



Taiwan Machine Tool

TTB-20 series

SLANT BED CNC LATHE



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TTB-20 series

SLANT BED CNC LATHE

03 Structure

05 Diverse Optional Devices for Enhanced Performance!

06 Cutting Performance, Operating convenience

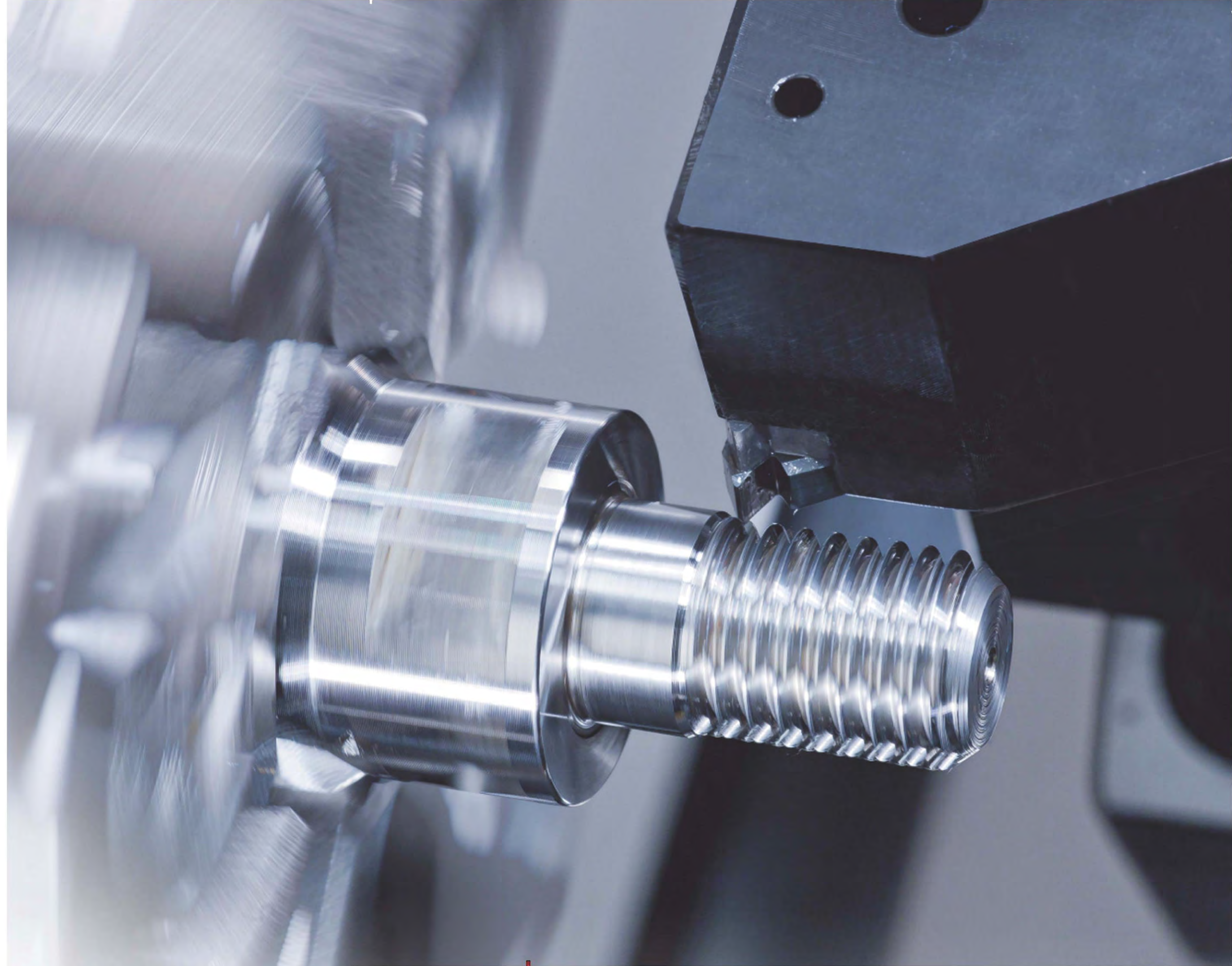
07 Spindle Power Output/ Torque Diagram, Travel Diagram

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TMT highly rigid base structure incorporates higher level of special metal to enhance the dampening and density of its casting, which enforces machine rigidity and stability.



Era of the High Performance!

Compact size provides flexibility for multiple machine operation, Excellent cutting performance satisfies customers' needs of heavy duty cutting.

TTB-20 series

SLANT BED CNC LATHE



Technical Data of TTB-20 series

Chuck Size : 8"/ 10"
Bar Capacity : Ø62 / Ø85 mm
Max. Working Length : 200mm/ 600mm
Max. Turning Diameter : Ø430mm/ 400mm
Spindle Nose : A2-6

- The one piece cast base incorporates FEM analysis to achieve its optimal ribbing and structure to further enhance machine rigidity and stability.
- The 30° slant bed design has low center of gravity for easier swarf management and better ergonomic design. The TTB-20 series also offers optional rear type chip conveyor.
- Servo motors are directly coupled to ball screw with high precision to minimize backlash and thermal distortion and improve machining accuracy.
- The TTB-20 Series can rotate maximum 20 mm/min for X axis and 25 mm/min for Z axis. And the servo motors adopt absolute encoders for faster and more reliable positioning.



Head Stock

- The spindle has 160 mm to prevent molasses and dust.
- The spindle is supported by NSK dual bearing bearings to ensure high-precision processing.
- The ball screw is bolted to enhance the processing accuracy.



Servo Turret

The fly speed servo turret changes tool position quickly with high accuracy and speed.



Boxway Structure

The Boxway design satisfies positioning needs for heavy cutting and interrupted cutting.

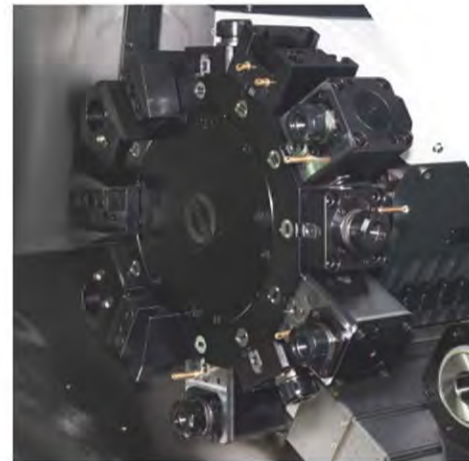


Direct Coupled Motor

Direct coupled ball screw matches energy without waste.



Diverse Optional Devices for Enhanced Performance!



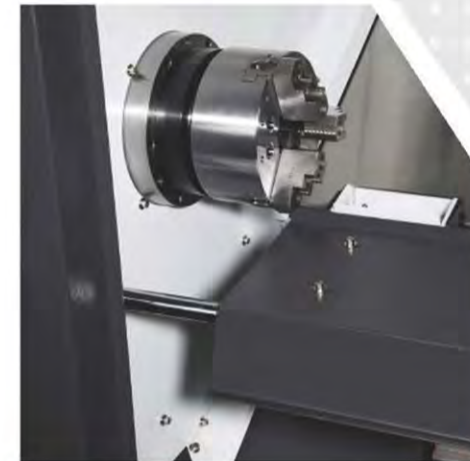
BMT Power Turret

The highly rigid BMT turret has large torque output and stronger tool locking mechanism to handle heavier cutting conditions while improving tool interference. The BMT turret is ideal for heavy turning and milling applications.



Manual/ Auto Tool Presetter

The tool presetter shortens tool set up time and can easily measure tool wear to ensure machining accuracy.



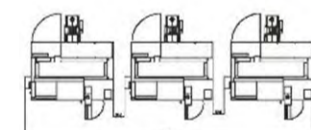
Parts Catcher

The parts catcher is a synchronized design for quick collection of finished product.

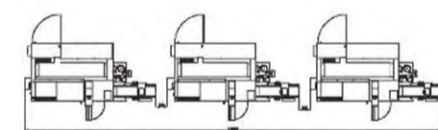


Product Conveyor

The product conveyor combined with the barfeeder allows the machine to perform fully automatic operations.



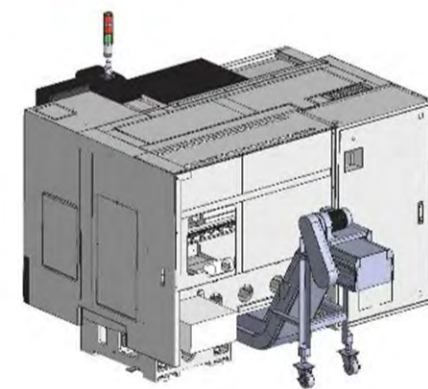
Rear Discharge Chip Conveyor



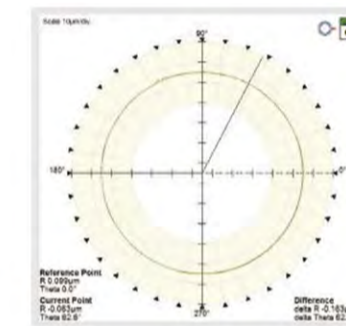
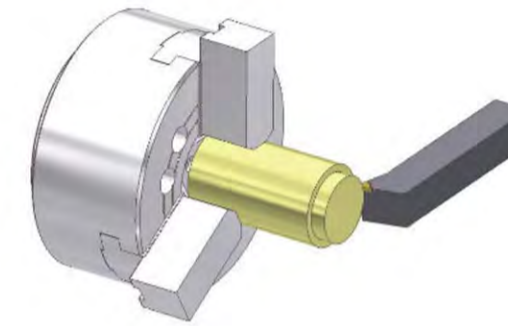
Side Discharge Chip Conveyor

Rear Type Chip Conveyor

The optional rear discharge chip conveyor reduces valuable shop floor space and allows you to centralize your chip removal system.



Cutting Performance Operating Convenience



REMOVAL RATE **489 mL/min**

Material	S45C
Spindle speed(rpm)	950 rpm
Depth of cut(d)	6 mm
Cutting speed(Vc)	136 m/min
Feedrate	0.6 mm/rev

ROUNDNESS **0.56μm**

Material	A5052
Spindle speed(rpm)	3000 rpm
Cutting Tool	VDGT160408-ASIC20
Nose R	0.8mm
Feedrate	0.05 mm/rev

SURFACE ROUGHNESS **0.244 μm** ▼▼▼▼

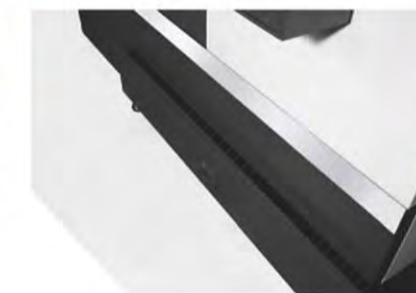
Material	A5052
Material Size	ø80*100mm
Spindle speed(rpm)	3000 rpm
Depth of cut(d)	0.05 mm
Feedrate	0.05 mm/rev

The data is tested without tailstock support.



Upright Control Panel

The ergonomical control panel can be swiveled 90° for easier operator access.



Front Discharge Coolant Tank (Side Discharge Chip Conveyor)

Coolant tank can be removed in the front for simple access to clean and maintain.



Rear Discharge Coolant Tank (Rear Discharge Chip Conveyor)

Coolant tank can be removed from rear side when machine is with rear type chip conveyor to save working space.



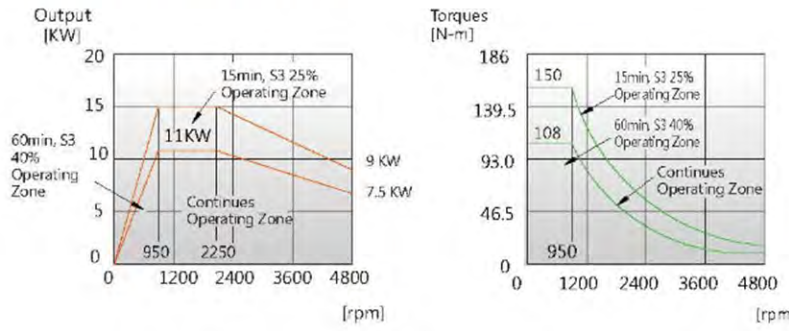
Tool Cabinet

Tool cabinet under the control panel offers extra storage space for operator to use for storing tools.

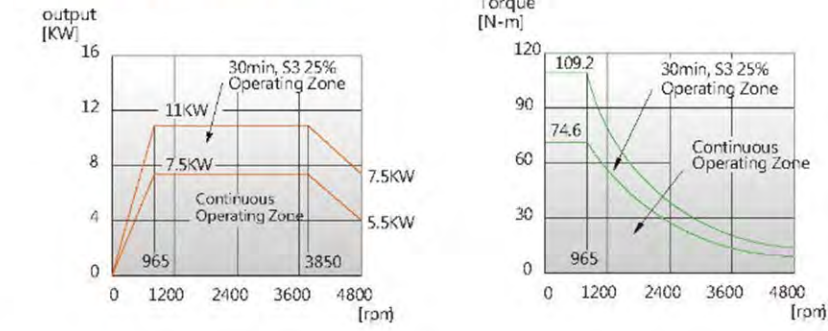
Spindle Power Output / Torque Diagram Travel Diagram

Spindle Power Output / Torque Diagram

β12/7000i (TTB-20 Series)

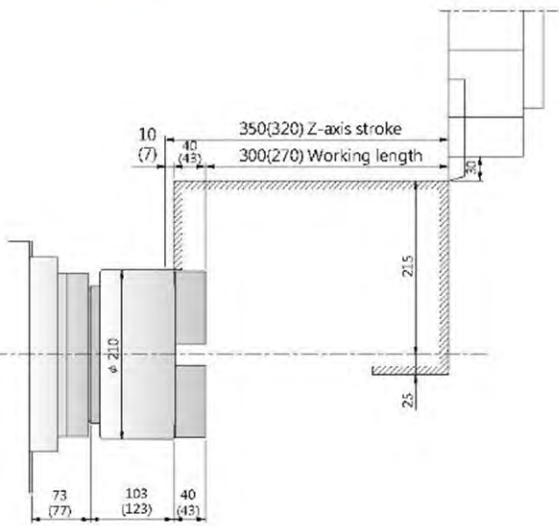


α8/8000i (TTB-20M Series)

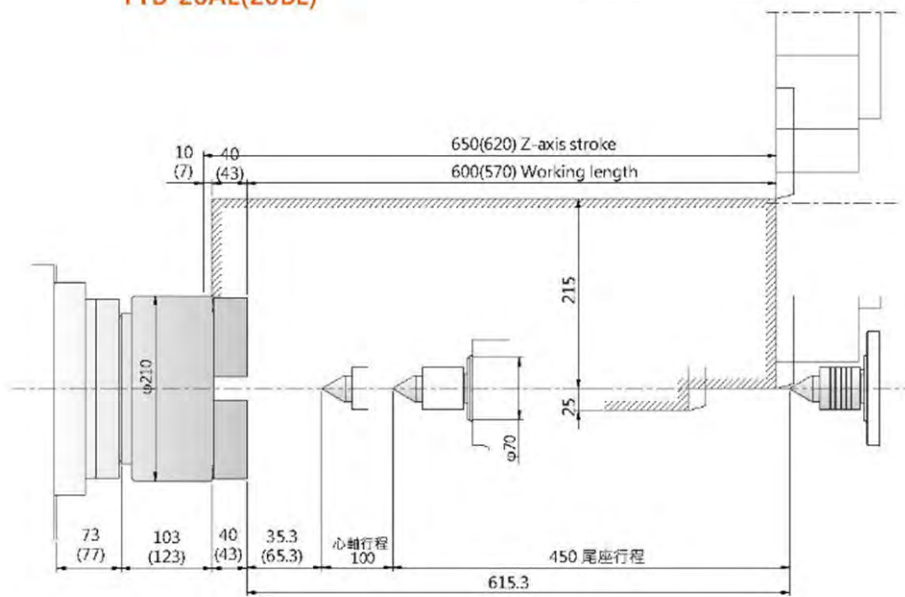


Spindle Power Output / Torque Diagram

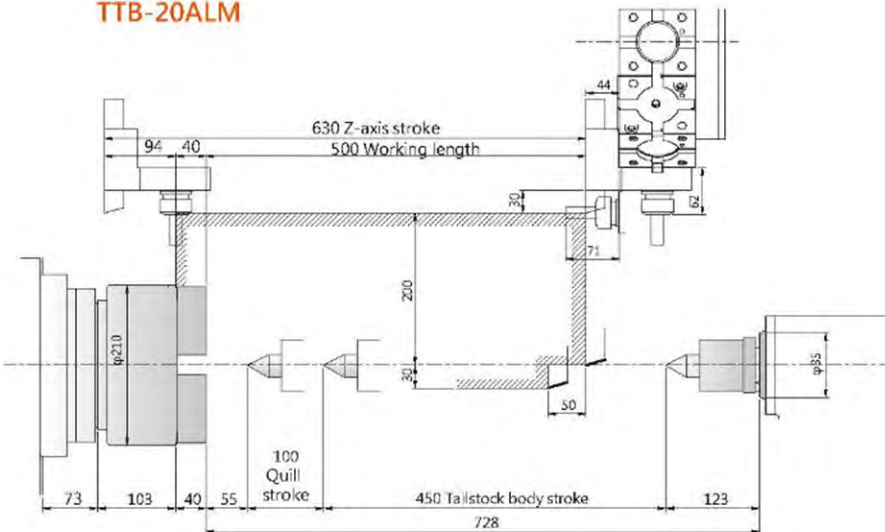
TTB-20A(20B)



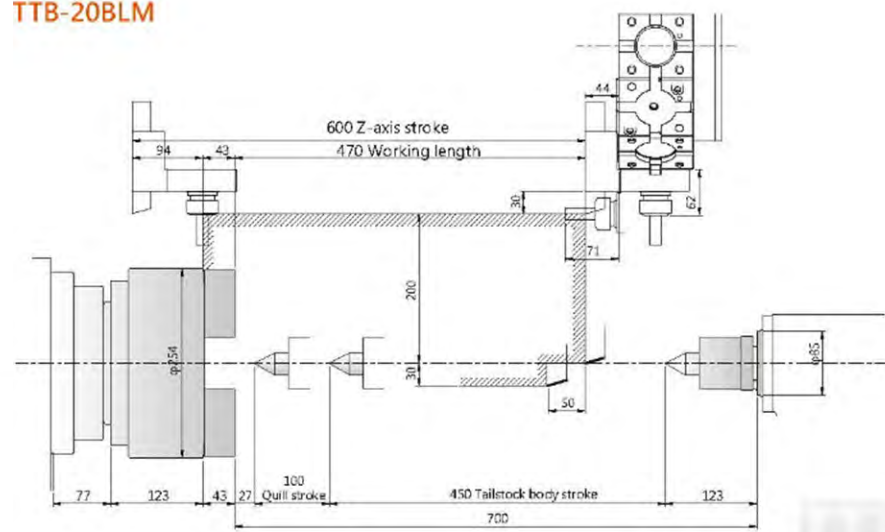
TTB-20AL(20BL)



TTB-20ALM



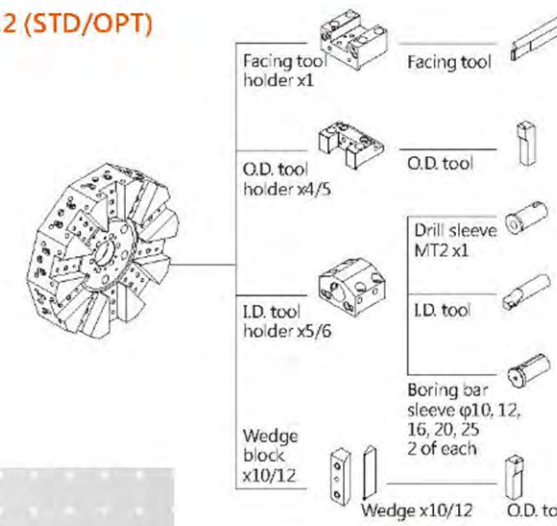
TTB-20BLM



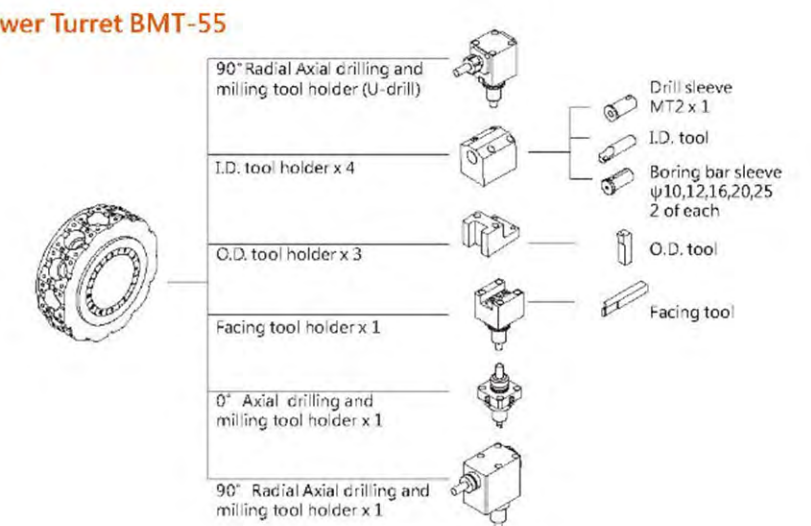
Tool System Tool Interference Diagram Dimensional Drawing

Tool System

V10/V12 (STD/OPT)

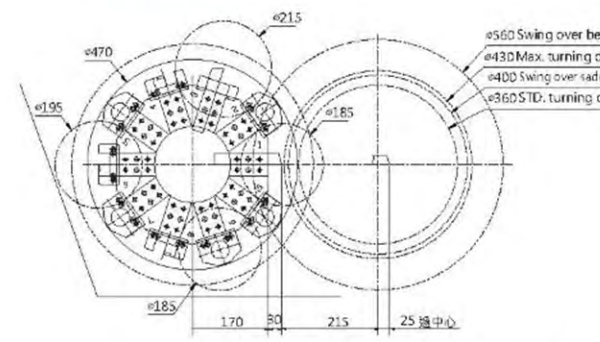


Power Turret BMT-55

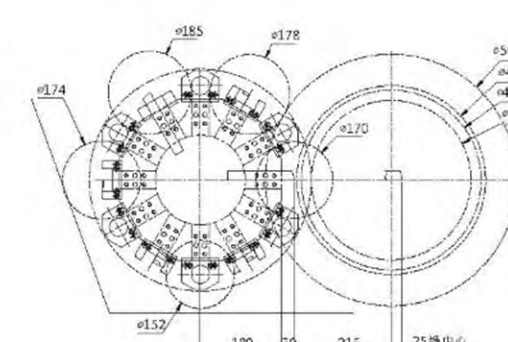


Tool Interference Diagram

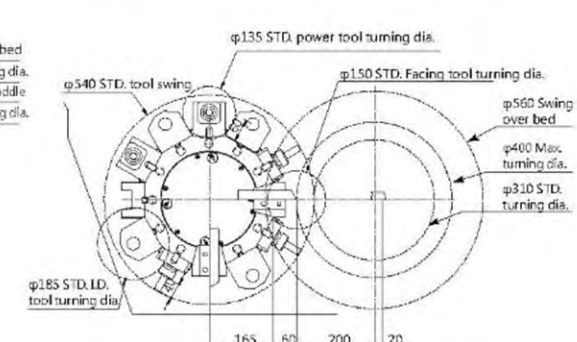
V10 (STD)



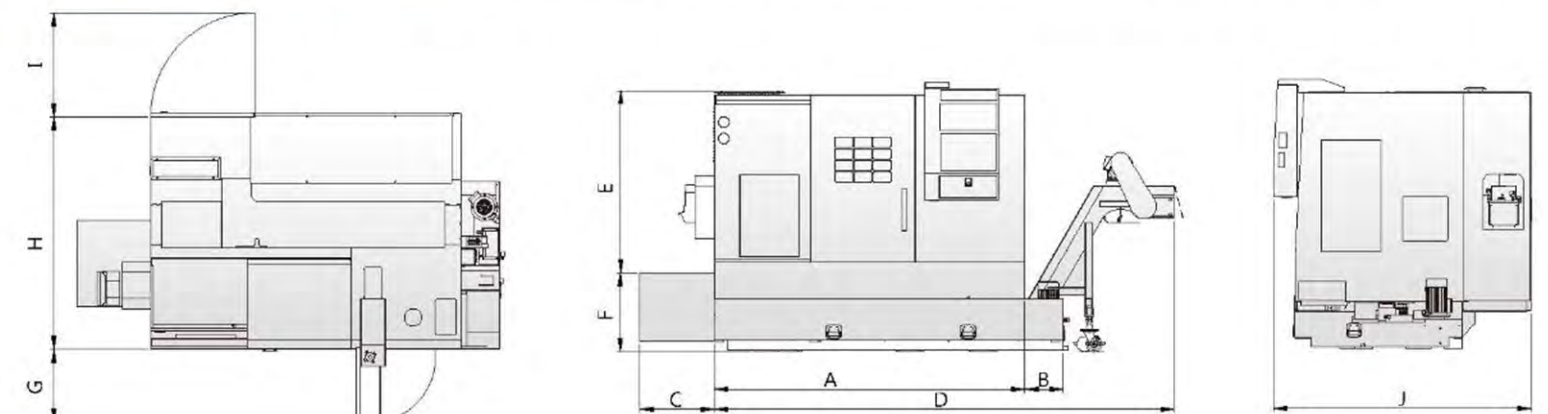
V12(OPT)



Power Turret BMT-55



Dimensional Drawing



MODEL	A	B	C	D	E	F	G	H	I	J
TTB-20A/B	1650	258	500	2653	1222.6	519	-	1559.2	700	1588
TTB-20AL/BL	2084	258	500	3087	1222.6	529	487	1559.2	700	1730
TTB-20ALM/BLM	2800	50	500	3087	1236	529	487	1620	700	1790

Machine Specification

Description	Unit	TTB-20A		TTB-20AL	TTB-20ALM	TTB-20B		TTB-20BL	TTB-20BLM	
		Oi-Mate TD		Oi-TD	Oi-Mate TD	Oi-Mate TD		Oi-TD		
CAPACITY										
Swing over bed	mm	ø560			ø560					
Swing over saddle	mm	ø400			ø400					
Max. turning diameter	mm	ø430		ø400	ø430		ø400			
Max. working length	mm	300	600	500	270	570	470			
Distance between centers	mm	400	650	550	390	640	550			
Bar capacity	mm	ø52			ø65					
Chuck size	inch	8"			10"					
Type of collet chuck	-	-			-					
STROKE										
X-axis stroke	mm	215+25		200+30	215+25		200+30			
Z-axis stroke	mm	350	650	630	320	620	600			
FEEDRATE										
Axial rapid feedrate	m/min	X:20, Z:25			X:20, Z:25					
Cutting feedrate (X/Z)	mm/min	10000			10000					
SPINDLE										
Spindle speed	rpm	4200			3500					
Spindle nose	-	A2-6			A2-6					
Spindle taper	-	1/20			1/20					
Spindle bore diameter	mm	ø66			ø79					
TURRET										
Turret type and storage capacity	-	Servo V10 (opt. V12)		BMT-55	Servo V10 (opt. V12)		BMT-55			
Square tool dimension	mm	25x25		25x25	25x25		25x25			
Boring tool dimension	mm	ø40			ø40					
Turret indexing time (T to T)	sec	0.4		0.38	0.4		0.38			
M-axis tool speed	rpm	-			4000	-		4000		
M-axis tool motor output (cont./15 min)	KW(HP)	-		2.2/3.7 (3/5)	-		2.2/3.7 (3/5)			
TAILSTOCK										
Tailstock movement type	-	Manual			Manual					
Tailstock body stroke	mm	450		450	450		450			
Quill movement type	-	Hydraulic			Hydraulic					
Quill stroke	mm	100			100					
Quill diameter	mm	ø85			ø85					
Quill taper	-	MT4			MT4					
Max. quill thrust	kg	250			250					
MOTOR										
Spindle motor output (cont./30 min)	KW(HP)	11/15 (14.7/20)		7.5/11 (10/14.7)	11/15 (14.7/20)		11/15 (14.7/20)			
Axial servo motor output	KW(HP)	X:1.8, Z:1.8 (X:2.4, Z:2.4)		X:3.0, Z:3.0 (X:4.0, Z:4.0)	X:1.8, Z:1.8 (X:2.4, Z:2.4)		X:3.0, Z:3.0 (X:4.0, Z:4.0)			
X/Z AXIS ACCURACY										
Positioning accuracy (VDI 3441)	mm	0.01			0.01					
Repeatability accuracy (VDI 3441)	mm	0.006			0.006					
HYDRAULIC SYSTEM										
Hydraulic pump motor output	KW(HP)	1.5 (2)			1.5 (2)					
Hydraulic pressure	kg/cm ²	40			40					
Hydraulic tank capacity	L	30			30					
COOLANT TANK										
Coolant motor output	KW(HP)	0.75 (1)			0.75 (1)					
Coolant tank capacity	L	80	100	100	80	100	100			
Lub. tank capacity	L	3			3					
OTHER										
Power requirements	KVA	25		25	25		30			
Machine size	mm	2408x1588x1742	2842x1730x1752	3350x1790x1765	2408x1588x1742	2842x1730x1752	3350x1790x1765			
Machine weight	kg	3400	3740	3840	3450	3800	3900			

All specifications, dimensions and design characteristics are subject to change without prior notice.

Standard and Optional Accessories

● : Standard
○ : Option
× : Not Available

		TTB-20 Series					
		A	AL	ALM	B	BL	BLM
SPINDLE MOTOR							
7.5/11 kw (Cont./30 min.)		○	○	●	○	○	○
11/15 kw (Cont./30 min.)		●	●	○	●	●	●
TURRET							
Servo Turret	V10	●	●	×	●	●	×
	V12	○	○	×	○	○	×
Hydraulic Turret	V10	○	○	×	○	○	×
	V12	○	○	×	○	○	×
Power Turret	BMT-55	×	×	●	×	×	●
SLEEVE							
Sleeve Specification		H40	H40	E40	H40	H40	E40
Boring Bar Sleeve	ø6	○	○	○	○	○	○
	ø8	○	○	○	○	○	○
	ø10	2	2	2	2	2	2
	ø12	2	2	2	2	2	2
	ø16	2	2	2	2	2	2
	ø20	2	2	2	2	2	2
	ø25	2	2	2	2	2	2
Drill Sleeve	ø32	○	○	○	○	○	○
	MT2	1	1	1	1	1	1
	MT3	○	○	○	○	○	○
TOOL HOLDER							
O.D tool holder		4/5(V10/V12)	4/5(V10/V12)	3	4/5(V10/V12)	4/5(V10/V12)	3
Facing O.D. tool holder		1	1	1	1	1	1
I.D tool holder		5/6(V10/V12)	5/6(V10/V12)	4	5/6(V10/V12)	5/6(V10/V12)	4
Axial drilling and milling tool holder		×	×	1	×	×	1
Radial drilling and milling tool holder		×	×	1	×	×	1
CHUCK							
Collect Chuck		○	○	○	○	○	○
Hollow Hydraulic 3-Jaw Chuck	8"	●	●	●	×	×	×
	10"	×	×	×	●	●	●
Hard Jaw(3 pcs/set)		1	1	1	1	1	1
Soft Jaw(3 pcs/set)		1	1	1	1	1	1
Foot switch control for chuck		●	●	●	●	●	●
TAILSTOCK							
Manual Tailstock		×	●	●	×	●	●
Live Center MT4		×	●	●	×	●	●
Foot switch control for tailstock		×	○	○	×	○	○
CONTROLLER FUNCTION							
FANUC Oi-Mate TD		●	●	×	●	●	×
FANUC Oi-TD		○	○	●	○	○	●
Auto Power Off		●	●	●	●	●	●
Bar Feeder Interface		○	○	○	○	○	○
Dynamic Graph Simulation		●	●	●	●	●	●
Rigid Tapping		●	●	●	●	●	●
RS-232&PCMCIA Interface		●	●	●	●	●	●
Ethernet		●	●	●	●	●	●
MACHINE ACCESSORIES							
Manual/Auto Tool Presetter		○	○	○	○	○	○
Leveling Set Screws & Pads		7	9	9	7	9	9
Chip Conveyor & Chip Cart		●	●	●	●	●	●
Product Conveyor		○	○	○	○	○	○
Parts Catcher		○	○	○	○	○	○
Heat Exchanger		●	●	●	●	●	●
Bar Feeder		○	○	○	○	○	○
Front Air Blast		○	○	○	○	○	○
Tool Box & Service Tools		●	●	●	●	●	●
Operation/ Maintenance Manual		●	●	●	●	●	●
Coolant System		●	●	●	●	●	●
Automatic Lubrication System		●	●	●	●	●	●
3 Color Warning Lamp		●	●	●	●	●	●
Working Lamp		●	●	●	●	●	●
Transformer/Voltage Regulator		○	○	○	○	○	○

Standard and optional equipments listed as above are for reference only. The correct information is dependent on customer's order.