



J  
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THE NEXT  
GENERATION  
PARTNER  
FOR QUALITY



VERTICAL MACHINING CENTER



### HIGH SPEED SERIES



India's finest range of CNC machine manufacturer introduces new J series vertical machining centre with higher reliability, performance and precision. The design concept of J series provides larger working area, direct coupled spindle for greater surface finish, higher rapid rates, optimum Speed/Torque characteristics, Lower chip to chip time for higher productivity. J series is suitable for universal Industrial applications such as Automobile, Die mold, Medical, Pump, Valve, Forging, Industrial machinery & General Engineering etc...

### J SERIES

- Direct Drive BT40 Spindle Speed upto 12,000 rpm
- Rigid structure with wider working area
- Precision Linear Motion Guideways on X Y & Z axes
- Faster tool change time < 2 Sec
- Ergonomically designed for easy loading / unloading operations
- Wider Column base ensures heavy duty machining
- Improved chip & Coolant management
- Compact design with larger working area

## BASIC STRUCTURE

- Robust machine structure, every prime element like bed, column, saddle, table and spindle head are made of FG 300 grade cast iron and thoroughly stress relieved, imparting long lasting accuracy and vibration free machining.
- The entire structure passes through FEA analysis for an elaborate check to avoid possible distortions during heavy machining.

## FEED MECHANISM

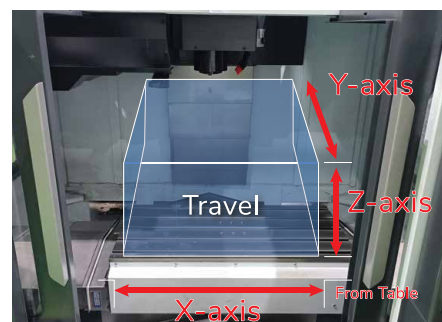
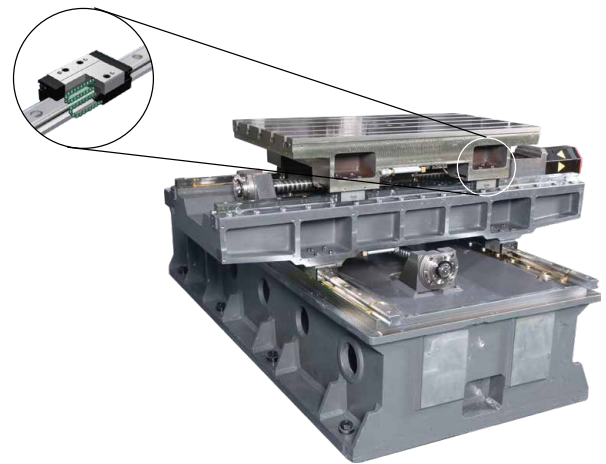
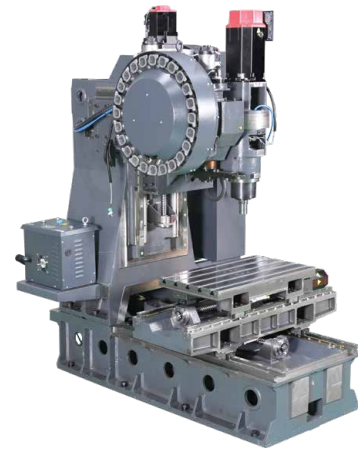
- J series employs high precision linear motion guideways & large diameter, pre-tensioned ball screws, high resolution feedback system in all axes.
- All three axes are equipped with direct drive motors and precision ball screws for optimum accuracy and rigidity.
- Laser calibration of the axis traverse ensure excellent accuracies in respective positioning as well as in interpolated cutting.

## LINEAR GUIDEWAYS

- LM guideways and high speed servo motors enable fast axis movements which reduce machining time and non cutting time, resulting in enhanced productivity.
- Three axes are mounted with high precision linear guideways for stable and smooth movement, making the machine ideal for high speed and precision machining.
- Guideways are completely protected from chips and dust by extremely flexible telescopic covers.

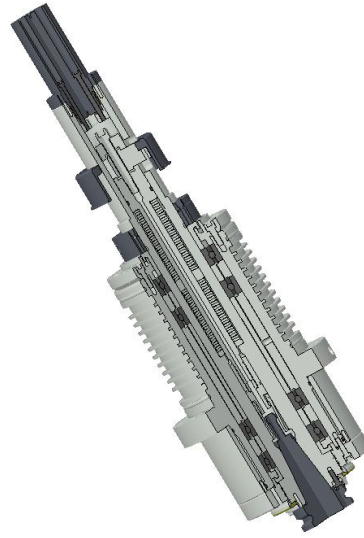
## TABLE

- J series have larger table sizes with increased Y axis travel.
- Increased table size and maximum load carrying capacity for larger work piece.



## SPINDLE

- J series machines are equipped with high rigid and high speed spindle.
- Direct driven type Spindle is directly coupled to the motor to reduce vibration, noise and heat which enhances productivity and high machining accuracy.
- Optimum Torque/Speed spindle characteristics to meet various applications.
- Spindles are manufactured in dedicated dust free, temperature controlled assembly shops where spindles are extensively tested for various performance criteria.
- J series is equipped with BT40 spindle for high precision machining.



**DIRECT COUPLED SPINDLE**

Model	SPINDLE CONFIGURATION					
	SPINDLE POWER (kW)			SPINDLE TORQUE (Nm)		
	FANUC	MITSUBISHI	SIEMENS	FANUC	MITSUBISHI	SIEMENS
	(Cont./ S2 / S3)	(Cont./ S2 / S3)	(Cont./ S6 40% / S6 25% / S6-15%)	(Cont./ S2 / S3)	(Cont./ S2 / S3)	(Cont./ S6 40% / S6 25% / S6-15%)
	STANDARD			STANDARD		
J1 J2 J3	7.5/11/15		7.5/9.8/11.3/15	35.8/47.8/70/95.5		35.8/46.8/54/71.6
J4 J5 J6	11/15/18.5	11/15	11/14.3/16.5/22	52.5/70/95.5/118	52.5/71.8/95.5	70/91/105/140
J7 J8	15/18.5		15/19.5/22.5/30	71.6(95.5)/118	95.5/118	71.5/93/107.5/143
	OPTION A			OPTION A		
J1 J2 J3	11/15/18.5	11/15	11/14.3/16.5/22	52.5/70/95.5/118	52.5/71.8/95.5	70/91/105/140
J4 J5 J6	15/18.5		16/19.5/22.5/30	71.6/95.5/118	95.5/118	71.5/93/107.5/143
	OPTION B			OPTION B		
J1 J2 J3	15/18.5		15/19.5/22.5/30	71.6/95.5/118	95.5/118	71.5/93/107.5/143

## AUTOMATIC TOOL CHANGER

- Twin arm type with automatic tool changer.
- High speed 24 pocket tool magazine with faster tool change which reduces the non cutting time.
- Rapid tool clamp / Declamp arrangement.

### 24 TOOL ARM TYPE ATC

No of Tools: 24  
Tool to Tool Time:

**< 2 SEC**



## EASE OF OPERATION

- The operator panel can swivel from 0° to 90° with six intermittent stop arrangement.



## EASY ACCESSIBILITY

- With wider opening (double door) crane accessibility is quick and easy.

Distance from the Floor to operator Panel

**1620 mm**

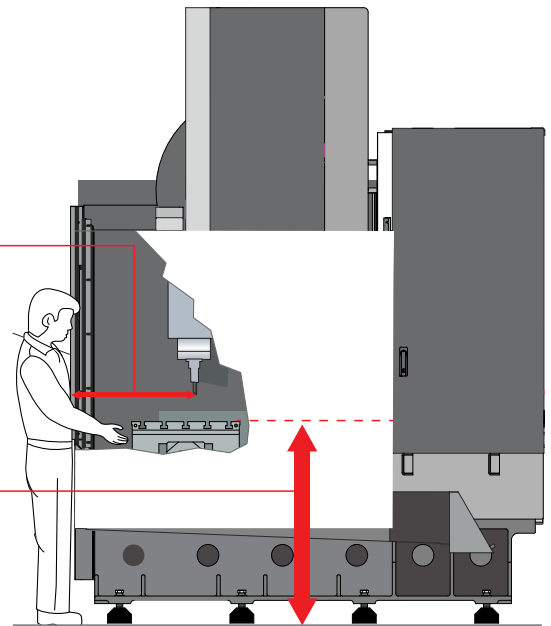
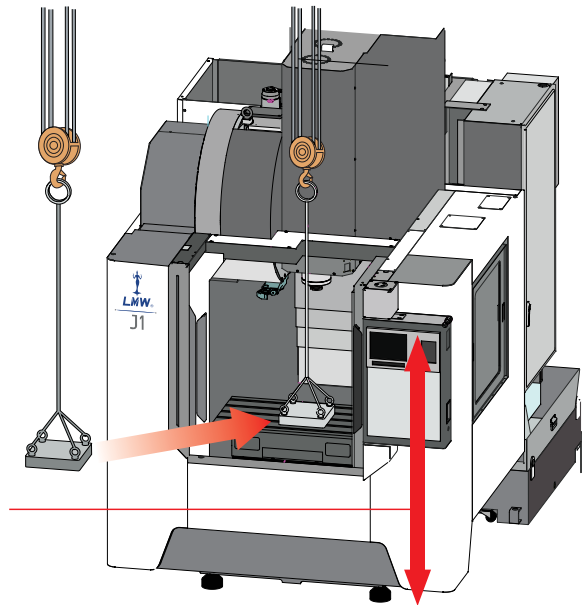
- Easy to load components and automation friendly.
- With excellent access to the table, spindle and operator panel helps in loading / unloading setup operations such as fixture adjustment can be done smoothly.

Distance from the front of the machine to the spindle center

**830 mm**

Distance from floor surface to table surface

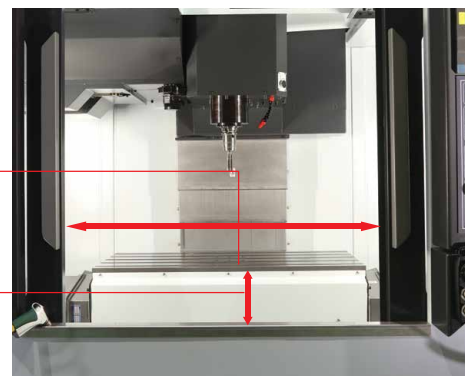
**950 mm**



	J1	J2	J3	J4	J5	J6	J7	J8	J6R
Door Opening (in mm)	790	930	1117	790	930	1117	1117	1117	948 (Loading Station)

**WIDER DOOR OPENING**

**SHORTER DISTANCE FROM DOOR TO TABLE**





## EASY OPERATING SCREEN (LMW-EOS)

### QUICK MAGAZINE VIEW



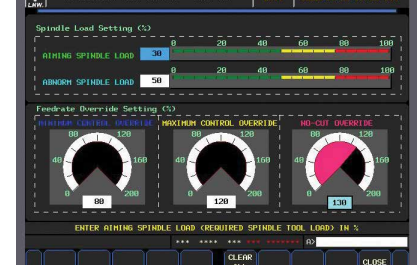
Quick magazine view displays magazine overview like pot location, current spindle tool and waiting tool status also helps for trouble shooting.

### TOOL DATA MANAGEMENT



Tool data management displays tool data overview like Tool name & number / Pot number, Tool type (Big tool / Fixed tool), Spindle tool status, Load setting for each tool.

### SPINDLE LOAD MONITORING



Spindle load monitoring use to monitor the spindle load current for each tool. If the spindle current exceeds a preset load value, it raises an alarm to shut down the machine.

### HARD PROBING



Hard probing is a process which is used to measure the centre of inner and outer wall of circle and rectangle by using rigid tool without probe.

### CUTTING CALCULATOR



This screen helps operator to identify the Material removal rate and power consumption details by providing cutting speed, Depth of cut, Deed/ Tooth and Spindle cutting resistance details.

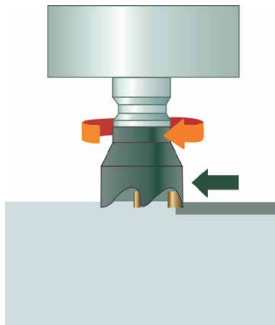
### MAINTENANCE DISPLAY



Maintenance display shows the maintenance schedules of the machine.

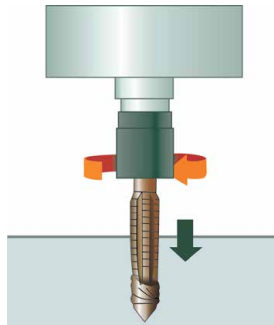
## MACHINING PERFORMANCE: MATERIAL REMOVAL RATE (ON EN8 STEEL)

### FACE MILLING



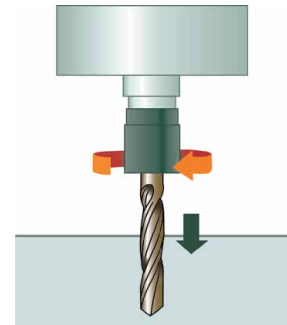
Material : Steel

### TAPPING



Material : Steel

### DRILLING



Material : Steel

FACE MILLING		
Parameter	Unit	EN8
Cutter Size	mm	Ø80 x 6Z
Spindle speed	rpm	1200
Feed	mm/mm	1000
Width of Cut	mm	60
Depth of Cut	mm	5
Capacity	cc/min	300

TAPPING			
Parameter	Unit	EN8	
		Max	Min
Tap Size	mm	M27x3	M2x0.4
Spindle speed	rpm	180	800
Feed	mm/mm	540	320
Depth of Cut	mm	30	5

DRILLING		
Parameter	Unit	EN8
Cutter Size	mm	Ø50 x 2Z
Spindle speed	rpm	1270
Feed	mm/mm	152
Depth of Cut	mm	50

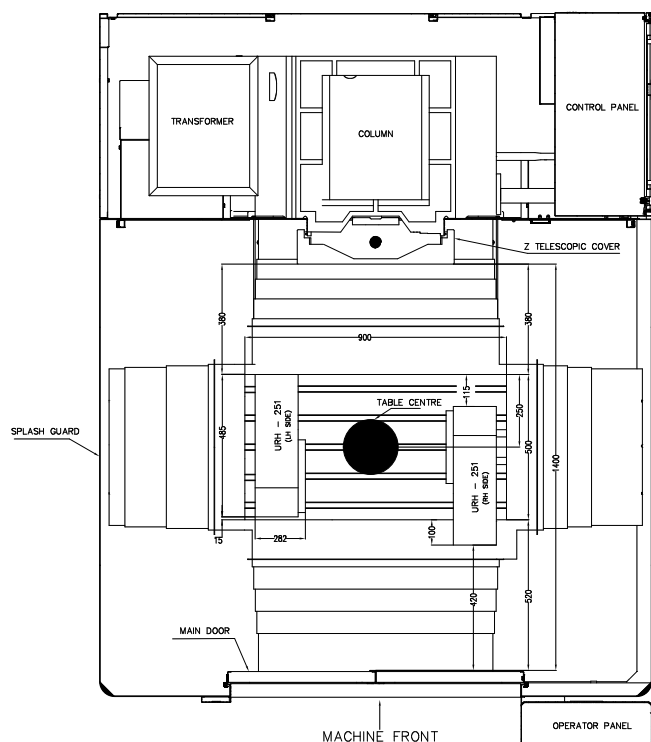
Note : Values shown are in test conditions, may vary depending on tools, materials and cutting parameters / conditions (Spindle power: 7.5 / 11 / 15 kW motor).

## SPECIFICATIONS

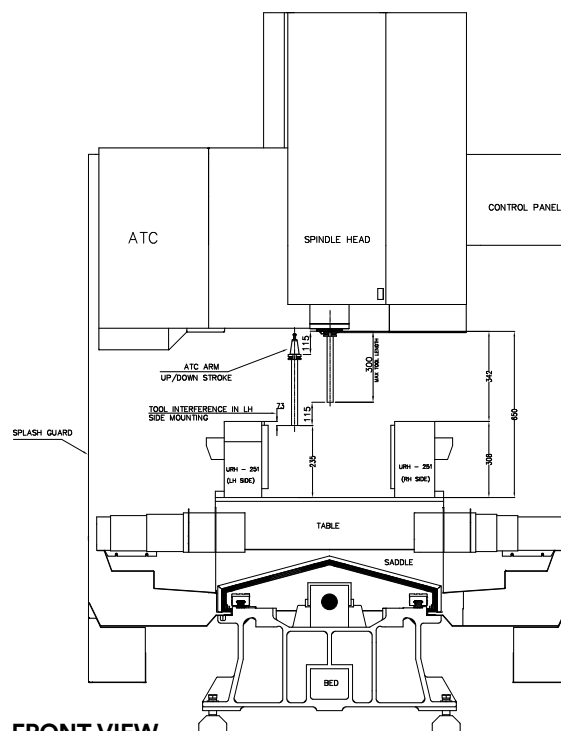
DESCRIPTION	UNIT	J1	J2	J3	J4	J5	J6
TRAVEL							
X Axis	mm	600	800	1000	600	800	1000
Y Axis	mm	500			600		
Z Axis	mm	500			600		
Distance between Spindle nose & Table top		150-650			150-750		
TABLE							
Table Size	mm	900 X 500	1000 X 500	1200 X 500	900 X 600	1000 X 600	1200 X 600
Table Loading Capacity	kg	500	800	800	500	800	800
No. of T-slots	Nos.	5					
T-slot Size x pitch	mm	18 X 100					
SPINDLE							
Spindle Speed	rpm	8000(10000/12000*)					
Spindle Bore Taper	Type	BBT 40 (BT 40*)					
Spindle Motor Power (Cont. / S2/S3)	kW	7.5 / 11 / 15#			11 / 15 / 18.5#		
Max. Spindle Torque	Nm	35.8 / 47.8 / 70 / 95.5#			52.5 / 70 / 95.5 / 118#		
FEED SYSTEM							
Rapid Traverse rate (X/Y/Z) - Axis	m/min	40/40/40		36/36/36	40/40/40		36/36/36
Cutting Feed rate	m/min	10					
Ballscrew Size X,Y & Z Axes (DiaxPitch)	mm	Ø40 X 16		Ø40 X 12	Ø40 X 16		Ø40 X 12
AUTOMATIC TOOL CHANGER							
No. of Tools	Nos	24					
Tool Shank Configuration	Type	BT 40					
Max. Tool dia with adjacent tool	mm	Ø 80					
Max. Tool dia without adjacent tool	mm	Ø 125					
Max. Tool length	mm	250	300	300	250	300	300
Max. Tool weight	kg	8					
Tool change time (tool to tool)	Sec	1.9					
Tool change time (chip to chip)	Sec	5.3					
MACHINE SIZE							
Width	mm	1900	2200	2535	1900	2200	2535
Depth x Height	mm	3110 X 2845			3110 X 2945		
Weight	kg	4500	5000	5500	4500	5000	5500
Floor Space (Aprox)	m2	5.9	6.8	7.9	5.9	6.8	7.9
ACCURACY							
Positioning Accuracy (X, Y & Z) - Axis	mm	0.010					
Repeatability	mm	±0.003					
CNC SYSTEM							
Controller	Type	Fanuc / Siemens / Mitsubishi					
POWER SUPPLY							
Power Requirement	kVA	25			27		

Note: Specifications are subject to change without prior notice & may vary depending upon optional accessories  
 #S3 RANGE, for more info please refer Page 14

### INTERFERENCE DIAGRAM 4TH AXIS- (J1 STANDARD)



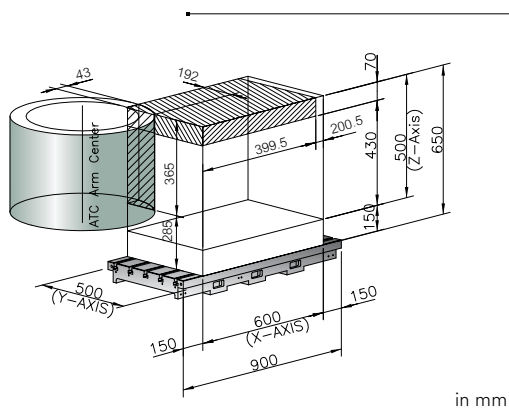
### TOP VIEW



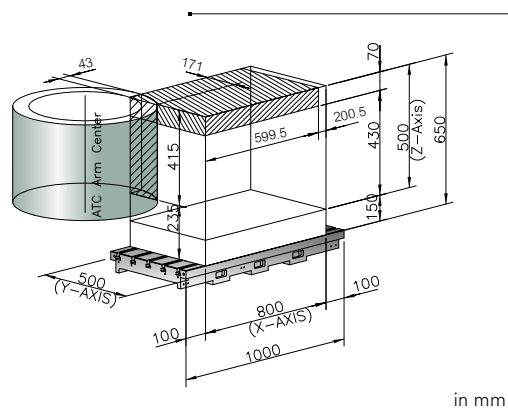
**FRONT VIEW**

## INTERFERENCE DIAGRAM

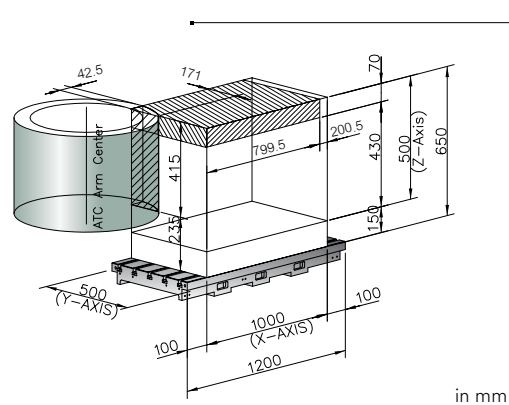
## J1



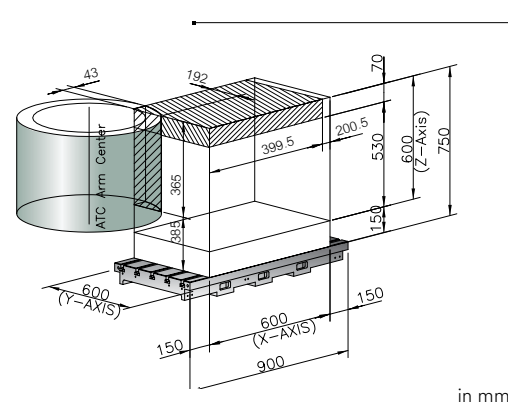
**J2**



J3

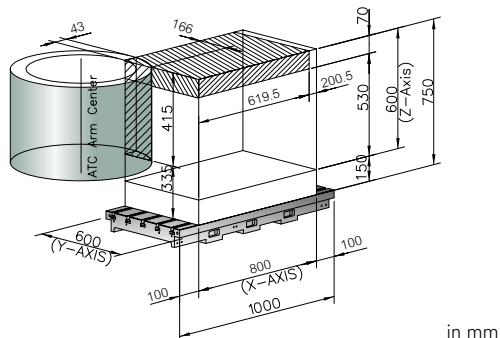


**J4**



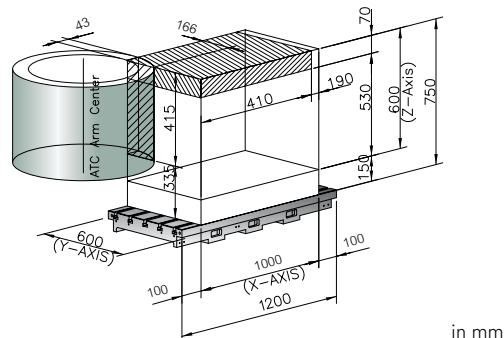


J5



in mm

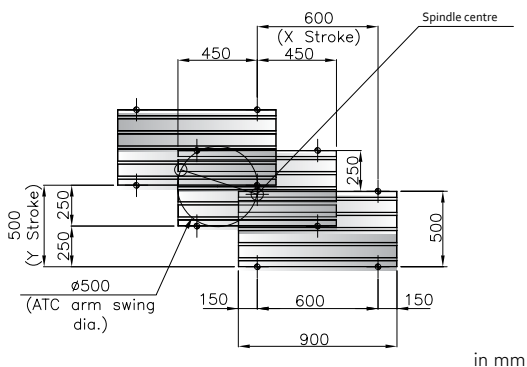
J6



in mm

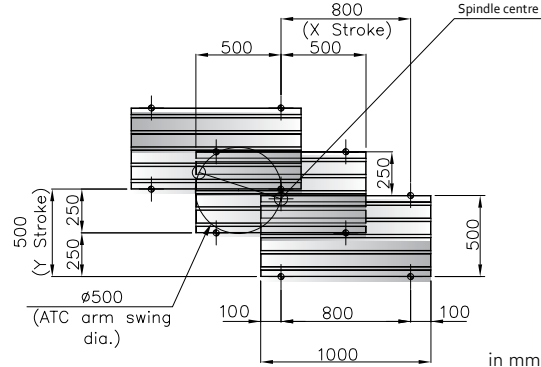
## MOVING RANGE

J1



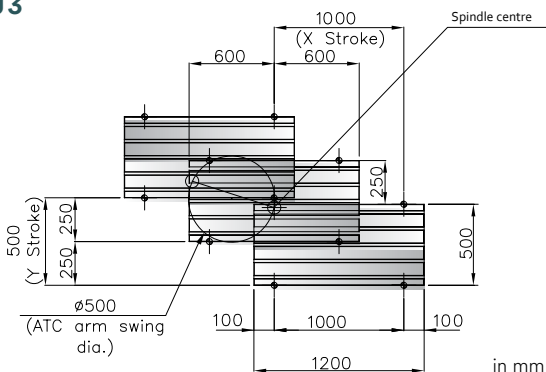
in mm

J2



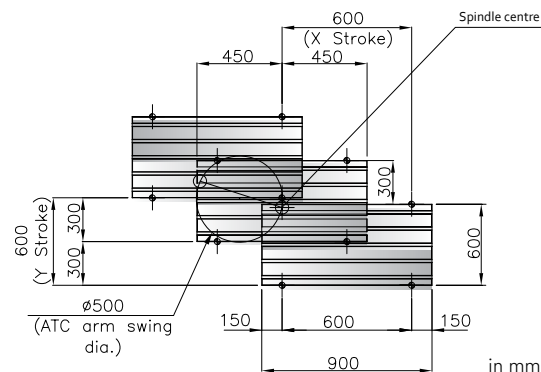
in mm

J3



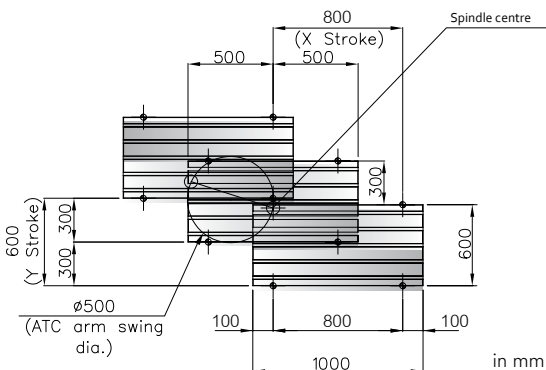
in mm

J4



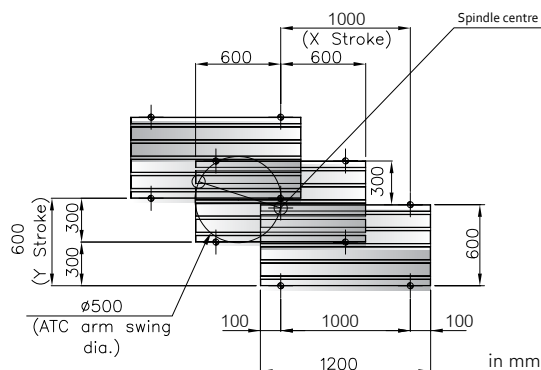
in mm

J5



in mm

J6



in mm

## J6 R - VERTICAL MACHINING CENTER WITH ROTARY PALLET CHANGER

J SERIES

BASIC  
INFORMATION

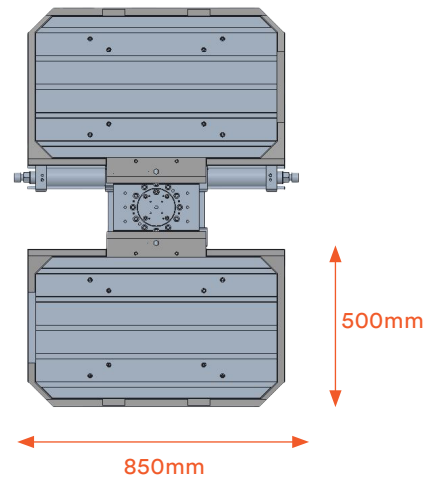
SPECIFICATIONS

DIAGRAMS

APPLICATION  
& SOLUTIONS

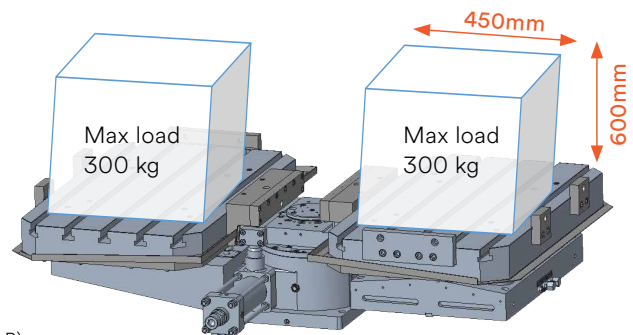
### HIGHLIGHTS

- J6 R has large table with rotary pallet changer to achieve higher productivity and to reduce non-cutting time
- Enhanced chip removal system with air blast blower.
- Pallet load capacity 600kg (2 x 300kg)
- The hydraulic-driven APC rotates upto 180° with high-reliability and delivers stable performance which also reduces cycle time and increase productivity
- The increased pallet size has more space for operator convenience to load/unload job
- Max.workpiece size: 600 x 450 mm



Description	Unit	J6 R
Pallet Change	Type	Rotary
No. of Pallets	Nos	2
Pallet size	mm	850 x 500
Pallet loading capacity	kg	600 (2 x 300)
Lift-up mechanism	Type	Hook type (U type)
Rotation method	Type	Hydraulic motor
Rotation angle	Deg	180°

Note: Rotary pallet changer available in other models of J Series (J1 R, J2 R & J5 R)



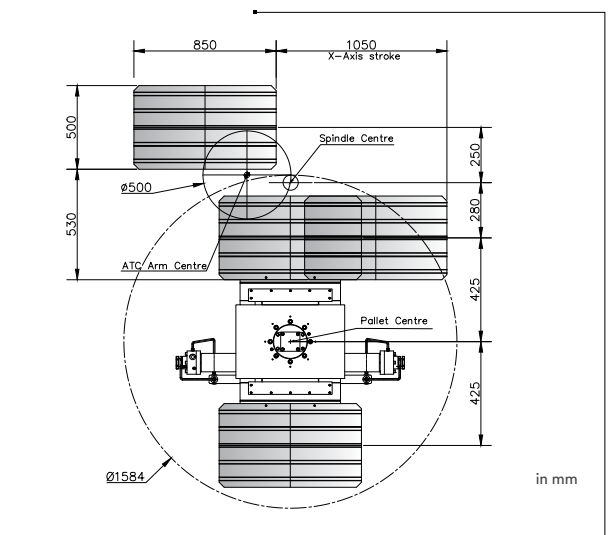
## SPECIFICATIONS

DESCRIPTION	UNIT	J6 R
<b>TRAVEL</b>		
X Axis	mm	1000
Y Axis	mm	600
Z Axis	mm	600
Distance between Spindle nose & Table top	mm	100-600
<b>AUTOMATIC PALLET CHANGER</b>		
Pallet Size	mm	850×500
Pallet Loading Capacity	kg	600(2×300)
No. of T-slots	Nos.	5
Pallet Indexing time	Sec	18.5
T-slot Size x pitch	mm	18×100
<b>SPINDLE</b>		
Spindle Speed	rpm	8000
Spindle Bore Taper	Type	BBT 40 (BT40)
Spindle Motor Power (Cont. / S2/S3)	kW	11 / 15 / 18.5
Max. Spindle Torque	Nm	52.5 / 71.8 / 95.5
<b>FEED SYSTEM</b>		
Rapid Traverse rate (X/Y/Z) - Axis	m/min	36/36/36
Cutting Feed rate	m/min	10
Ball screw Size X,Y & Z Axes (Dia x Pitch)	mm	Ø40 X 12
<b>AUTOMATIC TOOL CHANGER</b>		
No. of Tools	Nos	24
Tool Shank Configuration	Type	BT 40
Max. Tool dia with adjacent tool	mm	Ø80
Max. Tool dia without adjacent tool	mm	Ø150
Max. Tool length	mm	300
Max. Tool weight	kg	8
Tool change time (tool to tool)	Sec	1.9
Tool change time (chip to chip)	Sec	5.3
<b>MACHINE SIZE</b>		
Length	mm	2355
Width x Height	mm	3990×3090
Weight	kg	5600
<b>ACCURACY</b>		
Positioning Accuracy (X, Y & Z) - Axis	mm	0.01
Repeatability	mm	±0.003
<b>CNC SYSTEM</b>		
Controller	Type	Fanuc / Mitsubishi / Siemens
<b>POWER SUPPLY</b>		
Power Requirement	kVA	24

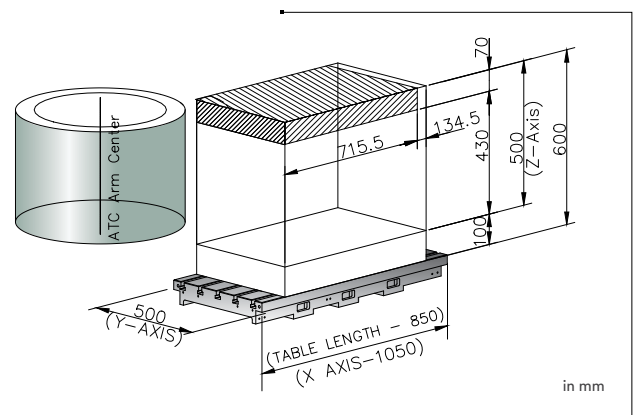
Note: Specifications are subject to change without prior notice & may vary depending upon optional accessories

- Robust FG 300 cast iron structure
- Wider Column base ensures heavy duty machining
- Rotary type Automatic pallet changer
- Precision Linear Motion Guideways on X Y & Z axes
- 24 tool arm type ATC
- Ergonomically designed for easy loading / unloading operations

## MOVING RANGE



## INTERFERENCE DIAGRAM



## J7 & J8 - VERTICAL MACHINING CENTER WITH BT50 SPINDLE

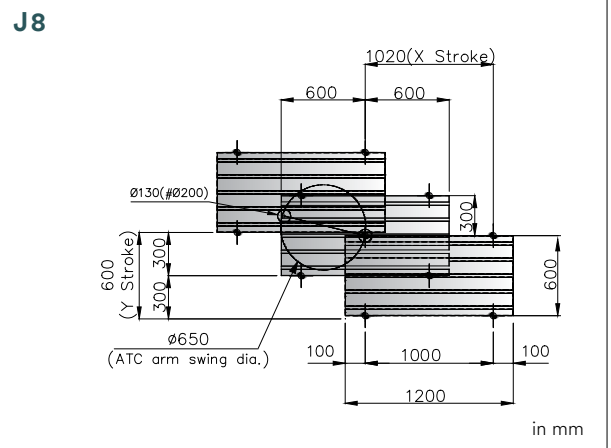
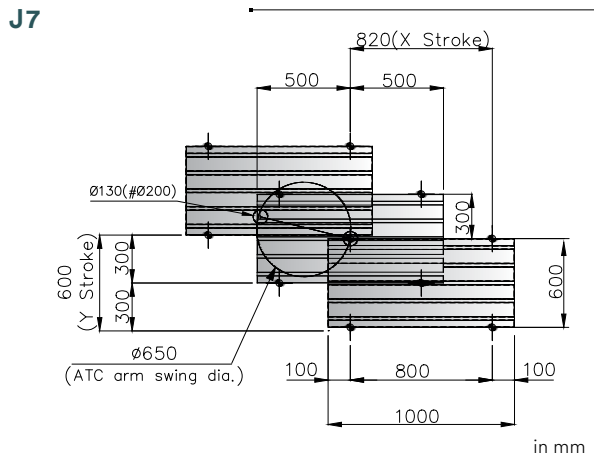
- J7 & J8 is a powerful performance machine with high torque and heavy duty BT-50 spindle which is capable of performing in various applications according to the user requirements.
- To achieve high accuracy the machine is built-up with FG 300 cast iron which reduce vibrations.
- The machine is designed in favour of user convenience for easy loading/unloading.

### HEAVY DUTY SPINDLE

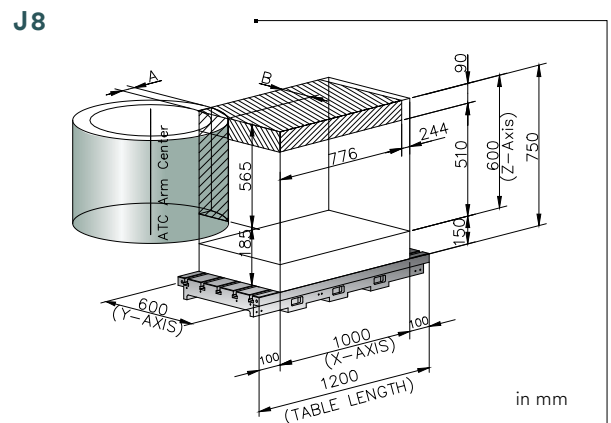
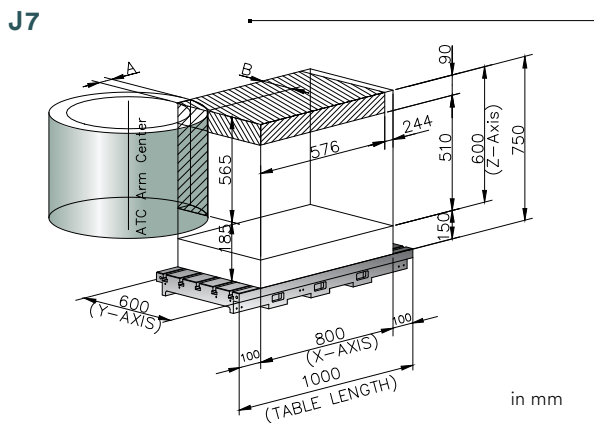
J7 & J8 is equipped with high-performance BT 50 taper which is direct driven spindle, Coupled with direct motor to enhance accuracy and heavy cutting at higher speed than the standard spindle.



### MOVING RANGE



### INTERFERENCE DIAGRAM



## SPECIFICATIONS

DESCRIPTION	UNIT	J7	J8
TRAVEL			
X Axis	mm	800	1000
Y Axis	mm	600	
Z Axis	mm	600	
Distance between Spindle nose & Table top	mm	150-750	
TABLE			
Table Size	mm	1000×600	1200×600
Table Loading Capacity	kg	800	
No. of T-slots	Nos.	5	
T-slot Size x pitch	mm	18×100	
SPINDLE			
Spindle Speed	rpm	6000	
Spindle Bore Taper	Type	BT50	
Spindle Motor Power (Cont. / S2)	kW	15 /18.5	
Max. Spindle Torque	Nm	71.6 /95.5	
FEED SYSTEM			
Rapid Traverse rate (X/Y/Z) - Axis	m/min	36/36/24	
Cutting Feed rate	m/min	10	
Guideways on all Axes	Type	Roller LM Guideways	
Ballscrew Size X,Y & Z Axes (Dia x Pitch)	mm	Ø40 X 12	
AUTOMATIC TOOL CHANGER			
No. of Tools	Nos	24	
Tool Shank Configuration	Type	BT 50	
Max. Tool dia with adjacent tool	mm	Ø130	
Max. Tool dia without adjacent tool	mm	Ø200	
Max. Tool length	mm	400	
Max. Tool weight	kg	20	
Tool change time (tool to tool)	Sec	4.4	
Tool change time (chip to chip)	Sec	6.5	
MACHINE SIZE			
Width	mm	2580	
Depth x Height	mm	3110×2870	
Weight	kg	5000	5500
Floor space required	m²	8	
ACCURACY			
Positioning Accuracy (X, Y & Z) - Axis	mm	0.01	
Repeatability	mm	±0.003	
CNC SYSTEM			
Controller	Type	Fanuc / Mitsubishi / Siemens	
POWER SUPPLY			
Power Requirement	kVA	35	

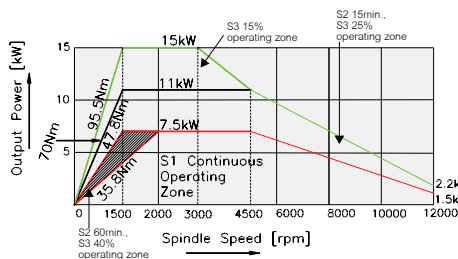
Note: Specifications are subject to change without prior notice & may vary depending upon optional accessories

## SPINDLE SPEED POWER DIAGRAM - DIRECT COUPLED SPINDLE

### FANUC

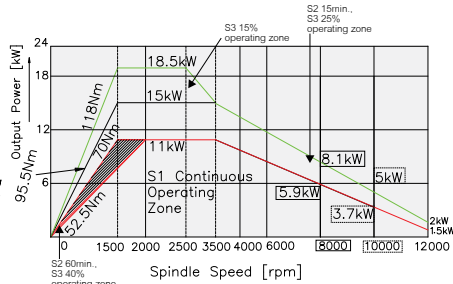
#### J series

For 7.5/11/15 kW



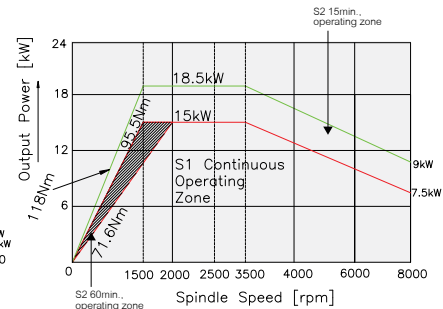
#### J series

For 11/15/18.5 kW



#### J series, J7, J8

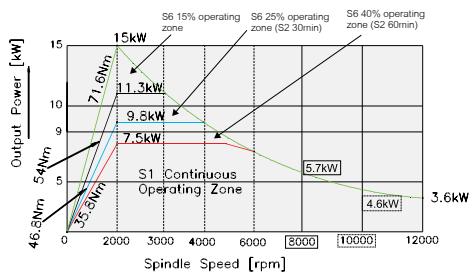
For 15/18.5 kW



### SIEMENS

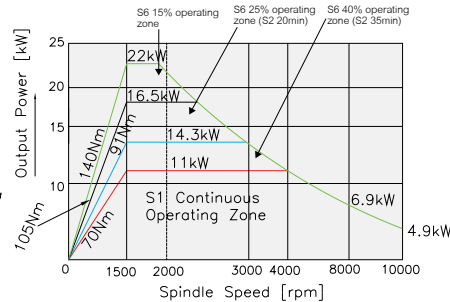
#### J series

For 7.5/11 kW



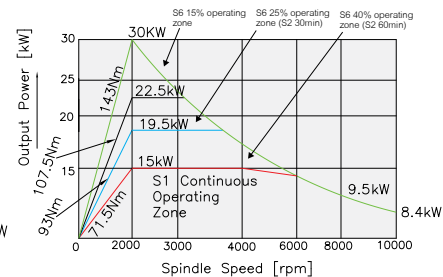
#### J series

For 11/15 kW



#### J series

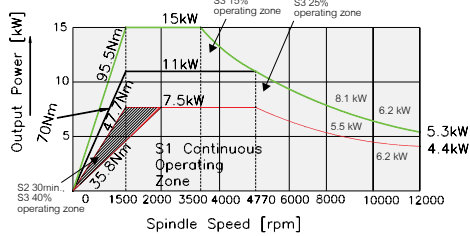
For 15/18.5 kW



### MITSUBISHI

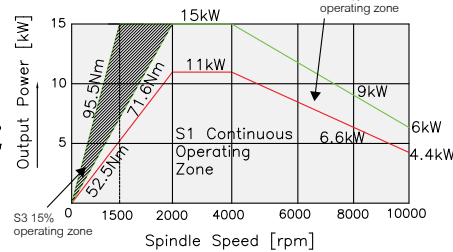
#### J series

For 7.5/11 kW



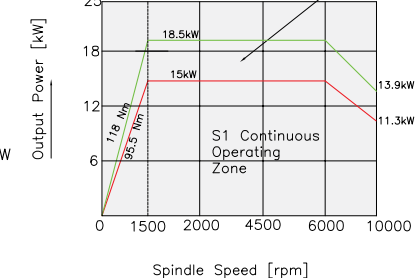
#### J series, J6R

For 11/15 kW



#### J series

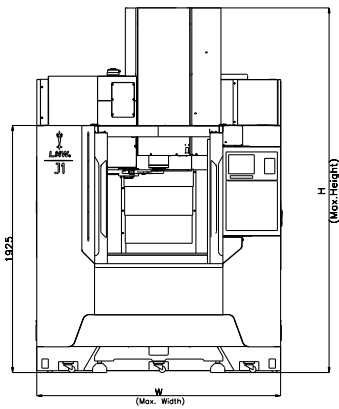
For 15/18.5 kW



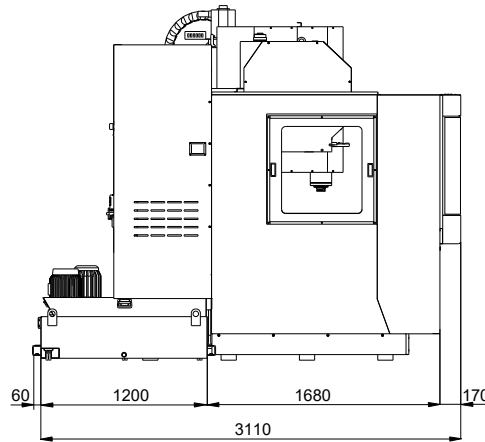


## INSTALLATION DIAGRAM

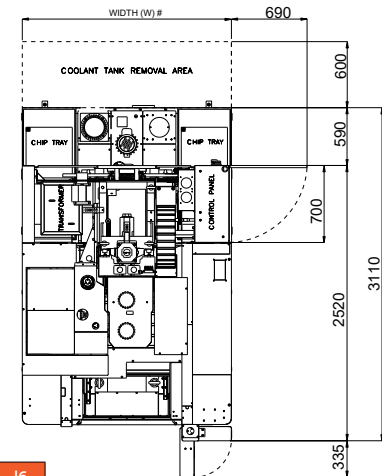
## FRONT VIEW



## SIDE VIEW



## TOP VIEW



J Series		J1	J2	J3	J4	J5	J6
Width (W)		1900	2200	2535	1900	2200	2535
	Std	2845			2945		
	100mm HC	2945			3045		
	200mm HC	3045			3145		

Note: HC = Height Column

## MACHINING SOLUTIONS

## AUTOMOBILE 2 WHEELER



Connecting Rod



Brake Disc



Axle Stub



Greeve Piston



Intermediate Shaft



CAM Shaft

## 4 WHEELER



Differential Case



Flywheel



Axle arm



Planet Carrier



Brake Drum



Impeller

## DIE MOLD



Bottle Mold



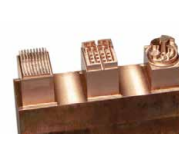
Top Finisher



Tetron Hose



Shoe mold



Copper Electrode



Forging Die

## PUMP &amp; VALVE



Valve

Compressor  
Valve PlateWater Pump  
Housing

Valve Body



Collar



Mounting Flange

J SERIES

BASIC  
INFORMATION

SPECIFICATIONS

DIAGRAMS

APPLICATION  
& SOLUTIONS

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