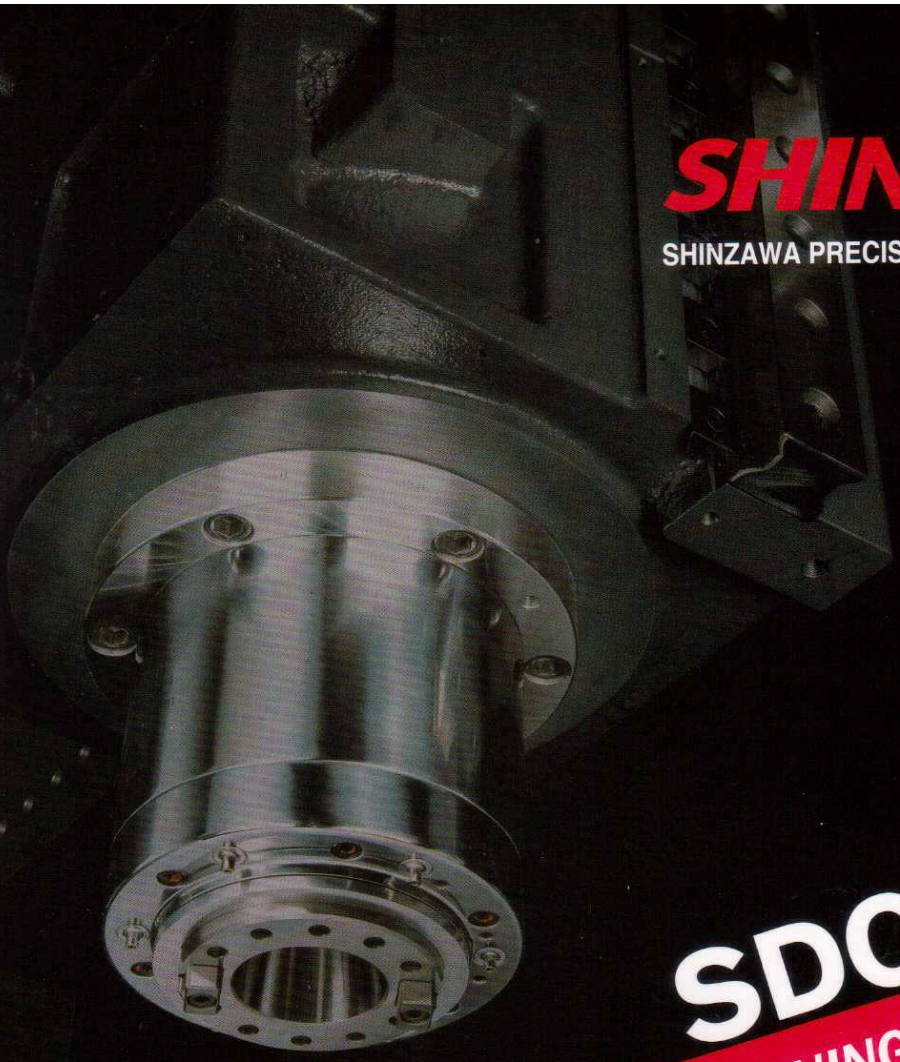
SHINZAWA

SHINZAWA PRECISION MACHINERY CO., LTD.



SDC series

HIGH SPEED DOUBLE COLUMN MACHINING CENTER

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A NEW GENERATION OF HIGH SPEED DOUBLE COLUMN MACHINING CENTER

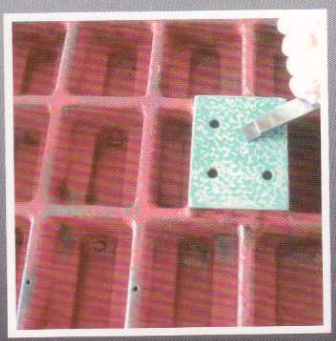
This machine features optimal cost-to-performance ratio. All models in this series have a modular design and an enhanced machine structure, exhibiting high speed, high precision cutting performance and increased machine stability. These machines can fully satisfy the requirements for precise complex surface machining and mold machining in various industries. The SDC series could be widly applied to the high-tech industries such as: aerospace, automotive and motorcycle, energy, electronics and transportation.

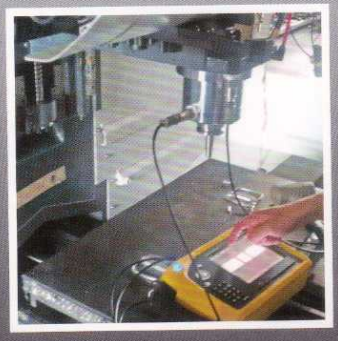
HIGHLY RIGID MACHINE STRUCTURE

- The massive base is a box type structure in combination with internal rib reinforcement. Employs 55mm high rigidity roller type linear ways and one grade increased Ø63mm ballscrews. These provide a dependable foundation to ensure high accuracy in high speed machining.
- The oversized columns are of honeycomb structure with higher stability than others. This also provides better geometric accuracy maintaining capacity compared to conventional structures. The columns and the cross beam are one-piece fabricated. The contact surfaces of all parts have been scraped for higher accuracy of the machine, which in turn provides the best dynamic and static rigidity.
- The joint parts among the saddle, spindle head and cross beam are of stepped structure (top/side) design, which helps to boost stability when the Y axis moves at a high speed, reducing vibration and tilting forward to enhance the high speed cutting rigidity of the spindle. This results in higher machining accuracy.
- All machine parts are subjected to analyze by using the Finite Element Method (FEM), which provides a light configuration after assembling, while ensuring the optimal rigidity of the machine.
- The table is a box-type structure with rib reinforcement to increase loading stability and machining accuracy.
- The series of machine is manufactured from high durability cast iron (FC-300), and they are assembled after high precision grinding and scraping.

BUILT-IN TYPE SPINDLE WITH HIGH POWER

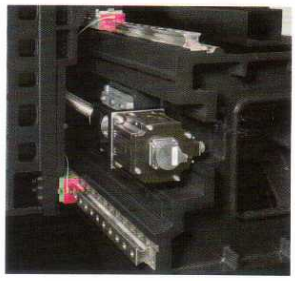
- Standardly equipped 10,000 rpm BT50 direct-drive spindle.
- The high speed, high rigidity spindle is suitable for high speed and high precision machining needs on molds.
- The spindle is supported by high precising, large ceramic bearings, providing outstanding axial and radial cutting rigidity (direct-drive type).
- The powerful built-in type spindle provides power output of 15/18.5KW and maximum torque of 118Nm.





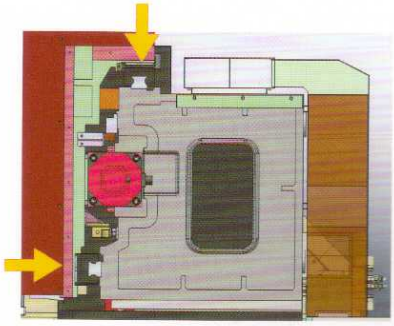
THREE AXES BALLSCREWS DIRECTLY COUPLED TO MOTORS

- Employs a powerful axial servomotor to directly drive the highly rigid ballscrew with double nuts, pretension treated by thermal growth in advance to upgrade positioning accuracy.
- Three axes transmission and end supports on all machine models are completely scraped to achieve the actual geometric surfaces.
- Specially designed forced positioning restriction on axis.
- Rapid traverse rates on three axes (X/Y/Z): 24/24/24 m/min



STEPPED STRUCTURE ON Y-AXIS WITH TWO LINEAR WAYS

The saddle, saddle slideways and the cross beam are compactly constructed with 90° design, allowing them to resist axial and radial tensile force, shear force, and various pressure fluctuations.



PRACTICAL, DEPENDABLE CONTROL FUNCTION

- The improved operation panel meets CE regulations with elegant outlook.
- The seat type operation box makes operation free.

ROLLER TYPE LINEAR WAYS ON THREE AXES

All three are mounted with roller type linear ways. The X-axis (table) uses #55 linear ways with 6 blocks. The Y/Z axes use #55 linear ways. The Y-axis linear ways are heavy duty type with rigidity increased by 70%, making the machine suitable for high speed, high rigidity machining for the long term.

ITEM	UNIT	SDC-1612	SDC-2212	SDC-3212
TRAVEL				
X-axis travel	mm	1600	2200	3200
Y-axis travel	mm	1200		
Z-axis travel	mm	800		
Spindle nose to table surface	mm	170~970 (BT-40) / 150~950 (BT-50)		
Distance between columns	mm	1300		
WORK TABLE				
Table size	mm	1600 x 1100	2200 x 1100	3100 x 1100
T-slot (W x No. x P)	mm	22 x 7 x 160		
Max loading (average)	kg	3000	3500	4000
SPINDLE				
Max. spindle speed	RPM	10,000		
Drive type		Direct drive (Built-in type)		
Motor power output	kW	15 / 18.5		
Spindle taper		BT40 / BT50		
FEEDRATE				
Rapid traverse speed on X / Y / Z axes	M/min	24 / 24 / 24		
Max. cutting feedrate	M/min	10		
Servo motor of X / Y / Z	kW	4.5 / 4.5 / 4.5 (Mitsubishi) 4.0 / 4.0 / 4.0 (Fanuc)		
AUTOMATIC TOOL CHANGER				
Tool capacity	pcs	32T		
ATC type		Arm type		
Max. tool diameter	mm	Ø70 (BT-40) / Ø120 (BT-50)		
Max. tool diameter (with adj. tool)	mm	Ø150 (BT-40) / Ø250(BT-50)		
Max. tool length	mm	350(BT-40) / 400(BT-50)		
Max. tool weight	kg	7(BT-40) / 16(BT-50)		
OTHER				
Total required power	KVA	40		
Air pressure required		5~7		
Machine dimensions (L x W x H)	mm	4830 x 3400 x 3990	5860 x 3400 x 3990	7860 x 3400 x 3990
Machine weight	kg	17000	19000	23000

* We reserve the right to modify the design and specifications without prior notice.

STANDARD EQUIPMENT

- Mitsubishi M80A controller
- Spindle motor 15/18.5KW
- 10,000 rpm direct-drive spindle
- 32 Tool ATC
- Absolute position feedback on X, Y, Z axes
- Rigid tapping
- Twin counter-balancing hydraulic cylinders
- Automatic lubrication system
- Spindle oil cooler
- Spindle air blast device
- MPG
- Work lamp
- Three-color warning lamp
- RS-232 interface
- Heat exchanger for electrical cabinet
- Air gun & flush gun
- Cooling system and coolant tank
- M30 auto power off
- Twin chip augers
- Link / chain type chip conveyor with chip cart
- Foundation bolts and blocks
- Tool box

OPTIONAL EQUIPMENT

- Mitsubishi M830 controller
- Fanuc 0i-MF controller
- Fanuc 31i-MB controller
- Siemens 840D controller
- Heidenhain TNC 640 controller
- Spindle taper BBT-50
- Spindle taper HSK-A63
- 12,000 rpm direct-drive spindle
- 8,000 rpm belt-drive spindle
- Built-in type spindle
- Column heighten up 100mm (standard Z-axis travel)
- 24 Tool ATC (disk type)
- 40 Tool ATC
- CTS 30 / 70 bar
- Air conditioner for electrical cabinet
- Transformer
- Intelligent voltage stabilizer
- Oil skimmer
- Heidenhain linear scale
- Automatic tool length measurement device (contact type / non-contact type)

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