

Technical Specification

		SX 4	SX 6	SX 8	SX 10
Capacity					
X-axis travel	mm	400	500	700	1000
Y-axis travel	mm	300	400	400	500
Z-axis travel	mm	300	400	400	500
Distance from Spindle Face to Table Top	mm	150-450	150-550	150-550	150-650
Automatic Pallet Changer					
Table size	mm	550 x 300	650 x 400	750 x 400	1100 x 500
Table Slot Dim.	mm	3x14x100	4x14x100	4x14x100	5x18x100
Max. Load on table	kg	125 x 2	300 x 2	300 x 2	500 x 2
Distance from floor to table top	mm	900	900	900	1000
Pallet change time	sec	4	5	6	9
Main Spindle					
Spindle Motor		Integral	Integral	Integral	Integral
Spindle Nose		HSK A 50	HSK A 50	HSK A 50	HSK A 63
Max Spindle Speed	rpm	12000	12000	12000	12000
0 to 12000 rpm	sec	1.1	1.1	1.1	1.1
Spindle Power (S6-40% / S1)	kW	13.5	13.5	13.5	13.5
Front Bearing Bore	mm	60	60	60	70
Feed					
Rapid traverse (X,Y,Z - Axes)	m/min	50	50	50	50
Cutting feed	m/min	20	20	20	20
Automatic Tool Changer					
No of tools		16	16	16	16
Max. Tool diameter	mm	80	80	80	90
Max. Tool Dia Meter (Adj. Pocket)	mm	100	100	100	120
Tool selection		Random	Random	Random	Random
Tool length max.	mm	250	250	250	300
Tool Wt. Max.	kg	3	3	3	8
Accuracy (As per VDI / DGQ 3441)					
Positioning Uncertainty (P)	mm	0.010	0.010	0.010	0.010
Repeatability (Ps medium)	mm	0.005	0.005	0.005	0.005
Weight (Approx)					
	kg	4400	5500	6000	7000
Dimensions (Approx)					
Length	mm	3000	3500	3500	4000
Width	mm	1200	1450	1650	2000
Height	mm	2500	2800	2800	2900

Note :- All above information is subject to change arising out of continuous product improvement. • The description 'standard accessories / feature' conforms to its list; not the photo of machine shown in the catalogue.

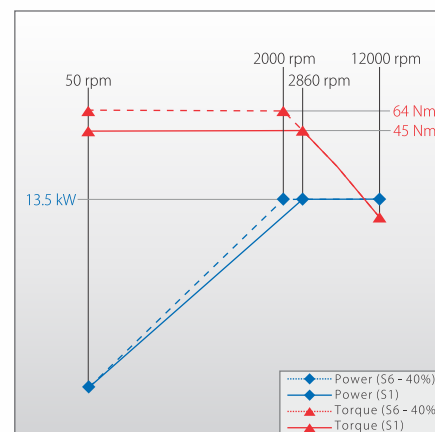
Standard Features :

- High Speed Electro Spindle
- Integral Work Piece Changer
- High Speed Servo Auto Tool Changer
- Linear Motion Roller Guide ways
- Auto & Manual Coolant System
- Centralized & Programmable Lubrication
- Laser Calibrated Axis for precise positioning accuracy
- Electrical Cabinet with Controlled Temperature
- Optimized Outer Guarding for compact footprint
- Work Light
- Controller SINUMERIK 828D Basic M

Possible Options :

- High Speed Electro Spindle of 15000 RPM
- Tool Changer with 24 and 40 Tool Option
- Coolant Through Spindle
- Tool & Job probing
- Rear Chip Conveyor
- Easy SMS System (Siemens)
- FANUC Oi MD Controller

Power-Torque Diagram



SX Series

High Speed Vertical Machining Center



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SX Series

High Speed Vertical Machining Center

Overview

Years of experience in High Speed Machining has helped JYOTI to develop a machine totally dedicated for Fast Milling suitable for small components. The SX series machines are with compact foot print equipped with integral work piece changer, a fast Auto Tool Changer and a high speed electro spindle. The moving mass of the axes being out of table area, a constant machining accuracy is achieved even at higher speeds. These column moving Fast Milling machines are ideally suitable for continuous production lines that require precision component output in mass.

Structure

The concept of Base and column structure with all the moving axes mass on the column helps very high dynamics while maintaining the machining accuracy. To maintain the rigidity at high dynamics all the axes are having Roller type linear motion guides. The base front which accommodates the integral Work Piece Changer is having enough slant side walls to guide the chip flow easily to the chip conveyor.



Integral Work Piece Changer

The unique feature of SX series is its Integral Work piece Changer for Fast change of work piece. This Work piece changer is hydraulically actuated one with hirth coupling mechanism for precise positioning and clamping. The changing of work piece could take place in 4 sec. for a model like SX 4, thus reducing the Job load / Unloading time to almost NIL. In order to incorporate extra Hydraulic job clamping systems without interference, this work piece changer has integral hydraulic connection points.

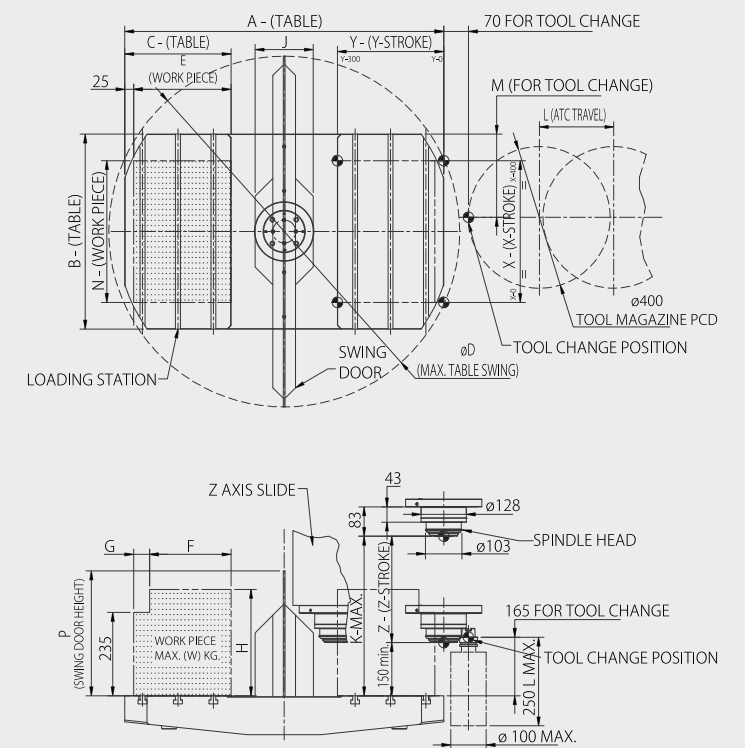
High Speed Tool Changer

SX series machines are equipped with very high speed Servo driven Disc type Tool Changer. Standard machines are provided with 16 station Tool Changers with extremely fast tool changing time of 1.5 second.

High Speed Electro Spindle

The HSK A50 Taper High Speed Electro spindle at a standard speed 12000 rpm is the heart of SX machines. The thermal stability of the spindle is maintained by using a special temperature controlled liquid chiller. These high speed spindles have an acceleration rate of 1.1 second to reach the maximum rpm specially designed to meet the requirement of small component machining with high precision and dynamism.

Machining Range Diagram for SX Series



All Dimension in mm

	A	B	C	D	E	F	G	H	J	K	L	M	N	P	W	X	Y	Z
SX4	900	550	300	∅990	275	230	45	300	165	450	220	235	400	350	125	400	300	300
SX6	1200	650	400	∅1250	375	325	50	450	180	550	260	325	500	500	300	500	400	400
SX8	1200	750	400	∅1250	375	325	50	450	180	550	260	375	700	500	300	700	400	400



Continuous Production Automation Solution



Compact Foot Print



Integral Work Piece Changer



High Speed Tool Changer



High Speed Electro Spindle