



**GRAND
SEIKI**



450 AS₃



600 AS₃



600 AS₄ Belt



600 AS₄ Plus

AS SERIES

CNC TAPPING CENTER



GRAND SEIKI MACHINERY CO., LTD.

450 AS₃ 600 AS₃ 600 AS₄ Plus 600 AS₄ Belt

CNC TAPPING CENTER



Features

- Lightweight servo tool magazine for fast tool change
- P-grade linear guideway / C3-grade ball screw on all three axes
- Compact floor space to reduce factory space cost
- Reinforced A-frame column structure design
- Direct chip-falling design with steep angles on both sides for efficient chip evacuation
- Oil/Water separation design
- Powerful surrounding chip flushing system for efficient chip removal
- High-rigidity cast iron

600 AS₄ Belt

- Table size: 650 x 400 mm
- Saddle-moving
- X/Y/Z-axis travel: 600 x 400 x 400 mm
- BT40 belt-driven spindle



- Maximum Triple-Sliding Door Opening Size: 650 mm



450 AS₃

- Table size: 500 x 400 mm
- Saddle-moving
- X/Y/Z-axis travel: 450 x 400 x 350 mm
- BT30 direct-drive spindle

600 AS₃

- Table size: 650 x 400 mm
- Saddle-moving
- X/Y/Z-axis travel: 600 x 400 x 350 mm
- BT30 direct-drive spindle

600 AS₄ Plus

- Table size: 650 x 400 mm
- Saddle-moving
- X/Y/Z-axis travel: 600 x 400 x 500 mm
- BT40 direct-drive spindle



Plus

Belt

Highly Stable Structure

Column

Wide-span A-frame column design enhances spindle head support and maximizes overall structural stability

Model		Unit	450 AS ₃	600 AS ₃	600 AS ₄ Plus	600 AS ₄ Belt
Item						
Travel	X-axis	mm	450	600		
	Y-axis	mm	400			
	Z-axis	mm	350		500	400
	Distance from spindle nose to table top	mm	110~460		200~700	200~600
	Distance from spindle center to Z-axis guideway	mm	431			476
Table	Table size	mm	500 x 400	650 x 400		
	Max. loading capacity	kgs	250			
	T-slot	—	14mm × 3 (slots)			
Axis Drive	Rapid traverse rate	m/min	48 / 48 / 48			
	Cutting feed rate	mm/min	0.001~12000			
	X/Y/Z motor power	kw	1.7 / 1.7 / 2.4 (Syntec)		1.7 / 1.7 / 3.9 (Syntec)	
			1.5 / 1.5 / 1.5 (Mitsubishi)		1.5 / 1.5 / 3.0 (Mitsubishi)	
			2.5 / 2.5 / 2.7 (Fanuc)		1.8 / 1.8 / 3.0 (Fanuc)	
Spindle (Direct Drive)	Spindle diameter	mm	100		126	116
	Max. spindle speed	rpm	12000			8000
	Spindle taper	—	BT30 x 45°		BT40 x 45°	
	Spindle motor power	kw	7.5 / 5.5 (Syntec)		11 / 7.3 (Syntec)	
			5.5 / 3.7 (Mitsubishi)		7.5 / 5.5 (Mitsubishi)	
			5.5 / 3.7 (Fanuc)		7.5 / 5.5 (Fanuc)	
ATC Unit (Servo-Driven)	Tool storage capacity	T	16	21	24	12
	Max. tool diameter	mm	100		80	
	Max. tool length	mm	200		300	
	Max. tool weight	kgs	3		5	
	Tool changing time (T-T)	sec.	1.3 (T~T)		2.7 (T~T)	2.8 (T~T)
General	Machine height	mm	2522		2840	2935
	Floor space (Width × Depth)	mm	1200 x 2283	1737 x 2163	1918 x 2163	1737 x 2163
	Machine weight	kgs	2609	2750	3030	2857

■ Specifications are subject to change without prior notice. The actual machine shall prevail.

Machining Capacity

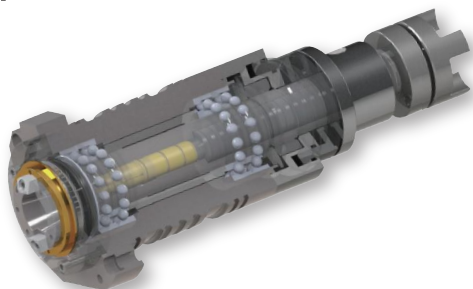
450 AS₃ / 600 AS₃ with Mitsubishi Controller (Syntec Controller)

Machining Material	Drilling		Tapping		Milling	
	Max.	Min.	Max.	Min.	MRR	Width×Depth×Feed
Aluminum Alloy(A6061)	26 (22)	0.3	M18 x 2.5	M1 x 0.25	378 cc/min	63 x 2.0 x 3000
Medium Carbon Steel(S45C)	22	1.65	M16 x 2.0 (M20 x 1.5)	M2 x 0.40	95 cc/min	63 x 1.5 x 1000
Stainless Steel (SUS430)	18.5	0.92	M12 x 1.75	M1 x 0.25	95 (119) cc/min	63 x 1.5 x 1000 (63 x 0.7 x 2700)
Cast Iron(FC-25)	22	—	M20 x 1.5	—	170 cc/min	63 x 1.0 x 2700

600 AS₄ Plus / 600 AS₄ Belt with Mitsubishi Controller

Machining Material	Drilling		Tapping		Milling	
	Max.	Min.	Max.	Min.	MRR	Width×Depth×Feed
Aluminum Alloy(A6061)	31	1.65	M22 x 2.5	M2 x 0.4	402 cc/min	67 x 4 x 1500
Medium Carbon Steel(S45C)	26	0.92	M22 x 2.5	M2 x 0.4	119 cc/min	63 x 2.5 x 758
Stainless Steel (SUS430)	26	1.65	M16 x 2	M2 x 0.4	96 cc/min	63 x 2 x 758
Cast Iron(FC-25)	31	—	M24 x 3	—	176 cc/min	63 x 3.5 x 800

» Spindle



- BT30 direct-drive spindle
- Spindle speed: 12,000 rpm (standard)
20,000 rpm (optional: Fanuc)
24,000 rpm (optional: Mitsubishi)
30,000 rpm (optional, built-in motor spindle)
- High-precision angular contact ball bearings with wide-span arrangement for high-speed operation and high rigidity
- Oil cooling temperature control system
- Double protection with labyrinth seal and air curtain system

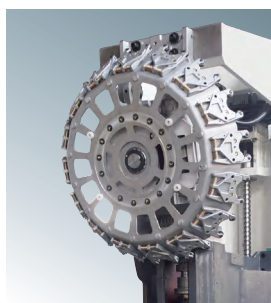


- BT40 belt-driven spindle (8,000 rpm)
- High-precision belt pulley for high torque transmission
- High-precision, high-rigidity bearings
- Forward/reverse labyrinth seal design



- BT40 direct-drive spindle (12000rpm)
- Minimize transmission power loss to maximize spindle motor efficiency
- Oil-cooled temperature control system
- High-tension adjustable four-petal gripper

» Tool Magazine



- Servo-driven tool selection with high-response servo tool magazine



- Cam indexing mechanism ensures smooth rotation and precise positioning
- Suitable for high-speed tool changes and applications requiring a larger quantity of bigger tools

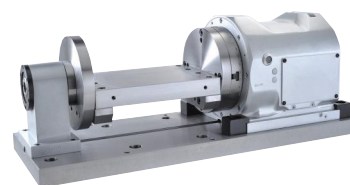


- Each tool gripper can be individually removed for easy maintenance, cleaning, and service

» Fourth Axis (Opt.)



- Direct-Drive Indexing Table (DDM)



» High-Performance Control Systems



Mitsubishi System



Fanuc System



Syntec System

- High-speed, high-precision control system with error compensation
- Multiple interfaces including USB and network ports

» Side Automatic Door (Opt.)



Standard & Optional Equipment



O: Standard Δ: Option X: None

Item \ Model		450 AS ₃	600 AS ₃	600 AS ₄ Plus	600 AS ₄ Belt
Controller	Mitsubishi	Δ	Δ	O	O
	Fanuc	Δ	Δ	Δ	Δ
	Syntec	O	O	Δ	Δ
Spindle	8000rpm (Belt-Driven Spindle)	X	X	X	O
	12000rpm (Direct-Drive Spindle)	O	O	O	X
	20000rpm (Direct-Drive Spindle)	Δ	Δ	X	X
	24000rpm (Direct-Drive Spindle)	Δ	Δ	X	X
	30000rpm (Built-in Motor Spindle)	Δ	Δ	X	X
	Spindle Oil Cooling & Temperature Control System	O	O	O	Δ
	Spindle Aie Blowing Device	O	O	O	O
	Coolant Through Spindle	Δ	Δ	Δ	X
	Spindle Oil-Mist Lubrication System	Δ	Δ	Δ	Δ
	BBT Dual-Contact Spindle	Δ	Δ	Δ	Δ
Tool Magazine	16T	O	X	X	X
	21T	X	O	X	X
	24T	X	X	O	X
	12T	X	X	X	O
	Tool Length Measurement	Δ	Δ	Δ	Δ
	Tool Breakage Detection System	Δ	Δ	Δ	Δ
Mechanical System	Automatic Lubrication System	O	O	O	O
	Surrounding Automatic Chip Flushing System	O	O	O	O
	Full Enclosed Heat-Isolated Electrical Cabinet	O	O	O	O
	Transformer	O	O	O	O
	LED Work Light	O	O	O	O
	Three-Color Tower Light	O	O	O	O
	Air Gun & Water Gun	O	O	O	O
	Fourth Axis	Δ	Δ	Δ	Δ
	M Codes	Δ	Δ	Δ	Δ
	Air-Conditioning System for Electrical Cabinet	Δ	Δ	Δ	Δ
	Workpiece Air Blowing Device	Δ	Δ	Δ	Δ
	Full Enclosed Enclosure	Δ	Δ	Δ	Δ
	Oil Mist Collector	Δ	Δ	Δ	Δ
	Front Automatic Door	Δ	Δ	Δ	Δ
	Side Automatic Door	Δ	Δ	Δ	Δ
	Safety Door Lock	Δ	Δ	Δ	Δ
	Chip Conveyor	Δ	Δ	Δ	Δ
	Oil/Water Separator	Δ	Δ	Δ	Δ



Nothing But The Best

**Driven by Quality / Strengthened by Expertise
Powered by Service / Inspired by Innovation**



MILESTONES

- 2003-Established as a Foreign-Invested Enterprise
- 2008-Factory Expansion Completed
- 2013-Organizational Restructuring Completed
- 2014-ISO 9001 Quality Management System Certification Obtained
- 2018-Recognized as a National High-Tech Enterprise



Our complete range of tapping centers and machining centers is engineered for high-speed machining, rapid tool changes, and versatile manufacturing applications. Widely used in automotive, 3C electronics, watchmaking, medical, new energy, and precision component industries, our machines deliver outstanding productivity, accuracy, and reliability. In addition, we provide comprehensive machining solutions and full-process manufacturing support tailored to customer requirements.

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www.grand-seiki.com



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