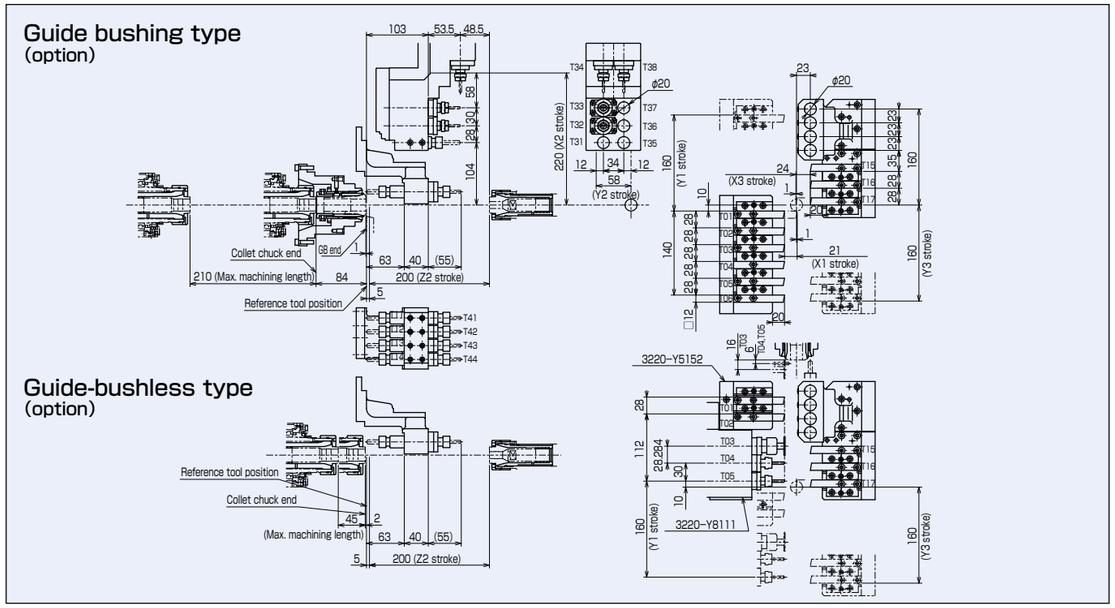
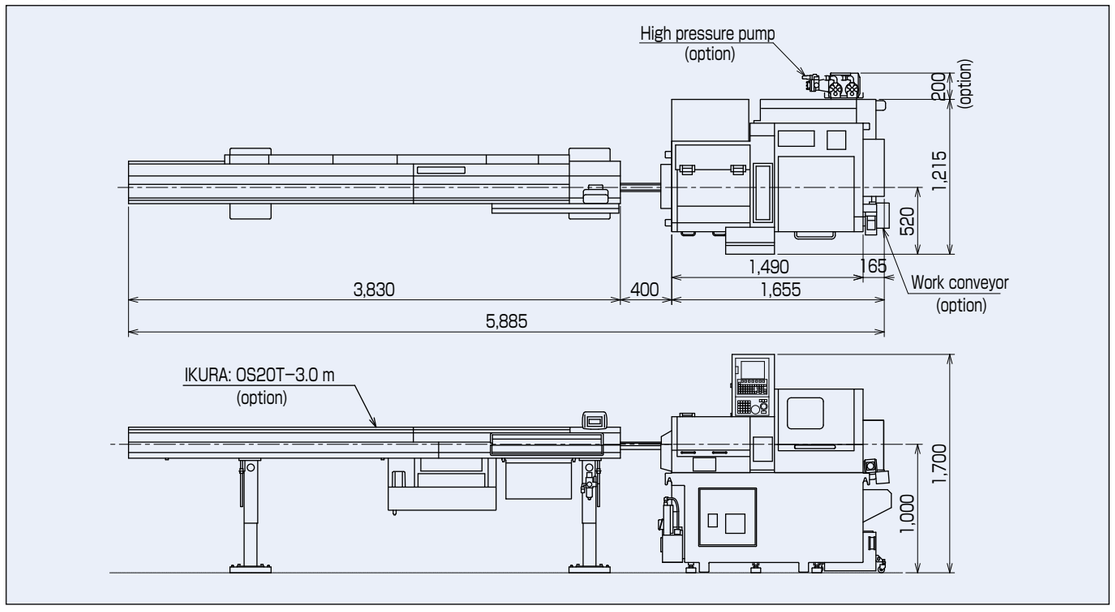
Tooling Zone



Appearance



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The specifications of this catalogue are subject to change without prior notice.

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PRECISION TSUGAMI

TSUGAMI

CNC Precision Automatic Lathe

B0128WE
B0208WE

With CE mark

Simultaneous processing by 3-path and 8-axis control

B0 series with independent opposed gang-tool posts

Overwhelming cost performance

High productivity with minimal investment
Drastically shortened cycle time

BO128WE
BO208WE

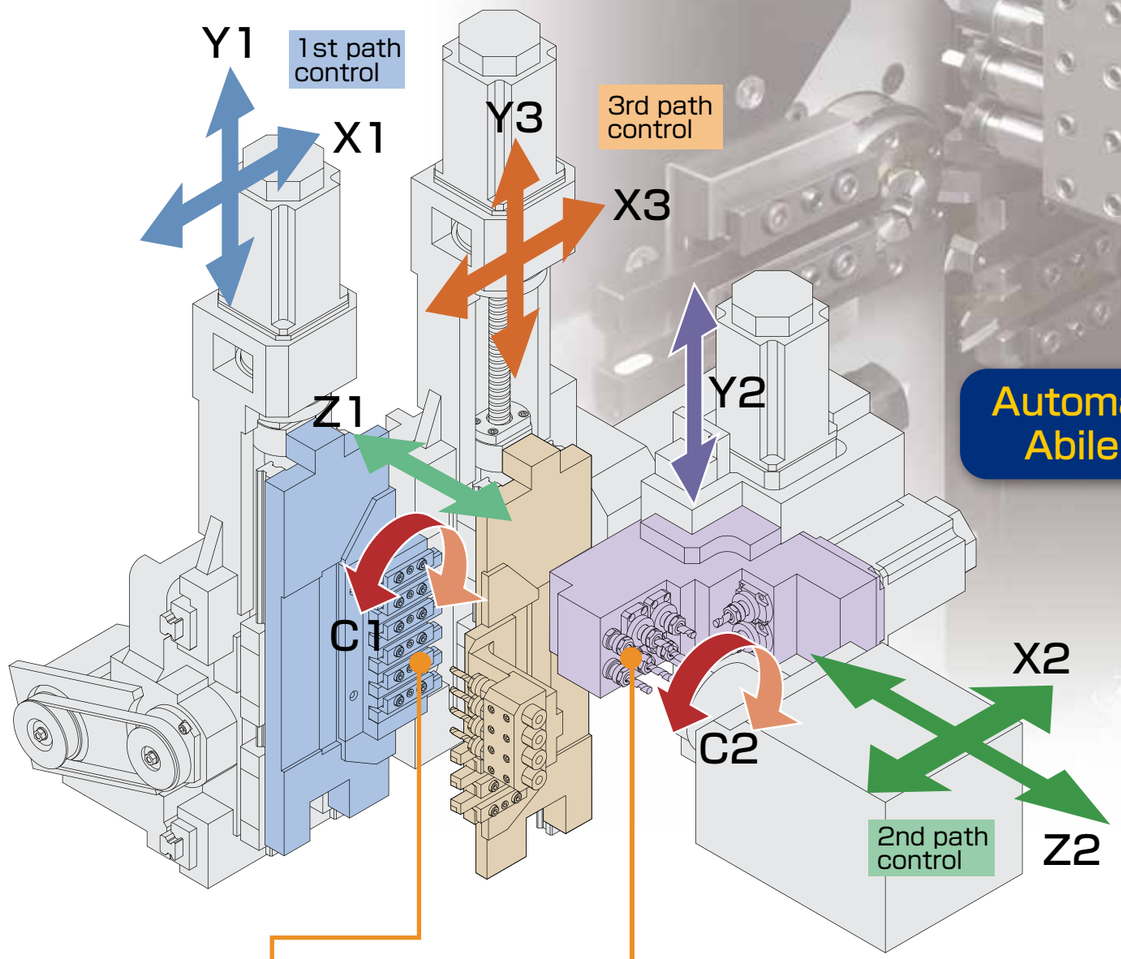
Independent-controlled opposed gang tool posts

OD and ID simultaneous processing

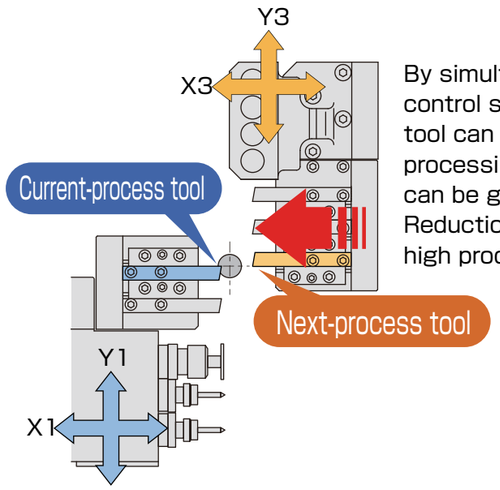
- By simultaneous 3-path control system, diverse simultaneous processing is possible with independent-controlled tool posts.
- Zero tool change time by 3-path control
- Mounting Y axis on three tool posts
- Highly value-added workpiece is also possible by the Y-axis of the back side.
- Overwhelming cost performance
- High accuracy machining by thermal displacement compensation software.

Infinite Pursuit of Productivity

Realizes a variety of uninterrupted cutting patterns by the cooperation of the 3-path control system.



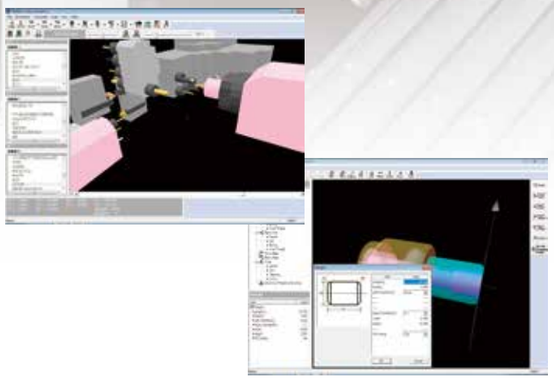
Shortening tool change time



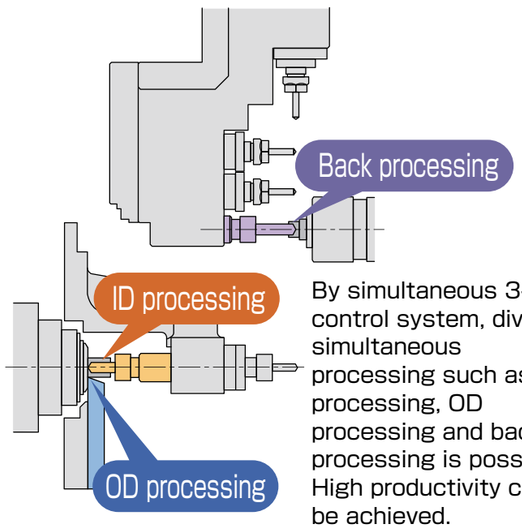
By simultaneous 3-path control system, next-process tool can be selected during processing, tool change time can be greatly reduced. Reduction of cycle time allows high production.

Automatic programming system Abile is provided as standard.

Easy & quick programming for 3-path controlled machine can be created by automatic programming system.



Simultaneous processing



By simultaneous 3-path control system, diverse simultaneous processing such as ID processing, OD processing and back processing is possible. High productivity can be achieved.

Cross drills on front tool post (option)

Drilling, tapping or milling from cross direction is executed with the main spindle indexing.

Max. speed: 8,000 min^{-1} (Front tool post tool storage capacity)	
2 spindles	ER11/AR11 x 2 pcs. □12 x 3 pcs.
2 spindles shifted	ER11/AR11 x 1 pcs. ER16/AR16 x 1 pcs. □12 x 3 pcs.
3 spindles	ER11/AR11 x 2 pcs. ER16/AR16 x 1 pcs. □12 x 2 pcs.
4 spindles	ER11/AR11 x 2 pcs. ER16/AR16 x 2 pcs. □12 x 2 pcs.

Note: They are not modular type.

Back tool post

By back live tool with Y2 axis, back side off-center drilling, tapping, cross milling or back milling can be overlapped with front side processing.

Machining patterns of back milling

Back tool post		
	End face	Cross
Live tool	ER11/AR11 x 2 pcs.	
	Max. speed: 8,000 min^{-1} (Note 1)	
	Non-modular type	
Fixed tool	φ20 x 4 holes	

Note 1: Rated speed: 7,000 min^{-1}

Item	Specification
Max. drilling dia.	φ6 (Note 2)
Max. tapping dia.	M5 (Note 3)
Motor output	0.75 kW

Note 2, Note3: Machining capacity is based on JIS S45C or equivalent.
Note 3: Tapping capacity is based on the cutting tap.

Machine specifications

Item		B0128WE	B0208WE
Machining capacity (Note1), Machining range	Working barstock diameter	ϕ3 to ϕ12mm	ϕ3 to ϕ20mm
	Max. machining length	210 mm (stationary guide bushing), 80 mm (carrier type rotary guide bushing), 170 mm (direct-drive rotary guide bushing), 45 mm (guide-bushless),	
	Max. main spindle drilling diameter	ϕ7	ϕ10
	Max. main spindle tapping diameter	M6	M10
	Max. back spindle chucking dia.	ϕ12	ϕ20
	Max. back spindle drilling diameter	ϕ7	ϕ8
	Max. back spindle tapping diameter	M8	
	Max. cross drilling diameter	ϕ6 (option)	
	Max. cross tapping diameter	M5 x 0.8 (option)	
	Max. tool spindle slotting cutter diameter	ϕ30 (option)	
	Max. back drilling diameter	ϕ6	
	Max. back tapping diameter	M5	
Machine capability	Main spindle speed	200 to 12,000 min^{-1}	200 to 10,000 min^{-1}
	Back spindle speed	200 to 12,000 min^{-1}	
	Rotary guide bushing speed	200 to 8,000 min^{-1}: Carrier type rotary guide bushing 200 to 12,000 min^{-1}: Direct-drive guide bushing	200 to 8,000 min^{-1}: Carrier type rotary guide bushing 200 to 10,000 min^{-1}: Direct-drive guide bushing
	Tool spindle speed	200 to 8,000 min^{-1} (option)(Note 3)	
	Total tool storage capacity (standard)	25	
	Tool size	12 mm x 12 mm x 85 mm	
	Rapid traverse rate	32 m/min (X1,X3: 12 m/min, Y1,Y3: 24 m/min, Y2: 15 m/min)	
	Controlled axes (linear axes)	8-axis	
Motors	Main spindle	1.5/2.2 kW	2.2/3.7 kW
	Back spindle	1.5/2.2 kW	
	X1, Z1, Z2, X2, X3 Y1, Y2, Y3	0.5 kW	
	Cross drill (option)	0.75 kW (option)	
	Back live tool	0.75 kW	
	Coolant pump	0.25 kW	
	Lubricating oil pump	3 W	
Power supply and others	Power source requirement	14.1 kVA	15.4 kVA
	Net weight	2,150 kg	
	Compressed air requirement	0.4 MPa or above	
	Air discharge rate	50 NL/min	
	Coolant tank capacity	120 L	
	Width x depth x height	1,655 x 1,215 x 1,700 mm	

Note 1: Machining capacity is based on JIS S45C or equivalent.
Note 2: Stationary guide bushing, carrier type rotary guide bushing and direct-drive rotary guide bushing and guide-bushless are optional.
Note 3: Rated speed: 7,000 min^{-1}

NC Specifications

Controlled axes	X1,Z1,Y1,X2,Z2,Y2,X3,Y3,C1,C2
Least input increment	0.001 mm (X1/X2/X3-axis in diameter)
Least command increment	0.001 mm (X1/X2/X3-axis in diameter)
Maximum programmable value	±8 digits
Interpolation method	Linear, circular
Rapid traverse rate	32 m/min (X1･X3: 12 m/min, Y1･Y3: 24 m/min, Y2: 15 m/min)
Feedrate	1 to 6,000 mm/min
Feedrate override	0 to 150% in 10% increments
Dwell	G04 0 to 99999.99

ABS/INC command	X, Y, Z, C: absolute U, V, W, H: incremental
Tool offset pairs	Sum of all paths: 200 pairs
LCD/MDI	10.4" color LCD
Display language	Japanese/English
Part program storage size	Sum of all paths: 64 kbytes (equivalent to 160m)
Registerable programs	Sum of all paths: 63
Miscellaneous functions	M5-digits
Spindle function	S5-digits
Tool function	T4-digits

Standard Accessories

Automatic programming system	Tool spindle	4-hole drill post
Tool height compensation	Back cross tool spindle	Retractable coolant nozzle
Tool life counter	Door interlock	Automatic power shut off
Periodic maintenance screen	Coolant level detector	Automatic cut-off function/Automatic facing function
Main spindle adapter	Spindle cooling unit	C-axis control for main/back spindles (Brake is provided as option separately.)
Back spindle adapter	Standard tools	
Back drive	Transit clamps	

NC standard accessories

Chasing function	Constant surface speed control	Multiple repetitive cycle
Continuous thread cutting	Spindle synchronous control (rotation/phase/tracing)	Extended program editing
Manual pulse generator	Tool geometry/wear offset	Canned drilling cycle
Memory card input/output interface	Programmable data input	Rigid tap (main spindle, back spindle)
Back ground editing	Chamfering & corner R	Spindle speed fluctuation detection
Run time & parts number display	Tool nose radius compensation	Cut-off detection (speed differential type)
Custom macro	HRV control	

Option

Guide bushing	Stationary guide bushing
	Carrier type rotary guide bushing
	Direct-drive guide bushing
	Guide-bushing-less kit
Advanced function system	Spindle 15°index
	Main spindle brake
	Back spindle 15° index
	Back spindle 1° index
	2-spindle cross drill
	3-spindle cross drill
	4-spindle cross drill
High precision system	Coolant oil temperature controller
Coolant related	Mist collector
	High pressure pump
	M code oil blow
	WAVY coolant nozzle
Workpiece discharge system	Work catcher
	Work conveyor
	Front discharge
	Rear discharge
Chip disposal	Chip conveyor
Machine maintenance and monitoring functions	Cut-off detection (Touch switch type)
	Signal indicator
Tooling related	Adapter for non-round bar (main spindle)
	Adapter for non-round bar (back spindle)
	Collet chuck with carbide lining
	Tool set gauge
	Spindle liner

NC functions	Part program storage size 128 kbytes
	Part program storage size 256 kbytes
	Part program storage size 512 kbytes
	G-code system B/C
	Direct drawing dimension program
	Variable-lead thread cutting
	Thread cutting cycle retract
	Number of registerable programs expansion #1
	Standard program storage size: 120 programs
	128 KB : 250 programs
	256 KB : 500 programs
	512 KB : 1,000 programs
	Polar coordinate interpolation
	Cylindrical interpolation
	Display language
Safety and other	Coolant flow switch
	Automatic fire extinguisher
	Illumination lamp
	Bar feeder interface
	Manual handle retrace function
	Live tool rigid tapping
	RS232C input/output interface
	Inch/metric conversion
	Abnormal load detection

Type of collet chucks and guide bushing

		B0128WE	B0208WE
Main spindle collet chuck Back spindle collet chuck		Schaublin 76-71 F22	Schaublin 76-64 F25
Guide Bushiing	Callier type	Neukomm 61.002	Neukomm 18.001
	Direct drive type	Tsugami 2621-1185	Tsugami 2621-1226

Selection of live tool (option)

				B0128WE/B0208WE
Front tool post	Cross drill		2 spindles parallel	3220-Y8120
			2 spindles shifted	3220-Y8170
			3 spindles	3220-Y8110
			4 spindles	3220-Y8140
Back tool post	Y2 axis tool post	Live tools	Front: 2 / Cross: 2 (Non-modular type)	standard
		Fixed drill holders	4 tools	