

NAKANISHI HAND-TOOL Rotus EVOLUTION

Alt-Speed / SWS



Headquarters · Factory
700 Shimohinata, Kanuma, Tochigi 322-8666, Japan
TEL +81-289-64-3520 FAX +81-289-62-1135

www.nakanishi-inc.com
NAKANISHI INC. 2019

PR-K329E Ver.2 '19.03.03.Ⓜ

Specifications and design are subject to change without notice.



VEGA INTERNATIONAL TOOLS SRL
via Asti, 9 - 10026 - Santena (TO)
www.vegaonline.net
info@vegaonline.net
011-9497911

Nature of Tochigi, Japan

ATTACHMENT TYPE MICRO AIR GRINDER

ROTUS Series

ROTUS SERIES ◀◀



ROTUS Standard Set

Code No.	1163	Model	ROTUS-IR
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- Interchangeability with a variety of attachments ideal for any applications.
- To achieve high torque, ROTUS air motor is assembled with micron precision between the vanes and the internal surface of the cylinder using NAKANISHI's proprietary techniques.
- Lightweight and compact design.
- Assembled with ON/OFF, speed control and FWD./REV. by the Ring Switch.

A Special Rotary Vane Air Motor is Incorporated

The air motor utilizes a special vane design which keeps constant speed even under load providing stable grinding and polishing operation.

Excellent quietness with Silencer

By attaching the silencer to the end of the exhaust air tubing, the motor is operated extremely quiet.

Twist Free Hose

To prevent twisting of the hose, 360° Twist-Free Joint connects the motor and the hose. (IM-301)

30,000 min⁻¹



14 Types of Attachments Available

14 different types of attachments making an almost infinite number of applications possible.



* ROTUS Attachment is exchangeable for Emax EVOLUTION. System Chart Emax EVOLUTION Series / ROTUS Series (P.11-12)

Ring Type Attachment

Code No.	1147	Model	IR-310
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ROTUS Air Motor

Code No.	1004	Model	IM-301
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Set-Up Drawing



■ Use Air Line Kit AL-H1207F or air supply 3 pieces set. (Air Filter, Air Regulator, Lubricator)

ROTUS Series System Chart

Code No.	Model	Attachment
1147	IR-310	Ring Type
1005	IH-300	Lever Type
2811	IG-400	Straight Type
1016	HG-200	6 mm Torque Type
1017	BMH-300	Long Type
1012	MFC-300S	90° Mini Angle Type
1013	MFC-300M	90° Mini Angle Type (Very Small Head)
1006	IC-300	90° Angle Type
1014	KC-300	50° Angle Type
1302	LS-100	Pistol-Type Polisher (Reciprocating motion)
1307	ML-8	Pencil-Type Reciprocating Polishing Finisher (Reciprocating motion)
1380	SLS-16	Pencil-Type Reciprocating Polishing Finisher (Right to left motion)
8060	HA-500	Hammer Action Type Engraving and Ornament Processing Work Hammer
1146	KBS-101	Small-sized Handy Belt Sander

Speed Reducer·Extension Joint

Extension Joint
1015 CN-01

1/4 Speed Reducer
1009 RG-01

1/15 Speed Reducer
1010 RG-02

• May be connected between the motor and the attachment when required increased torque.

Motor

• Air Motor with Hose
360° Twist-Free Joint Mechanism
1004 IM-301 3,000~30,000 min⁻¹

Air Driven

• Air Line Kit
4507 AL-H1207F

• Foot Controller
1064 AFC-45

*This air line kit is designed for use with the AFC-45 foot controller, Code No.1064.

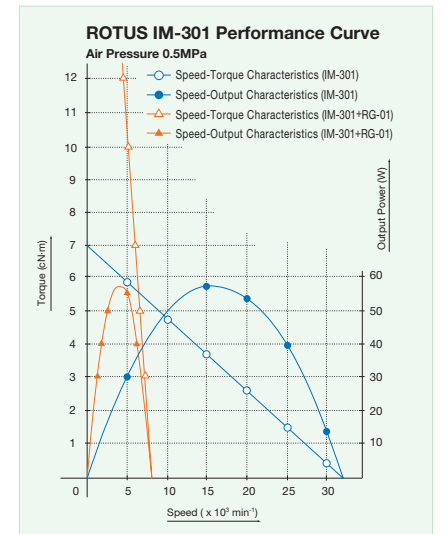
ROTUS SERIES

PRECISION HIGH TORQUE AIR MOTOR · STANDARD SET

ROTUS Air Motor · Standard Set

3,000~30,000 min⁻¹

- To achieve high torque, ROTUS air motor is assembled with micron precision between the vanes and the internal surface of the cylinder using NAKANISHI's proprietary techniques.
- This high performance air motor with minimal power loss from load fluctuation has excellent performance in its grinding stability. Moreover, the motor with minimal air consumption runs quietly and the energy-saving mechanism makes it possible to operate with a 0.75KW (1hp) air compressor.
- Lightweight and compact design. 130 g (w/o hose)
- 14 types of attachments for all types of applications.
- ON/OFF, FWD./REV. Rotation Direction and Motor Speed can be controlled only by the Ring Switch.
 - ◆ Foot controller is available (P.44) : used as an ON/OFF switch as well as a variable speed control.
- Air cooling system generates no heat for continuous operation.
- By attaching the silencer to the end of the exhaust air tubing, the motor is operated extremely quiet.
- Twist-Free Joint mechanism is installed in IM-301 to solve the problem of hose twisting.



ROTUS Air Motor (with Twist-Free Joint Mechanism)

2,000~30,000 min⁻¹

Code No.	1004	Model	IM-301
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- ◆ Speed : Max. 30,000 min⁻¹ (0.4 MPa)
- ◆ Proper Air Pressure : 0.3~0.45 MPa
- ◆ Air Consumption : 75 NL/min ◆ Output Power : 46 W
- ◆ Max. Torque : 6.6 cN·m (0.4 MPa) ◆ Weight : 130 g (w/o hose)

Standard Accessories
 • Hose (K-206) : 2 m • Silencer (K-209) • Pin Spanner (K-233) : 1 pc.



<Air Motor with 360° Twist-Free Joint Mechanism>

- Adopted Twist-Free Joint mechanism between the motor and the hose has solved the problem of hose twisting.



ROTUS Standard Set



30,000 min⁻¹ (Speed)

The ROTUS System is a hand-held grinder with an energy saving air motor. Since it is an air driven system, there is virtually no heat generation resulting in excellent durability. Select from a variety of attachments depending on the application.

The Ring type IR-310 is a standard attachment for ROTUS standard set ROTUS-IR.

Code No.	1163	Model	ROTUS-IR
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- Standard Equipment
- Air Grinder (IR-310+IM-301) : 1 pc.
 - Collet ø3.0mm (CHH-3.0), ø2.35 mm (CHH-2.35) : 1 pc. each
 - Air Line Kit (AL-H1207F) : 1 pc. • Foot Controller (AFC-45) : 1 pc.
 - Accessories : Piping Hose 2m (K-275) : 1 pc., Lubricating Oil (K-211) : 1 pc. Spanner (7x5.1) : 1 pc., Pin Spanner (K-233) : 2 pcs. L Shaped Spanner (9) : 1 pc.

Specifications (IM-301 + IR-310)

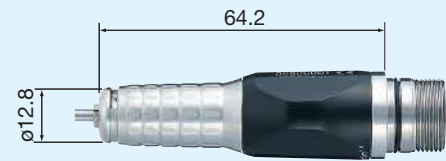
Weight	Max. Torque	Speed	Proper Air Pressure	Air Consumption	Output Power	Collet
222g(*)	6.6 cN·m (0.4 MPa)	30,000 min ⁻¹	0.3~0.45 MPa	75 NL/min	46 W (Motor)	ø0.3~ø3.175 mm CHH Group (P.55)

* Weight (w/o Hose)

⚠ Details of Maximum Allowable speed on intermittent use or continuous use P.41~44

Ring Type Attachment

Code No. **1147** Model **IR-310**



40,000 min⁻¹ Max.

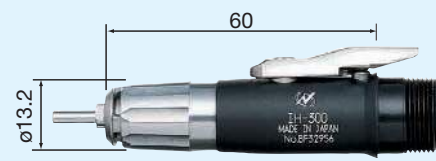
- High precision and high reliability is realized by micron precision.
- Slim, lightweight design allows for fine finishing of delicate parts.
- One-touch ring type bur replacement.



◆ Weight : 92 g
 Standard Size Collet
 ø3.0 mm (CHH-3.0) ø2.35 mm (CHH-2.35)
 Optional Collets : CHH group are shown in page (P55)
 Standard Accessories
 • Spanner (7x5.1) : 1 pc. • Pin Spanner (K-233) : 1 pc.
 • L Shaped Spanner (9) : 1 pc.

Lever Type Attachment

Code No. **1005** Model **IH-300**



40,000 min⁻¹ Max.

- High precision and high reliability is realized by micron precision.
- Slim, lightweight design allows for fine finishing of delicate parts.
- Lever Type one touch bur release.



◆ Weight : 62 g
 Standard Size Collet
 ø3.0 mm (CHH-3.0) ø2.35 mm (CHH-2.35)
 Optional Collets : CHH group are shown in page (P55)
 Standard Accessories
 • Spanner (7x5.1) : 1 pc.
 • Pin Spanner (K-233) : 1 pc.

90° Mini Angle Type Attachment

Code No. **1013** Model **MFC-300M**

For Chamfering Deep Hole, Bur Only ø1.6 mm



15,000 min⁻¹ Max.

Please use it with Speed Reducer.

- The world's smallest angle type attachment.
- Suitable for chamfering and deburring the inside of the slit pipe.

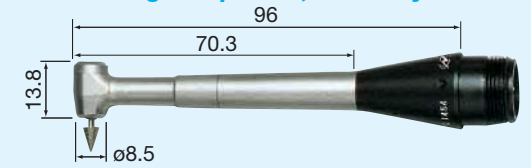


◆ Minimum Inner Diameter : ø13 mm
 ◆ Holding tool width : 7.2 mm ◆ Weight : 47 g
 ◆ Speed Reduction Ratio : 10/11
 Standard Size Collet
 ø1.6 mm (K-253) P.56
 Exclusive Tools P.71
 Standard Accessories
 • Chuck Wrench (K-232) : 1 pc. • Pin Spanner (K-233) : 1 pc.

90° Mini Angle Type Attachment

Code No. **1012** Model **MFC-300S**

For Chamfering Deep Hole, Bur Only ø1.6 mm



15,000 min⁻¹ Max.

Please use it with Speed Reducer.

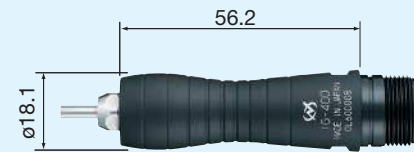
- Suitable for chamfering and deburring the inside of the slit pipe.
- Minimum Inner Diameter : ø20 mm



◆ Holding tool width : 11.9 mm
 ◆ Weight : 50 g
 ◆ Speed Reduction Ratio : 10/11
 Standard Size Collet
 ø1.6 mm (K-252) P.56
 Exclusive Tools P.71
 Standard Accessories
 • Chuck Wrench (K-232) : 1 pc. • Pin Spanner (K-233) : 1 pc.

Straight Type Attachment

Code No. **2811** Model **IG-400**



40,000 min⁻¹ Max.

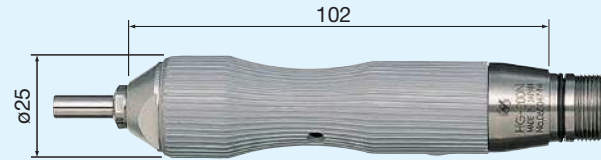
- Lightweight ergonomically designed with minimal vibration for extended use.
- NK Micron Collet permits strong retention and high precision performance.



◆ Weight : 55 g
 Standard Size Collet
 ø3.0 mm (NKM6-3.0)
 Optional Collets : NKM6 group are shown in page (P56)
 Standard Accessories
 • Collet Nut (CHN-6) • Bar Wrench (PCR-30) : 1 pc.
 • Spanner (9 x 9), (15 x 17) : 1 pc. each

6 mm Torque Type Attachment

Code No. **1016** Model **HG-200**



30,000 min⁻¹ Max.

Please use it with Speed Reducer.

- Permits the use of ø6.0 mm shank burs.
- The resistance produced by cutting and grinding is absorbed by a special rubber grip to eliminate slipping.
- Collet is tightened by a spanner.



◆ Weight : 210 g
 Standard Size Collet
 ø6.0 mm (CHG-6.0)
 Optional Collets : CHG group are shown in page (P55)
 Standard Accessories
 • Spanner (10 x 10) : 1 pc. • Bar Wrench (K-212) : 1 pc.
 • Pin Spanner (K-233) : 1 pc.

SWING-LUSTER Attachment

Code No. **1380** Model **SLS-16**

Right to Left motion



30,000 min⁻¹ Max.

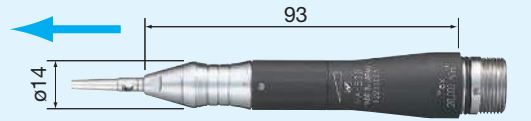
- High speed grinding and polishing operations can be performed while maintaining the fine and delicate feeling of hand polishing.
- Lightweight pencil type design makes it easy to work in tight areas.
- Easily adjustable stroke length allows efficient work on minute areas or large sections.
- Weight : 127 g ◆ Stroke Range (variable) : 0~1.6 mm
- ◆ Reciprocating Stroke (variable) : 0~7,650 times/min.
- ◆ Max. tool shank diameter ø5.0 mm, Screw clamp type.

Standard Accessories
 • Spanner (16 x 18), (20 x 24) : 1 pc. each
 • Allen Wrench (1.5 mm) : 1 pc. • Standard Accessories : 1 set
 Standard Accessories

Code No.	Description	Package
60737	Ceramic Fiber Grindstone 1 x 6 x 50 #1200	1 pc. each
62814	Electroplated Diamond File 1.2 x 4 x 50 #100	
62510	Ceramic Fiber Grindstone Holder	

Hammer Attachment

Code No. **8060** Model **HA-500**



16,000 min⁻¹ Max.

Please use it with Speed Reducer.

- A wide variety of patterns can be produced by varying the spring pressure and hammer speed.
- Light weight, pencil type grip makes the handpiece very comfortable to hold and easy to use.
- Adjustable spring pressure. ◆ Weight : 95 g
- ◆ Self lubricating hammer mechanism ensure excellent durability.
- ◆ Stroke Range : 0.4 mm ◆ Stroke Times : 25~4,000 times/min.
- ◆ Stroke Spring Pressure : 4.4~7.1 N (Ring Adjustment Type)

Standard Accessories
 • Spanner (7 x 5.5) : 1 pc. • Bar Wrench (K-212) : 1 pc.
 • Oil and Oil offer machine • Hammer Bit (For replacement) : 2 pcs.

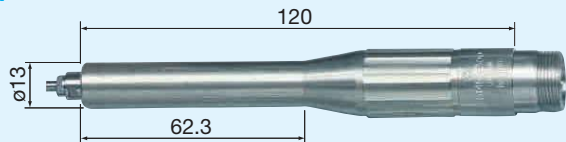
Hammer Bit to be machined to required shapes (SUS-420, heat treated, approx, HRC50)

Code No.	Package
65301	3 pcs./pack

Long Type Attachment

Code No. **1017** Model **BMH-300**

Tip diameter ø13 mm (For Deep Hole Grinding)



35,000 min⁻¹ Max.

- This unique slim body makes it ideal for cutting and grinding the bottom surface of deep ribs or holes.
- Collet is tightened by a spanner.



◆ Weight : 156 g
 Standard Size Collet
 ø3.0 mm (CHM-3.0)
 Optional Collets : CHM group are shown in page (P56)
 Standard Accessories
 • Spanner (7 x 5.1), (6 x 4.5) : 1 pc. each
 • Pin Spanner (K-233) : 1 pc.

ROTUS Air Motor (with Chip Air Mechanism)

Code No. **1003** Model **IM-300**



- ◆ Speed : 3,000~30,000 min⁻¹ ◆ Proper Air Pressure : 0.3~0.45 MPa
- ◆ Air Consumption : 75 NL/min ◆ Output Power : 46 W
- ◆ Max. Torque : 6.6 cN·m (0.4MPa) ◆ Weight : 130 g (w/o hose)

Standard Accessories
 • Hose (K-207) : 2 m • Silencer (K-209) • Pin Spanner (K-233) : 1 pc.

<Air Motor with Chip Air Mechanism>

- Air motor IM-300 with Chip Air Mechanism blows away the cutting dust with clean air coming through the top end of the attachment. The hand-held cutting work remains cool by the chip air allowing comfort through out the working process.



This is only with the attachment IH-300.

90° Angle Attachment

Code No. **1006** Model **IC-300**



30,000 min⁻¹ Max.
Please use it with Speed Reducer.

- Suitable for polishing a flat surface at speed with a grinding disk pad.
- Capable of applications for rough cutting to mirror finishing.
- Speed Reduction Ratio : 3/4



◆ Weight : 45 g
Standard Size Collet
Exclusive Tools P.69 ~ 71

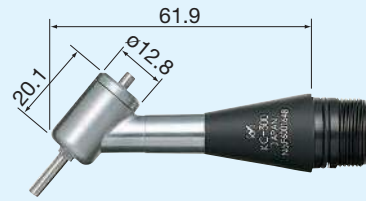
◆ **3.0 mm (CHC-3.0)**
Optional Collets : CHC group are shown in page (P.55)

- Standard Accessories
- Chuck Wrench (K-231) : 1 pc.
 - Pin Spanner (K-233) : 1 pc.
 - Standard Accessories : 1 set

Code No.	Description	Package
64101	Rubber Pad (Small) O.D. φ10 mm	1 pc./pack
64102	Rubber Pad (Med) O.D. φ20 mm	
64103	Rubber Pad (Large) O.D. φ30 mm	
64133	Sand Paper Disk for small pad φ11 #180	5 pcs./pack
64137	Sand Paper Disk for small pad φ11 #600	
64153	Sand Paper Disk for med. pad φ21 #180	
64157	Sand Paper Disk for med. pad φ21 #600	
64173	Sand Paper Disk for large pad φ31 #180	
64177	Sand Paper Disk for large pad φ31 #600	

50° Angle Attachment

Code No. **1014** Model **KC-300**



30,000 min⁻¹ Max.
Please use it with Speed Reducer.

- Perfect for finishing bottom surfaces and other tight, hard to reach areas.
 - Suitable for polishing a flat surface at speed with a grinding disk pad.
 - Speed Reduction Ratio : 3/4
- Use the motor in reverse rotation for clockwise rotation.



◆ Weight : 45 g
Standard Size Collet
Exclusive Tools P.69 ~ 71

◆ **3.0 mm (CHC-3.0)**
Optional Collets : CHC group are shown in page (P.55)

- Standard Accessories
- Chuck Wrench (K-231) : 1 pc.
 - Pin Spanner (K-233) : 1 pc.
 - Standard Accessories : 1 set

Code No.	Description	Package
64101	Rubber Pad (Small) O.D. φ10 mm	1 pc./pack
64102	Rubber Pad (Med) O.D. φ20 mm	
64103	Rubber Pad (Large) O.D. φ30 mm	
64133	Sand Paper Disk for small pad φ11 #180	5 pcs./pack
64137	Sand Paper Disk for small pad φ11 #600	
64153	Sand Paper Disk for med. pad φ21 #180	
64157	Sand Paper Disk for med. pad φ21 #600	
64173	Sand Paper Disk for large pad φ31 #180	
64177	Sand Paper Disk for large pad φ31 #600	

FINE BELT SANDER Attachment

Code No. **1146** Model **KBS-101**



30,000 min⁻¹ Max.

- Very high belt speed, ideal for applications from deburring to finishing.
- The angle of the belt section is fully adjustable.



- ◆ Belt Speed : 0~705 m/min.
- ◆ Weight : 350 g
- ◆ Belt Sizes : 4, 6, 8 mm Wide×300mm long

- Standard Accessories
- Allen Wrench (3 mm) : 1 pc.
 - Standard Accessories : 1 set

Exclusive Tools P.72 ~ 73

Code No.	Description	Package
64902	Abrasive Belt Width 4mm #120	2 pcs. each
64904	Abrasive Belt Width 4mm #240	
64906	Abrasive Belt Width 4mm #400	
64912	Abrasive Belt Width 6mm #120	
64914	Abrasive Belt Width 6mm #240	
64916	Abrasive Belt Width 6mm #400	
64922	Abrasive Belt Width 8mm #120	
64924	Abrasive Belt Width 8mm #240	
64926	Abrasive Belt Width 8mm #400	

Air Line Kit

Code No. **4507** Model **AL-H1207F**



300(W) x 120(D) x 220(H) mm

This air line kit is designed for use with the AFC-45 foot controller, Code No.1064.

- Ensures a smooth operation and long life by supplying stable, conditioned air to the air motor.
- Three functions : air filter, regulator, mist lubricator can also be used to adjust motor speed.

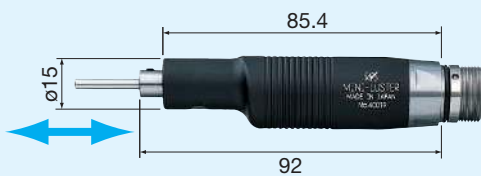
◆ Weight : 2.2 kg ◆ Filter Mesh : 5 μm

- Standard Accessories
- Air Pressure Gauge • Air Regulator • Air Filter • Lubricator
 - Air Control Valve (CV-05) • Piping Hose (K-275) • Lubricating Oil (K-211)

MINI-LUSTER Attachment (Pencil-Type Reciprocating Polishing Finisher)

Code No. **1307** Model **ML-8** Stroke (0.8 mm)

Reciprocating motion



25,000 min⁻¹ Max.

- Due to pencil type grip, it is most suitable for polishing narrow grooves, details, etc.
- Stroke Range (Fixed) : 0.8 mm
- Reciprocating Stroke (Variable) : 0~6,380 times/min.



◆ Weight : 130 g
◆ Max. tool shank diameter φ3.2 mm, Screw clamp type

- Standard Accessories
- Allen Wrench (1.5 mm) : 1 pc.
 - Standard Accessories : 1 set

Exclusive Tools P.67 ~ 69

Code No.	Description	Package
62751	Spring Holder	1 pc./pack
62510	Ceramic Fiber Grindstone Holder	
62814	Electroplated Diamond File 1.2 x 4 x 50 #100	
60737	Ceramic Fiber Grindstone 1 x 6 x 50 #1200	

LUSTER Attachment (Pistol-Type Polisher)

Code No. **1302** Model **LS-100**

Reciprocating motion



25,000 min⁻¹ Max.

- High performance grinding & polishing with high power and reciprocating stroke.
- Well-balanced, rubber-grip absorbs vibration.
- Stroke Range : 0~6 mm (variable)
- Reciprocating Stroke (variable) : 0~6,300 times/min.



◆ Weight : 680 g
◆ Max. tool shank diameter φ6.4 mm, Screw clamp type

Standard Accessories

- Allen Wrench (2 mm), (3 mm) : 1 pc. each
- Lubricating Oil • Lubrication Nozzle for LUSTER
- Standard Accessories : 1 set

Exclusive Tools P.67 ~ 69

Code No.	Description	Package
62502	Stone Holder	1 pc./pack
62505	Stone Holder	
62751	Spring Holder	
62525	Rectangular Pad	
62526	Rod for Rectangular Pad	
62527	Angle Rod	10 pcs./pack
62552	Sand Paper Tip #120	
62555	Sand Paper Tip #320	
62557	Sand Paper Tip #600	
62559	Sand Paper Tip #1000	

1/4 Speed Reducer

Code No. **1009** Model **RG-01**



30,000 min⁻¹ Max.

- Mounted between an attachment and a motor.
- The speed is reduced to 1/4 but the torque is multiplied by 4 times.
- Suitable for high torque grinding process or drilling. ◆ Weight : 68 g

- Standard Accessories
- Pin Spanner (K-233) : 1 pc.

1/15 Speed Reducer

Code No. **1010** Model **RG-02**



30,000 min⁻¹ Max.

- Mounted between an attachment and a motor.
- The speed is reduced to 1/15 but the torque is multiplied by 15 times.
- Suitable for high torque grinding process or drilling.

◆ Weight : 93 g

- Standard Accessories
- Pin Spanner (K-233) : 1 pc.

Foot Controller

Code No. **1064** Model **AFC-45**



This foot controller is necessary for use with the AL-H1207F air line kit.

- Designed to depress from any direction.
- Fine adjustment of speed control is possible.

Extension Joint

Code No. **1015** Model **CN-01**



35,000 min⁻¹ Max.

- Speed Ratio 1 : 1
- This is a joint to be connected between a motor and an attachment to extend the total length of the attachment.

◆ Weight : 83 g

- Standard Accessories
- Pin Spanner (K-233) : 1 pc.