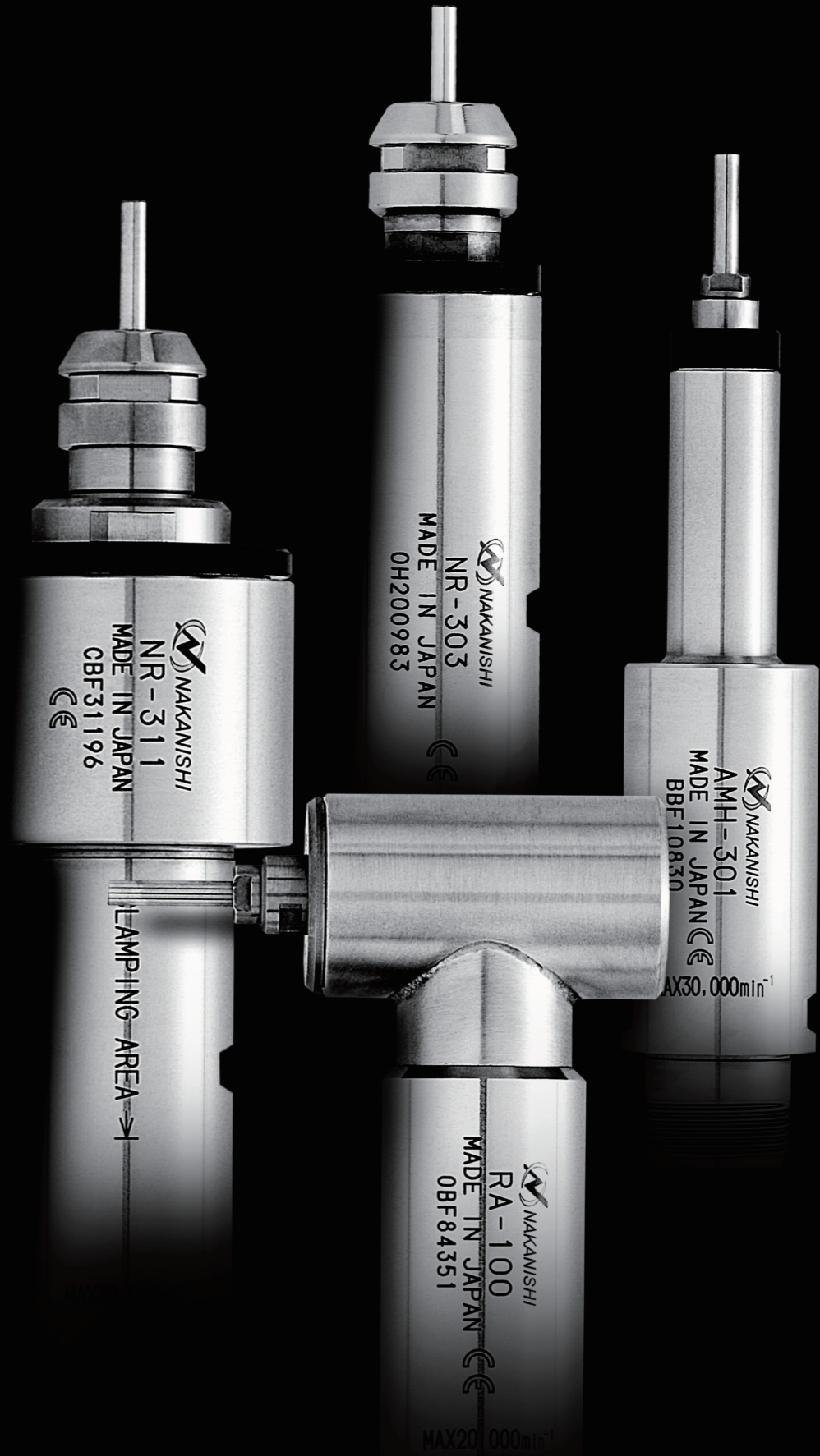


E2000



E2000

NAKANISHI INC. 2022



NAKANISHI INC.

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www.nakanishi-inc.com
PR-K366E Ver.1 2022-02-24 02. 440

※Specifications and design are subject to change without notice.

SERIES **E2000**
ULTRA-HIGH-SPEED & SUPER-PRECISION

Baby-E

Smallest model in Nakanishi E series

✔ **Spindle accuracy within 1 μm**

- Optimum for high-precision machining
- Longer tool life

✔ **Ceramic Bearing**

- Higher rigidity for heavy cutting
- Longer bearing life





✔ **Brushless motor**

- No need to replace carbon brushes to enable maintenance-free operation
- Carbon brush dust will no longer penetrate the bearing to extend the product life






Index

Straight type spindle

NR-303		p.5
NR-2351		p.5
NR-311		p.7
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Angle type spindle

RA-100		p.9
RA-200		p.9
RAS-101		p.11

Motor

EM-2350J		p.13
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Speed reducer

ARG-01		p.13	ARG-02		p.13
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Motor cord

EMCD-2350J	Motor cord	p.16
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Motor cord [Length] 4m, 6m, 8m



Controller



E2280 CONTROLLER	p.15
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Accessories



AL-C1204	p.16
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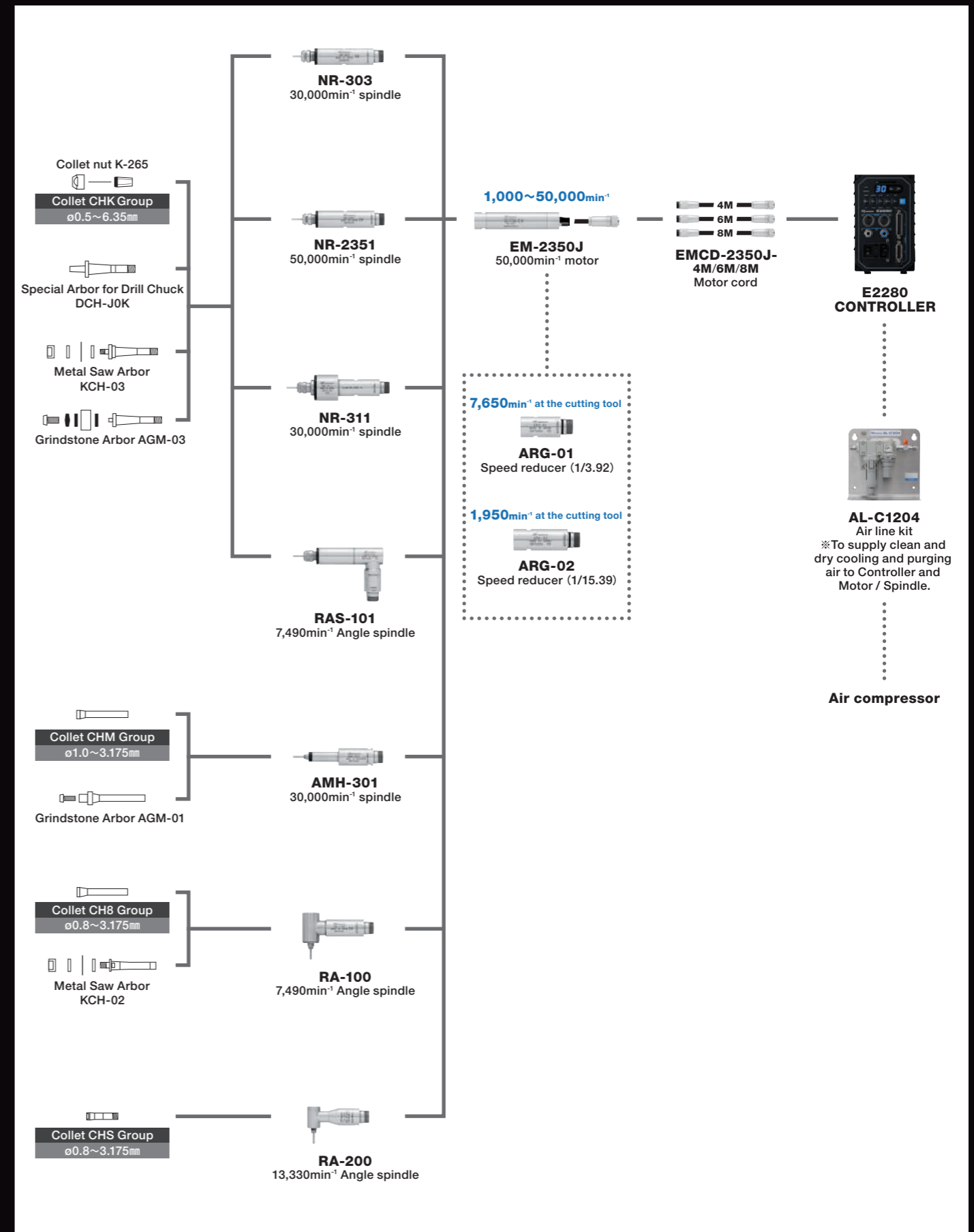
GR-22.8	p.16
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CHK / CHM CHS / CH8	p.17
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System Chart

[E2000]



Spindle
Guide

CHK



NR-303



NR-2351



EM-2350J



EMCD-2350J



E2280 CONTROLLER



AL-C1204

E2000 SERIES

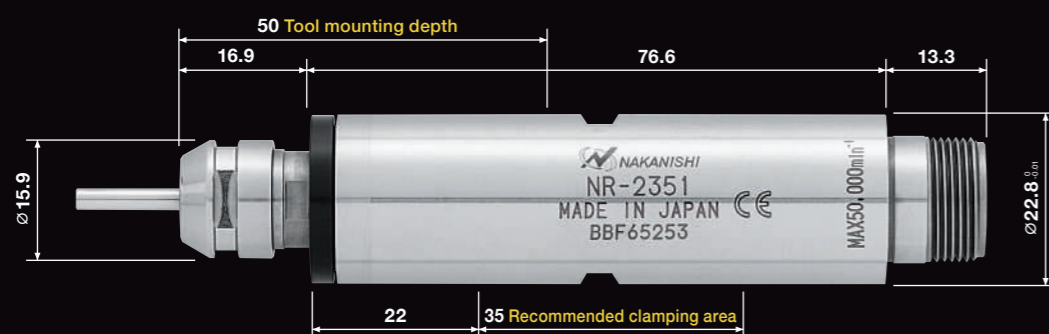
Shown In Actual Size

Straight type spindle

NR-303

O.D. \varnothing 22.8mm

NR-2351

O.D. \varnothing 22.8mm

Specifications

DXF data DXF files are available on our website

Order by Code No.

NR-303

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

O.D.	Max. rpm	Spindle Accuracy	Collet	Weight
\varnothing 22.8mm	30,000min ⁻¹	Within 2 μ m	CHK Group (\varnothing 0.5 ~ \varnothing 6.35mm)	215g
Standard Accessories		Collet nut (K-265) / Wrench (12×14) : 2pcs. · (20×24) : 1pc.		
Options		Collet (CHK Group) : \varnothing 0.5~ \varnothing 6.35mm p.17 Metal Saw Arbor (KCH-03) : \varnothing d (I.D.) × under \varnothing 30mm (O.D.) Grindstone Arbor (AGM-03) : Grindstone I.D. \varnothing 5.0mm		

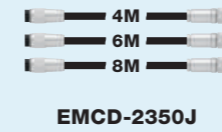
* Collet is sold separately.

NR-2351

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

O.D.	Max. rpm	Spindle Accuracy	Collet	Weight
\varnothing 22.8mm	50,000min ⁻¹	Within 1 μ m	CHK Group (\varnothing 0.5 ~ \varnothing 6.35mm)	215g
Standard Accessories		Collet nut (K-265) / Wrench (12×14) : 2pcs. · (20×24) : 1pc.		
Options		Collet (CHK Group) : \varnothing 0.5~ \varnothing 6.35mm p.17 Metal Saw Arbor (KCH-03) : \varnothing d (I.D.) × under \varnothing 30mm (O.D.) Grindstone Arbor (AGM-03) : Grindstone I.D. \varnothing 5.0mm		

* Collet is sold separately.

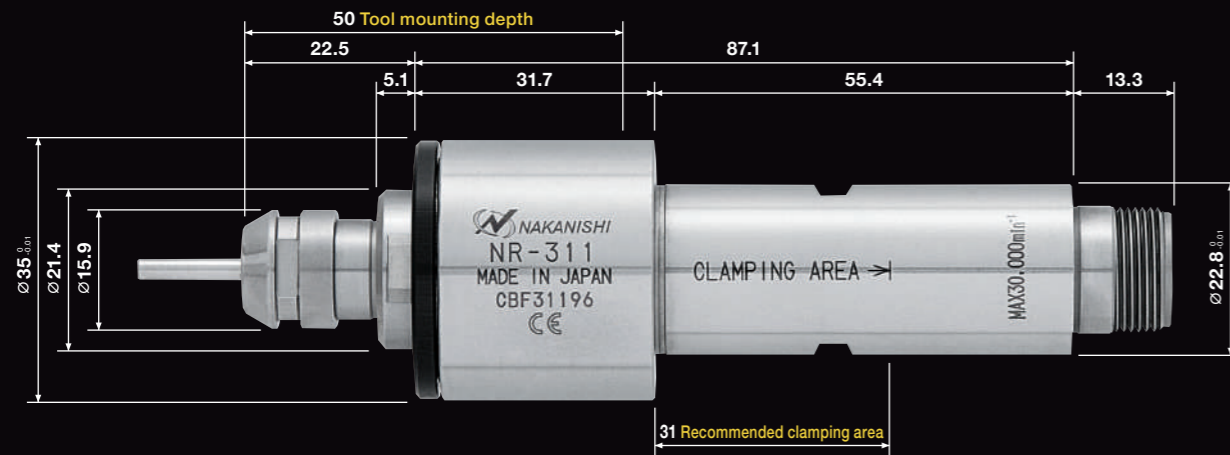
Spindle
Guide

E2000 SERIES

Shown In Actual Size

Straight type spindle

NR-311

O.D. \varnothing 22.8mm

Specifications

DXF data DXF files are available on our website

Order by Code No.

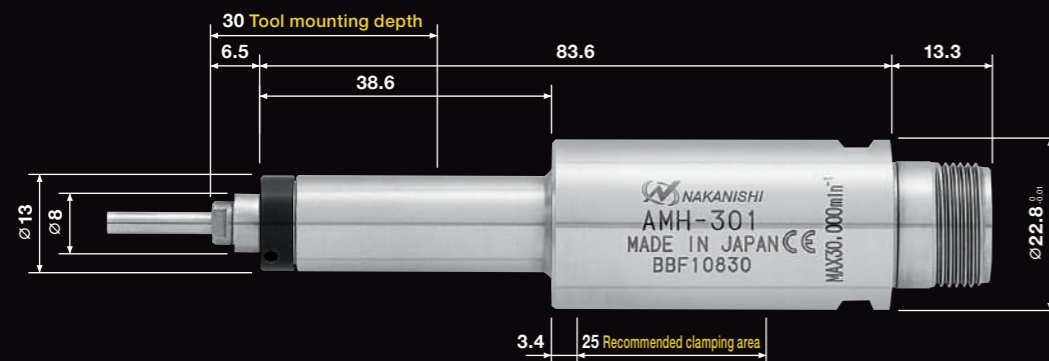
NR-311

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

O.D.	Max. rpm	Spindle Accuracy	Collet	Weight
\varnothing 22.8 _{mm}	30,000min ⁻¹	Within 2 μ m	CHK Group (\varnothing 0.5 ~ \varnothing 6.35mm)	370g
Standard Accessories Collet nut (K-265) / Wrench (12×14) · (20×24) : 1pc. each				
Options Collet (CHK Group) : \varnothing 0.5~ \varnothing 6.35mm p.17 Metal Saw Arbor (KCH-03) : \varnothing d (I.D.) × under \varnothing 30mm (O.D.) Grindstone Flange (NGF2-19) : \varnothing 19.05 (I.D.) × \varnothing 40 (O.D.) × 7mm (W)				

* Collet is sold separately.

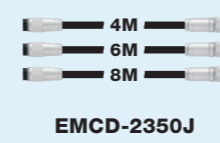
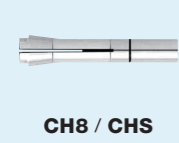
AMH-301

O.D. \varnothing 22.8mm

AMH-301

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

O.D.	Max. rpm	Collet	Weight
\varnothing 22.8 _{mm}	30,000min ⁻¹	CHM Group (\varnothing 1.0 ~ \varnothing 3.175mm)	171g
Standard Accessories Collet : \varnothing 3.0mm (CHM-3.0) / Wrench (7×5.1) · (6×4.5) · (20×24) : 1pc. each			
Options Collet (CHM Group) : \varnothing 1.0~ \varnothing 3.175mm p.17 Grindstone Arbor (AGM-01) : Grindstone I.D. \varnothing 5.0mm			

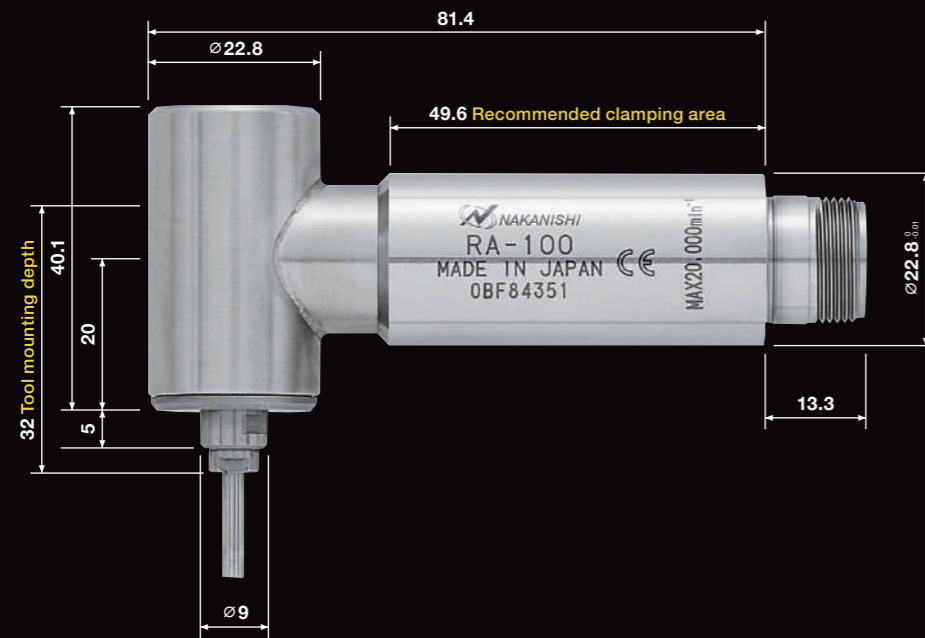
Spindle
Guide

E2000 SERIES

Shown In Actual Size

Angle type spindle

RA-100



Specifications

DXF data DXF files are available on our website

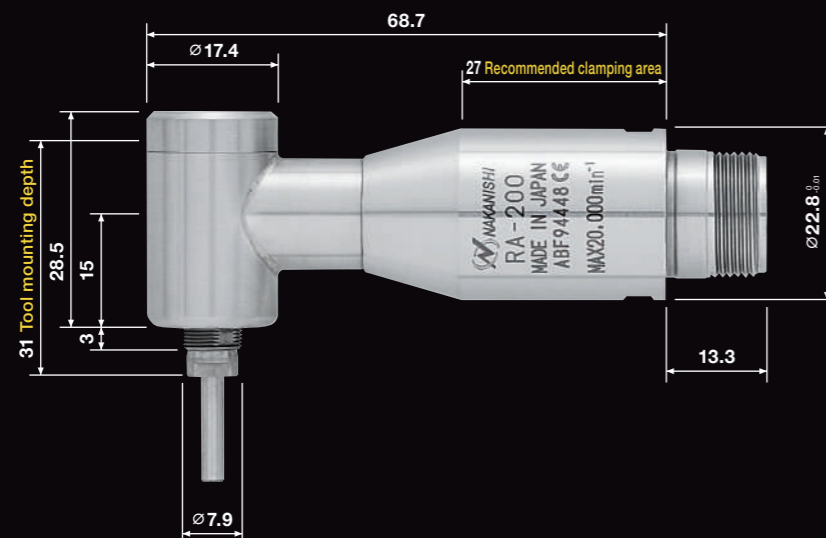
Order by Code No.

RA-100

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

O.D.	Max. speed at the cutting tool	Reduction ratio	Max. Allowable Motor Speed for The Spindle	Collet	Weight
ø22.8mm	7,490 min ⁻¹	$\frac{1}{2.67}$	20,000 min ⁻¹	CH8 Group (ø0.8 ~ ø3.175mm)	271g
Standard Accessories		Collet : ø3.0mm (CH8-3.0) / Wrench (7×5.5) · (8×5) · (20×24) : 1pc. each			
Options		Collet (CH8 Group) : ø0.8~ø3.175mm p.17 Metal Saw Arbor (KCH-02) : ød (I.D.) × under ø30mm (O.D.)			

RA-200



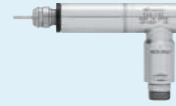
RA-200

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

O.D.	Max. speed at the cutting tool	Reduction ratio	Max. Allowable Motor Speed for The Spindle	Collet	Weight
ø22.8mm	13,330 min ⁻¹	$\frac{1}{1.5}$	20,000 min ⁻¹	CHS Group (ø0.8 ~ ø3.175mm)	165g
Standard Accessories		Collet : ø3.0mm (CHS-3.0) / Wrench (7×5.1) · (8×5) · (20×24) : 1pc. each			
Options		Collet (CHS Group) : ø0.8~ø3.175mm p.17			

Spindle
Guide

CHK



RAS-101



EM-2350J



EMCD-2350J



E2280 CONTROLLER



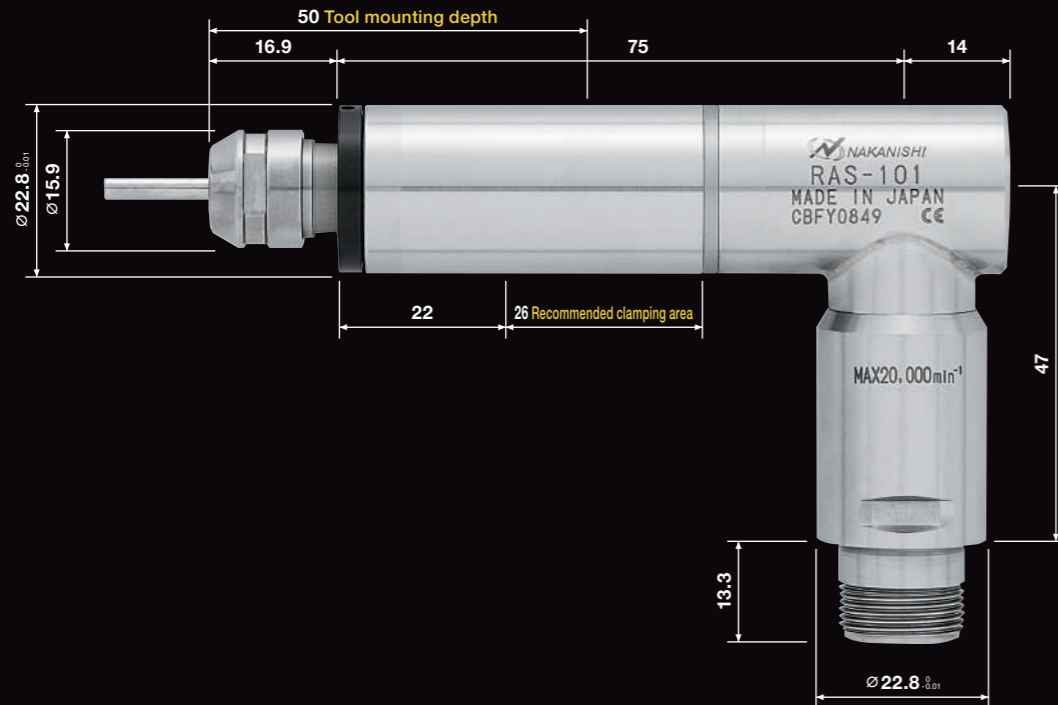
AL-C1204

E2000 SERIES

Shown In Actual Size

Angle type spindle

RAS-101

O.D. ϕ 22.8mm

Specifications

DXF
dataDXF files are available
on our website

Order by Code No.

RAS-101

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

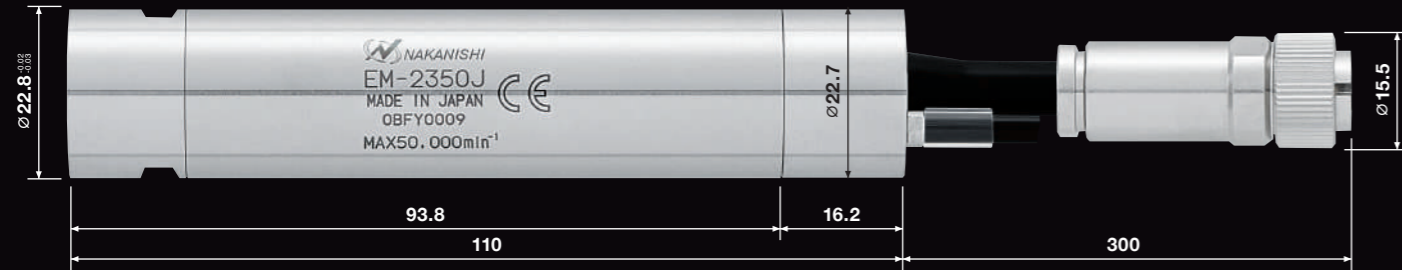
O.D.	Max. speed at the cutting tool	Reduction ratio	Max. Allowable Motor Speed for The Spindle	Spindle Accuracy	Collet	Weight
ϕ 22.8mm	7,490 min ⁻¹	$\frac{1}{2.67}$	20,000 min ⁻¹	Within 2 μ m	CHK Group (ϕ 0.5 ~ ϕ 6.35mm)	325g
Standard Accessories		Collet nut (K-265) / Wrench (12×14) : 2pcs. · (20×24) : 1pc.				
Options		Collet (CHK Group) : ϕ 0.5~ ϕ 6.35mm p.17				
		Metal Saw Arbor (KCH-03) : ϕ d (I.D.) × under ϕ 30mm (O.D.)				
		Grindstone Arbor (AGM-03) : Grindstone I.D. ϕ 5.0mm				

* Collet is sold separately.

Motor / Speed reducer

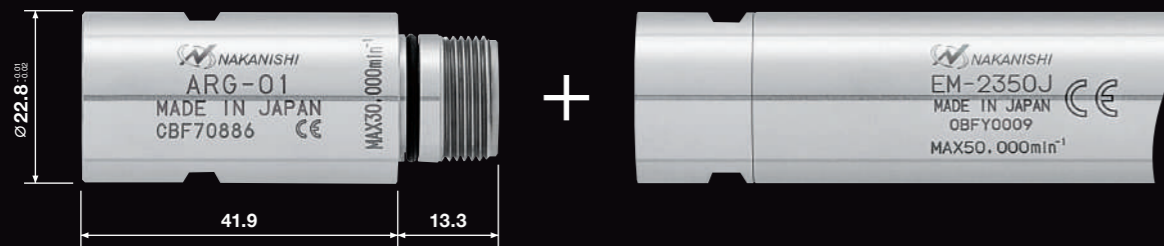
EM-2350J

Motor

O.D. \varnothing 22.8mm

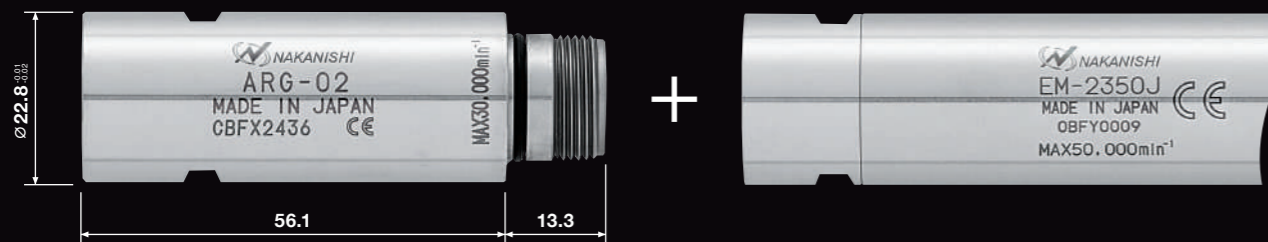
ARG-01

Speed reducer (1/3.92)

O.D. \varnothing 22.8mm

ARG-02

Speed reducer (1/15.39)

O.D. \varnothing 22.8mm

Specifications

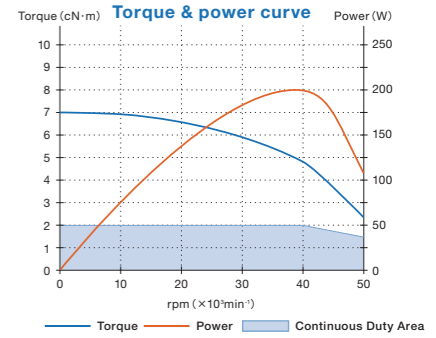
DXF data DXF files are available on our website

Order by Code No.

EM-2350J

Code No. **7721** Model **EM-2350J**

O.D.	Speed Range	Max. power	Weight
\varnothing 22.8mm	1,000~50,000min ⁻¹	200w	260g (Motor cord is included.)
Standard Accessories Wrench (20×24) : 1pc.			
Options Motor cord : Length 4m (7722), 6m (7723), 8m (7724)			



ARG-01

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

O.D.	Max. speed at the cutting tool	Reduction ratio	Max. rpm	Weight
\varnothing 22.8mm	7,650min ⁻¹	$\frac{1}{3.92}$	30,000min ⁻¹	108g

ARG-02

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

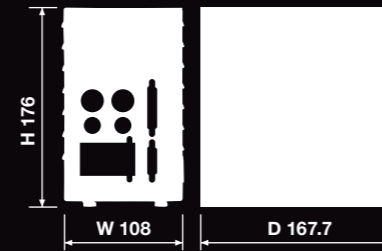
O.D.	Max. speed at the cutting tool	Reduction ratio	Max. rpm	Weight
\varnothing 22.8mm	1,950min ⁻¹	$\frac{1}{15.39}$	30,000min ⁻¹	148g

E2280 Controller



E2280 CONTROLLER Controller

Code No. **7720**



Equipped with selector

- Up to 2 motors to control
※not simultaneously
- Providing individual speed control of each motor

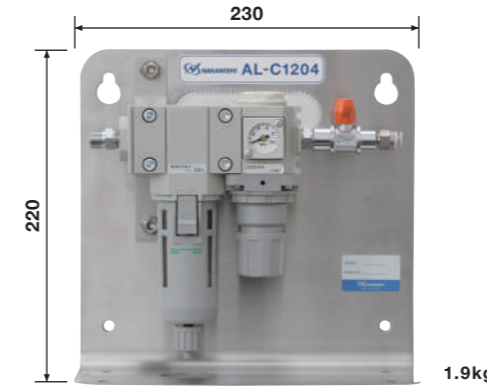
External Input / Output Control Signal Operation

- External Input
Motor ON / OFF,
Error Released, Rotating Direction,
Motor Speed Setting and etc.
- External Monitor
Motor Current, Error, Warning,
Rotating pulse and etc.
- Parameter Setting
Maximum motor speed setting,
Fix the motor speed
※For more information, please refer to the
operation manual on our website.

Speed Range		Input Voltage	Max. power
1,000~50,000min ⁻¹		AC100~240v Without plug Multiple output power	200w
Power consumption	Air consumption		Weight
AC1.4A	1motor : 30Nℓ/min (0.25MPa) / 2motors : 63Nℓ/min (0.30MPa)		2.2kg
Standard Accessories			
Power cord : 3m / Air hose with filter (K-251 : 2058) : 2m / Power cord hook			
Connector cap (Included) / Connector cover (Included)			
Bracket / Air branching joint / Fuse / Mounting screw / Reducer			

Accessories (Air line kit, etc.)

AL-C1204 Air line kit



※Recommendation of nominal filtration rating:0.3μm, Pressure range:0.1-1.0MPa
Recommendation of air filter:M2000-WS (CKD)

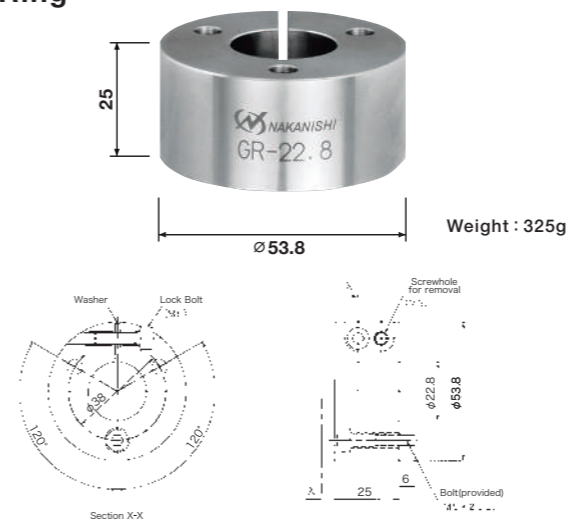
Code No.	4504	Model	AL-C1204
Standard Accessories	Hose pipe (K-260) : 2m		

Motor cord

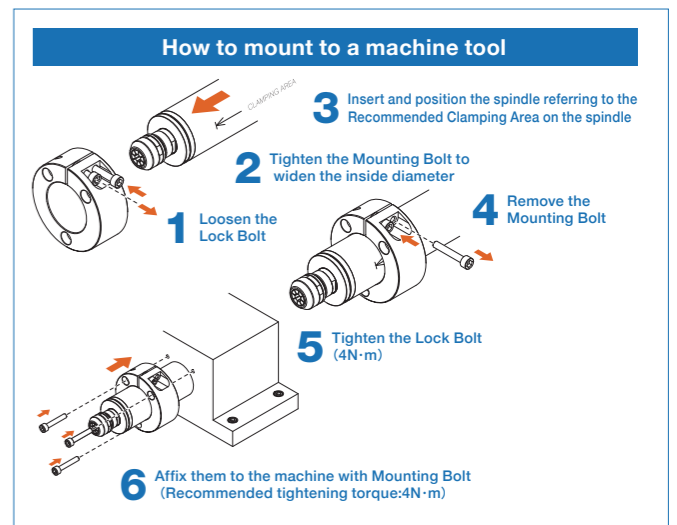
Motor cord	Code No.	Model	Length	Standard Accessories	Compatible model
4M	7722	EMCD-2350J-4M	3.7m	Air hose Connector cap (Included)	EM-2350J
6M	7723	EMCD-2350J-6M	5.7m		
8M	7724	EMCD-2350J-8M	7.7m		
Joint type					

GR-22.8 Grip Ring

Code No.	1888	Model	GR-22.8
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Standard Accessories Mounting Bolt (GR-22.8) M5 × 25 : 3pcs.



Accessories (Collet, etc.)

Collet	Code No.	Model	I.D. / Description	Compatible model				
<p>Collet CHK Group</p>	91597	CHK-3.0AA	ø3.0AA*	NR-2351 · NR-303 · NR-311 RAS-101 * 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					
	<p>Collet CHM Group</p>	90992	CHM-2.35		ø2.35	AMH-301		
90930		CHM-3.0	ø3.0					
90993		CHM-3.175	ø3.175					
90916		CHM-1.6	ø1.6					
—		CHM-□□	ø1.0, ø2.0					
<p>Collet CHS Group</p>		90592	CHS-2.35	ø2.35	RA-200			
		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				
		<p>Collet CH8 Group</p>	91092	CH8-2.35			ø2.35	RA-100
			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				
	<p>Collet nut for CHK collet</p>		2129	K-265		Collet nut for CHK collet	NR-2351 · NR-303 · NR-311 RAS-101	

Metal Saw Arbor · Grindstone Arbor	Code No.	Model	I.D. / Description / Specifications	Compatible model	
	2132	DCH-J0K	Special Arbor for Drill Chuck For drill chuck Jacob's taper No.0 Run-out Accuracy : within 0.05mm	NR-2351 · NR-303 · NR-311 RAS-101	
	2146	KCH-02 (5.0)	ø5.0 (I.D.)	Metal Saw Arbor ød (I.D.) x under ø30mm (O.D.) Run-out Accuracy : within 0.02mm	RA-100
	1077	KCH-02 (6.0)	ø6.0 (I.D.)		
	2147	KCH-02 (8.0)	ø8.0 (I.D.)		
	2148	KCH-03 (5.0)	ø5.0 (I.D.)	Metal Saw Arbor ød (I.D.) x under ø30mm (O.D.) Run-out Accuracy : within 0.02mm	NR-2351 · NR-303 · NR-311 RAS-101
	2130	KCH-03 (6.0)	ø6.0 (I.D.)		
	2149	KCH-03 (8.0)	ø8.0 (I.D.)		
		1029	AGM-01	Grindstone Arbor Run-out Accuracy : within 0.02mm Grindstone I.D. ø5.0mm	AMH-301
		2131	AGM-03	Grindstone Arbor Run-out Accuracy : within 0.02mm Grindstone I.D. ø5.0mm	NR-2351 · NR-303 · RAS-101

* For right hand (cw) rotation only.

NAKANISHI Solutions LINE UP

Electric Motors & Spindles



Application for CNC lathes / Special purpose machines

Application for machining centers and milling machines

E4000 SERIES

1,000~40,000min⁻¹ Max.1,200W
[ø40mm]



- World's highest power in this class
- Max. power: 1,200W, Max. torque: 1.0N·m

E3000 SERIES

1,000~80,000min⁻¹ Max.350W
[ø30/25/20mm]



- The largest product lines for various processing
- Space-saving solution for small CNC lathe

HES SERIES

Max.80,000min⁻¹
[For small diameter endmills and drills only]



- The most cost effective solution to add high-speed machining capability
- 80,000min⁻¹, 6.0cN·m
- BT, HSK A63, ST shanks are available
- Driven by E3000 Controller

E2000 SERIES

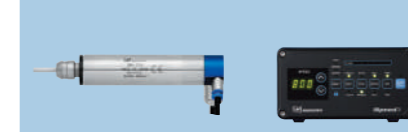
1,000~50,000min⁻¹ Max.200W
[ø22.8/25mm]



- Small size spindle allows multi-axis installation in limited space

iSpeed3 SERIES

1,000~80,000min⁻¹ Max.150W
[ø19.05/20/22mm]



- Super short motor spindle
- High efficiency brushless motor



- 50,000min⁻¹, 8.75cN·m
- BT, NT, CAT, IT, HSK A, ST shanks are available
- Driven by E3000 Controller

Air Motors & Spindles



Application for CNC lathes / Special purpose machines

Air-Speed SERIES One-piece type

Max.30,000min⁻¹ Max.130W
[ø25/23/20/19.05mm]



- Short body enables the spindle to mount in a limited space on a small NC/CNC lathe or on a special purpose machine

Air-Speed SERIES Modular type

Max.30,000min⁻¹ Max.130W
[ø30/25/22.8mm]



- Separate motor and spindle for flexible application changes
- Adjustable to various application through changing spindles

Air Turbine Spindles

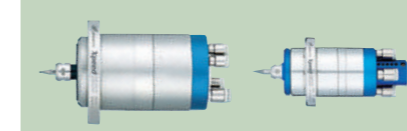


Application for CNC lathes / Special purpose machines

Application for machining centers and milling machines

Xped SERIES

Max.160,000min⁻¹
[ø65/40mm]



- Extreme accuracy-Runout 1μm
- For high precision small diameter drilling, internal grinding of ceramics
- Long life of spindle thanks to contactless rotation mechanism

PLANET SERIES

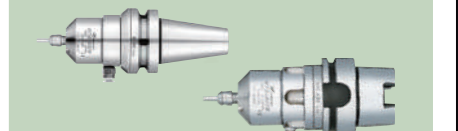
Max.65,000min⁻¹



- A milling machine turns into a jig grinder
- For high precision internal grinding

HTS SERIES

150,000min⁻¹
[For small diameter endmills and drills only]



- No thermal expansion on Z axis thanks to air turbine generating little heat
- Ultra high speed 150,000min⁻¹ with higher rigidity thanks to ceramic bearings
- BT, HSK E and straight (M2040) shanks are available

Electric spindle

Air spindle