

**TOYODA**

# FA SERIES

Horizontal Spindle Machining Center

FA630S  
FA800S  
FA1050S



**JTEKT**  
JTEKT CORPORATION

Most suitable to every Mono-zukuri

# FA1050S / FA800S

Born of joyful wide specification for

□1,050/□800 class horizontal machining center



U. S. Patent on the machine : 7,140,775 and others



U. S. Patent on the machine : 7,140,775 and others

## Offering the ultimate in user-friendliness

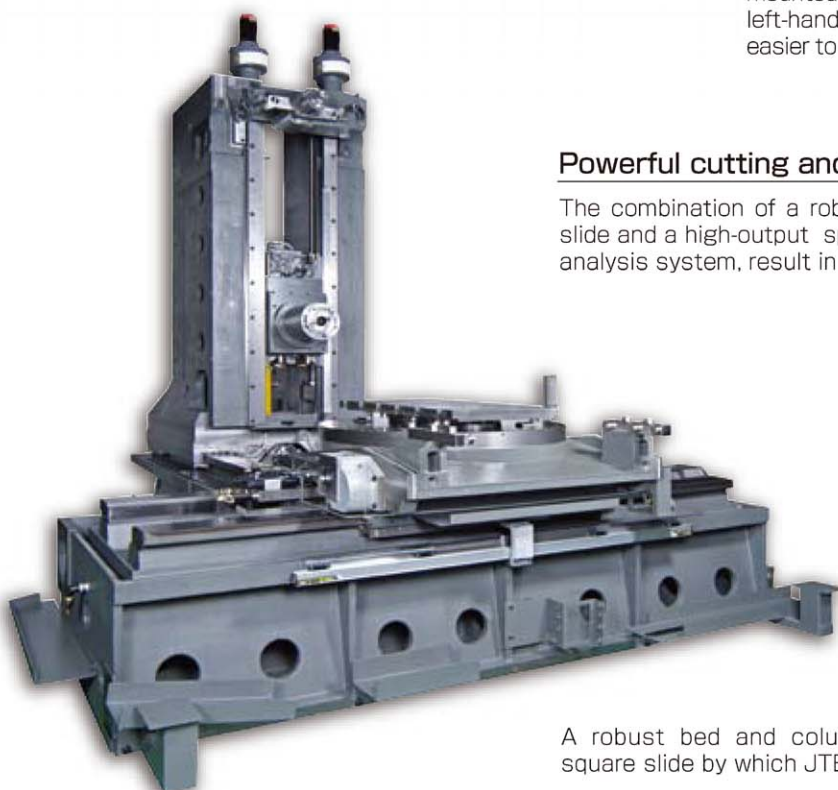
A design which considers both operability and safety from the perspective of the user.

A movable operation panel mounted on the machine's left-hand side which is easier to use.



## Powerful cutting and accurate machining

The combination of a robust bed and column, a high rigidity square slide and a high-output spindle, along with the underlying quantitative analysis system, result in powerful and accurate cutting.



The perfect balance between a high-output spindle and the machine itself makes for powerful cutting.

A robust bed and column adopting the highly rigid square slide by which JTEKT swear.

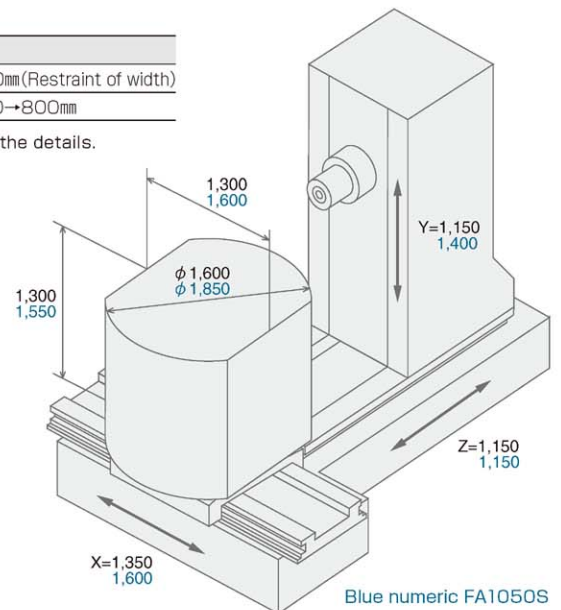
## Making the swing of workpiece more wider. Long tool is available as a standard.

Machining of one size larger workpiece or attaching of plural workpieces became possible by expanding the swing of workpiece.

FA800S	
Max. workpiece swing	$\phi 1,300 \rightarrow \phi 1,600$ (Restraint of width)
Tool length	550 $\rightarrow$ 800mm

FA1050S	
Max. workpiece swing	$\phi 1,600 \rightarrow \phi 1,850$ (Restraint of width)
Tool length	550 $\rightarrow$ 800mm

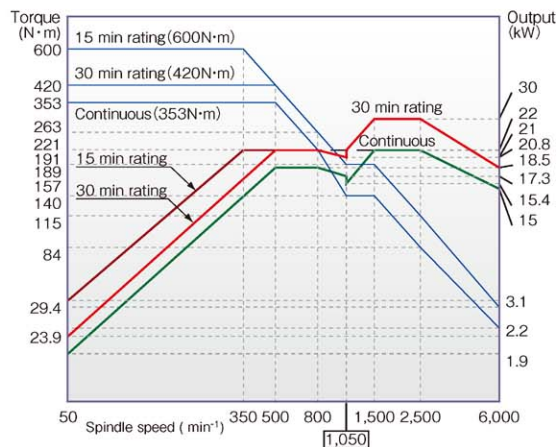
※The interference of tool and workpiece might be generated. Please check with our sales for the details.



A wide selection of spindles. You can select the best spindle for your job, from lower to higher speed with a wider range of output.

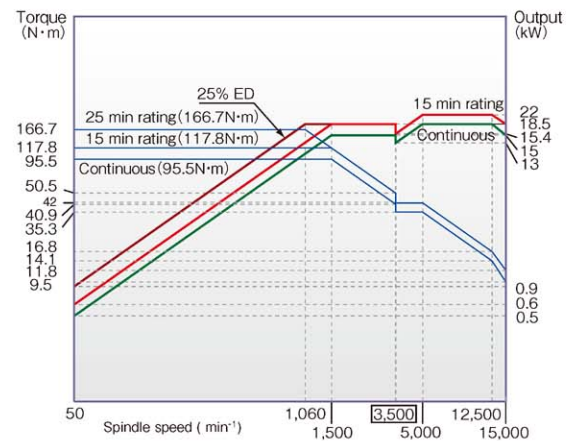
### 6,000min<sup>-1</sup> standard spindle

For powerful cutting of iron and casting



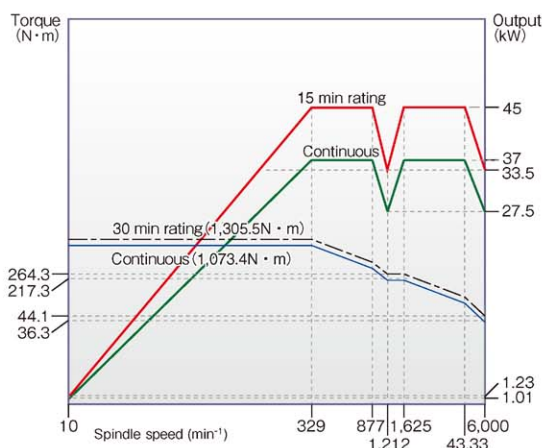
### 15,000min<sup>-1</sup> (22/18.5kW) spindle

For high speed processing of aluminum



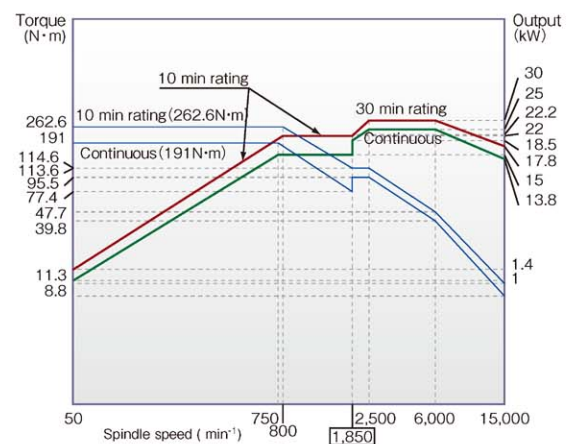
### 6,000min<sup>-1</sup> high output spindle (gear change)

For heavy cutting of iron and casting



### 15,000min<sup>-1</sup> (30/25kW) spindle

For high speed cutting of iron and casting





Most suitable to every Mono-zukuri

# FA630S

High rigid machine of □630 class



U.S. Patent on the machine: 7,140,775 and others

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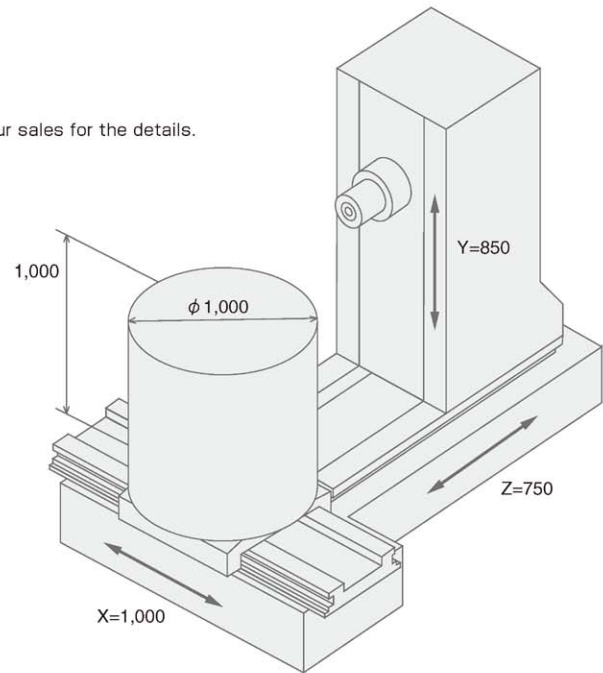
The perfect balance between a high-output spindle and the machine itself makes for powerful cutting.



A robust bed and column adopting the highly rigid square slide by which JTEKT swear.

FA630S	
Max. workpiece swing × Max. workpiece height	$\phi 1,000 \times \phi 1,000$
Tool dia. × Tool length	$\phi 120 \times \phi 500$

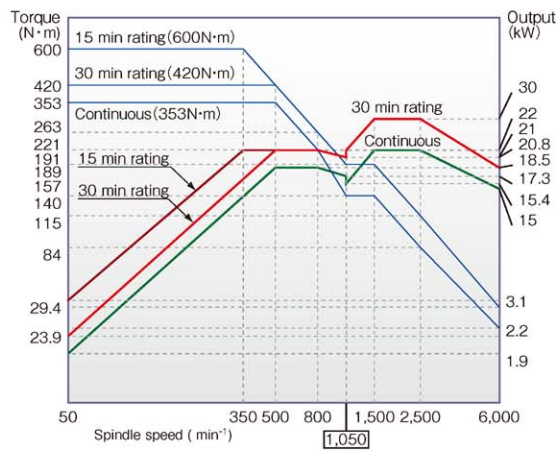
※The interference of tool and workpiece might be generated. Please check with our sales for the details.



A wide selection of spindles. You can select the best spindle for your job, from lower to higher speed with a wider range of output.

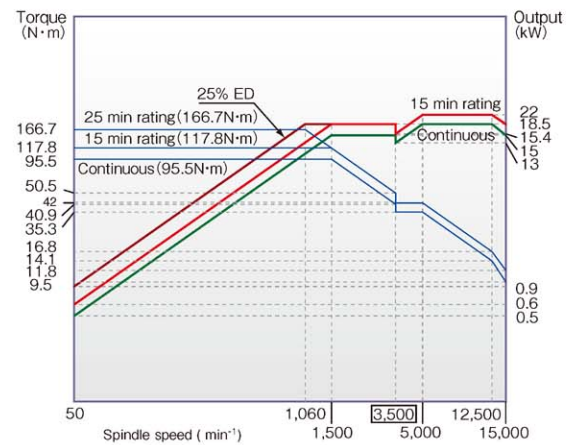
#### 6,000min<sup>-1</sup> standard spindle

For powerful cutting of iron and casting



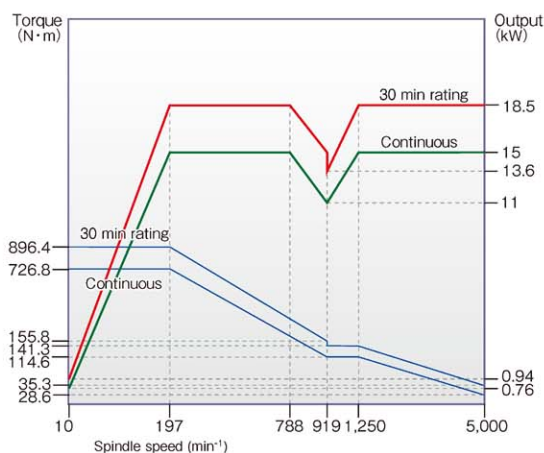
#### 15,000min<sup>-1</sup> (22/18.5kW) spindle

For high speed processing of aluminum



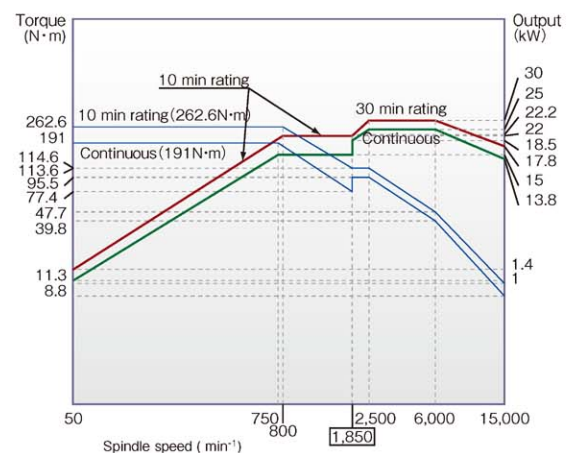
#### 5,000min<sup>-1</sup> high output spindle(gear change)

For heavy cutting of iron and casting



#### 15,000min<sup>-1</sup> (30/25kW) spindle

For high speed cutting of iron and casting





## Machine Specifications

Item		Unit	FA630S				FA800S					
			Standard specifications		Special specifications		Standard specifications		Special specifications			
Table & Pallet	Table dimensions(pallet dimensions)	mm	□630				□800 (Pallet)					
	Rotary table indexing angle	°	Min.1°		0.001°(NC)		Min.1°		0.001°(NC)			
	Pallet height(from floor)	mm	1,200				1,300					
	Max load on pallet	kg	1,300				2,500					
	Table indexing time(90°indexing)	sec	2.7		3.2(NC)		5					
	Pallet change time	sec	12		13.5(NC)		40		45(NC)			
Stroke	X-axis	mm	1,000				1,350					
	Y-axis	mm	850				1,150					
	Z-axis	mm	750				1,150					
	Distance between spindle nose and table center	mm	175-925				200-1,350					
	Distance between spindle center and top of pallet	mm	50-900				50-1,200					
	Max. workpiece swing × Max. workpiece height	mm	φ1,000×1,000				φ1,600×1,300 ※1					
Feeds	Rapid feed rate (X,Y and Z)	m/min	36				24					
	Cutting feed rate (X,Y and Z)	m/min	0.001~36				0.001~24					
	Ball screw diameter (X,Y and Z)	mm	φ50				φ63, φ50×2tool ,φ63					
Spindle	Spindle speed	min <sup>-1</sup>	50~6,000		10~5,000(Gear)	50~15,000	50~15,000	50~6,000		10~6,000(Gear)	50~15,000	50~15,000
	Spindle diameter (front bearing bore)	mm	φ110		φ110	φ90	φ100	φ110		φ110	φ90	φ100
	Allowable spindle thrust load	N	14,700		14,700	7,800	9,800	14,700		19,600	7,800	9,800
	Spindle nose shape		BT No.50		HSK, KM		BT No.50					
	Spindle motor, short-time/continuous	kW	30/22		18.5/15	22/18.5	30/25	30/22		45/37	22/18.5	30/25
ATC	Tool holding capacity	tool	60		40, 120, 190		60		40, 120			
	Tool(dia. x length)	mm	φ120 × 500 ※2				φ120 × 800 ※2					
	Tool mass	kg	27				35					
	Max. tool moment	N·m	29.0				29.0					
	Tool change time(Tool-to-Tool)	sec	2.0 (15kg)				2.0 (15kg)		3.1 (15kg)	2.0(15kg)		
	Tool change time(Chip-to-Chip)	sec	5.5 (15kg)				7.9 (15kg)		9.0(15kg)	7.9(15kg)		
	Tools     Holder		JIS6339 50T				JIS6339 50T					
	Pull stud		JIS6339 50P				MAS P50T-1					
Dimensions & Weight	Floor space (width X depth)	mm	3,550×6,050 ※3 (Without coolant tank)		4,440×6,050 ※3 (With 2-partitioned coolant tank)		4,225×7,400 ※3 (Without coolant tank)		5,115×7,400 ※3 (With 2-partitioned coolant tank)			
	Machine height	mm	3,561		3,758(5K with gear type spindle)		3,750		3,886(When housing 120 tools in magazine)			
	Machine weight	kg	16,000				21,000					
Various Capacities	Working oil	L	100				63					
	Slide lubricant	L	5.5				5.5					
	Spindle oil air	L	2.9		—	2.9		2.9		—	2.9	
	Table	L	4		3.5(NC)		4		4(NC)			
	Spindle coolant	L	35		63	35		35		63	35	
	Power supply capacity	kVA	52		44	52		52		67	52	
	Control voltage	V	AC100 DC24				AC100 DC24					
	Air source capacity	NL/min	900				900					
	Air source pressure	MPa	0.4~0.5				0.4~0.5					
Capability & Performance	Positioning accuracy ※4	mm	±0.003/FS		±0.002/FS(With scale)		±0.003/FS		±0.002/FS(With scale)			
	Repeatability positioning accuracy※4	mm	±0.0015		± 0.001/FS(With scale)		±0.0015		±0.001/FS(With scale)			
	Table indexing accuracy ※4	sec	±2		±7(NC), ±3.5(With NC encoder)		±2		±7(NC), ±3.5(With NC encoder)			
	Table indexing repeatability ※4	sec	—		±3.5(NC), ±2(With NC encoder)		—		±3.5(NC), ±2(With NC encoder)			

※1 Run-out of workpiece is limited to 1,300mm (FA800S) or 1,600mm (FA1050S) in the X axis direction. For details, refer to the tooling data.

※2 For details, refer to the tooling data.

※3 For details, refer to the layout plan.

※4 According to our inspection method.

## CNC unit specifications FANUC31i

FA1050S			
Standard specifications	Special specifications		
<input type="checkbox"/> 1050 (Pallet)			
Min. 1°	0.001°(NC)		
1,400			
3,000			
5			
43	48(NC)		
1,600			
1,400			
1,150			
250-1,400			
50-1,450			
φ1,850×1,550 ※1			
24			
0.001~24			
φ63, φ50×2tool, φ63			
50~6,000	10~6,000(Gear)	50~15,000	50~15,000
110	φ110	φ90	φ100
14,700	19,600	7,800	9,800
BT No.50			
30/22	45/37	22/18.5	30/25
60	40,120		
φ120 x 800 ※2			
35			
29.0			
2.0 (15kg)	3.1(15kg)	2.0 (15kg)	
7.9 (15kg)	9.0(15kg)	7.9 (15kg)	
JIS6339 50T			
MAS P50T-1			
4,665×8,140 ※3 (Without coolant tank)	5,460×8,140 ※3 (With 2-partitioned coolant tank)		
4,100	4,236(When housing 120 tools in magazine)		
30,000			
63			
5.5			
2.9	—	2.9	
4	6.5(NC)		
35	63	35	
54	69	54	
AC100 DC24			
900			
0.4~0.5			
±0.003/FS	±0.002/FS(With scale)		
±0.0015	±0.001/FS(With scale)		
±2	±7(NC), ±3.5(With NC encoder)		
—	±3.5(NC), ±2(With NC encoder)		

Division	Name	●Standard/□Optional
Axis control	Min. input increment (0.001mm)	●
	Machine lock	●
	Absolute position detection	●
	Inch/metric switch	□
Operation	Dry run	●
	single block	●
	Manual handle feed 1 set	●
	Program restart	□
Interpolation function	Manual handle interrupt	□
	Nano interpolation	●
	Positioning (G00)	●
	Exact stop mode (G61)	●
	Tapping mode (G63)	●
	Cutting mode (G64)	●
	Exact stop (G09)	●
	Linear interpolation (G01)	●
	Arc interpolation (G02,G03)	●
	Dwell (G04)	●
	Helical interpolation	●
	Reference point return (G28,G29)	●
	Second reference point return (G30)	●
	Third and fourth reference point return (G30)	●
Feed function	AI contouring control I (pre-read 30 blocks)	●
	F1-digit feed	□
Program entry	Local coordinate system (G52)	●
	Machine coordinate system (G53)	●
	Workpiece coordinate system (G54 to G59)	●
	Additional workpiece coordinate system (48 sets)	□
	Additional workpiece coordinate system (300 sets)	□
	Custom macro	●
	Additional custom macro common variables (#100 to #199, #500 to #999)	●
	Fixed drilling cycle (G73,G74,G76,G80 to G89,G98 and G99)	●
	Additional optional block skip (9 piece)	□
	Automatic corner override	□
Spindle function	Rigid Tap	●
Tool function Tool correction function	No. of tool offset (99 pieces)	●
	No. of tool offset (200 pieces)	□
	No. of tool offset (400 pieces)	□
	No. of tool offset (499 pieces)	□
	No. of tool offset (999 pieces)	□
	No. of tool offset (2000 pieces)	□
	Tool offset	●
	Tool dia. · Tool nose radius compensation	●
	Tool length compensation (G43,G44,G49)	●
Editing operation	Program memory storage (128 K-byte)	●
	Program memory storage (256 K-byte)	□
	Program memory storage (512 K-byte)	□
	Program memory storage (1 M-byte)	□
	Program memory storage (2 M-byte)	□
	Program memory storage (4 M-byte)	□
	Program memory storage (8 M-byte)	□
	No. of registerable programs (250 pieces)	●
	No. of registerable programs (500 pieces) * required memory storage 256 K-byte	□
	No. of registerable programs (1000 pieces) * required memory storage min. 512 K-byte	□
	No. of registerable programs (2000 pieces) * required memory storage min. 1 M-byte	□
	No. of registerable programs (4000 pieces) * required memory storage min. 2 M-byte	□
	Plural programs simultaneous edit (including back ground edit)	●
Data entry/display	Touch panel control	●
Communication function	Built-in ethernet	●
Others	10.4 inch color LCD	●

FANUC is the registered trademark of FANUC Ltd.

## Accessories Check Sheet

○ : Standard accessories — : Not available

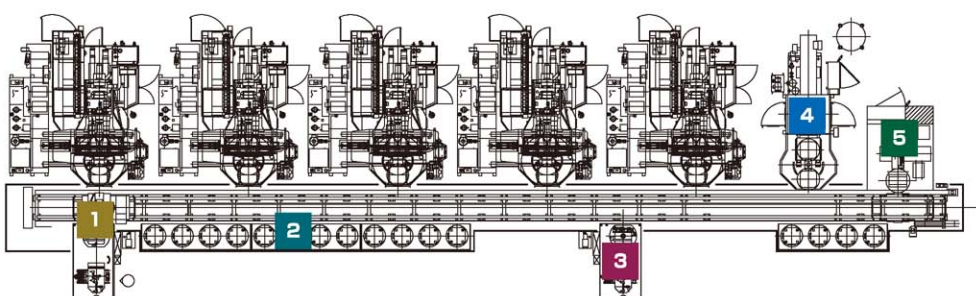
Item	Equipment name		FA630S	FA800S	FA1050S	
Table and Pallet	Index table	1" indexing table	○	○	○	
		NC indexing table				
		NC indexing table (with encoder)				
	Pallet	Standard pallet screw hole	○	○	○	
Addition of pallet	T-groove pallet					
	Single piece screw hole					
	Single piece T-groove					
Spindle relations	Speed	6,000min <sup>-1</sup> BT50 (30/22kW) spindle(with spindle-through coolant spec)	○	○	○	
		15,000min <sup>-1</sup> BT50 (22/18.5kW) spindle(with spindle-through coolant spec)				
		15,000min <sup>-1</sup> BT50 (30/25kW) spindle(with spindle-through coolant spec)				
		6,000min <sup>-1</sup> BT50 (45/37kW) spindle(with spindle-through coolant spec)	—			
		5,000min <sup>-1</sup> BT50 (18.5/15kW) spindle(with spindle-through coolant spec)		—	—	
		Filler block for oil hole holder				
		Positioning block for angle head holder				
	Collet	HSK specification				
		BIG PLUS specification				
		MAS I	○	○	○	
		JIS				
		MAS II				
Tool magazine	Tool capacity	60 tools	○	○	○	
		40 tools				
		120 tools				
		190 or more tools				
Coolant relations	Coolant supply unit	Coolant supply unit(water soluble/with take-up chip conveyor/scrapper type/spindle-through coolant spec/1MPa through pump)	○	○	○	
		Coolant supply unit(water soluble/with take-up chip conveyor/scrapper type/spindle-through coolant spec/3MPa through pump)				
		Coolant supply unit(water soluble/with take-up chip conveyor/scrapper type/spindle-through coolant spec/7MPa through pump)				
		Coolant supply unit(water soluble/with take-up chip conveyor/2-tank type/spindle-through coolant spec/1MPa through pump)				
		Coolant supply unit(water soluble/with take-up chip conveyor/2-tank type/spindle-through coolant spec/3MPa through pump)				
		Coolant supply unit(water soluble/with take-up chip conveyor/2-tank type/spindle-through coolant spec/7MPa through pump)				
	Coolant temperature control function (With sub tank)		○	○	○	
		External nozzle coolant				
		Ceiling shower coolant				
		Chip flushing coolant				
		Internal screw conveyor				
		Coolant cooling				
		Magnet separator				
		Oil skimmer	Belt type			
		Chip box				
		Splash gun (at APC)		○	○	○
		Mist collector				
		Air blower	External nozzle type			
		Splash guard	Enclosure guard	○	○	○
			Door interlock at operating position	○	○	○
APC door interlock	○		○	○		
Internal lighting	○		○	○		
Operation control function, othres	Leakage breaker					
	Cooler for control cabinet inside					
	Automatic fire extinguisher					
Labor saving function	Pallet changer (APC)	○	○	○		
Support for high accuracy	Spindle cooling unit	○	○	○		
	Scale feedback(X-, Y- and Z-axes)					
	Touch sensor function	Optical type (without energization); with alignment and datum face correction functions				
		Optical type (with energization); with alignment, datum face correction, gap elimination and tool breakage detection function				
		Automatic tool length measurement function and datum face for measurement(interference area caused)				
		Automatic measuring function				
		Automatic measuring correction function				
		Rotary coordinate system correction function				
		Rotary coordinate axis correction function				
	STS(Spindle Thermo Stabilizer) function					
Operator support function	Package	OP10i basic model	○			
		OP20i basic model				
		OP20iP maintenance model		○	○	
		OP20iT tool control model				
		OP20iA advanced tool control model				
	Tool management	AC function (condition control)				
		Cutting condition setting function				
		Replacement tool automatic indexing function				
		Tool data update during installation and removal				
		Storage tool data saving function				
		Tool ID function				
		Tool list display				
	Pallet management	APC control				
		Multi-workpiece installation				
	Auxiliary function	Measurement result display				
	Maintenance function	Signal condition display				
		Fault history				
		Fault code-specific frequency				
		Periodic inspection display				
Load monitor						



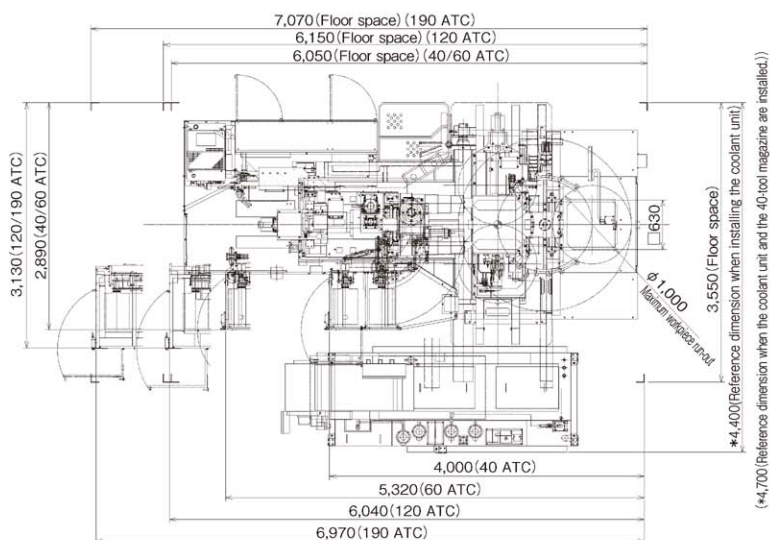
**We supply the best system to the customer with a wide selection of modules.**

Unmanned operation, more flexibility in the system and an improved level of control.

A state-of-the-art production system that only JTEKT, with our grasp on key points of the FA, are able to provide.

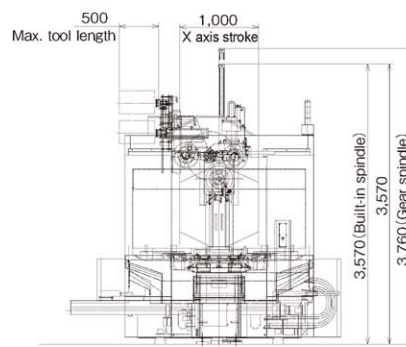
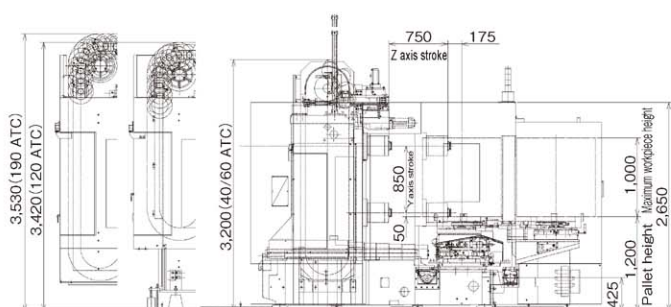


- 1 Pallet transfer unit
- 2 Buffer station
- 3 Setup change station
- 4 Wash booth
- 5 Measuring device

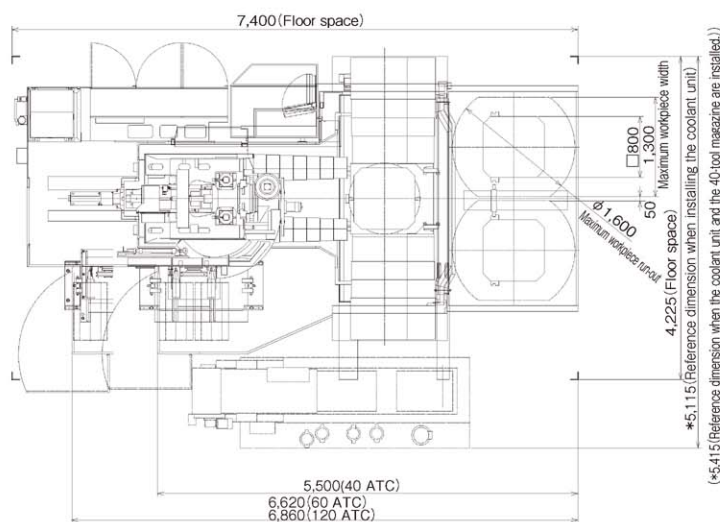


## FA630S

### Layout plan

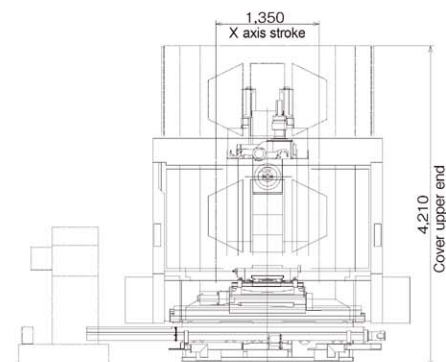
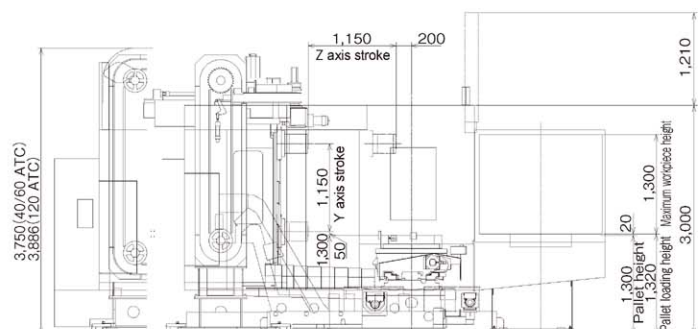


★ shows dimensions of coolant unit with take-up chip conveyor. The dimension change depending on the specification.



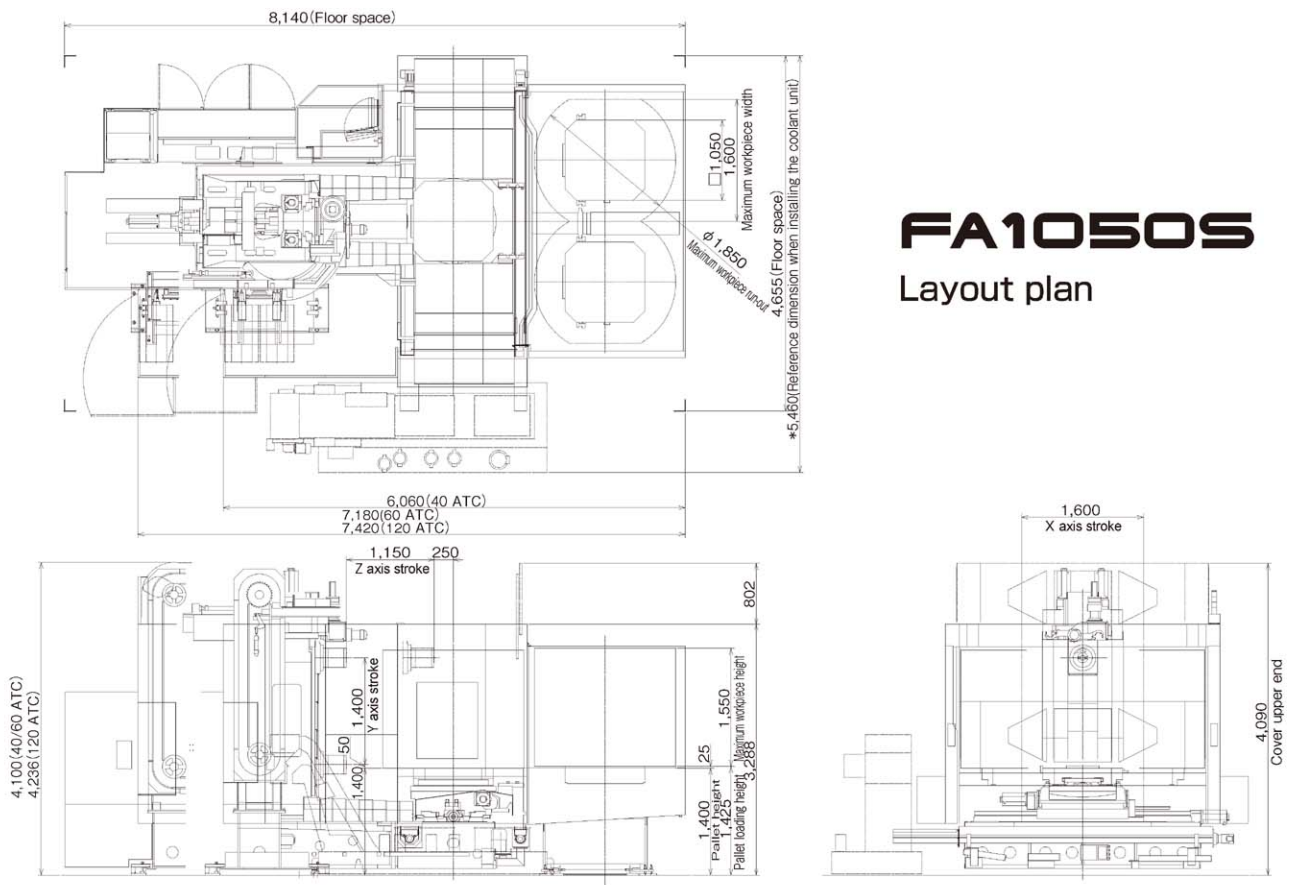
## FA800S

### Layout plan



★ shows dimensions of coolant unit with take-up chip conveyor. The dimension change depending on the specification.





# FA1050S

## Layout plan

★ shows dimensions of coolant unit with take-up chip conveyor. The dimension change depending on the specification.

Note) The 40-tool magazine machine with the opening for the take-up chip conveyor on the back side may require the dimension ★ to be extended in order to avoid the interference between the magazine door and the conveyor. For details please contact JTEKT.





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