PX Series

Vertical Machining Centers

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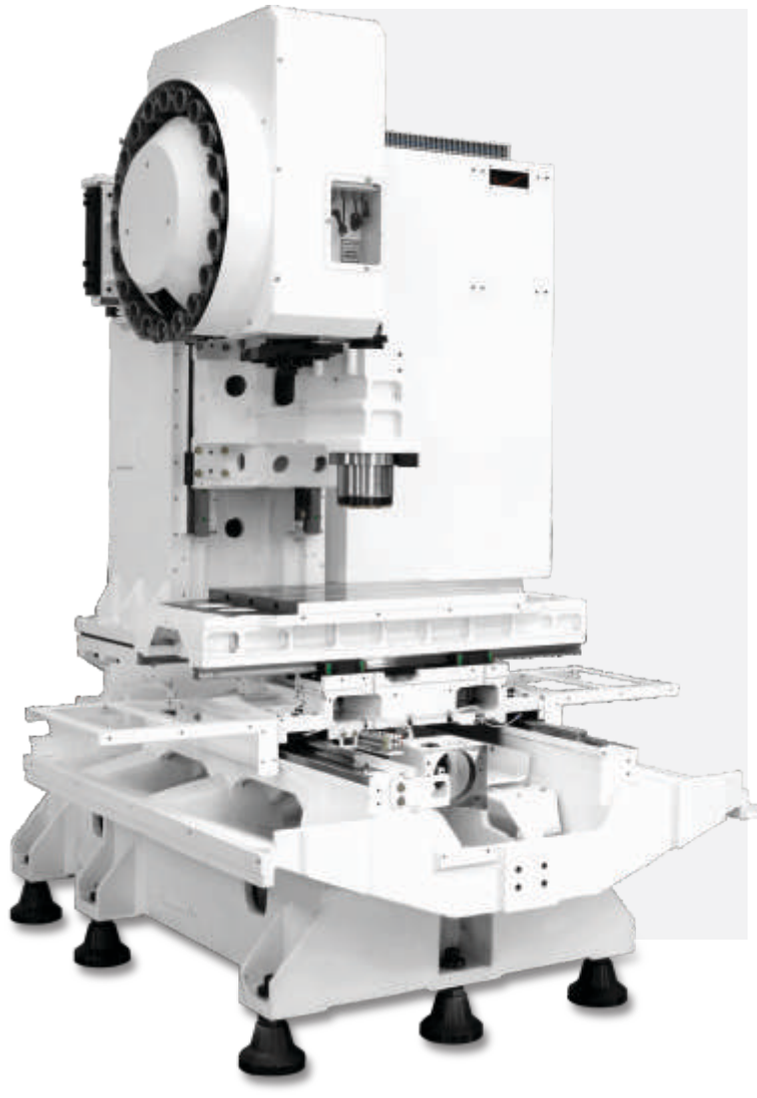
Vertical Machining Center

OVERVIEW

PX Series of vertical machining center have been developed with the aim to deliver ability to cope up with various arenas of demanding manufacturing industry. This machine has been designed to be a achieving better surface finishing, cycle time and process capabilities for various applications.

- Column on fixed base with ribbed stiff wall, a structure of C-frame design.
- Complete structure made out of graded cast iron and heat treated for consistent accuracy for long time and gives mechanical performance which maximizes structure rigidity.
- Broad rigid base with heavy cross ribbing dampens the effect of vibration.
- Entire structure has been designed and tested by stringent FEM analysis for optimum performance under practical working conditions.

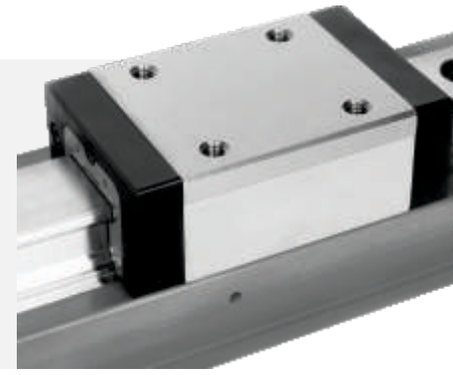


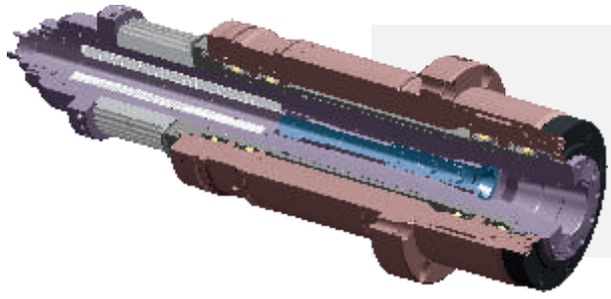
3 - POINT LEVELING

Structural design followed with the concept of 3PL provides it with higher base rigidity due to which twisting of bed is eliminated during actual working load conditions. Also this feature enables PX Series to be installed and relocated quickly and easily.

PRECISION LINEAR AXIS

Precision class L.M. Guideways on all the 3-Axis with exceptional static and dynamic stiffness for better rapid rates and accuracy. Preloaded ballscrews on each axis which is directly coupled with axis motor by integrated bracket. Complete linear system has been protected from dirt and dust by flexible telescopic covers. Automatic lubrication system available for maintenance to necessary areas of movement for better performance and long life of machine.



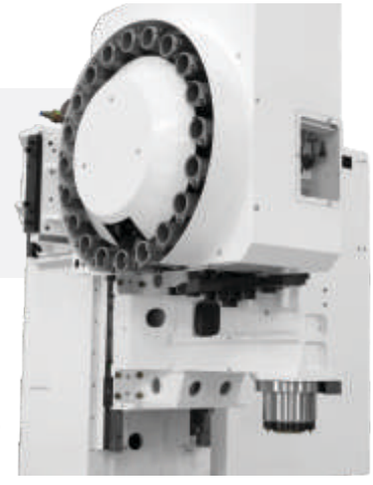


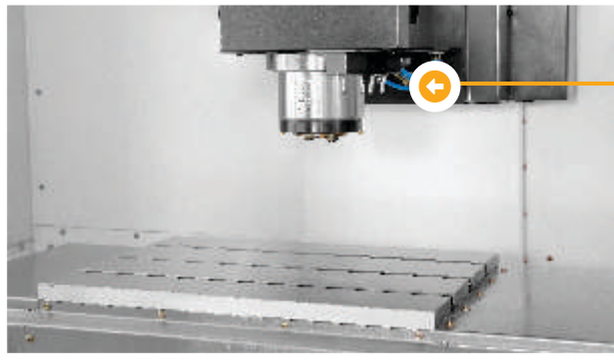
HIGH PERFORMANCE SPINDLE

The spindle of the machine is designed and manufactured in-house in JYOTI. For high stability during heavy cutting loads, Angular contact bearings are used with life lubrication. These spindles are manufactured in our dedicated clean room facility and then finally balanced and extensively tested for high performance.

FAST AUTO TOOL CHANGER

Entire PX Series of machines have side mounted Twin-arm type tool magazine ATC. Such a tool changer has better characteristic in terms of interference to working area with a fast tool change time.





NOZZLES FOR CUTTING TOOL COOLANT

The Coolant nozzles around the Spindle face facilitates the manual adjustment for proper positioning of the coolant on the job while machining.

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EROGONOMIC DESIGN

OPERATOR PANEL

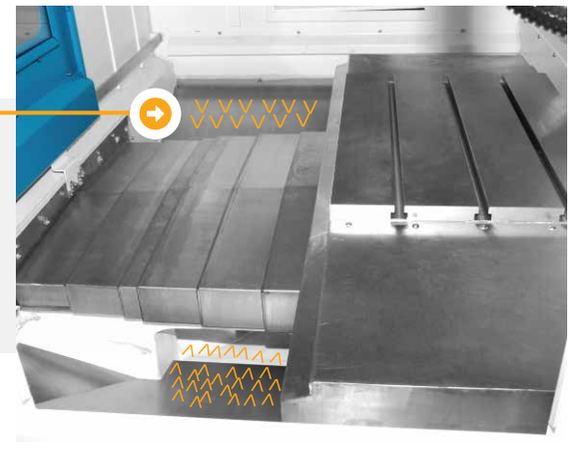
- Operator panel is mounted on the right side of machine with better ergonomics for operator friendliness.
- Complete safeguard around machine ensuring safety of machine, operator and environment.

IMPROVED MAINTENANCE

- Taking into consideration for better reach for necessary check points such as lubrication, pneumatics and other for maintenance all relative access points are arranged in better proximity for operator ease.

EASY CHIP REMOVAL

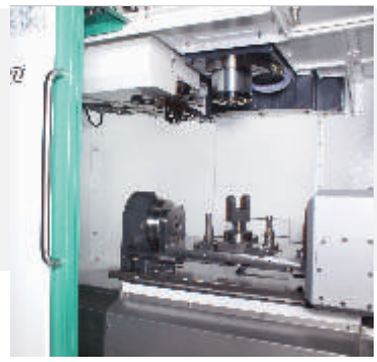
- Evacuation channel for chips from rear side of the machine with collector system for easy scrap removal without interfering the process of machining.
- Chip Conveyor option available for continuous machining hours having much metal removal. With help of this system machine downtime can be reduced drastically.

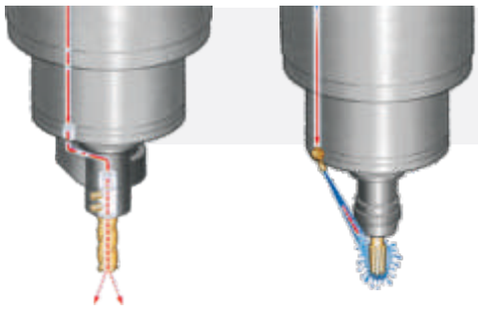


PRODUCTIVITY IMPROVEMENT OPTIONS

4th AXIS CAPABILITY (ROTARY TABLE)

For maximum production and contouring flexibility, usage of 4th-Axis rotary table and production system. These rotary tables can be programmed through the control system, that can be used to increase productivity by machining multiple sides of a workpiece in single setting.





OIL MIST SPRAY

Air / Oil Mist Spray available through spindle and also available by external nozzle for dry cutting applications.

COOLANT THROUGH SPINDLE (CTS)

This option provides high pressure filtered coolant directly to the cutting edge minimizing heat distortion, ensuring maximum productivity with today's high performance tooling. Highly recommended for jobs demanding deep hole drilling and tapping.

PROBES

A wide choice of spindle and surface-sensing probes as tool & job probes with infrared / radio / laser transmission technology are available for increased spindle utilization, work piece set up and work piece measurement

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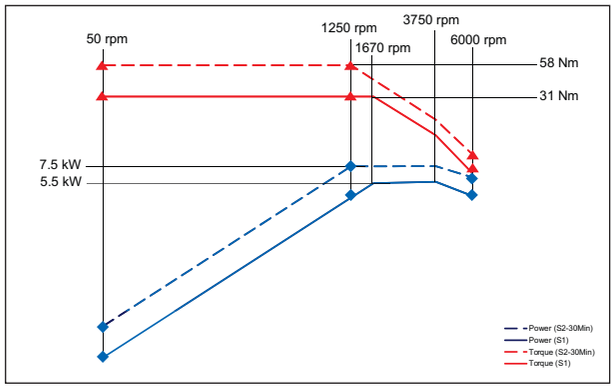
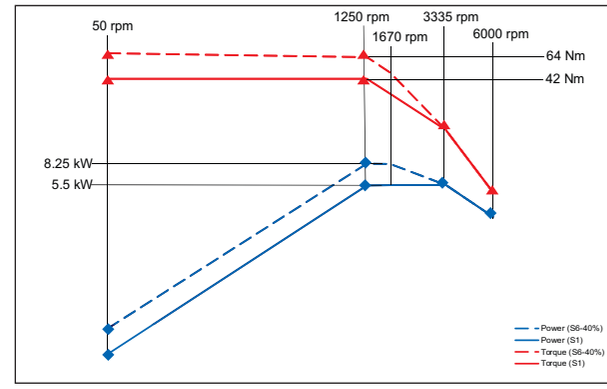
POWER-TORQUE DIAGRAM

7.5 / 5.5 kW, 6000 rpm (Fanuc)



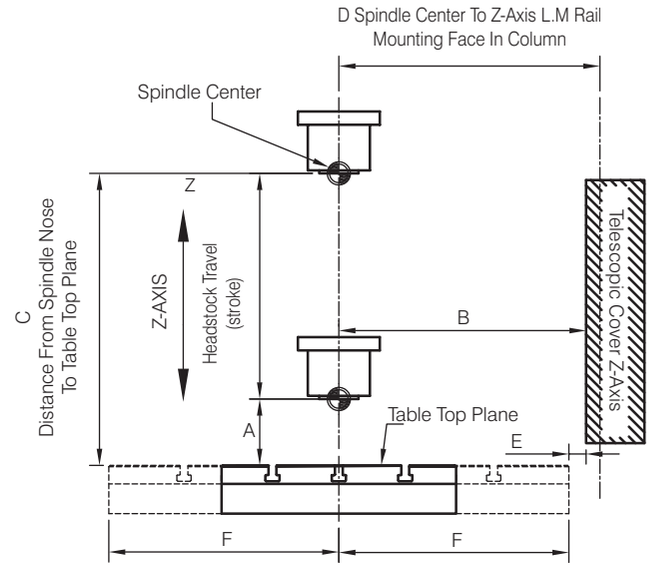
8.25 / 5.5 kW, 6000 rpm (Siemens)



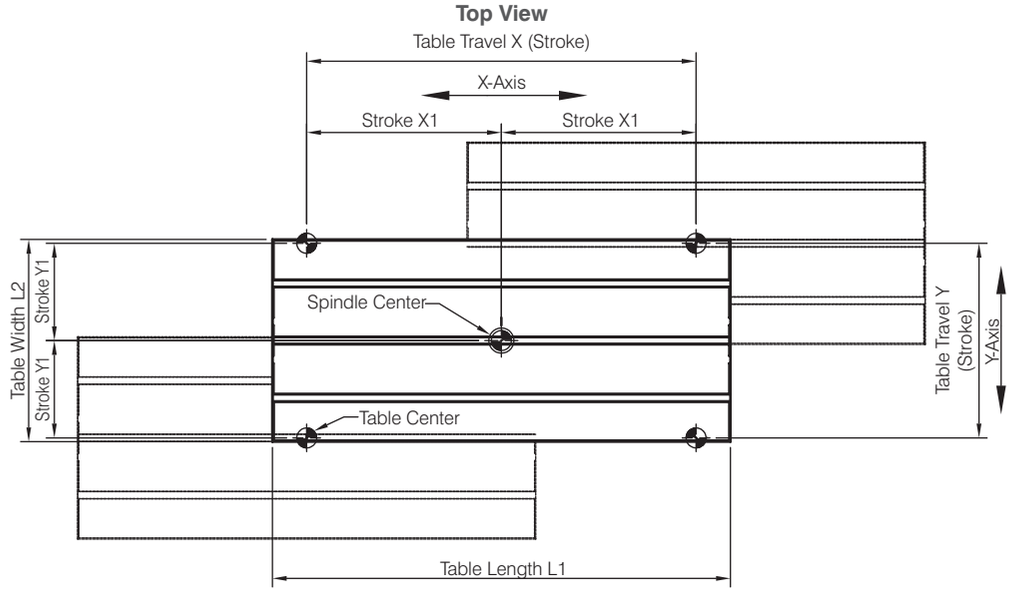
INTERFERENCE DIAGRAM

SIZES	PX 10	PX 20	PX 30	PX 40
A	100	100	100	100
B	533	533	533	533
C	610	610	610	610
D	583	583	583	583
E	148	048	148	048
F	385	485	385	485
X	510	510	760	760
Y	410	510	410	510
Z	510	510	510	510
X1	255	255	380	380
Y1	205	255	200	255
L1	660	660	915	915
L2	360	460	360	460

Right Hand Side View



Top View



TECHNICAL SPECIFICATION

Table		PX 10	PX 20	PX 30	PX 40
Table Size	mm	660 x 360	660 x 460	915 x 360	915 x 460
T-Slot Dimension	mm	3 x 14 x 125	3 x 14 x 125	3 x 14 x 125	3 x 14 x 125
Dist. From Floor to Table	mm	1020	1020	1020	1020
Max. Load on Table	Kgf	400	400	500	500
Capacity					
X-Axis Travel	mm	510	510	760	760
Y-Axis Travel	mm	410	510	410	510
Z-Axis Travel	mm	510	510	510	510
Dist. From Spindle Face to Table	mm	100-610	100-610	100-610	100-610
Feed					
Rapid Traverse (X, Y & Z Axis)	m/min	25	25	25	25
Cutting Feed	m/min	10	10	10	10
Main Spindle					
Spindle Motor Speed	rpm	6000	6000	6000	6000
Spindle Motor Power - Fanuc	kW	7.5 / 5.5	7.5 / 5.5	7.5 / 5.5	7.5 / 5.5
Spindle Motor Power - Siemens	kW	8.25 / 5.5	8.25 / 5.5	8.25 / 5.5	8.25 / 5.5
Front Bearing Bore	mm	70	70	70	70
Spindle Nose		BT-40	BT-40	BT-40	BT-40
Automatic Tool Changer					
No. of Tools		20	20	20	20
Max. Tool Dia. (All Pocket Full)	mm	80	80	80	80
Max. Tool Dia. (Adj. Empty)	mm	125	125	125	125
Max. Tool Length	mm	250	250	250	250
Max. Tool Weight	Kg	7	7	7	7
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
Other Data					
Machine Weight (Approx.)	Kg	3600	3650	3750	3800
Machine Dimension (Approx.) :					
Length	mm	2837	2837	2837	2837
Width	mm	2125	2125	2500	2500
Height	mm	2800	2800	2800	2800

STANDARD FEATURES

- The CNC System offered Fanuc 0i MF or SIEMENS 828D Basic M
- AC Servo Spindle Drive
- AC Servo Axis Drive
- L.M. Guideways
- Work Light
- Auto & Manual Coolant System
- Centralized & Programmable Lubrication
- Laser Calibrated Axis for High Precise Positioning Accuracy
- Electricals with Quality Devices & Panel A.C.

PRODUCTIVITY IMPROVING OPTIONS

- Chip Conveyor
- Auto Door
- 4th Axis Rotary Table
- Coolant Gun
- Flood Coolant System
- Extra Daylight Area (100 mm)
- SK Spindle Taper in lieu of BT Taper
- Coolant Through Spindle
- Tool Tip Air Nozzle (For Dry Cutting)
- Tool Probe & Job Probe
- Air/Oil Mist Spray
- Linear Glass Scale
- Oil Skimmer
- Machine Tower Light
- Visiport Window
- Fully Tooled up Solutions to Meet Customer Needs
- Manual Guide i (Fanuc)
- Easy SMS System (Siemens)

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Note: Specified information are subject to change arising out of continuous product improvement without notice. The description standard accessories/feature conforms to its list; not the photo of machine show in the catalogue. Other controller will have different configuration. Machine images are shown with option.

ISO 9001 : 2008