



High Speed Double Column Machining Center



# High Speed and High Accuracy Machining of Mold Industry & Aluminum Structure

SE high speed machining center raises double in productivity by excellent mechanism and structural performance.

Extraordinary performance particularly meets high speed and high accuracy machining of mold, and mass removal machining of aluminum alloy.

The performance of High Speed Machining (HSM) is created by precise mechanism and multiple spindle combination.

- 0.5G Axial Thrust.
- Spindle Speed Reaches 28,000 rpm.
- 20 m/min Feedrate.
- Precise Contour Accuracy.
- Delicate Surface Roughness.
- Positioning Accuracy P 0.007mm.
- Repeatability Ps 0.003mm.
- Aluminum Alloy Chips Removal Rate 7,000 cc/min.

# High Speed Machining



## Structure of Machine Head

- Box shape, symmetrical, and thermal friendly structure enables outstanding rigidity and precise accuracy.
- Anti-bending and deformation-resistant characteristic supports whole Z-axis travel and provides best straightness.



# SE Specification | SE-xx12 Series

Model			Unit	SE-1612	SE-2112	SE-2612
TRAVEL						
X axis			mm	1,600	2,100	2,600
Y axis			mm	1,200		
Z axis			mm	800 / 1,000 ( columns + 200 )( Opt. )		
Distance from spindle nose to table	Direct-Driven( # 40 )	Z axis=800	mm	210~1,010		
		Z axis=1,000	mm	210 / 1,210 ( columns + 200 )		
Spindle center to column			mm	450		
Width between columns			mm	1,250		
TABLE						
Dimension			mm	1,800 x 1,000	2,000 x 1,000	2,800 x 1,000
T-slot ( Dimension x Number x Pitch)-Y axis direction			mm	22 x 7 x 250	22 x 9 x 250	22 x 11 x 250
Max. table load			kg	8,000	10,000	12,000
SPINDLE						
Spindle motor (continuous/30 minute rated)			kW	15 / 18.5		
Spindle speed			rpm	1,5000		
Spindle taper			-	BBT-40		
Spindle output torque (Cont. /S6-40%)			Nm	L: 102 / 126 H: 29 / 35		
FEED						
Cutting feedrate			mm/min	1~24,000		
Rapid traverse			m/min	XYZ: 24 / 30 ( Opt. )		
X,Y,Z power capacity (FANUC)			kW	X:4.5, Y:4.5, Z:4.5x2		
ACCURACY						
Repeatability	Refer to JIS B6333	mm	± 0.004 / Full travel			
	Refer to VDI 3441	mm	P0.007			
Positioning accuracy	Refer to JIS B6333	mm	± 0.001			
	Refer to VDI 3441	mm	Ps0.003			
ATC						
ATC capacity	Vertical	pcs	24 / 20(Opt.) / 32(Opt.) / 40(Opt.)			
Max. tool weight*1			kg	HSK-A63 / BBT-40: 8 kg / HSK-A100 / BBT-50: 15kg		
Max. tool length			mm	HSK-A63 / BBT-40: 300 / HSK-A100 / BBT-50: 300		
Max. tool size (Full/ next pockets empty)			mm	HSK-A63 / BBT-40: Φ 75 ( Φ 130 ) / HSK-A100 / BBT-50: Φ 125 ( Φ 250 )		
OTHERS						
Electric power consumption			kVA	55		
Pneumatic input pressure			kg/cm <sup>2</sup>	6		
Air flow rate			L/Min	900		
Machine net weight			kg	15,500	17,500	19,500
Machine gross weight			kg	18,500	20,500	23,500
Max. floor space (LxWxH)			m	7.4 x 6.3 x 4.4	8.2 x 6.3 x 4.5	9.6 x 6.3 x 4.5

※ All specifications and designs are subject to change without notice.

\* For details, please refer to Machine Specification.

\* The manufacture reserves the right to modify the design, specifications mechanism, etc.



● 24 T Tool Magazine (Std.)



● 32 / 40 T tool magazine (Opt.)



● Modularized cart for oil cooling device and hydraulic unit(Std.)



● Wash gun and pneumatic interface (Std.)

## Standard Accessory

- 1 Fanuc 0i MF controller
- 2 15,000 rpm direct driven spindle (BBT-40)
- 3 Z travel 800 mm
- 4 Spindle cooling system
- 5 24 Tools magazine with arm type ATC
- 6 Centralized auto lubrication system
- 7 Independent lubrication oil collector
- 8 Air blast through spindle
- 9 Wash gun and pneumatic interface
- 10 Cutting fluid cooling system
- 11 Enclosed sheet metal guard with roof
- 12 Screw type chip conveyor on table sides
- 13 Caterpillar type chip conveyor
- 14 Heat exchanger for electrical cabinet
- 15 Swiveling arm type operation panel
- 16 Working lamp
- 17 Operation cycle finish and alarm light
- 18 Movable manual pulse generator
- 19 RJ45 interface
- 20 Footswitch for tool clamping
- 21 XYZ-axis Linear Scales(Fagor)
- 22 Auto power off function
- 23 Spindle cutting load software protection
- 24 XYZ-axis travel hard limits protection
- 25 Foundation pads and bolts kits
- 26 Adjustment tool and tool kits
- 27 Z-axis retract function at power failure
- 28 Thermal compensation System
- 29 Technical manuals  
(operation, maintenance manual and circuit diagram)

## Optional Accessory & Function

- 1 FANUC 31 iB; HEIDENHAIN TNC 620/640 Controllers
- 2 Built-in spindle  
20,000/ 2,4000/ 2,8000 rpm(HSK-A63);  
10,000/12,000 rpm(50#, HSK-A100)
- 3 Built-in spindle only for Heidenhain controller:  
15,000 rpm (50#, HSK-A100)
- 4 Built-in spindle 28,000 rpm (HSK-A63) for Heidenhain controller
- 5 Direct driven spindle 10,000/12,000 rpm (50#, HSK-A100)
- 6 Rapid traverse (X/Y/Z) 30 m/min
- 7 Z axis travel 1,000 mm
- 8 Column higher 200 mm
- 9 Spindle ring cutting coolant device (Built-in spindle excluded)
- 10 Coolant through spindle system 20/70 bar
- 11 Reserved interface for coolant through spindle system
- 12 Oil skimmer
- 13 Oil mist cooling device
- 14 Oil mist recycling device
- 15 20T tools magazine carousel type;  
32T/40T tool magazine arm type ATC
- 16 Enclosed sheet metal guard (without roof)
- 17 Worktable fluid flushing function
- 18 Helically bladed screw conveyor on table sides
- 19 Chip cart
- 20 Air conditioner for electrical cabinet
- 21 Transformer
- 22 Reserved interface for 4th axis
- 23 Auto tool length measurement
- 24 Auto coordinate measurement
- 25 Spindle load hardware protection
- 26 XYZ-axis Linear Scales (HEIDENHAIN)
- 27 CE Regulation



# SE Specification | SE-xx18 Series

Model			Unit	SE-1618	SE-2118	SE-2618	SE-3118
TRAVEL							
X axis			mm	1,600	2,100	2,600	3,100
Y axis			mm	1,800	1,800	1,800	1,800
Z axis			mm	800 / 1,000 ( columns + 200 )( Opt. )			
Distance from spindle nose to table	Direct-Driven( # 40 )	Z axis=800	mm	210~1,010			
		Z axis=1,000	mm	210 / 1,210 ( columns + 200 )			
Spindle center to column			mm	450			
Width between columns			mm	1,850			
TABLE							
Dimension			mm	1,800 x 1,600	2,300 x 1,600	2,800 x 1,600	3,300 x 1,600
T-slot ( Dimension x Number x Pitch)-Y axis direction			mm	22 x 7 x 250	22 x 9 x 250	22 x 11 x 250	22 x 13 x 250
Max. table load			kg	8,000	10,000	12,000	14,000
SPINDLE							
Spindle motor (continuous/30 minute rated)			kW	15 / 18.5			
Spindle speed			rpm	1,5000			
Spindle taper			-	BBT-40			
Spindle output torque (Cont. /S6-40%)			Nm	L: 102 / 126 H: 29 / 35			
FEED							
Cutting feedrate			mm/min	1~24,000			
Rapid traverse			m/min	XYZ: 24 / 30 ( Opt. )			
X,Y,Z power capacity (FANUC)			kW	X:4.5, Y:4.5, Z:4.5x2			
ACCURACY							
Repeatability	Refer to JIS B6333	mm	± 0.004 / Full travel				
	Refer to VDI 3441	mm	P0.007				
Positioning accuracy	Refer to JIS B6333	mm	± 0.001				
	Refer to VDI 3441	mm	Ps0.003				
ATC							
ATC capacity	Vertical	pcs	24 / 20(Opt.) / 32(Opt.) / 40(Opt.)				
Max. tool weight*1			kg	HSK-A63 / BBT-40: 8 kg / HSK-A100 / BBT-50: 15kg			
Max. tool length			mm	HSK-A63 / BBT-40: 300 / HSK-A100 / BBT-50: 300			
Max. tool size (Full/ next pockets empty)			mm	HSK-A63 / BBT-40: Φ 75 ( Φ 130 ) / HSK-A100 / BBT-50: Φ 125 ( Φ 250 )			
OTHERS							
Electric power consumption			kVA	55			
Pneumatic input pressure			kg/cm <sup>2</sup>	6			
Air flow rate			L/Min	900			
Machine net weight			kg	17,500	19,500	23,500	27,500
Machine gross weight			kg	20,500	22,500	26,500	31,000
Max. floor space (LxWxH)			m	8.0 x 7.2 x 4.5	9.0 x 7.2 x 4.5	10.0 x 7.2 x 4.5	11.0 x 7.2 x 4.5

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