



VTL Series

Heavy-Duty Vertical Turning Lathes



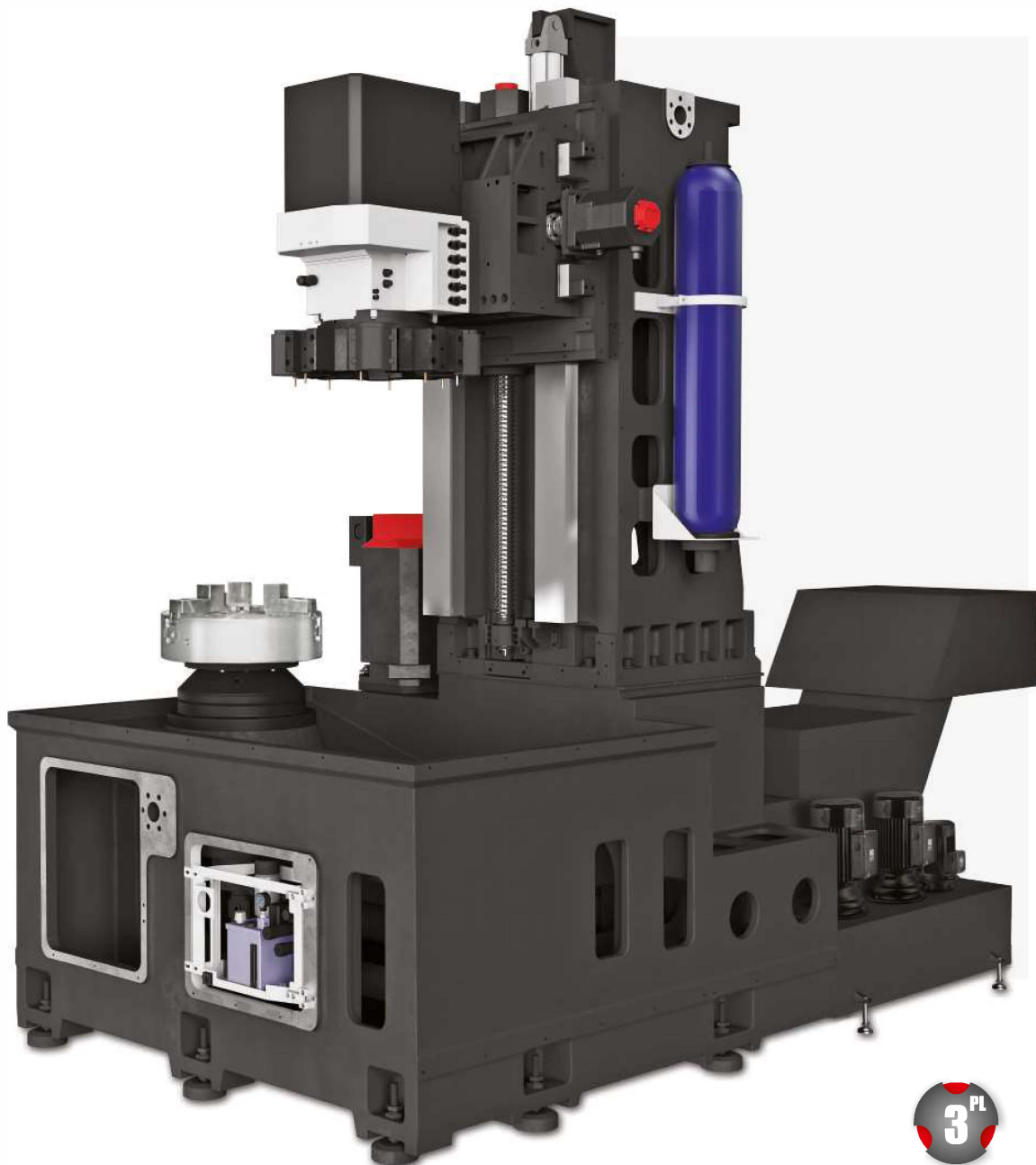
VTL Series

Heavy-duty Vertical Turning Center

OVERVIEW

Delivering improvised productivity with better durability to match the demand of bigger diameter heavy components like Valve Body, Motor Body, Brake Drum, Disc Brake, etc. Jyoti has developed state of art Vertical Turning Center keeping better working economics as prime objectives.

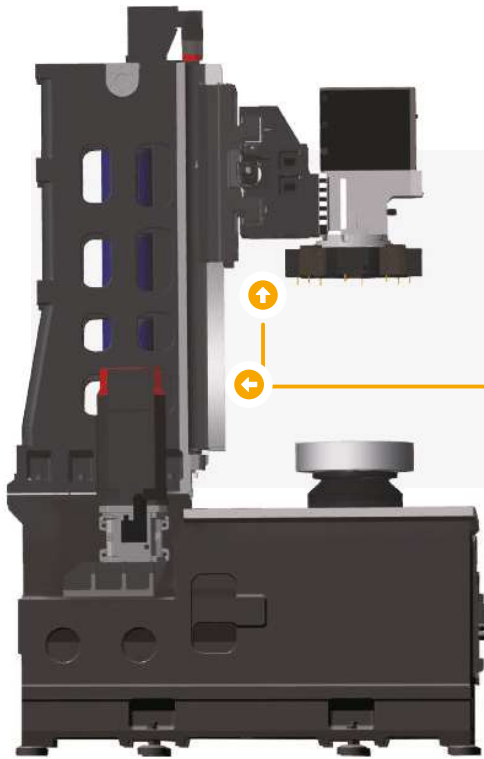
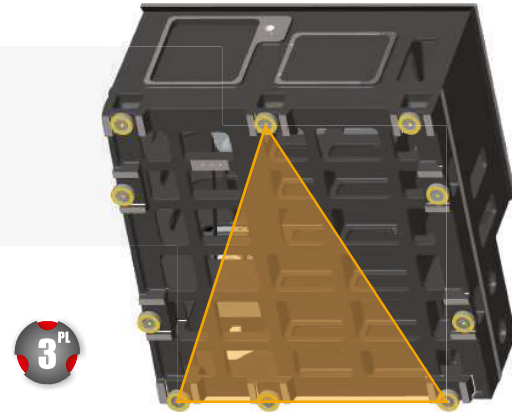
Rugged & graded cast iron structure imparts high mechanical performance during roughing to finishing operations retaining long term accuracy and precision. Box type construction avoiding vibration during heavy duty cutting even at dynamic load condition.





3-POINT LEVELING

A unique system that allows machine to be installed or relocated quickly and easily and also avoids twisting effect for longer machine life.



RIGID SADDLE & COLUMN

Heavily ribbed, X-Axis moving on cross-saddle and Z-Axis moving on broad column, ensures minimal cantilever effect with effective vibration dampening and least thermal distortion increasing tool life also with bigger diameter components.

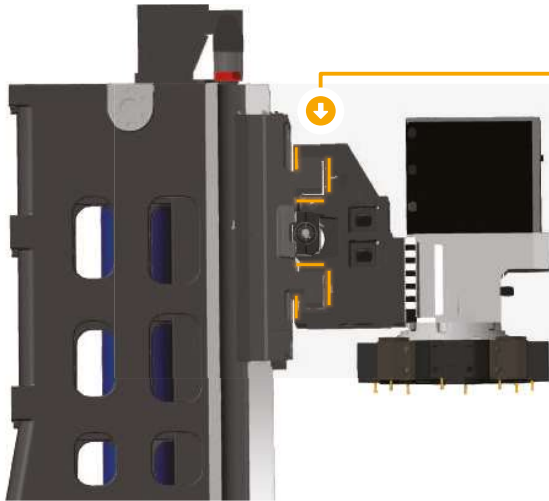
HEAVY DUTY SPINDLE

The state-of-art rigid spindle of the machine is designed and manufactured in-house in dust free and temperature controlled environment. Spindles are designed with 1 cylindrical roller bearing + 1 double direction Angular Contact Thrust Ball Bearing at the front and 1 cylindrical roller bearing at the rear for heavy weight carrying capacity and excellent stability during heavy cutting condition.



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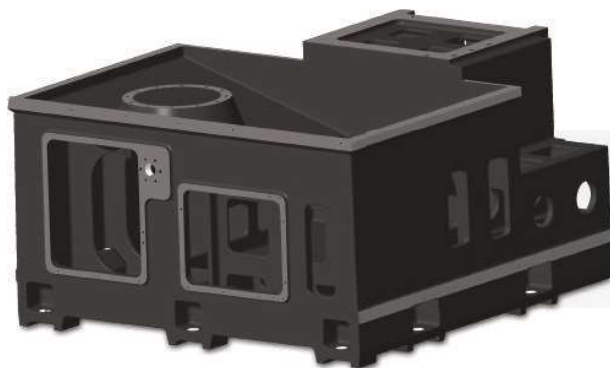
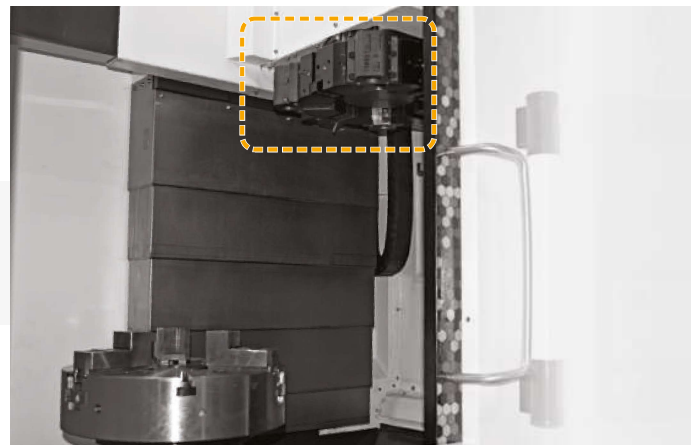


3-SIDED ADJUSTABLE SUPPORTS FOR AXIS

3-sided support on both X & Z - Axis helps maintaining tolerance between axis & guide-ways during reversal movement assures durability and provides long term accuracy. VTL 400 is equipped with high precision roller type LM guideways for exceptional static and dynamic stiffens.

HIGH SPEED SERVO TURRET

VTL Series of machines are equipped with High Speed and High Precision bi-directional Servo Turret with hydraulic clamping system achieved by 3-Piece Hirth Coupling. These arrangement drastically increases the clamping rigidity.



RIGID MACHINE BED

Rigid single piece machine bed made from graded cast iron, specially designed for hard part turning application and extra ribbed construction allow heavy depth of cut with virtually no vibration and increase the rigidity for large size of work piece



EASY ACCESSIBILITY OF JOB LOADING

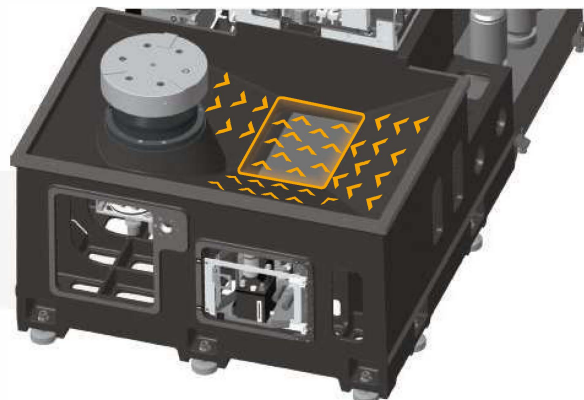
Heavy components can be easily loaded/unloaded from wide front door entry as well as from top of the machine with the help of crane



EFFICIENT CHIP DISPOSAL

Gravity fall of chips with well designed bed slope with hollow centre for effective chip evacuation through rear side of machine.

Flush Coolant System further improves the chip evacuation.

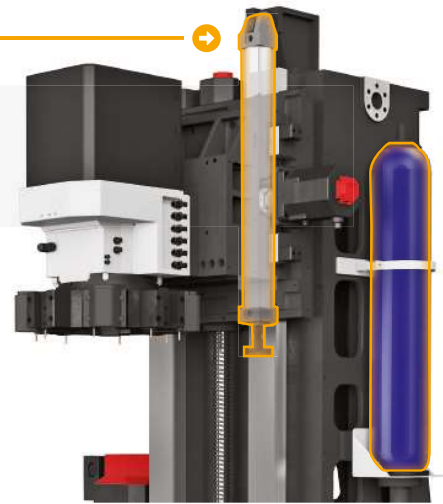
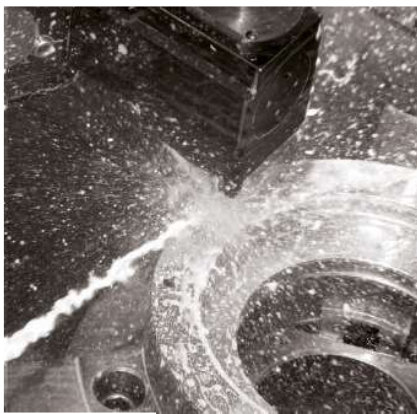


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PREVENT FOR VERTICAL AXIS DROP

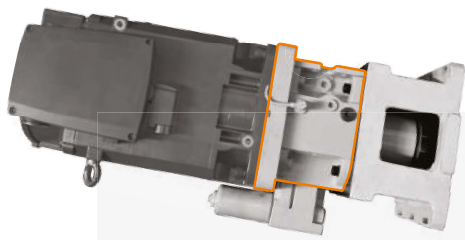
Hydraulic counterbalance will positively hold pressurised load and will prevent the vertical drop during emergency stop.



* Counterbalance for VTL 500 & VTL 750

TURN-MILL VERSION

Turn-Mill options available with 12 station servo driven live tool turret on VTL to avoid multiple setup and increase the productivity. Turret movement is controlled by high torque servo motors for various applications like PCD Drilling, Tapping and OD & ID profiles with radial and axial live tools.



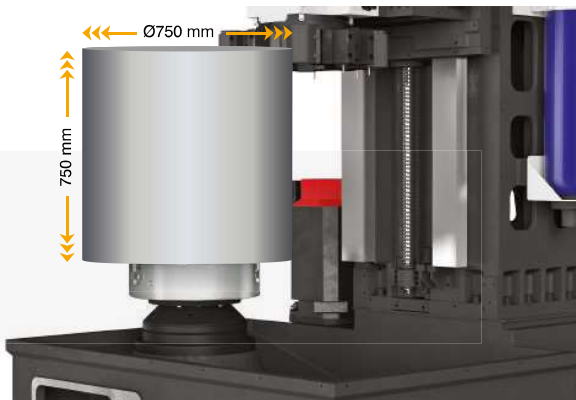
GEAR BOX

Two Stage Auto-Shifting Gearbox provides higher cutting torque at lower rpm for the large size components like Bearing & Gear-Box Housing, Wheel Rim, Motor Bracket, etc.

BETTER MACHINING RANGE CAPABILITY

Delivering to the need of present market requirement for huge diameter components in full turning range capability.

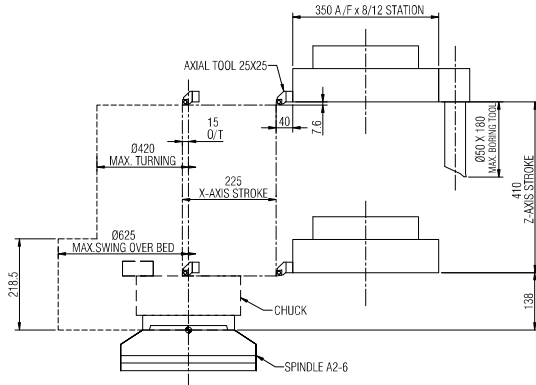
[MAX. DIA. of component Turned to FULL LENGTH]



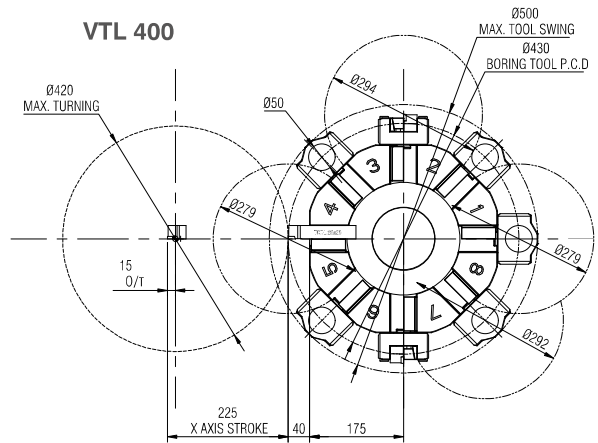


MACHINE RANGE & INTERFERENCE DIAGRAM

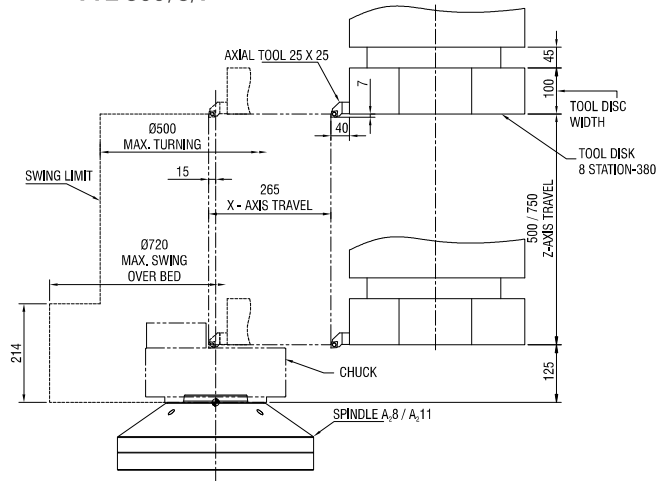
VTL 400



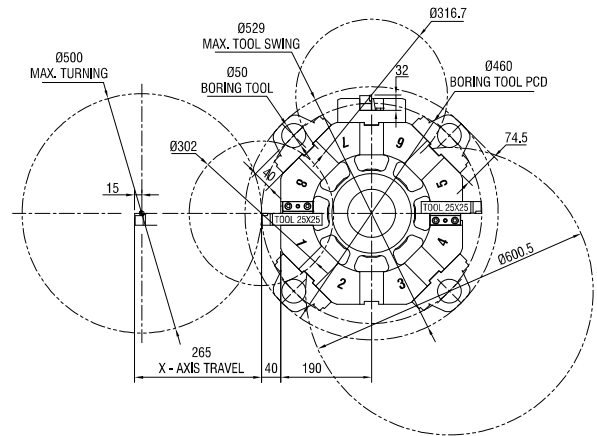
VTL 400



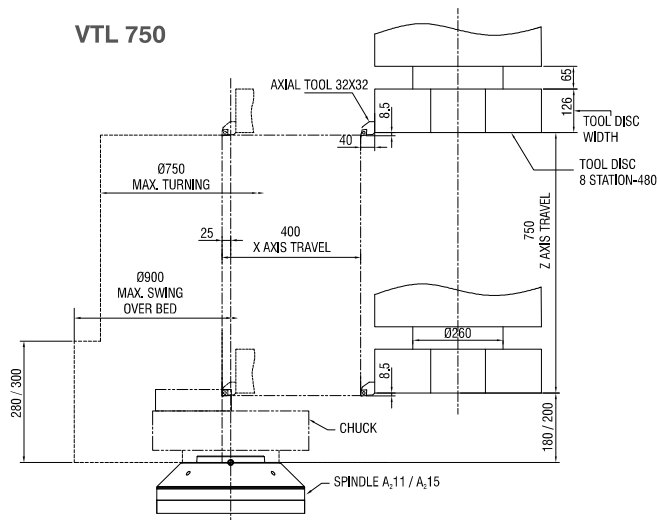
VTL 500/5/7



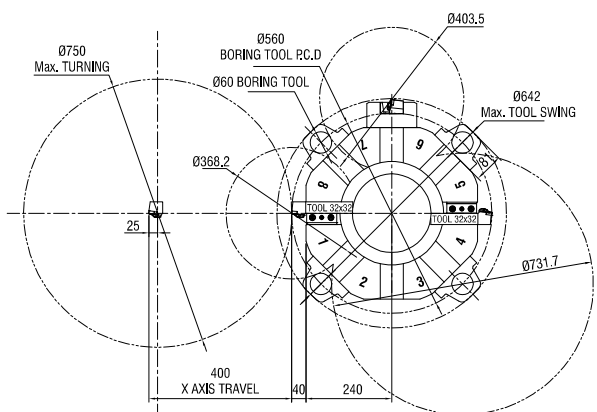
VTL 500/5/7



VTL 750



VTL 750

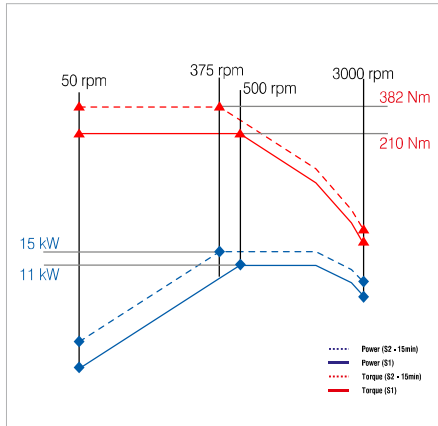


VTL Series

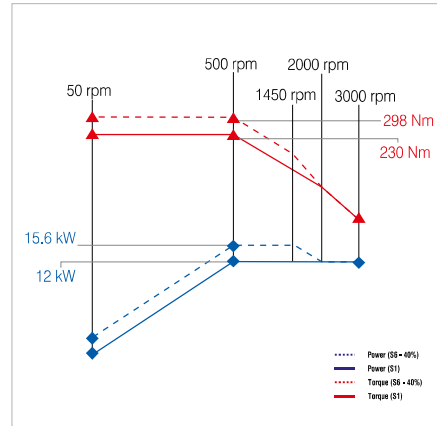
Heavy-duty Vertical Turning Center

POWER TORQUE DIAGRAM

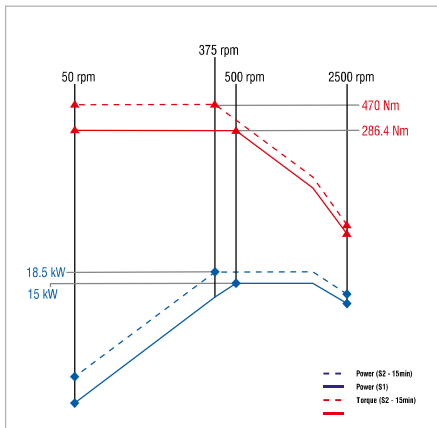
VTL 400 (Fanuc)



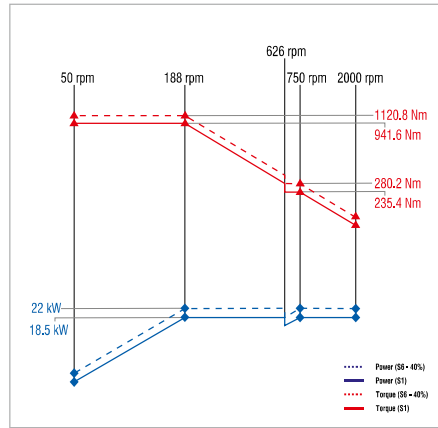
VTL 400 (Siemens)



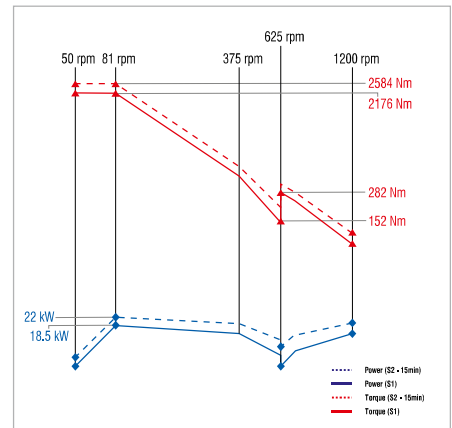
VTL 500/5A/7A (Fanuc)



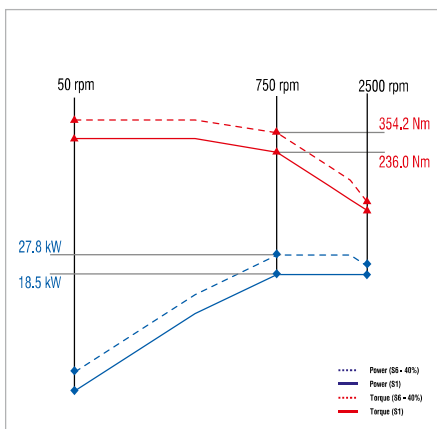
VTL 500/5B/7B, VTL 750A (Fanuc)



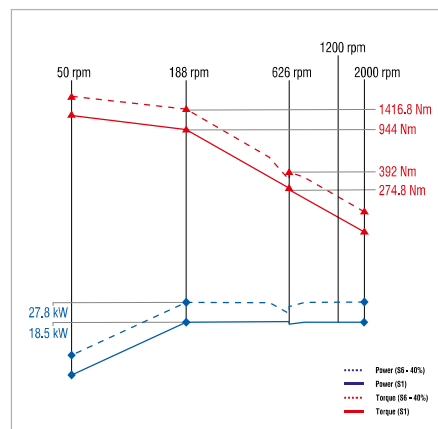
VTL 750B (Fanuc)



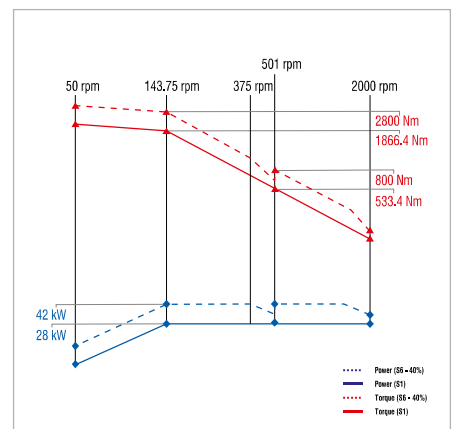
VTL 500/5A/7A (Siemens)



VTL 500/5B/7B, VTL 750A (Siemens)



VTL 750B (Siemens)





TECHNICAL SPECIFICATION

Capacity		VTL 400	VTL 500/5A	VTL 500/5B	VTL 500/7A	VTL 500/7B	VTL 750A	VTL 750B
Swing Dia.	mm	625	720	720	720	720	900	900
Std. Turning Dia.	mm	400	500	500	500	500	750	750
Max. Turning Dia*	mm	420	500	500	500	500	750	750
Max. Turning Length*	mm	410	500	500	750	750	750	750
Slides								
X-Axis (Horizontal)	mm	225	265	265	265	265	400	400
Z-Axis (Vertical)	mm	410	500	500	750	750	750	750
Feed								
Rapid (X / Z Axis)	m/min	24	20	20	20	20	20	20
Cutting Feed	m/min	10	10	10	10	10	10	10
Main Spindle								
Chuck Size	mm	250	315	400	315	400	400	530
Range of Table Speed	rpm	3000	2500	2000	2500	2000	2000	1200
Front Bearing Dia.	mm	100	120	160	120	160	160	200
Spindle Nose		A ₂ 6	A ₂ 8	A ₂ 11	A ₂ 8	A ₂ 11	A ₂ 11	A ₂ 15
Spindle Motor Power - Fanuc	kW	15/11	18.5/15	22/18.5	18.5/15	22/18.5	22/18.5	22/18.5
Spindle Motor Power - Siemens	kW	15.6/12	27.8/18.5	27.8/18.5	27.8/18.5	27.8/18.5	27.8/18.5	42/28
Gear Box		Opt.	Opt.	Std.	Opt.	Std.	Std.	Std.
Tool Turret								
Type of Turret		Servo	Servo	Servo	Servo	Servo	Servo	Servo
No. of Tool Station		8	8	8	8	8	8	8
Tool Size	mm	25 x 25	25 x 25	32 x 32	25 x 25	32 x 32	32 x 32	32 x 32
Boring Bar Dia.	mm	50	50	50	50	50	60	60
Accuracy (As Per VDI/DGQ 3441)								
Positioning Uncertainty(P)	mm	0.010	0.015	0.015	0.015	0.015	0.015	0.015
Repeatability (Ps Medium)	mm	0.005	0.007	0.007	0.007	0.007	0.007	0.007
Other Data								
Machine Weight #(Approx)	kg	5500	8000	8200	8500	8700	10500	10700
Machine Dimension #(Approx): Length,	mm	1600	3010	3010	3010	3010	3980	3980
Width	mm	1750	1715	1715	1715	1715	2075	2075
Height	mm	2450	3185	3185	3185	3450	3490	3490

* Depends upon clamping arrangement, Tooling and Job. # Refer Machine Detailed Layout for overall machine dimensions & space requirements.

STANDARD FEATURES

- Fanuc Oi TF or Siemens 828D Basic T
- AC Spindle Drive
- AC Servo Axis Drive
- 8 St. Bi-Directional Servo Tool Turret
- LM Guideways for VTL 400
- Harden & Ground Box Type Guideways
- Centralized Programmable Lubrication
- Hydraulic Chucking
- Auto & Manual Coolant System
- Flush Coolant for Chip Flushing

PRODUCTIVITY IMPROVING OPTIONS

- Chip Conveyor
- Gear Box
- Turn-Mill Version
- Coolant Gun & Air Gun
- Linear Glass Scale
- 12 Station Turret
- Job Probe
- Tool Offset Measurement System
- High Pressure Tool Through Coolant
- Tooling Solutions as per customer need