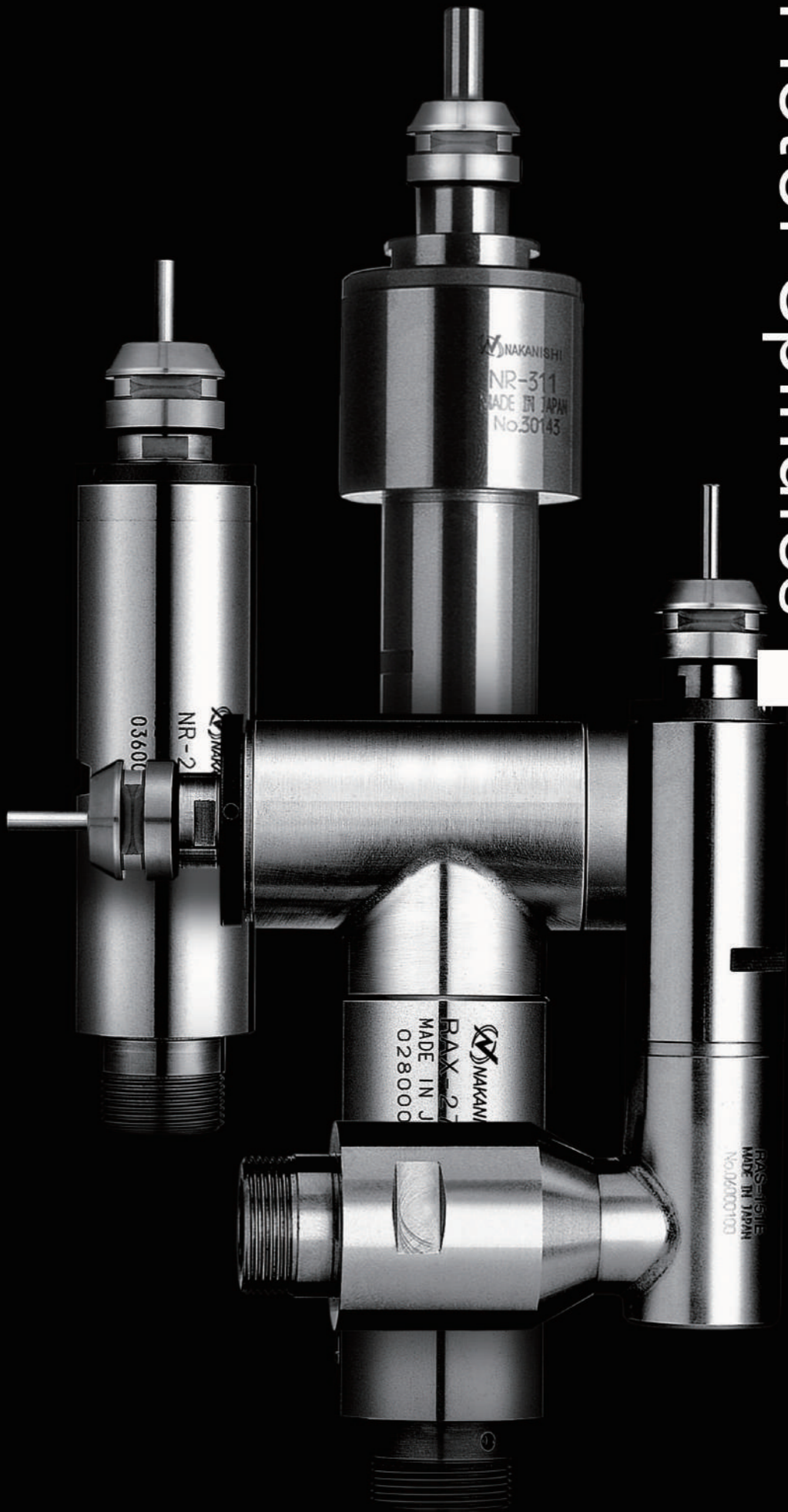


# AirSpeed Air Motor Spindles



AirSpeed

NAKANISHI INC. 2022



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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**  $\varnothing 25, \varnothing 23, \varnothing 20, \varnothing 19.05\text{mm}$

**Max.**  $30,000\text{min}^{-1}$

**Max. Power** **130W**



**Separate Type Spindle**

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



**Outside Diameter**  $\varnothing 30, \varnothing 25, \varnothing 22.8\text{mm}$

**Max.**  $30,000\text{min}^{-1}$

**Max. Power** **130W**



**One Piece Type  $\phi 25, \phi 23, \phi 20, \phi 19.05\text{mm}$**

**● Air Motor**

Vane  
Rotor  
Cylinder  
Air Inlet Port  
Exhaust Air Port

24,000 / 6,000 / 1,500min<sup>-1</sup>  
Air Motor Spindle  
MSS-25 Series Straight type

22,000 / 5,500 / 1,400min<sup>-1</sup>  
Air Motor Spindle  
MSS-25 Series Angle type

30,000 / 7,700 / 2,000min<sup>-1</sup>  
Air Motor Spindle  
MSST-23 Series Straight type

27,000 / 7,200 / 1,900min<sup>-1</sup>  
Air Motor Spindle  
MSST-23 Series Angle type

30,000 / 8,000 / 2,000min<sup>-1</sup>  
Air Motor Spindle  
MSS-20 Series Straight type

30,000 / 8,000 / 2,000min<sup>-1</sup>  
Air Motor Spindle  
MSS-20 Series Angle type

30,000 / 8,000 / 2,000min<sup>-1</sup>  
Air Motor Spindle  
MSS-19 Series Straight type

30,000 / 8,000 / 2,000min<sup>-1</sup>  
Air Motor Spindle  
MSS-19 Series Angle type

Compressor

Air line kit  
AL-M1202 / AL-M1203BS2

Collet nut K-265  
Collet CHK Group  
 $\phi 0.5 - \phi 6.35\text{mm}$

Metal Saw Arbor KCH-03

Grindstone Arbor AGM-03

Collet nut CHN-A  
Collet CHA Group  
 $\phi 0.5 - \phi 4.0\text{mm}$

※ 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<sup>-1</sup>

**Max. Power** 130W

**Model Code Example**

|                             |     |                      |    |           |    |                       |   |
|-----------------------------|-----|----------------------|----|-----------|----|-----------------------|---|
| [1] SERIES CODE             | MSS | [2] OUTSIDE DIAMETER | 19 | [3] SPEED | 08 | [4] R=FORWARD (Right) | R |
| [5] CODE FOR 90° ANGLE TYPE |     |                      |    |           |    | A                     |   |

**• Straight Type**

**• 90° Angle Type**

**Spindle Accuracy :**  
Within 2  $\mu\text{m}$



**● Outer Housing Material**

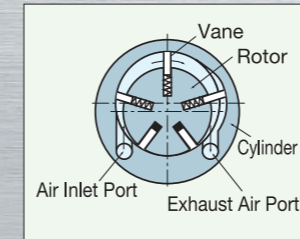
Made from stainless steel (SUS416)

**● Configuration**

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

**● Highest output power in the class**

**● Air Motor**



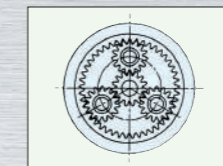
The rotor of the air motor rotates off center in the cylinder. The vanes are pushed by compressed air and this rotates the rotor. This small air motor produces high torque making it suitable for small diameter drilling, milling, slitting and grinding.

**● 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



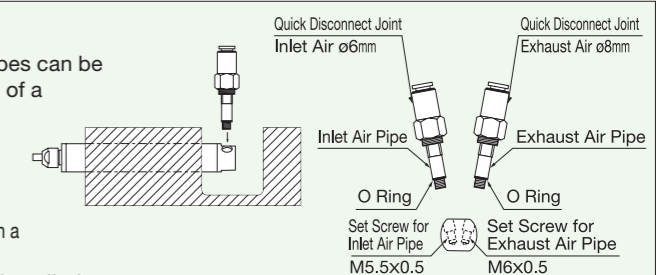
**● Installation of the 90° Angle Type**

● 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.

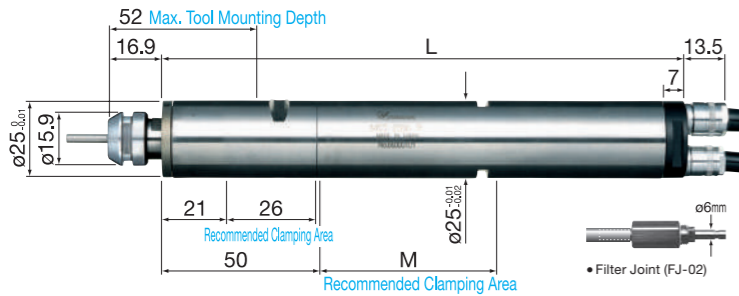
● Urethane hose of 6 x 4 for inlet air and 8 x 5 for exhaust air can be installed.



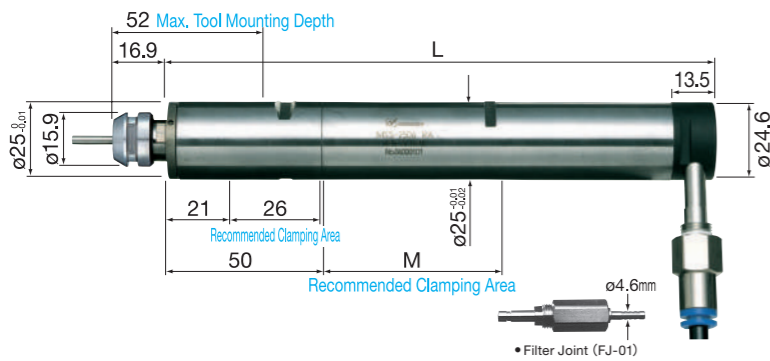
※ The motor speed of the 90° Angle type is 10% less than that of the straight type.

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

▼ MSS-25 Series STRAIGHT TYPE (R)



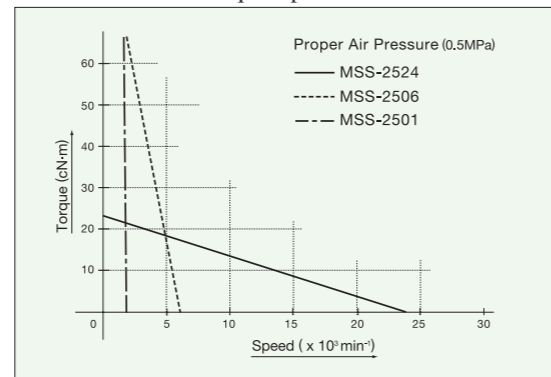
▼ MSS-25 Series 90° ANGLE TYPE (RA)



< Specifications >

| Motor Hose (Diameter / Length) |  |
|--------------------------------|--|
| R-Type                         | Air Inlet : ø6.7mm (O.D.) x 2m<br>Exhaust Air : ø7.5mm (O.D.) x 1m |
| RA-Type                        | Air Inlet : ø6.0mm (O.D.) x 2m<br>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<sup>-1</sup> (0.5MPa) / RA 22,000min<sup>-1</sup> (0.5MPa)

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

R 6,000min<sup>-1</sup> (0.5MPa) / RA 5,500min<sup>-1</sup> (0.5MPa) 1/4 Speed Reduction

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

R 1,500min<sup>-1</sup> (0.5MPa) / RA 1,400min<sup>-1</sup> (0.5MPa) 1/16 Speed Reduction

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

< Standard Accessories >

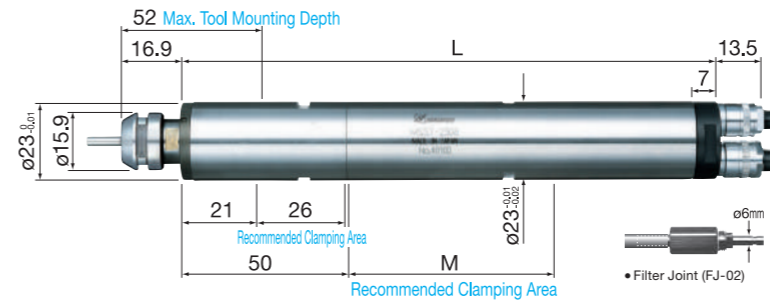
- Collet Nut (K-265) • Wrench (12 x 14) : 2pcs.
- Hose (K-204) (R-type) : 1pc.
- Hose (K-215) (RA-type) : 1pc.
- Hose (K-256) (RA-type) : 1pc.
- Filter Joint (FJ-02) (R-type) • Filter Joint (FJ-01) (RA-type)
- Silencer (K-208)

< Options >

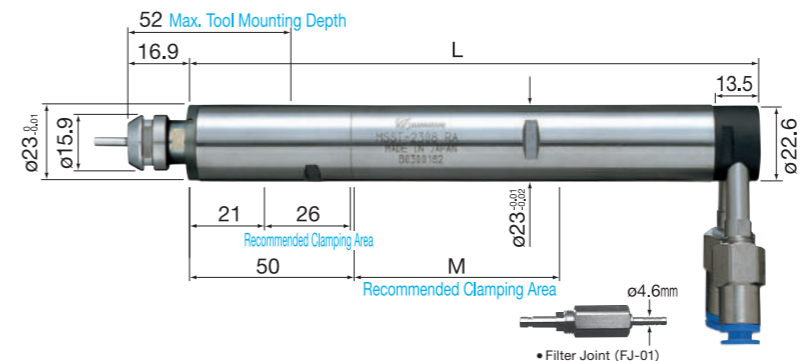
- Collet (CHK Group) : ø0.5~ø6.35mm See Page 30 for details
- Metal Saw Arbor (KCH-03) : ød (I.D.) x under ø30mm (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D. ø5.0mm
- ※ Refer to Page p.4 for mounting instructions for the 90° Angle Type.
- ※ Outside diameter ø25.4 mm type are also available.
-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

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

▼ MSST-23 Series STRAIGHT TYPE (R)



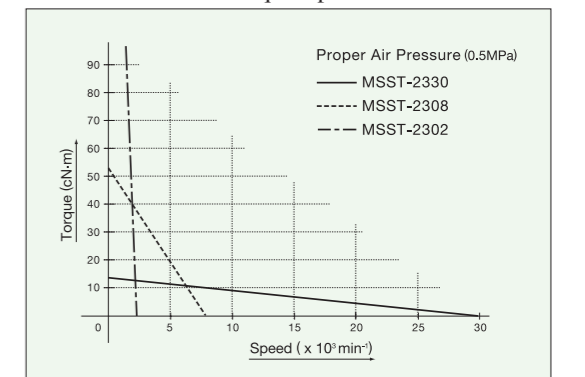
▼ MSST-23 Series 90° ANGLE TYPE (RA)



< Specifications >

| Proper Air Pressure            |             | Value                |
|--------------------------------|-------------|----------------------|
| 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<sup>-1</sup> (0.5MPa) / RA 27,000min<sup>-1</sup> (0.5MPa)

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

R 7,700min<sup>-1</sup> (0.5MPa) / RA 7,200min<sup>-1</sup> (0.5MPa) 1/4 Speed Reduction

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

R 2,000min<sup>-1</sup> (0.5MPa) / RA 1,900min<sup>-1</sup> (0.5MPa) 1/16 Speed Reduction

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

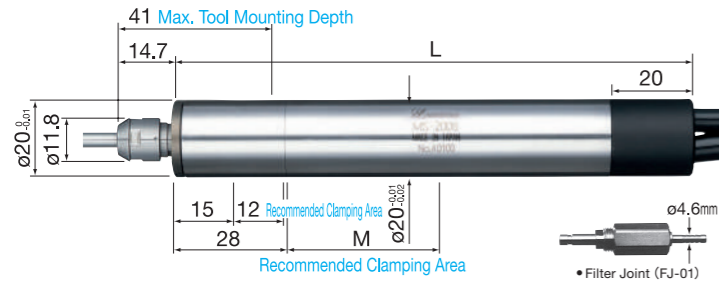
< Options >

- 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.

Air Motor Spindle  
**MSS-20 Series**

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

▼ MSS-20 Series STRAIGHT TYPE (R)



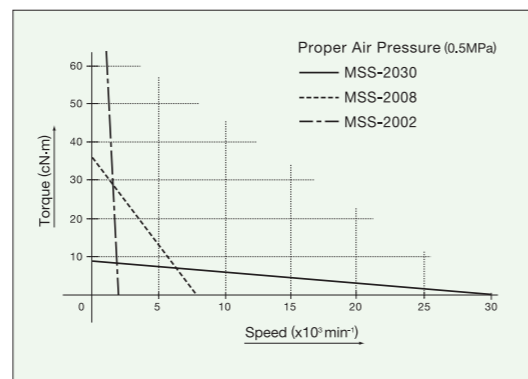
< Specifications >

Proper Air Pressure : 0.3~0.5MPa

Motor Hose (Diameter / Length)

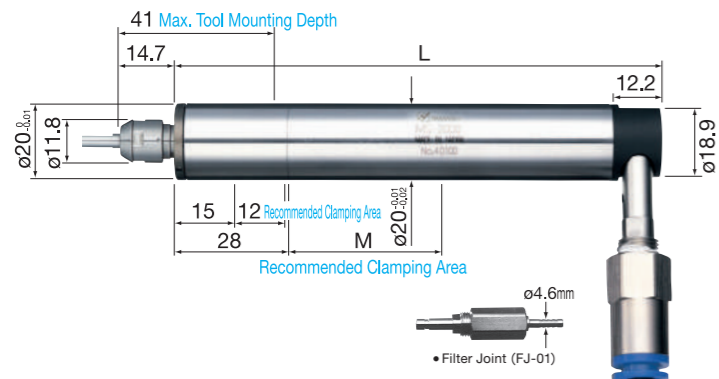
|         |             |                                      |
|---------|-------------|--------------------------------------|
| R-Type  | Air Inlet   | : ø3.7mm (I.D.) x ø5.7mm (O.D.) x 2m |
|         | Exhaust Air | : ø5.0mm (I.D.) x ø6.5mm (O.D.) x 1m |
| RA-Type | Air Inlet   | : ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m |
|         | Exhaust Air | : ø6.0mm (I.D.) x ø8.0mm (O.D.) x 1m |

● MSS-20 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.

▼ MSS-20 Series 90° ANGLE TYPE (RA)



30,000 min<sup>-1</sup> (0.5MPa)

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

8,000 min<sup>-1</sup> (0.5MPa) 1/4 Speed Reduction

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

2,000 min<sup>-1</sup> (0.5MPa) 1/16 Speed Reduction

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

< Standard Accessories >

- 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)

< Options >

- Collet (CHA Group) : ø0.5~ø4.0mm See Page 30 for details
- ※ Refer to Page p.4 for mounting instructions for the 90° Angle Type.
- ※ Collet is sold separately.

Air Motor Spindle  
**MSS-19 Series**

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

▼ MSS-19 Series STRAIGHT TYPE (R)



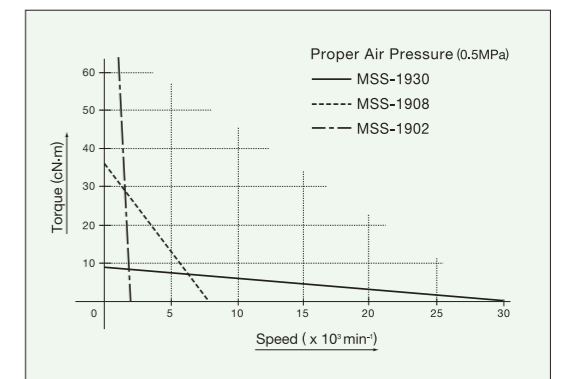
< Specifications >

Proper Air Pressure : 0.3~0.5MPa

Motor Hose (Diameter / Length)

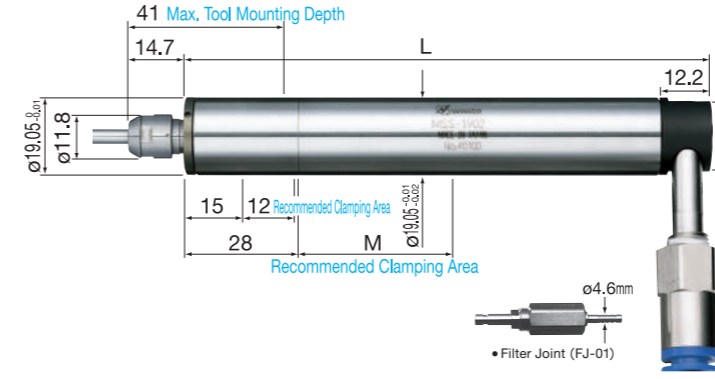
|         |             |                                      |
|---------|-------------|--------------------------------------|
| R-Type  | Air Inlet   | : ø3.7mm (I.D.) x ø5.7mm (O.D.) x 2m |
|         | Exhaust Air | : ø5.0mm (I.D.) x ø6.5mm (O.D.) x 1m |
| RA-Type | Air Inlet   | : ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m |
|         | Exhaust Air | : ø6.0mm (I.D.) x ø8.0mm (O.D.) x 1m |

● MSS-19 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.

▼ MSS-19 Series 90° ANGLE TYPE (RA)



30,000 min<sup>-1</sup> (0.5MPa)

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

8,000 min<sup>-1</sup> (0.5MPa) 1/4 Speed Reduction

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

2,000 min<sup>-1</sup> (0.5MPa) 1/16 Speed Reduction

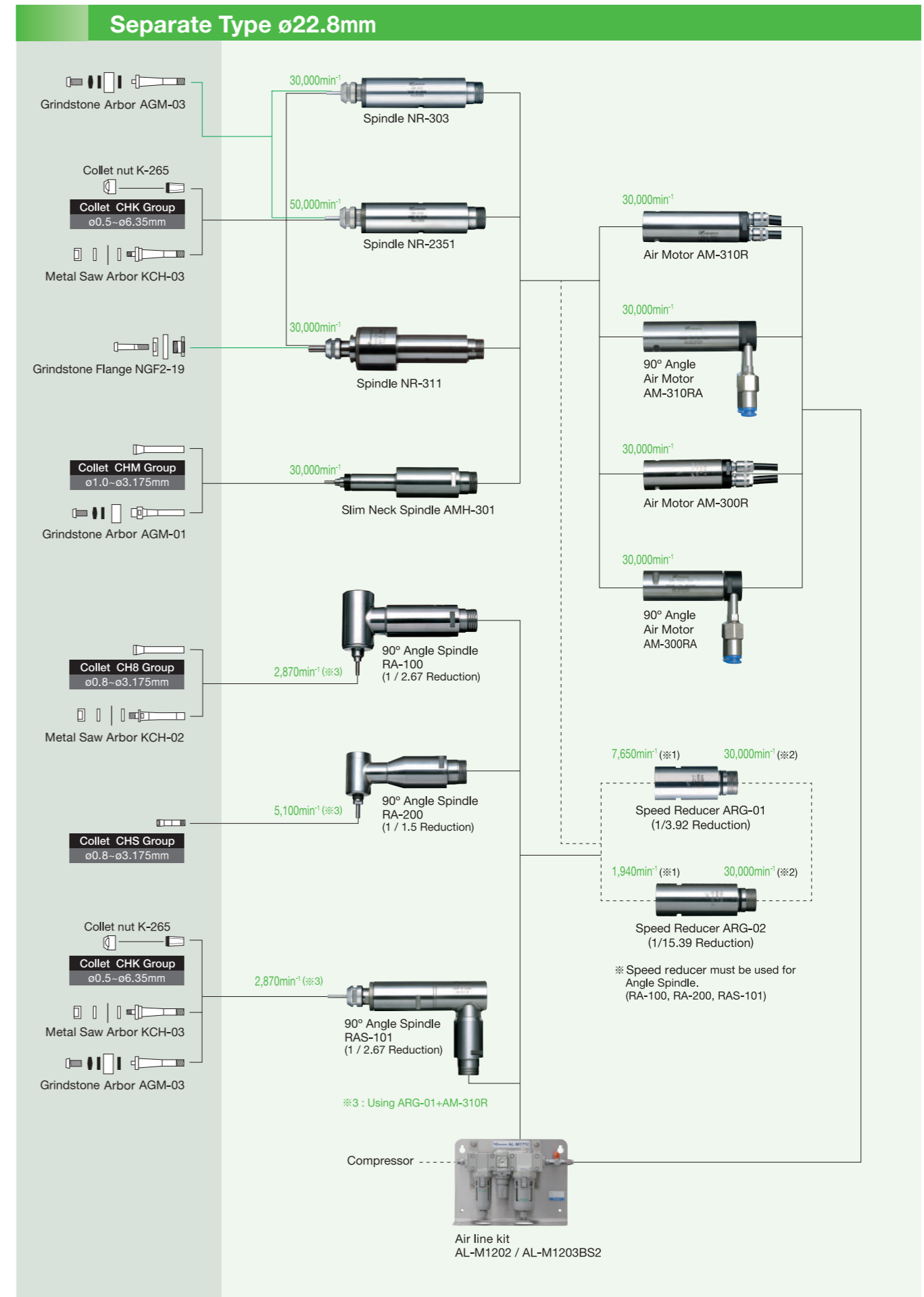
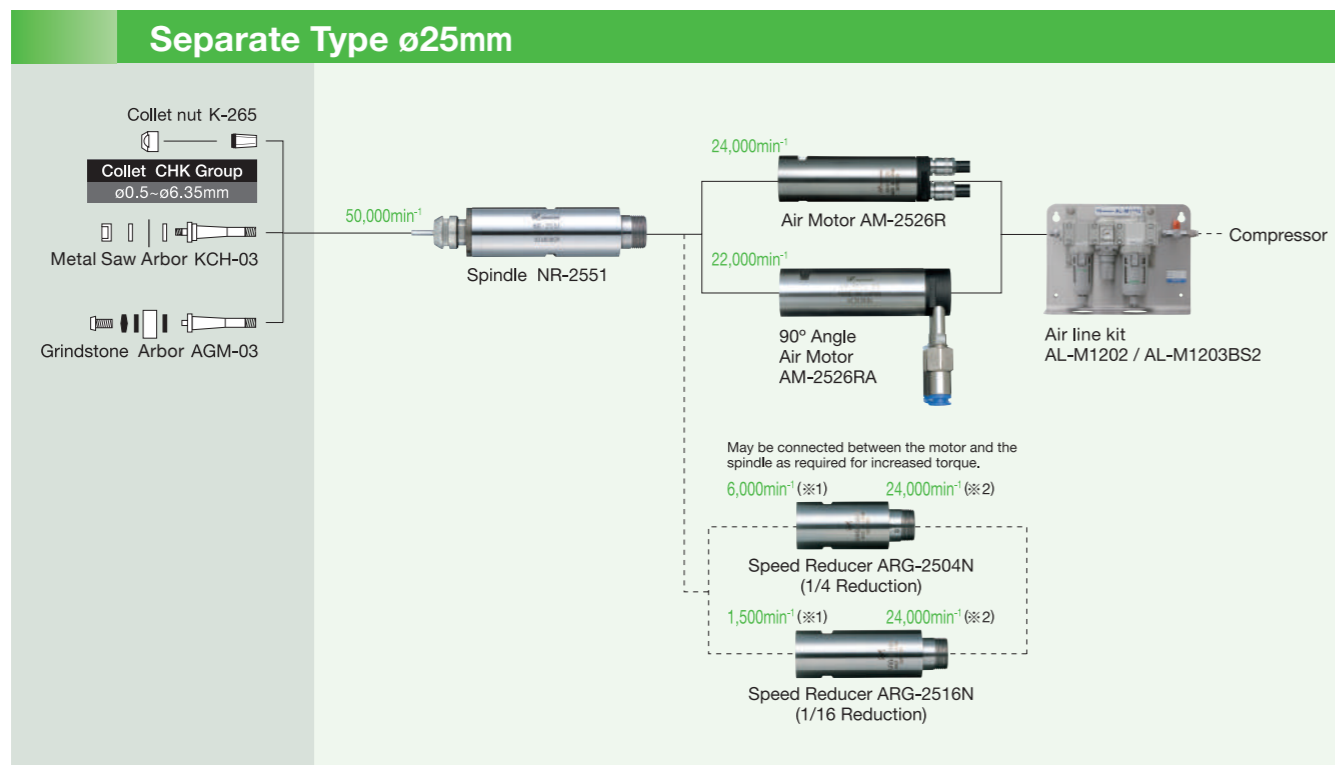
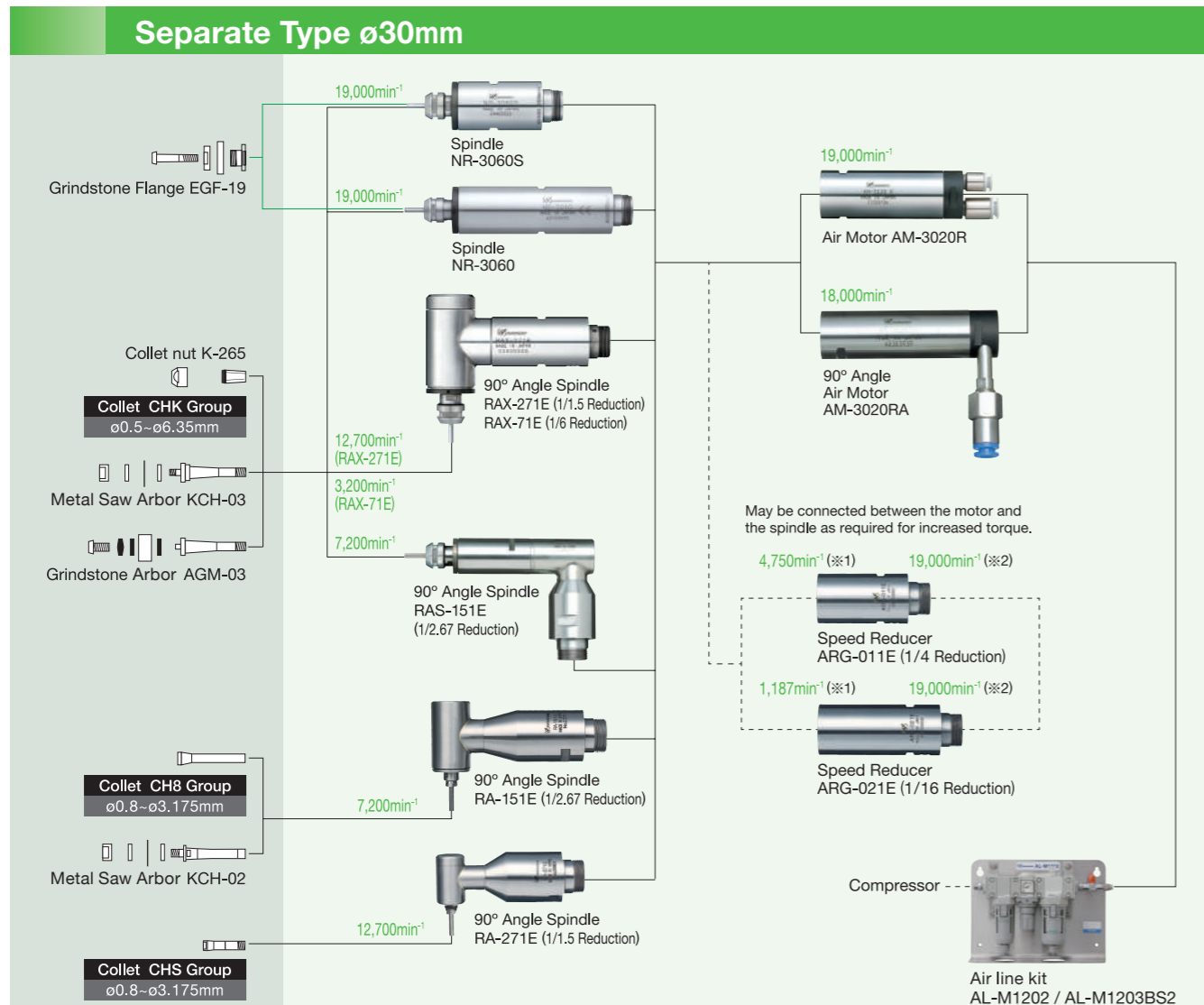
| Code No.    | Model      | Shape     | Max. Torque | Weight | L       | M    | DXF-data            |
|-------------|------------|-----------|-------------|--------|---------|------|---------------------|
| <b>7826</b> | MSS-1902R  | Straight  | 141cN·m     | 216g   | 141.0mm | 53mm | MSS-1902R DXF-data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

< Standard Accessories >

- 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)

< Options >

- Collet (CHA Group) : ø0.5~ø4.0mm See Page 30 for details
- ※ Refer to Page p.4 for mounting instructions for the 90° Angle Type.
- ※ Collet is sold separately.




※ 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**  $\varnothing 30\text{mm}$

**Max.**  $19,000\text{min}^{-1}$  (Using 0.5MPa : AM-3020R)

**Max. Power** 130W

**Spindle Accuracy :**  
Within  $1\ \mu\text{m}$

**Collet :**  
Max.  $\varnothing 6.35\text{mm}$

Collet  
CHK-3.0  
OPTION → Refer to P.30  
※ Other collet sizes are available.

**90° Angle Type Air Motor is available**

**Air Motor AM-3020R**  
→ Refer to P.15

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

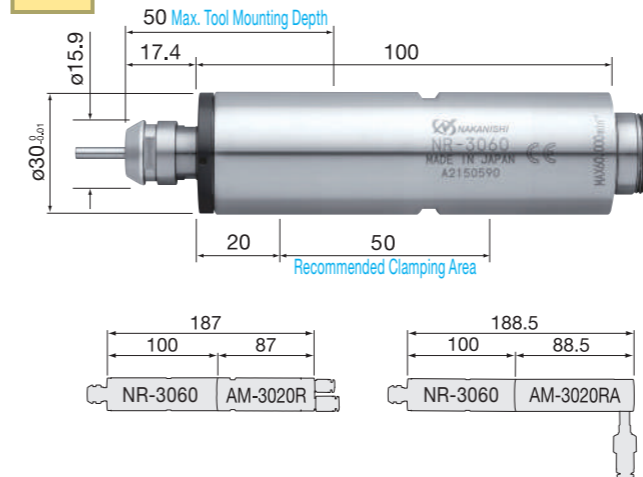
**AM-3020R Torque-Speed Characteristics**



COOLANT

| Spindle<br>< Ceramic Bearings > | O.D.                      | Speed   | Spindle Accuracy              | Collet  | Weight      |
|---------------------------------|---------------------------|---|-------------------------------|---|-------------|
| <b>NR-3060</b>                  | $\varnothing 30\text{mm}$ | <b>19,000</b> $\text{min}^{-1}$<br>(Using AM-3020R) | Within <b>1</b> $\mu\text{m}$ | <b><math>\varnothing 0.5\sim\varnothing 6.35\text{mm}</math></b><br>(CHK Group) | <b>420g</b> |

DXF-data



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

< Standard Accessories >

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

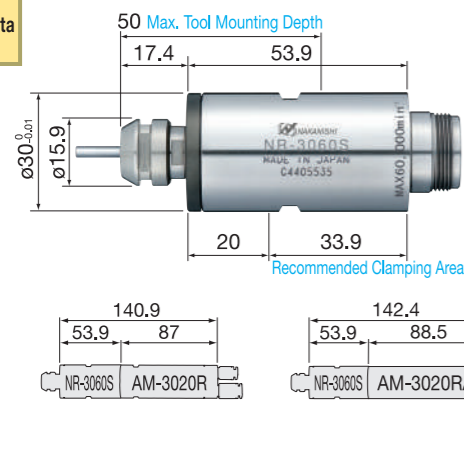
< Options >

- Collet (CHK Group) :  $\varnothing 0.5\sim\varnothing 6.35\text{mm}$  See Page 30 for details
- Metal Saw Arbor (KCH-03) :  $\varnothing d$  (I.D.) x under  $\varnothing 30\text{mm}$  (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D.  $\varnothing 5.0\text{mm}$
- Grindstone Flange (EGF-19) :  $\varnothing 19.05$  (I.D.) x  $\varnothing 40$  (O.D.) x 7 (W) mm

※ Collet is sold separately.

| Spindle<br>< Ceramic Bearings > | O.D.                      | Speed   | Spindle Accuracy              | Collet  | Weight      |
|---------------------------------|---------------------------|---|-------------------------------|---|-------------|
| <b>NR-3060S</b>                 | $\varnothing 30\text{mm}$ | <b>19,000</b> $\text{min}^{-1}$<br>(Using AM-3020R) | Within <b>1</b> $\mu\text{m}$ | <b><math>\varnothing 0.5\sim\varnothing 6.35\text{mm}</math></b><br>(CHK Group) | <b>260g</b> |

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) :  $\varnothing 0.5\sim\varnothing 6.35\text{mm}$  See Page 30 for details
- Metal Saw Arbor (KCH-03) :  $\varnothing d$  (I.D.) x under  $\varnothing 30\text{mm}$  (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D.  $\varnothing 5.0\text{mm}$
- Grindstone Flange (EGF-19) :  $\varnothing 19.05$  (I.D.) x  $\varnothing 40$  (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**  $\phi 30\text{mm}$

**Max.**  $12,700\text{min}^{-1}$  (Rotating speed at the cutting tool) (Using 0.5MPa : AM-3020R)

**Max. Power**  $130\text{W}$

**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.  $\phi 6.35\text{mm}$

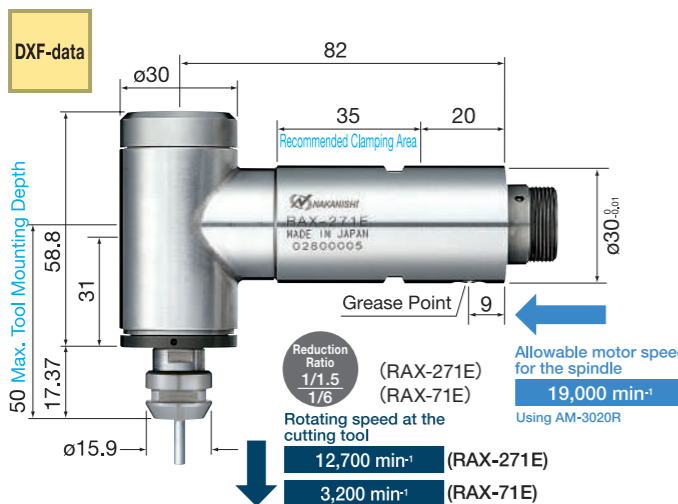
Collet CHK-3.0  
OPTION → Refer to P.30  
※ Other collet sizes are available.

**Angle Spindle Select Sheet**

| Model  | RAX-271E                         | RAX-71E                | RAS-151E                          | RA-151E                | RA-271E                 |
|--|----------------------------------|------------------------|-----------------------------------|------------------------|-------------------------|
| Angle Head Size O.D.                             | $\phi 30\text{mm}$               | $\phi 30\text{mm}$     | $\phi 23\text{mm}$                | $\phi 22.8\text{mm}$   | $\phi 17.4\text{mm}$    |
| Rotating speed at the cutting tool <sup>※1</sup> | $12,700\text{min}^{-1}$          | $3,200\text{min}^{-1}$ | $7,200\text{min}^{-1}$            | $7,200\text{min}^{-1}$ | $12,700\text{min}^{-1}$ |
| Using Tools                                      | $\phi 0.5\sim\phi 6.35\text{mm}$ |                        | $\phi 0.8\sim\phi 3.175\text{mm}$ |                        |                         |

※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      |
|-------------------|--------------------|------------------------------------|-----------------|---|-----------------------|---|-------------|
| <b>RAX-271E</b>   | $\phi 30\text{mm}$ | $12,700\text{min}^{-1}$ ※          | $\frac{1}{1.5}$ | $19,000\text{min}^{-1}$<br>(Using AM-3020R) | Within $2\mu\text{m}$ | $\phi 0.5\sim\phi 6.35\text{mm}$<br>(CHK Group) | <b>580g</b> |
| <b>RAX-71E</b>    | $\phi 30\text{mm}$ | $3,200\text{min}^{-1}$ ※           | $\frac{1}{6}$   | $19,000\text{min}^{-1}$<br>(Using AM-3020R) | Within $2\mu\text{m}$ | $\phi 0.5\sim\phi 6.35\text{mm}$<br>(CHK Group) | <b>580g</b> |



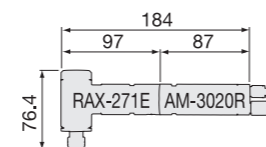
※ Maximum rotating speed at the cutting tool for the reduction ratio.

|          |             |       |                 |
|----------|-------------|-------|-----------------|
| Code No. | <b>7856</b> | Model | <b>RAX-271E</b> |
| Code No. | <b>7857</b> | Model | <b>RAX-71E</b>  |

- < Standard Accessories >
- Collet Nut (K-265) • Wrench (12 x 14) : 2pcs., (22 x 27) : 1pc.
  - Grease for speed reducer (10m $\ell$ ) • Grease Nipple : 1pc.

- < Options >
- Collet (CHK Group) :  $\phi 0.5\sim\phi 6.35\text{mm}$  See Page 30 for details
  - Metal Saw Arbor (KCH-03) :  $\phi d$  (I.D.) x under  $\phi 30\text{mm}$  (O.D.)
  - Grindstone Arbor (AGM-03) : Grindstone I.D.  $\phi 5.0\text{mm}$

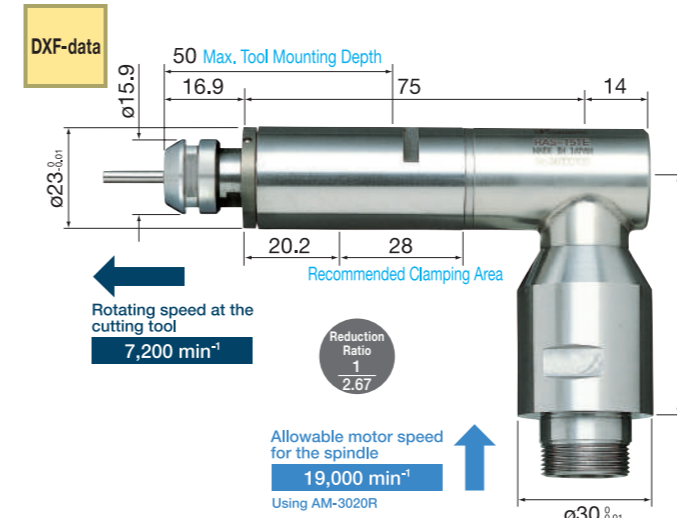
※ Collet is sold separately.



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      |
|-------------------|--------------------|------------------------------------|------------------|---|-----------------------|---|-------------|
| <b>RAS-151E</b>   | $\phi 30\text{mm}$ | $7,200\text{min}^{-1}$ ※           | $\frac{1}{2.67}$ | $19,000\text{min}^{-1}$<br>(Using AM-3020R) | Within $2\mu\text{m}$ | $\phi 0.5\sim\phi 6.35\text{mm}$<br>(CHK Group) | <b>413g</b> |

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



|          |             |       |                 |
|----------|-------------|-------|-----------------|
| Code No. | <b>7840</b> | Model | <b>RAS-151E</b> |
|----------|-------------|-------|-----------------|

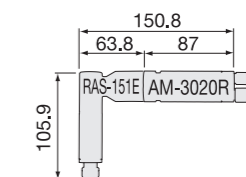
< Standard Accessories >

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

< Options >

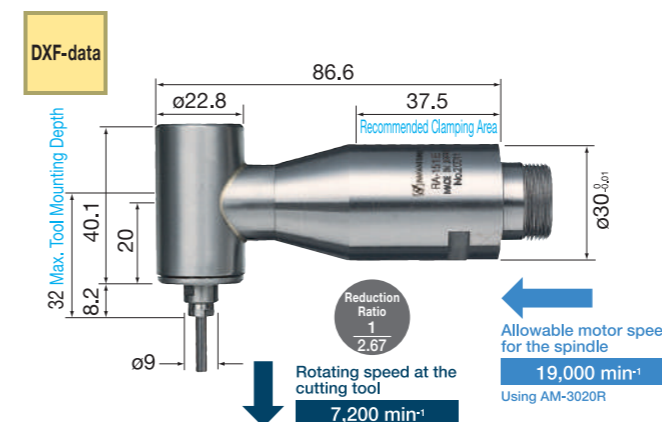
Collet (CHK Group) :  $\phi 0.5\sim\phi 6.35\text{mm}$  See Page 30 for details

※ 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      |
|-------------------|--------------------|------------------------------------|------------------|---|--|-------------|
| <b>RA-151E</b>    | $\phi 30\text{mm}$ | $7,200\text{min}^{-1}$ ※           | $\frac{1}{2.67}$ | $19,000\text{min}^{-1}$<br>(Using AM-3020R) | $\phi 0.8\sim\phi 3.175\text{mm}$<br>(CH8 Group) | <b>385g</b> |

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



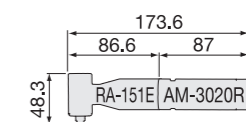
|          |             |       |                |
|----------|-------------|-------|----------------|
| Code No. | <b>1505</b> | Model | <b>RA-151E</b> |
|----------|-------------|-------|----------------|

< Standard Accessories >

- Collet :  $\phi 3.0\text{mm}$  (CH8-3.0)
- Wrench (7 x 5.5), (8 x 5), (22 x 27) : 1pc. each

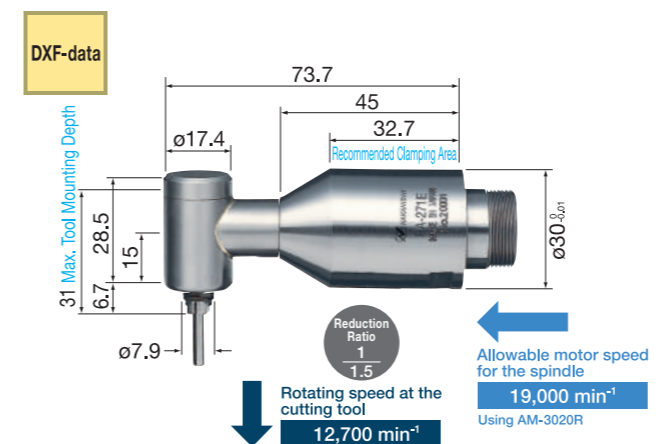
< Options >

Collet (CH8 Group) :  $\phi 0.8\sim\phi 3.175\text{mm}$  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      |
|-------------------|--------------------|------------------------------------|-----------------|---|--|-------------|
| <b>RA-271E</b>    | $\phi 30\text{mm}$ | $12,700\text{min}^{-1}$ ※          | $\frac{1}{1.5}$ | $19,000\text{min}^{-1}$<br>(Using AM-3020R) | $\phi 0.8\sim\phi 3.175\text{mm}$<br>(CHS Group) | <b>240g</b> |

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



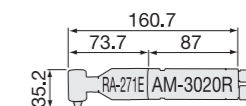
|          |             |       |                |
|----------|-------------|-------|----------------|
| Code No. | <b>1506</b> | Model | <b>RA-271E</b> |
|----------|-------------|-------|----------------|

< Standard Accessories >

- Collet :  $\phi 3.0\text{mm}$  (CHS-3.0)
- Wrench (7 x 5.1), (8 x 5), (22 x 27) : 1pc. each

< Options >

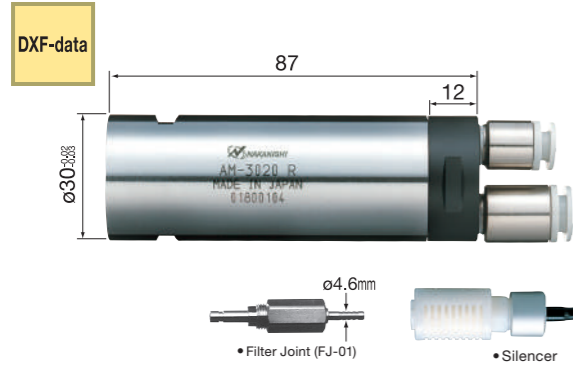
Collet (CHS Group) :  $\phi 0.8\sim\phi 3.175\text{mm}$  See Page 30 for details





Please maintain not to exceed speed limit.

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



Code No. **1797** Model **AM-3020R**

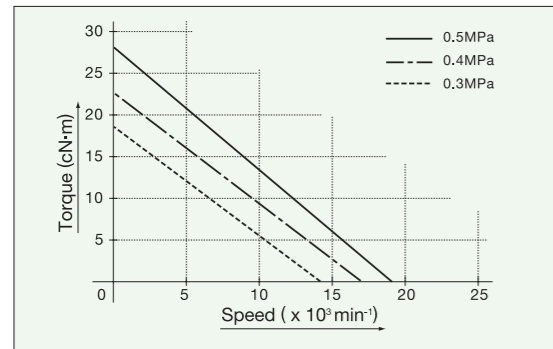
< Specifications >

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

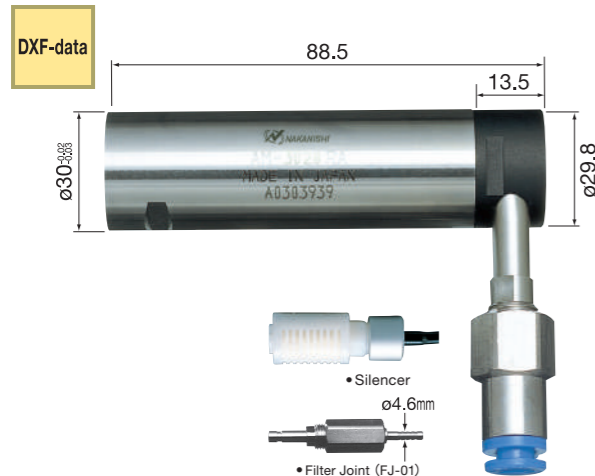
< Standard Accessories >

• 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                     |
|--|-------|---|--------------|---------------------|-------------------|----------------------------|
| <b>AM-3020RA</b>                       | ø30mm | <b>18,000</b> min <sup>-1</sup><br>(0.5MPa) | <b>125</b> W | <b>0.3~0.5</b> MPa  | <b>175</b> Nℓ/min | <b>339</b> g<br>(w/o hose) |



Code No. **1799** Model **AM-3020RA**

< Specifications >

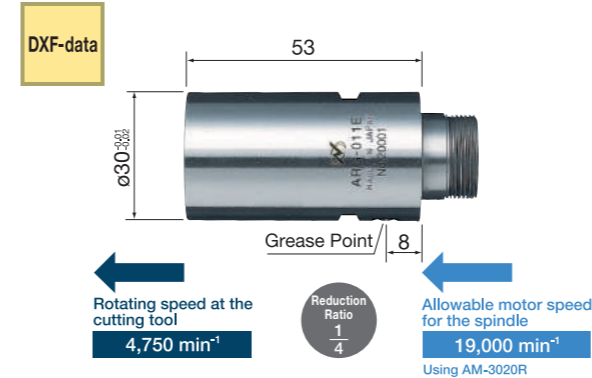
Motor Hose (Diameter / Length)  
Air Inlet : ø4.0mm (I.D.) x ø6.0mm (O.D.) x 2m  
Exhaust Air : ø6.0mm (I.D.) x ø8.0mm (O.D.) x 1m

< 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       |
|---------------------|-------|------------------------------------|-----------------|---|--------------|
| <b>ARG-011E</b>     | ø30mm | <b>4,750</b> min <sup>-1</sup> *   | <b>1/4</b>      | <b>19,000</b> min <sup>-1</sup><br>(Using AM-3020R) | <b>242</b> g |

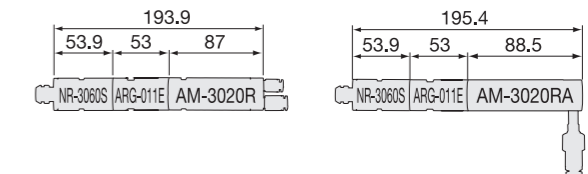
※ Maximum rotating speed at the cutting tool for the reduction ratio.



Code No. **1507** Model **ARG-011E**

< Standard Accessories >

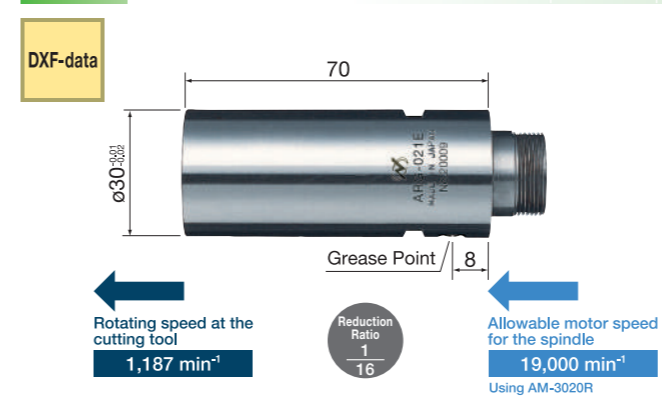
• Grease for speed reducer (10mℓ) • Grease Nipple : 1pc.



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       |
|----------------------|-------|------------------------------------|-----------------|---|--------------|
| <b>ARG-021E</b>      | ø30mm | <b>1,187</b> min <sup>-1</sup> *   | <b>1/16</b>     | <b>19,000</b> min <sup>-1</sup><br>(Using AM-3020R) | <b>325</b> g |

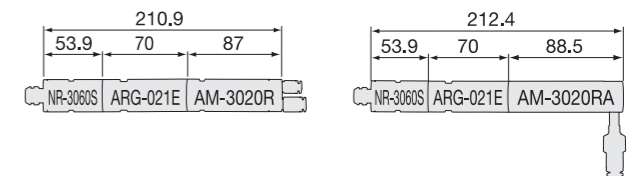
※ Maximum rotating speed at the cutting tool for the reduction ratio.



Code No. **1508** Model **ARG-021E**

< 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**  $\varnothing 25\text{mm}$

**Max.**  $24,000\text{min}^{-1}$  (Using 0.5MPa : AM-2526R)

**Max. Power** **130W**

**Spindle Accuracy : Within 1  $\mu\text{m}$**

**90° Angle Type Air Motor is available**

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

**Straight Spindle NR-2551**

**Collet : Max.  $\varnothing 6.35\text{mm}$**

Collet CHK-3.0 → Refer to P.30

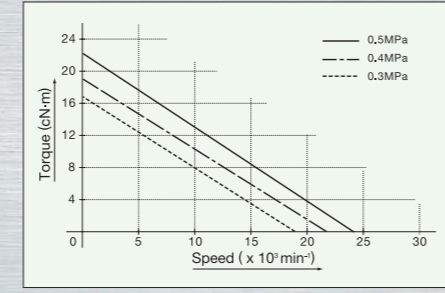
Air line kit AL-M1202 → Refer to P.29

OPTION → Refer to P.30

OPTION → Refer to P.29

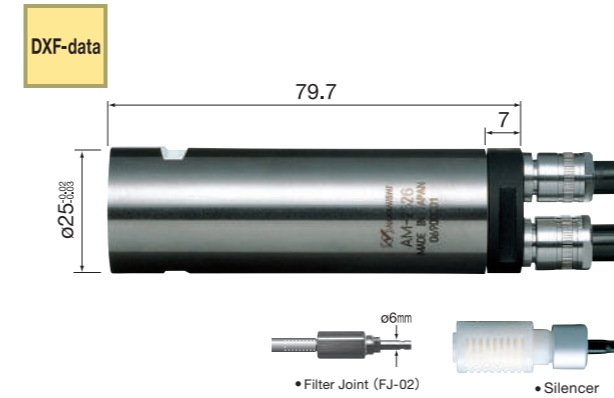
※ Other collet sizes are available.

**AM-2526R Torque-Speed Characteristics**



COOLANT

| Air Motor (Forward Rotation) | O.D.                      | Motor Speed                         | Max. Power  | Proper Air Pressure | Air Consumption                  | Weight                    |
|------------------------------|---------------------------|-------------------------------------|-------------|---------------------|----------------------------------|---------------------------|
| <b>AM-2526R</b>              | $\varnothing 25\text{mm}$ | $24,000\text{min}^{-1}$<br>(0.5MPa) | <b>130W</b> | <b>0.3~0.5MPa</b>   | <b>205N<math>\ell</math>/min</b> | <b>200g</b><br>(w/o hose) |



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

< Specifications >

Motor Hose (Diameter / Length)

Air Inlet :  $\varnothing 4.5\text{mm}$  (I.D.) x  $\varnothing 6.7\text{mm}$  (O.D.) x 2m

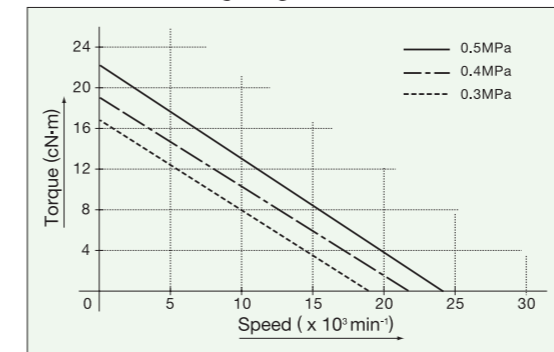
Exhaust Air :  $\varnothing 5.5\text{mm}$  (I.D.) x  $\varnothing 7.5\text{mm}$  (O.D.) x 1m

< Standard Accessories >

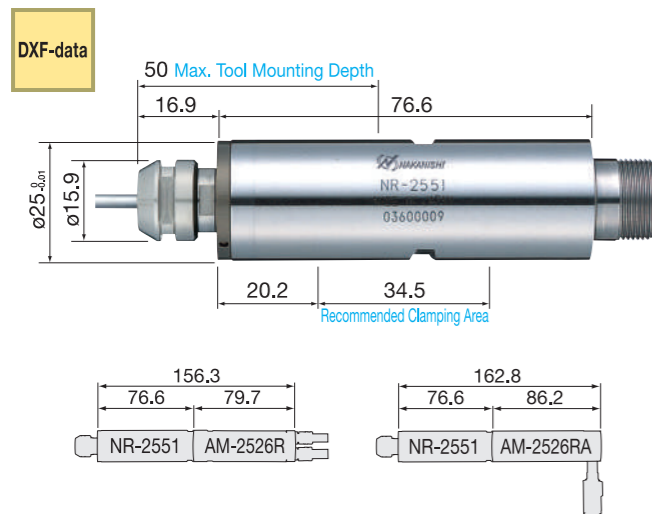
- Hose (K-204) : 2m • Filter Joint (FJ-02) • Silencer (K-208)
- Wrench (22 x 27) : 1pc.

※ Outside diameter  $\varnothing 25.4\text{mm}$  type is also available.

● AM-2526R Torque-Speed Characteristics



| Spindle < Ceramic Bearings > | O.D.                      | Speed                   | Spindle Accuracy                         | Collet  | Weight      |
|------------------------------|---------------------------|-------------------------|--|---|-------------|
| <b>NR-2551</b>               | $\varnothing 25\text{mm}$ | $50,000\text{min}^{-1}$ | Within <b>1 <math>\mu\text{m}</math></b> | <b><math>\varnothing 0.5\sim\varnothing 6.35\text{mm}</math></b><br>(CHK Group) | <b>253g</b> |



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

< Standard Accessories >

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

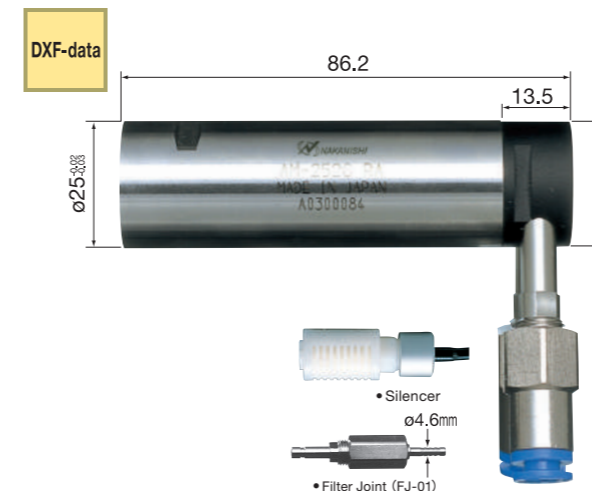
< Options >

- Collet (CHK Group) :  $\varnothing 0.5\sim\varnothing 6.35\text{mm}$  See Page 30 for details
- Metal Saw Arbor (KCH-03) :  $\varnothing$  (I.D.) x under  $\varnothing 30\text{mm}$  (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D.  $\varnothing 5.0\text{mm}$

※ Outside diameter  $\varnothing 25.4\text{mm}$  type is also available.

※ Collet is sold separately.

| 90° Angle Air Motor (Forward Rotation) | O.D.                      | Motor Speed                         | Max. Power  | Proper Air Pressure | Air Consumption                  | Weight                    |
|--|---------------------------|-------------------------------------|-------------|---------------------|----------------------------------|---------------------------|
| <b>AM-2526RA</b>                       | $\varnothing 25\text{mm}$ | $22,000\text{min}^{-1}$<br>(0.5MPa) | <b>120W</b> | <b>0.3~0.5MPa</b>   | <b>170N<math>\ell</math>/min</b> | <b>241g</b><br>(w/o hose) |



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

< Specifications >

Motor Hose (Diameter / Length)


Air Inlet :  $\varnothing 4.0\text{mm}$  (I.D.) x  $\varnothing 6.0\text{mm}$  (O.D.) x 2m

Exhaust Air :  $\varnothing 5.5\text{mm}$  (I.D.) x  $\varnothing 8.0\text{mm}$  (O.D.) x 1m

< Standard Accessories >


- Hose (K-215) :  $\varnothing 6.0\text{mm}$  x 2m • Hose (K-256) :  $\varnothing 8.0\text{mm}$  x 1m
- Filter Joint (FJ-01) • Silencer (K-208) • Wrench (22 x 27) : 1pc.

※ Outside diameter  $\varnothing 25.4\text{mm}$  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       |
|---------------------|-------|------------------------------------|-----------------|---|--------------|
| <b>ARG-2504N</b>    | ø25mm | <b>6,000</b> min <sup>-1</sup> *   | <b>1/4</b>      | <b>24,000</b> min <sup>-1</sup><br>(Using AM-2526R) | <b>150</b> g |

**DXF-data**



Rotating speed at the cutting tool  
**6,000** min<sup>-1</sup>

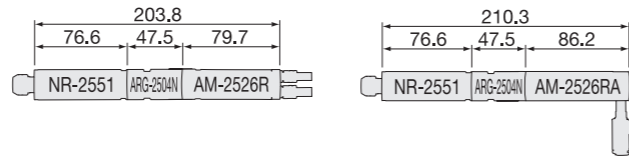
Reduction Ratio  
**1/4**

Allowable motor speed for the spindle  
**24,000** min<sup>-1</sup>  
Using AM-2526R

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


Code No. **1822** Model **ARG-2504N**

※ 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       |
|----------------------|-------|------------------------------------|-----------------|---|--------------|
| <b>ARG-2516N</b>     | ø25mm | <b>1,500</b> min <sup>-1</sup> *   | <b>1/16</b>     | <b>24,000</b> min <sup>-1</sup><br>(Using AM-2526R) | <b>205</b> g |

**DXF-data**



Rotating speed at the cutting tool  
**1,500** min<sup>-1</sup>

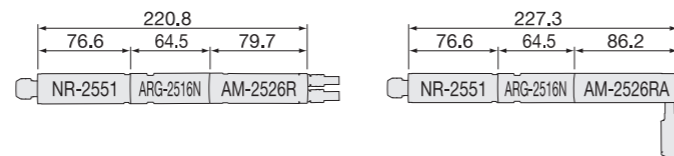
Reduction Ratio  
**1/16**

Allowable motor speed for the spindle  
**24,000** min<sup>-1</sup>  
Using AM-2526R

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

Code No. **1824** Model **ARG-2516N**

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



▼ AIR MOTOR & SPINDLE (Separate Type)

# Straight Spindle

**Outside Diameter**  $\varnothing 22.8\text{mm}$

**Max.**  $30,000\text{min}^{-1}$  (0.5MPa)

**Max. Power** 108W

**90° Angle Type Air Motor is available**

**Air Motor AM-310R** → Refer to P.25

**Straight Spindle NR-303**

**OPTION** → Refer to P.29

**Collet :**  
**Max.  $\varnothing 6.35\text{mm}$**

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**

**COOLANT**

Spindle **NR-303**

| O.D.                        | Speed                                      | Spindle Accuracy        | Collet  | Weight      |
|-----------------------------|--|-------------------------|---|-------------|
| $\varnothing 22.8\text{mm}$ | $30,000\text{min}^{-1}$<br>(Using AM-310R) | Within $2\ \mu\text{m}$ | $\varnothing 0.5\sim\varnothing 6.35\text{mm}$<br>(CHK Group) | <b>215g</b> |

**DXF-data**

**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) :  $\varnothing 0.5\sim\varnothing 6.35\text{mm}$  See Page 30 for details
- Metal Saw Arbor (KCH-03) :  $\varnothing d$  (I.D.) x under  $\varnothing 30\text{mm}$  (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D.  $\varnothing 5.0\text{mm}$

※ Collet is sold separately.

Spindle **NR-2351**

< Ceramic Bearings >

| O.D.                        | Speed                   | Spindle Accuracy        | Collet  | Weight      |
|-----------------------------|-------------------------|-------------------------|---|-------------|
| $\varnothing 22.8\text{mm}$ | $50,000\text{min}^{-1}$ | Within $1\ \mu\text{m}$ | $\varnothing 0.5\sim\varnothing 6.35\text{mm}$<br>(CHK Group) | <b>215g</b> |

**DXF-data**

**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) :  $\varnothing 0.5\sim\varnothing 6.35\text{mm}$  See Page 30 for details
- Metal Saw Arbor (KCH-03) :  $\varnothing d$  (I.D.) x under  $\varnothing 30\text{mm}$  (O.D.)
- Grindstone Arbor (AGM-03) : Grindstone I.D.  $\varnothing 5.0\text{mm}$

※ Allowable Motor Speed :  $50,000\text{min}^{-1}$   
※ Collet is sold separately.

Spindle **NR-311**

| O.D.                        | Speed                                      | Spindle Accuracy        | Collet  | Weight      |
|-----------------------------|--|-------------------------|---|-------------|
| $\varnothing 22.8\text{mm}$ | $30,000\text{min}^{-1}$<br>(Using AM-310R) | Within $2\ \mu\text{m}$ | $\varnothing 0.5\sim\varnothing 6.35\text{mm}$<br>(CHK Group) | <b>370g</b> |

**DXF-data**

**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) :  $\varnothing 0.5\sim\varnothing 6.35\text{mm}$  See Page 30 for details
- Metal Saw Arbor (KCH-03) :  $\varnothing d$  (I.D.) x under  $\varnothing 30\text{mm}$  (O.D.)
- Grindstone Flange (NGF2-19) :  $\varnothing 19.05$  (I.D.) x  $\varnothing 40$  (O.D.) x 7 (W)mm

※ Collet is sold separately.

Spindle **AMH-301**

| O.D.                        | Speed                                      | Collet   | Weight      |
|-----------------------------|--|--|-------------|
| $\varnothing 22.8\text{mm}$ | $30,000\text{min}^{-1}$<br>(Using AM-310R) | $\varnothing 1.0\sim\varnothing 3.175\text{mm}$<br>(CHM Group) | <b>171g</b> |

**DXF-data**

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

**< Standard Accessories >**

- Collet :  $\varnothing 3.0\text{mm}$  (CHM-3.0)
- Wrench (7 x 5.1), (6 x 4.5), (20 x 24) : 1pc. each

**< Options >**

- Collet (CHM Group) :  $\varnothing 1.0\sim\varnothing 3.175\text{mm}$  See Page 30 for details
- Grindstone Arbor (AGM-01) : Grindstone I.D.  $\varnothing 5.0\text{mm}$

Please maintain not to exceed speed limit.

▼ AIR MOTOR & SPINDLE (Separate Type)

# Angle Spindle

**Outside Diameter**  $\phi 22.8\text{mm}$

**Max.**  $2,870\text{min}^{-1}$  (Rotating speed at the cutting tool Using 0.5MPa : ARG-01+AM-300R)

**Max. Power**  $57\text{W}$  (Using AM-300R)

**Air Motor** AM-300R → Refer to P.26

**90° Angle Spindle** RA-100

**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.  $\phi 3.175\text{mm}$

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.                             | $\phi 22.8\text{mm}$              | $\phi 17.4\text{mm}$              | $\phi 22.8\text{mm}$             |
| Rotating speed at the cutting tool <sup>※1</sup> | $2,870\text{min}^{-1}$            | $5,100\text{min}^{-1}$            | $2,870\text{min}^{-1}$           |
| Using Tools                                      | $\phi 0.8\sim\phi 3.175\text{mm}$ | $\phi 0.8\sim\phi 3.175\text{mm}$ | $\phi 0.5\sim\phi 6.35\text{mm}$ |

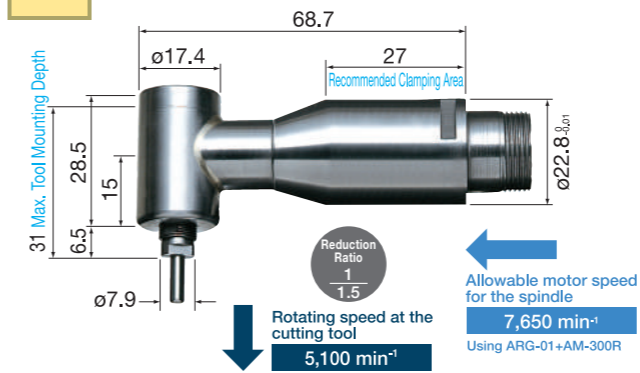
※ 1 Using ARG-01+AM-300R ※ 2 Using ARG-01+AM-310R

※ Please maintain not to exceed speed limit.

| 90° Angle Spindle | O.D.                 | Rotating speed at the cutting tool | Reduction Ratio | Allowable motor speed for the spindle            | Collet   | Weight      |
|-------------------|----------------------|------------------------------------|-----------------|--|--|-------------|
| <b>RA-200</b>     | $\phi 22.8\text{mm}$ | $5,100\text{min}^{-1}$ ※           | $\frac{1}{1.5}$ | $7,650\text{min}^{-1}$<br>(Using ARG-01+AM-300R) | $\phi 0.8\sim\phi 3.175\text{mm}$<br>(CHS Group) | <b>165g</b> |

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

DXF-data



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

< Standard Accessories >

- Collet :  $\phi 3.0\text{mm}$  (CHS-3.0)
- Wrench (7 x 5.1), (8 x 5), (20 x 24) : 1pc. each

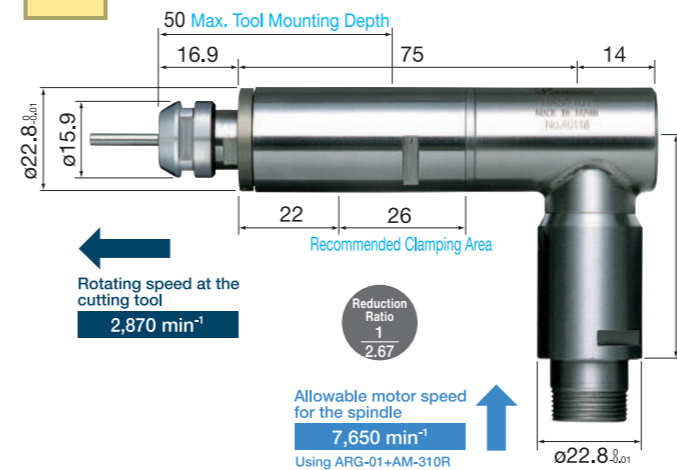
< Options >

Collet (CHS Group) :  $\phi 0.8\sim\phi 3.175\text{mm}$  See Page 30 for details

| 90° Angle Spindle | O.D.                 | Rotating speed at the cutting tool | Reduction Ratio  | Allowable motor speed for the spindle            | Spindle Accuracy      | Collet  | Weight      |
|-------------------|----------------------|------------------------------------|------------------|--|-----------------------|---|-------------|
| <b>RAS-101</b>    | $\phi 22.8\text{mm}$ | $2,870\text{min}^{-1}$ ※           | $\frac{1}{2.67}$ | $7,650\text{min}^{-1}$<br>(Using ARG-01+AM-310R) | Within $2\mu\text{m}$ | $\phi 0.5\sim\phi 6.35\text{mm}$<br>(CHK Group) | <b>325g</b> |

※ 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 >

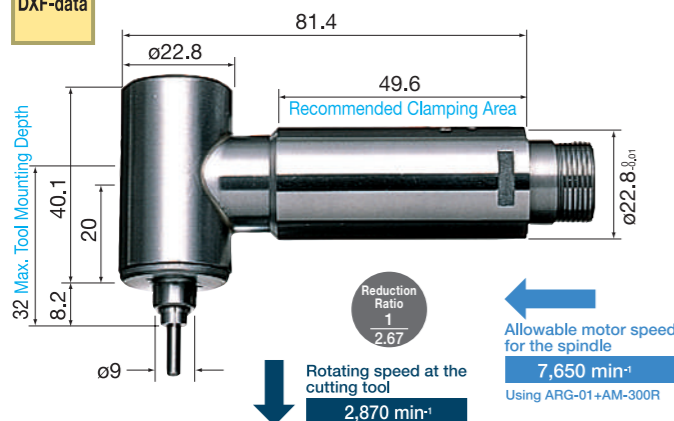
Collet (CHK Group) :  $\phi 0.5\sim\phi 6.35\text{mm}$  See Page 30 for details

※ 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      |
|-------------------|----------------------|------------------------------------|------------------|--|--|-------------|
| <b>RA-100</b>     | $\phi 22.8\text{mm}$ | $2,870\text{min}^{-1}$ ※           | $\frac{1}{2.67}$ | $7,650\text{min}^{-1}$<br>(Using ARG-01+AM-300R) | $\phi 0.8\sim\phi 3.175\text{mm}$<br>(CH8 Group) | <b>271g</b> |

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

DXF-data



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

< Standard Accessories >

- Collet :  $\phi 3.0\text{mm}$  (CH8-3.0)
- Wrench (7 x 5.5), (8 x 5), (20 x 24) : 1pc. each

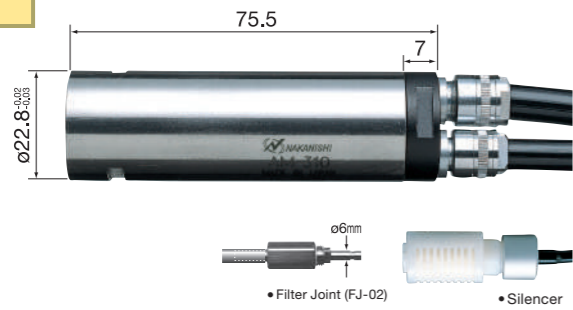
< Options >

Collet (CH8 Group) :  $\phi 0.8\sim\phi 3.175\text{mm}$  See Page 30 for details

Metal Saw Arbor (KCH-02) :  $\phi$  (I.D.) x under  $\phi 30\text{mm}$  (O.D.)

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

DXF-data



Code No. **1079** Model **AM-310R**

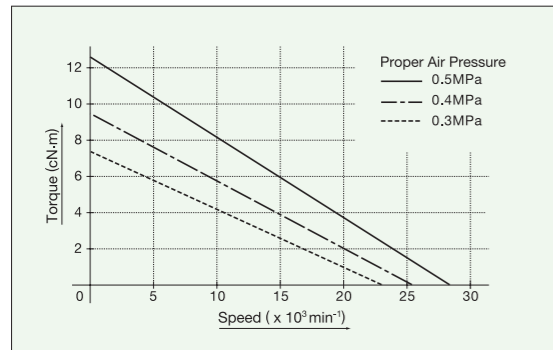
< Specifications >

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 >

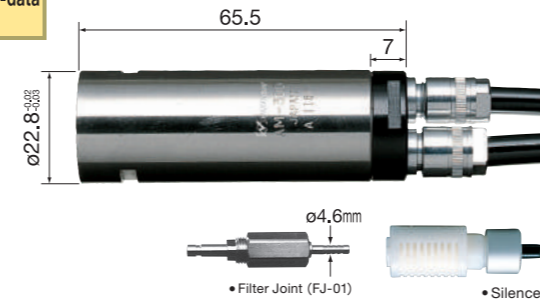
- Hose (K-204) : 2m • Filter Joint (FJ-02) • Silencer (K-208)
- Wrench (20 x 24) : 1pc.

● AM-310R Torque-Speed Characteristics



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

DXF-data



Code No. **1021** Model **AM-300R**

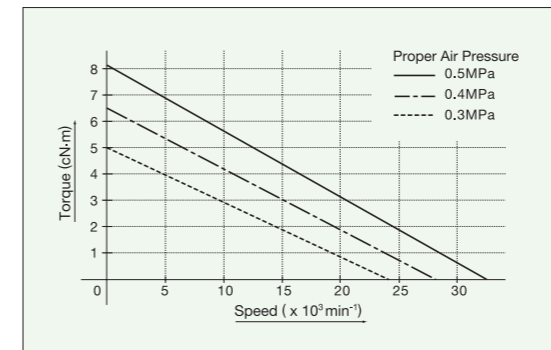
< Specifications >

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             |
|--|---------|-------------------------------------|------------|---------------------|-----------------|--------------------|
| <b>AM-310RA</b>                        | ø22.8mm | 30,000min <sup>-1</sup><br>(0.5MPa) | 108W       | 0.3~0.5MPa          | 170Nℓ/min       | 244g<br>(w/o hose) |

DXF-data



Code No. **1081** Model **AM-310RA**

< 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.

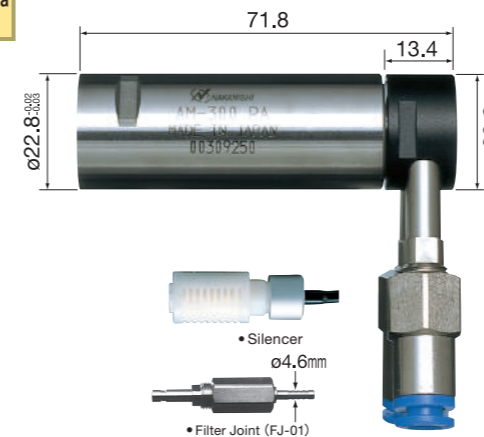
Air line kit  
AL-M1202

OPTION → Refer to P.29



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

DXF-data



Code No. **1018** Model **AM-300RA**

< 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

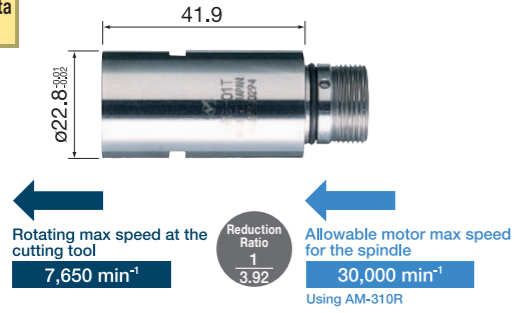


 Please maintain not to exceed speed limit.

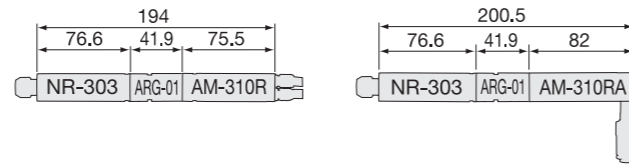
| Speed Reducer (1/3.92) | O.D.    | Rotating Max. speed at the cutting tool      | Reduction Ratio  | Allowable motor Max. speed for the spindle         | Weight      |
|------------------------|---------|--|------------------|--|-------------|
| <b>ARG-01</b>          | ø22.8mm | <b>7,650</b> min <sup>-1</sup> *<br>(0.5MPa) | $\frac{1}{3.92}$ | <b>30,000</b> min <sup>-1</sup><br>(Using AM-310R) | <b>108g</b> |

\* Maximum rotating speed at the cutting tool for the reduction ratio.

DXF-data



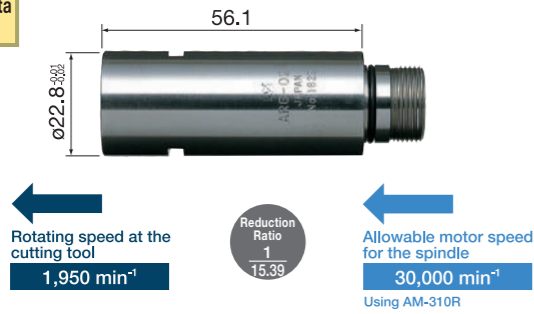
Code No. **1022** Model **ARG-01**



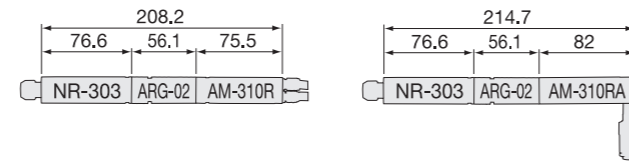
| Speed Reducer (1/15.39) | O.D.    | Rotating speed at the cutting tool           | Reduction Ratio   | Allowable motor speed for the spindle              | Weight      |
|-------------------------|---------|--|-------------------|--|-------------|
| <b>ARG-02</b>           | ø22.8mm | <b>1,950</b> min <sup>-1</sup> *<br>(0.5MPa) | $\frac{1}{15.39}$ | <b>30,000</b> min <sup>-1</sup><br>(Using AM-310R) | <b>148g</b> |

\* Maximum rotating speed at the cutting tool for the reduction ratio.

DXF-data



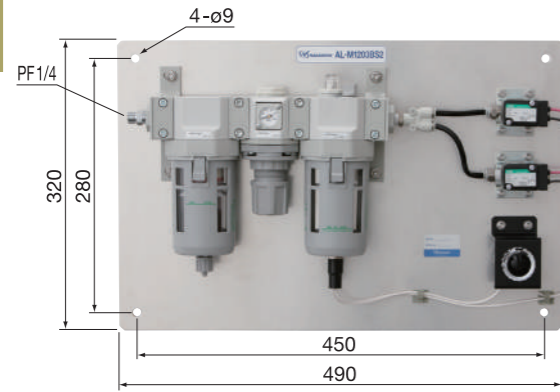
Code No. **1023** Model **ARG-02**



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**

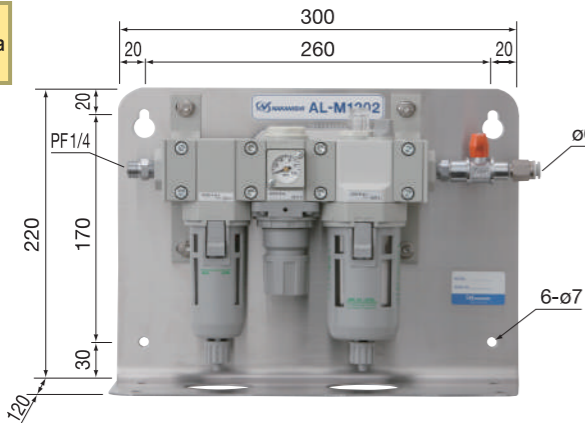
< Standard Accessories >

• 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 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**

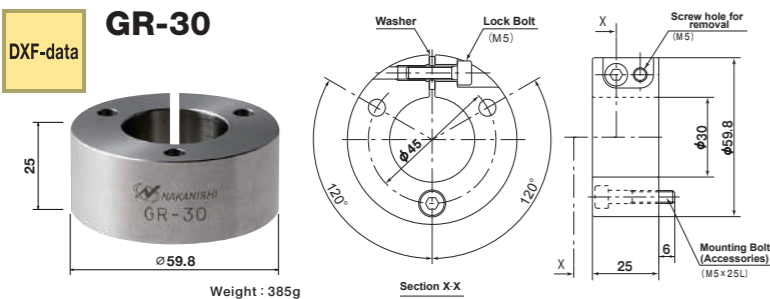
< Standard Accessories >

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

Grip Ring

## GR-30 / GR-22.8

DXF-data

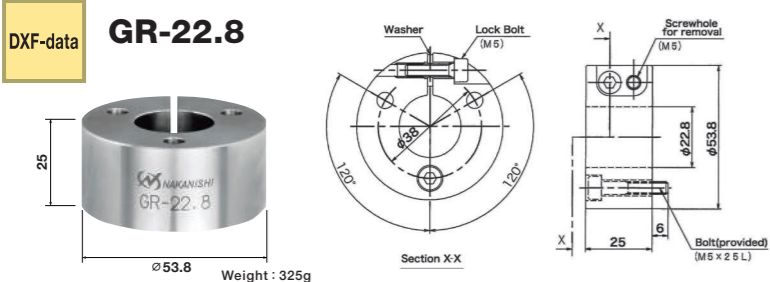


Code No. **1885** Model **GR-30**

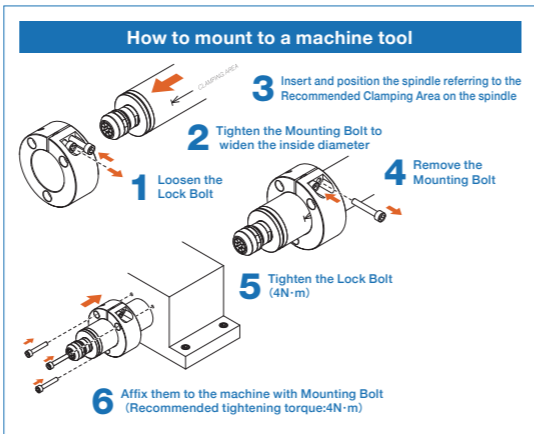
Code No. **1888** Model **GR-22.8**

Standard Accessories Mounting Bolt (GR-30) M5x25 : 3pcs.

DXF-data



Standard Accessories Mounting Bolt (GR-22.8) M5x25 : 3pcs.



## ■ Collet • Collet Nut

| Product               | Code No.     | Model  | I.D.   | Compatible model  |
|-----------------------|--------------|--|--|---|
| <br>Collet CHA Group  | <b>91494</b> | CHA-3.0AA  | ø3.0AA ※   | MSS-19, MSS-20, MSS-22<br>PMS-3020A<br>※ High precision type AA<br>(Run-out Accuracy within 2 µm)   |
|                       | <b>91496</b> | CHA-3.175AA  | ø3.175AA ※   |   |
|                       | <b>91495</b> | CHA-4.0AA  | ø4.0AA ※   |   |
|                       | <b>91492</b> | CHA-2.35   | ø2.35  |   |
|                       | <b>91430</b> | CHA-3.0  | ø3.0   |   |
|                       | <b>91493</b> | CHA-3.175  | ø3.175   |   |
| <br>Collet CHA Group  | <b>91440</b> | CHA-4.0  | ø4.0   |   |
|                       | —            | CHA-□□   | ø0.5, ø0.6, ø0.7, ø0.8, ø0.9   |   |
|                       | —            | CHA-□□   | ø1.1, ø1.2, ø1.3, ø1.4, ø1.7, ø1.8, ø1.9<br>ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9<br>ø3.1, ø3.2, ø3.3, ø3.4, ø3.6, ø3.7, ø3.8, ø3.9   |   |
|                       | —            | CHA-□□   | ø1.0, ø1.5, ø2.0, ø2.5, ø3.5   |   |
|                       | —            | CHA-□□   | ø1.6   |   |
|                       | —            | CHA-□□   | ø0.5, ø0.6, ø0.7, ø0.8, ø0.9   |   |
| <br>Collet CHK Group  | <b>91597</b> | CHK-3.0AA  | ø3.0AA ※   | MSS-25, MSST-23, NR-2351, NR-2551<br>NR-303, NR-311, NR-3060S, NR-3060<br>NR-403E, NR-453E, PMA-3013K<br>PMS-3020K, PMR-3005K, RAS-101<br>RAS-151E, RAX-71E, RAX-271E<br>※ High precision type AA<br>(Run-out Accuracy within 2 µm) |
|                       | <b>91598</b> | CHK-3.175AA  | ø3.175AA ※   |   |
|                       | <b>91599</b> | CHK-4.0AA  | ø4.0AA ※   |   |
|                       | <b>91600</b> | CHK-6.0AA  | ø6.0AA ※   |   |
|                       | <b>91601</b> | CHK-6.35AA   | ø6.35AA ※  |   |
|                       | <b>91592</b> | CHK-2.35   | ø2.35  |   |
|                       | <b>91530</b> | CHK-3.0  | ø3.0   |   |
|                       | <b>91593</b> | CHK-3.175  | ø3.175   |   |
|                       | <b>91540</b> | CHK-4.0  | ø4.0   |   |
|                       | <b>91560</b> | CHK-6.0  | ø6.0   |   |
| <br>Collet CHK Group  | <b>91596</b> | CHK-6.35   | ø6.35  |   |
|                       | —            | CHK-□□   | ø0.5, ø0.6, ø0.7, ø0.8, ø0.9   |   |
|                       | —            | CHK-□□   | ø1.0, ø1.5, ø2.0, ø2.5, ø3.5, ø4.5, ø4.76, ø5.5  |   |
|                       | —            | CHK-□□   | ø1.1, ø1.2, ø1.3, ø1.4, ø1.7, ø1.8, ø1.9<br>ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9<br>ø3.1, ø3.2, ø3.3, ø3.4, ø3.6, ø3.7, ø3.8, ø3.9<br>ø4.1, ø4.2, ø4.3, ø4.4, ø4.6, ø4.7, ø4.8, ø4.9<br>ø5.1, ø5.2, ø5.3, ø5.4, ø5.6, ø5.7, ø5.8, ø5.9 |   |
|                       | —            | CHK-□□   | ø1.6, ø5.0   |   |
|                       | —            | CHK-□□   | ø0.5, ø0.6, ø0.7, ø0.8, ø0.9   |   |
| <br>Collet CHSS Group | <b>93092</b> | CHSS-2.35  | ø2.35  | PMA-3013S   |
|                       | <b>93030</b> | CHSS-3.0   | ø3.0   |   |
|                       | <b>93093</b> | CHSS-3.175   | ø3.175   |   |
| —                     | CHSS-□□      | ø1.0, ø1.5, ø2.0, ø2.5   |  |   |
| <br>Collet CHM Group  | <b>90992</b> | CHM-2.35   | ø2.35  | AMH-301, NR-601   |
|                       | <b>90930</b> | CHM-3.0  | ø3.0   |   |
|                       | <b>90993</b> | CHM-3.175  | ø3.175   |   |
|                       | <b>90916</b> | CHM-1.6  | ø1.6   |   |
| —                     | CHM-□□       | ø1.0, ø2.0   |  |   |
| <br>Collet CHS Group  | <b>90592</b> | CHS-2.35   | ø2.35  | RA-200, RA-271E   |
|                       | <b>90530</b> | CHS-3.0  | ø3.0   |   |
|                       | <b>90593</b> | CHS-3.175  | ø3.175   |   |
|                       | <b>90516</b> | CHS-1.6  | ø1.6   |   |
|                       | —            | CHS-□□   | ø0.8, ø0.9<br>ø1.0, ø2.0, ø2.5   |   |
|                       | —            | CHS-□□   | ø1.1, ø1.2, ø1.3, ø1.4, ø1.5, ø1.7, ø1.8, ø1.9<br>ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9   |   |
| <br>Collet CH8 Group  | <b>91092</b> | CH8-2.35   | ø2.35  | RA-100, RA-151E   |
|                       | <b>91030</b> | CH8-3.0  | ø3.0   |   |
|                       | <b>91093</b> | CH8-3.175  | ø3.175   |   |
| —                     | CH8-□□       | ø0.8, ø0.9<br>ø1.0, ø1.5, ø2.0, ø2.5   |  |   |
| —                     | CH8-□□       | ø1.1, ø1.2, ø1.3, ø1.4, ø1.6, ø1.7, ø1.8, ø1.9<br>ø2.1, ø2.2, ø2.3, ø2.4, ø2.6, ø2.7, ø2.8, ø2.9 |  |   |
|                       | <b>2102</b>  | CHN-A  | Collet Nut for Collet (CHA)  | MSS-19, MSS-20, MSS-22<br>PMS-3020A   |
|                       | <b>2129</b>  | K-265  | Collet Nut for Collet (CHK)  | MSS-25, MSST-23, NR-2351, NR-2551, NR-303<br>NR-311, NR-3060S, NR-3060, NR-403E<br>NR-453E, PMA-3013K, PMS-3020K, PMR-3005K<br>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) | Metal Saw Arbor<br>Dimensions of Metal Saw<br>ød (I.D.) x under ø30mm (O.D.)<br>Run-out Accuracy<br>: within 0.02 mm | RA-100, RA-151E   |
|         | 1077     | KCH-02 (6.0) |  |   |
|         | 2147     | KCH-02 (8.0) |  |   |
|         | 2148     | KCH-03 (5.0) | Metal Saw Arbor<br>Dimensions of Metal Saw<br>ød (I.D.) x under ø30mm (O.D.)<br>Run-out Accuracy<br>: within 0.02 mm | MSS-25, MSST-23, NR-2351, NR-2551, NR-303<br>NR-311, NR-3060S, NR-3060, NR-403E<br>NR-453E, PMA-3013K, PMS-3020K, PMR-3005K<br>RAS-101, RAS-151E, RAX-71E, RAX-271E |
|         | 2130     | KCH-03 (6.0) |  |   |
|         | 2149     | KCH-03 (8.0) |  |   |
|         | 1029     | AGM-01       | Grindstone Arbor<br>Run-out Accuracy : within 0.02 mm<br>Grindstone I.D. ø5.0mm                                      | AMH-301, NR-601   |
|         | 2131     | AGM-03       | Grindstone Arbor<br>Run-out Accuracy : within 0.02 mm<br>Grindstone I.D. ø5.0mm                                      | MSS-25, MSST-23, NR-2351, NR-2551<br>NR-303, NR-3060S, NR-3060, NR-403E<br>NR-453E, PMA-3013K, PMS-3020K<br>RAS-101, RAS-151E, RAX-71E, RAX-271E                    |
|         | 2143     | NGF2-19      | Grindstone Flange<br>Applicable Grindstone Dimensions<br>ø19.05 (I.D.) x ø40 (O.D.) x 7 (W) mm                       | NR-311  |
|         | 2138     | EGF-19       |  | NR-3060S, NR-3060<br>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<br>Dimensions: ø19.05 x ø25.4 x 36mm |
|         | 1877           | RB-20 x 22                                     | ø22 Bush<br>Dimensions: ø20 x ø22 x 40mm        |
|         | 1876           | RB-20 x 22.8                                   | ø22.8 Bush<br>Dimensions: ø20 x ø22.8 x 40mm    |
|         | 1875           | RB-20 x 23                                     | ø23 Bush<br>Dimensions: ø20 x ø23 x 40mm        |
|         | 1878           | RB-20 x 25                                     | ø25 Bush<br>Dimensions: ø20 x ø25 x 40mm        |
|         | 1879           | RB-20 x 25.4                                   | ø25.4 Bush<br>Dimensions: ø20 x ø25.4 x 40mm    |
|         | 1883           | RB-22 x 25 x 34L                               | ø25 Bush<br>Dimensions: ø22 x ø25 x 33.5mm      |
|         | 1884           | RB-22 x 25.4 x 34L                             | ø25.4 Bush<br>Dimensions: ø22 x ø25.4 x 33.5mm  |
|         | 1872           | RBS-22.8 x 25                                  | ø25 Bush<br>Dimensions: ø22.8 x ø25 x 25mm      |
|         | 1871           | RB-22.8 x 25                                   | ø25 Bush<br>Dimensions: ø22.8 x ø25 x 44mm      |
|         | 1874           | RBS-22.8 x 25.4                                | ø25.4 Bush<br>Dimensions: ø22.8 x ø25.4 x 25mm  |
| 1873    | RB-22.8 x 25.4 | ø25.4 Bush<br>Dimensions: ø22.8 x ø25.4 x 44mm |   |

■ Metal Fitting & Filter Joint

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

■ Hose

| Product | Description                      | Code No. | Model | Compatible model   |
|---------|----------------------------------|----------|-------|--|
|         | Hose ø6mm (O.D.)<br>(INLET) 2m   | 2028     | K-215 | AM-2526 (RA · LA), AM-300 (RA · LA)<br>AM-310 (RA · LA), AM-3020, AM-600RA<br>PMA-3013K, PMA-3013S<br>PMA-3020A, PMS-3020K<br>MSS-19 · 20 · 22 · 25 (RA), MSST-23 (RA) |
|         | Hose ø8mm (O.D.)<br>(EXHAUST) 1m | 2029     | K-216 | AM-300 (RA · LA), AM-310 (RA · LA)<br>AM-600RA, MSS-19 · 20 · 22 (RA)<br>MSST-23 (RA)  |
|         | Hose ø8mm (O.D.)<br>(EXHAUST) 1m | 2052     | K-256 | AM-3020, PMA-3013K, PMA-3013S<br>PMR-3005K, PMS-3020A, PMS-3020K<br>AM-2526 (RA · LA), MSS-25 (RA)   |
|         | Hose 2m                          | 2030     | K-204 | AM-2526 (R · L), AM-310 (R · L)<br>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<br>PMR-3005K, PMA-3013K<br>RAX-271E, RAX-71E |
|         | Grease for speed reducer (10mℓ)     | 1550     | —     |   |
|         | Grease<br>for speed reducer (100mℓ) | 1549     | —     |   |

■ Oil

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