NAKANISHI SPINDLE HTS

Nature of Tochigi, Japan

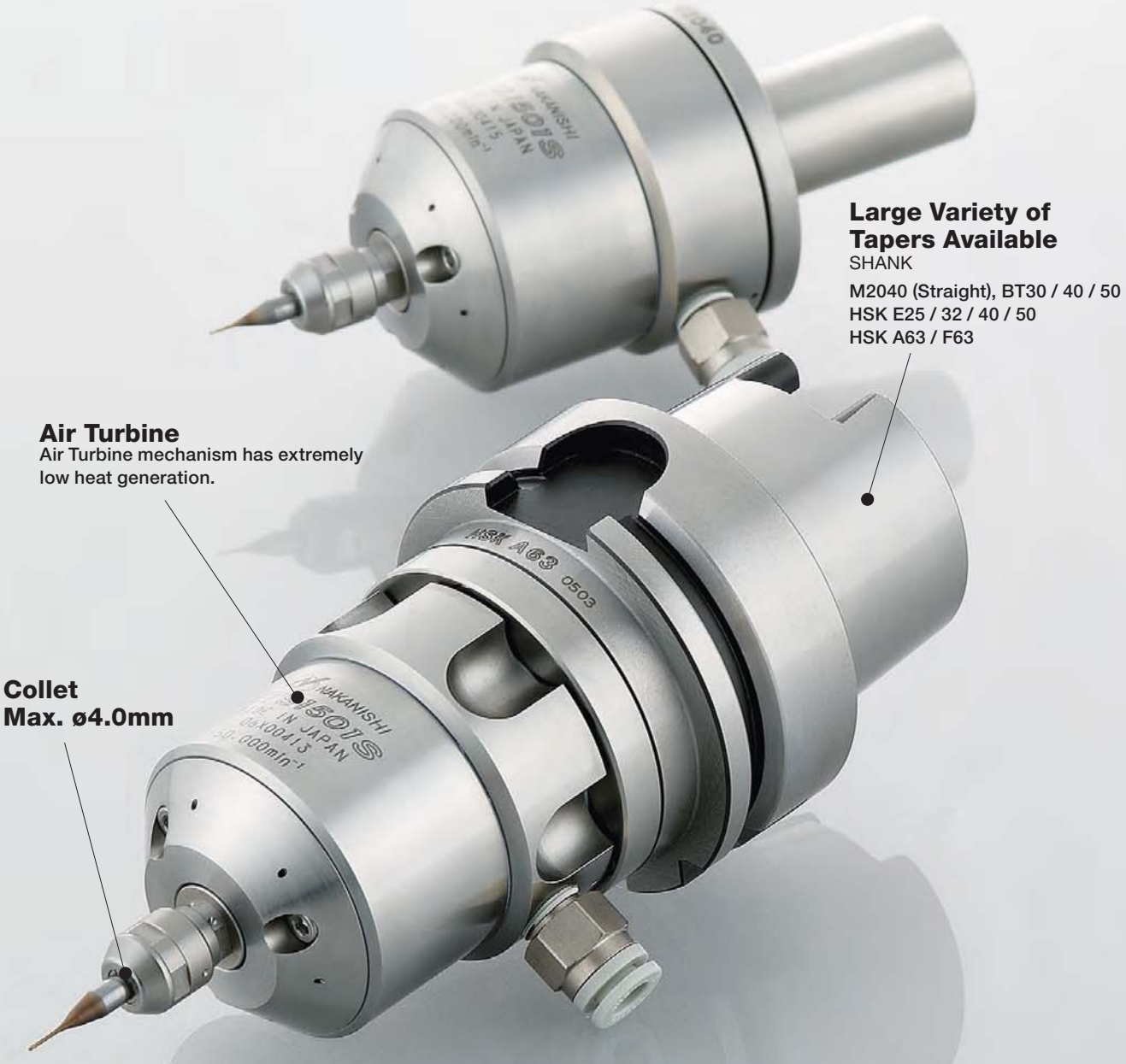
AIR TURBINE SPINDLE

HTS Series

COOLANT

Max.	150,000min^{-1} (0.5MPa)
Max. Power	25W

High Speed 150,000min^{-1}
Suitable for Small Diameter Milling



▼AIR TURBINE SPINDLE

HTS Series

COOLANT

Max. 150,000min^{-1} (0.5MPa)

Max. Power 25W

Air Turbine Spindle
HTS1501S-BT40

Negligible spindle expansion

- Air Turbine mechanism has extremely low heat generation.
- Up to cutting tool R x 0.1 depth of cut is possible.

Highly stable milling conditions are possible ever with very small diameter cutting tools

- Usable max. cutting tool diameter : Ball End Mill R0.5mm, Square End Mill ø1mm

Spindle Runout : Within 1 µm

Collet : Max. ø4.0mm

Collet
CHA-4.0
OPTION → Refer to P.5

*Other collet sizes are available.

Dramatically shorten mold cavity machining time

Air Line Kit
AL-M1202
OPTION → Refer to P.5

HTS Series Connection Drawing

Clean, lubricated, and regulated air is required for HTS Series spindles. Please refer to the diagram to the right for proper connections. AL-M1202 incorporates a filter, regulator and lubricator to provide the appropriate air.

HTS Series

Air Line Kit AL-M1202

Compressor

⚠Caution

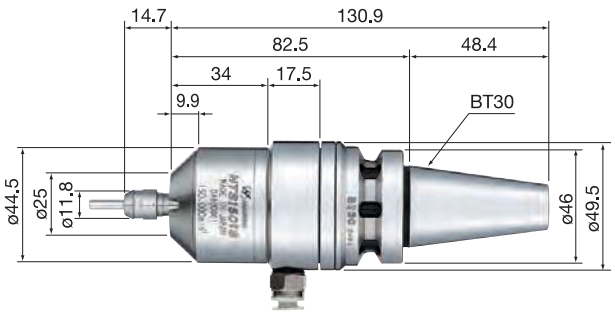
- **Do not rotate the machining center's main spindle with the HTS1501 spindle installed.**

"HTS SERIES" TURBINE SPINDLE

Air Turbine Spindle

HTS1501S-BT30

Max. Power	Speed	Spindle Runout	Air Consumption	Weight
25W	150,000min^{-1} (0.5MPa)	Within 1 μm	90Nℓ/min	1,030g



Code No. **8296** Model **HTS1501S-BT30**

< Standard Equipment Accessories >

- Collet : ø4.0mm (CHA-4.0)
- Collet Nut (CHN-AA) ●Spanner (8 x 5), (9 x 11) : 1pc. each
- Filter Joint (FJ-01) ●Hose (K-247) : ø6mm x 4.0m

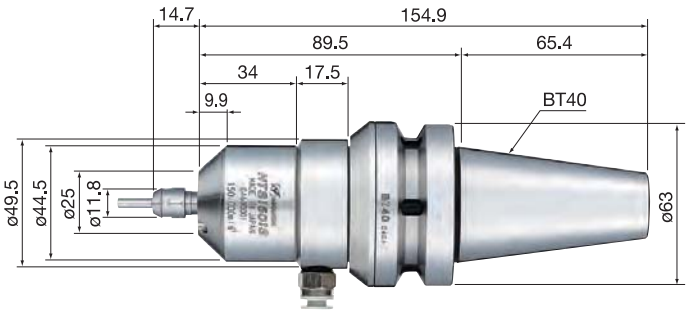
< Optional >

Collet (CHA Group) : ø0.5~ø4.0mm See Page 5 for details

Air Turbine Spindle

HTS1501S-BT40

Max. Power	Speed	Spindle Runout	Air Consumption	Weight
25W	150,000min^{-1} (0.5MPa)	Within 1 μm	90Nℓ/min	1,700g



Code No. **8297** Model **HTS1501S-BT40**

< Standard Equipment Accessories >

- Collet : ø4.0mm (CHA-4.0)
- Collet Nut (CHN-AA) ●Spanner (8 x 5), (9 x 11) : 1pc. each
- Filter Joint (FJ-01) ●Hose (K-247) : ø6mm x 4.0m

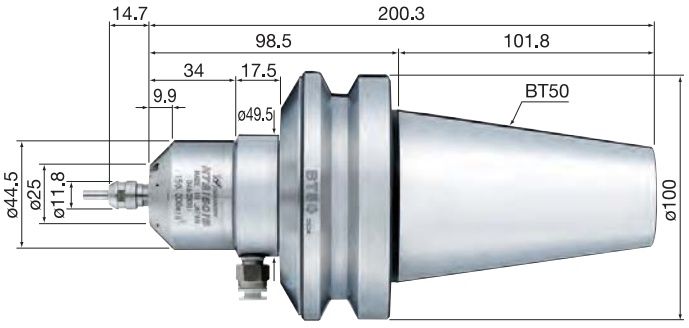
< Optional >

Collet (CHA Group) : ø0.5~ø4.0mm See Page 5 for details

Air Turbine Spindle

HTS1501S-BT50

Max. Power	Speed	Spindle Runout	Air Consumption	Weight
25W	150,000min^{-1} (0.5MPa)	Within 1 μm	90Nℓ/min	4,500g



Code No. **8281** Model **HTS1501S-BT50**

< Standard Equipment Accessories >

- Collet : ø4.0mm (CHA-4.0)
- Collet Nut (CHN-AA) ●Spanner (8 x 5), (9 x 11) : 1pc. each
- Filter Joint (FJ-01) ●Hose (K-247) : ø6mm x 4.0m

< Optional >

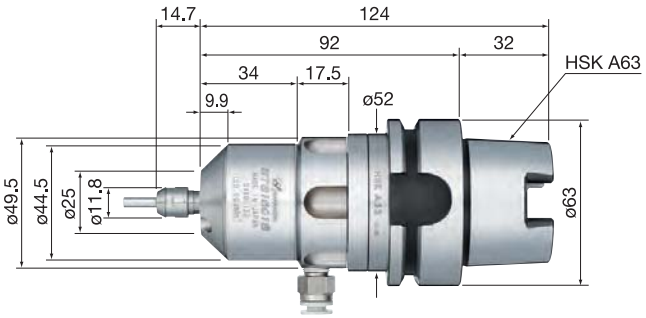
Collet (CHA Group) : ø0.5~ø4.0mm See Page 5 for details

⚠Caution : Do not rotate the machining center's main spindle with the HTS1501 spindle installed.

Air Turbine Spindle

HTS1501S-HSK A63

Max. Power	Speed	Spindle Runout	Air Consumption	Weight
25W	150,000min^{-1} (0.5MPa)	Within 1 μm	90Nℓ/min	1,400g



Code No. **8298** Model **HTS1501S-HSK A63**

< Standard Equipment Accessories >

- Collet : ø4.0mm (CHA-4.0)
- Collet Nut (CHN-AA) ●Spanner (8 x 5), (9 x 11) : 1pc. each
- Filter Joint (FJ-01) ●Hose (K-247) : ø6mm x 4.0m

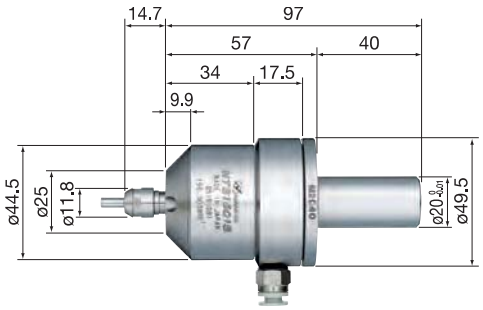
< Optional >

Collet (CHA Group) : ø0.5~ø4.0mm See Page 5 for details

Air Turbine Spindle

HTS1501S-M2040 (Straight Type)

Max. Power	Speed	Spindle Runout	Air Consumption	Weight
25W	150,000min^{-1} (0.5MPa)	Within 1 μm	90Nℓ/min	710g



Code No. **8299** Model **HTS1501S-M2040**

< Standard Equipment Accessories >

- Collet : ø4.0mm (CHA-4.0)
- Collet Nut (CHN-AA) ●Spanner (8 x 5), (9 x 11) : 1pc. each
- Filter Joint (FJ-01) ●Hose (K-247) : ø6mm x 4.0m

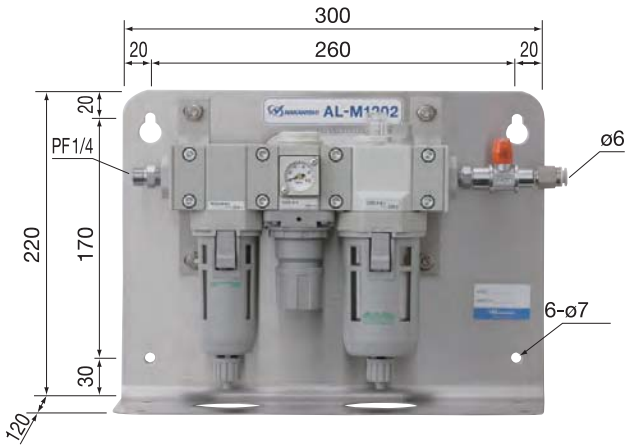
< Optional >

Collet (CHA Group) : ø0.5~ø4.0mm See Page 5 for details

✻Please mention "Code Number" upon your order.

Air Line Kit

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



■ 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.

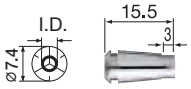
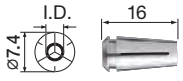
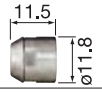
Filter Mesh 0.3 µm

Code No.	4502	Model	AL-M1202

< Standard Equipment Accessories >

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

■ Parts

Product	Inside Diameter : ød	Fit to	Model	Code No.
 ø1.0~ø4.0	ø3.0AA*	HTS series ※ High precision type AA (Spindle runout within 2µm)	CHA-3.0AA	91494
	ø3.175AA*		CHA-3.175AA	91496
	ø4.0AA*		CHA-4.0AA	91495
	ø2.35		CHA-2.35	91492
	ø3.0		CHA-3.0	91430
	ø3.175		CHA-3.175	91493
	ø4.0		CHA-4.0	91440
 ø0.5~ø0.9	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 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			
CHA Group	ø1.0, ø1.5, ø2.0, ø2.5, ø3.5			
	ø1.6			
	Collet Nut for Collet (CHA)	HTS series	CHN-AA	2159
	Hose ø6mm (O.D.) (INLET) 4m・Blue	HTS series	K-247	2056
	Lubricating Oil (70cc)	Air Line Kit (AL-M1202)	K-211	1057
	Lubricating Oil (1L)	Air Line Kit (AL-M1202)	K-202	1058

*: For right hand (cw) rotation only.

*Please mention "Code Number" upon your order.

HTS1501 Series

Case Studies <Rough mill for deep cutting, High-speed feeding> F=2,000mm/min (Rough cutting)

Material	NAK80 (HRC 40)
Motor Speed	150,000min^{-1}
Usable Tool	R 0.2 x 2L Ball End Mill
Rough Cutting	Ad 0.03 x Rd 0.04mm
Rough Cutting Work Feed	2,000mm/min
Finishing Cutting	Ad 0.01 x Rd 0.01mm
Finishing Cutting Work Feed	1,500mm/min
Total Time	4h 31min

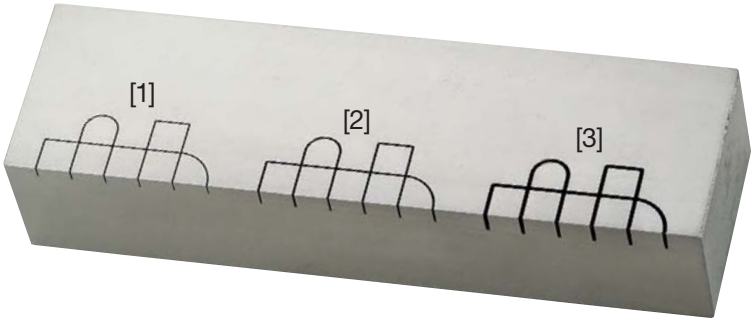
HTS1501 Series

Case Studies <High-speed rotation and feeding> F=2,250mm/min

Material	DC53 (HRC 60)
Motor Speed	150,000min^{-1}
Usable Tool	R 0.1 x 0.5 cBN
Work Feed	2,250mm/min
Cutting Depth	Ad 0.005 x Rd 0.01mm
Total Time	3h 30min (42min / 1pc.)

HTS1501 Series

Case Studies <Rib processing> F=2,000mm/min



Material	NAK80 (HRC 40)		
Motor Speed	150,000min^{-1}		
Sample No.	[1]	[2]	[3]
Usable Tool	ø0.2 x 2	ø0.3 x 3	ø0.4 x 4
Work Feed	2,000mm/min		
Cutting Depth	Ad 0.003mm	Ad 0.005mm	Ad 0.007mm
Total Time	29min. 50sec.	27min. 43sec.	26min. 22sec.

Specifications and design are subject to change without notice.

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