

AirSpeed

Air Motor Spindles



AirSpeed

NAKANISHI INC. 2022



NAKANISHI INC.

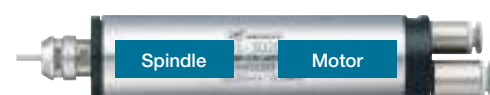
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PR-K372E Ver.1 2022-03-02 015. 870

※Specifications and design are subject to change without notice.

One Piece Type Spindle

- Shorten total spindle length suitable for the compact sized NC or CNC Lathe, and special purpose machines.
- Hardened and precision ground for high rigidity & excellent durability.
- External housing is one-piece with the spindle & the motor for machine attachments.



Outside Diameter **ø25, ø23, ø20, ø19.05mm**

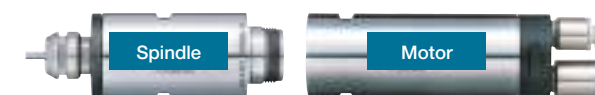
Max. **30,000min⁻¹**

Max. Power **130W**



Separate Type Spindle

- Free to connect the spindle to the motor for applications.
- Easy to exchange for repairs.

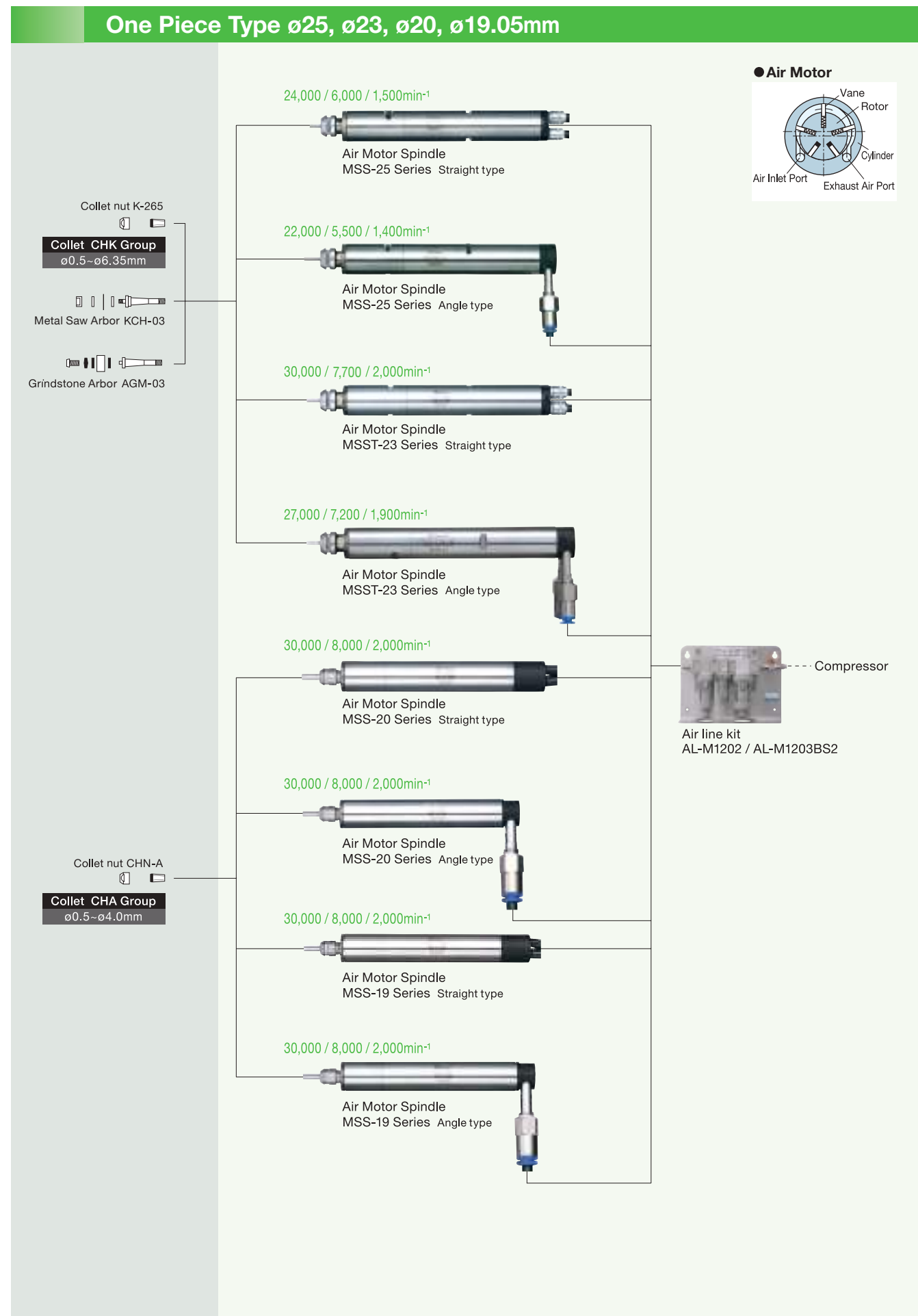


Outside Diameter **ø30, ø25, ø22.8mm**

Max. **30,000min⁻¹**

Max. Power **130W**





※ Please refer to the concerned product introduction page about the details.

▼ AIR MOTOR SPINDLE (One Piece Type)

Straight Spindle



Outside Diameter $\phi 25$, $\phi 23$,
 $\phi 20$, $\phi 19.05\text{mm}$

Max. 30,000min⁻¹

Max. Power 130W

Model Code Example

[1] SERIES CODE
[2] OUTSIDE DIAMETER
[3] SPEED
[4] R=FORWARD (Right)
[5] CODE FOR 90°ANGLE TYPE

•Straight Type

MSS 19 08 R
[1] [2] [3] [4]

•90° Angle Type

MSS 19 08 R A
[1] [2] [3] [4] [5]

Spindle Accuracy :
Within 2 μm

● **Outer Housing Material**

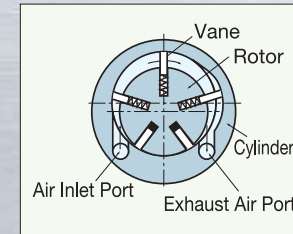
Made from stainless steel (SUS416)

● **Configuration**

2 Types available, Straight type & 90° Angle type.

● **Highest output power in the class**

● **Air Motor**



The rotor of the air motor rotates off center in the cylinder. The vanes are pushed by compressed air and this rotates the rotor. This small air motor produces high torque making it suitable for small diameter drilling, milling, slitting and grinding.

● **Silencer**

By utilizing a silencer on the exhaust air tubing the noise generated by the motor or turbine is greatly reduced.

● **Speed Reduction System**

A planetary gear speed reduction system is incorporated in some of the MSS Series motor spindles. The speed reduction ratio is either 1/4 or 1/16.



1/4 1/16 :
Planetary Gear System

Air line kit
AL-M1202

OPTION

Refer to P.29

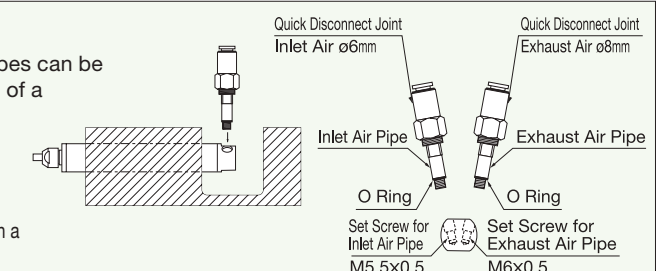
● **Installation of the 90° Angle Type**

● MSS · MSST series angle (RA) type drive air and exhaust air pipes can be removed enabling the motor spindle installed through the front of a holder with backside restriction as shown in the illustration.

Installation

- [1] Remove Inlet and Exhaust Air Pipes from motor spindle.
- [2] Insert the straight spindle from the front side of holder and fix it.
- [3] Mount the inlet and exhaust air pipes to the spindle fixed on the holder and attach a hose to the quick disconnect joint.

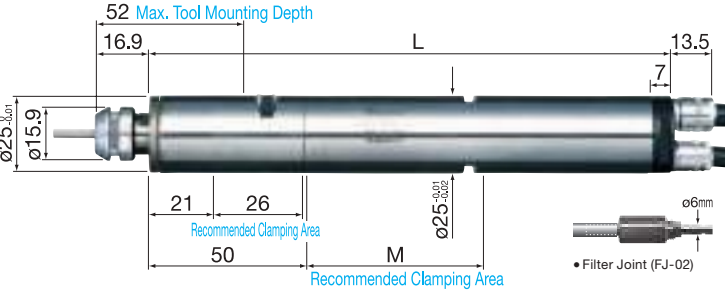
● Urethane hose of 6 x 4 for inlet air and 8 x 5 for exhaust air can be installed.



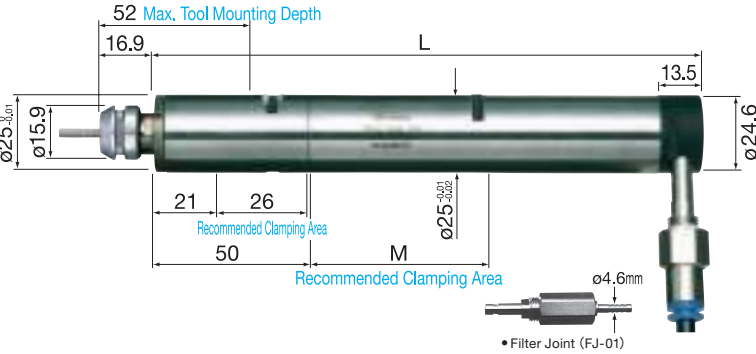
※ The motor speed of the 90° Angle type is 10% less than that of the straight type.

Air Motor Spindle		O.D.	Collet	Spindle Accuracy	Max. Power	Air Consumption
MSS-25 Series		ø25mm	ø0.5~ø6.35mm (CHK Group)	Within 2 μm	130W	205Nℓ/min (R) 170Nℓ/min (RA)

▼ MSS-25 Series STRAIGHT TYPE (R)



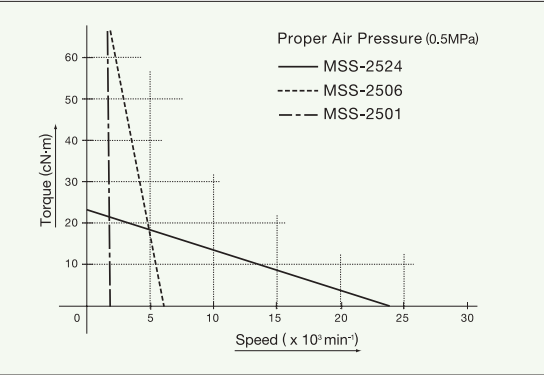
▼ MSS-25 Series 90° ANGLE TYPE (RA)



< Specifications >

Motor Hose (Diameter / Length)		
R-Type	Air Inlet	: ø6.7mm (O.D.) x 2m
	Exhaust Air	: ø7.5mm (O.D.) x 1m
RA-Type	Air Inlet	: ø6.0mm (O.D.) x 2m
	Exhaust Air	: ø8.0mm (O.D.) x 1m

● MSS-25 Series Torque-Speed Characteristics



⚠ Two recommended clamp areas are laser-marked on the spindle. Select one of them for clamping, and do not clamp both areas.

R 24,000min⁻¹ (0.5MPa) / RA 22,000min⁻¹ (0.5MPa)

Code No.	7841	Model	MSS-2524R	Shape	Straight	Max. Torque	22.5cN·m	Weight	395g	L	131.3mm	M	25mm	MSS-2524R DXF-data
Code No.	7842	Model	MSS-2524RA	Shape	90° Angle	Weight	436g	L	137.8mm					MSS-2524RA DXF-data

R 6,000min⁻¹ (0.5MPa) / RA 5,500min⁻¹ (0.5MPa) 1/4 Speed Reduction

Code No.	7843	Model	MSS-2506R	Shape	Straight	Max. Torque	85cN·m	Weight	485g	L	164.1mm	M	58mm	MSS-2506R DXF-data
Code No.	7844	Model	MSS-2506RA	Shape	90° Angle	Weight	526g	L	170.6mm					MSS-2506RA DXF-data

R 1,500min⁻¹ (0.5MPa) / RA 1,400min⁻¹ (0.5MPa) 1/16 Speed Reduction

Code No.	7845	Model	MSS-2501R	Shape	Straight	Max. Torque	332cN·m	Weight	475g	L	168.5mm	M	62mm	MSS-2501R DXF-data
Code No.	7846	Model	MSS-2501RA	Shape	90° Angle	Weight	516g	L	175.0mm					MSS-2501RA DXF-data

< Standard Accessories >

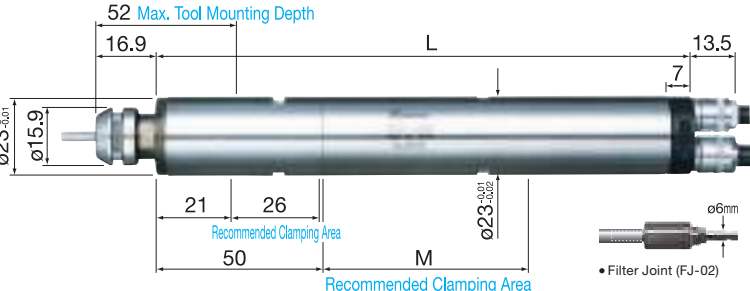
- Collet Nut (K-265) • Wrench (12 x 14) : 2pcs.
- Hose (K-204) (R-type) : 1pc.
- Hose (K-215) (RA-type) : 1pc.
- Hose (K-256) (RA-type) : 1pc.
- Filter Joint (FJ-02) (R-type) • Filter Joint (FJ-01) (RA-type)
- Silencer (K-208)

< Options >

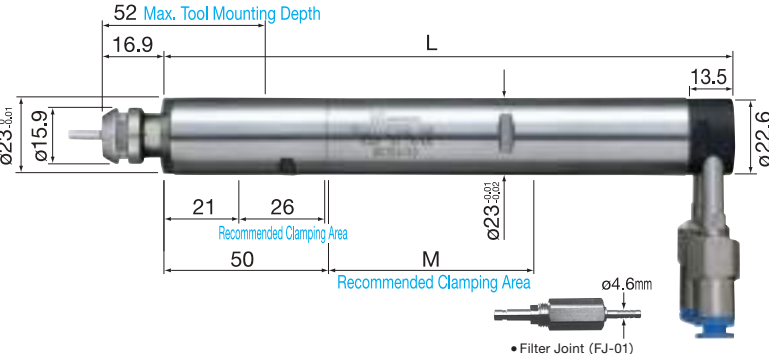
- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details
- Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D. ø5.0mm
- ※ Refer to Page p.4 for mounting instructions for the 90° Angle Type.
- ※ Outside diameter ø25.4 mm type are also available.
- ※ Collet is sold separately.

Air Motor Spindle		O.D.	Collet	Spindle Accuracy	Max. Power	Air Consumption
MSST-23 Series		ø23mm	ø0.5~ø6.35mm (CHK Group)	Within 2 μm	108W	190Nℓ/min (R) 170Nℓ/min (RA)

▼ MSST-23 Series STRAIGHT TYPE (R)



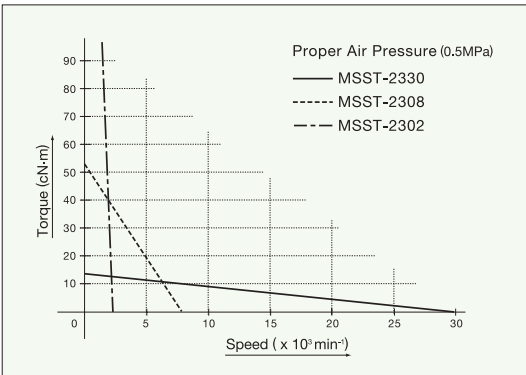
▼ MSST-23 Series 90° ANGLE TYPE (RA)



< Specifications >

Proper Air Pressure		: 0.3~0.5MPa
Motor Hose (Diameter / Length)		
R-Type	Air Inlet	: ø6.7mm (O.D.) x 2m
	Exhaust Air	: ø7.5mm (O.D.) x 1m
RA-Type	Air Inlet	: ø6.0mm (O.D.) x 2m
	Exhaust Air	: ø8.0mm (O.D.) x 1m

● MSST-23 Series Torque-Speed Characteristics



⚠ Two recommended clamp areas are laser-marked on the spindle. Select one of them for clamping, and do not clamp both areas.

R 30,000min⁻¹ (0.5MPa) / RA 27,000min⁻¹ (0.5MPa)

Code No.	7833	Model	MSST-2330R	Shape	Straight	Max. Torque	13.7cN·m	Weight	328g	L	127.3mm	M	25mm	MSST-2330R DXF-data
Code No.	7834	Model	MSST-2330RA	Shape	90° Angle	Weight	369g	L	133.8mm					MSST-2330RA DXF-data

R 7,700min⁻¹ (0.5MPa) / RA 7,200min⁻¹ (0.5MPa) 1/4 Speed Reduction

Code No.	7835	Model	MSST-2308R	Shape	Straight	Max. Torque	52cN·m	Weight	415g	L	160.1mm	M	58mm	MSST-2308R DXF-data
Code No.	7836	Model	MSST-2308RA	Shape	90° Angle	Weight	456g	L	166.6mm					MSST-2308RA DXF-data

R 2,000min⁻¹ (0.5MPa) / RA 1,900min⁻¹ (0.5MPa) 1/16 Speed Reduction

Code No.	7837	Model	MSST-2302R	Shape	Straight	Max. Torque	202cN·m	Weight	405g	L	164.4mm	M	62mm	MSST-2302R DXF-data
Code No.	7838	Model	MSST-2302RA	Shape	90° Angle	Weight	446g	L	170.9mm					MSST-2302RA DXF-data

< Standard Accessories >

- Collet Nut (K-265) • Wrench (12 x 14) : 2pcs.
- Hose (K-204) (R-type) : 1pc.
- Hose (K-215) (RA-type) : 1pc.
- Hose (K-216) (RA-type) : 1pc.
- Filter Joint (FJ-02) (R-type) • Filter Joint (FJ-01) (RA-type)
- Silencer (K-208)

< Options >

- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details
- Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone ø5.0mm
- ※ Refer to Page p.4 for mounting instructions for the 90° Angle Type.
- ※ Collet is sold separately.

MSS-20 Series

	O.D.	Collet	Spindle Accuracy	Max. Power	Air Consumption
	ø20mm	ø0.5~ø4.0mm (CHA Group)	Within 2 μm	72W	155Nℓ/min (R・RA)

[illegible]

41 Max. Tool Mounting Depth

14.7

L

12.2

18.9

20.8

20.3

15

12

28

M

Recommended Clamping Area

Recommended Clamping Area

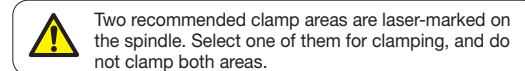
4.6mm

• Filter Joint (FJ-01)

Proper Air Pressure		: 0.3–0.5MPa
Motor Hose (Diameter / Length)		
R-Type	Air Inlet	: ø3.7mm (I.D.) x ø5.7mm (O.D.) x 2m
	Exhaust Air	: ø5.0mm (I.D.) x ø6.5mm (O.D.) x 1m
RA-Type	Air Inlet	: ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m
	Exhaust Air	: ø6.0mm (I.D.) x ø8.0mm (O.D.) x 1m

Figure 10 is a line graph comparing the torque-speed characteristics of three motor types: MSS-2030, MSS-2008, and MSS-2002. The y-axis represents Torque in N·m, ranging from 0 to 60. The x-axis represents Speed in $\times 10^3 \text{ min}^{-1}$, ranging from 0 to 30. The legend indicates that the solid line represents MSS-2030, the dashed line represents MSS-2008, and the dash-dot line represents MSS-2002. MSS-2030 shows a relatively constant torque of about 8 N·m up to 25 $\times 10^3 \text{ min}^{-1}$ before dropping to zero at 30 $\times 10^3 \text{ min}^{-1}$. MSS-2008 starts at a high torque of about 40 N·m at zero speed and decreases linearly to zero at approximately 8 $\times 10^3 \text{ min}^{-1}$. MSS-2002 starts at a torque of about 8 N·m at zero speed and decreases linearly to zero at approximately 25 $\times 10^3 \text{ min}^{-1}$.

Speed ($\times 10^3 \text{ min}^{-1}$)	MSS-2030 Torque (N·m)	MSS-2008 Torque (N·m)	MSS-2002 Torque (N·m)
0	8	40	8
5	8	16	6.4
10	8	0	4.8
15	8	0	3.2
20	8	0	1.6
25	8	0	0
30	0	0	0



Code No.	7851	Model	MSS-2030R	Shape	Straight	Max. Torque 9.2cN·m	Weight	190g	L	110.9mm	M	23mm	MSS-2030R DXF-data
Code No.	7852	Model	MSS-2030RA	Shape	90° Angle		Weight	239g	L	103.1mm			MSS-2030RA DXF-data

Code No.	7828	Model	MSS-2008R	Shape	Straight	Max. Torque	36cN·m	Weight	225g	L	126.8mm	M	39mm	MSS-2008R DXF-data
Code No.	7829	Model	MSS-2008RA	Shape	90° Angle			Weight	274g	L	119.0mm			MSS-2008RA DXF-data

Code No.	7830	Model	MSS-2002R	Shape	Straight	Max. Torque 141cN·m	Weight	241g	L	141.0mm	M	53mm	MSS-2002R DXF-data
Code No.	7831	Model	MSS-2002RA	Shape	90° Angle		Weight	290g	L	133.2mm			MSS-2002RA DXF-data

- Collet Nut (CHN-A) ● Wrench (8 x 5), (9 x 11) : 1pc. each
- Hose (K-221) (R-type) : 1pc.
- Hose (K-215) (RA-type) : 1pc.
- Hose (K-216) (RA-type) : 1pc.
- Filter Joint (FJ-01)
- Silencer (K-209) (R-type) ● Silencer (K-208) (RA-type)

Collet (CHA Group) : $\phi 0.5 \sim \phi 4.0 \text{ mm}$ See Page 30 for details

※ Refer to Page p.4 for mounting instructions for the 90° Angle Type.

※ Collet is sold separately.

MSS-19 Series

	O.D.	Collet	Spindle Accuracy	Max. Power	Air Consumption
	ø19.05mm	ø0.5~ø4.0mm (CHA Group)	Within 2 μm	72W	155Nℓ/min (R・RA)

Technical drawing of the Filter Joint (FJ-01) showing dimensions and clamping area. The drawing includes the following dimensions and labels:

- Max. Tool Mounting Depth:** 41
- Clamping Area Dimensions:** 14.7, 15, 12, 28, 19.05 $_{-0.02}^{+0.01}$
- Overall Length:** L
- End Flange Dimensions:** 20, 11.8, 19.05 $_{-0.01}^{+0.01}$
- Recommended Clamping Area:** Indicated by a double line and the dimension 19.05 $_{-0.02}^{+0.01}$.
- Filter Joint (FJ-01):** Labeled at the bottom right with a dimension of 4.6mm.

Technical drawing of the FJ-01 Filter Joint. The drawing shows the overall dimensions and the recommended clamping area. Key dimensions include:

- Max. Tool Mounting Depth: 41
- Clamping Area Length: 14.7
- Overall Length: L
- End Flange Thickness: 12.2
- Threaded Section Length: 15
- Clamping Area Length (Detailed): 12
- Overall Length (Detailed): M
- Threaded Section Diameter: $\phi 18.05_{-0.012}^{+0.011}$
- End Flange Diameter: $\phi 11.8$
- End Flange Thread: $\phi 19.05_{-0.011}^{+0.010}$
- Filter Joint (FJ-01) Detail: $\phi 4.6\text{mm}$

Proper Air Pressure		: 0.3~0.5MPa
Motor Hose (Diameter / Length)		
R-Type	Air Inlet	: ø3.7mm (I.D.) x ø5.7mm (O.D.) x 2m
	Exhaust Air	: ø5.0mm (I.D.) x ø6.5mm (O.D.) x 1m
RA-Type	Air Inlet	: ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m
	Exhaust Air	: ø6.0mm (I.D.) x ø8.0mm (O.D.) x 1m

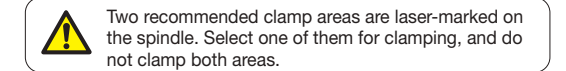
Proper Air Pressure (0.5MPa)

Legend:

- MSS-1930 (Solid line)
- MSS-1908 (Dashed line)
- MSS-1902 (Dash-dot line)

The graph shows torque decreasing as speed increases. MSS-1902 has the highest torque at low speeds, while MSS-1930 has the highest torque at high speeds.

Speed ($\times 10^3 \text{ min}^{-1}$)	MSS-1930 Torque (cN.m)	MSS-1908 Torque (cN.m)	MSS-1902 Torque (cN.m)
0	10	35	35
5	8	10	10
10	6	-	-
15	4	-	-
20	2	-	-
25	1	-	-
30	0	-	-



Code No.	7849	Model	MSS-1930R	Shape	Straight	Max. Torque	9.2cN·m	Weight	171g	L	110.9mm	M	23mm	MSS-1930R DXF-data
Code No.	7850	Model	MSS-1930RA	Shape	90° Angle			Weight	219g	L	103.1mm			MSS-1930RA DXF-data

Code No.	7824	Model	MSS-1908R	Shape	Straight	Max. Torque	36cN·m	Weight	202g	L	126.8mm	M	39mm	MSS-1908R DXF-data
Code No.	7825	Model	MSS-1908RA	Shape	90° Angle			Weight	250g	L	119.0mm			MSS-1908RA DXF-data

Code No.	7826	Model	MSS-1902R	Shape	Straight	Max. Torque	141cN·m	Weight	216g	L	141.0mm	M	53mm	MSS-1902R DXF-data
Code No.	7827	Model	MSS-1902RA	Shape	90° Angle			Weight	264g	L	133.2mm			MSS-1902RA DXF-data

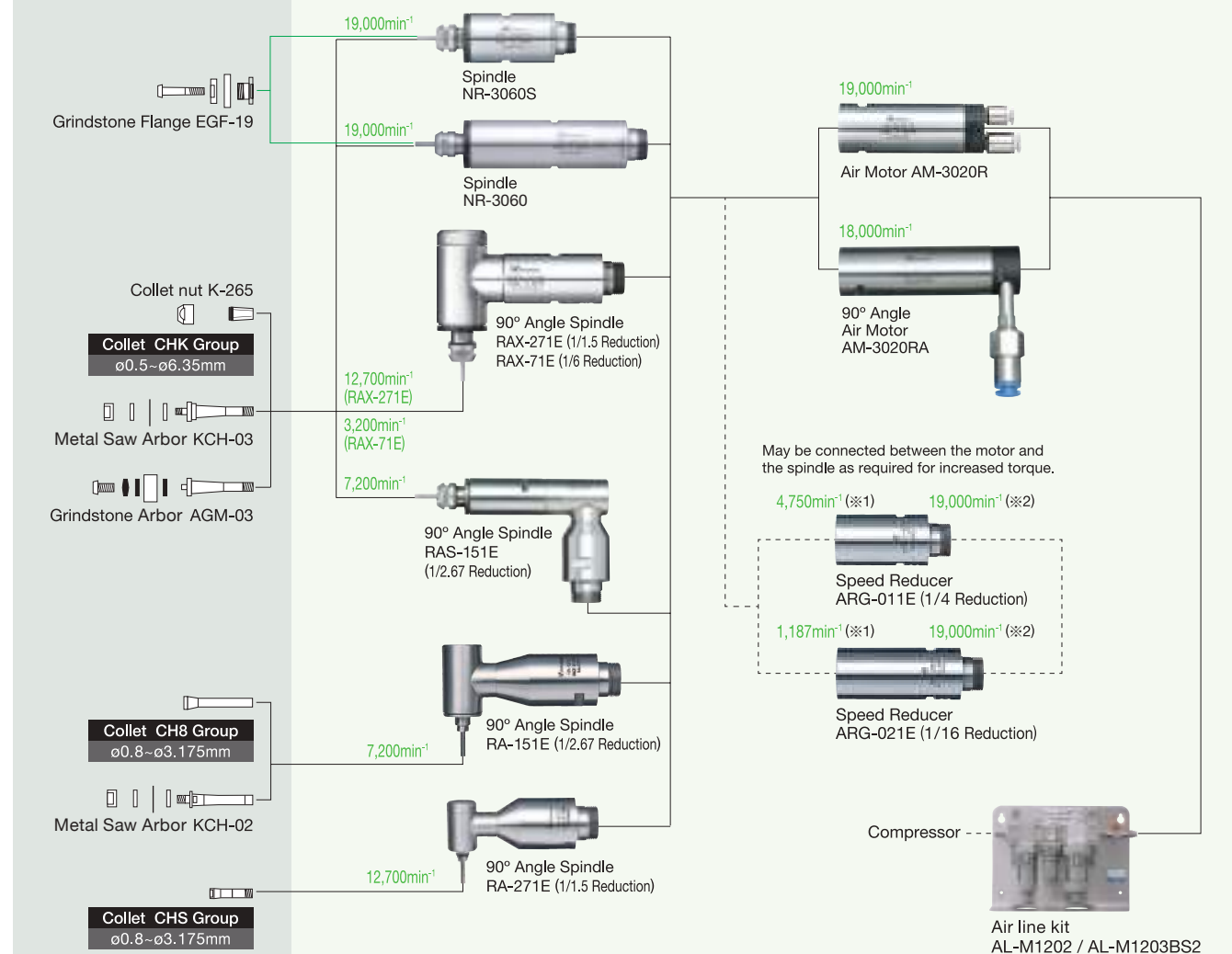
- Collet Nut (CHN-A) ● Wrench (8 x 5), (9 x 11) : 1pc. each
- Hose (K-221) (R-type) : 1pc.
- Hose (K-215) (RA-type) : 1pc.
- Hose (K-216) (RA-type) : 1pc.
- Filter Joint (FJ-01)
- Silencer (K-209) (R-type) ● Silencer (K-208) (RA-type)

Collet (CHA Group) : $\varnothing 0.5\text{--}\varnothing 4.0\text{mm}$ See Page 30 for details

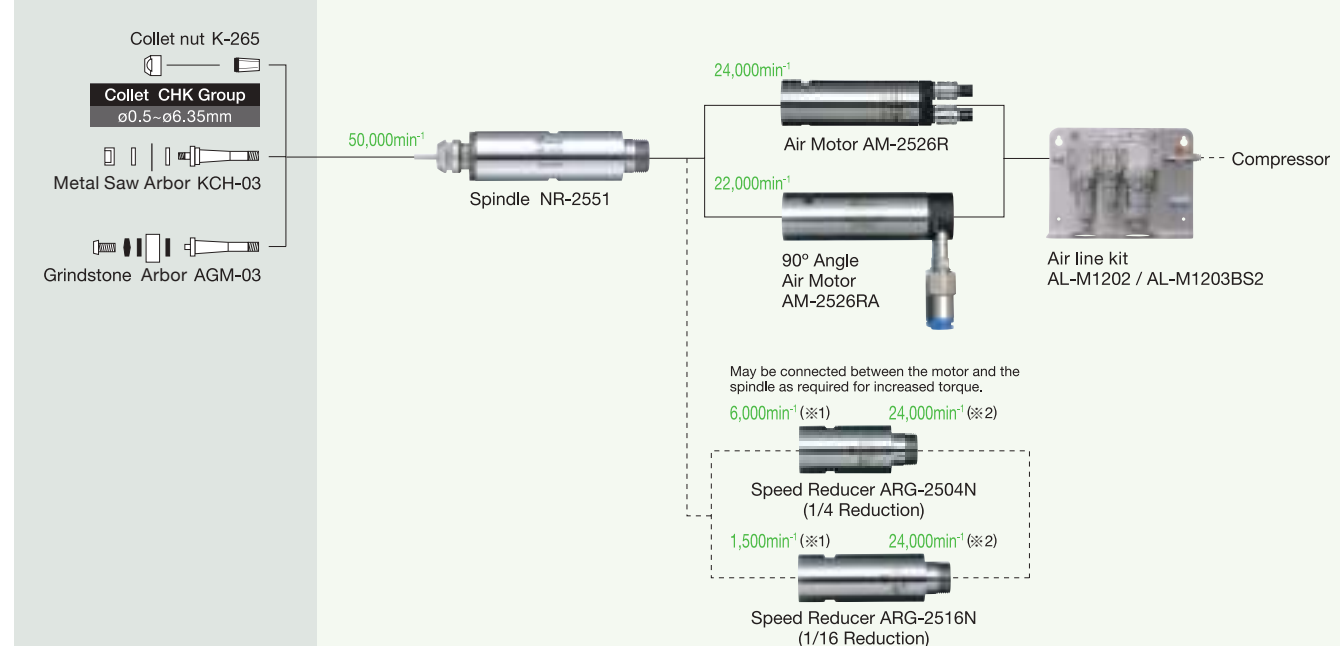
※ Refer to Page p.4 for mounting instructions for the 90° Angle Type.

※ Collet is sold separately.

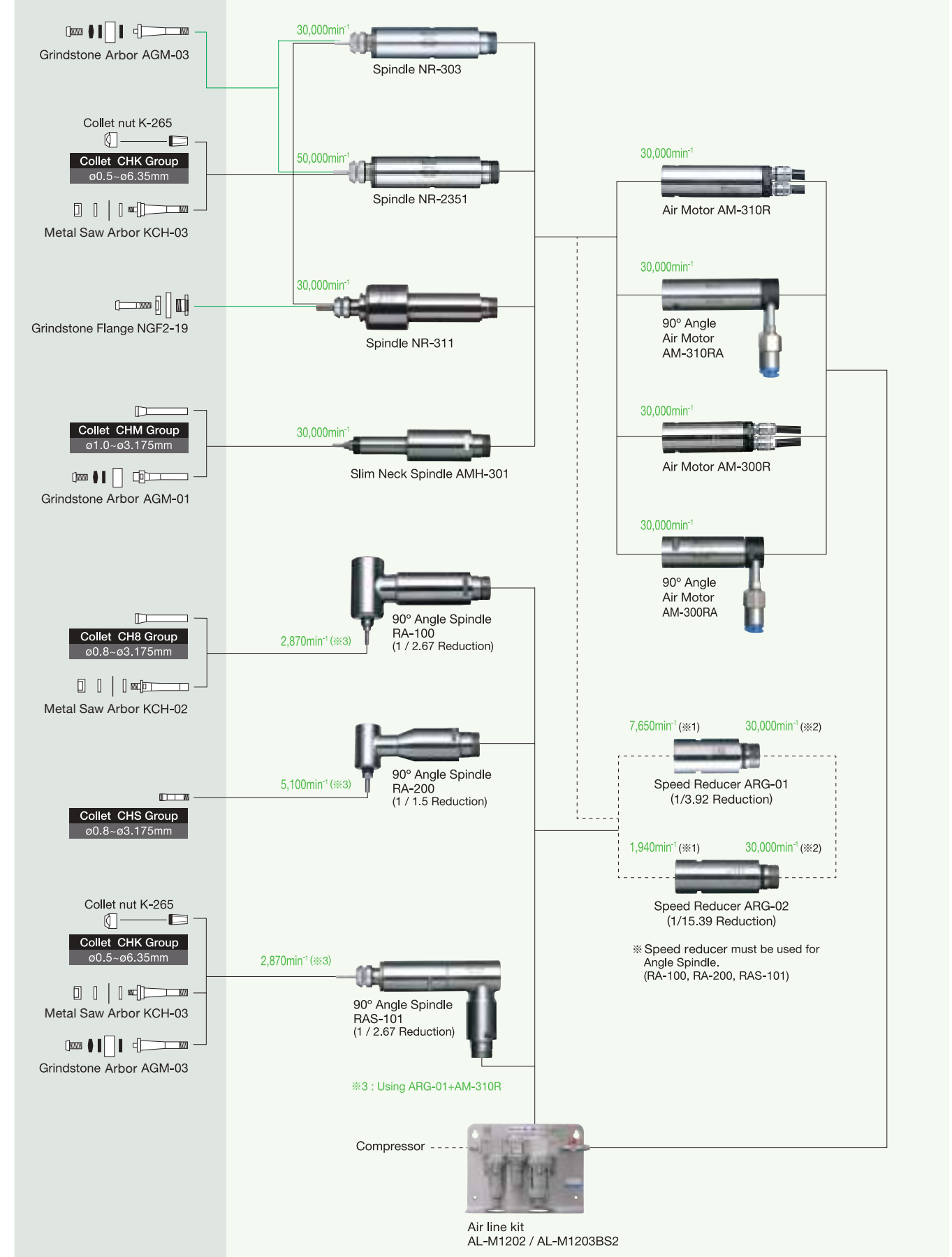
Separate Type ø30mm



Separate Type ø25mm



Separate Type ø22.8mm



※ Please maintain not to exceed speed limit. Excess speed will dramatically reduce bearing life.

※ 1 : Maximum rotating speed at the cutting tool. ※ 2 : Maximum allowable motor speed for the spindle.

※ Please refer to the concerned product introduction page about the details.

▼ AIR MOTOR & SPINDLE (Separate Type)

Straight Spindle

Outside Diameter **ø30mm**

Max. **19,000min⁻¹** (Using 0.5MPa : AM-3020R)

Max. Power **130W**

90° Angle Type Air Motor is available

Spindle Accuracy : Within 1 μm

Air Motor AM-3020R
→ Refer to P.15

Air line kit AL-M1202
OPTION → Refer to P.29

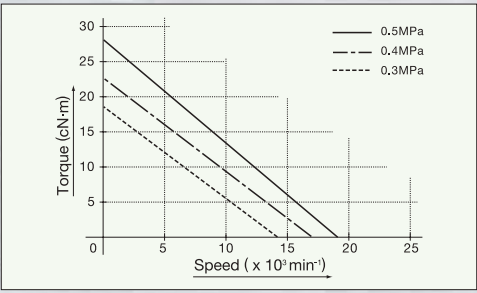
Straight Spindle NR-3060S

Collet : Max. ø6.35mm
Collet CHK-3.0
OPTION → Refer to P.30
※ Other collet sizes are available.

COOLANT



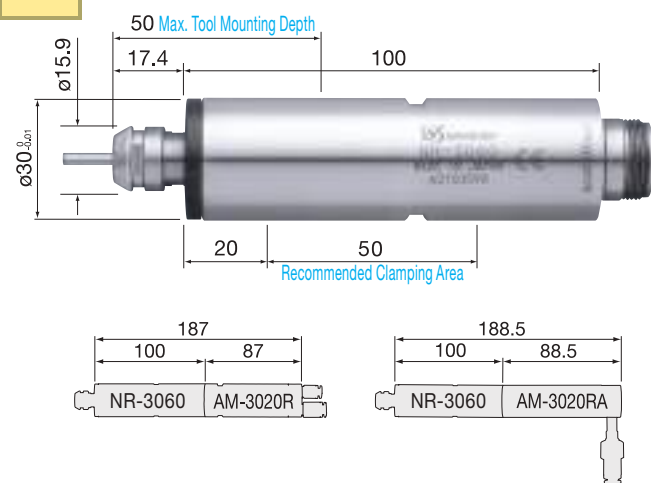
AM-3020R Torque-Speed Characteristics



Spindle < Ceramic Bearings >
NR-3060

O.D.	Speed	Spindle Accuracy	Collet	Weight
ø30mm	19,000min⁻¹ (Using AM-3020R)	Within 1 μm	ø0.5~ø6.35mm (CHK Group)	420g

DXF-data



Code No. **7875** Model **NR-3060**

< Standard Accessories >

- Collet Nut (K-265)
- Wrench (12 x 14) : 2pcs., (22 x 27) : 1pc.

< Options >

Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details

Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)

Grindstone Arbor (AGM-03) : Grindstone I.D. ø5.0mm

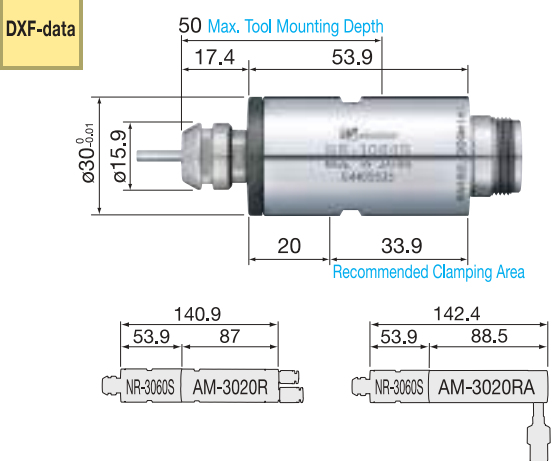
Grindstone Flange (EGF-19) : ø19.05 (I.D.) x ø40 (O.D.) x 7 (W) mm

※ Collet is sold separately.

Spindle < Ceramic Bearings >
NR-3060S

O.D.	Speed	Spindle Accuracy	Collet	Weight
ø30mm	19,000min⁻¹ (Using AM-3020R)	Within 1 μm	ø0.5~ø6.35mm (CHK Group)	260g

DXF-data



Code No. **7859** Model **NR-3060S**

< Standard Accessories >

- Collet Nut (K-265)
- Wrench (12 x 14) : 2pcs., (22 x 27) : 1pc.

< Options >

Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details

Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)

Grindstone Arbor (AGM-03) : Grindstone I.D. ø5.0mm

Grindstone Flange (EGF-19) : ø19.05 (I.D.) x ø40 (O.D.) x 7 (W) mm

※ Collet is sold separately.



Please maintain not to exceed speed limit.

▼ AIR MOTOR & SPINDLE (Separate Type)

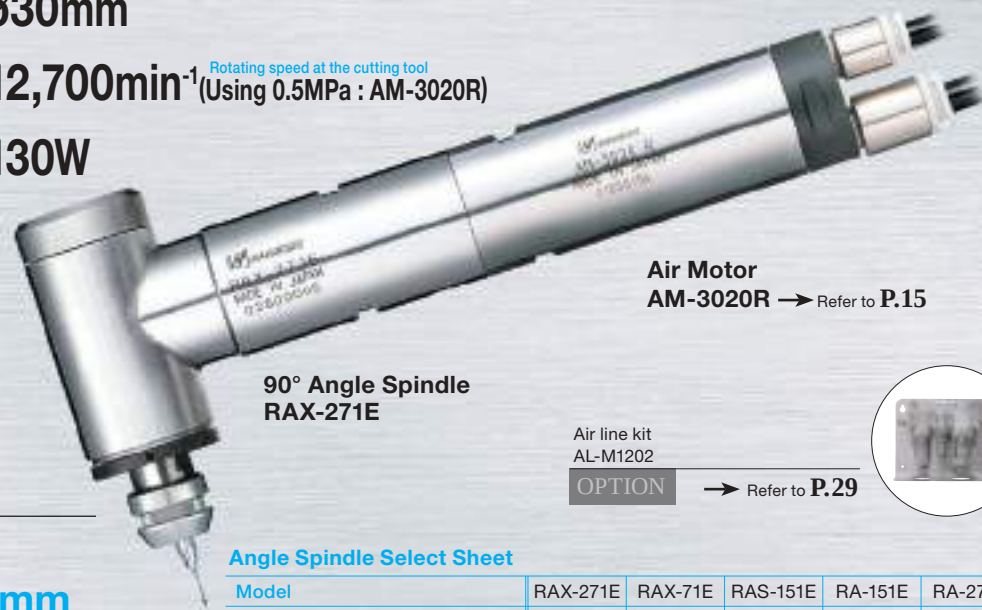
Angle Spindle



Outside Diameter **ø30mm**

Max. **12,700min⁻¹** (Rotating speed at the cutting tool
(Using 0.5MPa : AM-3020R))

Max. Power **130W**

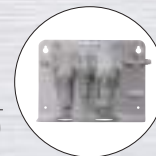


Air Motor
AM-3020R → Refer to P.15

90° Angle Spindle
RAX-271E

Air line kit
AL-M1202

OPTION → Refer to P.29



Collet :
Max. **ø6.35mm**

Collet
CHK-3.0

OPTION → Refer to P.30

※ Other collet sizes are available.

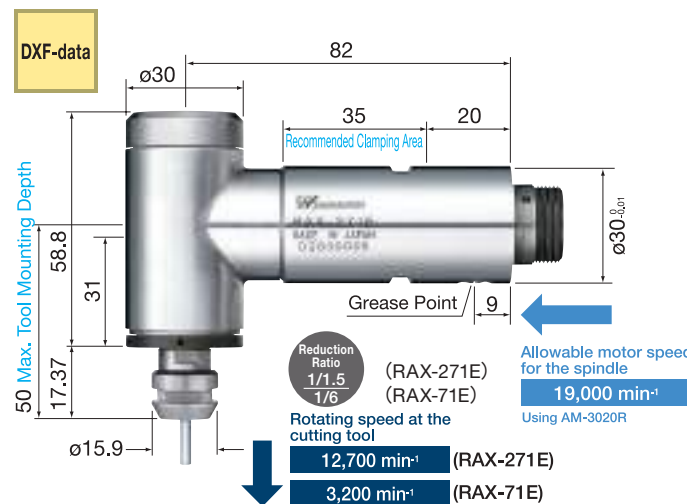
Angle Spindle Select Sheet

Model	RAX-271E	RAX-71E	RAS-151E	RA-151E	RA-271E
Angle Head Size O.D.	ø30mm	ø30mm	ø23mm	ø22.8mm	ø17.4mm
Rotating speed at the cutting tool ^{※1}	12,700min ⁻¹	3,200min ⁻¹	7,200min ⁻¹	7,200min ⁻¹	12,700min ⁻¹
Using Tools	ø0.5~ø6.35mm		ø0.8~ø3.175mm		

※1 Using AM-3020R

90° Angle Spindle	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Spindle Accuracy	Collet	Weight
RAX-271E	ø30mm	12,700min⁻¹ ※	1/1.5	19,000min⁻¹ (Using AM-3020R)	Within 2 μm	ø0.5~ø6.35mm (CHK Group)	580g
RAX-71E	ø30mm	3,200min⁻¹ ※	1/6	19,000min⁻¹ (Using AM-3020R)	Within 2 μm	ø0.5~ø6.35mm (CHK Group)	580g

※ Maximum rotating speed at the cutting tool for the reduction ratio.



Code No.	7856	Model	RAX-271E
Code No.	7857	Model	RAX-71E

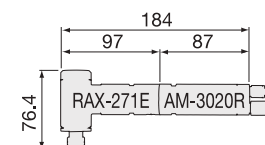
< Standard Accessories >

- Collet Nut (K-265) • Wrench (12 x 14) : 2pcs., (22 x 27) : 1pc.
- Grease for speed reducer (10mℓ) • Grease Nipple : 1pc.

< Options >

- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details
- Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D. ø5.0mm

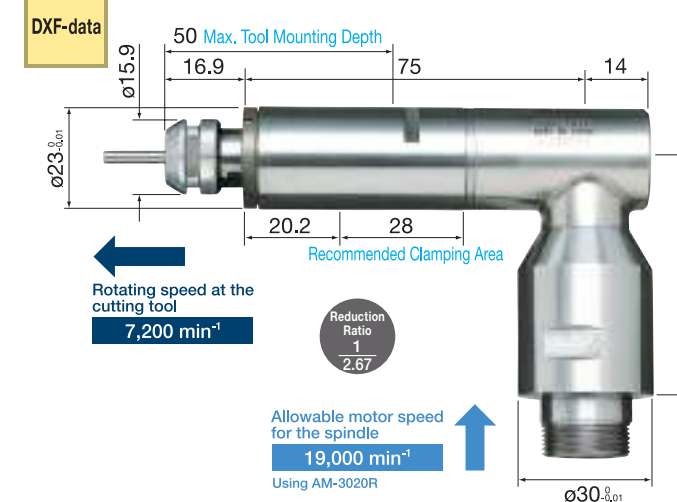
※ Collet is sold separately.



To extend the life expectancy of the Speed Reducer, inject grease every 70 to 100 hours. Grease injection prevents friction of the internal gears as well as heat generation. Adding grease also prevents the degradation of the existing grease in the reducer. Please maintain a reducer grease maintenance program.

90° Angle Spindle	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Spindle Accuracy	Collet	Weight
RAS-151E	ø30mm	7,200min⁻¹ ※	1/2.67	19,000min⁻¹ (Using AM-3020R)	Within 2 μm	ø0.5~ø6.35mm (CHK Group)	413g

※ Maximum rotating speed at the cutting tool for the reduction ratio.



Code No.	7840	Model	RAS-151E
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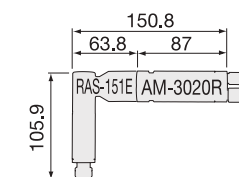
< Standard Accessories >

- Collet Nut (K-265)
- Wrench (12 x 14) : 2pcs., (22 x 27) : 1pc.

< Options >

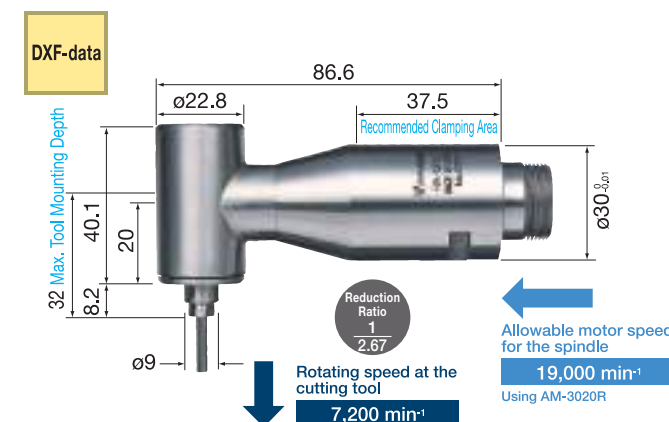
- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details

※ Collet is sold separately.



90° Angle Spindle	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Collet	Weight
RA-151E	ø30mm	7,200min⁻¹ ※	1/2.67	19,000min⁻¹ (Using AM-3020R)	ø0.8~ø3.175mm (CH8 Group)	385g

※ Maximum rotating speed at the cutting tool for the reduction ratio.



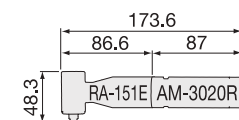
Code No.	1505	Model	RA-151E
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< Standard Accessories >

- Collet : ø3.0mm (CH8-3.0)
- Wrench (7 x 5.5), (8 x 5), (22 x 27) : 1pc. each

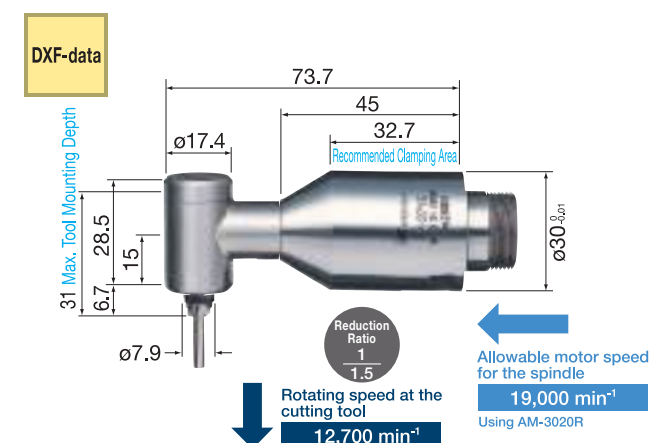
< Options >

- Collet (CH8 Group) : ø0.8~ø3.175mm See Page 30 for details



90° Angle Spindle	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Collet	Weight
RA-271E	ø30mm	12,700min⁻¹ ※	1/1.5	19,000min⁻¹ (Using AM-3020R)	ø0.8~ø3.175mm (CHS Group)	240g

※ Maximum rotating speed at the cutting tool for the reduction ratio.



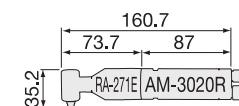
Code No.	1506	Model	RA-271E
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< Standard Accessories >

- Collet : ø3.0mm (CHS-3.0)
- Wrench (7 x 5.1), (8 x 5), (22 x 27) : 1pc. each

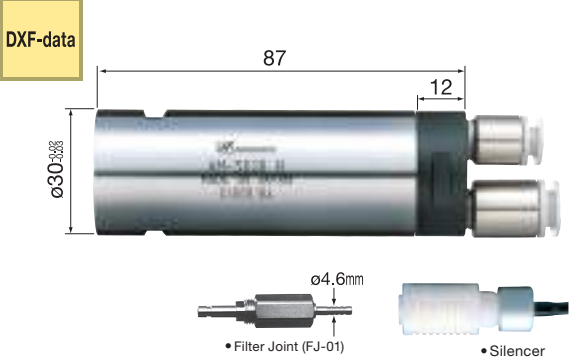
< Options >

- Collet (CHS Group) : ø0.8~ø3.175mm See Page 30 for details



 Please maintain not to exceed speed limit.

Air Motor (Forward Rotation)	O.D.	Motor Speed	Max. Power	Proper Air Pressure	Air Consumption	Weight
AM-3020R	ø30mm	19,000 min ⁻¹ (0.5MPa)	130 W	0.3~0.5 MPa	180 Nℓ/min	298 g (w/o hose)

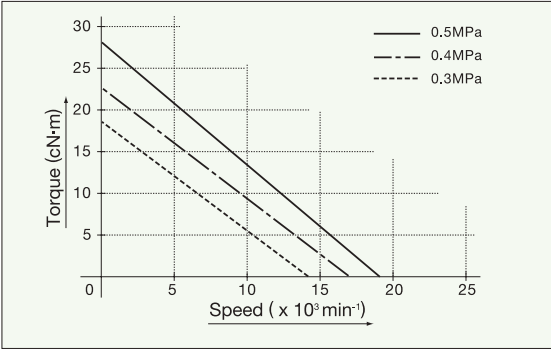


Code No.	1797	Model	AM-3020R
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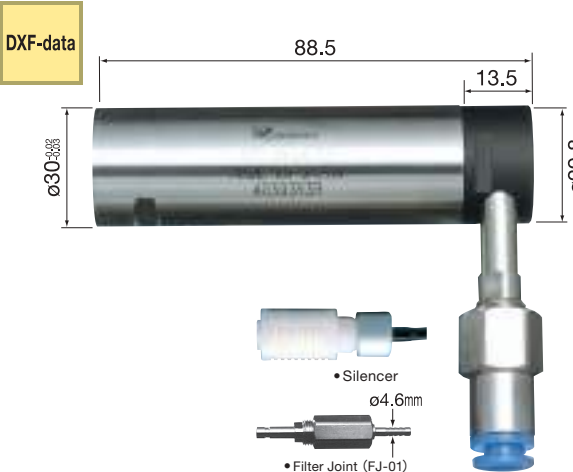
< Specifications >	
Motor Hose (Diameter / Length)	
Air Inlet	: ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m
Exhaust Air	: ø6.0mm (I.D.) x ø8.0mm (O.D.) x 1m

< Standard Accessories >	
• Hose (K-215) : ø6.0mm x 2m • Hose (K-256) : ø8.0mm x 1m	
• Filter Joint (FJ-01) • Silencer (K-208) • Wrench (22 x 27) : 1pc.	

● AM-3020R Torque-Speed Characteristics



90° Angle Air Motor (Forward Rotation)	O.D.	Motor Speed	Max. Power	Proper Air Pressure	Air Consumption	Weight
AM-3020RA	ø30mm	18,000 min ⁻¹ (0.5MPa)	125 W	0.3~0.5 MPa	175 Nℓ/min	339 g (w/o hose)

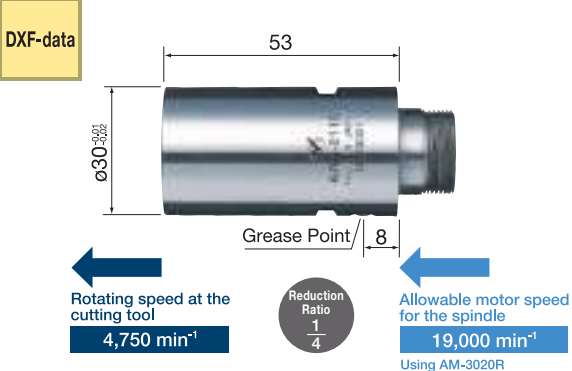


Code No.	1799	Model	AM-3020RA
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< Specifications >	
Motor Hose (Diameter / Length)	
Air Inlet	: ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m
Exhaust Air	: ø6.0mm (I.D.) x ø8.0mm (O.D.) x 1m

< Standard Accessories >	
• Hose (K-215) : ø6.0mm x 2m • Hose (K-256) : ø8.0mm x 1m	
• Filter Joint (FJ-01) • Silencer (K-208) • Wrench (22 x 27) : 1pc.	

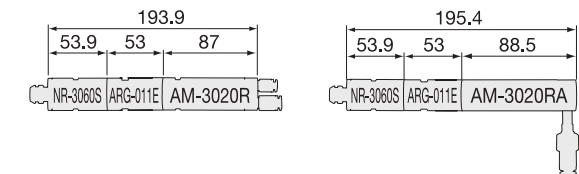
Speed Reducer (1/4)	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Weight
ARG-011E	ø30mm	4,750 min ⁻¹ *	1/4	19,000 min ⁻¹ (Using AM-3020R)	242 g



※ Maximum rotating speed at the cutting tool for the reduction ratio.

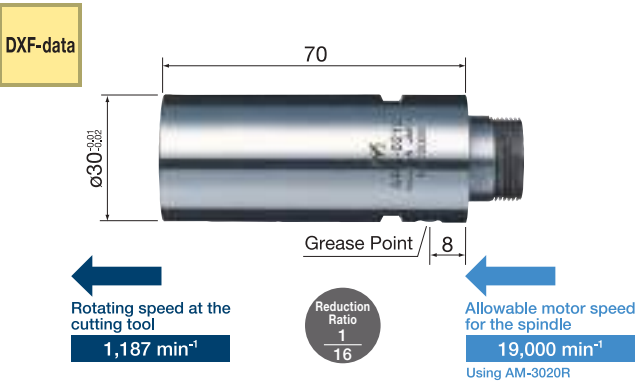
Code No.	1507	Model	ARG-011E
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< Standard Accessories >	
• Grease for speed reducer (10mℓ) • Grease Nipple : 1pc.	



 To extend the life expectancy of the Speed Reducer, inject grease every 70 to 100 hours. Grease injection prevents friction of the internal gears as well as heat generation. Adding grease also prevents the degradation of the existing grease in the reducer. Please maintain a reducer grease maintenance program.

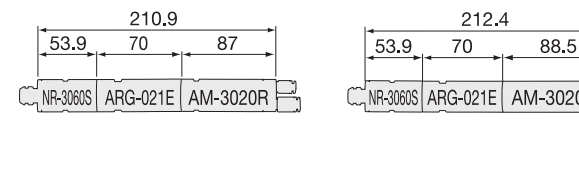
Speed Reducer (1/16)	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Weight
ARG-021E	ø30mm	1,187 min ⁻¹ *	1/16	19,000 min ⁻¹ (Using AM-3020R)	325 g



※ Maximum rotating speed at the cutting tool for the reduction ratio.

Code No.	1508	Model	ARG-021E
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< Standard Accessories >	
• Grease for speed reducer (10mℓ) • Grease Nipple : 1pc.	



 To extend the life expectancy of the Speed Reducer, inject grease every 70 to 100 hours. Grease injection prevents friction of the internal gears as well as heat generation. Adding grease also prevents the degradation of the existing grease in the reducer. Please maintain a reducer grease maintenance program.

▼ AIR MOTOR & SPINDLE (Separate Type)

Straight Spindle

Outside Diameter **ø25mm**

Max. **24,000min⁻¹** (Using 0.5MPa : AM-2526R)

Max. Power **130W**

Spindle Accuracy :
Within 1 μm

Collet :
Max. ø6.35mm

Collet
CHK-3.0

OPTION → Refer to **P.30**

※ Other collet sizes are available.

Air line kit
AL-M1202

OPTION → Refer to **P.29**

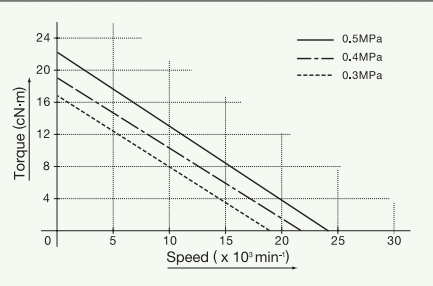
90° Angle Type Air Motor is available

Air Motor AM-2526R → Refer to **P.18**

Straight Spindle NR-2551

COOLANT

AM-2526R Torque-Speed Characteristics

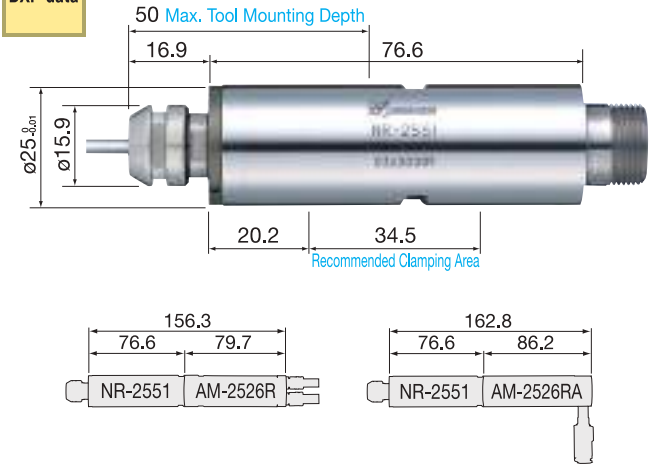


Spindle
< Ceramic Bearings >

NR-2551

	O.D.	Speed	Spindle Accuracy	Collet	Weight
	ø25mm	50,000min⁻¹	Within 1 μm	ø0.5~ø6.35mm (CHK Group)	253g

DXF-data



Code No. **7853** Model **NR-2551**

< Standard Accessories >

- Collet Nut (K-265)
- Wrench (12 x 14) : 2pcs., (22 x 27) : 1pc.

< Options >

- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details
- Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D. ø5.0mm

※ Outside diameter ø25.4mm type is also available.

※ Collet is sold separately.

Air Motor (Forward Rotation)

AM-2526R

	O.D.	Motor Speed	Max. Power	Proper Air Pressure	Air Consumption	Weight
	ø25mm	24,000min⁻¹ (0.5MPa)	130W	0.3~0.5MPa	205Nℓ/min	200g (w/o hose)

DXF-data



Code No. **1801** Model **AM-2526R**

< Specifications >

Motor Hose (Diameter / Length)

Air Inlet : ø4.5mm (I.D.) x ø6.7mm (O.D.) x 2m

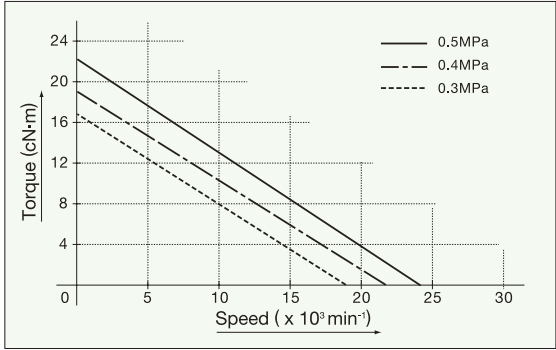
Exhaust Air : ø5.5mm (I.D.) x ø7.5mm (O.D.) x 1m

< Standard Accessories >

- Hose (K-204) : 2m • Filter Joint (FJ-02) • Silencer (K-208)
- Wrench (22 x 27) : 1pc.

※ Outside diameter ø25.4mm type is also available.

● AM-2526R Torque-Speed Characteristics



90° Angle Air Motor
(Forward Rotation)

AM-2526RA

	O.D.	Motor Speed	Max. Power	Proper Air Pressure	Air Consumption	Weight
	ø25mm	22,000min⁻¹ (0.5MPa)	120W	0.3~0.5MPa	170Nℓ/min	241g (w/o hose)

DXF-data



Code No. **1803** Model **AM-2526RA**

< Specifications >

Motor Hose (Diameter / Length)

Air Inlet : ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m

Exhaust Air : ø5.5mm (I.D.) x ø8.0mm (O.D.) x 1m

< Standard Accessories >

- Hose (K-215) : ø6.0mm x 2m • Hose (K-256) : ø8.0mm x 1m
- Filter Joint (FJ-01) • Silencer (K-208) • Wrench (22 x 27) : 1pc.

※ Outside diameter ø25.4mm type is also available.



Please maintain not to exceed speed limit.

Speed Reducer (1/4)

	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Weight
ARG-2504N	ø25mm	6,000 min ⁻¹ ※	1/4	24,000 min ⁻¹ (Using AM-2526R)	150 g

DXF-data

Rotating speed at the cutting tool
6,000 min⁻¹

Reduction Ratio
1/4

Allowable motor speed for the spindle
24,000 min⁻¹
Using AM-2526R

※ Maximum rotating speed at the cutting tool for the reduction ratio.

Code No.	1822	Model	ARG-2504N
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※ Outside diameter ø25.4mm type is also available.

Speed Reducer (1/16)

	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Weight
ARG-2516N	ø25mm	1,500 min ⁻¹ ※	1/16	24,000 min ⁻¹ (Using AM-2526R)	205 g

DXF-data

Rotating speed at the cutting tool
1,500 min⁻¹

Reduction Ratio
1/16

Allowable motor speed for the spindle
24,000 min⁻¹
Using AM-2526R

※ Maximum rotating speed at the cutting tool for the reduction ratio.

Code No.	1824	Model	ARG-2516N
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※ Outside diameter ø25.4mm type is also available.

▼ AIR MOTOR & SPINDLE (Separate Type)

Straight Spindle



Outside Diameter **ø22.8mm**
Max. **30,000min⁻¹** (0.5MPa)
Max. Power **108W**

90° Angle Type Air Motor is available

Air Motor AM-310R → Refer to P.25

Air line kit AL-M1202

OPTION → Refer to P.29



Straight Spindle NR-303

Collet :
Max. ø6.35mm

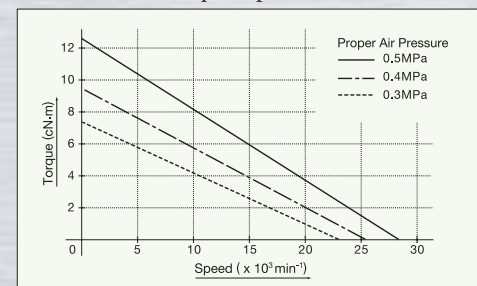
Collet CHK-3.0

OPTION → Refer to P.30

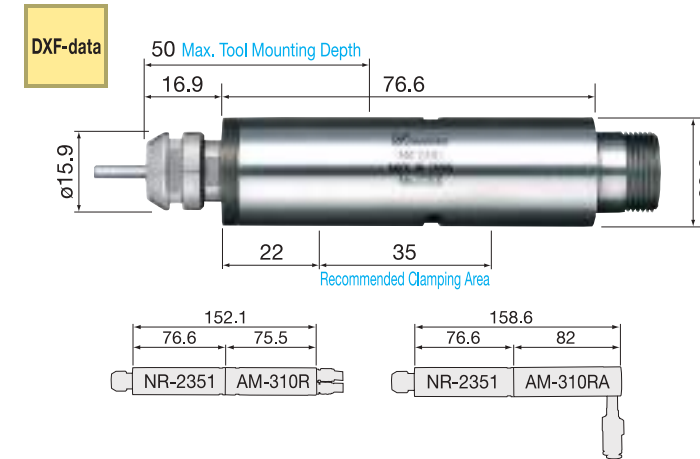
※ Other collet sizes are available.

※ Please maintain not to exceed speed limit.

● AM-310R Torque-Speed Characteristics



Spindle	O.D.	Speed	Spindle Accuracy	Collet	Weight
< Ceramic Bearings > NR-2351	ø22.8mm	50,000min ⁻¹	Within 1 μm	ø0.5~ø6.35mm (CHK Group)	215g



Code No. **7855** Model **NR-2351**

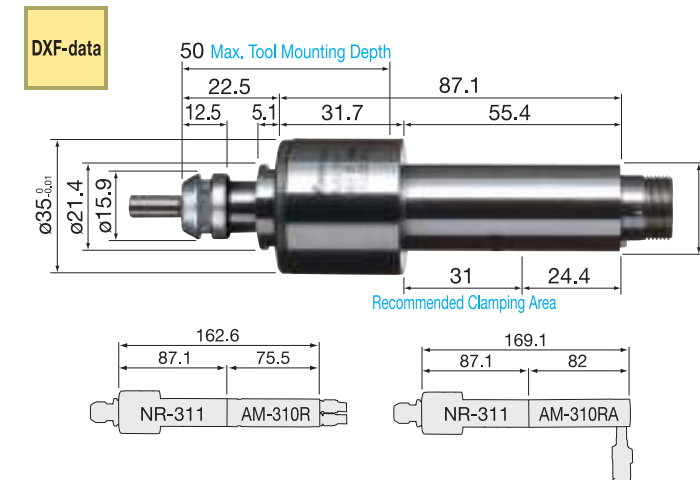
< Standard Accessories >

- Collet Nut (K-265)
- Wrench (12 x 14) : 2pcs., (20 x 24) : 1pc.

< Options >

- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details
- Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D. ø5.0mm
- ※ Allowable Motor Speed : 50,000min⁻¹
- ※ Collet is sold separately.

Spindle	O.D.	Speed	Spindle Accuracy	Collet	Weight
NR-311	ø22.8mm	30,000min ⁻¹ (Using AM-310R)	Within 2 μm	ø0.5~ø6.35mm (CHK Group)	370g



Code No. **7832** Model **NR-311**

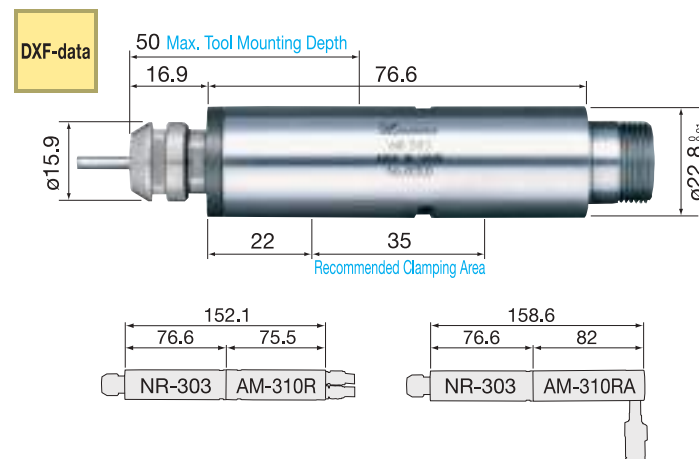
< Standard Accessories >

- Collet Nut (K-265)
- Wrench (12 x 14), (20 x 24) : 1pc. each

< Options >

- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details
- Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)
- Grindstone Flange (NGF2-19) : ø19.05 (I.D.) x ø40 (O.D.) x 7 (W)mm
- ※ Collet is sold separately.

Spindle	O.D.	Speed	Spindle Accuracy	Collet	Weight
NR-303	ø22.8mm	30,000min ⁻¹ (Using AM-310R)	Within 2 μm	ø0.5~ø6.35mm (CHK Group)	215g



Code No. **7861** Model **NR-303**

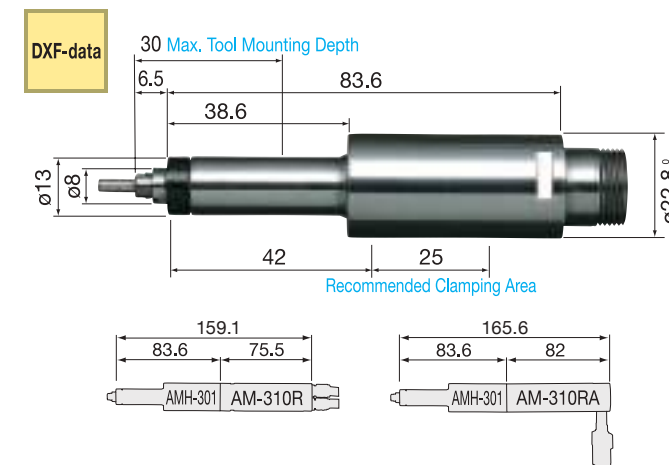
< Standard Accessories >

- Collet Nut (K-265)
- Wrench (12 x 14) : 2pcs., (20 x 24) : 1pc.

< Options >

- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details
- Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D. ø5.0mm
- ※ Collet is sold separately.

Spindle	O.D.	Speed	Collet	Weight
AMH-301	ø22.8mm	30,000min ⁻¹ (Using AM-310R)	ø1.0~ø3.175mm (CHM Group)	171g



Code No. **1074** Model **AMH-301**

< Standard Accessories >

- Collet : ø3.0mm (CHM-3.0)
- Wrench (7 x 5.1), (6 x 4.5), (20 x 24) : 1pc. each

< Options >

- Collet (CHM Group) : ø1.0~ø3.175mm See Page 30 for details
- Grindstone Arbor (AGM-01) : Grindstone I.D. ø5.0mm



Please maintain not to exceed speed limit.

▼ AIR MOTOR & SPINDLE (Separate Type)

Angle Spindle



Outside Diameter **ø22.8mm**

Max. **2,870min⁻¹** Rotating speed at the cutting tool
(Using 0.5MPa : ARG-01+AM-300R)

Max. Power **57W** (Using AM-300R)

Air Motor
AM-300R → Refer to P.26

**Reducer must be used
for Angle Spindle**

Speed Reducer
ARG-01
OPTION → Refer to P.27

Air line kit
AL-M1202
OPTION → Refer to P.29

**Collet :
Max. ø3.175mm**

Collet
CH8-3.0

OPTION → Refer to P.30

※ Other collet sizes are available.

Angle Spindle Select Sheet

Model	RA-100	RA-200	RAS-101
Angle Head Size O.D.	ø22.8mm	ø17.4mm	ø22.8mm
Rotating speed at the cutting tool ^{※1}	2,870min ⁻¹ ※1	5,100min ⁻¹ ※1	2,870min ⁻¹ ※2
Using Tools	ø0.8~ø3.175mm	ø0.5~ø6.35mm	ø0.5~ø6.35mm

※1 Using ARG-01+AM-300R ※2 Using ARG-01+AM-310R

※ Please maintain not to exceed speed limit.

90° Angle Spindle

RA-200

O.D.

ø22.8mm

Rotating speed at the cutting tool

5,100min⁻¹※

Reduction Ratio

1/1.5

Allowable motor speed for the spindle

7,650min⁻¹
(Using ARG-01+AM-300R)

Collet

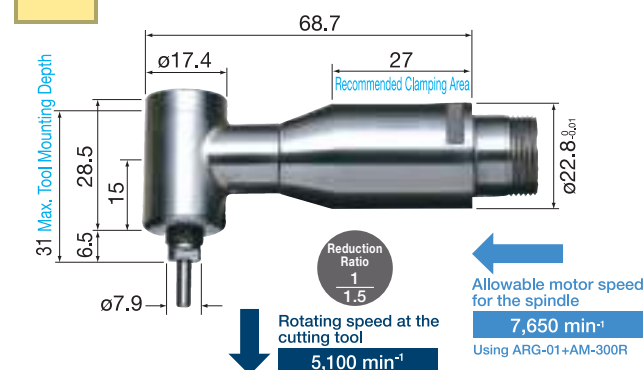
ø0.8~ø3.175mm
(CHS Group)

Weight

165g

※ Maximum rotating speed at the cutting tool for the reduction ratio.

DXF-data



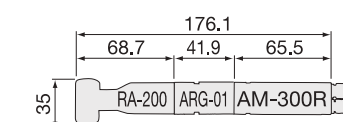
Code No. **1075** Model **RA-200**

< Standard Accessories >

- Collet : ø3.0mm (CHS-3.0)
- Wrench (7 x 5.1), (8 x 5), (20 x 24) : 1pc. each

< Options >

Collet (CHS Group) : ø0.8~ø3.175mm See Page 30 for details



90° Angle Spindle

RAS-101

O.D.

ø22.8mm

Rotating speed at the cutting tool

2,870min⁻¹※

Reduction Ratio

1/2.67

Allowable motor speed for the spindle

7,650min⁻¹
(Using ARG-01+AM-310R)

Spindle Accuracy

Within 2μm

Collet

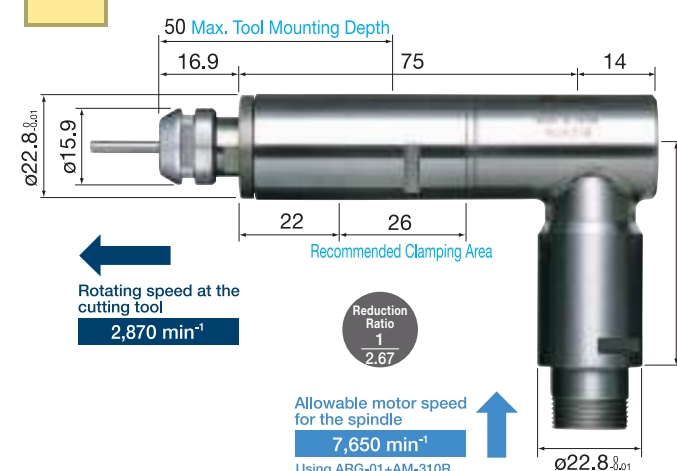
ø0.5~ø6.35mm
(CHK Group)

Weight

325g

※ Maximum rotating speed at the cutting tool for the reduction ratio.

DXF-data



Code No. **7839** Model **RAS-101**

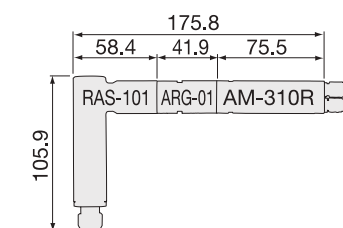
< Standard Accessories >

- Collet Nut (K-265)
- Wrench (12 x 14) : 2pcs., (20 x 24) : 1pc.

< Options >

Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details

※ Collet is sold separately.



90° Angle Spindle

RA-100

O.D.

ø22.8mm

Rotating speed at the cutting tool

2,870min⁻¹※

Reduction Ratio

1/2.67

Allowable motor speed for the spindle

7,650min⁻¹
(Using ARG-01+AM-300R)

Collet

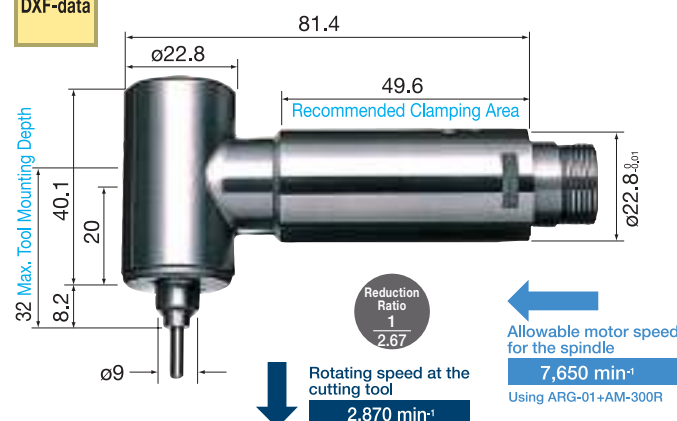
ø0.8~ø3.175mm
(CH8 Group)

Weight

271g

※ Maximum rotating speed at the cutting tool for the reduction ratio.

DXF-data



Code No. **1024** Model **RA-100**

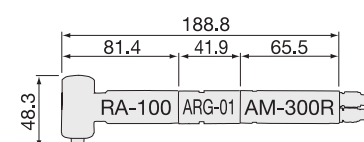
< Standard Accessories >

- Collet : ø3.0mm (CH8-3.0)
- Wrench (7 x 5.5), (8 x 5), (20 x 24) : 1pc. each

< Options >

Collet (CH8 Group) : ø0.8~ø3.175mm See Page 30 for details

Metal Saw Arbor (KCH-02) : ød (I.D.) x under ø30mm (O.D.)



Air Motor (Forward Rotation)	O.D.	Motor Speed	Max. Power	Proper Air Pressure	Air Consumption	Weight
AM-310R	ø22.8mm	30,000min ⁻¹ (0.5MPa)	108W	0.3~0.5MPa	190Nℓ/min	203g (w/o hose)



Code No.	1079	Model	AM-310R
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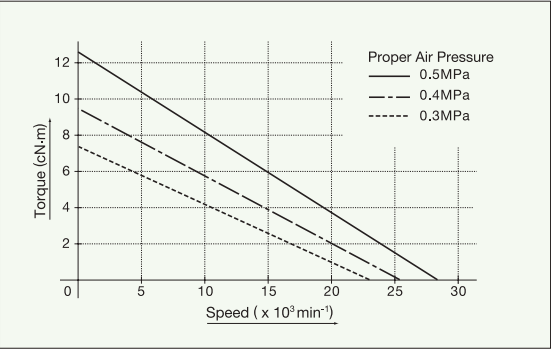
< Specifications >

Motor Hose (Diameter / Length)	
Air Inlet	: ø4.5mm (I.D.) x ø6.7mm (O.D.) x 2m
Exhaust Air	: ø5.5mm (I.D.) x ø7.5mm (O.D.) x 1m

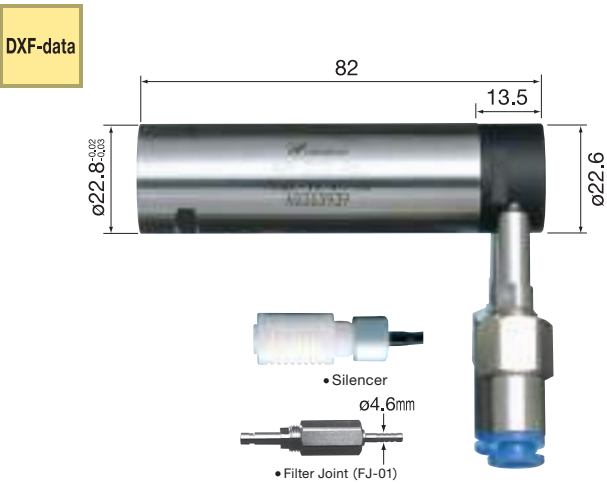
< Standard Accessories >

- Hose (K-204) : 2m •Filter Joint (FJ-02) •Silencer (K-208)
- Wrench (20 x 24) : 1pc.

● AM-310R Torque-Speed Characteristics



90° Angle Air Motor (Forward Rotation)	O.D.	Motor Speed	Max. Power	Proper Air Pressure	Air Consumption	Weight
AM-310RA	ø22.8mm	30,000min ⁻¹ (0.5MPa)	108W	0.3~0.5MPa	170Nℓ/min	244g (w/o hose)



Code No.	1081	Model	AM-310RA
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< Specifications >

Motor Hose (Diameter / Length)	
Air Inlet	: ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m
Exhaust Air	: ø5.5mm (I.D.) x ø8.0mm (O.D.) x 1m

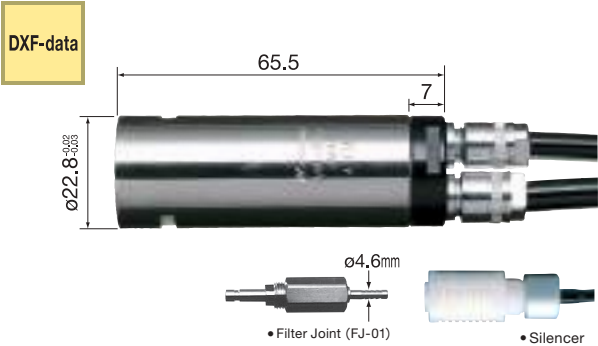
< Standard Accessories >

- Hose (K-215) : ø6.0mm x 2m •Hose (K-216) : ø8.0mm x 1m
- Filter Joint (FJ-01) •Silencer (K-208) •Wrench (20 x 24) : 1pc.

Air line kit
AL-M1202
OPTION → Refer to **P.29**



Air Motor (Forward Rotation)	O.D.	Motor Speed	Max. Power	Proper Air Pressure	Air Consumption	Weight
AM-300R	ø22.8mm	30,000min ⁻¹ (0.4MPa)	57W	0.3~0.5MPa	90Nℓ/min	135g (w/o hose)



Code No.	1021	Model	AM-300R
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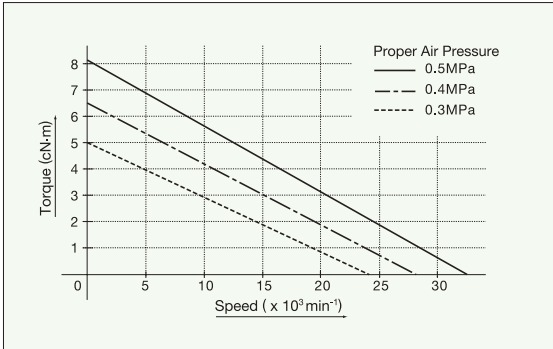
< Specifications >

Motor Hose (Diameter / Length)	
Air Inlet	: ø3.7mm (I.D.) x ø5.7mm (O.D.) x 2m
Exhaust Air	: ø5.0mm (I.D.) x ø6.5mm (O.D.) x 1m

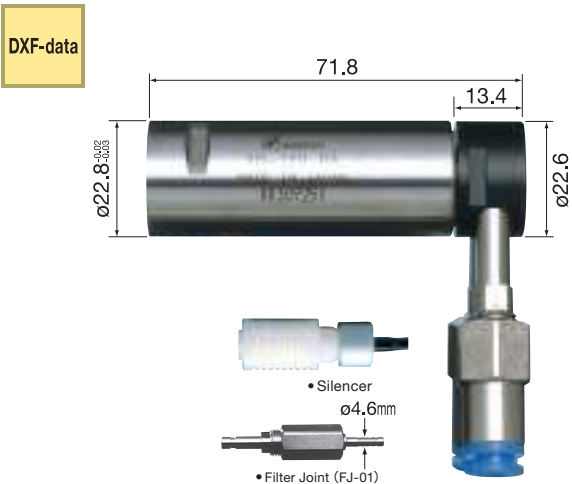
< Standard Accessories >

- Hose (K-221) : 2m •Filter Joint (FJ-01) •Silencer (K-209)
- Wrench (20 x 24) : 1pc.

● AM-300R Torque-Speed Characteristics



90° Angle Air Motor (Forward Rotation)	O.D.	Motor Speed	Max. Power	Proper Air Pressure	Air Consumption	Weight
AM-300RA	ø22.8mm	30,000min ⁻¹ (0.4MPa)	57W	0.3~0.5MPa	90Nℓ/min	176g (w/o hose)



Code No.	1018	Model	AM-300RA
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< Specifications >

Motor Hose (Diameter / Length)	
Air Inlet	: ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m
Exhaust Air	: ø5.5mm (I.D.) x ø8.0mm (O.D.) x 1m

< Standard Accessories >

- Hose (K-215) : ø6.0mm x 2m •Hose (K-216) : ø8.0mm x 1m
- Filter Joint (FJ-01) •Silencer (K-208) •Wrench (20 x 24) : 1pc.

Air line kit
AL-M1202
OPTION → Refer to **P.29**



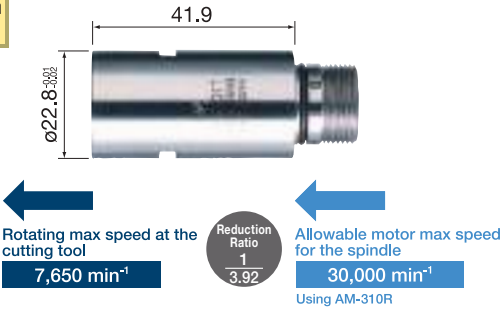


Please maintain not to exceed speed limit.

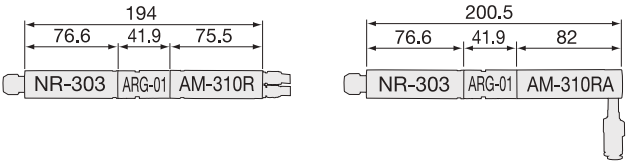
Speed Reducer (1/3.92)	O.D.	Rotating Max. speed at the cutting tool	Reduction Ratio	Allowable motor Max. speed for the spindle	Weight
ARG-01	ø22.8mm	7,650 min ⁻¹ ※ (0.5MPa)	1 3.92	30,000 min ⁻¹ (Using AM-310R)	108g

※ Maximum rotating speed at the cutting tool for the reduction ratio.

DXF-data



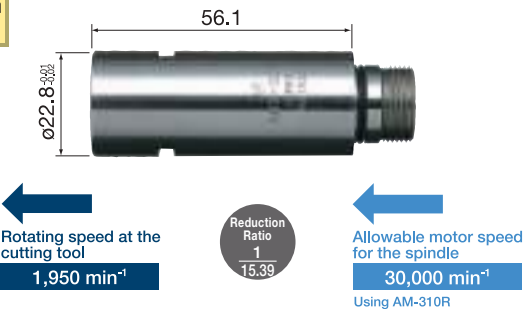
Code No.	1022	Model	ARG-01
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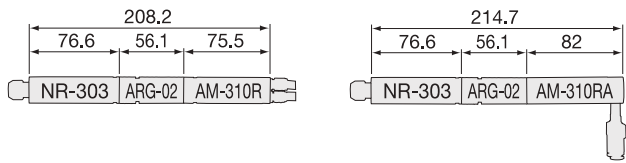
Speed Reducer (1/15.39)	O.D.	Rotating speed at the cutting tool	Reduction Ratio	Allowable motor speed for the spindle	Weight
ARG-02	ø22.8mm	1,950 min ⁻¹ ※ (0.5MPa)	1 15.39	30,000 min ⁻¹ (Using AM-310R)	148g

※ Maximum rotating speed at the cutting tool for the reduction ratio.

DXF-data



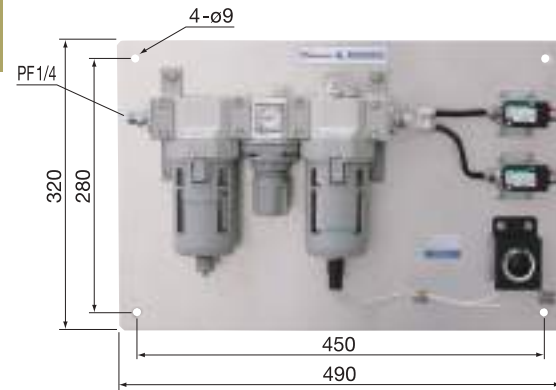
Code No.	1023	Model	ARG-02
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Air Line Kit

AL-M1203BS2 (For ø6mm Hose)

DXF-data



■ The AL-M1203BS2 is fitted with 2 (DC+24V) solenoid operated air valves a large capacity filter and lubricator a high flow regulator, and low oil warning system making this the ideal air line system for installation on NC and CNC machinery. This Air Line Kit allows for operation of 2 air motors.

Filter Mesh 0.3 μm

Code No. **4503** Model **AL-M1203BS2**

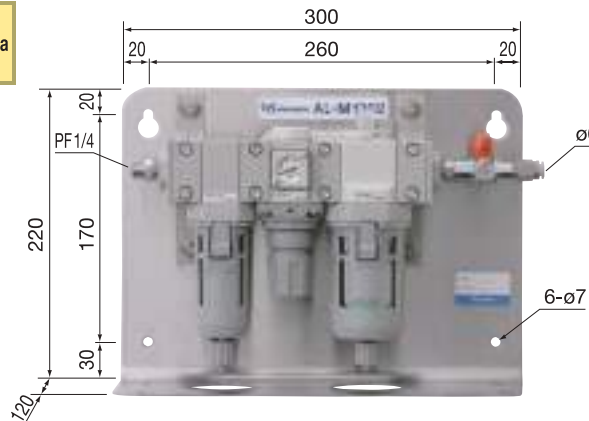
< Standard Accessories >

• Connection Hose (K-275) : 2m • Lubricating Oil (K-202) : 1pc.

Air Line Kit

AL-M1202 (ø6mm Air Output One-Touch Connector)

DXF-data



■ The AL-M1202 provides simple, automatic conditioning of the air supplied to NAKANISHI air motors. The filter removes water and impure substances from the input air supply. The regulator maintains to proper air pressure and the lubricator ensures proper oil flow to the motor and spindle. This Air Line Kit is wall mountable.

Filter Mesh 0.3 μm

Code No. **4502** Model **AL-M1202**

< Standard Accessories >

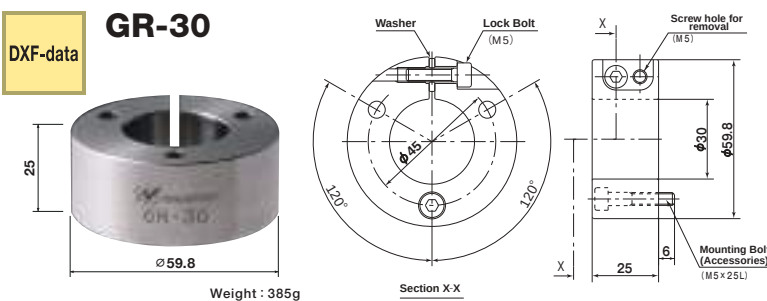
• Connection Hose (K-275) : 2m • Lubricating Oil (K-211) : 1pc.

Grip Ring

GR-30 / GR-22.8

DXF-data

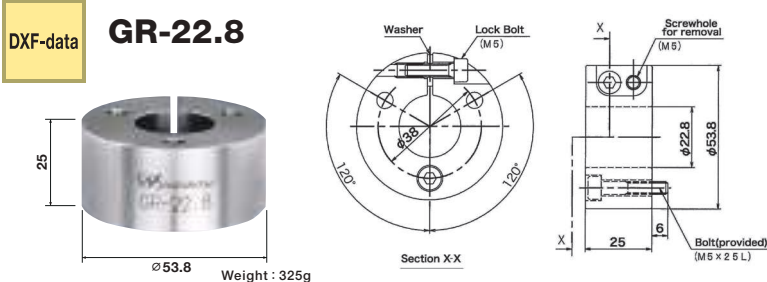
GR-30



Standard Accessories Mounting Bolt (GR-30) M5×25 : 3pcs.

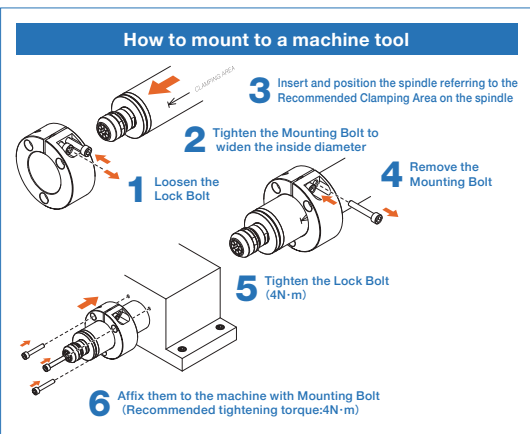
DXF-data

GR-22.8

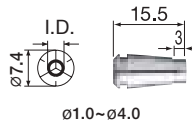
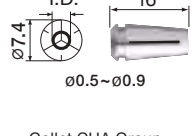
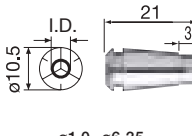
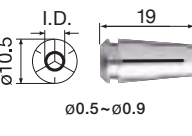
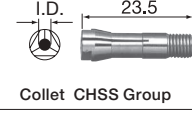
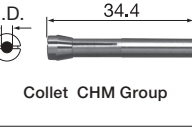
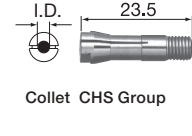
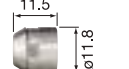
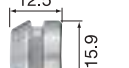


Standard Accessories Mounting Bolt (GR-22.8) M5×25 : 3pcs.

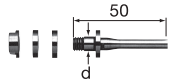
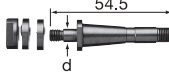
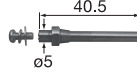
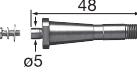
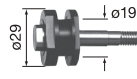
Code No. **1885** Model **GR-30**
Code No. **1888** Model **GR-22.8**



Collet • Collet Nut

Product	Code No.	Model	I.D.	Compatible model
 ø1.0~ø4.0  ø0.5~ø0.9 Collet CHA Group	91494	CHA-3.0AA	ø3.0AA ※	MSS-19, MSS-20, MSS-22 PMS-3020A ※ High precision type AA (Run-out Accuracy within 2 μm)
	91496	CHA-3.175AA	ø3.175AA ※	
	91495	CHA-4.0AA	ø4.0AA ※	
	91492	CHA-2.35	ø2.35	
	91430	CHA-3.0	ø3.0	
	91493	CHA-3.175	ø3.175	
	91440	CHA-4.0	ø4.0	
	—	CHA-□□	ø0.5, ø0.6, ø0.7, ø0.8, ø0.9	
			ø1.1, ø1.2, ø1.3, ø1.4, ø1.7, ø1.8, ø1.9 ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9 ø3.1, ø3.2, ø3.3, ø3.4, ø3.6, ø3.7, ø3.8, ø3.9	
			ø1.0, ø1.5, ø2.0, ø2.5, ø3.5 ø1.6	
 ø1.0~ø6.35  ø0.5~ø0.9 Collet CHK Group	91597	CHK-3.0AA	ø3.0AA ※	MSS-25, MSST-23, NR-2351, NR-2551 NR-303, NR-311, NR-3060S, NR-3060 NR-403E, NR-453E, PMA-3013K PMS-3020K, PMR-3005K, RAS-101 RAS-151E, RAX-71E, RAX-271E ※ High precision type AA (Run-out Accuracy within 2 μm)
	91598	CHK-3.175AA	ø3.175AA ※	
	91599	CHK-4.0AA	ø4.0AA ※	
	91600	CHK-6.0AA	ø6.0AA ※	
	91601	CHK-6.35AA	ø6.35AA ※	
	91592	CHK-2.35	ø2.35	
	91530	CHK-3.0	ø3.0	
	91593	CHK-3.175	ø3.175	
	91540	CHK-4.0	ø4.0	
	91560	CHK-6.0	ø6.0	
	91596	CHK-6.35	ø6.35	
	—	CHK-□□	ø0.5, ø0.6, ø0.7, ø0.8, ø0.9	
			ø1.0, ø1.5, ø2.0, ø2.5, ø3.5, ø4.5, ø4.76, ø5.5	
			ø1.1, ø1.2, ø1.3, ø1.4, ø1.7, ø1.8, ø1.9 ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9 ø3.1, ø3.2, ø3.3, ø3.4, ø3.6, ø3.7, ø3.8, ø3.9 ø4.1, ø4.2, ø4.3, ø4.4, ø4.6, ø4.7, ø4.8, ø4.9 ø5.1, ø5.2, ø5.3, ø5.4, ø5.6, ø5.7, ø5.8, ø5.9	
			ø1.6, ø5.0	
 Collet CHSS Group	93092	CHSS-2.35	ø2.35	PMA-3013S
	93030	CHSS-3.0	ø3.0	
	93093	CHSS-3.175	ø3.175	
	—	CHSS-□□	ø1.0, ø1.5, ø2.0, ø2.5	
 Collet CHM Group	90992	CHM-2.35	ø2.35	AMH-301, NR-601
	90930	CHM-3.0	ø3.0	
	90993	CHM-3.175	ø3.175	
	90916	CHM-1.6	ø1.6	
	—	CHM-□□	ø1.0, ø2.0	
 Collet CHS Group	90592	CHS-2.35	ø2.35	RA-200, RA-271E
	90530	CHS-3.0	ø3.0	
	90593	CHS-3.175	ø3.175	
	90516	CHS-1.6	ø1.6	
	—	CHS-□□	ø0.8, ø0.9	
			ø1.0, ø2.0, ø2.5	
			ø1.1, ø1.2, ø1.3, ø1.4, ø1.5, ø1.7, ø1.8, ø1.9 ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9	
 Collet CH8 Group	91092	CH8-2.35	ø2.35	RA-100, RA-151E
	91030	CH8-3.0	ø3.0	
	91093	CH8-3.175	ø3.175	
	—	CH8-□□	ø0.8, ø0.9	
			ø1.0, ø1.5, ø2.0, ø2.5	
			ø1.1, ø1.2, ø1.3, ø1.4, ø1.6, ø1.7, ø1.8, ø1.9 ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9	
 ø11.5 ø11.8	2102	CHN-A	Collet Nut for Collet (CHA)	MSS-19, MSS-20, MSS-22 PMS-3020A
 ø12.5 ø15.9	2129	K-265	Collet Nut for Collet (CHK)	MSS-25, MSST-23, NR-2351, NR-2551, NR-303 NR-311, NR-3060S, NR-3060, NR-403E NR-453E, PMA-3013K, PMS-3020K, PMR-3005K RAS-101, RAS-151E, RAX-71E, RAX-271E

■ Metal Saw Arbor・Grindstone Arbor

Product	Code No.	Model	I.D. / Description / Specification		Compatible model
	2146	KCH-02 (5.0)	ø5.0	Metal Saw Arbor Dimensions of Metal Saw ød (I.D.) x under ø30mm (O.D.) Run-out Accuracy : within 0.02 mm	RA-100, RA-151E
	1077	KCH-02 (6.0)	ø6.0		
	2147	KCH-02 (8.0)	ø8.0		
	2148	KCH-03 (5.0)	ø5.0	Metal Saw Arbor Dimensions of Metal Saw ød (I.D.) x under ø30mm (O.D.) Run-out Accuracy : within 0.02 mm	MSS-25, MSST-23, NR-2351, NR-2551, NR-303 NR-311, NR-3060S, NR-3060, NR-403E NR-453E, PMA-3013K, PMS-3020K, PMR-3005K RAS-101, RAS-151E, RAX-71E, RAX-271E
	2130	KCH-03 (6.0)	ø6.0		
	2149	KCH-03 (8.0)	ø8.0		
	1029	AGM-01	Grindstone Arbor Run-out Accuracy : within 0.02 mm Grindstone I.D. ø5.0mm		AMH-301, NR-601
	2131	AGM-03	Grindstone Arbor Run-out Accuracy : within 0.02 mm Grindstone I.D. ø5.0mm		MSS-25, MSST-23, NR-2351, NR-2551 NR-303, NR-3060S, NR-3060, NR-403E NR-453E, PMA-3013K, PMS-3020K RAS-101, RAS-151E, RAX-71E, RAX-271E
	2143	NGF2-19	Grindstone Flange Applicable Grindstone Dimensions ø19.05 (I.D.) x ø40 (O.D.) x 7 (W) mm		NR-311
	2138	EGF-19			NR-3060S, NR-3060 NR-403E, NR-453E, PMS-3020K

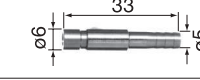
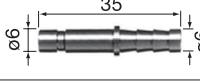
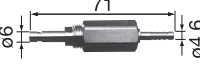
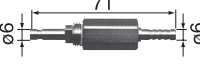
※ For right hand (cw) rotation only.

■ Bush

Bushes to allow smaller dia. spindles to be mounted in larger dia. holders.

Product	Code No.	Model	Description x I.D. x O.D.
	1887	RB-19.05 x 25.4 x 36L	ø25.4 Bush Dimensions: ø19.05 x ø25.4 x 36mm
	1877	RB-20 x 22	ø22 Bush Dimensions: ø20 x ø22 x 40mm
	1876	RB-20 x 22.8	ø22.8 Bush Dimensions: ø20 x ø22.8 x 40mm
	1875	RB-20 x 23	ø23 Bush Dimensions: ø20 x ø23 x 40mm
	1878	RB-20 x 25	ø25 Bush Dimensions: ø20 x ø25 x 40mm
	1879	RB-20 x 25.4	ø25.4 Bush Dimensions: ø20 x ø25.4 x 40mm
	1883	RB-22 x 25 x 34L	ø25 Bush Dimensions: ø22 x ø25 x 33.5mm
	1884	RB-22 x 25.4 x 34L	ø25.4 Bush Dimensions: ø22 x ø25.4 x 33.5mm
	1872	RBS-22.8 x 25	ø25 Bush Dimensions: ø22.8 x ø25 x 25mm
	1871	RB-22.8 x 25	ø25 Bush Dimensions: ø22.8 x ø25 x 44mm
	1874	RBS-22.8 x 25.4	ø25.4 Bush Dimensions: ø22.8 x ø25.4 x 25mm
	1873	RB-22.8 x 25.4	ø25.4 Bush Dimensions: ø22.8 x ø25.4 x 44mm

■ Metal Fitting & Filter Joint

Product	Description	Code No.	Model	Compatible model
	Metal Fitting (for ø6 Quick Disconnecting Joint)	2035	K-241	(For K-215 Hose)
	Metal Fitting (for ø6 Quick Disconnecting Joint)	2036	K-242	(For K-204 Hose)
	Filter Joint (for ø6 Quick Disconnecting Joint)	2038	FJ-01	(For K-215 Hose) (For K-221 Hose) (For K-247 Hose) (For K-254 Hose)
	Filter Joint (for ø6 Quick Disconnecting Joint)	2039	FJ-02	(For K-204 Hose)

■ Hose

Product	Description	Code No.	Model	Compatible model
	Hose ø6mm (O.D.) (INLET) 2m	2028	K-215	AM-2526 (RA・LA), AM-300 (RA・LA) AM-310 (RA・LA), AM-3020, AM-600RA PMA-3013K, PMA-3013S PMA-3020A, PMS-3020K MSS-19・20・22・25 (RA), MSST-23 (RA)
	Hose ø8mm (O.D.) (EXHAUST) 1m	2029	K-216	AM-300 (RA・LA), AM-310 (RA・LA) AM-600RA, MSS-19・20・22 (RA) MSST-23 (RA)
	Hose ø8mm (O.D.) (EXHAUST) 1m	2052	K-256	AM-3020, PMA-3013K, PMA-3013S PMR-3005K, PMS-3020A, PMS-3020K AM-2526 (RA・LA), MSS-25 (RA)
	Hose 2m	2030	K-204	AM-2526 (R・L), AM-310 (R・L) AM-600R, MSST-23 (R)
	Hose 2m	2049	K-221	AM-300 (R・L), MSS-19・20・22 (R)

■ Grease

Product	Description	Code No.	Model	Compatible model
	Grease for speed reducer (2.5mℓ)	1547	—	ARG-011E, ARG-021E PMR-3005K, PMA-3013K RAX-271E, RAX-71E
	Grease for speed reducer (10mℓ)	1550	—	
	Grease for speed reducer (100mℓ)	1549	—	

■ Oil

Product	Description	Code No.	Model	Compatible model
	Lubricating Oil (70cc)	1057	K-211	Air Line Kit (AL-M1202, AL-M1203BS2)
	Lubricating Oil (1ℓ)	1058	K-202	