○			●	●	○		
	SNGX 1206ENN-MM4	12.7	6.34	0.8	1.2	5.5	●	●	●			●	●			
	SNMX 1206ENN-MM4	12.7	6.34	0.8	1.2	5.5			○	●		●				
	SNGX 1206ENN-MR6	12.7	6.32	0.8	1.2	5.5	●	●	●			●	●			

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed										
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SN.. 1206..										
				ap	Geometry				fz					
					MM3	MM4	MR6	RR2	(mm)					
				min	max	min	max	min	max	min	max	min	max	
P	Unalloyed steel	<600	<180	0.20	8.00	0.12	0.32	0.19	0.35	0.15	0.38	0.18	0.40	
		<950	<280											
	Alloyed steel	700-950	200-280			0.10	0.30	0.12	0.32	0.10	0.35	0.15	0.35	
		950-1200	280-355											
	1200-1400	355-415												
M	Duplex stainless steel	778	230											
	Austenitic stainless steel	675	200			0.10	0.28	0.10	0.30	-	-	-	-	
	Precipitation-hardening stainless steel	1013	300											
K	Grey cast iron	700	220											
	Nodular cast iron	880	260			0.12	0.32	0.15	0.35	0.12	0.35	0.18	0.40	
	Malleable cast iron	800	250											
N	Aluminum	260	75											
	Aluminum alloy	447	130	-	-	-	-	-	-	-	-			
S	Fe-based alloy	943	280											
	Co-based alloy	1076	320	0.10	0.22	0.10	0.25	-	-	-	-			
	Ni-based alloy	1177	350											
	Ti-alloy	1262	370											
H	Hardened steel	-	50-60HRC											
	Chilled cast iron	-	55HRC											

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

AFM88-SN12

88° Approach angle face milling cutter

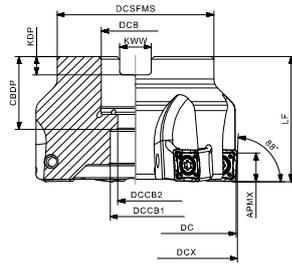


Fig. 1

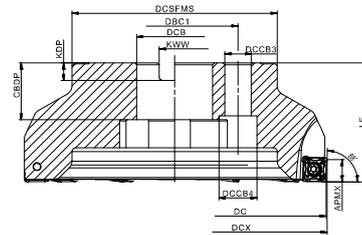


Fig. 2

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
AFM88-050-Z04-A22R-SN12-N-C	50	51	42	22	-	18	11	-	-	40	26	6.5	10.4	9		0.4	4	1	SN..1206ZNN.. SN..1206..
063-Z04-A22R-SN12-N-C	63	64	52	22	-	18	11	-	-	40	25	6.3	10.4	9		0.6	4		
063-Z06-A22R-SN12-N-C	63	64	52	22	-	18	11	-	-	40	26	6.5	10.4	9		0.6	6		
080-Z04-A27R-SN12-N-C	80	81	62	27	-	20	14	-	-	50	30	7.0	12.4	9		1.2	4		
080-Z07-A27R-SN12-N-C	80	81	62	27	-	20	14	-	-	50	29	7.2	12.4	9		1.2	7		
100-Z08-A32R-SN12-N-C	100	101	77	32	-	26	18	-	-	50	32	8.2	14.4	9		1.8	8		
100-Z11-A32R-SN12-N-C	100	101	77	32	-	26	18	-	-	50	32	8.2	14.4	9		1.6	11		
125-Z10-A40R-SN12-N-C	125	126	90	40	-	33	22	-	-	63	38	9.2	16.4	9		3.5	10		
125-Z13-A40R-SN12-N-C	125	126	90	40	-	33	22	-	-	63	38	9.2	16.4	9		3.5	13		
160-Z12-A40R-SN12-N	160	161	108	40	66.7	-	-	14	20	63	30	9.2	16.4	9		4.5	12		
200-Z14-A60R-SN12-N	200	201	130	60	101.6	-	-	18	27	63	45	14.2	25.6	9		7.2	14		

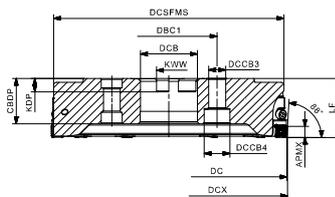


Fig. 3

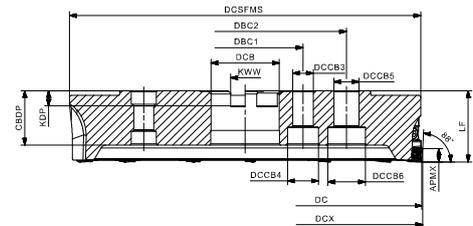
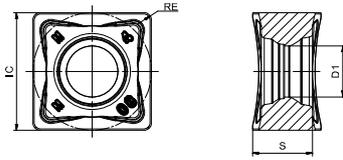


Fig. 4

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts	
	DC	DCX	DCSFMS	DCB	DBC1	DBC2	DCCB3	DCCB4	DCCB5	DCCB6	LF	CBDP	KDP	KWW						APMX
AFM88-250-Z12-A60R-SN12-M	250	251	180	60	101.6	-	18	27	-	-	63	48	14.2	25.6	9		15.7	12	3	SN..1206ZNN.. SN..1206..
315-Z14-A60R-SN12-M	315	316	220	60	101.6	177.8	18	27	22	33	63	48	14.2	25.6	9		24.4	14		

Note: With internal coolant
 Without internal coolant

Compatible Inserts



Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions										
		IC	S	RE	BS	D1	Dimension (mm)										
							P		M		K		N		S		
							AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	SNMX 120612-MM3	12.7	6.40	1.2	-	5.5	○	●	○			●	●	●			
	SNGX 120608-MM4	12.7	6.43	0.8	-	5.5	●	●	●			●	●	●			
	SNGX 120612-MM4	12.7	6.38	1.2	-	5.5	●										
	SNMX 120608-MM4	12.7	6.43	0.8	-	5.5	●	●				●	●	●			
	SNMX 120612-MM4	12.7	6.38	1.2	-	5.5	●	●	●			●	●	●			
	SNMX 120620-MM4	12.7	6.28	2.0	-	5.5		●	○			●	●	●			
	SNMX 120630-MM4	12.7	6.14	3.0	-	5.5						●					
	SNMX 120612-MR6	12.7	6.41	1.2	-	5.5	●	●	●			●	●	●			
	SNMX 120612-RR2	12.7	6.44	1.2	-	5.5	●	●	○			●	●				
	SNMX 120620-RR2	12.7	6.34	2.0	-	5.5		●	●			●	●				
	SNMX 120612R-MM4	12.7	6.85	1.2	-	5.5	●	●	○		●	●	●				

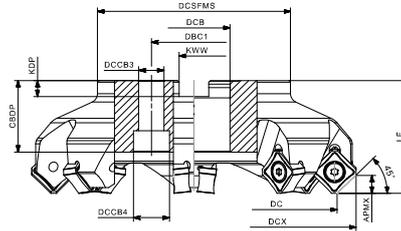
● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed													
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SN.. 1206..													
				ap	Geometry					fz							
					MM3		MM4		MR6		RR2		FM2				
					(mm)												
min		max		min		max		min		max							
P	Unalloyed steel	<600	<180	0.20	9.00	0.12	0.32	0.19	0.35	0.15	0.38	0.18	0.40	-	-		
		<950	<280														
	Alloyed steel	700-950	200-280			0.10	0.30	0.12	0.32	0.10	0.35	0.15	0.35	-	-		
		950-1200	280-355														
1200-1400	355-415																
M	Duplex stainless steel	778	230					0.10	0.28	0.10	0.30	-	-	-	-	-	
	Austenitic stainless steel	675	200														
	Precipitation-hardening stainless steel	1013	300														
K	Grey cast iron	700	220					0.12	0.32	0.15	0.35	0.12	0.35	0.18	0.40	-	-
	Nodular cast iron	880	260														
	Malleable cast iron	800	250														
N	Aluminum	260	75					-	-	-	-	-	-	-	0.12	0.32	
	Aluminum alloy	447	130														
S	Fe-based alloy	943	280			0.10	0.22	0.10	0.25	-	-	-	-	-			
	Co-based alloy	1076	320														
	Ni-based alloy	1177	350														
	Ti-alloy	1262	370														
H	Hardened steel	-	50-60HRC			-	-	-	-	-	-	-	-	-			
	Chilled cast iron	-	55HRC														

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

AFM45-SN19

45° Approach angle face milling cutter

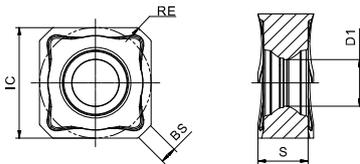


Product code	Dimension (mm)											Internal coolant	Weight (kg)	Z	Inserts	
	DC	DCX	DCSFMS	DCB	DBC1	DCCB3	DCCB4	LF	CBDP	KDP	KWW					APMX
AFM45-160-Z08-A40R-SN19	160	181.3	107	40	66.7	14	20	63	40	9.0	16.4	10		4.9	8	
200-Z10-A60R-SN19	200	221.3	130	60	101.6	18	27	63	46	14.2	25.6	10		7.7	10	SN..1909ANN..
250-Z12-A60R-SN19	250	271.3	180	60	101.6	18	26	63	46	14.0	25.6	10		12.7	12	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø160-250	 SP06018070	 DT-TP25	5.0Nm

Compatible Inserts



Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions											
		IC	S	RE	BS	D1	P		M		K		N		S			
		Dimension (mm)																
	SNGX 1909ANN-MM3	19.05	8.58	0.4	2.8	8	●											
	SNGX 1909ANN-MR6	19.05	8.50	0.8	2.7	8	●		●									

● : Standard stock ○ : Made-to-Order

Milling Cutters

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SN.. 1909..					
				ap	Geometry				
					MM3		MR6		
				fz					
(mm)									
min		max		min		max			
P	Unalloyed steel	<600	<180	0.80	10.00	0.10	0.40	0.13	0.43
		<950	<280						
	Alloyed steel	700-950	200-280			0.08	0.35	0.10	0.40
		950-1200	280-355						
	1200-1400	355-415							
M	Duplex stainless steel	778	230						
	Austenitic stainless steel	675	200			-	-	0.10	0.40
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220						
	Nodular cast iron	880	260			-	-	-	-
	Malleable cast iron	800	250						
N	Aluminum	260	75						
	Aluminum alloy	447	130	-	-	-	-		
S	Fe-based alloy	943	280						
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350	-	-	-	-		
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC						
	Chilled cast iron	-	55HRC	-	-	-	-		

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

AFM45-HN09

45° Approach angle face milling cutter

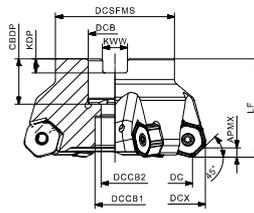


Fig. 1

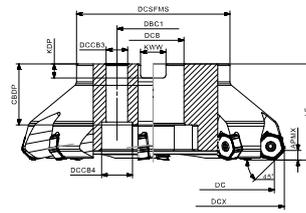


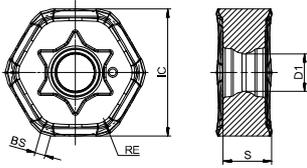
Fig. 2

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
AFM45-063-Z04-A22R-HN09-C	63	75	48	22	-	18	11	-	-	40	26	6.5	10.4	5		0.6	4	1	HN..0906..
063-Z05-A22R-HN09-C	63	75	48	22	-	18	11	-	-	40	26	6.5	10.4	5		0.5	5		
080-Z05-A27R-HN09-C	80	92	60	27	-	20	14	-	-	50	29	7.2	12.4	5		1.2	5		
080-Z06-A27R-HN09-C	80	92	60	27	-	20	14	-	-	50	29	7.2	12.4	5		1.2	6		
100-Z06-A32R-HN09-C	100	112	80	32	-	26	18	-	-	50	32	8.2	14.4	5		1.8	6		
100-Z08-A32R-HN09-C	100	112	80	32	-	26	18	-	-	50	32	8.2	14.4	5		1.8	8		
100-Z10-A32R-HN09-C	100	112	80	32	-	26	18	-	-	50	32	8.2	14.4	5		1.9	10		
125-Z06-A40R-HN09-C	125	137	87	40	-	33	22	-	-	63	38	9.2	16.4	5		3.7	6		
125-Z10-A40R-HN09-C	125	137	87	40	-	33	22	-	-	63	38	9.2	16.4	5		3.5	10		
125-Z12-A40R-HN09-C	125	137	87	40	-	33	22	-	-	63	38	9.2	16.4	5		3.7	12		
160-Z08-A40R-HN09	160	172	100	40	66.7	-	-	14	20	63	40	9.2	16.4	5		5.2	8	2	
160-Z12-A40R-HN09	160	172	100	40	66.7	-	-	14	20	63	40	9.2	16.4	5		5.3	12		

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø63-160	 SP045120	 DT-TP15	5.0Nm

Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions										
		IC	S	RE	BS	D1	Dimension (mm)											
							P		M		K		N		S			
AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S									
	HNGX 0906ANN-MR6	16.5	6.35	1.0	1.1	4.86	●		●	○	●	●		●				
	HNMX 0906ANN-MM4	16.5	6.35	1.0	1.1	4.86	●		●	○	●	●		●				
	HNMX 090612-MM4	16.5	6.35	1.2	-	4.86	●		●	○	●	●		●				

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	HN..0906..									
				ap	Geometry								
					MR6		MM4						
					fz								
(mm)													
min	max	min	max	min	max								
P	Unalloyed steel	<600	<180	0.20	5.00	0.30	0.50	0.17	0.35				
		<950	<280										
	Alloyed steel	700-950	200-280							0.28	0.45	-	-
		950-1200	280-355										
M	Duplex stainless steel	778	230			-	-	-	-				
	Austenitic stainless steel	675	200										
	Precipitation-hardening stainless steel	1013	300										
K	Grey cast iron	700	220			0.30	0.50	0.17	0.35				
	Nodular cast iron	880	260										
	Malleable cast iron	800	250										
N	Aluminum	260	75			-	-	-	-				
	Aluminum alloy	447	130										
S	Fe-based alloy	943	280	-	-	-	-						
	Co-based alloy	1076	320										
	Ni-based alloy	1177	350										
	Ti-alloy	1262	370										
H	Hardened steel	-	50-60HRC	-	-	-	-						
	Chilled cast iron	-	55HRC										

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

AFM45-XN07

45° Approach angle face milling cutter

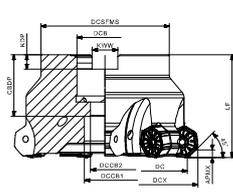


Fig. 1

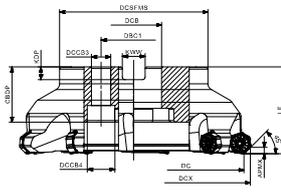


Fig. 2

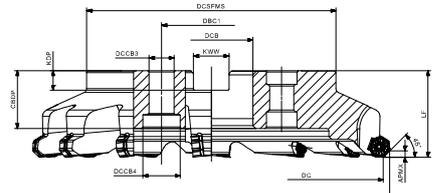
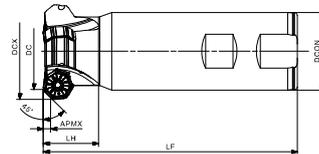


Fig. 3

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CDDP	KDDP	KWW	APMX					
AFM45-040-Z03-A16R-XN07-C	40	49.7	35	16	-	14	9	-	-	40	25	5.6	8.4	3.5		0.3	3	1	XN..0705..
050-Z04-A22R-XN07-C	50	59.7	42	22	-	18	11	-	-	40	26	6.5	10.4	3.5		0.4	4		
050-Z05-A22R-XN07-C	50	59.7	42	22	-	18	11	-	-	40	26	6.5	10.4	3.5		0.4	5		
063-Z05-A22R-XN07-C	63	72.7	48	22	-	18	11	-	-	40	26	6.5	10.4	3.5		0.6	5		
063-Z06-A22R-XN07-C	63	72.7	48	22	-	18	11	-	-	40	26	6.5	10.4	3.5		0.6	6		
080-Z06-A27R-XN07-C	80	89.7	62	27	-	20	14	-	-	50	29	7.2	12.4	3.5		1.3	6		
080-Z07-A27R-XN07-C	80	89.7	62	27	-	20	14	-	-	50	29	7.2	12.4	3.5		1.3	7		
100-Z07-A32R-XN07-C	100	109.7	80	32	-	26	18	-	-	50	32	8.2	14.4	3.5		1.9	7		
100-Z08-A32R-XN07-C	100	109.7	80	32	-	26	18	-	-	50	32	8.2	14.4	3.5		1.9	8		
125-Z08-A40R-XN07-C	125	134.7	90	40	-	33	22	-	-	63	38	9.2	16.4	3.5		3.6	8		
125-Z10-A40R-XN07-C	125	134.7	90	40	-	33	22	-	-	63	38	9.2	16.4	3.5		3.6	10		
160-Z09-A40R-XN07	160	169.7	107	40	66.7	-	-	14	20	63	40	9.2	16.4	3.5		4.5	9	2	
160-Z12-A40R-XN07	160	169.7	107	40	66.7	-	-	14	20	63	40	9.2	16.4	3.5		4.4	12		
200-Z14-A60R-XN07	200	209.6	130	60	101.6	-	-	18	27	63	45	14.2	25.6	3.5		7.0	14		
250-Z14-A60R-XN07-S	250	259.6	180	60	101.6	-	-	18	27	63	42	14.2	25.6	3.5		11.0	14	3	



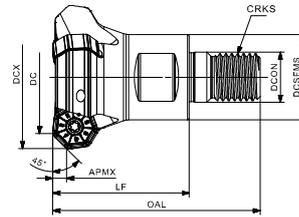
Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
AFM45-040-Z03-W40R-XN07-C	40	49.8	40	130	28.3	3.5		1.2	3	XN..0705..

Note: With internal coolant
 Without internal coolant

Milling Cutters

AFM45-XN07

45° Approach angle face milling cutter

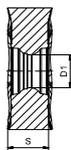
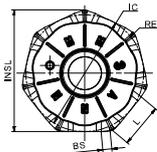


Product code	Dimension (mm)								Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCON	OAL	LF	CRKS	APMX				
AFM45-040-Z03-M16R-XN07-C	40	49.3	29	17	70	46	M16	3.5		0.3	3	XN..0705..

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts					
	Screw	Wrench	Shim	Shim screw	Shim screw wrench	Torque
∅40-250						3.5Nm
	SP035120H	DT-TP15	S-XN07030	SS050085F	LT-H3.5	

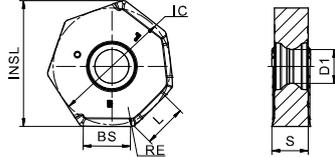
Compatible Inserts



Insert shape	Product code	Machining conditions								● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)								P		M		K		N		S	
		L	INSL	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	XNGU 0705ANN-MM3	5.5	15.09	14.5	5.0	0.8	1.1	4.07	●	●				●	●	●			
	XNGU 0705ANN-MM4	5.5	15.09	14.5	5.0	0.8	1.1	4.07	●			●	●		●				
	XNMU 0705ANN-MM4	5.5	15.09	14.5	5.0	0.8	1.1	4.07	●	●	●	●	●	●	●				
	XNMU 0705ANN-MR6	5.5	15.09	14.5	5.05	0.8	1.1	4.07	●	●				●	●				
	XNMU 0705ANN-MM4N	5.5	15.09	14.5	5.3	0.8	1.0	4.07	●		●	●	●						

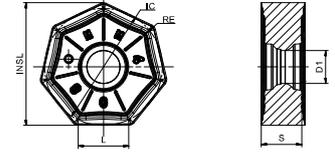
● : Standard stock ○ : Made-to-Order

Compatible Inserts



Insert shape	Product code	Machining conditions								● Good Conditions ● General Conditions ⚡ Bad Conditions									
		Dimension (mm)								P	M	K		N	S				
		L	INSL	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	XNGX 0705ANN-W	5.4	15.09	14.5	5.0	0.8	5.6	4.07	●						●	●	●		

● : Standard stock ○ : Made-to-Order



Insert shape	Product code	Machining conditions								● Good Conditions ● General Conditions ⚡ Bad Conditions								
		Dimension (mm)								P	M	K		N	S			
		L	INSL	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	XNMU 070508-MM4	6.6	15.21	14.5	5.0	0.8	-	4.07	●	●	●		●	●	●	●		
	XNMU 070508-MM4N	6.6	15.21	14.5	5.3	0.8	-	4.07						●		●		

● : Standard stock ○ : Made-to-Order

Precautions for using XN07..W long wiper inserts

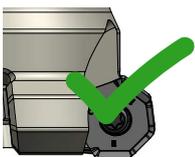


Fig.1 (correct)



Fig.2 (wrong)



Fig.3 (wrong)



Fig.4 (wrong)

This insert features two right-hand cutting edges and two left-hand cutting edges.

While a single wiper insert can achieve satisfactory surface finish, when the feed rate equals or exceeds the wiper edge length, it is recommended to install two or more wiper inserts in the tool holder. For optimal performance, the long wiper insert XNGX 0705ANN-W should be used in combination with standard wiper inserts XN..0705ANN..

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	XN.. 0705..							
				ap	Geometry						
					MM3		MM4		MR6		
				fz							
				(mm)							
min	max	min	max	min	max	min	max				
P	Unalloyed steel	<600	<180	0.20	3.50	0.15	0.35	0.18	0.38	0.18	0.40
		<950	<280								
	Alloyed steel	700-950	200-280			0.12	0.32	0.15	0.35	0.15	0.38
		950-1200	280-355								
	1200-1400	355-415									
M	Duplex stainless steel	778	230								
	Austenitic stainless steel	675	200			0.12	0.30	0.12	0.32	-	-
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220								
	Nodular cast iron	880	260			0.15	0.35	0.18	0.38	0.18	0.40
	Malleable cast iron	800	250								
N	Aluminum	260	75								
	Aluminum alloy	447	130	-	-	-	-	-	-		
S	Fe-based alloy	943	280								
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350	0.10	0.25	0.12	0.28	-	-		
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC								
	Chilled cast iron	-	55HRC								

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

AFM45-XN09

45° Approach angle face milling cutter

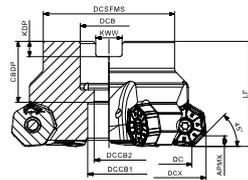


Fig. 1

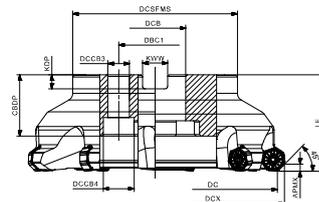


Fig. 2

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
AFM45-063-Z05-A22R-XN09-C	63	75.2	48	22	-	18	11	-	-	40	26	6.5	10.4	5		0.6	5	1	XN..0906..
080-Z06-A27R-XN09-C	80	92.2	62	27	-	20	14	-	-	50	29	7.2	12.4	5		1.2	6		
100-Z07-A32R-XN09-C	100	112.2	80	32	-	26	18	-	-	50	32	8.2	14.4	5		1.9	7		
100-Z08-A32R-XN09-C	100	112.2	80	32	-	26	18	-	-	50	32	8.2	14.4	5		2.0	8		
125-Z08-A40R-XN09-C	125	137.2	87	40	-	33	22	-	-	63	38	9.2	16.4	5		3.5	8		
125-Z10-A40R-XN09-C	125	137.2	87	40	-	33	22	-	-	63	38	9.2	16.4	5		3.5	10		
160-Z09-A40R-XN09	160	172.2	107	40	66.7	-	-	14	20	63	30	9.2	16.4	5		4.4	9	2	
160-Z11-A40R-XN09	160	172.2	107	40	66.7	-	-	14	20	63	30	9.2	16.4	5		4.3	11		
200-Z12-A60R-XN09	200	212.2	130	60	101.6	-	-	18	27	63	48	14.2	25.6	5		6.9	12		

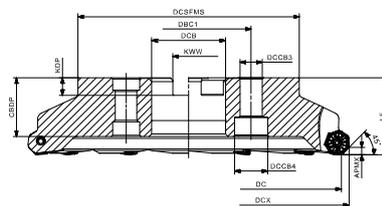


Fig. 3

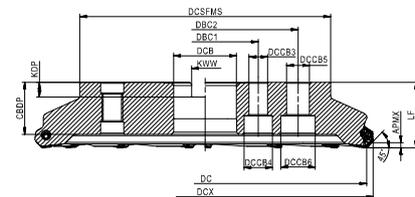


Fig. 4

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts	
	DC	DCX	DCSFMS	DCB	DBC1	DBC2	DCCB3	DCCB4	DCCB5	DCCB6	LF	CBDP	KDP	KWW						APMX
AFM45-250-Z12-A60R-XN09-S	250	262.7	180	60	101.6	-	18	27	-	-	63	48	14.2	25.6	5		12.4	12	3	XN..0906..
315-Z14-A60R-XN09-S	315	327.7	240	60	101.6	177.8	18	27	22	33	63	50	14.2	25.6	5		21.8	14		

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts					
	Screw	Wrench	Shim	Shim screw	Shim screw wrench	Torque
Ø63-315	 SP050130	 DT-TP20	 S-XN09040	 SS080100F	 LT-H5	5.0Nm

AFM45-XN09-W

45° Wedge clamping face milling cutter

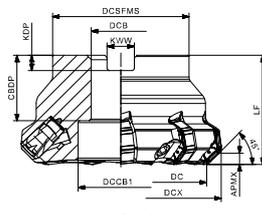


Fig. 1

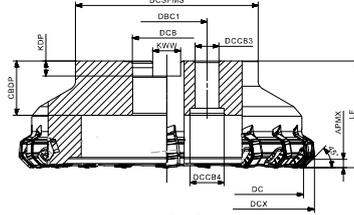


Fig. 2

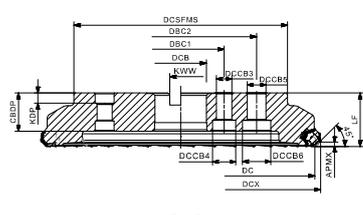


Fig. 3

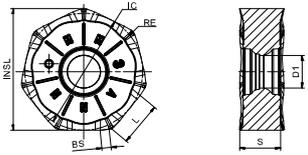
Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts		
	DC	DCX	DCSFMS	DCB	DBC1	DBC2	DCCB1	DCCB3	DCCB4	DCCB5	DCCB6	LF	CDDP	KDP						KWW	APMX
AFM45-080-Z09-A27R-XN09-W	80	92.7	62	27	-	-	39	-	-	-	-	50	30	7.0	12.5	5		1.2	9	1	XN..0906..
100-Z12-A32R-XN09-W	100	112.7	80	32	-	-	48	-	-	-	-	50	28.5	8.2	14.4	5		2.1	12		
125-Z16-A40R-XN09-W	125	137.7	87	40	-	-	58	-	-	-	-	63	30	9.2	16.4	5		3.9	16		
125-Z16-A40L-XN09-W	125	137.7	87	40	-	-	58	-	-	-	-	63	30	9.2	16.4	5		3.9	16		
160-Z20-A40R-XN09-W	160	172.7	107	40	66.7	-	-	14	20	-	-	63	32	9.0	16.4	5		4.9	20	2	
160-Z20-A40L-XN09-W	160	172.7	107	40	66.7	-	-	14	20	-	-	63	32	9.0	16.4	5		4.9	20		
200-Z26-A60R-XN09-W	200	212.7	130	60	101.6	-	-	18	27	-	-	63	48	14.2	25.6	5		7.2	26		
200-Z26-A60L-XN09-W	200	212.7	130	60	101.6	-	-	18	27	-	-	63	48	14.2	25.6	5		7.2	26		
250-Z30-A60R-XN09-W	250	262.2	170	60	101.6	-	-	18	27	-	-	63	45	14.2	25.6	5		13.0	30		
315-Z39-A60R-XN09-W	315	327.2	250	60	101.6	177.8	-	18	27	22	33	63	45	14.2	25.6	5		23.2	39	3	

Note: With internal coolant

Without internal coolant

Cutter diameter (mm)	Spare parts			
	Wedge	Screw	Wrench	Torque
Ø80-315				7.0Nm
	AWG-8H	WD080320F	LT-H4	

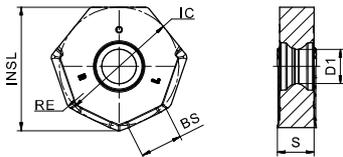
Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ⊛ Bad Conditions									
		L	INSL	IC	S	RE	BS	D1	●	⊛	⊛	⊛	⊛	●	●	●	●	⊛
		Dimension (mm)							P	M	K	N	S					
	XNGU 0906ANN-MM3	7.3	19.86	19.0	5.875	0.8	1.4	5.5	●	●	●	●	●	●	●	●	●	●
	XNGU 0906ANN-MM4	7.3	19.86	19.0	5.875	0.8	1.4	5.5	○	●	●	●	●	●	●	●	●	●
	XNMU 0906ANN-MR6	7.3	19.86	19.0	5.927	0.8	1.4	5.5	●	●	●	●	●	●	●	●	●	●
	XNMF 0906ANN-MR6	7.3	19.86	19.0	5.927	0.8	1.4	3.0	●	●	●	●	●	●	●	●	●	●

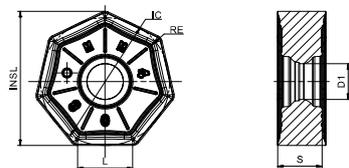
Note: XNMF inserts are for use with wedge cutter only.

● : Standard stock ○ : Made-to-Order



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ⊛ Bad Conditions									
		L	INSL	IC	S	RE	BS	D1	●	⊛	⊛	⊛	⊛	●	●	●	●	⊛
		Dimension (mm)							P	M	K	N	S					
	XNGX 0906ANN-W	7.2	19.86	19.0	5.88	1.0	7.6	5.5	●	●	●	●	●	●	●	●	●	●

● : Standard stock ○ : Made-to-Order



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ⊛ Bad Conditions									
		L	INSL	IC	S	RE	BS	D1	●	⊛	⊛	⊛	⊛	●	●	●	●	⊛
		Dimension (mm)							P	M	K	N	S					
	XNMU 090612-MM4	8.6	19.97	19.0	5.875	1.2	-	5.5	●	●	●	●	●	●	●	●	●	●
	XNMU 090612-MM4N	8.6	19.97	19.0	5.875	1.2	-	5.5	●	●	●	●	●	●	●	●	●	●

● : Standard stock ○ : Made-to-Order

Milling Cutters

Precautions for using XN09..W long wiper inserts

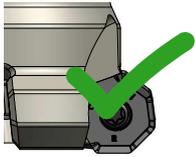


Fig.1 (correct)

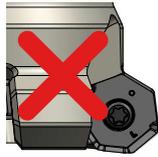


Fig.2 (wrong)

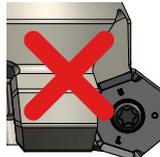


Fig.3 (wrong)



Fig.4 (wrong)

This insert features two right-hand cutting edges and two left-hand cutting edges.

While a single wiper insert can achieve satisfactory surface finish, when the feed rate equals or exceeds the wiper edge length, it is recommended to install two or more wiper inserts in the tool holder. For optimal performance, the long wiper insert XNGX 0906ANN-W should be used in combination with short wiper inserts XN..0906ANN..

Materials				Cutting depth and feed								
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	XN..0906..								
				ap	Geometry						min	max
					MM3		MM4		MR6			
				(mm)								min
min	max	min	max	min	max	min	max					
P	Unalloyed steel	<600	<180	0.20	5.00	0.15	0.35	0.18	0.38	0.18	0.40	
		<950	<280			0.12	0.32	0.15	0.35	0.15	0.38	
	Alloyed steel	700-950	200-280			0.12	0.30	0.12	0.32	-	-	
		950-1200	280-355			0.15	0.35	0.18	0.38	0.18	0.40	
M	Duplex stainless steel	778	230			-	-	-	-	-	-	
	Austenitic stainless steel	675	200			-	-	-	-	-	-	
	Precipitation-hardening stainless steel	1013	300			-	-	-	-	-	-	
K	Grey cast iron	700	220			0.10	0.25	0.12	0.28	-	-	
	Nodular cast iron	880	260			-	-	-	-	-	-	
	Malleable cast iron	800	250			-	-	-	-	-	-	
N	Aluminum	260	75			-	-	-	-	-	-	
	Aluminum alloy	447	130			-	-	-	-	-	-	
S	Fe-based alloy	943	280	-	-	-	-	-	-			
	Co-based alloy	1076	320	-	-	-	-	-	-			
	Ni-based alloy	1177	350	-	-	-	-	-	-			
	Ti-alloy	1262	370	-	-	-	-	-	-			
H	Hardened steel	-	50-60HRC	-	-	-	-	-	-			
	Chilled cast iron	-	55HRC	-	-	-	-	-	-			

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

AFF40-LN12/LN15

40° Approach angle cast iron finishing milling cutter

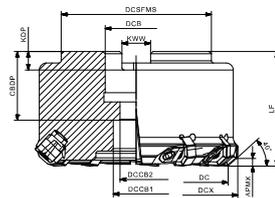


Fig. 1

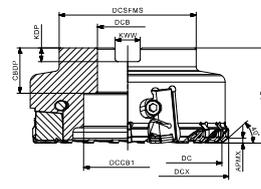


Fig. 2

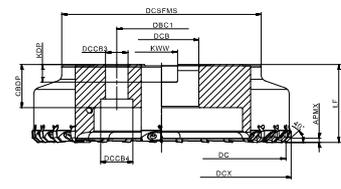


Fig. 3

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CDBP	KDP	KWW	APMX					
AFF40-080-Z08-A27R-LN12	80	88.4	65	27	-	20	14	-	-	50	30	8.1	12.4	0.5		1.6	8+2	1	ONHF 050408-MM3 LNHQ 120408FN-W
100-Z10-A32R-LN12	100	108.4	80	32	-	48	-	-	-	50	30	10.1	14.4	0.5		2.4	10+2	2	
125-Z15-A40R-LN15	125	133.4	90	40	-	58	-	-	-	63	30	9.1	16.4	0.5		3.9	15+3		
160-Z18-A40R-LN15	160	168.4	120	40	66.7	92	-	14	20	63	30	9.1	16.4	0.5		6.3	18+3	3	
200-Z24-A60R-LN15	200	208.4	160	60	101.6	130	-	18	26	63	35	14.2	25.64	0.5		9.4	24+3		
250-Z30-A60R-LN15	250	258.4	200	60	101.6	170	-	18	26	63	35	14.2	25.64	0.5		14.8	30+3		

*Z=8+2 means 8pcs rough inserts and 2pcs finish inserts

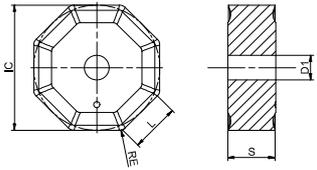
Note: With internal coolant

Without internal coolant

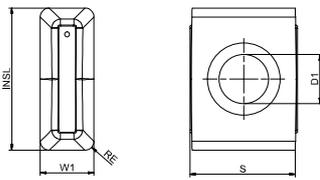
Cutter diameter (mm)	Spare parts				
	Wedge	Wedge locking screw	Wiper insert locking screw	Wiper insert adjusting screw	Wiper cartridge locking screw
∅80-250					
	AWG-6H-13B	WD060200	SP040085H	AH050100F	SH060250

Cutter diameter (mm)	Spare parts				
	Wedge screw Wrench	Wiper insert screw wrench	Wiper insert adjusting screw wrench	Wiper insert cartridge locking screw wrench	Wiper cartridge
∅80-250					
	LT-H3	DT-TP10	LT-H2.5	LT-H5	∅80-100 C-LN1235-2545
					∅125-250 C-LN1535-2545

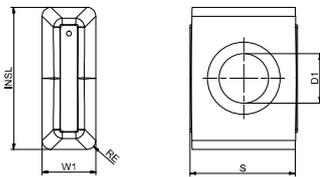
Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✚ Bad Conditions										
		L	INSL	IC	S	RE	D1	●	✚	●	✚	●	✚	●	✚	●	✚	
		Dimension (mm)						P	M	K	S	H						
	ONHF 050408-MM3	4.9	-	12.7	4.76	0.8	2.5	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H	●



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✚ Bad Conditions										
		W1	INSL	IC	S	RE	D1	●	✚	●	✚	●	✚	●	✚	●	✚	
		Dimension (mm)						P	M	K	S	H						
	LNHQ 120408FN-W	4.76	12.7	-	9.4	0.8	4.4	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H	●



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✚ Bad Conditions										
		W1	INSL	IC	S	RE	D1	●	✚	●	✚	●	✚	●	✚	●	✚	
		Dimension (mm)						P	M	K	S	H						
	LNHQ 150416FN-W	4.76	15.875	-	9.25	1.6	4.4	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H	●

● : Standard stock ○ : Made-to-Order

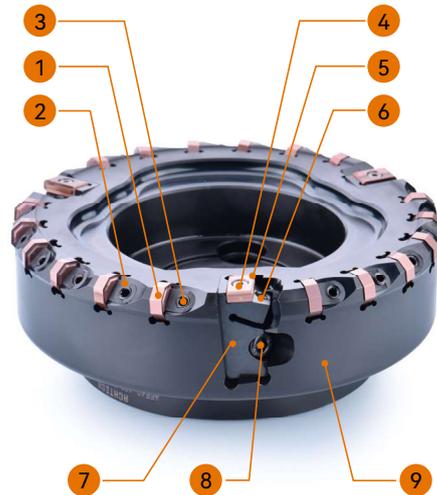
Materials				Cutting depth and feed			
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	ONHF 05.. + LNHQ 12/15..			
				ap		Geometry	
						MM3 + W	
				fz		(mm)	
min	max	min	max				
K	Grey cast iron	700	220	0.20	0.50	0.08	0.25
	Nodular cast iron	880	260				
	Malleable cast iron	800	250				

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Installation and Adjustment Method for Cast Iron Finishing Milling Cutter

1. Clean wiper cartridge (7), completely release adjusting screw (6);
2. Clean each insert pocket, cartridge pocket, clean inserts and cartridges;
3. Install roughing inserts (1), wiper cartridges (7) and use finger to push them to the locating surface and lock the screws;
4. Install wiper inserts (5);
5. Measure the axial run out of each roughing (1) and wiper insert (5);
6. Adjusting wiper inserts height through adjusting screw (6);
7. Wiper inserts Max. run out should be higher than roughing inserts by 0.03-0.06mm.

- | | |
|---------------------------------------|--------------------------------------|
| 1. Roughing inserts (ON..05..) | 6. Adjusting screw |
| 2. Locking wedge | 7. Wiper cartridge |
| 3. Double-headed wedge locking screws | 8. Locking screw for wiper cartridge |
| 4. Wiper insert clamping screw | 9. Cutter |
| 5. Wiper insert (LN12/15) | |



ASM90-LN12

90° Approach angle square shoulder milling cutter

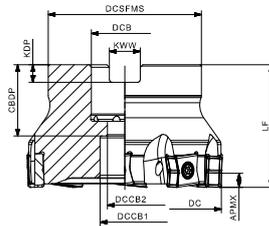
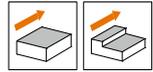


Fig. 1

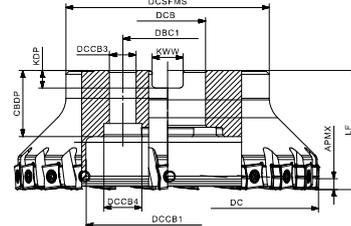
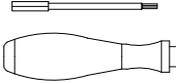


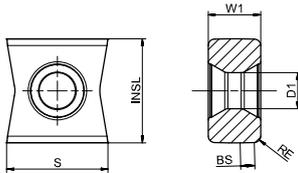
Fig. 2

Product code	Dimension (mm)													Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CDBP	KDP	KWW	APMX					
ASM90-063-Z06-A22R-LN12-C	63	52	22	-	18	11	-	-	40	26	6.5	10.4	5		0.6	6	1	LN..1206..
063-Z06-A22L-LN12-C	63	52	22	-	18	11	-	-	40	26	6.5	10.4	5		0.6	6		
063-Z08-A22R-LN12	63	52	22	-	18	11	-	-	40	26	6.5	10.4	5		0.6	8		
063-Z08-A22L-LN12	63	52	22	-	18	11	-	-	40	26	6.5	10.4	5		0.6	8		
080-Z08-A27R-LN12-C	80	62	27	-	20	14	-	-	50	29	7.2	12.4	5		1.2	8		
080-Z08-A27L-LN12-C	80	62	27	-	20	14	-	-	50	29	7.2	12.4	5		1.2	8		
080-Z10-A27R-LN12	80	62	27	-	20	14	-	-	50	29	7.2	12.4	5		1.2	10		
080-Z10-A27L-LN12	80	62	27	-	20	14	-	-	50	29	7.2	12.4	5		1.2	10		
100-Z09-A32R-LN12	100	78	32	-	26	18	-	-	50	32	8.2	14.4	5		1.9	9		
100-Z09-A32L-LN12	100	78	32	-	26	18	-	-	50	32	8.2	14.4	5		1.9	9		
100-Z13-A32R-LN12	100	78	32	-	26	18	-	-	50	32	8.2	14.4	5		1.9	13		
100-Z13-A32L-LN12	100	78	32	-	26	18	-	-	50	32	8.2	14.4	5		1.9	13		
125-Z10-A40R-LN12	125	90	40	-	33	22	-	-	63	38	9.2	16.4	5		3.5	10		
125-Z10-A40L-LN12	125	90	40	-	33	22	-	-	63	38	9.2	16.4	5		3.5	10		
125-Z16-A40R-LN12	125	90	40	-	33	22	-	-	63	38	9.2	16.4	5		3.5	16		
125-Z16-A40L-LN12	125	90	40	-	33	22	-	-	63	38	9.2	16.4	5		3.5	16		
160-Z13-A40R-LN12	160	107	40	66.7	98	-	14	20	63	35	9.2	16.4	5		4.0	13	2	
160-Z13-A40L-LN12	160	107	40	66.7	98	-	14	20	63	35	9.2	16.4	5		4.0	13		
160-Z21-A40R-LN12	160	107	40	66.7	98	-	14	20	63	35	9.2	16.4	5		4.1	21		
160-Z21-A40L-LN12	160	107	40	66.7	98	-	14	20	63	35	9.2	16.4	5		4.1	21		
200-Z16-A60R-LN12	200	130	60	101.6	135	-	18	27	63	45	14.2	25.6	5		6.4	16		
200-Z16-A60L-LN12	200	130	60	101.6	135	-	18	27	63	45	14.2	25.6	5		6.4	16		
200-Z26-A60R-LN12	200	130	60	101.6	135	-	18	27	63	45	14.2	25.6	5		6.5	26		
200-Z26-A60L-LN12	200	130	60	101.6	135	-	18	27	63	45	14.2	25.6	5		6.5	26		
250-Z20-A60R-LN12	250	180	60	101.6	180	-	18	27	63	45	14.2	25.6	5		11.8	20		
250-Z20-A60L-LN12	250	180	60	101.6	180	-	18	27	63	45	14.2	25.6	5		11.8	20		
250-Z32-A60R-LN12	250	180	60	101.6	180	-	18	27	63	45	14.2	25.6	5		11.9	32		
250-Z32-A60L-LN12	250	180	60	101.6	180	-	18	27	63	45	14.2	25.6	5		11.9	32		

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅63-250			3.5Nm
	SP040112	DT-TP15	

Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✱ Bad Conditions									
		Dimension (mm)							P		M		K		S		H	
		INSL	W1	S	RE	BS	D1	AP251U	AP351U	AC251P	AP403M	AP351M	AP251K	AC301K	AC151K	AP403S	AP151H	
	LNET 1206-MM4	12.7	6.35	12.3	0.8	1.7	4.4	●				●	●		●		○	

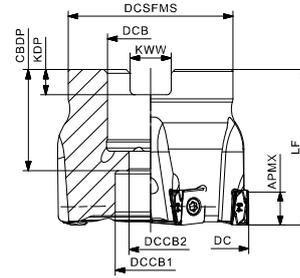
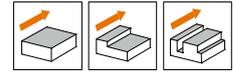
● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	LN..1206..					
				ap		Geometry			
						MM4			
				(mm)		fz			
min	max	min	max						
P	Unalloyed steel	<600	<180	0.20	5.00	0.08	0.35		
		<950	<280						
	Alloyed steel	700-950	200-280					0.08	0.30
		950-1200	280-355						
		1200-1400	355-415						
M	Duplex stainless steel	778	230			0.05	0.25		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.10	0.35		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75						
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	0.05	0.20				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	0.08	0.20				
	Chilled cast iron	-	55HRC						

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

ASM90-LN09

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDBP	KDP	KWW	APMX				
ASM90-040-Z04-A16R-LN09-C	40	35	16	14	9	40	24	5.8	8.4	8		0.3	4	LN..0904..
040-Z06-A16R-LN09-C	40	35	16	14	9	40	24	5.8	8.4	8		0.3	6	
050-Z05-A22R-LN09-C	50	42	22	18	11	40	26	6.5	10.4	8		0.4	5	
050-Z07-A22R-LN09-C	50	42	22	18	11	40	26	6.5	10.4	8		0.4	7	
063-Z07-A22R-LN09-C	63	48	22	18	11	40	26	6.5	10.4	8		0.6	7	
063-Z10-A22R-LN09-C	63	48	22	18	11	40	26	6.5	10.4	8		0.6	10	
080-Z09-A27R-LN09-C	80	62	27	20	14	50	29	7.2	12.4	8		1.2	9	
080-Z13-A27R-LN09-C	80	62	27	20	14	50	29	7.2	12.4	8		1.2	13	

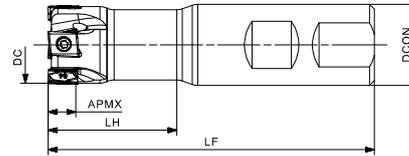
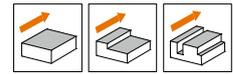


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-020-Z02-C20R-LN09-L110	20	20	110	30	8		0.3	2	LN..0904..
020-Z03-C20R-LN09-L110	20	20	110	30	8		0.3	3	
021-Z02-C20R-LN09-L200	21	20	200	30	8		0.5	2	
025-Z03-C25R-LN09-L200-C	25	25	200	34	8		0.7	3	
025-Z04-C25R-LN09-L200-C	25	25	200	34	8		0.7	4	
026-Z03-C25R-LN09-L200-C	26	25	200	34	8		0.7	3	
028-Z03-C25R-LN09-L110-C	28	25	110	34	8		0.4	3	
032-Z04-C32R-LN09-L250-C	32	32	250	45	8		1.4	4	
032-Z05-C32R-LN09-L250-C	32	32	250	45	8		1.5	5	
033-Z04-C32R-LN09-L250-C	33	32	250	45	8		1.4	4	

Note: With internal coolant
 Without internal coolant

ASM90-LN09

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-025-Z03-W25R-LN09-C	25	25	100	39	8		0.3	3	LN..0904..
025-Z04-W25R-LN09-C	25	25	100	39	8		0.3	4	
032-Z04-W32R-LN09-C	32	32	110	44	8		0.6	4	
032-Z05-W32R-LN09-C	32	32	110	44	8		0.6	5	
040-Z04-W32R-LN09-C	40	32	110	25	8		0.7	4	
040-Z06-W32R-LN09-C	40	32	110	25	8		0.7	6	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅20-80			1.8Nm
	SP030083	DT-TP09	

Milling Cutters

ASM90-LN13

90° Approach angle square shoulder milling cutter

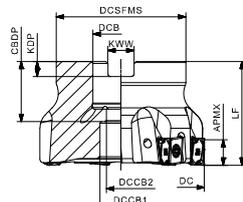
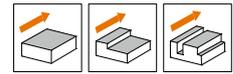


Fig. 1

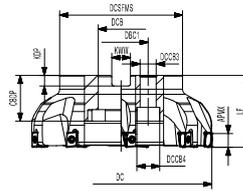


Fig. 2

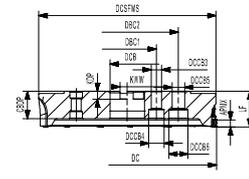


Fig. 3

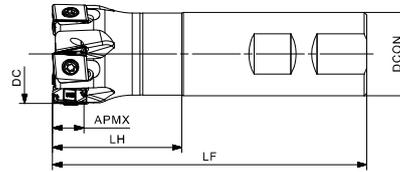
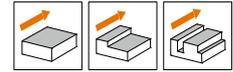
Product code	Dimension (mm)															Internal coolant	Weight (kg)	Z	Fig.	Inserts	
	DC	DCSFMS	DCB	DBC1	DBC2	DCCB1	DCCB2	DCCB3	DCCB4	DCCB5	DCCB6	LF	CBDP	KDP	KWW						APMX
ASM90-040-Z04-A16R-LN13-C	40	35	16	-	-	14	9	-	-	-	-	40	24	5.8	8.4	12		0.2	4	1	LN..1306..
040-Z05-A16R-LN13-C	40	35	16	-	-	14	9	-	-	-	-	40	24	5.8	8.4	12		0.2	5		
050-Z05-A22R-LN13-C	50	42	22	-	-	18	11	-	-	-	-	40	26	6.5	10.4	12		0.3	5		
050-Z06-A22R-LN13-C	50	42	22	-	-	18	11	-	-	-	-	40	26	6.5	10.4	12		0.3	6		
063-Z04-A22R-LN13-C	63	48	22	-	-	18	11	-	-	-	-	40	26	6.5	10.4	12		0.6	4		
063-Z06-A22R-LN13-C	63	48	22	-	-	18	11	-	-	-	-	40	26	6.5	10.4	12		0.5	6		
063-Z08-A22R-LN13-C	63	48	22	-	-	18	11	-	-	-	-	40	26	6.5	10.4	12		0.5	8		
080-Z05-A27R-LN13-C	80	62	27	-	-	20	14	-	-	-	-	50	29	7.2	12.4	12		1.2	5		
080-Z07-A27R-LN13-C	80	62	27	-	-	20	14	-	-	-	-	50	29	7.2	12.4	12		1.1	7		
080-Z10-A27R-LN13-C	80	62	27	-	-	20	14	-	-	-	-	50	29	7.2	12.4	12		1.1	10		
100-Z07-A32R-LN13-C	100	80	32	-	-	26	18	-	-	-	-	50	29	8.2	14.4	12		2.0	7		
100-Z09-A32R-LN13-C	100	80	32	-	-	26	18	-	-	-	-	50	29	8.2	14.4	12		1.8	9		
100-Z13-A32R-LN13-C	100	80	32	-	-	26	18	-	-	-	-	50	32	8.2	14.4	12		1.9	13		
125-Z09-A40R-LN13-C	125	87	40	-	-	33	22	-	-	-	-	63	32	9.2	16.4	12		3.5	9		
125-Z11-A40R-LN13-C	125	87	40	-	-	33	22	-	-	-	-	63	32	9.2	16.4	12		3.4	11		
125-Z16-A40R-LN13-C	125	87	40	-	-	33	22	-	-	-	-	63	38	9.2	16.4	12		3.5	16		
160-Z09-A40R-LN13	160	107	40	66.7	-	-	14	20	-	-	-	63	38	9.2	16.4	12		4.8	9	2	
160-Z13-A40R-LN13	160	107	40	66.7	-	-	14	20	-	-	-	63	38	9.2	16.4	12		4.4	13		
200-Z12-A60R-LN13	200	140	60	101.6	-	-	18	27	-	-	-	63	35	14.2	25.6	12		6.8	12		
250-Z12-A60R-LN13-M	250	180	60	101.6	-	-	18	27	-	-	-	63	35	14.2	25.6	12		15.8	12		
315-Z14-A60R-LN13-M	315	220	60	101.6	177.8	-	18	27	22	33	63	35	14.2	25.6	12		24.4	14	3		

Note: With internal coolant
 Without internal coolant

Milling Cutters

ASM90-LN13

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-040-Z05-W32R-LN13-C	40	32	120	49	12		0.8	5	LN..1306..

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅40-315	 SP040115	 DT-TP15	3.5Nm

Wedge	Wedge wrench	Wedge screw	Cartridge	Cartridge wrench	Cartridge screw
AWG-6H-6	LT-H3	AWCH624	C-LN1342-62-90	LT-H5	ACH622

ASM90-LN16

90° Approach angle square shoulder milling cutter

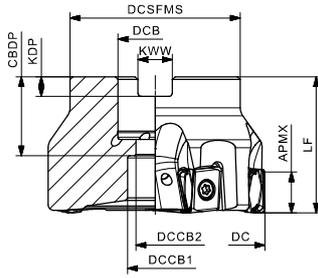


Fig. 1

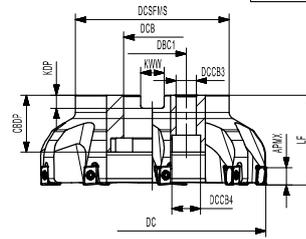
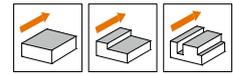


Fig. 2

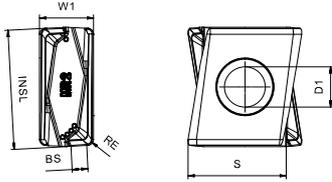


Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDDP	KDP	KWW	APMX						
ASM90-063-Z04-A22R-LN16-C	63	52	22	-	18	11	-	-	40	26	6.5	10.4	15		0.6	4	1	LN..1607..	
080-Z05-A27R-LN16-C	80	62	27	-	20	14	-	-	50	29	7.2	12.4	15		1.1	5			
100-Z06-A32R-LN16-C	100	80	32	-	26	18	-	-	50	32	8.2	14.4	15		2	6			
125-Z07-A40R-LN16-C	125	87	40	-	33	22	-	-	63	38	9.2	16.4	15		3.6	7			
160-Z08-A40R-LN16	160	107	40	66.7	-	-	14	20	63	30	9.2	16.4	15		4.6	8	2		

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø63-160			5.0Nm
	ST05013063	DT-T20	

Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions										
		Dimension (mm)						P		M		K		N		S		
		INSL	W1	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	LNHU 160708ER-MR2	16	7.2	13	0.8	1.9	5.4	●	●					●	●	●		
	LNHU 160716ER-MR2	16	7.2	13	1.6	1.5	5.4	●						●				

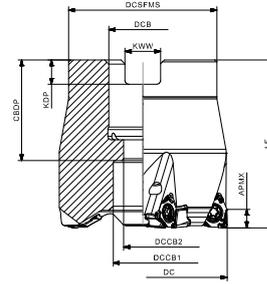
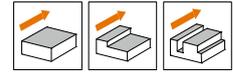
● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	LN..1607..					
				ap		Geometry			
						MR2			
						fz			
		(mm)		min		max			
P	Unalloyed steel	<600	<180	1.00	15.00	0.10	0.30		
		<950	<280						
	Alloyed steel	700-950	200-280					0.08	0.28
		950-1200	280-355						
M	Duplex stainless steel	778	230			0.08	0.25		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.10	0.30		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75			-	-		
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	-	-				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-				
	Chilled cast iron	-	55HRC						

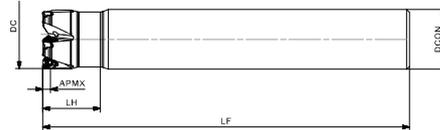
*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

ASM90-WN04

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
ASM90-040-Z05-A16R-WN04-C	40	35	16	14	9	40	24	5.8	8.4	4		0.3	5	WN..0403..

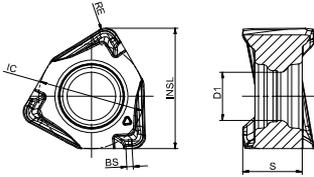


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-020-Z02-C20R-WN04-C	20	20	150	29	4		0.3	2	WN..0403..
025-Z04-C25R-WN04-C	25	25	170	35	4		0.6	4	
032-Z05-C32R-WN04-C	32	32	195	31	4		1.1	5	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø20-40			1.2Nm
	SP02506450H	DT-TP08	

Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✖ Bad Conditions													
		INSL	IC	S	RE	BS	D1	Dimension (mm)														
								P		M		K		N		H						
		AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP151H											
	WNGU 040308R-MM4	7.7	6.7	3.8	0.8	0.4	3.0	●				●	●	●								

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	WN..0403..					
				ap		Geometry			
						MM4			
						fz			
				(mm)					
		min	max	min	max	min	max		
P	Unalloyed steel	<600	<180	0.10	4.00	0.08	0.25		
		<950	<280						
	Alloyed steel	700-950	200-280					0.06	0.22
		950-1200	280-355						
M	Duplex stainless steel	778	230			0.06	0.20		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.08	0.25		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75			0.06	0.30		
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	-	-				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-				
	Chilled cast iron	-	55HRC						

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

ASM90-WN08

90° Approach angle square shoulder milling cutter

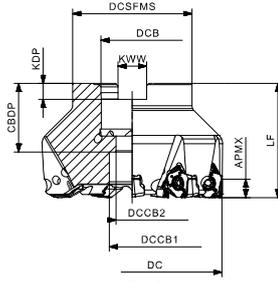


Fig. 1

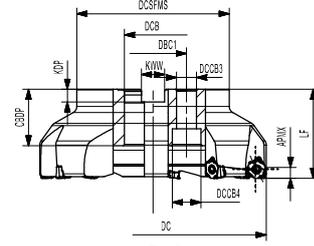
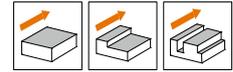
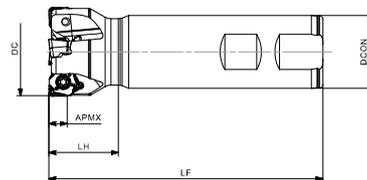


Fig. 2



Product code	Dimension (mm)													Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
ASM90-050-Z04-A22R-WN08-C	50	42	22	-	17	11	-	-	40	26	6.5	10.4	7		0.4	4	1	WN..0806..
050-Z05-A22R-WN08-C	50	42	22	-	17	11	-	-	40	26	6.5	10.4	7		0.3	5		
063-Z04-A22R-WN08-C	63	48	22	-	18	11	-	-	40	26	6.5	10.4	7		0.6	4		
063-Z06-A22R-WN08-C	63	48	22	-	18	11	-	-	40	26	6.5	10.4	7		0.6	6		
063-Z07-A22R-WN08-C	63	48	22	-	18	11	-	-	40	26	6.5	10.4	7		0.6	7		
080-Z05-A27R-WN08-C	80	52	27	-	20	14	-	-	50	29	7.2	12.4	7		1.1	5		
080-Z07-A27R-WN08-C	80	52	27	-	20	14	-	-	50	29	7.2	12.4	7		1.1	7		
080-Z09-A27R-WN08-C	80	52	27	-	20	14	-	-	50	29	7.2	12.4	7		1.1	9		
100-Z06-A32R-WN08-C	100	80	32	-	26	18	-	-	50	32	8.2	14.4	7		2.0	6		
100-Z08-A32R-WN08-C	100	80	32	-	26	18	-	-	50	32	8.2	14.4	7		2.0	8		
100-Z11-A32R-WN08-C	100	80	32	-	26	18	-	-	50	32	8.2	14.4	7		2.0	11		
125-Z07-A40R-WN08-C	125	87	40	-	33	22	-	-	63	38	9.2	16.4	7		3.5	7		
125-Z11-A40R-WN08-C	125	87	40	-	33	22	-	-	63	38	9.2	16.4	7		3.5	11		
125-Z13-A40R-WN08-C	125	87	40	-	33	22	-	-	63	38	9.2	16.4	7		3.5	13		
160-Z08-A40R-WN08	160	107	40	66.7	-	-	14	20	63	30	9.2	16.4	7		4.7	8	2	
160-Z12-A40R-WN08	160	107	40	66.7	-	-	14	20	63	30	9.2	16.4	7		4.3	12		
200-Z14-A60R-WN08	200	140	60	101.6	-	-	18	26	63	38	14.2	25.6	7		6.7	14		
250-Z16-A60R-WN08	250	180	60	101.6	-	-	18	26	63	38	14.2	25.6	7		11.6	16		



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-040-Z03-W32R-WN08-C	40	32	120	30	7		0.7	3	WN..0806..
040-Z04-W32R-WN08-C	40	32	120	30	7		0.7	4	

Note: With internal coolant
 Without internal coolant

Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	WN..0806..									
				ap	Geometry								
					MR2		MM4		FM2				
				fz									
				(mm)									
min	max	min	max	min	max	min	max						
P	Unalloyed steel	<600	<180	0.20	7.00	0.12	0.30	0.08	0.25	-	-		
		<950	<280										
	Alloyed steel	700-950	200-280			0.10	0.28	0.10	0.25	-	-		
		950-1200	280-355										
	1200-1400	355-415											
M	Duplex stainless steel	778	230					0.06	0.22	0.08	0.20	-	-
	Austenitic stainless steel	675	200										
	Precipitation-hardening stainless steel	1013	300										
K	Grey cast iron	700	220					0.15	0.30	0.10	0.28	-	-
	Nodular cast iron	880	260										
	Malleable cast iron	800	250										
N	Aluminum	260	75			-	-	-	-	0.10	0.30		
	Aluminum alloy	447	130										
S	Fe-based alloy	943	280										
	Co-based alloy	1076	320										
	Ni-based alloy	1177	350			-	-	0.10	0.15	-	-		
	Ti-alloy	1262	370										
H	Hardened steel	-	50-60HRC			-	-	0.08	0.25	-	-		
	Chilled cast iron	-	55HRC										

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

ASM90-WN08-N

90° Approach angle square shoulder milling cutter

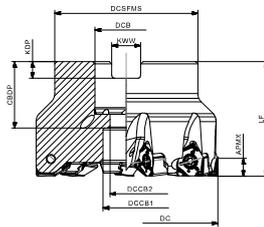
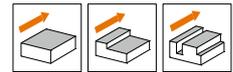


Fig. 1

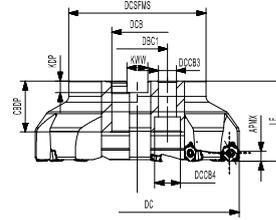
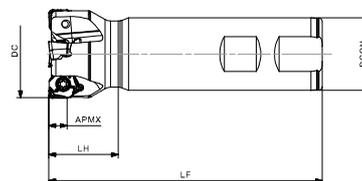


Fig. 2

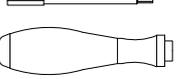
Product code	Dimension (mm)											Internal coolant	Weight (kg)	Z	Fig.	Inserts	
	DC	DCSFMS	DCB	DCCB1	DCCB2	DCCB3	DCCB4	LF	CDBP	KDP	KWW						APMX
ASM90-050-Z04-A22R-WN08-N-C	50	42	22	18	11	-	-	40	26	6.5	10.4	7		0.4	4	1	WNMU 0806..
050-Z05-A22R-WN08-N-C	50	42	22	18	11	-	-	40	26	6.5	10.4	7		0.4	5		
063-Z04-A22R-WN08-N-C	63	48	22	18	11	-	-	40	26	6.5	10.4	7		0.6	4		
063-Z06-A22R-WN08-N-C	63	48	22	18	11	-	-	40	26	6.5	10.4	7		0.6	6		
063-Z07-A22R-WN08-N-C	63	48	22	18	11	-	-	40	26	6.5	10.4	7		0.6	7		
080-Z05-A27R-WN08-N-C	80	62	27	20	14	-	-	50	29	7.2	12.4	7		1.2	5		
080-Z07-A27R-WN08-N-C	80	62	27	20	14	-	-	50	29	7.2	12.4	7		1.1	7		
080-Z09-A27R-WN08-N-C	80	62	27	20	14	-	-	50	29	7.2	12.4	7		1.2	9		
100-Z06-A32R-WN08-N-C	100	80	32	26	18	-	-	50	32	8.2	14.4	7		1.9	6		
100-Z08-A32R-WN08-N-C	100	80	32	26	18	-	-	50	32	8.2	14.4	7		1.9	8		
100-Z11-A32R-WN08-N-C	100	80	32	26	18	-	-	50	32	8.2	14.4	7		1.8	11		
125-Z07-A40R-WN08-N-C	125	87	40	33	22	-	-	63	38	9.2	16.4	7		3.6	7		
125-Z11-A40R-WN08-N-C	125	87	40	33	22	-	-	63	38	9.2	16.4	7		3.6	11		
125-Z13-A40R-WN08-N-C	125	87	40	33	22	-	-	63	38	9.2	16.4	7		3.5	13		
160-Z08-A40R-WN08-N	160	107	40	-	-	14	20	63	30	9.2	16.4	7		4.4	8	2	
160-Z12-A40R-WN08-N	160	107	40	-	-	14	20	63	30	9.2	16.4	7		4.3	12		
200-Z14-A60R-WN08-N	200	140	60	-	-	18	27	63	45	14.2	25.6	7		6.4	14		
250-Z16-A60R-WN08-N	250	180	60	-	-	18	27	63	45	14.2	25.6	7		11.9	16		



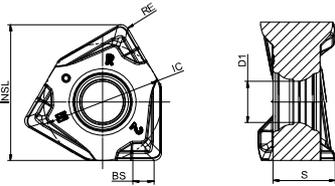
Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-040-Z03-W32R-WN08-N-C	40	32	120	30	7		0.7	3	WNMU 0806..
040-Z04-W32R-WN08-N-C	40	32	120	30	7		0.7	4	

Note: With internal coolant
 Without internal coolant

Milling Cutters

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø40-250			3.5Nm
	SP040112	DT-TP15	

Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions														
		INSL	IC	S	RE	BS	D1	Dimension (mm)														
								P		M		K		N		H						
	WNMU 080608R-MM3	14.5	12.5	6.58	0.8	2.2	4.4	●	○	○	●	●	●	○								
	WNMU 080608R-MM4	14.5	12.5	6.58	0.8	2.2	4.4	●	○	●	●	●	●	○								
	WNMU 080612R-MM4	14.3	12.5	6.47	1.2	1.2	4.4	●			●	●	●		●							
	WNMU 080616R-MM4	14.3	12.5	6.50	1.6	0.8	4.4	●			●	●	●		●							
	WNMU 080608R-MR2	14.5	12.5	6.60	0.8	2.2	4.4	●	○		●	●	●	○								
	WNMU 080612R-MR2	14.3	12.5	6.47	1.2	1.2	4.4	●			●	●	●									
	WNMU 080616R-MR2	14.3	12.5	6.50	1.6	0.8	4.4	●			●	●	●		●							

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed													
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	WNMU 0806..													
				ap	Geometry						fz						
					MR2		MM4		MM3								
					(mm)												
min		max		min		max		min		max							
P	Unalloyed steel	<600	<180	0.6	7.00	0.08	0.28	0.08	0.25	0.12	0.25						
		<950	<280														
	Alloyed steel	700-950	200-280									0.06	0.22	0.06	0.20	0.10	0.20
		950-1200	280-355														
		1200-1400	355-415														
M	Duplex stainless steel	778	230			0.06	0.22	0.06	0.20	0.10	0.18						
	Austenitic stainless steel	675	200														
	Precipitation-hardening stainless steel	1013	300														
K	Grey cast iron	700	220	0.08	0.30	0.08	0.28	-	-								
	Nodular cast iron	880	260														
	Malleable cast iron	800	250														
N	Aluminum	260	75	-	-	-	-	-	-								
	Aluminum alloy	447	130														
S	Fe-based alloy	943	280	-	-	0.08	0.15	-	-								
	Co-based alloy	1076	320														
	Ni-based alloy	1177	350														
	Ti-alloy	1262	370														
H	Hardened steel	-	50-60HRC	-	-	-	-	-	-								
	Chilled cast iron	-	55HRC														

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

ASM90-TD15

90° Approach angle square shoulder milling cutter

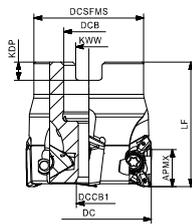
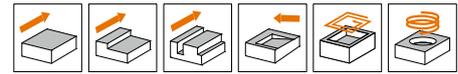


Fig. 1

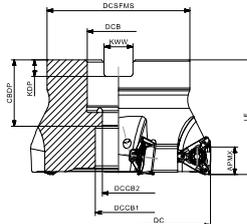


Fig. 2

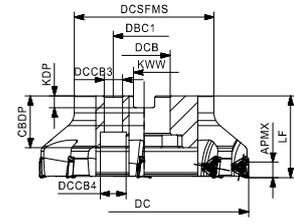


Fig. 3

Product code	Dimension (mm)													Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
ASM90-040-Z04-A16R-TD15-C	40	35	16	-	M8	-	-	-	40	-	5.8	8.4	11		0.2	4	1	TD..1505..
050-Z04-A22R-TD15-C	50	46	22	-	18	11	-	-	40	26	6.5	10.4	11		0.4	4	2	
050-Z05-A22R-TD15-C	50	46	22	-	18	11	-	-	40	26	6.5	10.4	11		0.3	5		
063-Z04-A22R-TD15-C	63	48	22	-	18	11	-	-	40	26	6.5	10.4	11		0.5	4		
063-Z05-A22R-TD15-C	63	48	22	-	18	11	-	-	40	26	6.5	10.4	11		0.5	5		
063-Z06-A22R-TD15-C	63	48	22	-	18	11	-	-	40	26	6.5	10.4	11		0.5	6		
080-Z05-A27R-TD15-C	80	62	27	-	20	14	-	-	50	29	7.2	12.6	11		1.1	5		
080-Z06-A27R-TD15-C	80	62	27	-	20	14	-	-	50	29	7.2	12.6	11		1.1	6		
080-Z07-A27R-TD15-C	80	62	27	-	20	14	-	-	50	29	7.2	12.6	11		1.1	7		
100-Z06-A32R-TD15-C	100	78	32	-	26	18	-	-	50	32	8.2	14.4	11		1.8	6		
100-Z08-A32R-TD15-C	100	78	32	-	26	18	-	-	50	32	8.2	14.4	11		1.8	8		
125-Z07-A40R-TD15-C	125	90	40	-	33	22	-	-	63	38	9.2	16.4	11		3.2	7		
125-Z09-A40R-TD15-C	125	90	40	-	33	22	-	-	63	38	9.2	16.4	11		3.3	9		
160-Z08-A40R-TD15	160	107	40	66.7	-	-	14	20	63	30	9.2	16.4	11		4.2	8		
160-Z10-A40R-TD15	160	107	40	66.7	-	-	14	20	63	30	9.2	16.4	11		4.2	10		
200-Z09-A60R-TD15	200	130	60	101.6	-	-	18	27	63	48	14.2	25.6	11		6.4	9		
250-Z11-A60R-TD15-M	250	180	60	101.6	-	-	18	27	63	45	14.2	25.6	11		14.6	11		

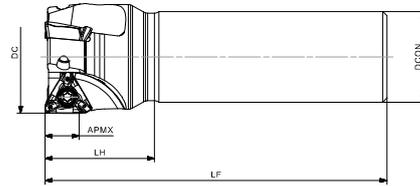
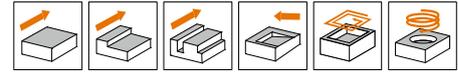
Note: ASM90-040-204-A16R-TD15-C is connected with dowel screws.

Note: With internal coolant
 Without internal coolant

Milling Cutters

ASM90-TD15

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-032-Z02-C32R-TD15-C	32	32	110	36	11		0.6	2	TD..1505..
032-Z02-C32R-TD15-L200-C	32	32	200	36	11		1.1	2	
040-Z03-C32R-TD15-C	40	32	120	38	11		0.7	3	
040-Z03-C32R-TD15-L200-C	40	32	200	38	11		1.2	3	

Note: When the inserts' nose radius $R \geq 3.1\text{mm}$, the cutters' nose area must be ground.
 For R3.1 inserts, grind the tool body's nose area to R2.0mm.
 For R4.0 inserts, grind the tool body's nose area to R4.0mm.

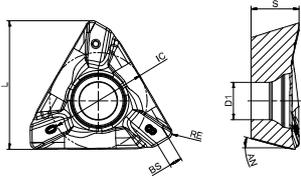
Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø32-250			3.5Nm
	SP040100H	DT-TP15	

Wedge	Wedge screw wrench	Wedge screw	Dowel screw wrench
AWG-6H-6	LT-H3	AWCH624	LT-H4

Cartridge	Cartridge screw wrench	Cartridge screw	Dowel screw
C-TD1540-62-90	LT-H5	ACH622	WD080300

Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✖ Bad Conditions										
		L	IC	S	RE	BS	D1	AN	P	M	K	N	S						
		Dimension (mm)							AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	TDHT 150508R-FM2	15.4	11.4	5.56	0.8	1.6	4.4	15°										●	
	TDMT 150508R-MM3	15.1	11.4	5.56	0.8	1.5	4.4	15°	●			●	●						
	TDHT 150508R-MM3	15.1	11.4	5.56	0.8	1.5	4.4	15°	●			●	●	●					●
	TDMT 150508R-MM4	15.1	11.4	5.6	0.8	1.5	4.4	15°	●		●	●	●	●	●				
	TDHT 150508R-MM4	15.1	11.4	5.6	0.8	1.5	4.4	15°	●	●		●	●	●					
	TDMT 150512R-MM4	15.0	11.4	5.6	1.2	1.0	4.4	15°	●			●	●	●	●				
	TDMT 150516R-MM4	14.9	11.4	5.6	1.6	0.9	4.4	15°	●			●	●	●	●				
	TDMT 150520R-MM4	14.7	11.4	5.6	2.0	0.7	4.4	15°					●						
	TDMT 150524R-MM4	14.6	11.4	5.6	2.4	0.6	4.4	15°					●						
	TDMT 150531R-MM4	14.1	11.4	5.56	3.1	0.4	4.4	15°					●						
TDMT 150540R-MM4	13.4	11.4	5.56	4.0	0.4	4.4	15°					●							

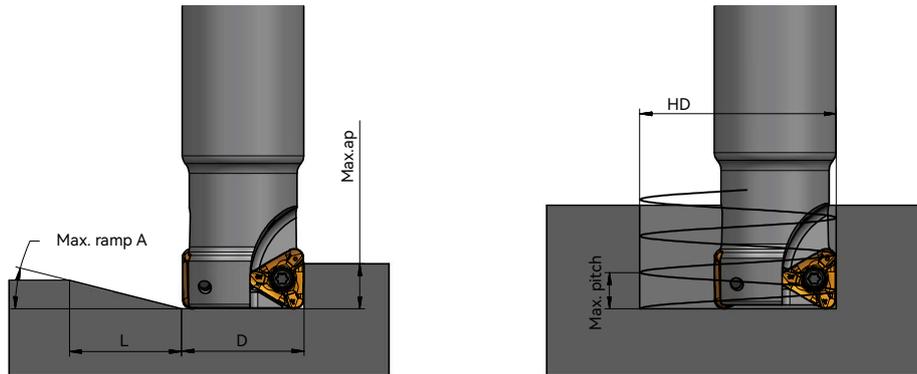
● : Standard stock ○ : Made-to-Order

Milling Cutters

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	TD.. 1505..							
				ap	Geometry			fz			
					MM4	MM3	FM2	(mm)			
				min	max	min	max	min	max	min	max
P	Unalloyed steel	<600	<180	0.30	11.00	0.08	0.28	0.08	0.25	-	-
		<950	<280								
	Alloyed steel	700-950	200-280			0.06	0.22	0.06	0.20	-	-
		950-1200	280-355								
M	Duplex stainless steel	778	230			0.06	0.22	0.06	0.20	-	-
	Austenitic stainless steel	675	200								
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220			0.08	0.30	0.08	0.28	-	-
	Nodular cast iron	880	260								
	Malleable cast iron	800	250								
N	Aluminum	260	75			-	-	-	-	0.06	0.35
	Aluminum alloy	447	130								
S	Fe-based alloy	943	280			0.08	0.15	0.08	0.15	-	-
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350								
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC			-	-	-	-	-	-
	Chilled cast iron	-	55HRC								

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

TD15 Milling Cutter Series



Cutter diameter (D)	Straight Ramping			Circular interpolate milling		
	Max. ramp-A	Min. length-L (mm)	Max.ap (mm)	Min. Dia. (HD)	Max. Dia. (HD)	Max. pitch (rev)
32	1.4°	479	11	53.5		1.4
					64	2.1
40	1.0°	633	11	70.1		1.5
					80	1.3
50	0.8°	824	11	90.1		1.5
					100	1.9
63	0.6°	1073	11	116.1		1.5
					126	1.8
80	0.5°	1399	11	150.3		1.5
					160	1.8
100	0.3°	2144	11	190.5		1.3
					200	1.4
125	0.3°	2262	11	240.3		1.6
					250	1.7
160	0.2°	2933	11	310.3		1.6
					320	1.7
200	0.2°	3692	11	390.3		1.6
					400	1.7

ASM90-SO12

90° Approach angle square shoulder milling cutter

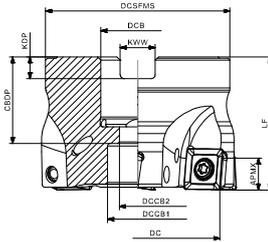
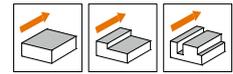


Fig. 1

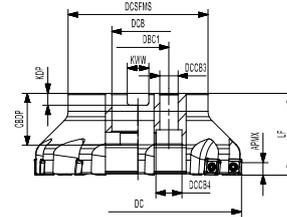
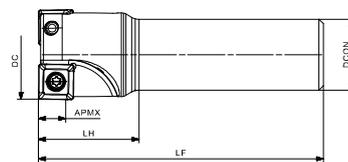


Fig. 2

Product code	Dimension (mm)													Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
ASM90-050-Z04-A22R-SO12-C	50	45	22	-	18	11	-	-	40	26	6.5	10.4	9		0.3	4	1	SO..1204..
050-Z05-A22R-SO12-C	50	45	22	-	18	11	-	-	40	26	6.5	10.4	9		0.3	5		
063-Z05-A22R-SO12-C	63	55	22	-	18	11	-	-	40	26	6.5	10.4	9		0.5	5		
063-Z06-A22R-SO12-C	63	55	22	-	18	11	-	-	40	26	6.5	10.4	9		0.5	6		
080-Z06-A27R-SO12-C	80	62	27	-	20	14	-	-	50	29	7.2	12.4	9		1.1	6		
080-Z08-A27R-SO12-C	80	62	27	-	20	14	-	-	50	29	7.2	12.4	9		1.1	8		
100-Z05-A32R-SO12-C	100	80	32	-	26	18	-	-	50	32	8.2	14.4	9		1.7	5		
100-Z07-A32R-SO12-C	100	80	32	-	26	18	-	-	50	32	8.2	14.4	9		1.7	7		
100-Z10-A32R-SO12-C	100	80	32	-	26	18	-	-	50	32	8.2	14.4	9		1.8	10		
125-Z08-A40R-SO12-C	125	90	40	-	33	22	-	-	63	38	9.2	16.4	9		3.3	8		
125-Z12-A40R-SO12-C	125	90	40	-	33	22	-	-	63	38	9.2	16.4	9		3.5	12		
160-Z12-A40R-SO12	160	107	40	66.7	-	-	14	20	63	30	9.2	16.4	9		4.0	12	2	
160-Z15-A40R-SO12	160	107	40	66.7	-	-	14	20	63	30	9.2	16.4	9		4.0	15		
200-Z16-A60R-SO12	200	130	60	101.6	-	-	18	27	63	48	14.2	25.6	9		6.8	16		
250-Z18-A60R-SO12	250	180	60	101.6	-	-	18	27	63	48	14.2	25.6	9		12.8	18		

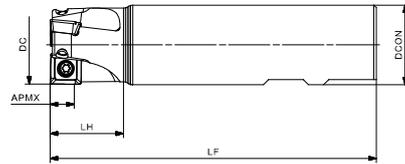
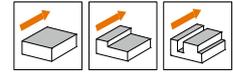


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-032-Z02-C25R-SO12-L100-C	32	25	100	35	9		0.4	2	SO..1204..
032-Z03-C32R-SO12-L130-C	32	32	130	29	9		0.7	3	
040-Z03-C32R-SO12-L170-C	40	32	170	36	9		1.0	3	
050-Z03-C32R-SO12-L120-C	50	32	120	37	9		0.8	3	
050-Z04-C32R-SO12-L120-C	50	32	120	37	9		0.8	4	

Note: With internal coolant
 Without internal coolant

ASM90-SO12

90° Approach angle square shoulder milling cutter

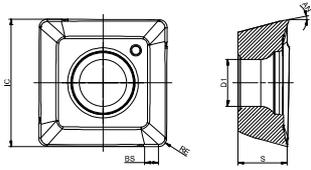


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-032-Z03-W32R-SO12-L130-C	32	32	130	29	9		0.7	3	SO..1204..
040-Z04-W32R-SO12-L110-C	40	32	110	36	9		0.7	4	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅32-250			3.5Nm
	SP040112	DT-TP15	

Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions										
		IC	S	RE	BS	D1	AN	Dimension (mm)										
								P	M	K		S	H					
	SOMT 120408PDER-MM4	12.46	4.8	0.8	1.3	4.6	15°	●		●	●	●	●		●	●		

● : Standard stock ○ : Made-to-Order

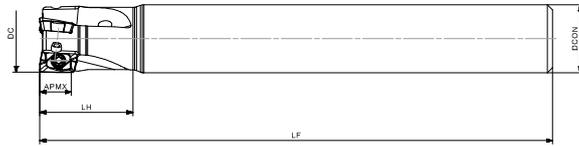
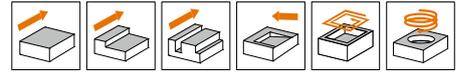
Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SO..1204..					
				ap		Geometry			
						MM4			
						fz			
		(mm)							
		min	max	min	max				
P	Unalloyed steel	<600	<180	0.50	9.00	0.08	0.25		
		<950	<280						
	Alloyed steel	700-950	200-280					0.06	0.22
		950-1200	280-355						
		1200-1400	355-415						
M	Duplex stainless steel	778	230			0.06	0.20		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.08	0.25		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75			-	-		
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	0.06	0.18				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-				
	Chilled cast iron	-	55HRC						

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling Cutters

ASM90-AO06

90° Approach angle square shoulder milling cutter



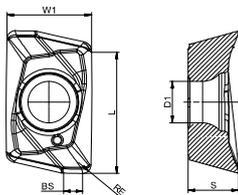
Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-010-Z02-C10R-AO06-L060-C	10	10	60	18	5		0.1	2	AO..0602..
010-Z02-C10R-AO06-L100-C	10	10	100	32	5		0.1	2	
012-Z03-C12R-AO06-L070-C	12	12	70	17	5		0.1	3	
012-Z03-C12R-AO06-L120-C	12	12	120	32	5		0.1	3	
014-Z03-C16R-AO06-L100-C	14	16	100	34	5		0.1	3	
016-Z04-C16R-AO06-L090-C	16	16	90	32	5		0.1	4	
016-Z03-C16R-AO06-L150-C	16	16	150	32	5		0.2	3	
020-Z05-C20R-AO06-L100-C	20	20	100	32	5		0.2	5	
020-Z04-C20R-AO06-L150-C	20	20	150	32	5		0.3	4	
025-Z05-C25R-AO06-L100-C	25	25	100	32	5		0.3	5	

Note: With internal coolant

Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø10-25			0.3Nm
	SP01803655	FT-TP05	

Compatible Inserts

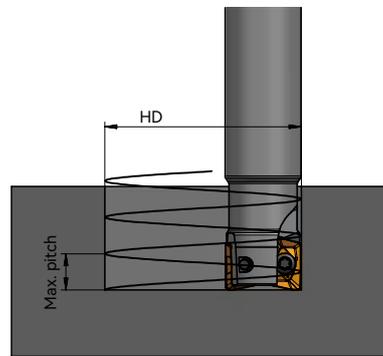
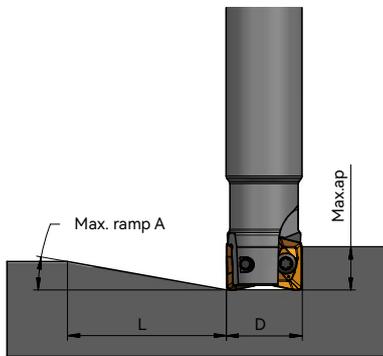


Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ⊕ Bad Conditions										
		Dimension (mm)							●	⊕	●	⊕	●	⊕	●	⊕	●	⊕	
		L	W1	S	RE	BS	D1	AN	P	M	K	S	H						
	AOMT 060204ER-MM3	5.8	4.1	2.45	0.4	0.9	2.0	15°	●			●	●					●	
	AOMT 060208ER-MM3	5.8	4.1	2.45	0.8	0.5	2.0	15°	●			●	●					●	

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AO..0602..					
				ap	Geometry				
					MM3		fz		
					(mm)				
min	max	min	max						
P	Unalloyed steel	<600	<180	0.10	5.00	0.08	0.25		
		<950	<280						
	Alloyed steel	700-950	200-280					0.06	0.22
		950-1200	280-355						
M	Duplex stainless steel	778	230			0.06	0.20		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.08	0.25		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75	-	-				
	Aluminum alloy	447	130	-	-				
S	Fe-based alloy	943	280	0.06	0.18				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-				
	Chilled cast iron	-	55HRC	-	-				

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

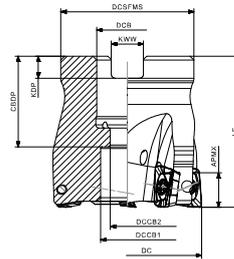


Cutter diameter (D)	Straight Ramping			Circular interpolate milling		
	Max. ramp-A	Min. length-L (mm)	Max.ap (mm)	Min. Dia. (HD)	Max. Dia. (HD)	Max. pitch (rev)
10	3.8°	84	5.0	12.2	20	0.4
				1.8		
12	3.6°	89.6	5.0	16.2	24	0.7
				2		
14	2.9°	112	5.0	20.2	28	0.8
				1.9		
16	1.9°	168	5.0	24.2	32	0.7
				1.4		
20	1.4°	224	5.0	32.2	40	0.8
				1.3		
25	1.1°	294	5.0	42.2	50	0.9
				1.3		

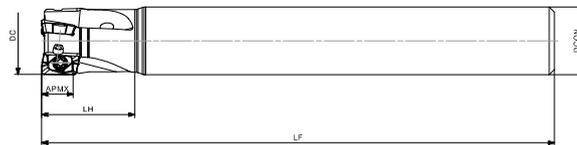
Milling Cutters

ASM90-AO10

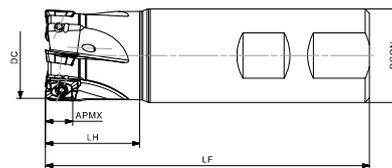
90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
ASM90-040-Z05-A16R-AO10-C	40	35	16	14	9	40	24	5.8	8.4	9		0.2	5	AO..10T3..



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-016-Z02-C16R-AO10-L130-C	16	16	130	24	9		0.2	2	AO..10T3..
020-Z03-C20R-AO10-L150-C	20	20	150	28	9		0.4	3	AO..10T3..

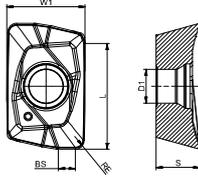


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-025-Z04-W25R-AO10-C	25	25	100	32.5	9		0.4	4	AO..10T3..
032-Z05-W32R-AO10-C	32	32	110	32.5	9		0.6	5	AO..10T3..

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø16-40			1.2Nm
	SP02506450H	DT-TP08	

Compatible Inserts

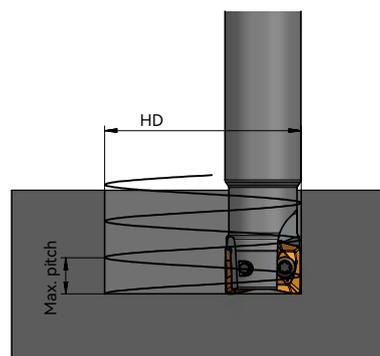
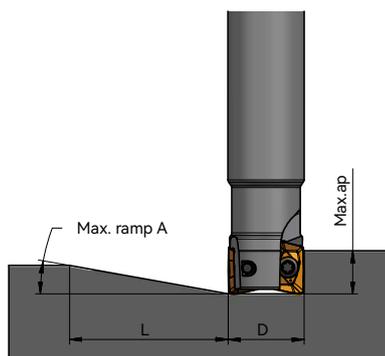


		Machining conditions							● Good Conditions ● General Conditions ⊛ Bad Conditions									
		Dimension (mm)							P		M		K		S		H	
Insert shape	Product code	L	W1	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	AOMT 10T308ER-MM4	9.3	6.85	3.83	0.8	1.5	3.0	15°	●			●					●	●
	AOMT 10T316ER-MM4	9.3	6.85	3.83	1.6	1.2	3.0	15°				●	●				●	
	AOMT 10T331ER-MM4	9.4	6.85	3.83	3.1	-	3.0	15°		○							●	

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AO..10T3..					
				ap		Geometry			
						MM4			
						fz			
		(mm)							
		min	max	min	max				
P	Unalloyed steel	<600	<180	0.10	9.00	0.08	0.25		
		<950	<280						
	Alloyed steel	700-950	200-280					0.06	0.22
		950-1200	280-355						
M	Duplex stainless steel	778	230			0.06	0.20		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.08	0.25		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75	-	-				
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	0.06	0.18				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-				
	Chilled cast iron	-	55HRC						

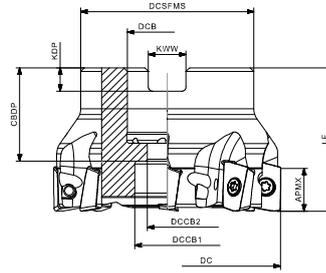
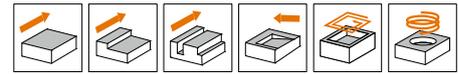
*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.



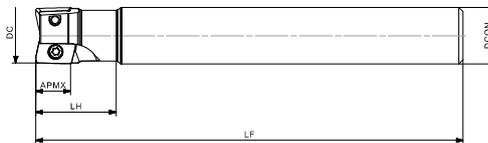
Cutter diameter (D)	Straight Ramping			Circular interpolate milling		
	Max. ramp-A	Min. length-L (mm)	Max.ap (mm)	Min. Dia. (HD)	Max. Dia. (HD)	Max. pitch (rev)
16	5.0°	103.5	9	18.6		0.6
					32	3.7
20	3.5°	148.5	9	26.6		1.1
					40	3.2
25	1.9°	273	9	36.6		1
					50	2.2
32	1.4°	378	9	50.6		1.2
					64	2
40	1.0°	498	9	66.6		1.3
					80	1.9

ASM90-AO12

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CDDP	KDP	KWW	APMX				
ASM90-040-Z04-A16R-AO12-C	40	35	16	14	9	40	24	5.8	8.4	10		0.2	4	AO..1204..
050-Z05-A22R-AO12-C	50	42	22	18	11	40	26	6.5	10.4	10		0.3	5	
050-Z07-A22R-AO12-C	50	42	22	18	11	40	26	6.5	10.4	10		0.3	7	
063-Z06-A22R-AO12-C	63	48	22	18	11	40	26	6.5	10.4	10		0.5	6	
063-Z08-A22R-AO12-C	63	48	22	18	11	40	26	6.5	10.4	10		0.5	8	
080-Z07-A27R-AO12-C	80	62	27	20	14	50	29	7.2	12.4	10		1.2	7	
080-Z10-A27R-AO12-C	80	62	27	20	14	50	29	7.2	12.4	10		1.1	10	



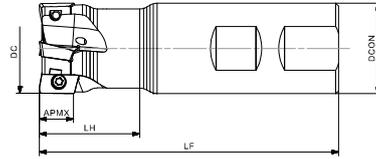
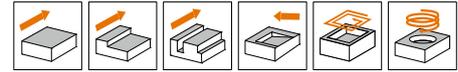
Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-020-Z02-C20R-AO12-L150-C	20	20	150	28	10		0.3	2	AO..1204..
025-Z03-C25R-AO12-L170-C	25	25	170	33	10		0.6	3	
032-Z04-C32R-AO12-L250-C	32	32	250	35	10		1.4	4	

Note: With internal coolant
 Without internal coolant

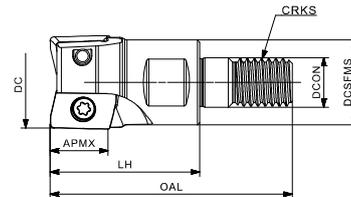
Milling
Cutters

ASM90-AO12

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-020-Z02-W20R-AO12-C	20	20	85	28.5	10		0.2	2	AO..1204..
025-Z03-W20R-AO12-C	25	20	95	33	10		0.2	3	
032-Z04-W32R-AO12-C	32	32	105	36.5	10		0.5	4	
040-Z04-W32R-AO12-C	40	32	120	43	10		0.7	4	



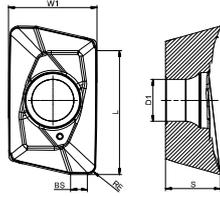
Product code	Dimension (mm)							Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCON	OAL	LF	CRKS	APMX				
ASM90-020-Z02-M10R-AO12-C	20	18	10.5	51	31.5	M10	10		0.1	2	AO..1204..
025-Z03-M12R-AO12-C	25	23	12.5	59	37	M12	10		0.1	3	
032-Z04-M16R-AO12-C	32	29	17	72	48	M16	10		0.2	4	
035-Z04-M16R-AO12-C	35	29	17	72	48	M16	10		0.3	4	

Note: When the inserts' nose radius $R \geq 2.4\text{mm}$, the cutters' nose area must be ground.
 For R2.4 inserts, grind the tool body's nose area to R1.5mm.
 For R3.1 inserts, grind the tool body's nose area to R2.0mm.
 For R4.0 inserts, grind the tool body's nose area to R3.0mm.

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø20-35			4.0Nm
	SP035078	DT-TP10	
Ø40-80	SP035086		

Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✖ Bad Conditions										
		Dimension (mm)							P		M		K		N		S		
		L	W1	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	AOHT 120408ER-FM2	11.3	8.15	5.07	0.8	1.5	3.9	15°										●	
	AOHT 120404ER-MM3	11.3	8.15	5.07	0.4	1.9	3.9	15°	●			●	●						●
	AOHT 120408ER-MM3	11.3	8.15	5.07	0.8	1.5	3.9	15°	●			●	●	●					●
	AOMT 120408ER-MM3	11.3	8.15	5.07	0.8	1.4	3.9	15°	●			●	●	●					●
	AOMT 120404ER-MM4	11.5	8.15	5.07	0.4	1.9	3.9	15°	●			●	●	●					●
	AOMT 120408ER-MM4	11.5	8.15	5.07	0.8	1.5	3.9	15°	●	●		●	●	●					●
	AOMT 120412ER-MM4	11.5	8.15	5.07	1.2	1.2	3.9	15°				●	●						●
	AOMT 120416ER-MM4	11.3	8.15	5.07	1.6	1.2	3.9	15°				●	●						●
	AOMT 120420ER-MM4	11.2	8.15	5.07	2.0	1.0	3.9	15°	●			●	●						●
	AOMT 120424ER-MM4	11.0	8.15	5.07	2.4	0.9	3.9	15°	●			●	●						●
	AOMT 120431ER-MM4	10.9	8.15	5.07	3.1	0.6	3.9	15°	●			●	●						●
	AOMT 120440ER-MM4	10.6	8.15	5.07	4.0	0.8	3.9	15°				●	●						●

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AO..1204..							
				ap	Geometry			fz			
					MM4	MM3	FM2				
					(mm)						
min	max	min	max	min	max	min	max				
P	Unalloyed steel	<600	<180	0.10	10.00	0.08	0.28	0.08	0.25	-	-
		<950	<280			0.06	0.22	0.06	0.20	-	-
	Alloyed steel	700-950	200-280			0.06	0.22	0.06	0.20	-	-
		950-1200	280-355								
M	Duplex stainless steel	778	230			0.06	0.22	0.06	0.20	-	-
	Austenitic stainless steel	675	200								
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220			0.08	0.30	0.08	0.28	-	-
	Nodular cast iron	880	260								
	Malleable cast iron	800	250								
N	Aluminum	260	75			-	-	-	-	0.06	0.35
	Aluminum alloy	447	130								
S	Fe-based alloy	943	280	0.08	0.15	0.08	0.15	-	-		
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350								
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC	-	-	-	-	-	-		
	Chilled cast iron	-	55HRC								

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

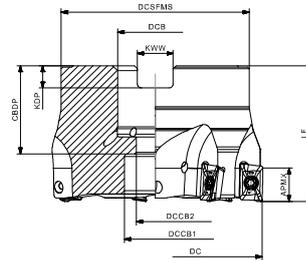
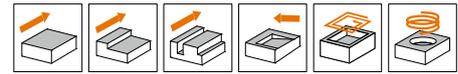
Milling Cutters



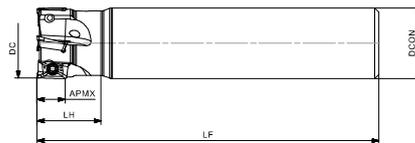
Cutter diameter (D)	Straight Ramping			Circular interpolate milling		
	Max. ramp-A	Min. length-L (mm)	Max.ap (mm)	Min. Dia. (HD)	Max. Dia. (HD)	Max. pitch (rev)
20	5.3	119.6	10	25		1.2
					40	4.9
25	3.6	175.6	10	35		1.7
					50	4.2
32	1.7	378.0	10	49		1.3
					64	2.5
35	1.5	424.5	10	55		1.4
					70	2.4
40	1.3	468.9	10	65		1.6
					80	2.5
50	1.3	501.5	10	85		2.0
					100	2.9
63	0.9	708.6	10	111		2.0
					126	2.6
80	0.7	875.2	10	145		2.2
					160	2.7

ASM90-AP10

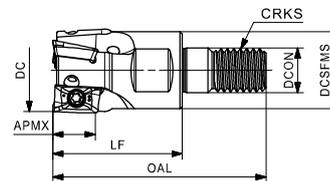
90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CDBP	KDP	KWW	APMX				
ASM90-040-Z06-A16R-AP10-C	40	35	16	14	9	40	24	5.8	8.4	9		0.2	6	AP.1003..
050-Z07-A22R-AP10-C	50	45	22	18	11	40	26	6.5	10.4	9		0.3	7	
063-Z07-A22R-AP10-C	63	55	22	18	11	40	26	6.5	10.4	9		0.6	7	



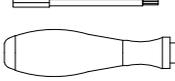
Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-016-Z02-C16R-AP10-L90-C	16	16	90	22	9		0.2	2	AP.1003..
020-Z03-C20R-AP10-L110-C	20	20	110	22	9		0.3	3	
025-Z04-C25R-AP10-L120-C	25	25	120	22	9		0.5	4	
032-Z05-C32R-AP10-L130-C	32	32	130	26	9		0.8	5	



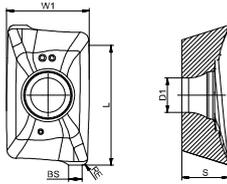
Product code	Dimension (mm)							Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCON	OAL	LF	CRKS	APMX				
ASM90-020-Z03-M10R-AP10-C	20	23	10.5	49.5	30	M10	9		0.1	3	AP.1003..
025-Z04-M12R-AP10-C	25	30	12.5	57.2	35	M12	9		0.2	4	
032-Z05-M16R-AP10-C	32	30	17	67	43	M16	9		0.2	5	

Note: With internal coolant
 Without internal coolant

Milling
Cutters

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø16-63			1.2Nm
	SP02506450H	DT-TP08	

Compatible Inserts



Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✱ Bad Conditions									
		Dimension (mm)							P		M		K		S		H	
		L	W1	S	RE	BS	D1	AS	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	APKT 1003PDER-IT	10.8	6.66	3.8	0.8	1.1	2.8	17°	●	●							●	

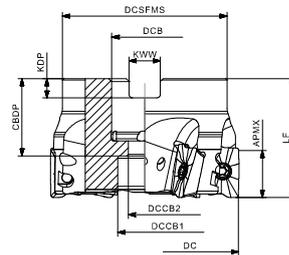
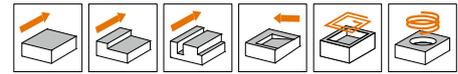
● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AP..1003..					
				ap		Geometry			
						IT			
				fz		(mm)			
min	max	min	max						
P	Unalloyed steel	<600	<180	0.10	9.00	0.08	0.25		
		<950	<280						
	Alloyed steel	700-950	200-280					0.06	0.22
		950-1200	280-355						
	1200-1400	355-415							
M	Duplex stainless steel	778	230			0.06	0.20		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.08	0.25		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75			-	-		
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	0.06	0.18				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-				
	Chilled cast iron	-	55HRC						

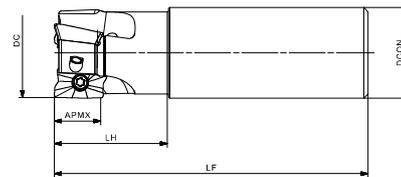
*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

ASM90-AP17

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
ASM90-050-Z05-A22R-AP17-C	50	45	22	18	11	40	26	6.5	10.4	15.5		0.4	5	AP.1705..
063-Z06-A22R-AP17-C	63	55	22	18	11	40	26	6.5	10.4	15.5		0.6	6	
080-Z06-A27R-AP17-C	80	62	27	20	14	50	29	7.2	12.4	15.5		1.1	6	
100-Z08-A32R-AP17-C	100	78	32	26	18	50	32	8.2	14.4	15.5		1.8	8	

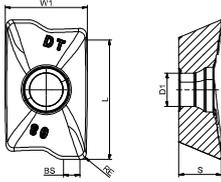


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
ASM90-025-Z02-C25R-AP17-L100-C	25	25	100	37	15.5		0.4	2	AP.1705..
032-Z03-C32R-AP17-L110-C	32	32	110	39	15.5		0.6	3	
032-Z03-C32R-AP17-L200-C	32	32	200	39	15.5		1.1	3	
040-Z04-C32R-AP17-L120-C	40	32	120	49	15.5		0.8	4	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
ø25			4.0Nm
	SP040084	DT-TP15	
ø32-100	SP040100H	DT-TP15	

Compatible Inserts

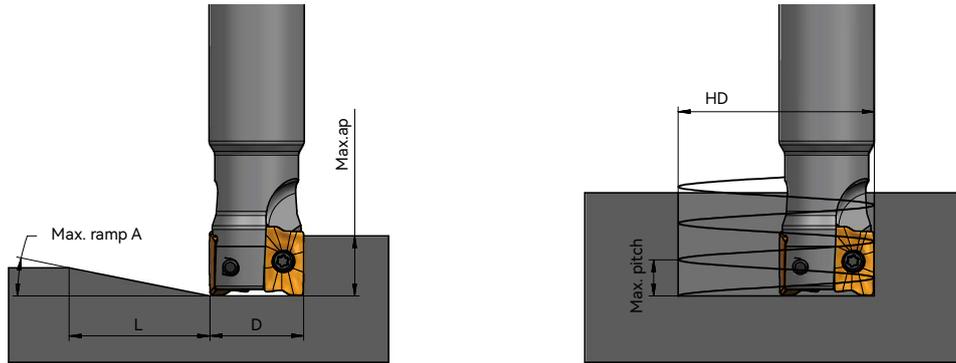


Insert shape	Product code	Machining conditions								● Good Conditions ● General Conditions ☒ Bad Conditions									
		Dimension (mm)								P		M		K		N		H	
		L	W1	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP151H	
	APKT 1705PER-DT	16.5	10.76	5.63	0.8	2.2	4.4	11°	●	●	○		●	●					
	APKT 170516R-DT	16.8	10.74	5.63	1.6	1.7	4.4	11°	●					●					

● : Standard stock ○ : Made-to-Order

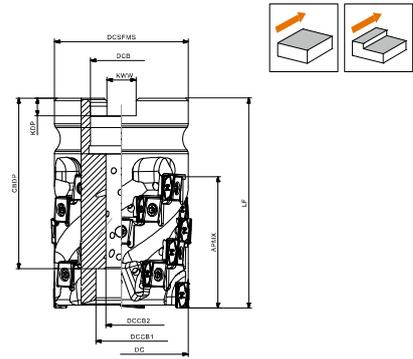
Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AP.1705..					
				ap		Geometry			
						DT			
				fz		(mm)			
min	max	min	max						
P	Unalloyed steel	<600	<180	0.50	15.50	0.08	0.25		
		<950	<280						
	Alloyed steel	700-950	200-280					0.06	0.22
		950-1200	280-355						
	1200-1400	355-415							
M	Duplex stainless steel	778	230			0.06	0.20		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			0.08	0.25		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75			-	-		
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	0.06	0.18				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-				
	Chilled cast iron	-	55HRC						

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

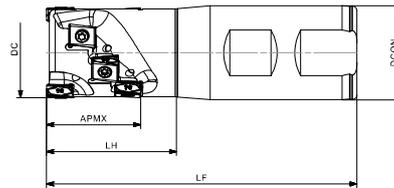


Cutter diameter (D)	Straight Ramping			Circular interpolate milling		
	Max. ramp-A	Min. length-L (mm)	Max.ap (mm)	Min. Dia. (HD)	Max. Dia. (HD)	Max. pitch (rev)
25	5.0°	184	15.5	30.6		1.3
					50	5.8
32	9.0°	102	15.5	44.6		5.3
					64	13.5
40	5.0°	184	15.5	40.6		4.8
					80	9.3
50	4.4°	209	15.5	80.6		6.3
					100	10.3
63	3.2°	288	15.5	106.6		6.5
					126	9.4
80	2.3°	401	15.5	140.6		6.5
					160	8.6
100	1.8°	513	15.5	180.6		6.8
					200	8.4

APE90-LN09 Helical Milling Cutter



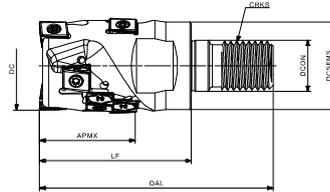
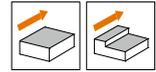
Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Row	Insert QTY	Clamping screw	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX							
APE90-040-Z03-A16R-LN09-L32-F-C	40	38	16	15	9	55	44	5.8	8.4	31		0.3	3	4	12	SH080400	LN..0904..
040-Z03-A16R-LN09-L40-F-C	40	38	16	15	9	65	54	5.8	8.4	39		0.4	3	5	15	SH080500	
050-Z04-A22R-LN09-L48-F-C	50	47	22	18	11	75	61	6.5	10.4	46		0.7	4	6	24	SH100550	



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Row	Insert QTY	Inserts
	DC	DCON	LF	LH	APMX						
APE90-025-Z02-W25R-LN09-L32-F-C	25	25	100	43	31		0.3	2	4	8	LN..0904..
032-Z02-W32R-LN09-L32-F-C	32	32	105	44	31		0.5	2	4	8	
032-Z02-W32R-LN09-L40-F-C	32	32	110	50	39		0.5	2	5	10	
040-Z03-W40R-LN09-L40-F-C	40	40	125	55	39		1.0	3	5	15	
040-Z03-W40R-LN09-L48-F-C	40	40	130	59	46		1.0	3	6	18	

Note: With internal coolant
 Without internal coolant

APE90-LN09 Helical Milling Cutter



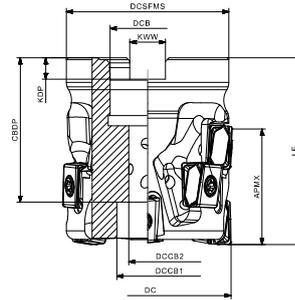
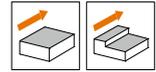
Product code	Dimension (mm)							Internal coolant	Weight (kg)	Z	Row	Insert QTY	Inserts
	DC	DCSFMS	DCON	OAL	LF	CRKS	APMX						
APE90-025-Z02-M12R-LN09-L24-F-C	25	23	12.5	64	40	M12	23		0.1	2	3	6	LN..0904..
032-Z02-M16R-LN09-L24-F-C	32	29	17	67	40	M16	23		0.2	2	3	6	
032-Z02-M16R-LN09-L32-F-C	32	29	17	77	50	M16	31		0.2	2	4	8	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts			
	Screw	Wrench	Installation wrench	Torque
Ø25-50				LN..0904..
	SP030083	DT-TP09	AFW-15/24	

Clamping screw	Screw type	Torque	
	SH080400	M8*40	41Nm
	SH080500	M8*50	41Nm
	SH100550	M10*55	81Nm

APE90-LN13 Helical Milling Cutter
90° Approach angle square shoulder milling cutter



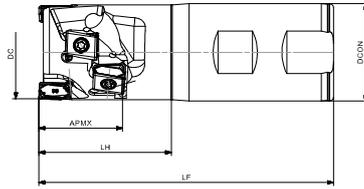
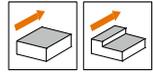
Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Row	Insert QTY	Clamping screw	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX							
APE90-040-Z02-A16R-LN13-L34-F-C	40	39	16	15	9	55	43	5.8	8.4	34		0.4	2	3	6	SH080400	LN..1306..
040-Z02-A16R-LN13-L45-F-C	40	39	16	15	9	65	54.5	5.8	8.4	45		0.4	2	4	8	SH080450	
050-Z03-A22R-LN13-L34-F-C	50	47.5	22	18	11	55	42.5	6.5	10.4	34		0.5	3	3	9	SH100400	
050-Z03-A22R-LN13-L45-F-C	50	47.5	22	18	11	65	52	6.5	10.4	45		0.6	3	4	12	SH100500	
063-Z04-A27R-LN13-L56-F-C	63	59.5	27	20	14	80	63	7.2	12.4	56		1.2	4	5	20	SH120600	
063-Z04-A27R-LN13-L45-F-C	63	59.5	27	20	14	70	53	7.2	12.4	45		1.0	4	4	16	SH120500	
080-Z05-A32R-LN13-L56-F-C	80	75.6	32	26	18	85	65	8.2	14.4	56		2.1	5	5	25	SH160650	

Note: With internal coolant
 Without internal coolant

Milling
Cutters

APE90-LN13 Helical Milling Cutter

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Row	Insert QTY	Inserts
	DC	DCON	LF	LH	APMX						
APE90-040-Z02-W40R-LN13-L34-F-C	40	40	120	54	34		0.2	2	3	6	LN..1306..
040-Z02-W40R-LN13-L45-F-C	40	40	135	64	45		0.2	2	4	8	

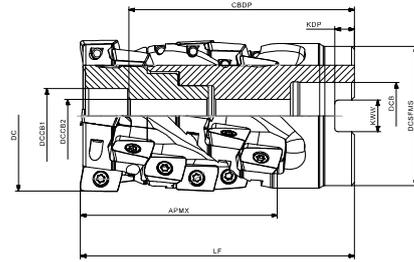
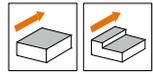
Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø40-80			3.5Nm
	SP040115	DT-TP15	

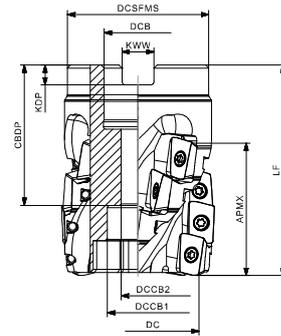
	Clamping screw	Screw type	Torque
		SH080400	M8*40
	SH080500	M8*50	41Nm
	SH100550	M10*55	81Nm
	SH100400	M10*40	81Nm
	SH100500	M10*50	81Nm
	SH120500	M12*50	142Nm
	SH120600	M12*60	142Nm
	SH160650	M16*65	350Nm

APE90-AO12 Helical Milling Cutter

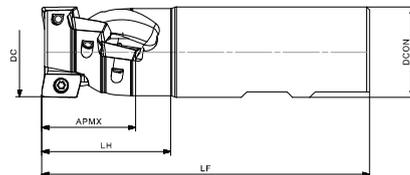
90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Row	Insert QTY	Clamping screw	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBBP	KDP	KWW	APMX							
APE90S-050-Z04-A22R-AO12-L64-F	50	46	22	18	11	90	74	6.5	10.4	63		0.7	4	6	24	SH100700	AO..1204..
063-Z05-A27R-AO12-L74-F	63	59	27	20	14	100	84	7.2	12.4	74		1.4	5	7	35	SH120800	
080-Z06-A32R-AO12-L85-F	80	76	32	26	18	110	92	8.2	14.4	84		2.8	6	8	48	SH160900	



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Row	Insert QTY	Clamping screw	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBBP	KDP	KWW	APMX							
APE90-050-Z04-A22R-AO12-L32-F-C	50	47	22	18	11	55	43	6.5	10.4	32		0.4	4	3	12	SH100400	AO..1204..
063-Z05-A27R-AO12-L43-F-C	63	59.5	27	20	14	66	52	7.2	12.4	43		1.0	5	4	20	SH120500	
080-Z06-A32R-AO12-L64-F-C	80	76	32	26	18	88	69	8.2	14.4	63		2.2	6	6	36	SH160700	



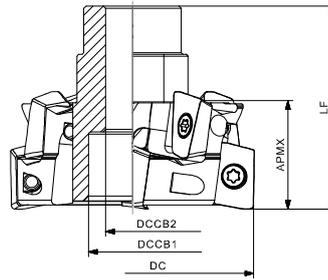
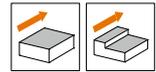
Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Row	Insert QTY	Inserts
	DC	DCON	LF	LH	APMX						
APE90-025-Z02-W25R-AO12-L32-F-C	25	25	115	38.5	31		0.3	2	3	6	AO..1204..
032-Z02-W32R-AO12-L32-F-C	32	32	115	45	32		0.6	2	3	6	
040-Z03-W40R-AO12-L43-F-C	40	40	130	56	42		1.0	3	4	12	

Note: With internal coolant

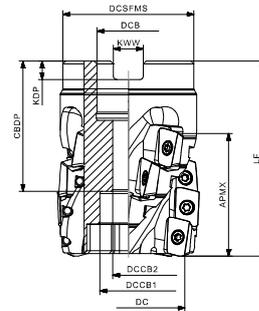
Without internal coolant

APE90-AO12 Helical Milling Cutter

90° Approach angle square shoulder milling cutter



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Row	Insert QTY	Inserts
	DC	DCCB1	DCCB2	LF	APMX						
APE90H-050-Z04-AO12-L21-F	50	18	11	42	21		0.2	4	2	8	AO..1204..
063-Z05-AO12-L21-F	63	20	14	42	21		0.4	5	2	10	
080-Z06-AO12-L21-F	80	26	18	42	21		0.6	6	2	12	



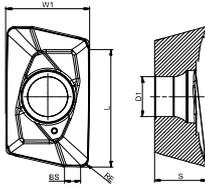
Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Row	Insert QTY	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX						
APE90B-050-Z04-A22R-AO12-L43-F	50	46	22	20	11	69	46	6.5	10.4	43		0.5	4	4	16	AO..1204..
063-Z05-A27R-AO12-L53-F	63	59	27	22	14	79	56	7.2	12.4	53		1.1	5	5	25	
080-Z06-A32R-AO12-L64-F	80	76	32	28	18	89	67.5	8.2	14.4	64		2.2	6	6	36	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅25-80			4.0Nm
	SP035086	DT-TP10	

Clamping screw	Bolt spec.	Torque	
	SH100400	M10*40	81N-m
	SH120500	M12*50	142N-m
	SH160700	M16*70	350N-m
	SH100700	M10*70	81N-m
	SH120800	M12*80	142N-m
SH160900	M16*90	350N-m	

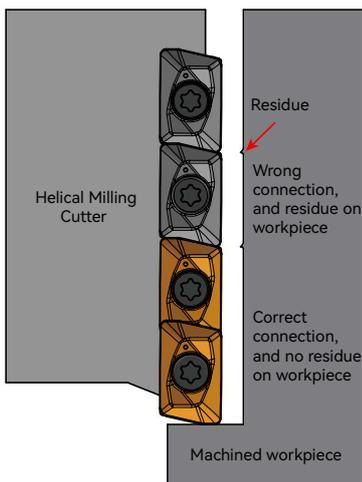
Compatible Inserts



Insert shape	Product code	Machining conditions								● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)								P		M		K		N		S	
		L	W1	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	AOHT 120408ER-FM2	11.3	8.15	5.07	0.8	1.5	3.9	15°										●	
	AOHT 120404ER-MM3	11.3	8.15	5.07	0.4	1.9	3.9	15°	●			●	●						●
	AOHT 120408ER-MM3	11.3	8.15	5.07	0.8	1.5	3.9	15°	●			●	●	●					●
	AOMT 120408ER-MM3	11.3	8.15	5.07	0.8	1.4	3.9	15°	●			●	●	●					●
	AOMT 120404ER-MM4	11.5	8.15	5.07	0.4	1.9	3.9	15°	●			●	●	●					●
	AOMT 120408ER-MM4	11.5	8.15	5.07	0.8	1.5	3.9	15°	●	●		●	●	●					●
	AOMT 120412ER-MM4	11.5	8.15	5.07	1.2	1.2	3.9	15°				●	●						●
	AOMT 120416ER-MM4	11.3	8.15	5.07	1.6	1.2	3.9	15°				●	●						●
	AOMT 120420ER-MM4	11.2	8.15	5.07	2.0	1.0	3.9	15°	●			●	●						●
	AOMT 120424ER-MM4	11.0	8.15	5.07	2.4	0.9	3.9	15°	●			●	●						●
	AOMT 120431ER-MM4	10.9	8.15	5.07	3.1	0.6	3.9	15°	●			●	●						●
AOMT 120440ER-MM4	10.6	8.15	5.07	4.0	0.8	3.9	15°				●	●						●	

Installing precautions for APE90-AO12 Helical Milling cutter:
 1. APE90-AO12 front part is compatible with all AOMT 1204.. inserts.
 2. APE90-AO12 basic part is compatible with R ≤ 1.2mm inserts.

● : Standard stock ○ : Made-to-Order

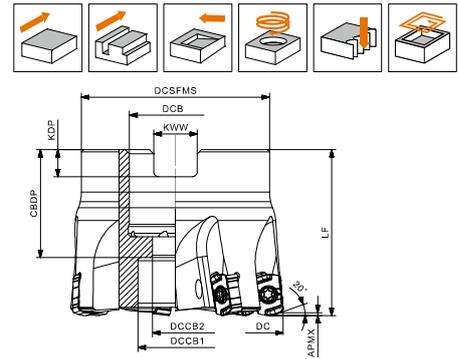


Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AO..1204..									
				ap	Geometry								
					MM4		MM3		FM2				
				(mm)									
min	max	min	max	min	max	min	max	min	max				
P	Unalloyed steel	<600	<180	3.00	85.00	0.08	0.28	0.08	0.25	-	-		
		<950	<280										
	Alloyed steel	700-950	200-280			0.06	0.22	0.06	0.20	-	-		
		950-1200	280-355										
	1200-1400	355-415											
M	Duplex stainless steel	778	230					0.06	0.22	0.06	0.20	-	-
	Austenitic stainless steel	675	200										
	Precipitation-hardening stainless steel	1013	300										
K	Grey cast iron	700	220					0.08	0.30	0.08	0.28	-	-
	Nodular cast iron	880	260										
	Malleable cast iron	800	250										
N	Aluminum	260	75					-	-	-	-	0.06	0.35
	Aluminum alloy	447	130										
S	Fe-based alloy	943	280			0.08	0.15	0.08	0.15	-	-		
	Co-based alloy	1076	320										
	Ni-based alloy	1177	350										
	Ti-alloy	1262	370										
H	Hardened steel	-	50-60HRC			-	-	-	-	-	-		
	Chilled cast iron	-	55HRC										

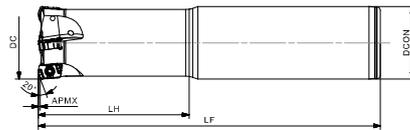
*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

AHM20-LN06

20° Approach angle high feed milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
AHM20-040-Z06-A16R-LN06-C	40	35	16	14	9	40	24	5.8	8.4	0.65		0.3	6	LN..0604..
050-Z07-A22R-LN06-C	50	45	22	18	11	40	26	6.5	10.4	0.65		0.4	7	
052-Z07-A22R-LN06-C	52	45	22	18	11	40	26	6.5	10.4	0.65		0.4	7	
063-Z08-A22R-LN06-C	63	48	22	18	11	40	26	6.5	10.4	0.65		0.6	8	

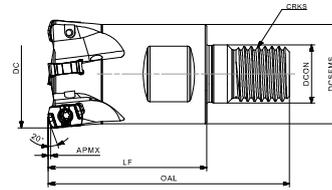
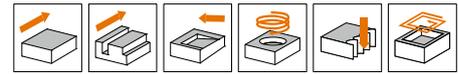


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
AHM20-016-Z02-C16R-LN06-L100-C	16	16	100	25	0.65		0.2	2	LN..0604..
017-Z02-C16R-LN06-L150-C	17	16	150	21	0.65		0.2	2	
020-Z03-C20R-LN06-L130-C	20	20	130	30	0.65		0.3	3	
021-Z03-C20R-LN06-L160-C	21	20	160	26	0.65		0.4	3	
025-Z03-C25R-LN06-L140-C	25	25	140	56	0.65		0.5	3	
026-Z03-C25R-LN06-L180-C	26	25	180	30	0.65		0.6	3	
032-Z04-C32R-LN06-L150-C	32	32	150	66	0.65		0.8	4	
033-Z04-C32R-LN06-L200-C	33	32	200	31.5	0.65		1.1	4	
035-Z05-C32R-LN06-L200-C	35	32	200	32	0.65		1.2	5	

Note: With internal coolant
 Without internal coolant

AHM20-LN06

20° Approach angle high feed milling cutter



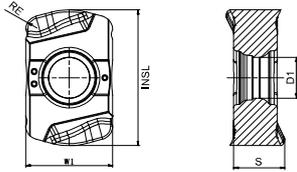
Product code	Dimension (mm)							Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	DCSFMS	OAL	LF	CRKS	APMX				
AHM20-016-Z02-M08R-LN06-C	16	8.5	15	42	25	M8	0.65		0.1	2	LN..0604..
017-Z02-M08R-LN06-C	17	8.5	14.5	42	25	M8	0.65		0.1	2	
020-Z03-M10R-LN06-C	20	10.5	18	49.5	30	M10	0.65		0.1	3	
021-Z03-M10R-LN06-C	21	10.5	18	51	31.5	M10	0.65		0.1	3	
025-Z04-M12R-LN06-C	25	12.5	23	59	35	M12	0.65		0.1	4	
026-Z03-M12R-LN06-C	26	12.5	23	59	35	M12	0.65		0.1	3	
026-Z04-M12R-LN06-C	26	12.5	23	59	35	M12	0.65		0.1	4	
032-Z04-M16R-LN06-C	32	17	29	70	46	M16	0.65		0.3	4	
032-Z05-M16R-LN06-C	32	17	29	70	46	M16	0.65		0.3	5	
033-Z05-M16R-LN06-C	33	17	29	70	46	M16	0.65		0.3	5	
035-Z05-M16R-LN06-C	35	17	29	70	46	M16	0.65		0.3	5	
040-Z06-M16R-LN06-C	40	17	29	70	46	M16	0.65		0.3	6	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø16-63	 SP02506450H	 DT-TP08	1.0Nm

Milling
Cutters

Compatible Inserts



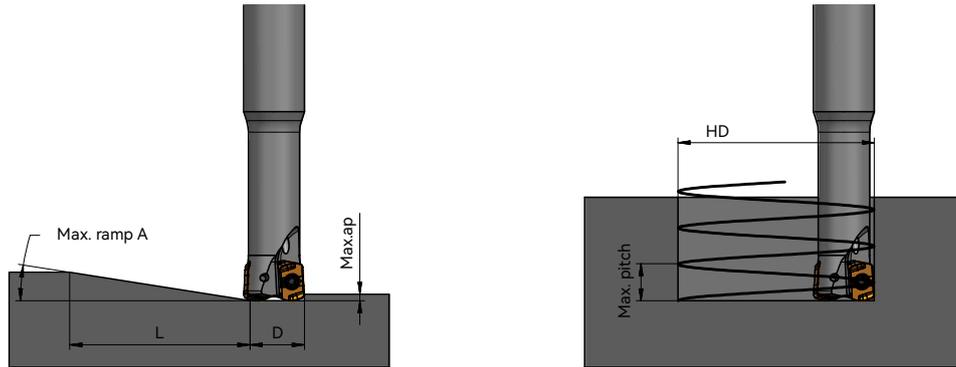
Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions										
		INSL	W1	S	RE	D1	Dimension (mm)										
							P		M		K		S		H		
		AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H						
	LNMX 060410ER-MM3	10	6.35	3.6	1.0	3	●	●			●					●	●
	LNMX 060410ER-MM4	10	6.35	3.6	1.0	3	●	●	○			○				●	●
	LNMX 060410ER-MM4N	10	6.35	3.6	1.0	3	●	●			●		●			●	●

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed											
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	LN..0604..											
				High feed milling				Plunging							
				ap		fz		ae		fz					
				(mm)											
min		max		min		max		min		max					
P	Unalloyed steel	<600	<180	0.30	0.65	0.30	1.00	0.50	4.00	0.08	0.15				
		<950	<280												
	Alloyed steel	700-950	200-280									0.30	1.00	0.06	0.12
		950-1200	280-355												
M	Duplex stainless steel	778	230									0.25	0.80	0.06	0.12
	Austenitic stainless steel	675	200												
	Precipitation-hardening stainless steel	1013	300									0.25	0.60		
K	Grey cast iron	700	220												
	Nodular cast iron	880	260												
	Malleable cast iron	800	250												
N	Aluminum	260	75	-	-	-	-	-	-	-	-				
	Aluminum alloy	447	130												
S	Fe-based alloy	943	280												
	Co-based alloy	1076	320	0.25	0.60	0.06	0.10								
	Ni-based alloy	1177	350												
H	Ti-alloy	1262	370												
	Hardened steel	-	50-60HRC	0.25	0.60	0.06	0.10								
	Chilled cast iron	-	55HRC												

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

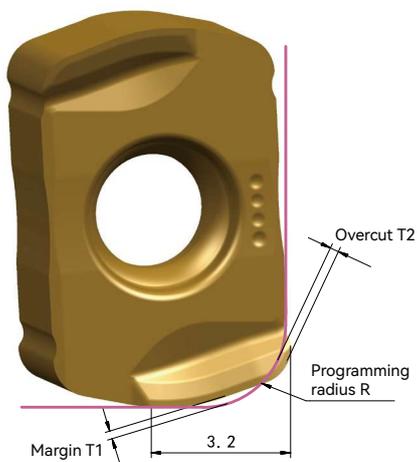
LN06 Milling Cutter Series



Cutter dia. (D)	Straight Ramping			Circular interpolate milling		
	Max. ramp-A	Max. ap (mm)	Min. length-L (mm)	Min. Dia. (HD)	Max. Dia.(HD)	Max. pitch (rev)
∅16	2.9°	0.65	13.8	23	32	0.65
∅17	2.6°	0.65	15.4	25	34	0.65
∅20	1.9°	0.65	21.1	31	40	0.65
∅21	1.8°	0.65	22.3	33	42	0.65
∅25	1.3°	0.65	30.8	41	50	0.65
∅26	1.3°	0.65	30.8	43	52	0.65
∅32	0.9°	0.65	44.6	55	64	0.65
∅33	0.9°	0.65	44.6	57	66	0.65
∅40	0.7°	0.65	57.3	71	80	0.65
∅50	0.5°	0.65	80.2	91	100	0.65
∅63	0.4°	0.65	100.3	117	126	0.65

Milling Cutters

Tool programming radius



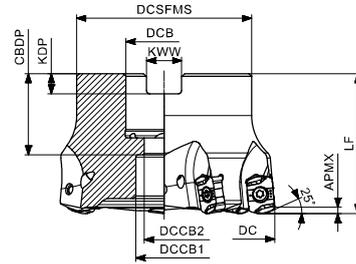
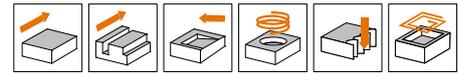
Programming radius R, margin and overcut analysis

Programming radius R	Margin T1	Overcut T2
R1.5	0.43	0
R2.0	0.29	0.06
R2.5	0.15	0.24

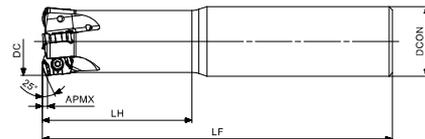
No overcutting of the workpiece when programmed with R1.5

AHM25-LN10

25° Approach angle high feed milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDDP	KDP	KWW	APMX				
AHM25-040-Z04-A16R-LN10-C	40	38	16	14	9	40	24	5.8	8.4	1.2		0.3	4	LN..1005..
040-Z05-A16R-LN10-C	40	38	16	14	9	40	24	5.8	8.4	1.2		0.3	5	
050-Z05-A22R-LN10-C	50	45	22	18	11	40	26	6.5	10.4	1.2		0.4	5	
050-Z07-A22R-LN10-C	50	45	22	18	11	40	26	6.5	10.4	1.2		0.4	7	
063-Z06-A22R-LN10-C	63	52	22	18	11	40	26	6.5	10.4	1.2		0.6	6	
063-Z08-A22R-LN10-C	63	52	22	18	11	40	26	6.5	10.4	1.2		0.6	8	
080-Z07-A27R-LN10-C	80	62	27	20	14	50	29	7.2	12.4	1.2		1.1	7	
080-Z09-A27R-LN10-C	80	62	27	20	14	50	29	7.2	12.4	1.2		1.1	9	
100-Z08-A32R-LN10-C	100	78	32	26	18	50	32	8.2	14.4	1.2		1.7	8	
100-Z10-A32R-LN10-C	100	78	32	26	18	50	32	8.2	14.4	1.2		1.8	10	
125-Z12-A40R-LN10-C	125	90	40	33	22	63	38	9.2	16.4	1.2		3.3	12	

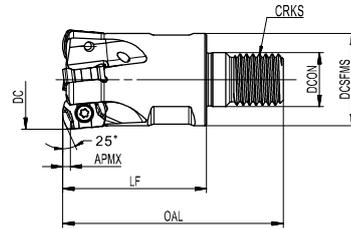
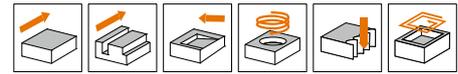


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
AHM25-025-Z02-C25R-LN10-L150-C	25	25	150	68	1.2		0.5	2	LN..1005..
025-Z03-C25R-LN10-L150-C	25	25	150	68	1.2		0.5	3	
026-Z03-C25R-LN10-L150-C	26	25	150	28	1.2		0.5	3	
026-Z03-C25R-LN10-L220-C	26	25	220	28	1.2		0.8	3	
032-Z03-C32R-LN10-L160-C	32	32	160	68	1.2		0.9	3	
032-Z04-C32R-LN10-L160-C	32	32	160	68	1.2		0.9	4	
033-Z04-C32R-LN10-L180-C	33	32	180	28	1.2		1.0	4	
033-Z04-C32R-LN10-L250-C	33	32	250	28	1.2		1.4	4	

Note: With internal coolant
 Without internal coolant

AHM25-LN10

25° Approach angle high feed milling cutter



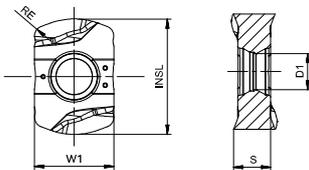
Product code	Dimension (mm)							Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	DCSFMS	OAL	LF	CRKS	APMX				
AHM25-025-Z02-M12R-LN10-C	25	12.5	23	61	39	M12	1.2		0.2	2	LN..1005..
025-Z03-M12R-LN10-C	25	12.5	23	61	39	M12	1.2		0.2	3	
026-Z03-M12R-LN10-C	26	12.5	23	61	39	M12	1.2		0.2	3	
032-Z03-M16R-LN10-C	32	17	29	69	45	M16	1.2		0.3	3	
032-Z04-M16R-LN10-C	32	17	29	69	45	M16	1.2		0.3	4	
033-Z04-M16R-LN10-C	33	17	29	69	45	M16	1.2		0.3	4	

Note: With internal coolant
 Without internal coolant

Milling Cutters

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø25-125	 SP035087H	 DT-TP10	3.0Nm

Compatible Inserts



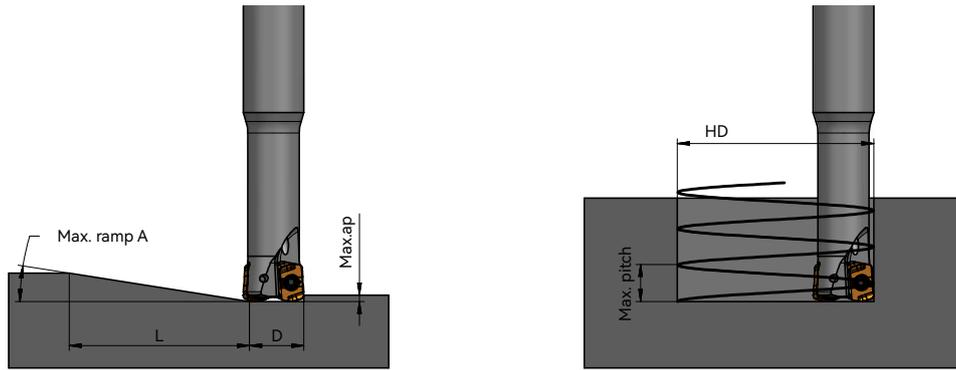
Insert shape	Product code	Machining conditions					Machining conditions									
		INSL	W1	S	RE	D1	● Good Conditions					● General Conditions				
							✖ Bad Conditions									
Dimension (mm)						P		M		K		S		H		
						AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC307K	AC151K	AP403S	AP151H	
	LNMX 100512ER-MM3	13.5	9.2	4.55	1.2	4.21	●	●		●	●			●	●	
	LNMX 100512ER-MM4	13.5	9.2	4.55	1.2	4.21	●	●		●					●	

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed											
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	LN.. 1005..											
				High feed milling				Plunging							
				ap		fz		ae		fz					
				(mm)											
				min	max	min	max	min	max	min	max				
P	Unalloyed steel	<600	<180	0.30	1.20	0.30	1.00	0.50	4.00	0.08	0.15				
		<950	<280									0.30	1.00	0.06	0.12
	Alloyed steel	700-950	200-280			0.25	0.80			0.06	0.12				
		950-1200	280-355									0.25	0.60	0.08	0.15
	1200-1400	355-415													
M	Duplex stainless steel	778	230												
	Austenitic stainless steel	675	200												
	Precipitation-hardening stainless steel	1013	300												
K	Grey cast iron	700	220												
	Nodular cast iron	880	260												
	Malleable cast iron	800	250												
N	Aluminum	260	75							-	-			-	-
	Aluminum alloy	447	130												
S	Fe-based alloy	943	280			0.25	0.60			0.06	0.10				
	Co-based alloy	1076	320												
	Ni-based alloy	1177	350												
	Ti-alloy	1262	370												
H	Hardened steel	-	50-60HRC			0.25	0.60			0.06	0.10				
	Chilled cast iron	-	55HRC												

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

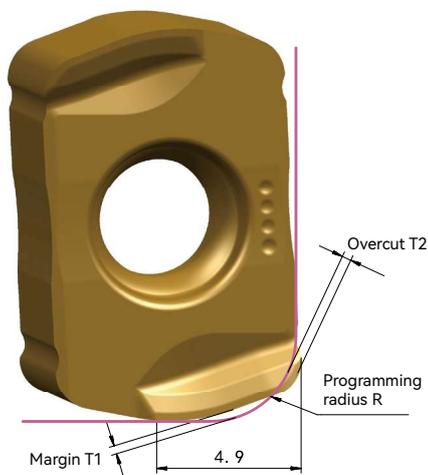
LN10 Milling Cutter Series



Cutter dia. (D)	Straight Ramping			Circular interpolate milling		
	Max. ramp-A	Max.ap (mm)	Min. length-L (mm)	Min. Dia. (HD)	Max. Dia.(HD)	Max. pitch (rev)
∅25	3.2	1.20	21.8	34	50	0.8
∅26	2.9	1.20	23.6	36	52	0.8
∅32	2.0	1.20	34.7	48	64	0.9
∅33	1.9	1.20	36.5	50	66	0.9
∅35	1.7	1.20	40.2	54	70	0.9
∅40	1.4	1.20	49.5	64	80	1.0
∅50	1.0	1.20	67.9	84	100	1.0
∅63	0.7	1.20	91.9	110	126	1.0
∅80	0.6	1.20	123.3	144	160	1.1
∅100	0.4	1.20	160.2	184	200	1.1
∅125	0.3	1.20	206.4	234	250	1.1

Milling Cutters

Tool programming radius



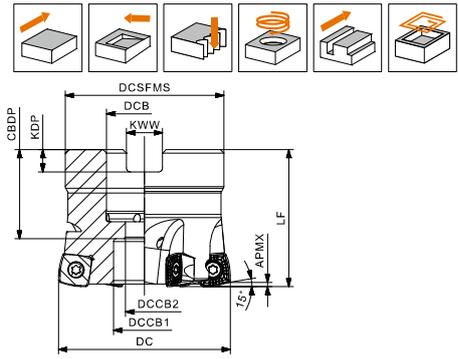
Programming radius R, margin and overcut analysis

	Programming radius R	Margin T1	Overcut T2
✓	R2.3	0.57	0
✗	R2.5	0.53	0.03
✗	R3.0	0.37	0.15

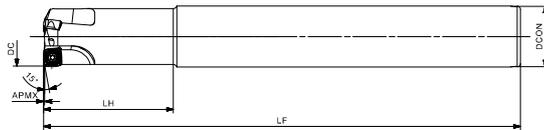
No overcutting of the workpiece when programmed with R1.5

AHM15-XD09

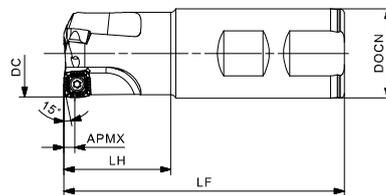
15° Approach angle high feed milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
AHM15-040-Z03-A16R-XD09-C	40	35	16	14	9	32	24	5.8	8.4	1.2		0.2	3	XD..0904..
040-Z04-A16R-XD09-C	40	35	16	14	9	32	24	5.8	8.4	1.2		0.2	4	
040-Z05-A16R-XD09-C	40	35	16	14	9	32	24	5.8	8.4	1.2		0.2	5	
050-Z05-A22R-XD09-C	50	46	22	18	11	40	26	6.5	10.4	1.2		0.4	5	
050-Z06-A22R-XD09-C	50	46	22	18	11	40	26	6.5	10.4	1.2		0.4	6	

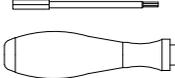


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
AHM15-025-Z02-C25R-XD09-C	25	25	200	48	1.2		0.7	2	XD..0904..
026-Z02-C25R-XD09-L180-C	26	25	180	28	1.2		0.6	2	
032-Z03-C32R-XD09-C	32	32	250	67	1.2		1.4	3	

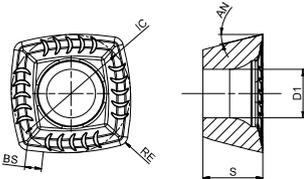


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
AHM15-025-Z02-W25R-XD09-C	25	25	96	37	1.2		0.3	2	XD..0904..
032-Z03-W32R-XD09-C	32	32	100	37	1.2		0.5	3	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø25-50			3.0Nm
	SP035086	DT-TP10	

Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions														
		IC	S	RE	BS	D1	AN	Dimension (mm)														
								P	M	K		S	H									
	XDLT 090408ER-MM3	9.525	4.76	0.8	1.3	3.9	15°	●	●	●												
	XDMW 090408ER-HR2	9.506	4.76	0.8	1.6	3.9	15°							○	●							

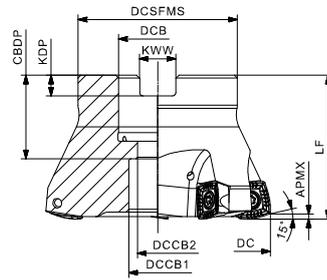
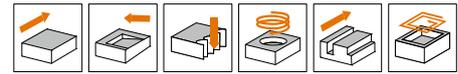
● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	XD..0904..							
				High feed milling				Plunging			
				ap		fz		ae		fz	
				(mm)							
				min	max	min	max	min	max	min	max
P	Unalloyed steel	<600	<180	0.20	1.20	0.30	1.50	0.00	7.00	0.05	0.15
		<950	<280								
	Alloyed steel	700-950	200-280								
		950-1200	280-355								
M	Duplex stainless steel	778	230	0.20	1.20	0.30	1.50	0.00	7.00	0.05	0.10
	Austenitic stainless steel	675	200								
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220	0.20	1.20	0.30	1.50	0.00	7.00	0.05	0.15
	Nodular cast iron	880	260								
	Malleable cast iron	800	250								
N	Aluminum	260	75	0.20	1.20	-	-	0.00	7.00	-	-
	Aluminum alloy	447	130								
S	Fe-based alloy	943	280	0.20	1.20	0.10	0.50	0.00	7.00	0.05	0.10
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350								
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC	0.20	1.20	0.30	1.00	0.00	7.00	0.05	0.10
	Chilled cast iron	-	55HRC								

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

AHM15-XD12

15° Approach angle high feed milling cutter

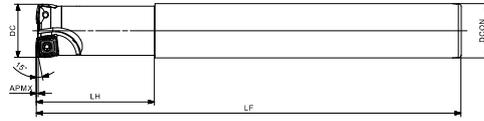
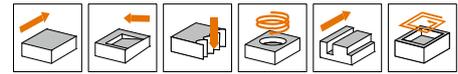


Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
AHM15-052-Z03-A22R-XD12-C	52	45	22	18	11	40	26	6.5	10.4	1.6		0.4	3	XD..1205..
052-Z04-A22R-XD12-C	52	45	22	18	11	40	26	6.5	10.4	1.6		0.4	4	
052-Z05-A22R-XD12-C	52	45	22	18	11	40	26	6.5	10.4	1.6		0.4	5	
063-Z04-A22R-XD12-C	63	48	22	18	11	40	26	6.5	10.4	1.6		0.5	4	
063-Z05-A22R-XD12-C	63	48	22	18	11	40	26	6.5	10.4	1.6		0.5	5	
063-Z04-60A22R-XD12-C	63	60	22	18	11	40	26	6.5	10.4	1.6		0.6	4	
063-Z05-60A22R-XD12-C	63	60	22	18	11	40	26	6.5	10.4	1.6		0.6	5	
066-Z04-A27R-XD12-C	66	50	27	20	14	45	29	7.2	12.4	1.6		0.5	4	
066-Z05-A27R-XD12-C	66	50	27	20	14	45	29	7.2	12.4	1.6		0.5	5	
066-Z04-63A27R-XD12-C	66	63	27	20	14	45	29	7.2	12.4	1.6		0.7	4	
066-Z05-63A27R-XD12-C	66	63	27	20	14	45	29	7.2	12.4	1.6		0.7	5	
080-Z05-A27R-XD12-C	80	55	27	20	14	50	29	7.2	12.4	1.6		0.9	5	
080-Z08-A27R-XD12-C	80	55	27	20	14	50	29	7.2	12.4	1.6		0.9	8	
080-Z05-76A27R-XD12-C	80	76	27	20	14	50	29	7.2	12.4	1.6		1.2	5	
080-Z08-76A27R-XD12-C	80	76	27	20	14	50	29	7.2	12.4	1.6		1.3	8	
100-Z06-A32R-XD12-C	100	80	32	26	18	50	32	8.2	14.4	1.6		1.7	6	
100-Z09-A32R-XD12-C	100	80	32	26	18	50	32	8.2	14.4	1.6		1.7	9	
100-Z06-96A32R-XD12-C	100	96	32	26	18	50	32	8.2	14.4	1.6		2.0	6	
100-Z09-96A32R-XD12-C	100	96	32	26	18	50	32	8.2	14.4	1.6		2.0	9	
125-Z08-A40R-XD12-C	125	89	40	33	22	63	38	9.2	16.4	1.6		3.1	8	
125-Z11-A40R-XD12-C	125	89	40	33	22	63	38	9.2	16.4	1.6		3.2	11	
125-Z08-100A40R-XD12-C	125	100	40	33	22	63	38	9.2	16.4	1.6		3.4	8	
125-Z11-100A40R-XD12-C	125	100	40	33	22	63	38	9.2	16.4	1.6		3.5	11	

Note: With internal coolant
 Without internal coolant

AHM15-XD12

15° Approach angle high feed milling cutter

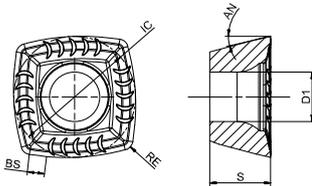


Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
AHM15-032-Z02-C32R-XD12-C	32	32	250	70	1.6		1.5	2	XD..1205..

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅32-125	 SP040112	 DT-TP15	3.5Nm

Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ⊕ Bad Conditions										
		IC	S	RE	BS	D1	AN	Dimension (mm)					P	M	K	S	H	
								AP251U	AP351U	AC251P	AP351M	AP403M						AP251K
	XDLT 120508ER-MM3	12.7	5.56	0.8	2.2	4.4	15°	●	●	●		○	●	●	●	●		
	XDLT 120512ER-MM3	12.7	5.56	1.2	2.2	4.4	15°	●	●	●			●	●				
	XDMW 120508ER-HR2	12.7	5.56	0.8	2.5	4.4	15°	●						○	●			

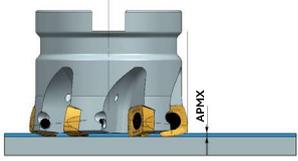
● : Standard stock ○ : Made-to-Order

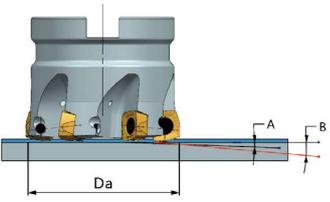
Milling Cutters

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	XD..1205..							
				High feed milling				Plunging			
				ap		fz		ae		fz	
				(mm)							
				min	max	min	max	min	max	min	max
P	Unalloyed steel	<600	<180	0.50	1.60	0.30	2.00	0.00	10.00	0.06	0.18
		<950	<280								
	Alloyed steel	700-950	200-280			0.30	2.00			0.06	0.15
		950-1200	280-355								
		1200-1400	355-415								
M	Duplex stainless steel	778	230			0.20	1.00			0.06	0.12
	Austenitic stainless steel	675	200								
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220			0.30	2.00			0.06	0.18
	Nodular cast iron	880	260								
	Malleable cast iron	800	250								
N	Aluminum	260	75			-	-			-	-
	Aluminum alloy	447	130								
S	Fe-based alloy	943	280	0.30	2.00	0.05	0.12				
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350								
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC	0.30	1.00	0.05	0.12				
	Chilled cast iron	-	55HRC								

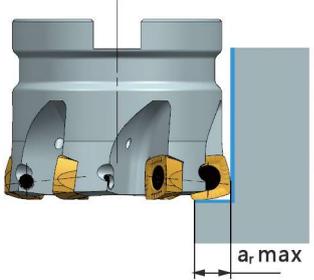
*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

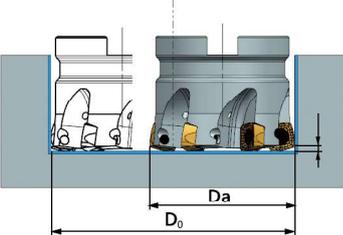
Application of AHM15-XD High Feed Milling Cutter

Face milling	ap (mm)		
	APMX	XD..0904..	XD..1205..
		1.2	1.6

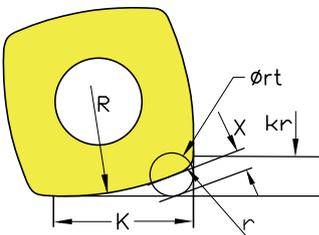
Sloping	Max. bevel				
	Da (mm)	XD..0904..		XD..1205..	
		Max. bevel A	Max. bevel B	Max. bevel A	Max. bevel B
	25	2.80°	6.30°	-	-
	32	1.50°	5.00°	-	-
	40	0.80°	2.70°	-	-
	52	-	-	0.8°	2.7°
	63	-	-	0.6°	1.8°
	66	-	-	0.45°	1.8°
	100	-	-	0.32°	1.45°
125	-	-	0.24°	1.06°	

A = Max. bevel using full plane contact
 B = Max. bevel using full contact and corner radius

Plunging	Max. cutting depth a,(mm)		
	Da (mm)	XD..0904..	XD..1205..
	25	6.0	-
	32	6.0	-
	40	6.0	-
	50	6.0	-
	52	-	9.0
	63	-	9.0
	66	-	9.0
	80	-	9.0
	100	-	9.0
125	-	9.0	

Helical interpolate milling on soild materials	Diameter range (mm) of holes milled in one feed				
	Da (mm)	XD..0904..		XD..1205..	
		D _o min (mm)	D _o max (mm)	D _o min (mm)	D _o max (mm)
	25	30	50	-	-
	32	51	64	-	-
	40	67	80	-	-
	50	87	100	-	-
	52	-	-	87.2	104
	63	-	-	109.2	126
	66	-	-	115.2	132
	80	-	-	143.2	160
	100	-	-	183.2	200
	125	-	-	233.2	250

Programming information

Helical interpolate milling on soild materials	Diameter range (mm) of holes milled in one feed						
	Indexable insert	R	r (Insert radius)	rt (Approximate radius)	k	kr	x
	XD..090408	17	0.8	2.0	6.5	1.9	1.47
	XD..120508	22.8	0.8	2.5	8.4	2.4	1.00
	XD..120512	20	1.2	3.0	8.3	2.8	0.86
	XD..120520	20	2.0	3.0	8.0	3.4	0.90

Programming with the theoretical tool radius "rt" produces the maximum deviation from the final contour shown above.
The small deviations that occur only in the corners can be corrected by other tools in the subsequent process.

AHM15-SD09

15° Approach angle high feed milling cutter

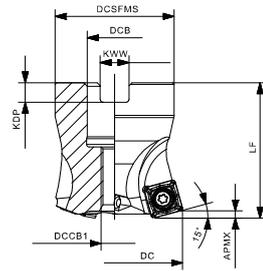


Fig. 1

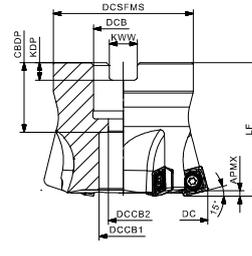
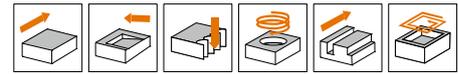


Fig. 2

Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX					
AHM15-040-Z03-A16R-SD09	40	35	16	M8	-	40	-	5.8	8.4	1.5		0.2	3	1	SD..09T3..N..
042-Z04-A16R-SD09	42	35	16	14	9	40	24	5.8	8.4	1.5		0.2	4	2	
050-Z05-A22R-SD09	50	45	22	18	11	40	26	6.5	10.4	1.5		0.3	5		
052-Z05-A22R-SD09	52	45	22	18	11	40	26	6.5	10.4	1.5		0.3	5		
063-Z06-A22R-SD09	63	52	22	18	11	50	26	6.5	10.4	1.5		0.6	6		

Note: AHM15-040-Z03-A16R-SD09 is connected using dowel screw



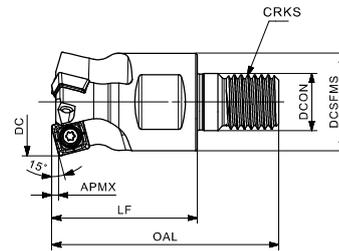
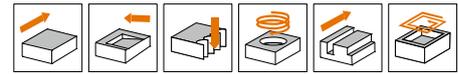
Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
AHM15-025-Z02-C25R-SD09-L200	25	25	200	25	1.5		0.6	2	SD..09T3..N..
032-Z03-C32R-SD09-L250	32	32	250	37	1.5		1.4	3	

Note: With internal coolant
 Without internal coolant

Milling Cutters

AHM15-SD09

15° Approach angle high feed milling cutter

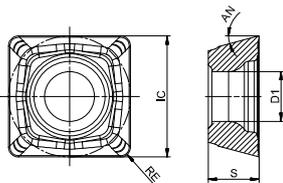


Product code	Dimension (mm)							Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCON	OAL	LF	CRKS	APMX				
AHM15-025-Z02-M12R-SD09	25	23	12.5	57	35	M12	1.5		0.1	2	SD..09T3..N...
026-Z02-M12R-SD09	26	23	12.5	57	35	M12	1.5		0.1	2	
032-Z03-M16R-SD09	32	29	17	67	43	M16	1.5		0.2	3	
033-Z03-M16R-SD09	33	29	17	67	43	M16	1.5		0.2	3	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts			
	Screw	Wrench	Dowel screw	Torque
∅25-63	 SP035086	 DT-TP10	 WD080300	3.0Nm

Compatible Inserts



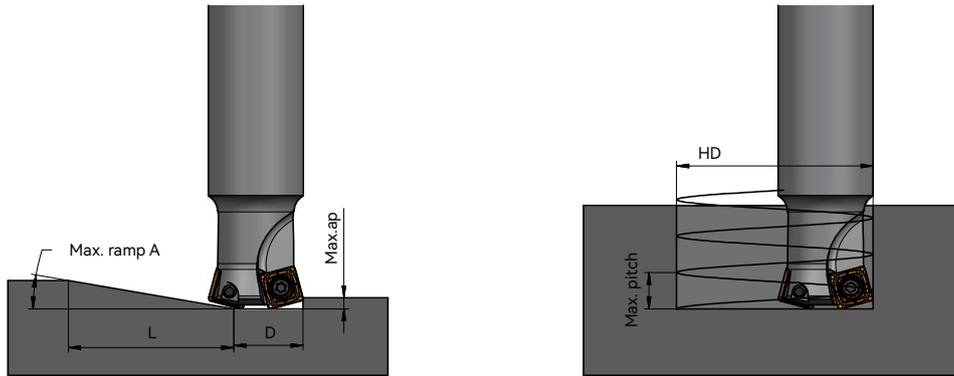
Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✘ Bad Conditions									
		Dimension (mm)					P		M		K		N		S	
		IC	S	RE	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	SDMT 09T308N-MM4	9.525	3.97	0.8	3.9	15°	●			●	●	●		●		
	SDMT 09T320N-MM4	9.520	3.97	2.0	3.9	15°	●			●	●	●		●		●
	SDMT 09T308N-MR2	9.525	3.97	0.8	3.9	15°	●			●	●	●		●		
	SDMT 09T320N-MR2	9.520	3.97	2.0	3.9	15°	●			●	●	●		●		

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..09T3..N..									
				High feed milling				Plunging					
				ap		fz		ap		fz			
				(mm)									
				min	max	min	max	min	max	min	max		
P	Unalloyed steel	<600	<180	0.10	1.50	0.80	1.40	0.00	8.40	0.12	0.22		
		<950	<280										
	Alloyed steel	700-950	200-280							0.80	1.50	0.12	0.25
		950-1200	280-355										
		1200-1400	355-415										
M	Duplex stainless steel	778	230			0.05	0.50			0.05	0.12		
	Austenitic stainless steel	675	200										
	Precipitation-hardening stainless steel	1013	300										
K	Grey cast iron	700	220			0.50	1.40			0.10	0.25		
	Nodular cast iron	880	260										
	Malleable cast iron	800	250										
N	Aluminum	260	75			-	-			-	-		
	Aluminum alloy	447	130										
S	Fe-based alloy	943	280	0.10	0.60	-	-						
	Co-based alloy	1076	320										
	Ni-based alloy	1177	350										
	Ti-alloy	1262	370										
H	Hardened steel	-	50-60HRC	-	-	-	-						
	Chilled cast iron	-	55HRC										

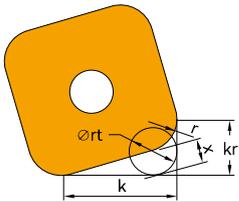
*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Application of AHM15-SD09 High Feed Milling Cutter



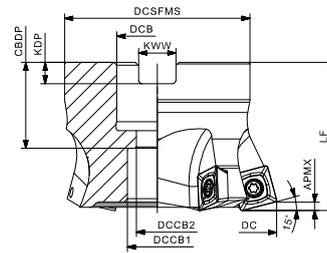
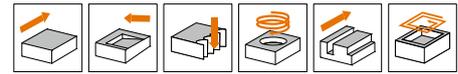
Product family	Cutter dia. (D)	Sloping			Helical interpolate milling		
		Max. ramp -A	Max.ap (mm)	Min. length-L (mm)	Min. Dia.(mm)	Max. Dia.(mm)	Max. pitch (mm)
AHM15-SD09	25	6.2°	1.5	17.6	32.4		1.5
	25	6.2°	1.5	17.6		50.0	1.5
	26	5.4°	1.5	20.0	34.4		1.5
	26	5.4°	1.5	20.0		52.0	1.5
	32	3.2°	1.5	34.2	46.4		1.5
	32	3.2°	1.5	34.2		64.0	1.5
	33	3.0°	1.5	36.6	48.4		1.5
	33	3.0°	1.5	36.6		66.0	1.5
	40	2.0°	1.5	53.2	62.4		1.5
	40	2.0°	1.5	53.2		80.0	1.5
	42	1.9°	1.5	58.0	66.4		1.5
	42	1.9°	1.5	58.0		84.0	1.5
	50	1.4°	1.5	77.0	82.4		1.5
	50	1.4°	1.5	77.0		100.0	1.5
	52	1.3°	1.5	81.7	86.4		1.5
	52	1.3°	1.5	81.7		104.0	1.5
	63	1.0°	1.5	107.8	108.4		1.5
	63	1.0°	1.5	107.8		126.0	1.5

Programming information

Helical interpolate milling on solid materials							
	Indexable insert	r (Insert radius)	rt (Approximate radius)	k	kr	x	
		SD..09T308	0.8	2.5	8.35	2.85	1.91
		SD..09T320	2.0	3.0	7.04	3.43	1.51

AHM15-SD12

15° Approach angle high feed milling cutter



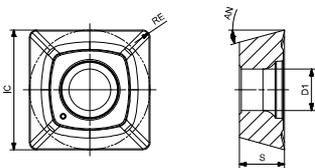
Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts
	DC	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
AHM15-050-Z04-A22R-SD12	50	45	22	M10	-	40	-	6.5	10.4	2.0		0.3	4	SD..1204..N..
052-Z04-A22R-SD12	52	45	22	18	11	40	26	6.5	10.4	2.0		0.3	4	
063-Z05-A22R-SD12	63	48	22	18	11	50	26	6.5	10.4	2.0		0.5	5	
080-Z06-A27R-SD12	80	62	27	20	14	50	29	7.2	12.4	2.0		0.9	6	
100-Z07-A32R-SD12	100	80	32	26	18	50	32	8.2	14.4	2.0		1.6	7	
125-Z08-A40R-SD12	125	87	40	33	22	63	38	9.2	16.4	2.0		2.8	8	

Note: AHM15-050-204-A22R-SD12 is clamped using dowel screw

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts			
	Screw	Wrench	Dowel screw	Torque
∅50-125	 SP040112	 DT-TP15	 WD100300	3.5Nm

Compatible Inserts



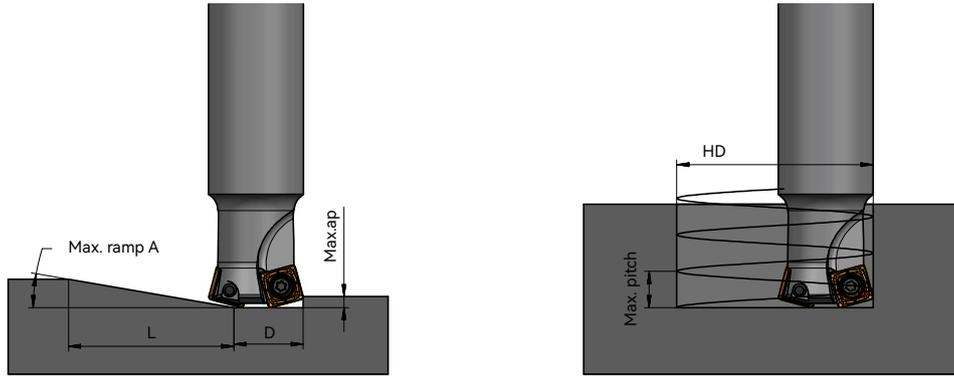
Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ⊕ Bad Conditions													
		IC	S	RE	D1	AN	Dimension (mm)													
							P	M	K	N	S									
	SDMT 120408N-MM4	12.7	4.76	0.8	4.4	15.3°	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	SDMT 120420N-MM4	12.7	4.76	2.0	4.4	15.3°	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	SDMT 120425N-MM4	12.7	4.76	2.5	4.4	15.3°	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	SDMT 120430N-MM4	12.7	4.76	3.0	4.4	15.3°	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	SDMT 120408N-MR2	12.7	4.76	0.8	4.4	15.3°	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..1204..N..							
				High feed milling				Plunging			
				ap		fz		ap		fz	
				(mm)							
				min	max	min	max	min	max	min	max
P	Unalloyed steel	<600	<180	0.20	2.00	1.00	1.80	0.00	11.40	0.15	0.25
		<950	<280								
	Alloyed steel	700-950	200-280			1.00	1.20			0.15	0.30
		950-1200	280-355								
	1200-1400	355-415									
M	Duplex stainless steel	778	230								
	Austenitic stainless steel	675	200			0.05	0.80			0.05	0.15
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220								
	Nodular cast iron	880	260			0.80	1.60			0.10	0.30
	Malleable cast iron	800	250								
N	Aluminum	260	75								
	Aluminum alloy	447	130			-	-			-	-
S	Fe-based alloy	943	280								
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350			0.10	0.80			-	-
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC								
	Chilled cast iron	-	55HRC								

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Application of AHM15-SD12 High Feed Milling Cutter



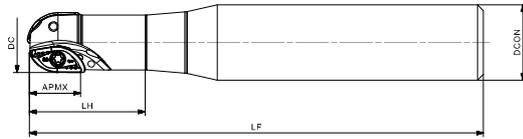
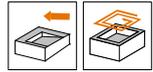
Product family	Cutter dia. (D)	Sloping			Helical interpolate milling		
		Max. ramp -A	Max.ap (mm)	Min. length-L (mm)	Min. Dia.(mm)	Max. Dia.(mm)	Max. pitch (mm)
AHM15-SD12	50	1.5°	2.0	89.1	76.0		1.9
	50	1.5°	2.0	89.1		100.0	2.0
	52	1.4°	2.0	96.0	80.0		1.9
	52	1.4°	2.0	96.0		104.0	2.0
	63	1.0°	2.0	133.7	102.0		1.9
	63	1.0°	2.0	133.7		126.0	2.0
	80	0.7°	2.0	192.0	136.0		1.9
	80	0.7°	2.0	192.0		160.0	2.0
	100	0.5°	2.0	260.6	176.0		1.9
	100	0.5°	2.0	260.6		200.0	2.0
	125	0.4°	2.0	346.3	226.0		1.9
	125	0.4°	2.0	346.3		250.0	1.9

Milling Cutters

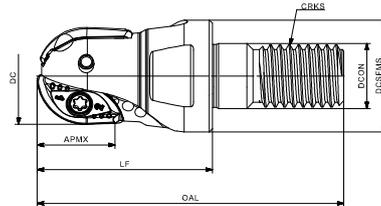
Programming information

Helical interpolate milling on soild materials	Indexable insert	r (Insert radius)	rt (Approximate radius)	k	kr	x
	SD..120408	0.8	3.0	11.43	3.65	2.62
	SD..120420..	2.0	3.0	10.12	4.28	2.32
	SD..120425	2.5	3.0	9.59	4.51	2.18
	SD..120430..	3.0	3.0	9.07	4.76	2.04

APM00-RP Profile milling cutter



Product code	Dimension (mm)					Internal coolant	Weight (kg)	Z	Inserts
	DC	DCON	LF	LH	APMX				
APM00-016-Z02-C20R-RP080-L120-C	16	16	120	31	14		0.3	2	RPM 080ER-MM4
020-Z02-C25R-RP100-L126-C	20	20	126	42	18		0.3	2	RPM 100ER-MM4
020-Z02-C25R-RP100-L176-C	20	20	176	42	18		0.5	2	
032-Z02-C32R-RP160-L130-C	32	32	130	53	28		0.6	2	RPM 160ER-MM4

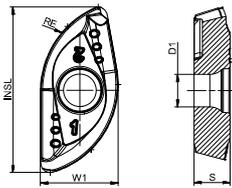


Product code	Dimension (mm)							Internal coolant	Weight (kg)	Inserts
	DC	DCSFMS	DCON	OAL	LF	CRKS	APMX			
APM00-016-Z02-M10R-RP080-C	16	18	10.5	50	28	M10	14		0.08	RPM 080ER-MM4
020-Z02-M10R-RP100-C	20	18	10.5	50	30	M10	18		0.04	RPM 100ER-MM4
032-Z02-M16R-RP160-C	32	29	17	64	40	M16	28		0.15	RPM 160ER-MM4

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts			
	Screw	Wrench	Installation wrench	Torque
Ø16				1.2Nm
	SP02506450H	DT-TP08	AFW-15	
Ø20	SP030072H	DT-TP09	AFW-15	2.0Nm
Ø32	SP040100H	DT-TP15	AFW-24	3.5Nm

Compatible Inserts



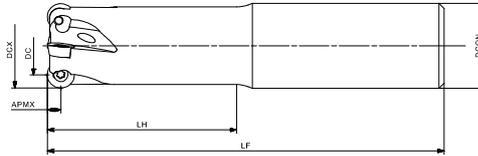
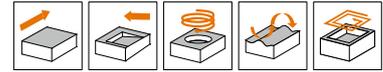
Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions													
		INSL	W1	S	RE	D1	Dimension (mm)													
							P		M		K		N		S					
		AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S									
	RPM 080ER-MM4	14.77	6.9	3.2	8.2	2.9	●				●	●								●
	RPM 100ER-MM4	18.85	8.63	3.9	10.3	3.5	●				●	○								●
	RPM 160ER-MM4	29.54	12.68	6.2	16.4	4.6					○	●								

● : Standard stock ○ : Made-to-Order

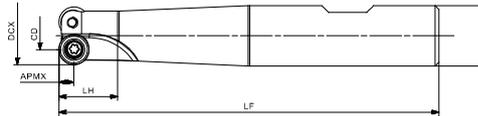
Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	RPM...					
				ap		MM4			
						fz			
				(mm)					
		min	max	min	max				
P	Unalloyed steel	<600	<180	0.20	28.00	0.10	0.20		
		<950	<280						
	Alloyed steel	700-950	200-280					0.10	0.18
		950-1200	280-355						
	1200-1400	355-415							
M	Duplex stainless steel	778	230			0.10	0.18		
	Austenitic stainless steel	675	200						
	Precipitation-hardening stainless steel	1013	300						
K	Grey cast iron	700	220			-	-		
	Nodular cast iron	880	260						
	Malleable cast iron	800	250						
N	Aluminum	260	75			-	-		
	Aluminum alloy	447	130						
S	Fe-based alloy	943	280	0.06	0.12				
	Co-based alloy	1076	320						
	Ni-based alloy	1177	350						
	Ti-alloy	1262	370						
H	Hardened steel	-	50-60HRC	-	-				
	Chilled cast iron	-	55HRC						

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

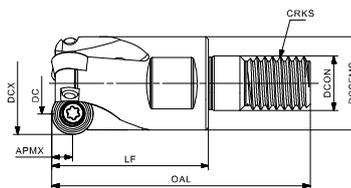
APM00-RO08 Profile milling cutter



Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
APM00-025-Z04-C25R-RO08-L116-C	17	25	25	116	55.3	4		0.4	4	RO..08..MOE..



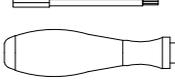
Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
APM00-016-Z02-W16R-RO08-L100	8	16	16	100	15.6	4		0.1	2	RO..08..MOE..



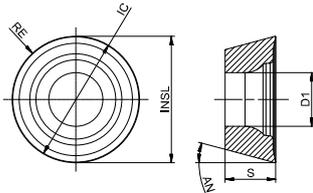
Product code	Dimension (mm)								Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCON	OAL	LF	CRKS	APMX				
APM00-020-Z03-M10R-RO08-C	12	20	18	10.5	49.5	30	M10	4		0.1	3	RO..08..MOE..

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅16-25	 SP030072H	 DT-TP09	2.0Nm

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø16-25			2.0Nm
	SP030072H	DT-TP09	

Compatible Inserts



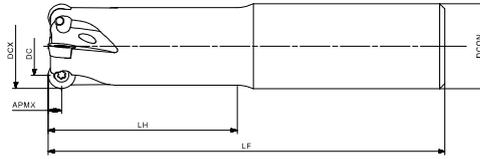
Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)							P		M		K		N		S	
		INSL	IC	S	RE	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	ROHT 0803MOE-MM3	8	8	3.18	-	3.4	15°					●						●

● : Standard stock ○ : Made-to-Order

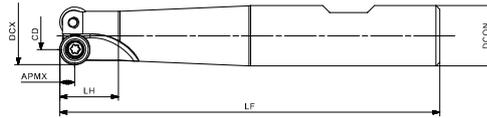
Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	RO..0803..							
				MM3							
				ap	fz						
					0.1 < ap ≤ 1		1 < ap ≤ 4				
				(mm)							
min	max	min	max	min	max						
P	Unalloyed steel	<600	<180	0.50	4.00	0.15	0.50	0.08	0.30		
		<950	<280								
	Alloyed steel	700-950	200-280			0.12	0.45	0.06	0.28		
		950-1200	280-355								
1200-1400	355-415										
M	Duplex stainless steel	778	230					0.10	0.40	0.06	0.25
	Austenitic stainless steel	675	200								
	Precipitation-hardening stainless steel	1013	300								
K	Grey cast iron	700	220					-	-	-	-
	Nodular cast iron	880	260								
	Malleable cast iron	800	250								
N	Aluminum	260	75			-	-	-	-		
	Aluminum alloy	447	130								
S	Fe-based alloy	943	280			0.10	0.35	0.06	0.25		
	Co-based alloy	1076	320								
	Ni-based alloy	1177	350								
	Ti-alloy	1262	370								
H	Hardened steel	-	50-60HRC			-	-	-	-		
	Chilled cast iron	-	55HRC								

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

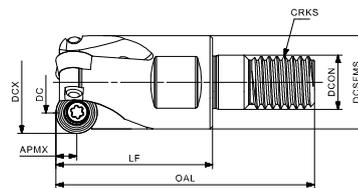
APM00-RO08 Profile milling cutter



Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
APM00-020-Z03-C20R-RO08-L120-N-C	12	20	20	120	61.8	4		0.3	4	RO..08..M4E..
025-Z04-C25R-RO08-L116-N-C	17	25	25	116	53.2	4		0.4	4	



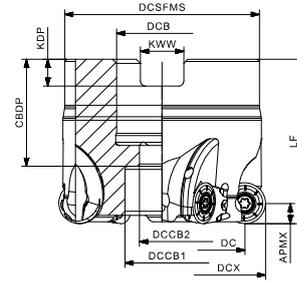
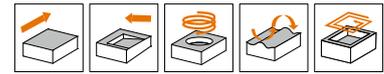
Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
APM00-016-Z02-W16R-RO08-L100-N	8	16	16	100	15.6	4		0.1	2	RO..08..M4E..



Product code	Dimension (mm)								Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCON	OAL	LF	CRKS	APMX				
APM00-020-Z03-M10R-RO08-N-C	12	20	18	10.5	49.5	30	M10	4		0.1	3	RO..08..M4E..

Note: With internal coolant
 Without internal coolant

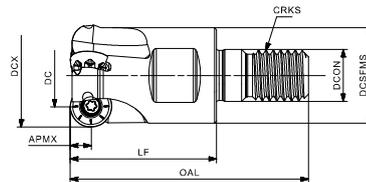
APM00-RO10 Profile milling cutter



Product code	Dimension (mm)										Internal coolant	Weight (kg)	Z	Inserts	
	DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDDP	KDP	KWW					APMX
APM00-040-Z05-A16R-RO10-C	30	40	35	16	14	9	40	24	5.8	8.4	5		0.3	5	RO..10T3..
050-Z06-A22R-RO10-C	40	50	47	22	18	11	40	26	6.5	10.4	5		0.4	6	

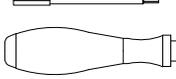


Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
APM00-025-Z03-C25R-RO10-L225-C	15	25	25	225	56.2	5		0.8	3	RO..10T3..
032-Z04-C32R-RO10-L130-C	22	32	32	130	65	5		0.7	4	

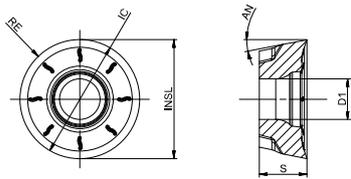


Product code	Dimension (mm)								Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCON	OAL	LF	CRKS	APMX				
APM00-025-Z03-M12R-RO10-C	15	25	23	12.5	57	35	M12	5		0.1	3	RO..10T3..
032-Z04-M16R-RO10-C	22	32	29	17	67	43	M16	5		0.3	4	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø25-50			2.0Nm
	SP030072H	DT-TP09	

Compatible Inserts



Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions										
		INSL	IC	S	RE	D1	AN	P		M		K		N	S			
		Dimension (mm)						AP251U	AP351U	AC251P	AP403M	AP351M	AP251K	AC301K	AC151K	AW100K	AP403S	
	ROHT 10T3M8E-MM3	10	10	3.97	-	3.4	11°				●							●
	ROMT 10T3M4E-MR6	10	10	3.97	-	3.4	11°		○		●							●

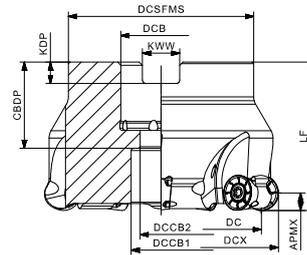
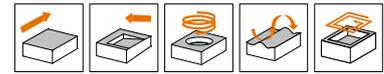
● : Standard stock ○ : Made-to-Order

Milling Cutters

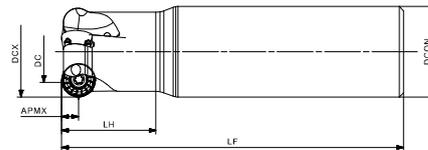
Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	RO..10T3..									
				ap		MM3		MR6		fz			
						min	max	min	max			min	max
				(mm)									
P	Unalloyed steel	<600	<180	0.80	5.00	0.15	0.55	0.10	0.30	0.15	0.60	0.10	0.32
		<950	<280			0.12	0.50	0.08	0.28	0.12	0.55	0.08	0.30
	Alloyed steel	700-950	200-280			0.10	0.45	0.08	0.25	0.10	0.50	0.08	0.28
		950-1200	280-355			-	-	-	-	-	-	-	-
M	Duplex stainless steel	778	230	-	-	-	-	-	-	-	-	-	
	Austenitic stainless steel	675	200	-	-	-	-	-	-	-	-	-	
	Precipitation-hardening stainless steel	1013	300	-	-	-	-	-	-	-	-	-	
K	Grey cast iron	700	220	-	-	-	-	-	-	-	-	-	
	Nodular cast iron	880	260	-	-	-	-	-	-	-	-	-	
	Malleable cast iron	800	250	-	-	-	-	-	-	-	-	-	
N	Aluminum	260	75	-	-	-	-	-	-	-	-	-	
	Aluminum alloy	447	130	-	-	-	-	-	-	-	-	-	
S	Fe-based alloy	943	280	0.10	0.40	0.08	0.25	-	-	-	-	-	
	Co-based alloy	1076	320	-	-	-	-	-	-	-	-	-	
	Ni-based alloy	1177	350	-	-	-	-	-	-	-	-	-	
	Ti-alloy	1262	370	-	-	-	-	-	-	-	-	-	
H	Hardened steel	-	50-60HRC	-	-	-	-	-	-	-	-	-	
	Chilled cast iron	-	55HRC	-	-	-	-	-	-	-	-	-	

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

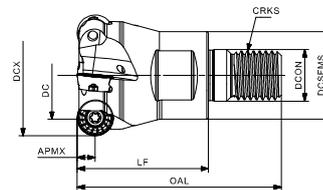
APM00-RO12 Profile milling cutter



Product code	Dimension (mm)											Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDBP	KDP	KWW	APMX				
APM00-040-Z04-A16R-RO12-C	28	40	35	16	14	9	40	24	5.8	8.4	6		0.3	4	RO..1204..
050-Z05-A22R-RO12-C	38	50	45	22	18	11	40	26	6.5	10.4	6		0.4	5	
063-Z06-A22R-RO12-C	51	63	48	22	18	11	40	26	6.5	10.4	6		0.6	6	
080-Z07-A27R-RO12-C	68	80	62	27	20	14	50	29	7.2	12.4	6		1.2	7	

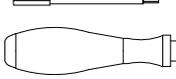


Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
APM00-032-Z03-C32R-RO12-L120-C	20	32	32	120	33	6		0.7	3	RO..1204..

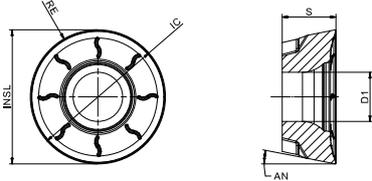


Product code	Dimension (mm)								Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCON	OAL	LF	CRKS	APMX				
APM00-040-Z04-M16R-RO12-C	28	40	29	17	67	43	M16	6		0.3	4	RO..1204..

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø32-80			4.0Nm
	SP040085H	DT-TP10	

Compatible Inserts



Insert shape	Product code	Machining conditions						Machining conditions									
		INSL	IC	S	RE	D1	AN	● Good Conditions				● General Conditions					
								✘ Bad Conditions									
		Dimension (mm)						P		M		K		N		S	
		AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S						
	ROHT 1204M4E-MM3 ROHT 1204M6E-MM3	12	12	4.76	-	4.4	11°					●					●
	ROMT 1204M6E-MR6	12	12	4.76	-	4.4	11°	○				●					●

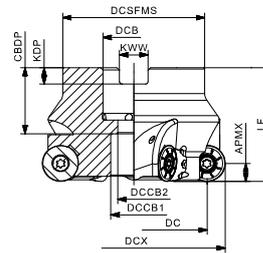
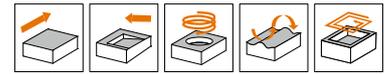
● : Standard stock ○ : Made-to-Order

Milling Cutters

Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	RO..1204..									
				ap		MM3		MR6		fz			
						0.1 < ap ≤ 1.5		1.5 < ap ≤ 6		0.1 < ap ≤ 1.5		1.5 < ap ≤ 6	
						(mm)							
		min	max	min	max	min	max	min	max	min	max		
P	Unalloyed steel	<600	<180	0.80	6.00	0.18	0.60	0.12	0.32	0.18	0.65	0.12	0.35
		<950	<280			0.15	0.55	0.10	0.30	0.15	0.60	0.10	0.32
	Alloyed steel	700-950	200-280			0.12	0.50	0.10	0.28	0.12	0.55	0.10	0.30
		950-1200	280-355			-	-	-	-	-	-	-	-
M	Duplex stainless steel	778	230			-	-	-	-	-	-	-	-
	Austenitic stainless steel	675	200			-	-	-	-	-	-	-	-
	Precipitation-hardening stainless steel	1013	300			-	-	-	-	-	-	-	-
K	Grey cast iron	700	220			-	-	-	-	-	-	-	-
	Nodular cast iron	880	260	-	-	-	-	-	-	-	-		
	Malleable cast iron	800	250	-	-	-	-	-	-	-	-		
N	Aluminum	260	75	-	-	-	-	-	-	-	-		
	Aluminum alloy	447	130	-	-	-	-	-	-	-	-		
S	Fe-based alloy	943	280	0.12	0.45	0.10	0.28	-	-	-	-		
	Co-based alloy	1076	320	-	-	-	-	-	-	-	-		
	Ni-based alloy	1177	350	-	-	-	-	-	-	-	-		
	Ti-alloy	1262	370	-	-	-	-	-	-	-	-		
H	Hardened steel	-	50-60HRC	-	-	-	-	-	-	-	-		
	Chilled cast iron	-	55HRC	-	-	-	-	-	-	-	-		

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sink.

APM00-RO16 Profile milling cutter

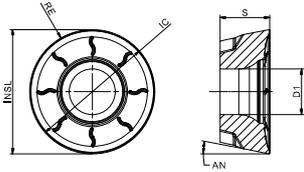


Product code	Dimension (mm)											Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCB	DCCB1	DCCB2	LF	CBDP	KDP	KWW	APMX				
APM00-063-Z05-A22R-RO16-C	47	63	48	22	18	11	40	26	6.5	10.4	8		0.5	5	
080-Z06-A27R-RO16-C	64	80	62	27	20	14	50	29	7.2	12.4	8		1.2	6	RO..1605..
100-Z07-A32R-RO16-C	84	100	80	32	26	18	50	32	8.2	14.4	8		1.8	7	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
∅63-100	 SP050120	 DT-TP20	5.0Nm

Compatible Inserts



		Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)						P		M		K		N		S	
Insert shape	Product code	INSL	IC	S	RE	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	ROHT 1605M8E-MM3	16	16	5.56	-	5.5	11°					●					●
	ROMT 1605M6E-MR6	16	16	5.56	-	5.5	11°			●		●					●

● : Standard stock ○ : Made-to-Order

Materials				Cutting depth and feed										
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	RO..1605..										
				ap	MM3				MR6				fz	
					0.1 < ap ≤ 1.5		1.5 < ap ≤ 8		0.1 < ap ≤ 1.5		1.5 < ap ≤ 8			
					(mm)									
				min	max	min	max	min	max	min	max	min	max	min
P	Unalloyed steel	<600	<180	0.80	8.00	0.20	0.65	0.12	0.35	0.20	0.68	0.12	0.38	
		<950	<280			0.18	0.60	0.10	0.32	0.18	0.65	0.10	0.35	
	Alloyed steel	700-950	200-280			0.15	0.55	0.10	0.30	0.15	0.58	0.10	0.32	
		950-1200	280-355			-	-	-	-	-	-	-	-	-
1200-1400	355-415	-	-			-	-	-	-	-	-	-		
M	Duplex stainless steel	778	230			-	-	-	-	-	-	-	-	-
	Austenitic stainless steel	675	200			-	-	-	-	-	-	-	-	-
	Precipitation-hardening stainless steel	1013	300			-	-	-	-	-	-	-	-	-
K	Grey cast iron	700	220			-	-	-	-	-	-	-	-	-
	Nodular cast iron	880	260			-	-	-	-	-	-	-	-	-
	Malleable cast iron	800	250	-	-	-	-	-	-	-	-	-		
N	Aluminum	260	75	-	-	-	-	-	-	-	-	-		
	Aluminum alloy	447	130	-	-	-	-	-	-	-	-	-		
S	Fe-based alloy	943	280	0.15	0.50	0.10	0.30	-	-	-	-	-		
	Co-based alloy	1076	320	-	-	-	-	-	-	-	-	-		
	Ni-based alloy	1177	350	-	-	-	-	-	-	-	-	-		
	Ti-alloy	1262	370	-	-	-	-	-	-	-	-	-		
H	Hardened steel	-	50-60HRC	-	-	-	-	-	-	-	-	-		
	Chilled cast iron	-	55HRC	-	-	-	-	-	-	-	-	-		

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

APM00-RO20 Profile milling cutter

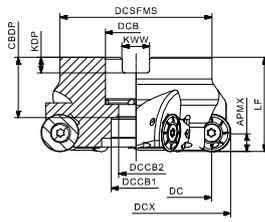
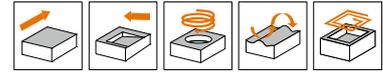


Fig. 1

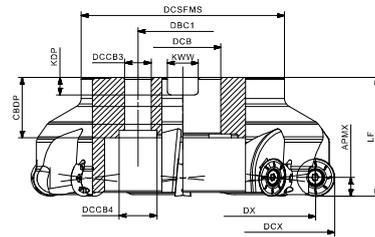


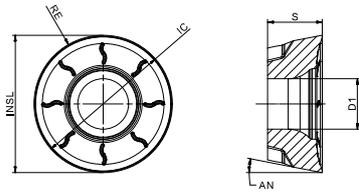
Fig. 2

Product code	Dimension (mm)														Internal coolant	Weight (kg)	Z	Fig.	Inserts
	DC	DCX	DCSFMS	DCB	DBC1	DCCB1	DCCB2	DCCB3	DCCB4	LF	CBDP	KDP	KWW	APMX					
APM00-100-Z06-A32R-RO20-C	80	100	80	32	-	26	18	-	-	50	32	8.2	14.4	10		1.7	6	1	RO..2006..
125-Z07-A40R-RO20-C	105	125	87	40	-	33	22	-	-	63	38	9.2	16.4	10		3.5	7		
160-Z08-A40R-RO20	140	160	107	40	66.7	58	-	14	20	63	32	9.2	16.4	10		4.5	8		

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø100-160			7.0Nm
	SP060180	DT-TP25	

Compatible Inserts



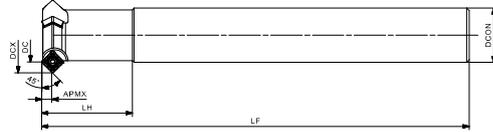
		Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)						P	M	K			N	S			
Insert shape	Product code	INSL	IC	S	RE	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	ROHT 2006M8E-MM3	20	20	6.35	-	6.5	11°					●					●
	ROMT 2006M8E-MR6	20	20	6.35	-	6.5	11°					●	○				●

● : Standard stock ○ : Made-to-Order

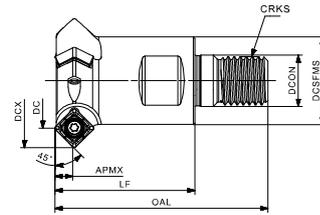
Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	RO..2006..									
				ap		MM3				MR6			
						0.1 < ap ≤ 2.5		2.5 < ap ≤ 10		0.1 < ap ≤ 2.5		2.5 < ap ≤ 10	
				(mm)									
				min	max	min	max	min	max	min	max	min	max
P	Unalloyed steel	<600	<180	1.00	10.00	0.20	0.70	0.15	0.38	0.20	0.80	0.15	0.40
		<950	<280			0.18	0.65	0.12	0.35	0.18	0.70	0.12	0.38
	Alloyed steel	700-950	200-280			0.15	0.60	0.12	0.32	0.15	0.65	0.12	0.35
		950-1200	280-355			-	-	-	-	-	-	-	-
1200-1400	355-415	-	-			-	-	-	-	-	-		
M	Duplex stainless steel	778	230			0.15	0.60	0.12	0.32	0.15	0.65	0.12	0.35
	Austenitic stainless steel	675	200			-	-	-	-	-	-	-	-
	Precipitation-hardening stainless steel	1013	300			-	-	-	-	-	-	-	-
K	Grey cast iron	700	220			-	-	-	-	-	-	-	-
	Nodular cast iron	880	260			-	-	-	-	-	-	-	-
	Malleable cast iron	800	250			-	-	-	-	-	-	-	-
N	Aluminum	260	75			-	-	-	-	-	-	-	-
	Aluminum alloy	447	130	-	-	-	-	-	-	-	-		
S	Fe-based alloy	943	280	0.15	0.55	0.12	0.32	-	-	-	-		
	Co-based alloy	1076	320	-	-	-	-	-	-	-	-		
	Ni-based alloy	1177	350	-	-	-	-	-	-	-	-		
	Ti-alloy	1262	370	-	-	-	-	-	-	-	-		
H	Hardened steel	-	50-60HRC	-	-	-	-	-	-	-	-		
	Chilled cast iron	-	55HRC	-	-	-	-	-	-	-	-		

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

ACM45-SD09 Chamfer milling cutter



Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
ACM45-012-Z01-C16R-SD09-L160	12	24	16	160	25	5.5		0.3	1	SD..09T3..N..
016-Z02-C16R-SD09-L160	16	28	16	160	30	5.5		0.2	2	
020-Z02-C20R-SD09-L180	20	32	20	180	35	5.5		0.4	2	
025-Z03-C25R-SD09-L200	25	37	25	200	42	5.5		0.7	3	
032-Z03-C32R-SD09-L250	32	44	32	250	53	5.5		1.5	3	

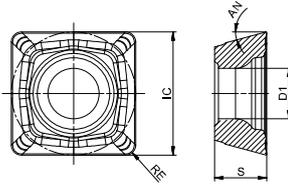


Product code	Dimension (mm)								Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCON	OAL	LF	CRKS	APMX				
ACM45-016-Z02-M08R-SD09	16	28	15	8.5	42	25	M08	5.5		0.1	2	SD..09T3..N..
020-Z02-M10R-SD09	20	32	18	10.5	51	31	M10	5.5		0.1	2	
025-Z03-M12R-SD09	25	37	23	12.5	59	37	M12	5.5		0.1	3	
032-Z03-M16R-SD09	32	44	29	17	70	46	M16	5.5		0.3	3	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø12-32			3.0Nm
	SP035086	DT-TP10	

Compatible Inserts



		Machining conditions						● Good Conditions ● General Conditions ✘ Bad Conditions									
		Dimension (mm)						P		M		K		N		S	
Insert shape	Product code	IC	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	SDMT 09T308N-MM4	9.525	3.97	0.8	-	3.9	15°	●			●	●	●		●		
	SDMT 09T320N-MM4	9.520	3.97	2.0	-	3.9	15°	●			●	●	●		●		●
	SDMT 09T308N-MR2	9.525	3.97	0.8	-	3.9	15°	●			●	●	●		●		
	SDMT 09T320N-MR2	9.520	3.97	2.0	-	3.9	15°	●			●	●	●		●		

● : Standard stock ○ : Made-to-Order

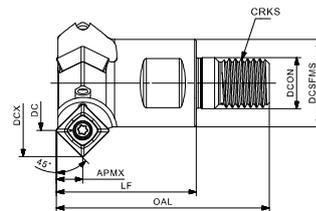
Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..09T3..N..									
				ap		Geometry							
						MM4		MR2					
				fz									
(mm)													
min		max		min		max							
P	Unalloyed steel	<600	<180	0.10	5.50	0.05	0.25	0.05	0.35				
		<950	<280										
	Alloyed steel	700-950	200-280							0.05	0.22	0.05	0.30
		950-1200	280-355										
M	Duplex stainless steel	778	230			-	-	0.08	0.35				
	Austenitic stainless steel	675	200										
	Precipitation-hardening stainless steel	1013	300										
K	Grey cast iron	700	220			0.08	0.30	0.08	0.30				
	Nodular cast iron	880	260										
	Malleable cast iron	800	250										
N	Aluminum	260	75	-	-	-	-						
	Aluminum alloy	447	130										
S	Fe-based alloy	943	280	0.05	0.30	-	-						
	Co-based alloy	1076	320										
	Ni-based alloy	1177	350										
	Ti-alloy	1262	370										
H	Hardened steel	-	50-60HRC	-	-	-	-						
	Chilled cast iron	-	55HRC										

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

ACM45-SD12 Chamfer milling cutter



Product code	Dimension (mm)						Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCON	LF	LH	APMX				
ACM45-025-Z02-C25R-SD12-L200	25	41	25	200	30	7.5		0.8	2	SD..1204..N..
032-Z03-C32R-SD12-L250	32	48	32	250	43	7.5		1.5	3	

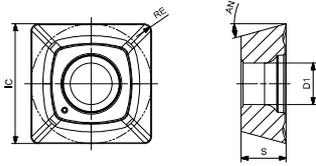


Product code	Dimension (mm)								Internal coolant	Weight (kg)	Z	Inserts
	DC	DCX	DCSFMS	DCON	OAL	LF	CRKS	APMX				
ACM45-025-Z02-M12R-SD12	25	41	23	12.5	59	37	M12	7.5		0.1	2	SD..1204..N..
032-Z03-M16R-SD12	32	48	29	17	70	46	M16	7.5		0.2	3	

Note: With internal coolant
 Without internal coolant

Cutter diameter (mm)	Spare parts		
	Screw	Wrench	Torque
Ø25-32			3.5Nm
	SP040112	DT-TP15	

Compatible Inserts



Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ⊕ Bad Conditions														
		IC	S	RE	D1	AN	Dimension (mm)														
							P		M		K		N		S						
												AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	SDMT 120408N-MM4	12.7	4.76	0.8	4.4	15.3°	●				●	●	●		●						
	SDMT 120420N-MM4	12.7	4.76	2.0	4.4	15.3°	○						●								
	SDMT 120425N-MM4	12.7	4.76	2.5	4.4	15.3°				○	●									○	
	SDMT 120430N-MM4	12.7	4.76	3.0	4.4	15.3°		○					●								
	SDMT 120408N-MR2	12.7	4.76	0.8	4.4	15.3°	●		●	●	●	●			●						

● : Standard stock ○ : Made-to-Order

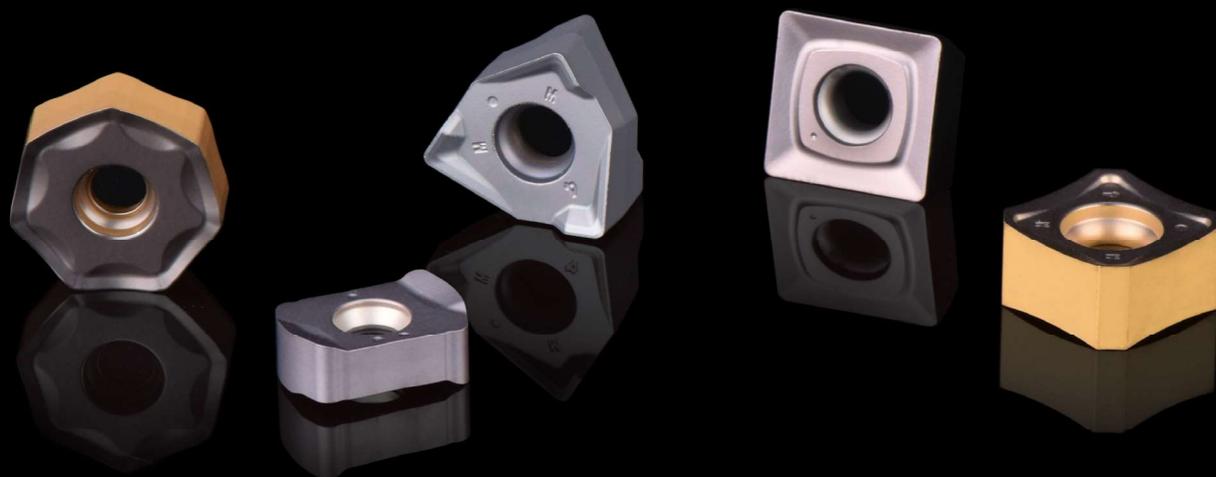
Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	SD..1204..N..									
				ap	Geometry				fz				
					MM4		MR2						
					(mm)								
min		max		min		max							
P	Unalloyed steel	<600	<180	0.20	7.50	0.10	0.30	0.10	0.35				
		<950	<280										
	Alloyed steel	700-950	200-280							0.12	0.25	0.10	0.30
		950-1200	280-355										
M	Duplex stainless steel	778	230			0.06	0.20	0.10	0.30				
	Austenitic stainless steel	675	200										
	Precipitation-hardening stainless steel	1013	300										
K	Grey cast iron	700	220			0.10	0.30	0.10	0.35				
	Nodular cast iron	880	260										
	Malleable cast iron	800	250										
N	Aluminum	260	75	-	-	-	-						
	Aluminum alloy	447	130										
S	Fe-based alloy	943	280	0.06	0.12	-	-						
	Co-based alloy	1076	320										
	Ni-based alloy	1177	350										
	Ti-alloy	1262	370										
H	Hardened steel	-	50-60HRC	-	-	-	-						
	Chilled cast iron	-	55HRC										

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

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Milling Inserts

CUTTING TOOL CATALOGUE

Milling Inserts	390
Milling Insert Denomination System	392
Geometry Application Guide	394
Geometry Introduction	395
Milling Grade Application Description	396
Milling Grade Application Recommendation Table	397
Milling Grade Introduction	398
SD Milling Insert	400
SE Milling Insert	402
OD Milling Insert	403
SN Milling Insert	404
XN Milling Insert	408
HN Milling Insert	411
ON Milling Insert	411
Cast Iron Finish Milling Insert	412
AO Milling Insert	413
AP Milling Insert	414
TD Milling Insert	416
SO Milling Insert	416
LN Milling Insert	417
WN Milling Insert	419
LNET Milling Insert	420
XD Milling Insert	421
LNMX Milling Insert	422
RPM Milling Insert	423
RO Milling Insert	423
RD/RP Milling Insert	425

Milling Insert Denomination System

A
1

O
2

1- Shape/Code

A	H	M	O	R
				
S	T	Z	X	Special
				

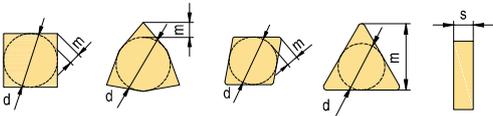
M
3

T
4

2- Clearance Angle

C	D	E	F
			
G	N	P	O
			Other clearance angle

3- Tolerance



Class	Unit	In.Circle dimension d	Nose height m	Thickness s
A	mm	± 0,025	± 0,005	± 0,025
C	mm	± 0,025	± 0,013	± 0,025
E	mm	± 0,025	± 0,025	± 0,025
F	mm	± 0,013	± 0,005	± 0,025
G	mm	± 0,025	± 0,025	± 0,13
H	mm	± 0,013	± 0,013	± 0,025
J	mm	*	± 0,005	± 0,025
K	mm	*	± 0,013	± 0,025
L	mm	*	± 0,025	± 0,025
M	mm	*	*	± 0,127
U	mm	*	*	± 0,127
N	mm	*	*	± 0,025

* For details refer to right and below tables

IC	Shape: C, E, H, M, O, P, S, T, R, W			
	d		m	
	J,K,L,M,N	U	M, N	U
4.76	± 0,05	± 0,08	± 0,08	± 0,13
5.56	± 0,05	± 0,08	± 0,08	± 0,13
6	± 0,05	± 0,08	± 0,08	± 0,13
6.35	± 0,05	± 0,08	± 0,08	± 0,13
7.94	± 0,05	± 0,08	± 0,08	± 0,13
8	± 0,05	± 0,08	± 0,08	± 0,13
9.525	± 0,05	± 0,08	± 0,08	± 0,13
10	± 0,05	± 0,08	± 0,08	± 0,13
12	± 0,08	± 0,13	± 0,13	± 0,2
12.7	± 0,08	± 0,13	± 0,13	± 0,2
15.875	± 0,1	± 0,18	± 0,15	± 0,27
16	± 0,1	± 0,18	± 0,15	± 0,27
19.05	± 0,1	± 0,18	± 0,15	± 0,27
20	± 0,1	± 0,18	± 0,15	± 0,27
25	± 0,13	± 0,25	± 0,18	± 0,38
25.4	± 0,13	± 0,25	± 0,18	± 0,38
31.75	± 0,15	± 0,25	± 0,2	± 0,38
32	± 0,15	± 0,25	± 0,2	± 0,38

M&N shape	D shape		V shape	
	d	m	d	m
5.56	± 0,05	± 0,11		
6.35	± 0,05	± 0,11	± 0,05	± 0,16
7.94	± 0,05	± 0,11	± 0,05	± 0,16
9.525	± 0,05	± 0,11	± 0,05	± 0,16
12.7	± 0,08	± 0,15	± 0,08	± 0,2
15.875	± 0,10	± 0,18	± 0,10	± 0,27
19.05	± 0,10	± 0,18	± 0,10	± 0,27

4- Clamping Type

A	B	C	F	G
				
H	J	M	N	Q
				
R	T	U	W	Z
				Special

12	04	08
5	6	7

5- Cutting Edge Length							
In. Circle dimension (mm)	H	M	O	R	S	T	Z
3.180						05	
3.970						06	
5.000				05			
5.560						09	
6.000				06			
6.350						11	
7.940						13	
8.000				08			
9.525				09	09	16	
10.000				10			
12.000				12			
12.700		04		12	12	22	
15.875				15	15	27	
16.000		06		16			
19.050				19	19	33	
20.000				20			
25.000				25	25		
25.400				25			
31.750				31			
32.000				32			

7- Corner Radius and Wiper Edge	
	00 = sharp
	01 = 0.1
	02 = 0.2
	04 = 0.4
	08 = 0.8
	12 = 1.2
	16 = 1.6
	20 = 2.0
	24 = 2.4
	28 = 2.8
	32 = 3.2
	40 = 4.0
	48 = 4.8
	56 = 5.6
	64 = 6.4
	X = others

Round insert: MO refers to metric dia. size

1 Approach angle (Entering angle) (Kr)	2 Clearance angle of wiper edge(n)
A = 45°	A = 3°
D = 60°	B = 5°
E = 75°	C = 7°
F = 85°	D = 15°
P = 90°	E = 20°
Z = Others	F = 25°
	G = 30°
	N = 0°
	P = 11°
	Z = Others

E	R	-	MM4
8	9	-	10

6- Insert Thickness	
	01=1.59mm
	T1=1.98mm
	02=2.38mm
	T2=2.78mm
	03=3.18mm
	T3=3.97mm
	04=4.76mm
	05=5.56mm
	06=6.35mm
	07=7.94mm
	09=9.52mm

8- Edge Preparation		
Sharp cutting edge	Honed cutting edge	Negative land
Double negative land	Negative land + honed	Double negative land + honed

9-Hand of Tool

Right hand	Left hand	Neutral

10- Geometry Refers to Geometry Introduction

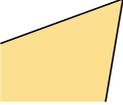
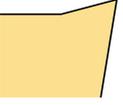
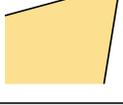
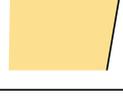
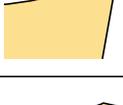
Milling Inserts

Geometry Application Guide

Materials				Milling geometry application						
				FM2	MM3	MM4	MR2	MR6	RR2	HR2
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	Suitable for machining aluminium alloy	Light cutting	General purpose	Medium machining	Roughing	Heavy roughing	Roughing
P	Unalloyed steel	<600	<180	-	●	●	●	●	-	-
		<950	<280	-	●	●	●	●	-	-
	Alloyed steel	700-950	200-280	-	●	●	●	●	-	-
		950-1200	280-355	-	●	●	●	●	-	-
		1200-1400	355-415	-	●	●	●	●	-	-
M	Duplex stainless steel	778	230	-	●	●	●	-	-	-
	Austenitic stainless steel	675	200	-	●	●	●	-	-	-
	Precipitation-hardening stainless steel	1013	300	-	●	●	●	-	-	-
K	Grey cast iron	700	220	-	-	●	●	●	●	●
	Nodular cast iron	880	260	-	-	●	●	●	●	●
	Malleable cast iron	800	250	-	-	●	●	●	●	●
N	Aluminum	260	75	●	-	-	-	-	-	-
	Aluminum alloy	447	130	●	-	-	-	-	-	-
S	Fe-based alloy	943	280	-	●	●	●	-	-	-
	Co-based alloy	1076	320	-	●	●	●	-	-	-
	Ni-based alloy	1177	350	-	●	●	●	-	-	-
	Ti-alloy	1262	370	-	●	●	●	-	-	-
H	Hardened steel	-	50-60HRC	-	-	●	●	-	-	-
	Chilled cast iron	-	55HRC	-	-	●	●	-	-	-

- 1st choice
- ◐ 2nd choice
- Inapplicable

Milling Geometry Introduction

Insert geometry	Edge shape	Application
FM2		<ul style="list-style-type: none"> ▪ Low cutting force, for weak machining condition ▪ Sharp geometry ▪ For aluminium material machining
MM3		<ul style="list-style-type: none"> ▪ Low cutting force, for weak machining condition ▪ Sharp geometry ▪ For steel, stainless-steel and heat resistant alloy machining
MM4		<ul style="list-style-type: none"> ▪ For medium machining condition ▪ Universal geometry ▪ For machining most materials
MR2		<ul style="list-style-type: none"> ▪ For medium or better machining condition ▪ Universal geometry ▪ For machining most materials
MR6		<ul style="list-style-type: none"> ▪ For stable machining condition ▪ Roughing geometry ▪ For machining most materials
HR2		<ul style="list-style-type: none"> ▪ For stable machining condition ▪ Roughing geometry ▪ Mainly for cast iron machining
RR2		<ul style="list-style-type: none"> ▪ For stable machining condition ▪ Heavy roughing geometry ▪ Mainly for cast iron and steel machining
IT		<ul style="list-style-type: none"> ▪ Sharp geometry, for specified product
DT		<ul style="list-style-type: none"> ▪ Universal geometry, for specified product

Grade Application Guide

Material List of Indexable Milling Inserts													
Material Group	Material classification	ISO	Coated									Uncoated	
			PVD					CVD					
P	unalloy steels / Alloyed steels	P01											
		P05											
		P10											
		P15											
		P20	AP251U										
		P25											
		P30		AP351U		AP351M							AC251P
		P35											
		P40											
		P45			AP351U		AP403M						
		P50											
M	Stainless steels	M01											
		M05											
		M10											
		M15	AP251U										
		M20											
		M25											
		M30		AP351U		AP351M							
		M35											
		M40											
		M45			AP351U		AP403M						
		M50					AP403S						
K	Cast iron	K01											
		K05											
		K10											
		K15											
		K20											
		K25											
		K30											
		K35											
		K40											
		K45											
		K50											
N	Aluminum/ Aluminum alloys	N01											
		N05											
		N10											
		N15											
		N20											
		N25											
		N30											
		N35											
		N40											
		N45											
		N50											
S	Heat resistant alloys	S01											
		S05											
		S10											
		S15											
		S20											
		S25											
		S30				AP351M							
		S35											
		S40					AP403M						
		S45						AP403S					
		S50											
H	Hardened steels/ Chilled cast iron	H01											
		H05											
		H10											
		H15											
		H20											
		H25											
		H30											

Grade Application Guide

Materials				Milling grade application										
				PVD coated							CVD coated			Uncoated
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AP251U	AP351U	AP351M	AP403M	AP251K	AP403S	AP151H	AC251P	AC151K	AC301K	AW100K
P	Unalloyed steel	<600	<180	●	●	●	●	-	-	-	●	-	-	-
		<950	<280	●	●	●	●	-	-	-	●	-	-	-
	Alloyed steel	700-950	200-280	●	●	●	●	-	-	-	●	-	-	-
		950-1200	280-355	●	●	●	●	-	-	-	●	-	-	-
		1200-1400	355-415	●	●	●	●	-	-	-	●	-	-	-
M	Duplex stainless steel	778	230	●	●	●	●	-	●	-	-	-	-	-
	Austenitic stainless steel	675	200	●	●	●	●	-	●	-	-	-	-	-
	Precipitation-hardening stainless steel	1013	300	●	●	●	●	-	●	-	-	-	-	-
K	Grey cast iron	700	220	-	-	-	-	●	-	●	●	●	●	-
	Nodular cast iron	880	260	-	-	-	-	●	-	●	●	●	●	-
	Malleable cast iron	800	250	-	-	-	-	●	-	●	●	●	●	-
N	Aluminum	260	75	-	-	-	-	-	-	-	-	-	-	●
	Aluminum alloy	447	130	-	-	-	-	-	-	-	-	-	-	●
S	Fe-based alloy	943	280	-	●	●	●	-	●	-	-	-	-	-
	Co-based alloy	1076	320	-	●	●	●	-	●	-	-	-	-	-
	Ni-based alloy	1177	350	-	●	●	●	-	●	-	-	-	-	-
	Ti-alloy	1262	370	-	●	●	●	-	●	-	-	-	-	●
H	Hardened steel	-	50-60HRC	-	-	-	-	-	-	●	-	-	-	-
	Chilled cast iron	-	55HRC	-	-	-	-	-	-	●	-	-	-	-

- 1st choice
- ◐ 2nd choice
- Inapplicable

Milling Inserts

Grade for Milling



Steel, alloyed steel, unalloyed steel

Basic grade

AP251U P25(P15-P35)

PVD-coated grade, suitable for most applications. First choice for steel machining. It is recommended to be used in rough to finish machining of steel under stable working conditions, good for dry and wet machining with small cutting width, complex tool path and sticky materials.

AC251P P35(P25-P40)

CVD coated grade is suitable for big cutting depth, medium to high speed milling of steel under bad machining conditions.

Supplemental grade

AP351M P35(P25-P45)

PVD coated grade, medium hardness substrate, which is a supplement for AP251U in steel milling when high-toughness is requested.

AP351U P35(P30-P45)

PVD coated grade, medium hardness substrate, which is a supplement for AP251U in steel milling when high-toughness is requested.



Stainless steel, austenite stainless steel, martensite stainless steel

Basic grade

AP351M M35(M25-M45)

PVD coated grade is used for milling stainless steel and steel at medium and low speed under bad machining conditions.

AP403M M35(M35-M50)

Ultra-thick PVD coated grade is the first choice for stainless steel milling. It is suitable for rough milling of stainless steel under bad machining conditions.

Supplemental grade

AP251U M25(M15-M35)

PVD coated grade is used in rough and finish milling of stainless steel under very stable machining conditions.

AP403S M45(M35-M50)

PVD coated grade, the substrate has both toughness and red hardness characteristics, and is suitable for rough milling of stainless steel under bad machining conditions. Milling at low cutting speed can get longer tool life.

AP351U M35(M30-M45)

PVD coated grade, medium hardness substrate, which is a supplement for AP251U in steel milling when high-toughness is requested.



Cast iron, grey cast iron, nodular cast iron

Basic grade

AC301K K25(K10-K35)

CVD coated grade, suitable for semi-finish milling and rough milling of grey cast iron at medium and high cutting speed, Recommended for dry cutting conditions, can achieve longer tool life.

AC151K K25(K10-K35)

CVD coated grade, the combination of a high wear-resistant substrate and a high bonding strength CVD coating provides excellent performance in semi-finish and rough milling of cast iron materials.

AP251K K25(K15-K40)

PVD coated grade is suitable for semi-finish and rough milling of grey cast iron and nodular cast iron at medium and low cutting speed, and has good tool life under dry and wet conditions.

Supplemental grade

AP151H K15(K10-K20)

PVD coated grade is suitable for finish milling of grey cast iron and nodular cast iron, which can get constant surface quality and longer tool life.

AC251P K35(K25-K40)

PVD coated grade recommended for high speed dry cutting of cast iron.

N Non-ferrous metals

Basic grade

AW100K N15 (N10-N20)

Uncoated grade, combined with sharp cutting edge, used in aluminum alloy milling.

S Heat resistant alloy

Basic grade

AP403S S45(S35-S50)

PVD coated grade, the substrate has both toughness and red hardness characteristics, and is the first choice for titanium alloy machining, as well as the machining of heat resistant alloy under weak rigidity. It is applicable to the milling at low cutting speed and can get longer tool life.

Supplemental grade

AP351M S35(S25-S45)

PVD coated grade is suitable for semi-finishing to light rough machining of heat resistant alloy and titanium alloys.

AP403M S45(S35-S50)

The ultra-thick PVD coated grade is suitable for low-speed milling of heat resistant alloy and titanium alloys when high toughness is requested, especially in case of large cutting width.

H Hard material, hardened steel

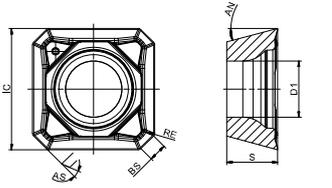
Basic grade

AP151H H15(H10-H20)

PVD coated grade, suitable for milling hardened steel, can be used in rough and finish milling, meeting the needs of most occasions.

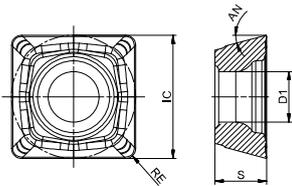
SD..09T3..

Positive square milling inserts



Insert shape	Product code	Dimension (mm)						Machining conditions											
		IC	S	RE	BS	D1	AN	● Good Conditions					● General Conditions						
												✖ Bad Conditions							
										P		M		K		N		S	
										AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	SDMT 09T304EN-MM3	9.525	3.97	0.4	-	4.4	15°	●	●	●					●	●			
	SDMT 09T308EN-MM3	9.525	3.97	0.8	-	4.4	15°	●	●						●	●			
	SDGT 09T3AEEEN-MM4	9.252	3.97	0.3	1.4	4.4	15°	○	○										
	SDGT 09T3PDER-MR6	9.516	3.97	0.8	1.2	4.4	15°	○	●						●				

● : Standard stock ○ : Made-to-Order

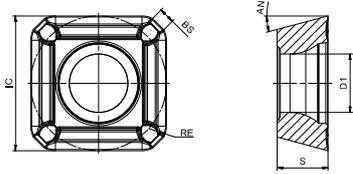


Insert shape	Product code	Dimension (mm)					Machining conditions												
		IC	S	RE	D1	AN	● Good Conditions					● General Conditions							
												✖ Bad Conditions							
										P		M		K		N		S	
										AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	SDMT 09T308N-MM4	9.525	3.97	0.8	3.9	15°	●				●	●	●			●			
	SDMT 09T320N-MM4	9.520	3.97	2.0	3.9	15°	●				●	●	●			●			●
	SDMT 09T308N-MR2	9.525	3.97	0.8	3.9	15°	●				●	●	●			●			
	SDMT 09T320N-MR2	9.520	3.97	2.0	3.9	15°	●				●	●	●			●			

● : Standard stock ○ : Made-to-Order

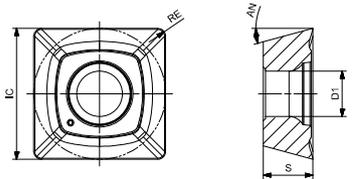
SD..1204..

Positive square milling inserts



Insert shape	Product code	IC	S	RE	BS	D1	AN	Machining conditions									
								● Good Conditions ● General Conditions ⊕ Bad Conditions									
								●	⊕	⊕	⊕	⊕	●	●	●	●	⊕
Dimension (mm)								P		M		K		N		S	
								AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	SDMT 120408EN-MM4	12.7	4.76	0.8	-	5.5	15°	●	●	●		●	●	●			
	SDMT 120412EN-MM3	12.7	4.76	1.2	-	5.5	15°	●	●	○				●			
	SDKT 1204AEEN-MR2	12.7	4.76	2.3	1.5	5.5	15°	○		●			●				

● : Standard stock ○ : Made-to-Order



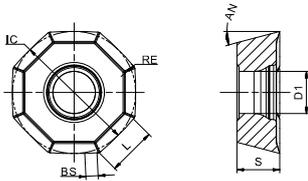
Insert shape	Product code	IC	S	RE	D1	AN	Machining conditions										
							● Good Conditions ● General Conditions ⊕ Bad Conditions										
							●	⊕	⊕	⊕	⊕	●	●	●	●	⊕	
Dimension (mm)							P		M		K		N		S		
								AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	SDMT 120408N-MM4	12.7	4.76	0.8	4.4	15.3°	●				●	●	●		●		
	SDMT 120420N-MM4	12.7	4.76	2.0	4.4	15.3°	○						●				
	SDMT 120425N-MM4	12.7	4.76	2.5	4.4	15.3°				○	●						○
	SDMT 120430N-MM4	12.7	4.76	3.0	4.4	15.3°		○					●				
	SDMT 120408N-MR2	12.7	4.76	0.8	4.4	15.3°	●		●	●	●	●	●		●		

● : Standard stock ○ : Made-to-Order

Milling Inserts

OD..0605..

Positive octagonal milling inserts

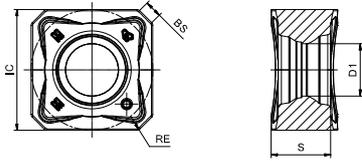


Insert shape	Product code	Dimension (mm)							Machining conditions										
		L	IC	S	RE	BS	D1	AN	● Good Conditions			● General Conditions			● Bad Conditions				
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
									P		M		K		N		S		
									AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	ODET 0605APFN-FM2	6.3	16	5.56	0.8	1.6	5.5	15°										●	
	ODMT 060508EN-MM3	6.3	16	5.56	0.8	-	5.5	15°	●	●	●			●	●				
	ODMT 060512EN-MM3	6.1	16	5.56	1.2	-	5.5	15°	●			○							●
	ODHT 0605APEN-MM3	6.3	16	5.56	0.8	1.6	5.5	15°	●	●	●	●		●	●	●			●
	ODEW 0605APSR-HR2	6.5	16	5.56	-	1.6	5.5	15°						●	●				
	ODMW 060512EN-HR2	6.1	16	5.56	1.2	-	5.5	15°						●	●				

● : Standard stock ○ : Made-to-Order

SN..1206ANN..

Negative short wiper milling inserts (applicable to AFM45-SN12 milling cutter)

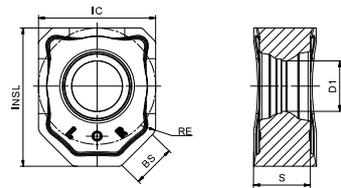


Insert shape	Product code	IC	S	RE	BS	D1	Machining conditions															
							Dimension (mm)										● Good Conditions		● General Conditions		⚠ Bad Conditions	
							P		M		K		N		S		●	●	●	●	⚠	
		AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S											
	SNHX 1206ANN-FM2	12.7	6.24	0.5	1.7	5.5													●			
	SNGX 1206ANN-MM3	12.7	6.24	0.4	1.8	5.5	●	●	●				●	●	●							
	SNMX 1206ANN-MM3	12.7	6.25	0.4	1.8	5.5	●	●	○				●	●								
	SNGX 1206ANN-MM4	12.7	6.22	0.4	1.8	5.5	●		●		●	●		●								
	SNMX 1206ANN-MM4	12.7	6.22	0.4	1.8	5.5	●	●	●		●	●	●	●								
	SNGX 1206ANN-MR6	12.7	6.25	0.4	1.8	5.5	●	●	○			●	●	●								
	SNMX 1206ANN-MR6	12.7	6.25	0.4	1.8	5.5	○	●	○			●	●	●								
	SNGX 1206ANN-RR2	12.7	6.29	0.5	1.7	5.5	○	●	○			●	●	○								

● : Standard stock ○ : Made-to-Order

SNHX 1206ANN..

Negative long wiper milling inserts (applicable to AFM45-SN12 milling cutter)

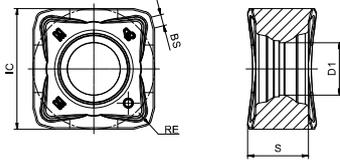


Insert shape	Product code	INSL	IC	S	RE	BS	D1	Machining conditions															
								Dimension (mm)										● Good Conditions		● General Conditions		⚠ Bad Conditions	
								P		M		K		N		S		●	●	●	●	⚠	
		AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP405S												
	SNHX 1206ANN-W	15.1	12.7	6.15	1.2	4.7	5.5	●						●	●	●							

● : Standard stock ○ : Made-to-Order

SN..1206ENN..

Negative short wiper milling inserts (applicable to AFM75-SN12 milling cutter)

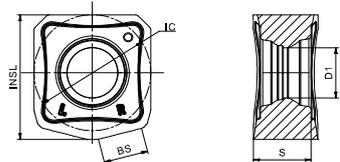


Insert shape	Product code	Dimension (mm)					Machining conditions														
		IC	S	RE	BS	D1	● Good Conditions					● General Conditions									
							● Bad Conditions		● Bad Conditions		● Bad Conditions		● Bad Conditions		● Bad Conditions						
							P	M	K	N	S										
	SNGX 1206ENN-MM3	12.7	6.36	0.8	1.2	5.5	●	●	○			●	●	○							
	SNGX 1206ENN-MM4	12.7	6.34	0.8	1.2	5.5	●	●	●			●	●								
	SNMX 1206ENN-MM4	12.7	6.34	0.8	1.2	5.5			○	●	●										
	SNGX 1206ENN-MR6	12.7	6.32	0.8	1.2	5.5	●	●	●			●	●								

● : Standard stock ○ : Made-to-Order

SNHX 1206ENN..

Negative long wiper milling inserts (applicable to AFM75-SN12 milling cutter)

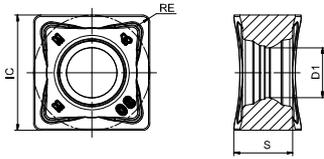


Insert shape	Product code	Dimension (mm)						Machining conditions													
		INSL	IC	S	RE	BS	D1	● Good Conditions					● General Conditions								
								● Bad Conditions		● Bad Conditions		● Bad Conditions		● Bad Conditions		● Bad Conditions					
							P	M	K	N	S										
	SNHX 1206ENN-W	13.66	12.7	6.24	0.6	4.8	5.5	●		●				●							

● : Standard stock ○ : Made-to-Order

SN..1206..

Negative milling cutter with corner radius

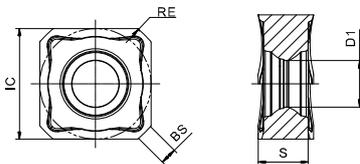


Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions											
		IC	S	RE	BS	D1	Dimension (mm)											
							P			M			K			N	S	
AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S									
	SNMX 120612-MM3	12.7	6.40	1.2	-	5.5	○	●	○		●	●	●					
	SNGX 120608-MM4	12.7	6.43	0.8	-	5.5	●	●	●			●	●	●				
	SNGX 120612-MM4	12.7	6.38	1.2	-	5.5	●					●	●	●				
	SNMX 120608-MM4	12.7	6.43	0.8	-	5.5	●	●				●	●	●				
	SNMX 120612-MM4	12.7	6.38	1.2	-	5.5	●	●	●			●	●	●				
	SNMX 120620-MM4	12.7	6.28	2.0	-	5.5		●	○			●	●	●				
	SNMX 120630-MM4	12.7	6.14	3.0	-	5.5						●						
	SNMX 120612-MR6	12.7	6.41	1.2	-	5.5	●	●	●			●	●	●				
	SNMX 120612-RR2	12.7	6.44	1.2	-	5.5	●	●	○			●	●					
	SNMX 120620-RR2	12.7	6.34	2.0	-	5.5		●	●			●	●					
	SNMX 120612R-MM4	12.7	6.85	1.2	-	5.5	●	●	○		●	●						

● : Standard stock ○ : Made-to-Order

SN..1909ANN..

Negative short wiper milling inserts (applicable to AFM45-SN19 milling cutter)

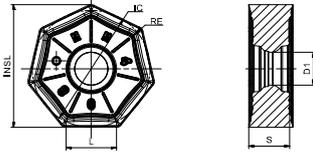


Insert shape	Product code	Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions											
		IC	S	RE	BS	D1	Dimension (mm)											
							P			M			K			N	S	
AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S									
	SNGX 1909ANN-MM3	19.05	8.58	0.4	2.8	8		●										
	SNGX 1909ANN-MR6	19.05	8.50	0.8	2.7	8		●		●								

● : Standard stock ○ : Made-to-Order

XN..0705..

Negative heptagonal milling inserts with corner radius

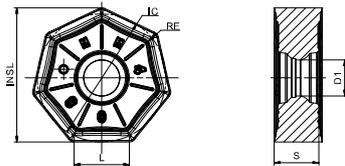


		Machining conditions							● Good Conditions ● General Conditions ⚡ Bad Conditions									
		Dimension (mm)							P		M		K		N		S	
Insert shape	Product code	L	INSL	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	XNMU 070508-MM4	6.6	15.21	14.5	5.0	0.8	-	4.07	●	●	●		●	●	●	●		
	XNMU 070508-MM4N	6.6	15.21	14.5	5.3	0.8	-	4.07						●		●		

● : Standard stock ○ : Made-to-Order

XN..0906..

Negative heptagonal milling inserts with corner radius

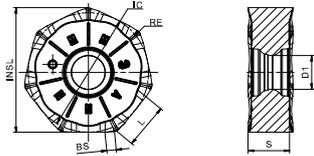


		Machining conditions							● Good Conditions ● General Conditions ⚡ Bad Conditions									
		Dimension (mm)							P		M		K		N		S	
Insert shape	Product code	L	INSL	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	XNMU 090612-MM4	8.6	19.97	19.0	5.875	1.2	-	5.5	●	●	●			●	●	●		
	XNMU 090612-MM4N	8.6	19.97	19.0	5.875	1.2	-	5.5						●				

● : Standard stock ○ : Made-to-Order

XN..0906ANN..

Negative heptagonal short wiper milling inserts

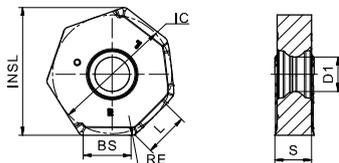


		Machining conditions							● Good Conditions ● General Conditions ⊛ Bad Conditions									
		Dimension (mm)							P	M	K	N	S					
Insert shape	Product code	L	INSL	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	XNGU 0906ANN-MM3	7.3	19.86	19.0	5.875	0.8	1.4	5.5		●					●			
	XNGU 0906ANN-MM4	7.3	19.86	19.0	5.875	0.8	1.4	5.5	○	●	●			●	●	●		
	XNMU 0906ANN-MR6	7.3	19.86	19.0	5.927	0.8	1.4	5.5	●		●			●	●	●		
	XNMF 0906ANN-MR6	7.3	19.86	19.0	5.927	0.8	1.4	3.0						●	●	●		

● : Standard stock ○ : Made-to-Order

XN..0906ANN..W

Negative heptagonal long wiper milling inserts

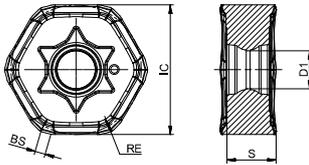


		Machining conditions							● Good Conditions ● General Conditions ⊛ Bad Conditions									
		Dimension (mm)							P	M	K	N	S					
Insert shape	Product code	L	INSL	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	XNGX 0906ANN-W	7.2	19.86	19.0	5.88	1.0	7.6	5.5	●						●			

● : Standard stock ○ : Made-to-Order

HN..0906..

Negative hexagonal milling inserts

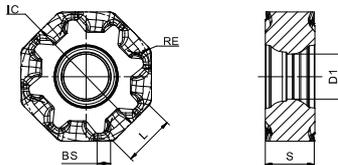


		Machining conditions						● Good Conditions ● General Conditions ☒ Bad Conditions									
		Dimension (mm)						P		M		K		N		S	
Insert shape	Product code	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	HNGX 0906ANN-MR6	16.5	6.35	1.0	1.1	4.86	●		●	○	●	●		●			
	HNMX 0906ANN-MM4	16.5	6.35	1.0	1.1	4.86	●		●	○	●	●		●			
	HNMX 090612-MM4	16.5	6.35	1.2	-	4.86	●		●	○	●	●		●			

● : Standard stock ○ : Made-to-Order

ON..0504..

Negative octagonal milling inserts

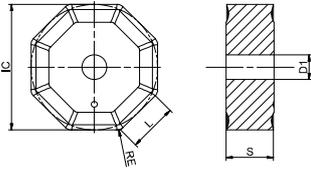


		Machining conditions							● Good Conditions ● General Conditions ☒ Bad Conditions									
		Dimension (mm)							P		M		K		N		S	
Insert shape	Product code	L	IC	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	ONHU 050408-MM3	4.9	12.7	4.76	0.8	-	4.4	●										
	ONMU 050408-MM4	4.9	12.7	4.76	0.8	-	4.4	●	●				●	●	●			
	ONHU 0504ZNR-MM3	5.0	12.7	4.76	0.8	1.4	4.4	○			●							

● : Standard stock ○ : Made-to-Order

ON..0504..

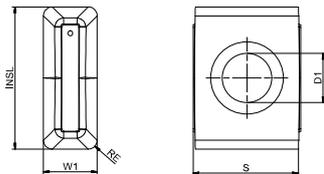
Cast iron finish milling cutter roughing inserts



		Machining conditions						● Good Conditions ● General Conditions ⊕ Bad Conditions									
		Dimension (mm)						●	⊕	⊕	⊕	⊕	●	●	●	⊕	●
		Dimension (mm)						P		M		K		S		H	
Insert shape	Product code	L	INSL	IC	S	RE	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	ONHF 050408-MM3	4.9	-	12.7	4.76	0.8	2.5										●

LN..1204..

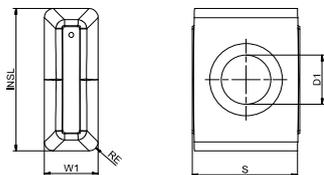
Cast iron finish milling cutter finishing inserts



		Machining conditions						● Good Conditions ● General Conditions ⊕ Bad Conditions									
		Dimension (mm)						●	⊕	⊕	⊕	⊕	●	●	●	⊕	●
		Dimension (mm)						P		M		K		S		H	
Insert shape	Product code	W1	INSL	IC	S	RE	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	LNHQ 120408FN-W	4.76	12.7	-	9.4	0.8	4.4										●

LN..1504..

Cast iron finish milling cutter finishing inserts

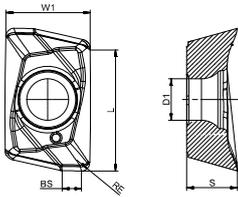


		Machining conditions						● Good Conditions ● General Conditions ⊕ Bad Conditions									
		Dimension (mm)						●	⊕	⊕	⊕	⊕	●	●	●	⊕	●
		Dimension (mm)						P		M		K		S		H	
Insert shape	Product code	W1	INSL	IC	S	RE	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	LNHQ 150416FN-W	4.76	15.875	-	9.25	1.6	4.4										●

● : Standard stock ○ : Made-to-Order

AO..0602..

Positive square shoulder milling cutter inserts

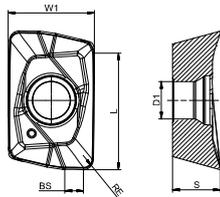


		Machining conditions							● Good Conditions ● General Conditions ☒ Bad Conditions									
		Dimension (mm)							P		M		K		S		H	
Insert shape	Product code	L	W1	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	AOMT 060204ER-MM3	5.8	4.1	2.45	0.4	0.9	2.0	15°	●			●	●				●	
	AOMT 060208ER-MM3	5.8	4.1	2.45	0.8	0.5	2.0	15°	●			●	●				●	

● : Standard stock ○ : Made-to-Order

AO..10T3..

Positive square shoulder milling cutter inserts



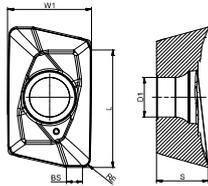
		Machining conditions							● Good Conditions ● General Conditions ☒ Bad Conditions									
		Dimension (mm)							P		M		K		S		H	
Insert shape	Product code	L	W1	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	AOMT 10T308ER-MM4	9.3	6.85	3.83	0.8	1.5	3.0	15°	●			●					●	●
	AOMT 10T316ER-MM4	9.3	6.85	3.83	1.6	1.2	3.0	15°				●	●				●	
	AOMT 10T331ER-MM4	9.4	6.85	3.83	3.1	-	3.0	15°		○							●	

● : Standard stock ○ : Made-to-Order

Milling Inserts

AO..1204..

Positive square shoulder milling cutter inserts

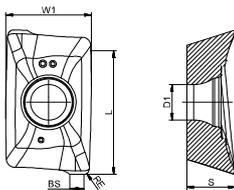


Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ● Bad Conditions										
		Dimension (mm)							P		M		K			N		S	
		L	W1	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S	
	AOHT 120408ER-FM2	11.3	8.15	5.07	0.8	1.5	3.9	15°									●		
	AOHT 120404ER-MM3	11.3	8.15	5.07	0.4	1.9	3.9	15°	●			●	●					●	
	AOHT 120408ER-MM3	11.3	8.15	5.07	0.8	1.5	3.9	15°	●			●	●	●				●	
	AOMT 120408ER-MM3	11.3	8.15	5.07	0.8	1.4	3.9	15°	●			●	●	●				●	
	AOMT 120404ER-MM4	11.5	8.15	5.07	0.4	1.9	3.9	15°	●			●	●	●				●	
	AOMT 120408ER-MM4	11.5	8.15	5.07	0.8	1.5	3.9	15°	●	●		●	●	●				●	
	AOMT 120412ER-MM4	11.5	8.15	5.07	1.2	1.2	3.9	15°				●	●					●	
	AOMT 120416ER-MM4	11.3	8.15	5.07	1.6	1.2	3.9	15°				●	●					●	
	AOMT 120420ER-MM4	11.2	8.15	5.07	2.0	1.0	3.9	15°	●			●	●					●	
	AOMT 120424ER-MM4	11.0	8.15	5.07	2.4	0.9	3.9	15°	●			●	●					●	
	AOMT 120431ER-MM4	10.9	8.15	5.07	3.1	0.6	3.9	15°	●			●	●					●	
	AOMT 120440ER-MM4	10.6	8.15	5.07	4.0	0.8	3.9	15°				●	●					●	

● : Standard stock ○ : Made-to-Order

AP.1003..

Positive square shoulder milling cutter inserts

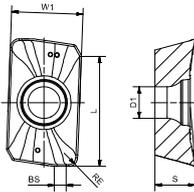


Insert shape	Product code	Machining conditions							● Good Conditions ● General Conditions ● Bad Conditions										
		Dimension (mm)							P		M		K			S		H	
		L	W1	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H	
	APKT 1003PDER-IT	10.8	6.66	3.8	0.8	1.1	2.8	11°	●	●							●		

● : Standard stock ○ : Made-to-Order

AP.1135..

Positive square shoulder milling cutter inserts

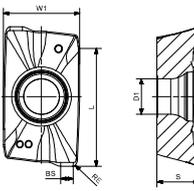


Insert shape	Product code	Dimension (mm)							Machining conditions																			
		L	W1	S	RE	BS	D1	AN	● Good Conditions ● General Conditions ☒ Bad Conditions																			
									P	M	K			N	H													
									AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP151H	●	●		●						●
	APMT 1135PDER	9.7	6.26	3.5	0.8	1.2	2.8	11°	●	●		●		●					●	●								●
	APMT 113508PDER	9.7	6.17	3.5	0.8	0.8	2.9	11°	●	●									●	●								

● : Standard stock ○ : Made-to-Order

AP.1604..

Positive square shoulder milling cutter inserts

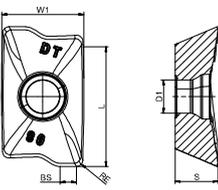


Insert shape	Product code	Dimension (mm)							Machining conditions																			
		L	W1	S	RE	BS	D1	AN	● Good Conditions ● General Conditions ☒ Bad Conditions																			
									P	M	K			N	H													
									AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP151H	●	●	●	●		●				●
	APMT 1604PDER	14.7	9.37	5.17	0.8	1.5	4.4	11°	●	●	●	●		●					●	●	●	●		●				●
	APHT 1604PDER -FM2	14.7	9.35	5.17	0.8	1.4	4.4	11°									●									●		

● : Standard stock ○ : Made-to-Order

AP.1705..

Positive square shoulder milling cutter inserts



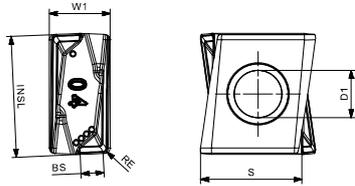
Insert shape	Product code	Dimension (mm)							Machining conditions																			
		L	W1	S	RE	BS	D1	AN	● Good Conditions ● General Conditions ☒ Bad Conditions																			
									P	M	K			N	H													
									AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP151H	●	●	○		●	●				
	APKT 1705PER-DT	16.5	10.76	5.63	0.8	2.2	4.4	11°	●	●	○		●	●					●	●	○		●	●				
	APKT 170516R-DT	16.8	10.74	5.63	1.6	1.7	4.4	11°	●					●					●				●					

● : Standard stock ○ : Made-to-Order

Milling Inserts

LN..0904..

Negative square shoulder milling cutter inserts

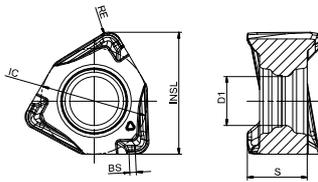


Insert shape	Product code	Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions											
		Dimension (mm)						P		M		K		N		S			
		INSL	W1	S	RE	BS	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S		
	LNHU 090404ER-FM2	9	4.5	7.5	0.4	1.7	3.5											●	
	LNHU 090404ER-MM3	9	4.5	7.5	0.4	1.7	3.5		●			●							
	LNHU 090404ER-MM4	9	4.5	7.5	0.4	1.7	3.5	●				●	●						
	LNHU 090408ER-MM4	9	4.5	7.5	0.8	1.4	3.5	●			●	●	●						
	LNHU 090404ER-MR2	9	4.5	7.5	0.4	1.7	3.5	●	●			●	●	●					
	LNHU 090408ER-MR2	9	4.5	7.45	0.8	1.4	3.5	●		●		●	●	●	●				
	LNHU 090412ER-MR2	9	4.5	7.4	1.2	1.0	3.5	●				●	●	●					
	LNHU 090416ER-MR2	9	4.5	7.35	1.6	0.65	3.5	●				●	●	●					
	LNHU 090420ER-MR2	9	4.5	7.3	2.0	0.2	3.5	●				●	●	●					
	LNHU 0904PDER-W	9	4.5	7.48	0.4	3.6	3.5	●						●					

● : Standard stock ○ : Made-to-Order

WN..0403..

Negative square shoulder milling cutter inserts

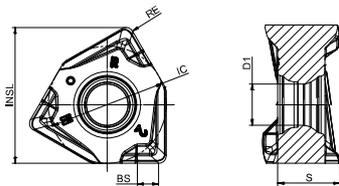


Insert shape	Product code	Dimension (mm)						Machining conditions																
		INSL	IC	S	RE	BS	D1	● Good Conditions		● General Conditions		● Bad Conditions												
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	WNGU 040308R-MM4	7.7	6.7	3.8	0.8	0.4	3.0	●				●	●	●										

● : Standard stock ○ : Made-to-Order

WN..0806..

Negative square shoulder milling cutter inserts



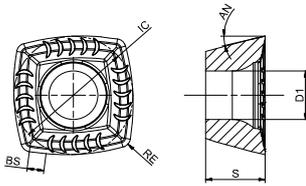
Insert shape	Product code	Dimension (mm)						Machining conditions																
		INSL	IC	S	RE	BS	D1	● Good Conditions		● General Conditions		● Bad Conditions												
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
	WNMU 080608R-MM3	14.5	12.5	6.58	0.8	2.2	4.4	●		○	●	●	●	●										
	WNMU 080608R-MM4	14.5	12.5	6.58	0.8	2.2	4.4	●	○	●	●	●	●	●	○									
	WNMU 080612R-MM4	14.3	12.5	6.47	1.2	1.2	4.4	●			●	●	●	●		●								
	WNMU 080616R-MM4	14.3	12.5	6.50	1.6	0.8	4.4	●			●	●	●	●		●								
	WNMU 080608R-MR2	14.5	12.5	6.60	0.8	2.2	4.4	●	○		●	●	●	●	○									
	WNMU 080612R-MR2	14.3	12.5	6.47	1.2	1.2	4.4	●			●	●	●	●										
	WNMU 080616R-MR2	14.3	12.5	6.50	1.6	0.8	4.4	●				●	●	●		●								

● : Standard stock ○ : Made-to-Order

Milling Inserts

XD..0904..

Positive high feed milling inserts

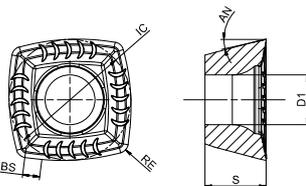


		Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)						P		M		K		S		H	
Insert shape	Product code	IC	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	XDLT 090408ER-MM3	9.525	4.76	0.8	1.3	3.9	15°	●	●	●				●		●	
	XDMW 090408ER-HR2	9.506	4.76	0.8	1.6	3.9	15°						○	●			

● : Standard stock ○ : Made-to-Order

XD..1205..

Positive high feed milling inserts

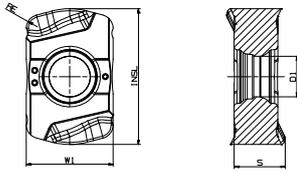


		Machining conditions						● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)						P		M		K		S		H	
Insert shape	Product code	IC	S	RE	BS	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	XDLT 120508ER-MM3	12.7	5.56	0.8	2.2	4.4	15°	●	●	●		○	●	●	●	●	
	XDLT 120512ER-MM3	12.7	5.56	1.2	2.2	4.4	15°	●	●	●			●	●			
	XDMW 120508ER-HR2	12.7	5.56	0.8	2.5	4.4	15°	●					○	●			

● : Standard stock ○ : Made-to-Order

LN..0604..

Negative high feed milling inserts

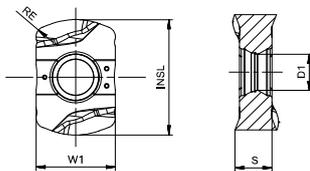


		Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)					P		M		K		S		H	
Insert shape	Product code	INSL	W1	S	RE	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	LNMX 060410ER-MM3	10	6.35	3.6	1.0	3	●	●			●				●	●
	LNMX 060410ER-MM4	10	6.35	3.6	1.0	3	●	●	○			○			●	●
	LNMX 060410ER-MM4N	10	6.35	3.6	1.0	3	●	●			●		●		●	●

● : Standard stock ○ : Made-to-Order

LN..1005..

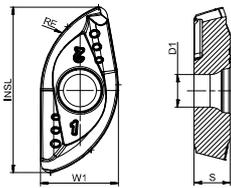
Negative high feed milling inserts



		Machining conditions					● Good Conditions ● General Conditions ✖ Bad Conditions									
		Dimension (mm)					P		M		K		S		H	
Insert shape	Product code	INSL	W1	S	RE	D1	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AP403S	AP151H
	LNMX 100512ER-MM3	13.5	9.2	4.55	1.2	4.21	●	●		●	●				●	●
	LNMX 100512ER-MM4	13.5	9.2	4.55	1.2	4.21	●	●			●					●

● : Standard stock ○ : Made-to-Order

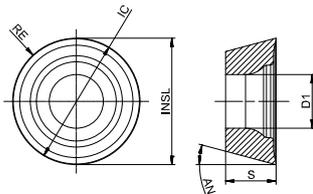
RPM..
Profile milling inserts



Insert shape	Product code	Dimension (mm)					Machining conditions																				
		INSL	W1	S	RE	D1	● Good Conditions					● General Conditions															
							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
							P					M					K					N					S
	RPM 080ER-MM4	14.77	6.9	3.2	8.2	2.9	●					●	●														●
	RPM 100ER-MM4	18.85	8.63	3.9	10.3	3.5	●						●	○													●
	RPM 160ER-MM4	29.54	12.68	6.2	16.4	4.6							○	●													

● : Standard stock ○ : Made-to-Order

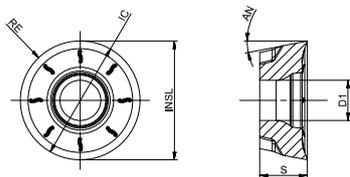
RO..0803..
Profile milling inserts



Insert shape	Product code	Dimension (mm)						Machining conditions																				
		INSL	IC	S	RE	D1	AN	● Good Conditions					● General Conditions															
								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
								P					M					K					N					S
	ROHT 0803MOE-MM3	8	8	3.18	-	3.4	15°										●											●
	ROHT 0803M4E-MM3	8	8	3.18	-	3.4	15°										●											●

● : Standard stock ○ : Made-to-Order

RO..10T3..
Profile milling inserts

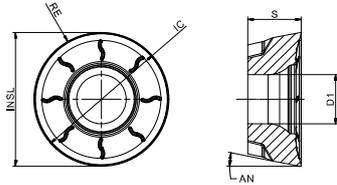


Insert shape	Product code	Dimension (mm)						Machining conditions																				
		INSL	IC	S	RE	D1	AN	● Good Conditions					● General Conditions															
								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
								P					M					K					N					S
	ROHT 10T3M8E-MM3	10	10	3.97	-	3.4	11°										●											●
	ROMT 10T3M4E-MR6	10	10	3.97	-	3.4	11°							○			●											●

● : Standard stock ○ : Made-to-Order

Milling Inserts

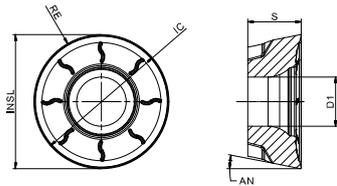
RO..1204.. Profile milling inserts



		Machining conditions						● Good Conditions ● General Conditions ☒ Bad Conditions									
		Dimension (mm)						●	●	●	●	●	●	●	●	●	●
		Dimension (mm)						P		M		K		N	S		
Insert shape	Product code	INSL	IC	S	RE	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	ROHT 1204M4E-MM3	12	12	4.76	-	4.4	11°					●					●
	ROHT 1204M6E-MM3	12	12	4.76	-	4.4	11°					●					●
	ROMT 1204M6E-MR6	12	12	4.76	-	4.4	11°	○				●					●

● : Standard stock ○ : Made-to-Order

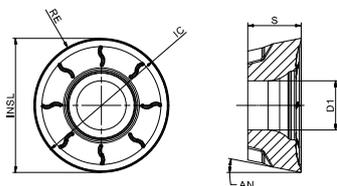
RO..1605.. Profile milling inserts



		Machining conditions						● Good Conditions ● General Conditions ☒ Bad Conditions									
		Dimension (mm)						●	●	●	●	●	●	●	●	●	●
		Dimension (mm)						P		M		K		N	S		
Insert shape	Product code	INSL	IC	S	RE	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	ROHT 1605M8E-MM3	16	16	5.56	-	5.5	11°					●					●
	ROMT 1605M6E-MR6	16	16	5.56	-	5.5	11°			●		●					●

● : Standard stock ○ : Made-to-Order

RO..2006.. Profile milling inserts



		Machining conditions						● Good Conditions ● General Conditions ☒ Bad Conditions									
		Dimension (mm)						●	●	●	●	●	●	●	●	●	●
		Dimension (mm)						P		M		K		N	S		
Insert shape	Product code	INSL	IC	S	RE	D1	AN	AP251U	AP351U	AC251P	AP351M	AP403M	AP251K	AC301K	AC151K	AW100K	AP403S
	ROHT 2006M8E-MM3	20	20	6.35	-	6.5	11°					●					●
	ROMT 2006M8E-MR6	20	20	6.35	-	6.5	11°					●		○			●

● : Standard stock ○ : Made-to-Order