JYOTI

PX nvu Series

Vertical Machining Centers

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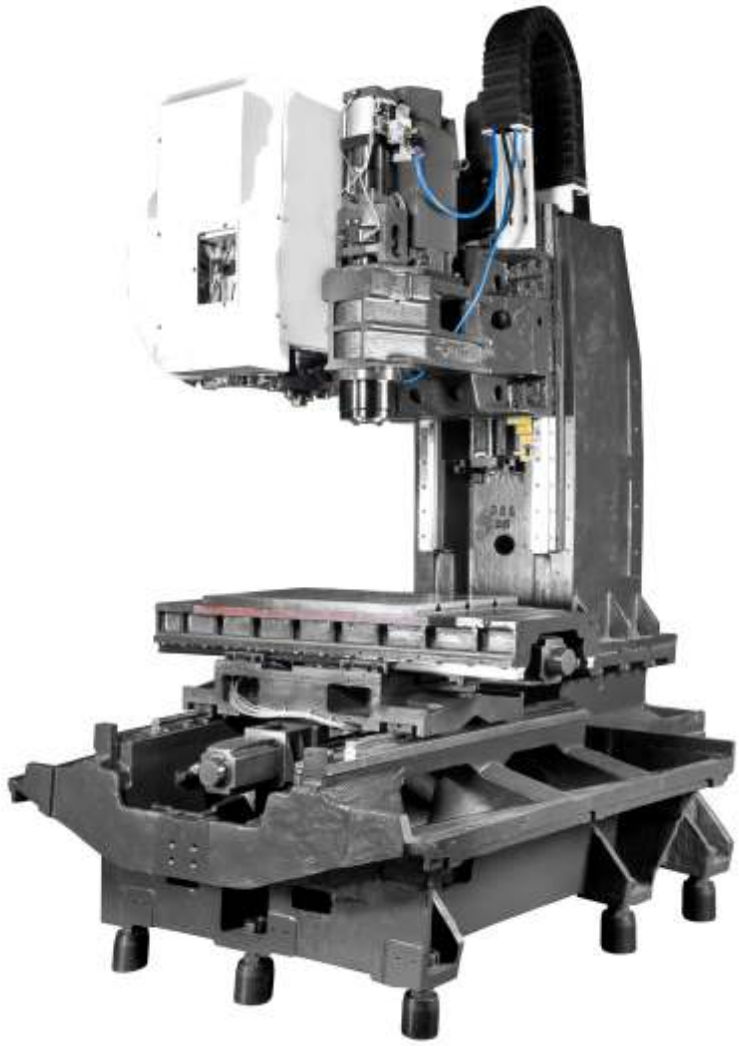
OVERVIEW

PX nvu 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 design for achieving better surface finishing, reduced cycle time and improved process capability for various applications.

- Column on fixed base with ribbed stiff wall, a structure of C-frame design.
- Complete structure is made out of heat treated graded cast iron which leads to retain accuracy for longer time, high mechanical performance and maximizes structural 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

Structure design with 3 point leveling concept provides higher base rigidity, this eliminates twisting of bed for longer working life. Also this feature enables to be installed and relocated quickly and easily.

FEM PROVEN STRUCTURE

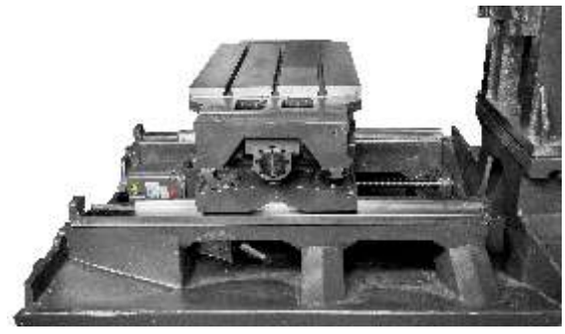
The machine offers high cutting rigidity and low vibration to match the requirement of heavy cutting load, such performance is assured due to advanced reinforced design structure assured with FEM analysis.

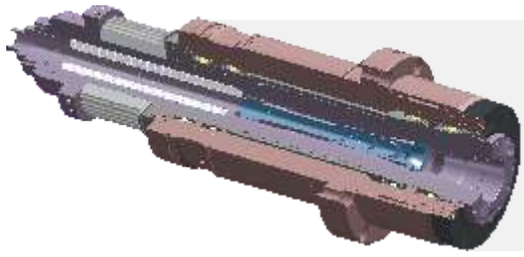
ROBUST BASE

Complete machine structure is made up of graded casting and heat treated. Broad rigid base with heavier cross ribs provides greater damping to avoid effect of vibration.

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 to maintain to necessary areas of movement for better performance and long life of machine.



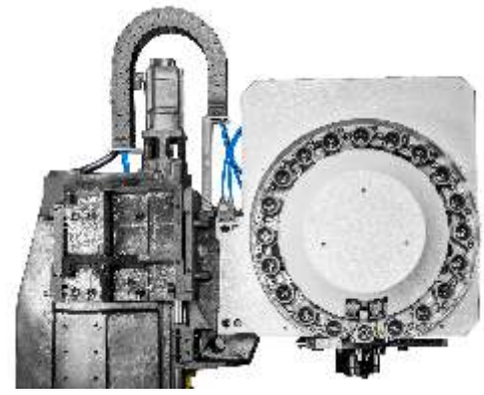


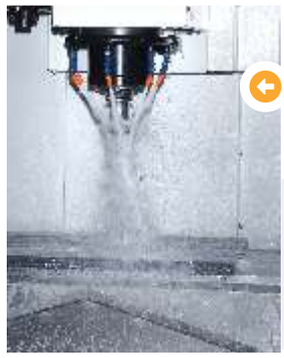
HIGH PERFORMANCE SPINDLE

The spindle of the machine is designed and manufactured in-house at JYOTI. Life time greased angular contact bearings are used for higher stability during heavy cutting load conditions. These spindles are manufactured in dedicated dust free, temperature controlled assembly shop where spindles are extensively tested for various performance criteria.

FAST AUTO TOOL CHANGER

PX Series machines are equipped with side mounted drum type with twin arm Automatic Tool Changer. Mounting location of ATC assures maximum working area without interference. Faster tool changing time with less maintenance is key feature of this design.





COOLANT NOZZLE FOR CUTTING TOOL

The Coolant Nozzle around periphery of spindle face facilitates the manual adjustment for proper positioning of the coolant on the job while machining.

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EROGONOMIC DESIGN

EASY ACCESSIBILITY

With wide door opening from top and front design, loading/unloading of heavy component made much easy ensuring operators safety. Also loading/unloading possible by crane from top of the machine

90° TILTING PANEL

A 90° tilting operating panel helps the operator to view the machining area while operating.

TABLE APPROACH

Easy approach to the table for component loading/unloading.

Complete safeguard around machine ensuring safety of machine, operator and environment.

IMPROVED MAINTENANCE

PX nvu series machine are designed with special care for easy approach and access for preventive maintenance check points for lubrication, pneumatics and proximities which makes it operator friendly.

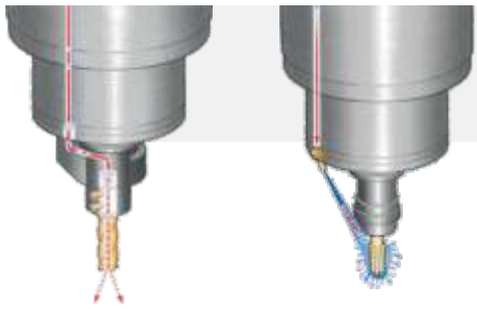
EFFICIENT CHIP FLOW

- 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 as in continuous machining activity where greater amount of metal removal.

PRODUCTIVITY IMPROVEMENT OPTIONS

4th AXIS CAPABILITY (ROTARY TABLE)

For maximum production and contouring flexibility, Rotary table and production system can be used as 4th axis. 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 tip of tool helps to minimize heat distortion and ensures greater tool life and job accuracy. 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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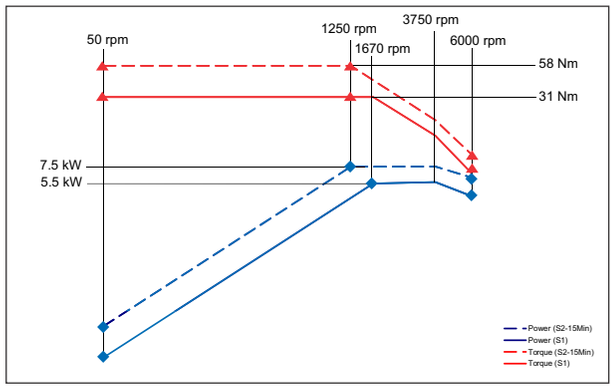
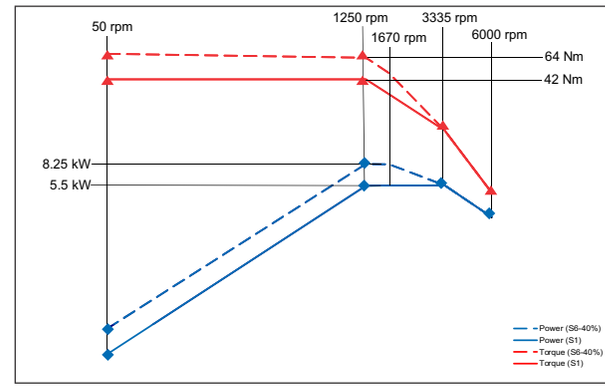
POWER-TORQUE DIAGRAM

7.5 / 5.5 kW, 6000 rpm (Fanuc)



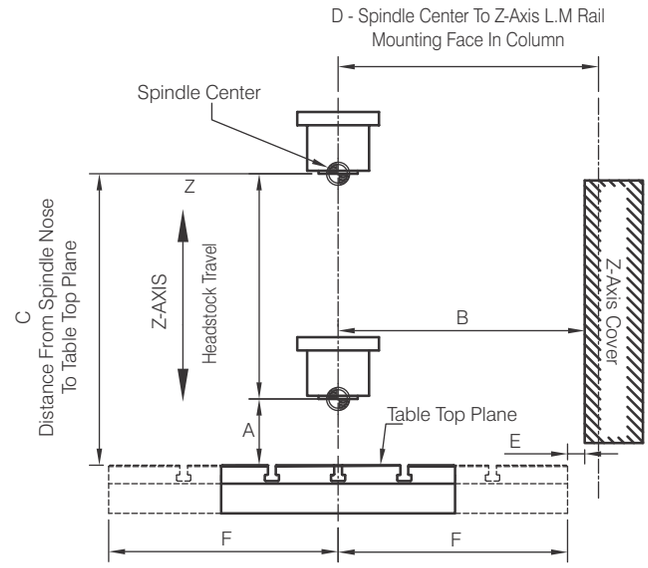
8.25 / 5.5 kW, 6000 rpm (Siemens)



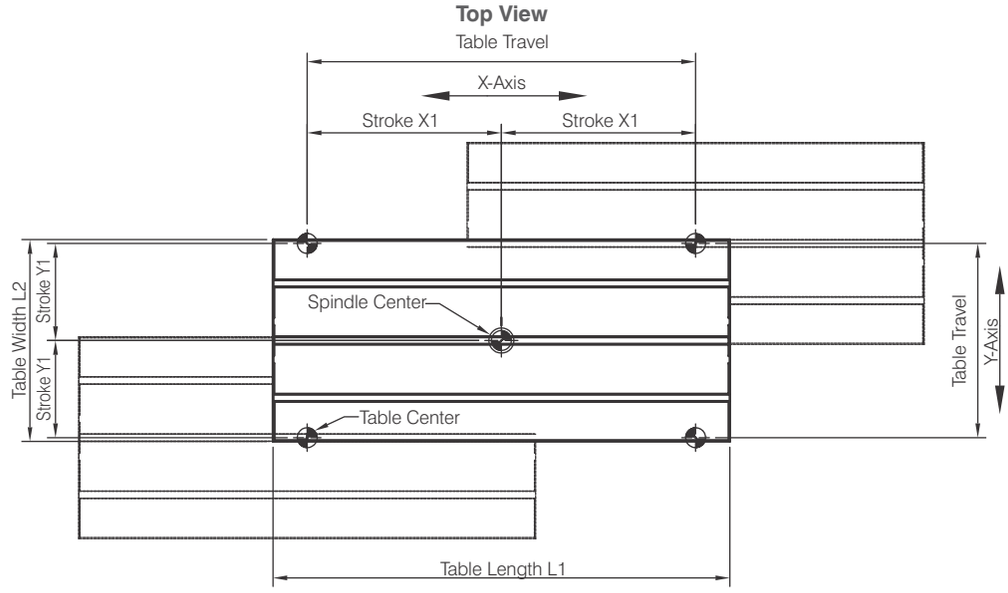
INTERFERENCE DIAGRAM

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	4000	4050	4250	4300
Machine Dimension #(Approx.) :					
Length	mm	3410	3410	3410	3410
Width	mm	2120	2120	2710	2710
Height	mm	2810	2810	2810	2810

Refer Machine Detailed Layout for overall machine dimensions & space requirements.

STANDARD FEATURES

- The CNC System offered Fanuc 0i MF or Siemens 828D Basic M
- AC Servo Spindle Drive & Axis Drive
- Chiptray - Rear Side
- 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 & Production System
- Air Gun
- Coolant Gun
- Flood Coolant System
- Extra Daylight Area (100 mm)
- SK Spindle Taper in lieu of BT Taper
- Coolant Through Spindle
- Tool Probe & Job Probe
- Air/Oil Mist Spray
- Linear Glass Scale
- Oil Skimmer
- Machine Tower Light
- Spin Window
- Fully Tooled up Solutions to Meet Customer Needs
- Manual Guide-i (Fanuc)
- Easy SMS System (Siemens)

ED. 2017/11

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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