



# DX Series

CNC Turning Centers



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CNC Turning Center

## OVERVIEW

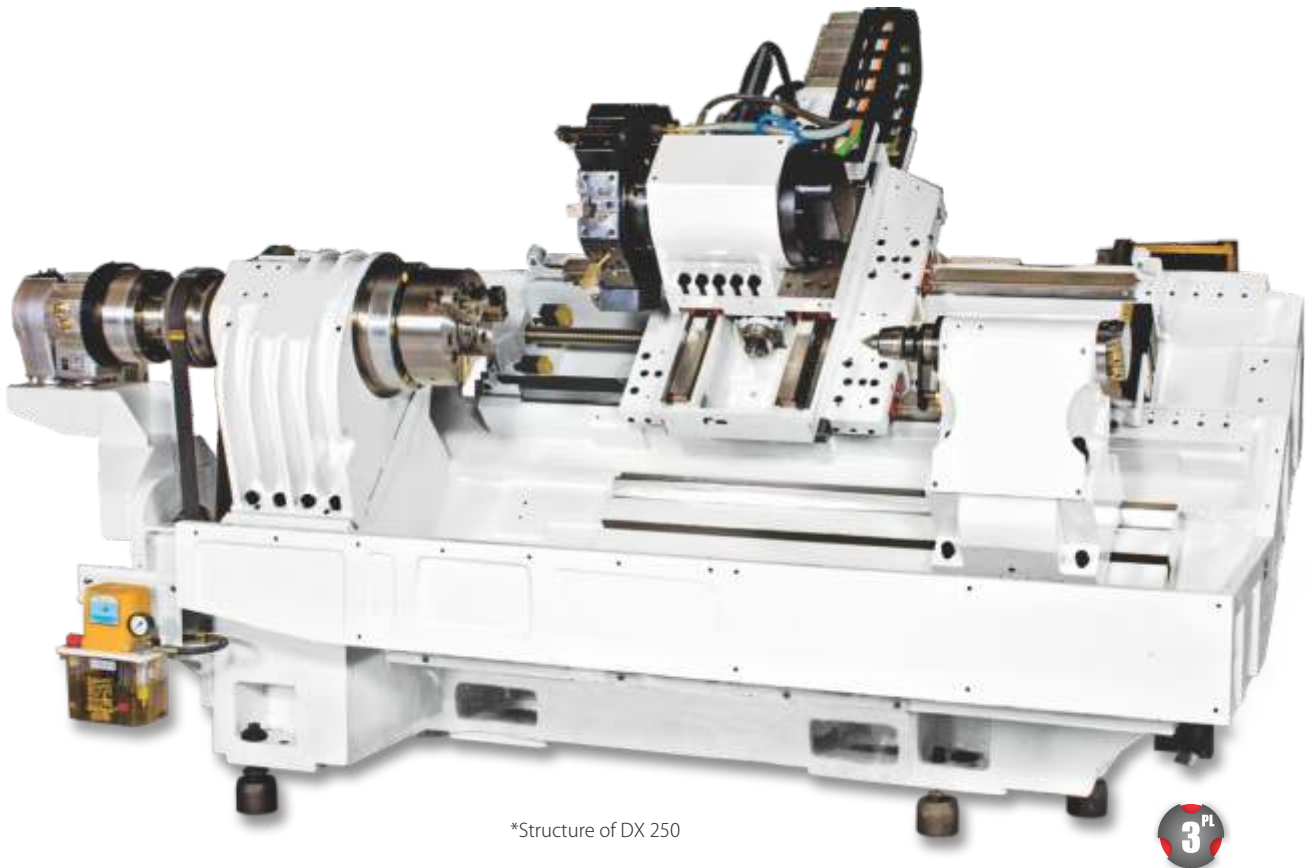
Jyoti introduces, DX Series for revolution in turning center technology. With this we build a world class machine that delivers exceptional performance even in Hard Part Machining. DX Series machines with Monoblock 45° slant bed structure offers advanced rigidity and durability which proves to be a value for money. This series is a benchmark in terms of power, torque, precision and accuracy, being fully capable to work with higher load carrying capacity. With design flexible enough to efficiently blend with many forms of productivity improvement options. Besides the series even entertains complex jobs with cost effective solutions offering better tool life.

## MONOBLOCK STRUCTURE

The rigid single piece 45° slant bed is made out of high grade cast iron for better rigidity, ability to take heavier cuts and faster production. With virtually no vibration, even at higher diameter enables superior surface finish even on hard materials.

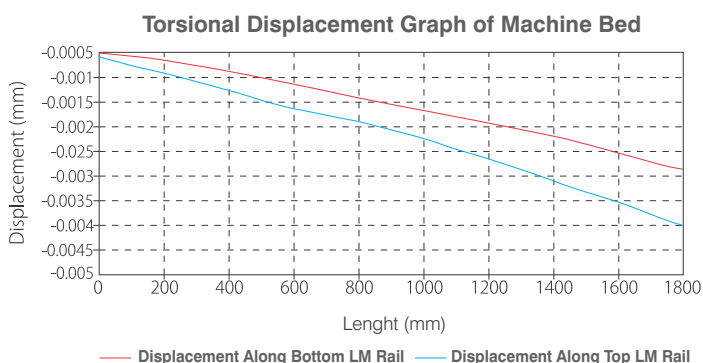
## HEAD STOCK

Taking into consideration ability to sustain the heavy cutting loads, head stock is made out of closed grain FG 300 grade casting. Fins are provided with better surface area for proper heat dissipation enabling better spindle life.



\*Structure of DX 250

## BED TORSION RIGIDITY



## 3 - POINT LEVELING

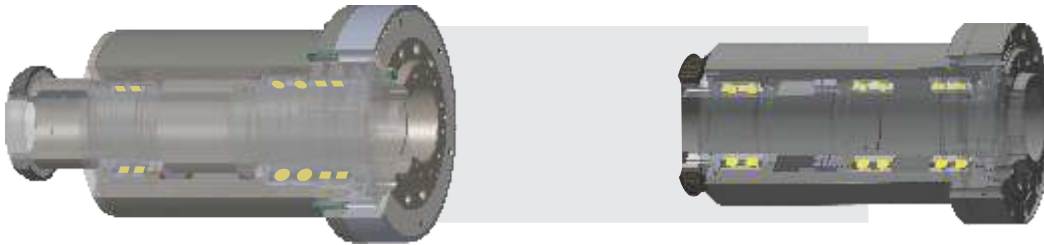
Twisting effect of bed can be eliminated due to 3-point leveling. Quick installation and relocation made easy with this feature.



## POWERFUL SPINDLE

Machine spindle is manufactured in-house with the help of world class precision mother machineries and assembled in a dust free temperature controlled environment.

Spindle is housed in a super precision 4 angular contact bearings in the front and 2 angular contact bearings at the rear end for A<sub>2</sub>8 spindle. In A<sub>2</sub>11 Spindle the design is with 1 cylindrical roller bearings + 2 angular contact bearings at the front and 1 cylindrical roller bearing at the rear for efficient working. This arrangement takes care of radial as well as axial loads. Powerful spindle with High Torque Motor allow high material removal rate.



## LINEAR AXIS

Machines are fully capable to take higher cutting parameters even with hard turning materials thanks to wide Linear Motion (Roller type) Guideways, Preloaded direct coupled ball-screws and Monoblock Structure.



## RIGID SERVO TURRET

DX Series machines are equipped with high speed and high precision Bi-directional Servo Turret with hydraulic clamping system achieved by 3-piece hirth coupling.

## TAIL STOCK

A manually movable tailstock with hydraulically actuated quill is a standard feature of the machine. Programmable tailstock with hydraulic movement is offered as an option.



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## ERGONOMIC DESIGN

The newly designed Easy-to-Operate operating panel of the machine is made considering the human comfort and the operator friendliness.



## EFFICIENT CHIP DISPOSAL

Ergonomically designed concept of DX Series enables to give efficient chip disposal system via chip tray. In case of applications with higher material removal rates or applications requiring long un-interrupted cutting, chip conveyor can be opted for better productivity.

## TURN MILL CENTER (OPTIONAL)

### LIVE TOOL TURRET

VDI or BMT Standard servo driven 12 station live tool turret on Turnmill Centers allows mix and match of the static or powered tools. Turret movement is controlled by servo motor for various milling applications.



### HEAD STOCK WITH C-AXIS

TMC Available with hydraulically operated disc brake for C-Axis which is helpful for milling operations like PCD Drilling and Tapping, OD & ID profiles with Radial and Axial Live tools.





## PRODUCTIVITY IMPROVING OPTIONS

### HYDRAULIC STEADY REST

Machine can be equipped with hydraulic steady rest for smooth machining operation for over-hang work pieces as per required applications.



### AUTOMATIC TOOL SETTING

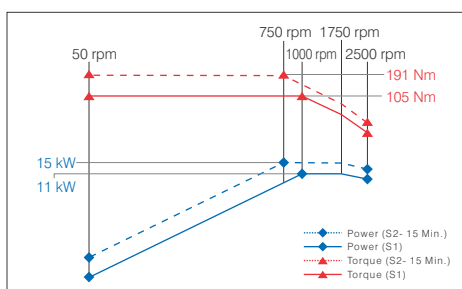
Automatic Tool Setting Probes and Job Probe can be incorporated with control feedback to set accurate tool data and even detect in-process tool wear or breakages.

### GEARBOX

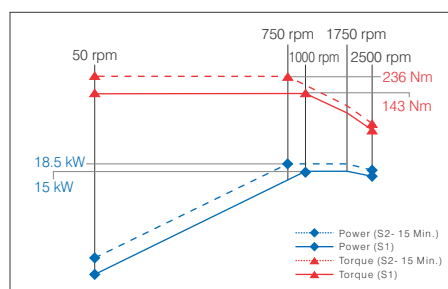
Auto Shifting 2-Speed Gearbox can be chosen for applications requiring high cutting force for hard material or high cutting speed for softer materials providing high cutting torque at lower rpm.

## POWER TORQUE DIAGRAM

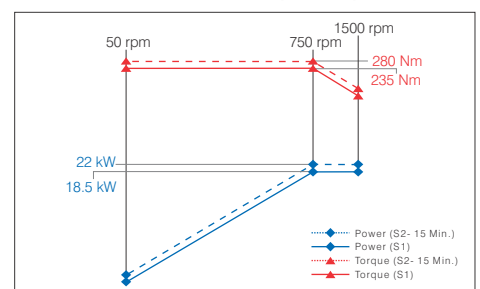
15 / 11 kW (Fanuc)



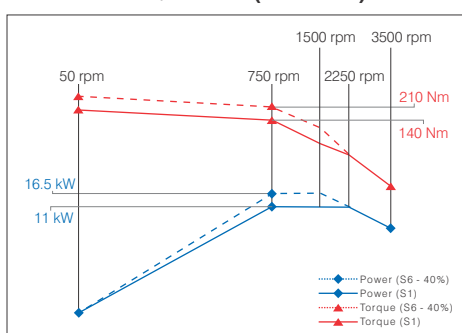
18.5 / 15 kW (Fanuc)



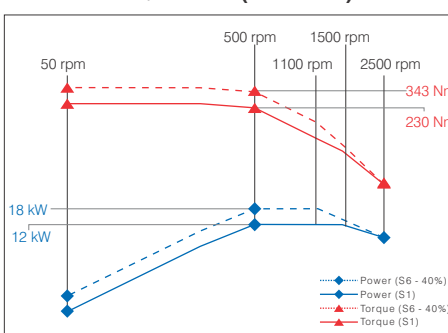
22 / 18.5 kW (Fanuc)



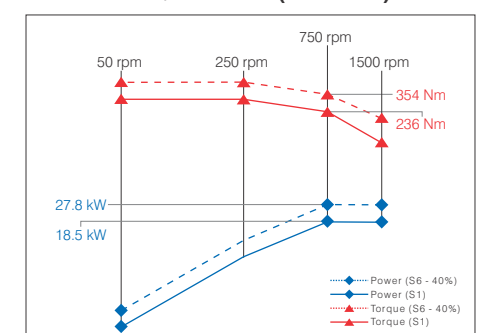
16.5 / 11 kW (Siemens)



18 / 12 kW (Siemens)



27.8 / 18.5 kW (Siemens)







TECHNICAL SPECIFICATION

Capacity		DX 250 - 500	DX 250 - 700	DX 250 - 1000	DX 350 - 700 A		DX 350 - 700 B	DX 350 - 1000 A	DX 350 - 1000 B	DX 350 - 1500 A	DX 350 - 1500 B	DX 350 - 2000 A	DX 350 - 2000 B
Swing Over Bed	mm	500	600	600	740		740	740	740	740	740	740	740
Std. Turning Dia.	mm	300	300	300	415		415	415	415	415	415	415	415
Max. Turning Dia.*	mm	490	480	480	600		600	600	600	600	600	600	600
Max. Turning Length*	mm	500	700	1000	700		700	1000	1000	1500	1500	2000	2000
Slides													
X-Axis Travel (Cross)	mm	250	250	250	310		310	310	310	310	310	310	310
Z-Axis Travel (Longitudinal)	mm	520	700	1000	700		700	1000	1000	1700	1700	2000	2000
Rapid Feed (X & Z Axis)	m/min	24	24	24	24		24	24	24	24	24	24	24
Main Spindle													
Spindle Motor Power - Fanuc	kW	15 / 11	15 / 11	15 / 11	18.5 / 15		22 / 18.5	18.5 / 15	22 / 18.5	18.5 / 15	22 / 18.5	18.5 / 15	22 / 18.5
Spindle Motor Power - Siemens	kW	16.5 / 11	18 / 12	18 / 12	18 / 12		27.8 / 18.5	18 / 12	27.8 / 18.5	18 / 12	27.8 / 18.5	18 / 12	27.8 / 18.5
Spindle Speed Range	rpm	50-3500	50-2500	50-2500	50-2500		50-1500	50-2500	50-1500	50-2500	50-1500	50-2500	50-1500
Spindle Bore	mm	90	80	80	80		110	80	110	80	110	80	110
Spindle Nose		A <sub>2</sub> 8	A <sub>2</sub> 8	A <sub>2</sub> 8	A <sub>2</sub> 8		A <sub>2</sub> 11	A <sub>2</sub> 8	A <sub>2</sub> 11	A <sub>2</sub> 8	A <sub>2</sub> 11	A <sub>2</sub> 8	A <sub>2</sub> 11
Max. Bar Capacity	mm	75	65	65	65		90	65	90	65	90	65	90
Turret													
No. of Tool Station		8	8	8	8		8	8	8	12	12	12	12
Max. Boring Bar Dia.	mm	40	40	40	40		50	40	50	50	50	50	50
Tool Size (Cross Sectional)	mm	25 X 25	25 X 25	25 X 25	25 X 25		32 X 32	25 X 25	32 X 32	32 X 32	32 X 32	32 X 32	32 X 32
Tailstock													
Quill Dia.	mm	85	100	100	100		100	100	100	130	130	130	130
Quill Stroke	mm	120	120	120	120		120	120	120	150	150	150	150
Thrust	kgf	500	500	500	500		500	500	500	1000	1000	1000	1000
Accuracy (as per VDI/DGQ 3441)													
Positioning Uncertainty (P)	mm	0.007	0.01	0.01	0.01		0.01	0.01	0.01	0.015	0.015	0.015	0.015
Repeatability (Ps Medium)	mm	0.005	0.005	0.005	0.005		0.005	0.005	0.005	0.007	0.007	0.007	0.007
Other Data													
Machine Weight (Approx.)#	kg	4000	5750	6000	6500		6500	6750	6750	10000	10000	10200	10200
Machine Dimension (Approx.)#													
Length	mm	2400	3450	3660	3450		3450	3660	3660	4625	4625	5100	5100
Width	mm	1520	2430	2430	2512		2512	2512	2512	3440	3440	3440	3440
Height	mm	1750	1900	1900	1950		1950	1950	1950	2240	2240	2240	2240

\* Depends upon clamping arrangement, Tooling and Job.    # Refer Machine Detailed Layout for overall machine dimensions & space requirements.    - Step-up structure for DX 250/500

CONTROL SYSTEM

The CNC System offered with the DX Series machine is the latest digital control from FANUC 0i TF and SIEMENS 828D Basic T.

STANDARD FEATURES

- AC Spindle Drive
- AC Servo Digital Drive
- Monoblock Structure
- 8-Station Bi-Directional Servo Turret
- L. M. Guideways (Roller Type)
- Hydraulic Chucking
- Auto & Manual Coolant System
- Centralised & Programmable Lubrication
- Laser Calibrated Axis for Highly Precise Positioning Accuracy and Repeatability
- Electricals with Quality Devices & Panel with A. C.
- Tailstock with Hydraulic Quill

PRODUCTIVITY IMPROVING OPTIONS

- Chip Conveyor
- Two Speed Gear Box
- Bita P-Series Motor for Fanuc
- Steady Rest
- Large Spindle Bore
- Programmable Tailstock
- Turn-Mill Version
- 12 Station Turret
- Automatic Tool Setting
- Bar Feeder
- Auto Door
- Bar Puller
- Part Catcher
- Live Quill (Built-in Revolving Center)
- High Pressure Coolant Through Turret
- Automatic Loading Unloading System
- Hydraulic Collet Chuck
- Manual Guide-i (Fanuc)
- Shop Turn (Siemens)
- Easy SMS System (Siemens)
- Fully Tooled up Solution to Meet Customer Needs

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App



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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.

