SD SERIES

Compact SWISS Turning Centers

THE ULTIMATE MACHINING POWER

GOODWAY®

COMPACT SWISS TURNING CENTERS

With leading technology and high quality components. GOODWAY SD series Swiss turning Center with exquisite appearance, variety tooling selection and complete automatic system provides high speed turning, milling, drilling, tapping and other complicated work requirements on front / side of work-piece. Besides, optional sub-spindle and rear-end tools is available. The high efficiency performance of SD series can satisfy with mass production of precision parts requirement.

Efficiency

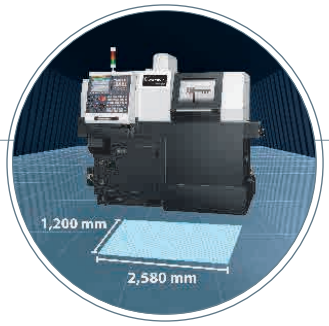
Mass production machine with high speed for small parts of Ø16 / Ø20 mm.

Flexibility

Variety tool configuration and optional accessories.

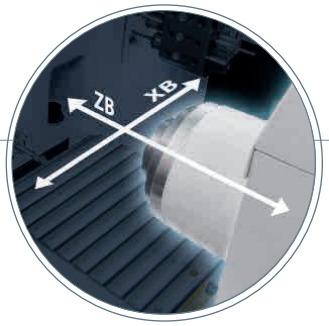
High C/P Value

Perfect machine with friendly price.



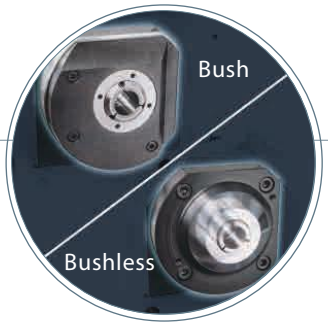
Space Demand

2,580 x 1,200 mm exquisite dimension greatly increase utilization of floor space in the factory.



Backworking Capacity

Sub-spindle and rear-end tool are available (opt.) which can finish work at one time with front-end, rear-end working together.

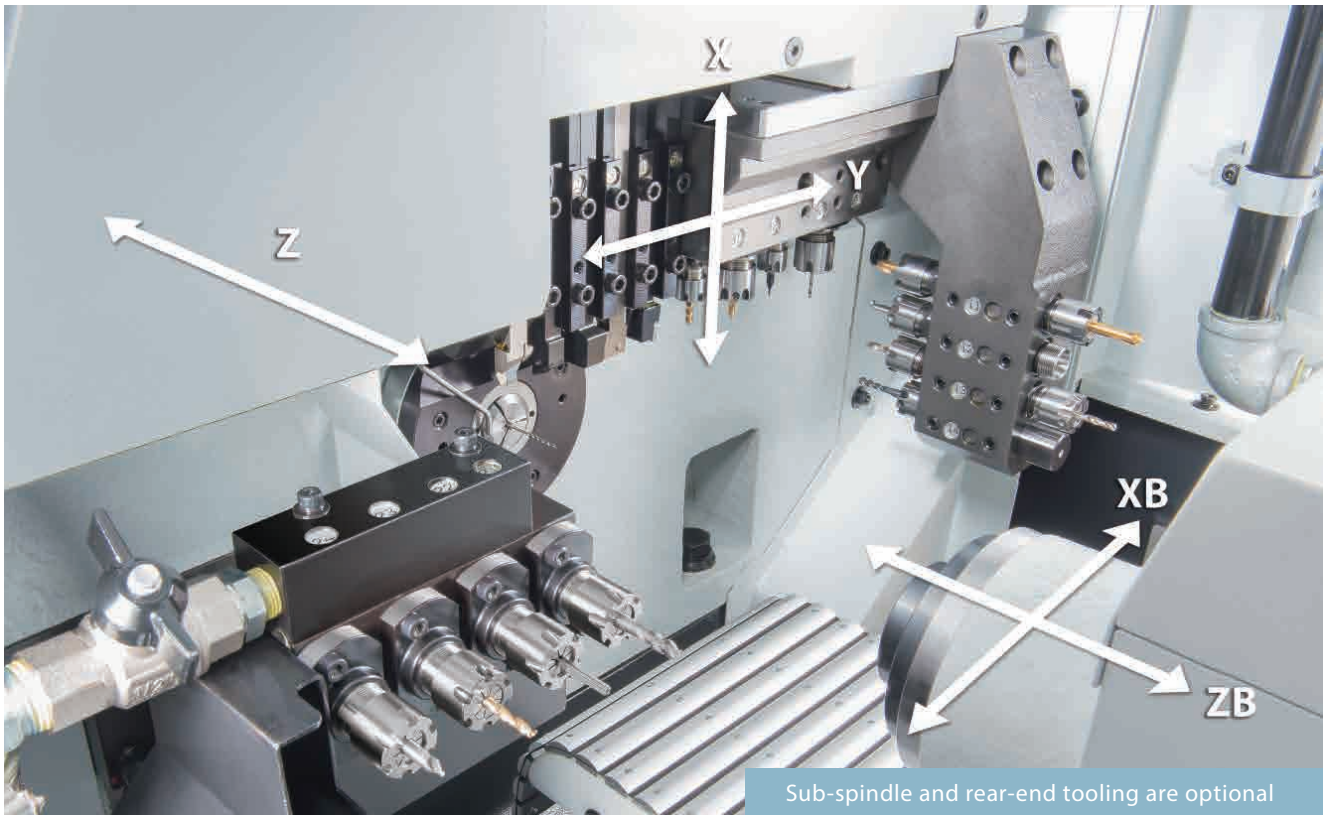


Hybrid Guide Bush

The hybrid guide bush are available bush / bushless which can meet different work requirements.

(Individual models may vary, please see page 5)

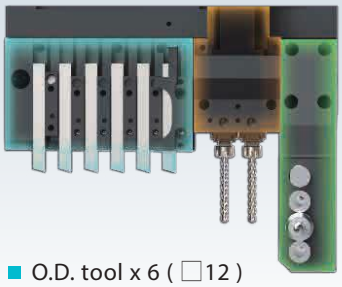
FLEXIBLE TOOLING SYSTEM



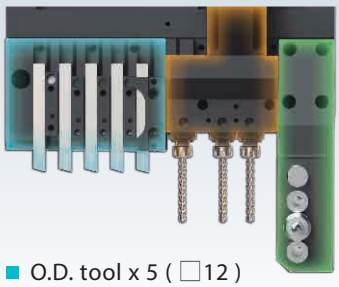
Sub-spindle and rear-end tooling are optional

SD-16 Tooling System Variations

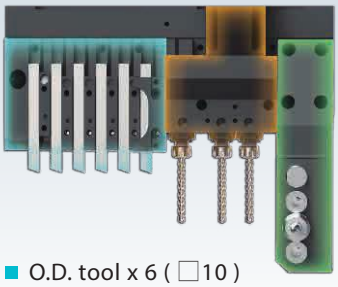
unit : mm



- O.D. tool x 6 (□12)
- Cross live tool x 2 (ER11)
- I.D. tool x 4



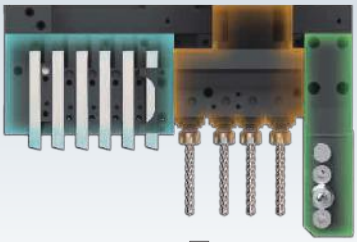
- O.D. tool x 5 (□12)
- Cross live tool x 3 (ER11)
- I.D. tool x 4



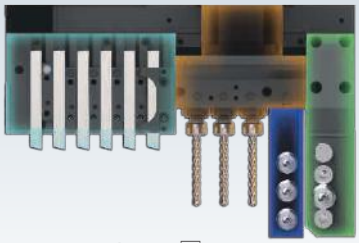
- O.D. tool x 6 (□10)
- Cross live tool x 3 (ER11)
- I.D. tool x 4

SD-20 Tooling System Variations

- O.D. tool x 9 (□12)
- I.D. tool x 4



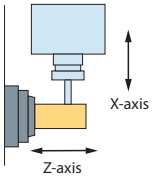
- O.D. tool x 6 (□12)
- Cross live tool x 4 (ER16)
- I.D. tool x 4



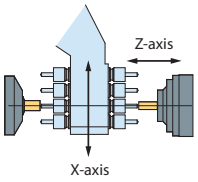
- O.D. tool x 6 (□12)
- Cross live tool x 3 (ER16)
- I.D. tool x 4
- Removable live tool holder x 1
  (front-end + rear-end offer 6 tool post,max.)

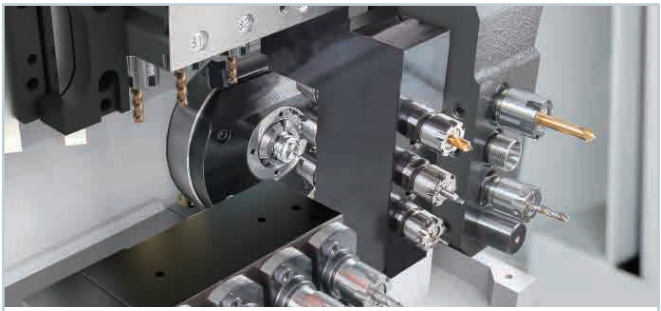
MACHINING VARIATIONS

Cross Machining

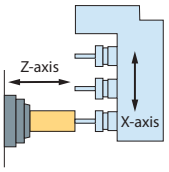


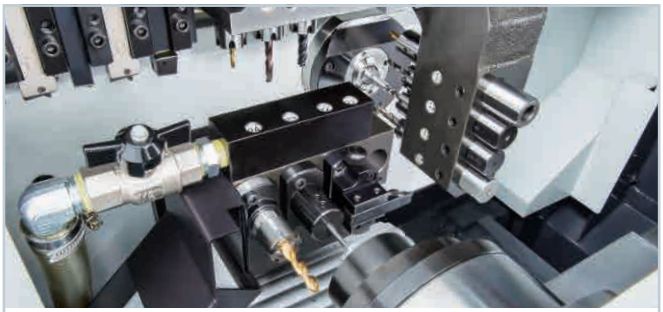
Front / Rear Simultaneous Drilling & Tapping



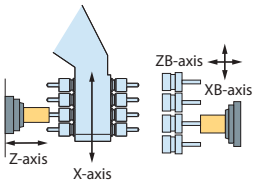


Front Off-Center Drilling & Tapping





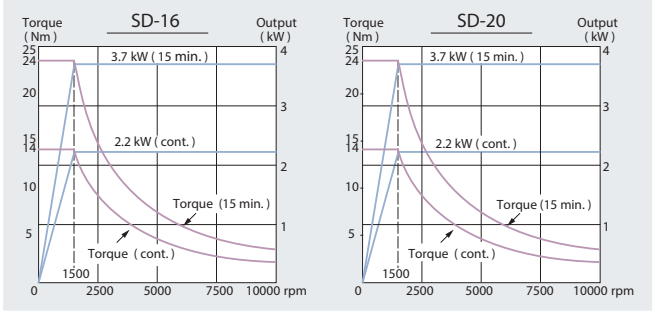
Front-end and rear-end working synchronization



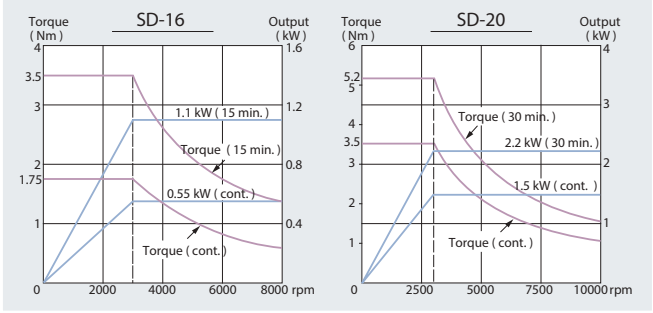
10,000 rpm high speed spindle is equipped with powerful 3.7 kW motor delivers maximum torque output of 24 Nm at 1,500 rpm.

Clamping of work-piece is design with pneumatic system to achieve our goal that with environment friendly, safety and easy to maintenance.

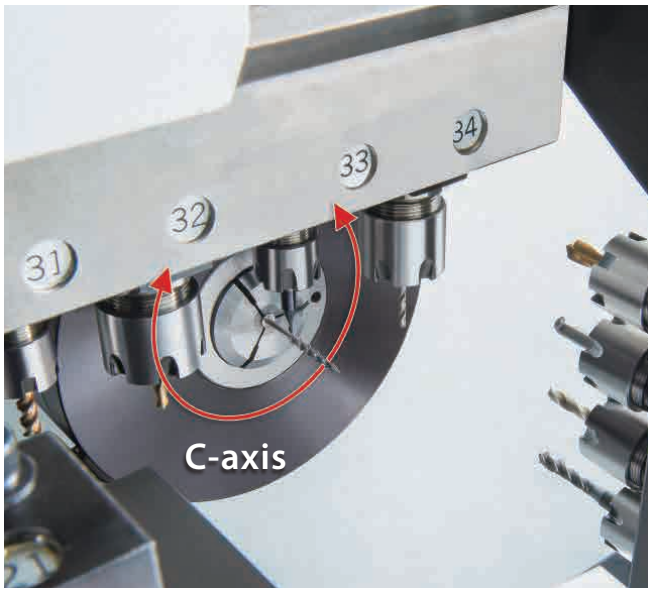
▸ Spindle output

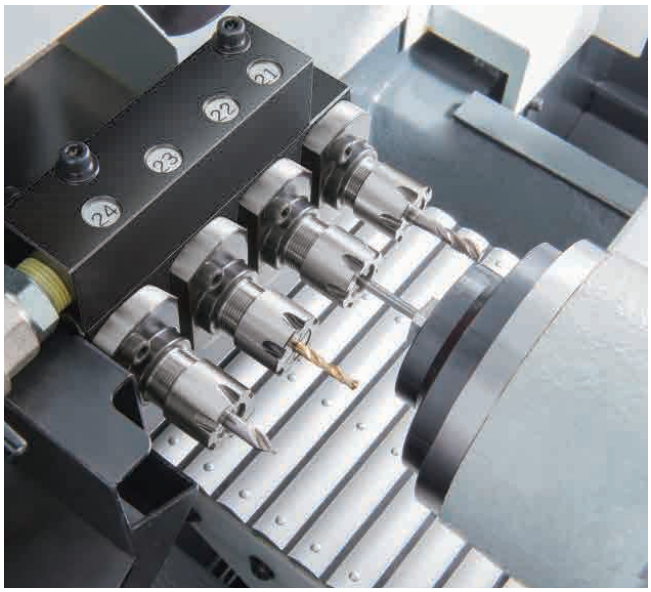


▸ Sub-spindle output



C-AXIS & REAR-END MACHINING CAPABILITY





C-axis

Working with the live tooling and 0.088° high resolution C-axis enables the machine to perform multiple tasks, such as drilling, tapping, and milling operations, including cylindrical and polar coordinate interpolations.

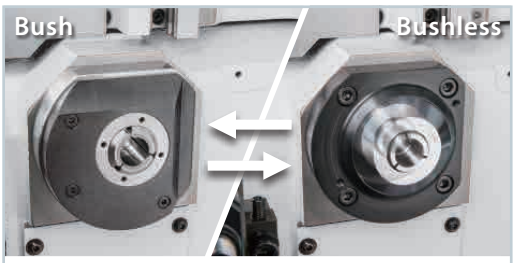
Sub-spindle

2.2kW (30 min.)[*1] spindle motor on sub-spindle for rear-end machining. Built-in type parts ejector on sub-spindle can release the finish parts automatically and into the parts catcher.

*1 SD-20

Hybrid Guide Bush

Special interface mechanical design of guide bush can be mounting or dismount base on actual situation. It is more flexible in use and save cost on facility and space in the factory.



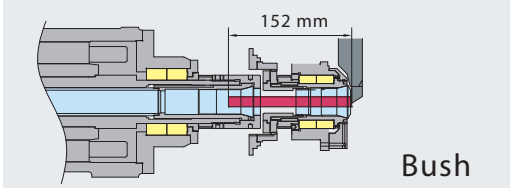
Hybrid guide bush

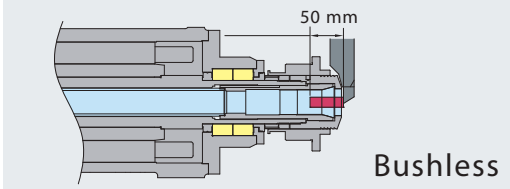
	SD-16	SD-20
Guide Bush	S	–
Hybrid guide bush	–	S

S : Standard – : Not Available

Bush
Suitable for long bar work-piece

Bushless
Suitable for cold working bar or high price raw material





▶ Remaining bar length (SD-20)

NC INTELLIGENCE G.LINC 350 option

Advanced Hardware Combined with Intelligent Software, Makes Your Machine Smarter

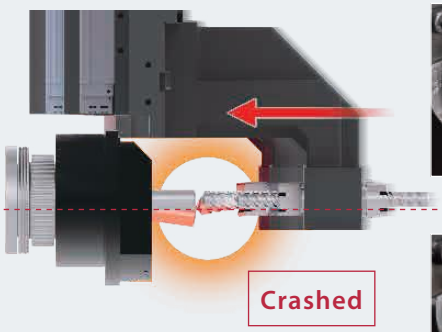
- Advanced hardware
- Outstanding operability
- Streamlined programming
- High security and shortened machining setting
- Reliable continuous operation
- Shortened troubleshooting time
- Improved utilization rate
- 3D cutting simulation preview

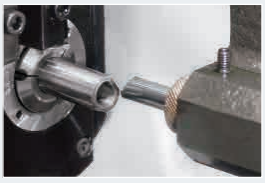
Comprehensive Functions

Programming	Setting	Test-Run	Actual Production	Daily Used
Dynamic graphic display	3D advance tool path and cutting simulation	Tool load monitor	Tool load monitor	Safety signal viewer
Program management		Program check	3D Real-time cutting simulation	Fast alarm check productivity
Friendly programing environment		Smart balance etection	Interference check (31*i* option needed)	Productivity management
Programming auxiliary		3D Real-time cutting simulation	Load monitoring	Twin operation system switch
Manual Guide *i*		Interference check (31*i* option needed)		Maintenance management
Embedded E-manual				NFC apply authority management and record

AIR BAG

Standard with air bag for maximum protection and also minimum the damage when machine crash which can save the cost of repair machines and production lost because of machine broken.





Equipped with air bag

Retract tools within 0.009 second

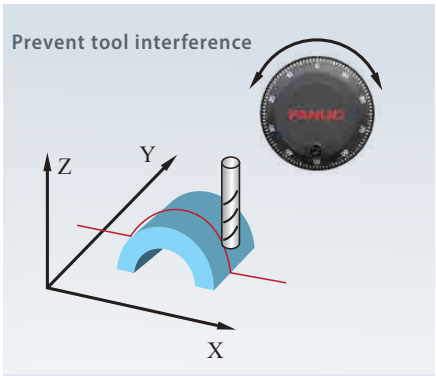
Machine crash → EMG mode → Servo motor

reverse rotary within 0.009 second → Machine stop

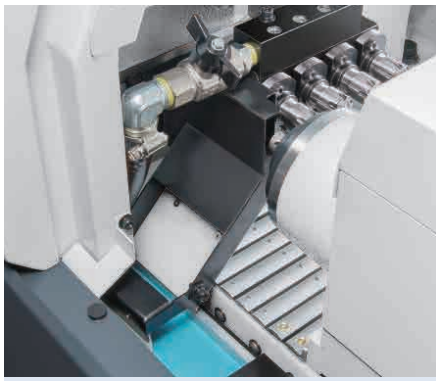
Not equipped with air bag

After machine crashed, axes continue feeding, machine structure might get damaged seriously.

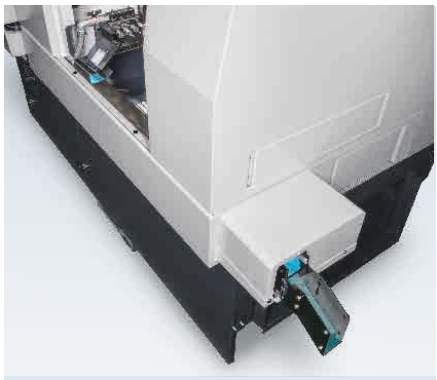
STANDARD & OPTIONAL FEATURES



Manual handle retrace



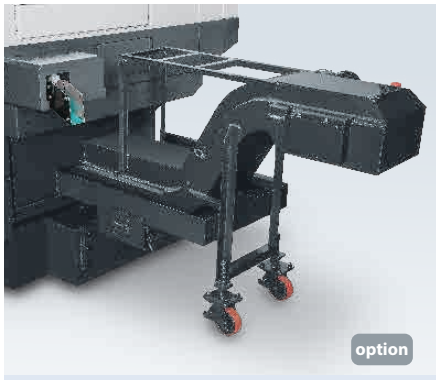
Parts catcher



Transport conveyor

A/C cooling system

Long parts ejector



Chip conveyor

Coolant through sub-spindle

Bar feeder

ALLCOOL SYSTEMS

- Compact machine size.
- Filter for open loop.
- Use disposable filter bag.
- Built-in the pressure is too low or too high alarm.

Models	SK1000	SC1500	SC2000
Max. pressure	70 bar (kg/cm^2) 1,000 PSI	100 bar (kg/cm^2) 1,500 PSI	140 bar (kg/cm^2) 2,000 PSI
Max. flow rate	12 LPM (3 GPM)	25 LPM (6.5 GPM)	19 LPM (5 GPM)
Max. load	3 HP (2.2 kW)	7.5 HP (5.5 kW)	7.5 HP (5.5 kW)

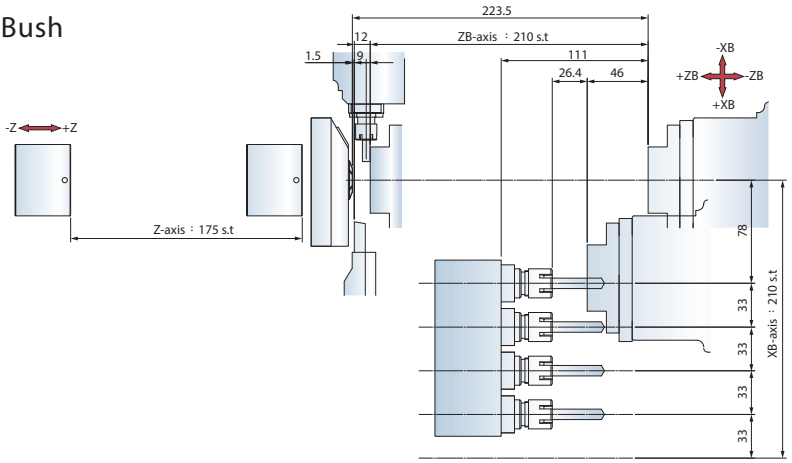
High-pressure coolant system

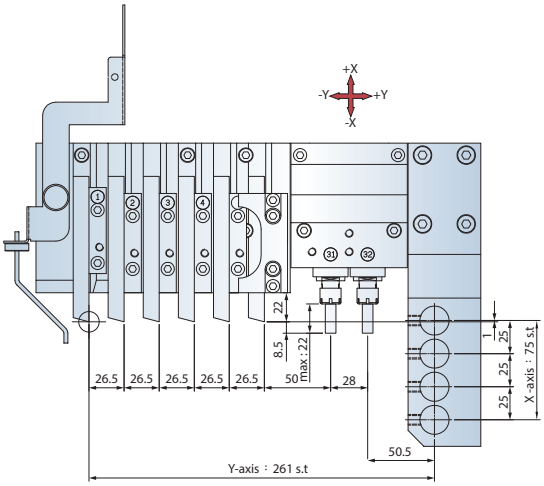
DIMENSIONS

SD-16

O.D. tool x 6 (□12) + Live tool x 2 (ER11)

Bush

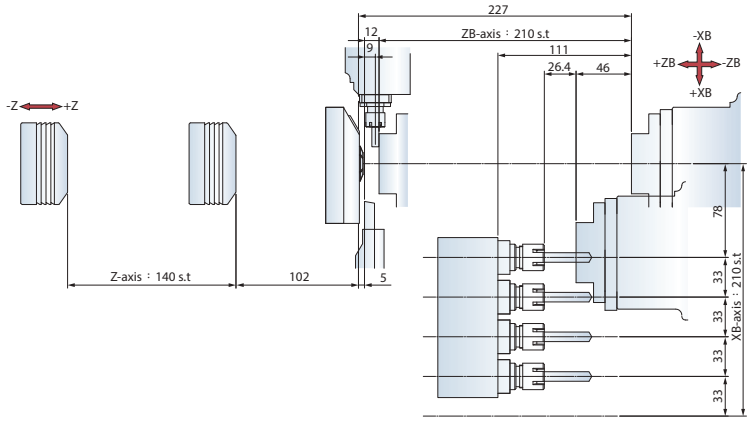


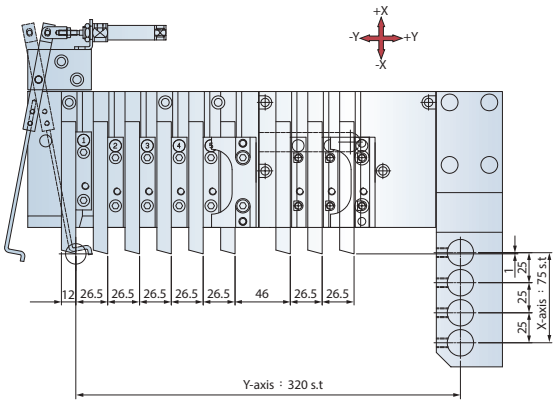


SD-20

O.D. tool x 6 (□12) + O.D. tool x 3 (□12)

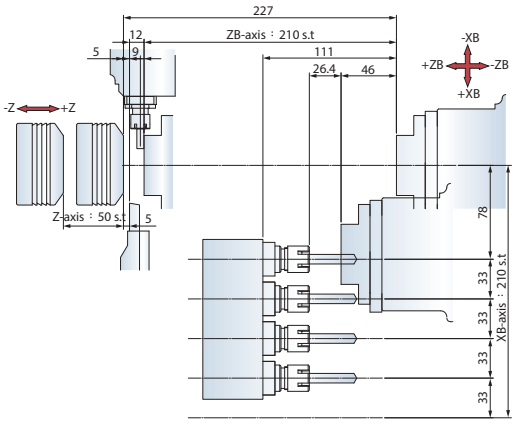
Hybrid guide bush (Bush)

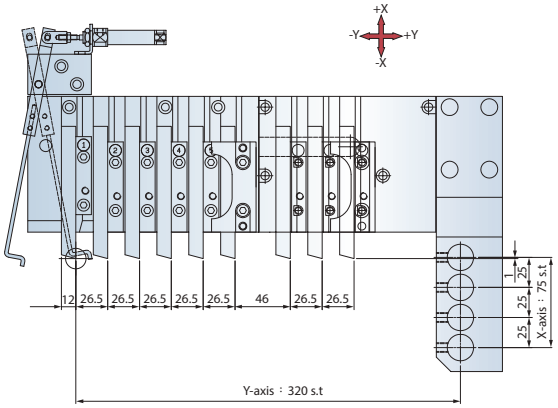




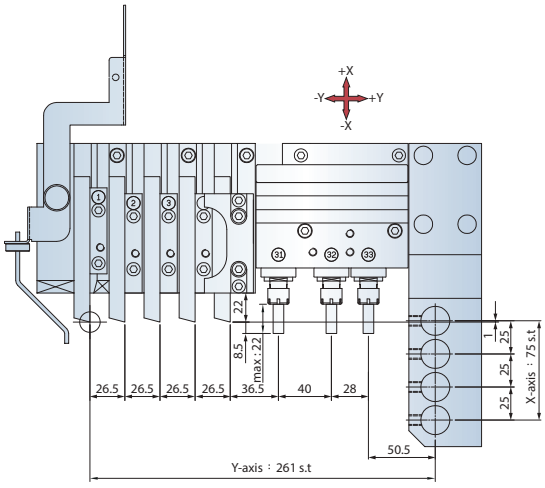
Hybrid guide bush (Bushless)

O.D. tool x 6 (□12) + O.D. tool x 3 (□12)

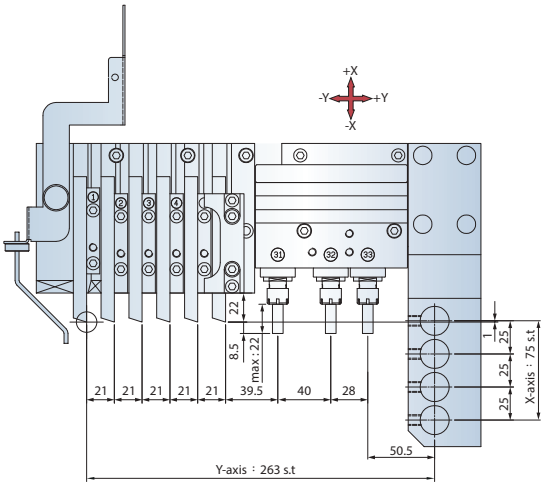




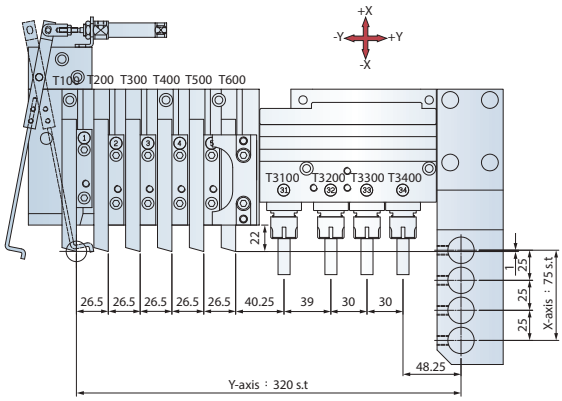
O.D. tool x 5 (□12) + Live tool x 3 (ER11)



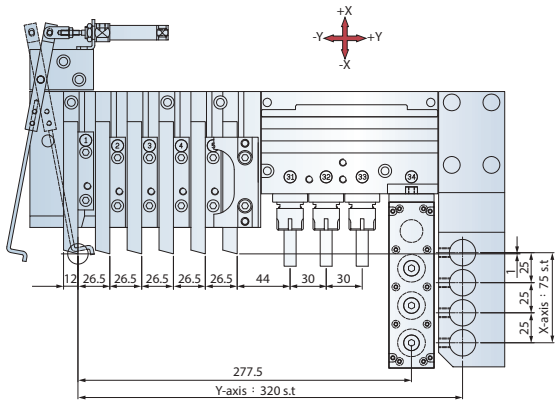
O.D. tool x 6 (□10) + Live tool x 3 (ER11)



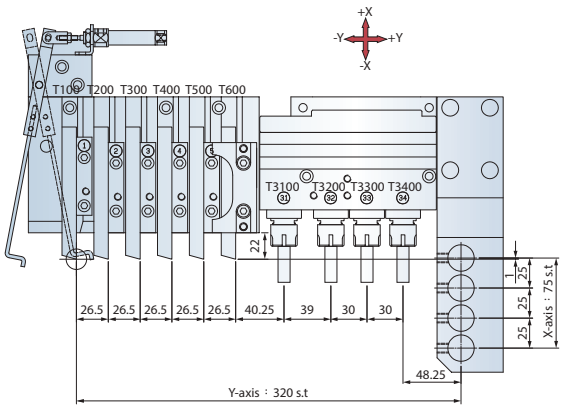
O.D. tool x 6 (□12) + Live tool x 4 (ER16)



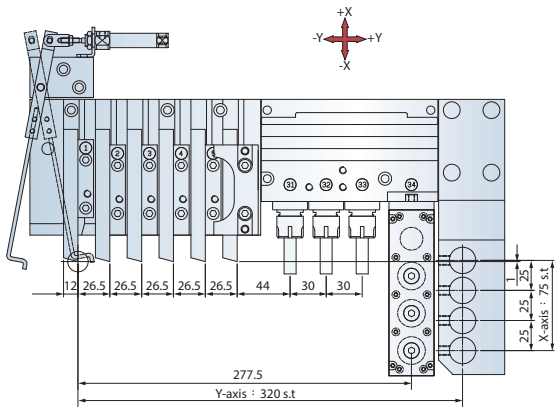
O.D. tool x 6 (□12) + Live tool x 3 (ER16) + Removable live tool holder



O.D. tool x 6 (□12) + Live tool x 4 (ER16)



O.D. tool x 6 (□12) + Live tool x 3 (ER16) + Removable live tool holder



unit : mm

S : Standard O : Option
– : Not Available C : Contact Goodway

		SD-16	SD-20
SPINDLE			
Main spindle motor configuration		S	S
Rigid tapping		S	S
C-axis		S	S
Spindle brake		S	S
WORK HOLDING			
Spindle hardness collect		O	O
Spindle tungsten collect		O	O
Sub-spindle hardness collect		O	O
Sub-spindle tungsten collect		O	O
Special work holding chuck		O	O
GUIDE BUSH			
Stationary guide bush		O	O
Revolving guide bush		S	S
Rotary magic guide bush		O	O
Tungsten guide bush		O	O
COOLANT			
Coolant pump		S	S
High-pressure coolant system	5.0 MPA	O	O
	7.0 MPA	O	O
	10 MPA	O	O
	14 MPA	O	O
Roll-out coolant tank		S	S
Coolant flow switch		S	S
Coolant level switch		S	S
CHIP DISPOSAL			
Chip conveyor		O	O
Chip cart with coolant drain		O	O
Oil mist collector		O	O
LIVE TOOLING			
ER16 cross live tool		–	O
ER16 3-spindle front-end live tool		–	O
ER16 2-spindle front-end live tool		–	O
ER16 slotting holder		O	O
AUTOMATIC OPERATION SUPPORT			
Bar feeder		O	O
Bar feeder interface		S	S
Parts catcher		S	S
Work-piece transport conveyor		S	S
Long parts ejector		O	O
SAFETY			
Fully enclosed guarding		S	S
Door interlock (incl. Mechanical lock)		S	S
Impact resistant viewing window		S	S
Low hydraulic pressure detection switch		S	S
Over travel (soft limit)		S	S
Load monitoring function		S	S
Cut-off detector		S	S
OTHERS			
Electrical cabinet	A/C cooling system	O	O
	Heat exchanger	S	S
Pneumatic system		S	S
Advanced auto lubrication system		S	S

Specifications are subject to change without notice.

FANUC CONTROL FUNCTIONS		Oi-TF
Display	8.4" color LCD	–
	10.4" color LCD	S
Graphic function	Standard	S
	Dynamic	O
Part program storage size Oi-TF : each path 31i : total	512 K bytes	S
	1 M bytes	S
	2 M bytes	O
	4 M bytes	–
Registerable programs Oi-TF : each path 31i : total	400	S
	500	O
	800	S
	1,000	O
	4,000	–
Tool offset pairs Oi-TF : each path 31i : total	99	–
	128	S
	200	O
	400	–
Servo HRV control	HRV 3	S
Automatic data backup		S
Synchronous / Composite control		O
Superimposed Control		O
Inch / metric conversion		S
Polar coordinate interpolation		S
Cylindrical interpolation		S
Multiple repetitive cycle		S
Rigid tapping		S
Unexpected disturbance torque detection function		S
Spindle orientation		S
Constant surface speed control		S
Spindle speed fluctuation detection		S
Embedded macro		S
Spindle synchronous control		S
Background editing		S
Multi-language display		S
Multi-language display		S
Cs contour control		S
Polygon turning		S
Helical interpolation		S
Direct drawing dimension programming		S
Thread cutting retract		S
Variable lead threading		S
Multiple repetitive cycle Ⅱ		S
Canned cycles for drilling		S
Synchronous / Composite / Superimposed control by program command		S
Tool nose radius compensation		S
Chamfering / Corner R		S
AI contour control Ⅰ		O
Multi part program editing		S
Manual handle retrace		S
Manual intervention and return		S
External data input		S
Addition of custom macro*1		S
Increment system C		S
Run hour & parts counter		S
Auto power-off function		S
RS-232 port		S
Memory card input / output (CF + USB)		S
Ethernet		S

*1 #100~#199，#500~#999

MACHINE SPECIFICATIONS

■ : Metric ■ : Inch

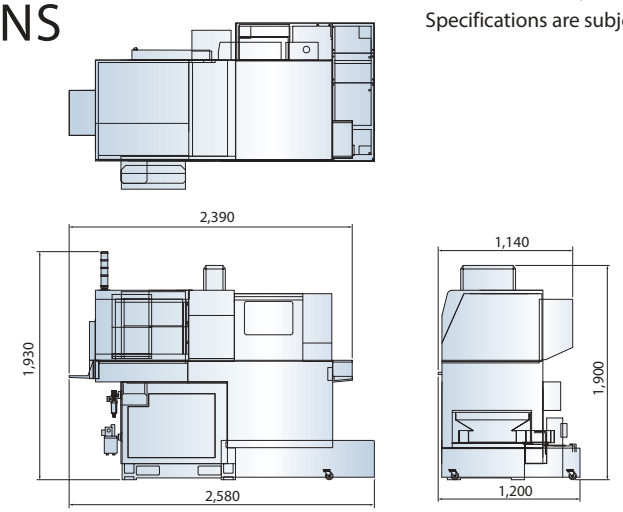
			SD-16	SD-20
Work range	Max. machining diameter		Ø 16 mm 0.62"	Ø 20 mm 0.78"
	Max. turning length per chuck	Bush	175 mm 6.88"	–
		Hybrid guide bush	–	140 / 50 mm 5.5" / 1.96" (Bush / Bushless)
O.D. tools	Number of tools		6 / 5	6
	Shank size		□ 12 mm 1/2" / □ 10 mm 2/5" / □ 12 mm 1/2"	□ 12 mm 1/2"
I.D. tools	Number of tools		4	4
	Sleeve size		ER16	ER16
	Max. drilling capacity		Ø 10 mm 0.39"	Ø 10 mm 0.39"
	Max. tapping capacity		M8 x P1.25	M8 x P1.25
Cross live tools	Number of tools		2 / 3 / 3 / 4	4 / 4 ~ 9*1
	Max. live tooling speed		8,000 rpm	6,000 rpm
	Servo motor output		0.4 kW 0.5 HP	1.0 kW 1.3 HP
	Sleeve size		ER11 / ER11 x 2 ER16 x 2	ER16
	Max. drilling capacity		Ø 6 mm 0.23"	Ø 8 mm 0.31"
	Max. tapping capacity		M5 x P0.8	M6 x P1.0
	Max. end mill capacity		Ø 7 mm 0.27"	Ø 10 mm 0.39"
Main spindle	Max. speed		10,000 rpm	10,000 rpm
	Spindle motor output (cont. / 30 min.)		2.2 / 3.7 kW 3 / 5 HP	2.2 / 3.7 kW 3 / 5 HP
	Min. indexing increment		0.088°	0.088°
X / Y / Z / XB / ZB axes rapids			30 m/min. 1,181 IPM	30 m/min. 1,181 IPM
NC controller			FANUC Oi-TF	FANUC Oi-TF
Spindle center height			1,075 mm 42.3"	1,075 mm 42.3"
Coolant tank capacity			140 L 37 gal	140 L 37 gal
Machine dimensions			2,390 x 1,140 x 1,900 mm 95" x 45" x 75"	
Machine weight			2,000 Kg 4,500 lb	2,100 Kg 4,700 lb

Backworking Tooling System		SD-16	SD-20
Rear-end machining capability	Max. chucking diameter	Ø 16 mm 0.62"	Ø 20 mm 0.78"
	Max. length for front ejection	80 mm 3.14"	80 mm 3.14"
	Max. parts projection length	30 mm 1.18"	30 mm 1.18"
Rear-end tools	Number of tools	4	4
	Max. drilling capacity (I.D. tools)	Ø 8 mm 0.31"	Ø 8 mm 0.31"
	Max. tapping capacity (I.D. tools)	M6 × P1.0	M6 × P1.0
Sub-spindle	Max. sub-spindle speed	8,000 rpm	10,000 rpm
	Sub-spindle motor output (cont. / 15 min.)	0.55 / 1.1 kW 0.74 / 1.5 HP	1.5 / 2.2 kW 2 / 3 HP

*1 Optional removable live tool holder.

Specifications are subject to change without notice.

MACHINE DIMENSIONS



unit : mm

THE ULTIMATE MACHINING POWER

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