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EUMASPINNER

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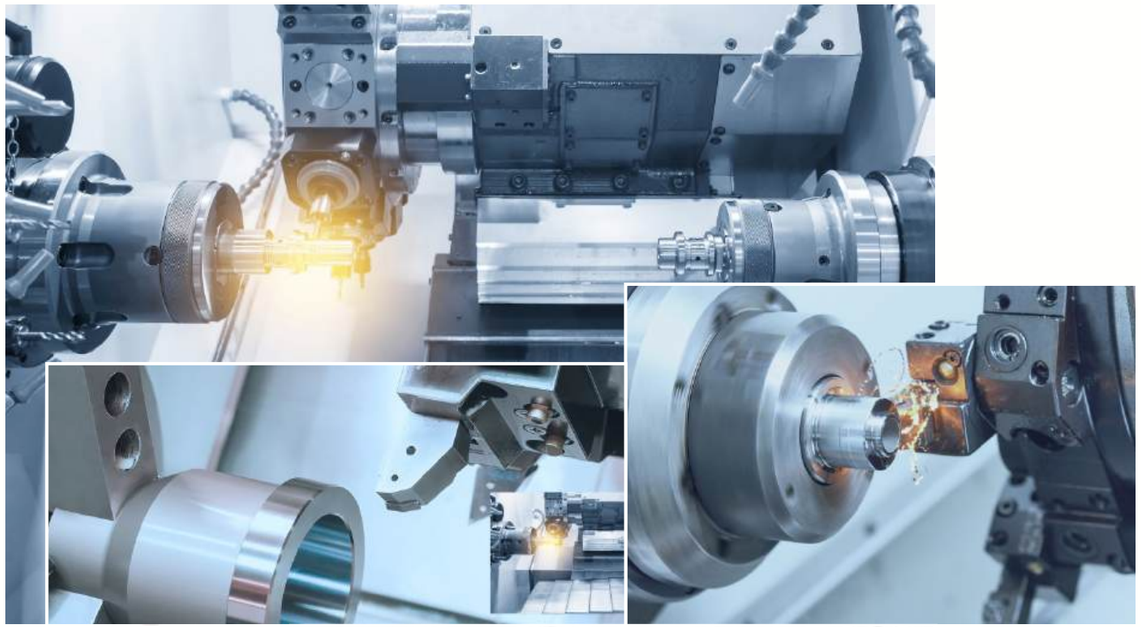
EUMASPINNER

12 Years Germany Technology Accumulated and Made by EUMASPINNER



EL SERIES SLANT-BED TURN MILL CENTERS

Structure Types

◆ Turn Mill Lathe + C ◆

◆ Turn Mill Lathe + CY ◆

◆ Turn Mill Lathe + MS ◆

◆ Turn Mill Lathe + MSY ◆

EL Series Overview

By nearly 20 years experience in slant bed lathe production. EUMASPINNER has amassed technical expertise and experienced engineers. The superb static and dynamic stability cutting machine EL series turn-mill lathe was born when the12 years joint venture with German Spinner in 2000s. We developed the optimal machine structure design to provide the perfect balance of brute power stability and precision to build a compact lathe delivering high performance.

Superior Casting

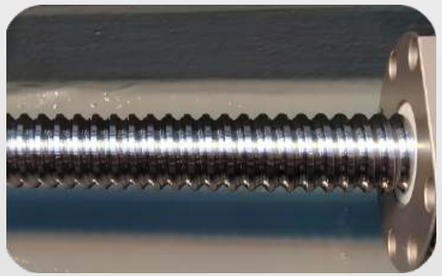
Machine bed is made of one-piece HT300 gray cast iron, are integrally cast, hardened, and ground. They possess a wide rail span, low center of gravity, large bed swing, and high stiffness while delivering excellent drainage and chip removal performance. The base bed's interior has a heavily distributed strengthening ribs design, effectively eliminating deformation caused by shear and tensile stress.

Meticulous Hand-scraping Work

The headstock and ballscrew anchoring seat require precise scraping for tighter alignments and tolerances between mating parts, ensuring excellent overall accuracy and machine stability. Skilled hand scraping creates oil pockets with high and low spot texture patterns, aligning the sliding surfaces between saddle and box guideways for smooth gliding while reducing wear and heat from friction.

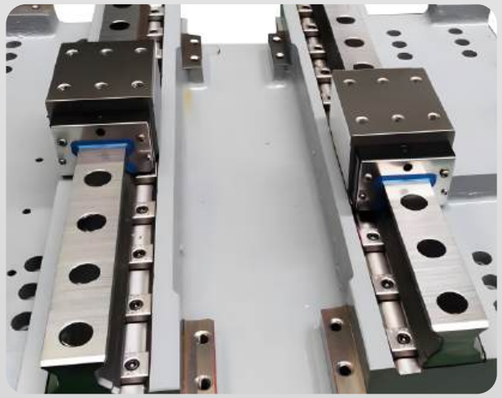
Ballscrew Drive Mechanism

Oversized AC servo motors are used to deliver powerful thrust for high feed rates and accurate cutting. Large diameter pre-tensioned precision customized HIWIN/THK ball screws are directly connected to the drive mechanism for nearly backlash free movement. Full travel repeat accuracy reach to 0.003 mm on 1000mm length according to German VDI3441 standard. C0 class ultra high accuracy ball screw is optional.



Linear Guideway

INNA/THK linear guide way design provides low friction coefficient,and minimize the difference between dynamic and static friction. Therefore,the stick-slip will not occur during sub-micron feeding.



Tailstock and Sub-spindle

Hydraulic/programmable tailstock

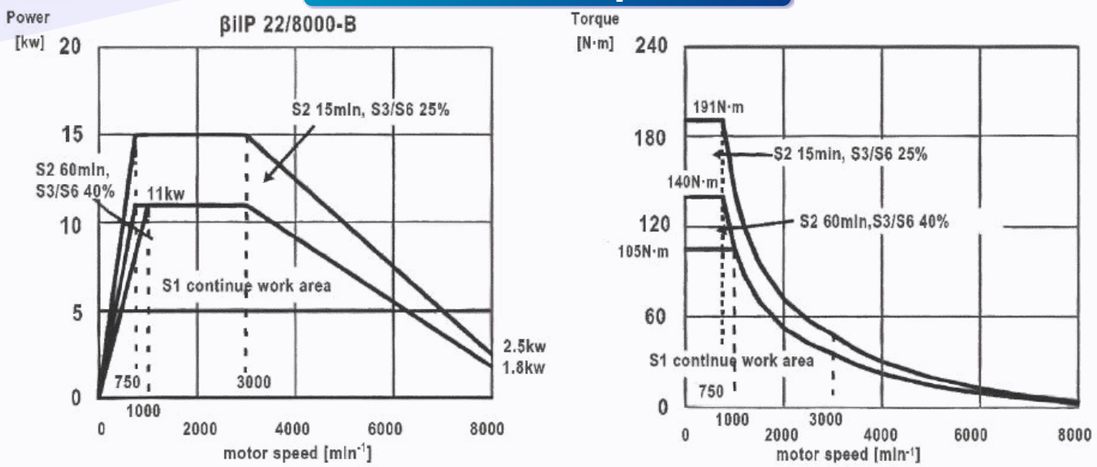
The tailstock moves as a whole, in two method moving way which could be driven by ball screw or by a X axis drag plate along the Z-axis.The extension and retraction of the tailstock sleeve are driving by hydraulic, the thrust can be adjusted by the user according to the condition of the workpiece.

Programmable sub-spindle

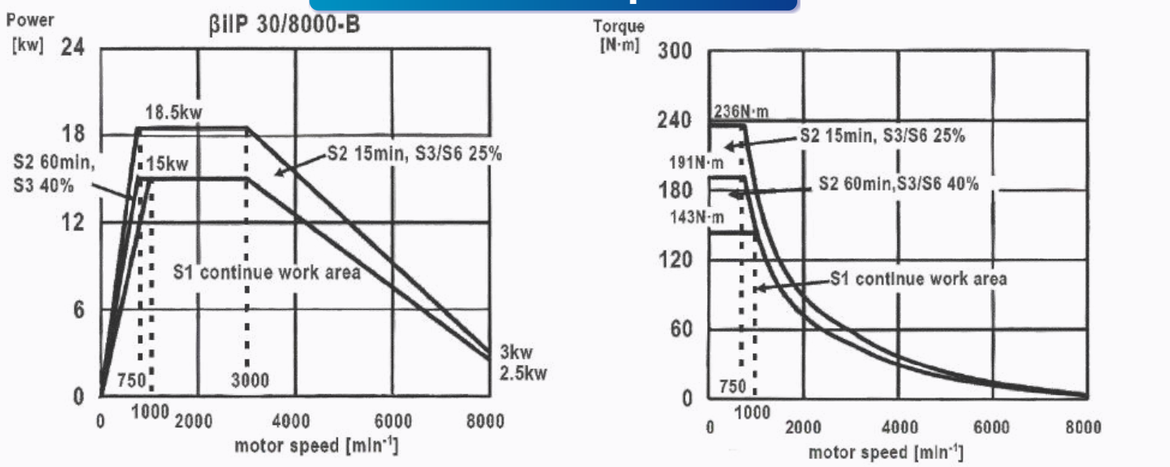
The sub-spindle moves as a whole moving by ball screw servo driving. Synchronization between main and sub spindle at any rotation speed can be programmed to perform part transfer for secondary machining.

Precise Spindle Motor Diagram

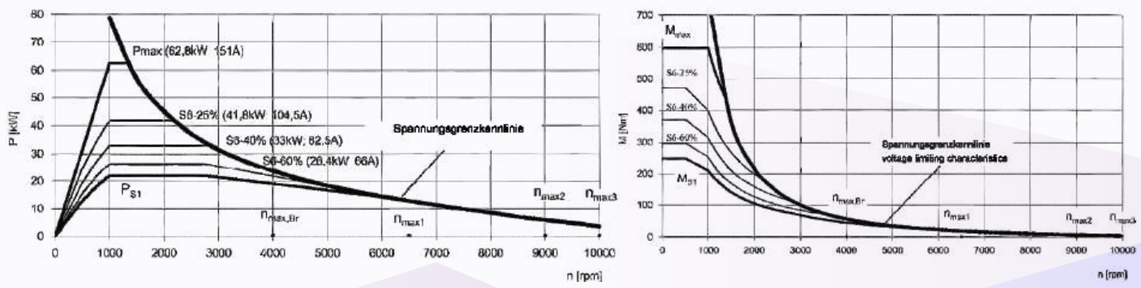
A2-6 Belt Spindle



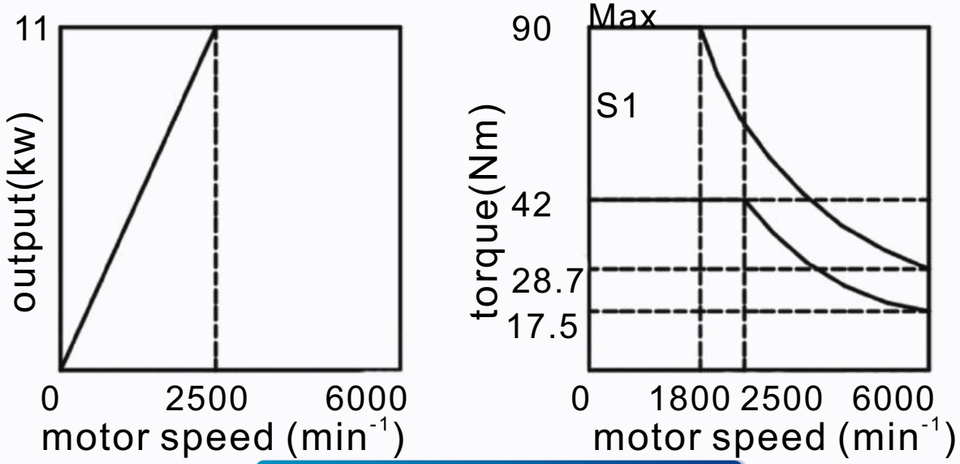
A2-8 Belt Spindle



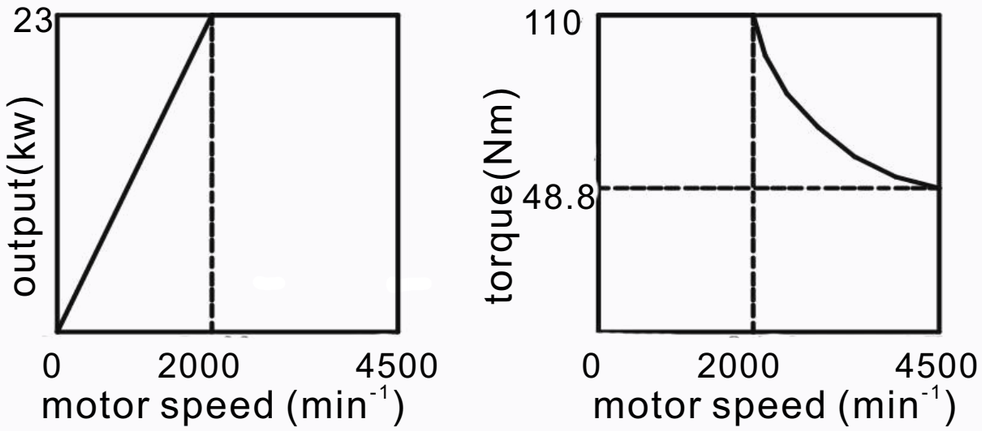
A2-11 Belt Spindle



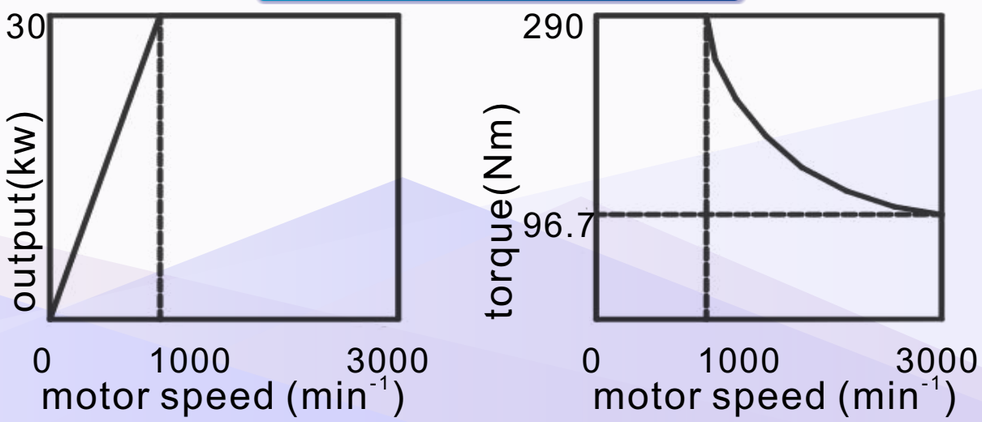
A2-5 Electrical Spindle



A2-6 Electrical Spindle



A2-8 Electrical Spindle

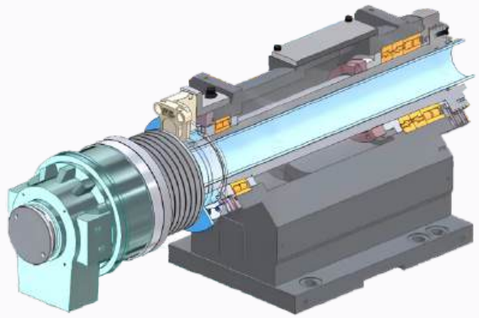


Spindle Nose Runout

Belt Spindle

EUMASPINNER in-house precision belt drive spindles with high precision circle encoder deliver unmatched power, durability, and machining capability. With high accuracy and low vibration.The headstock design reduces thermal deformation and ensures precise roundness and concentricity.Standard configurate with FANUC motor.Siemens system and motors are optional.

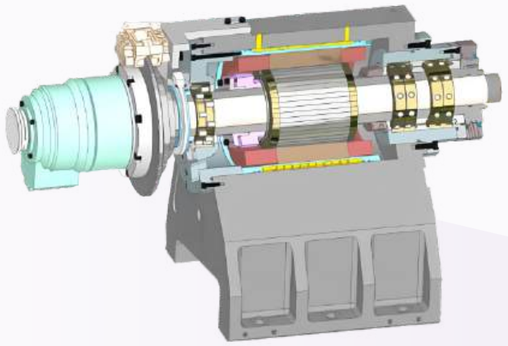
Belt spindle
- A2-6 spindle nose runout 0.0025 mm
- A2-8 spindle nose runout 0.0035 mm
- A2-11 spindle nose runout 0.0045 mm



Electrical Spindle

EUMASPINNER built-in motor driven electrical spindle thermally symmetrical design on the head stock diminishes distortion and provides stable accuracy on work pieces even in continuous high speed machining.Spindle is supported by a double row of tapered roller bearings in the front and rear of the spindle toresist axial cutting force, while self-alignment angular contact bearings provide tremendous radial load capability.

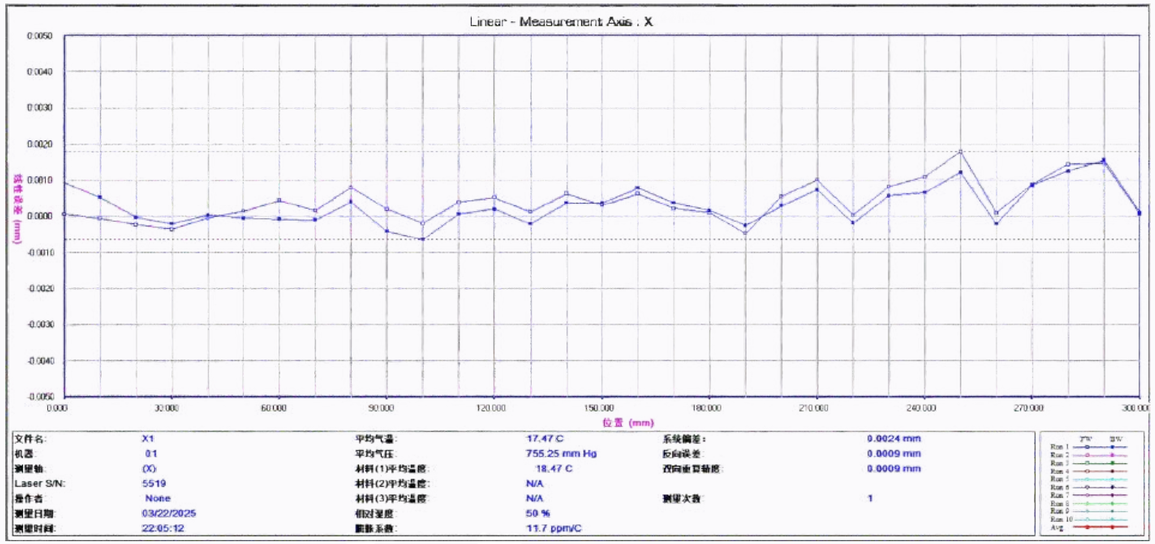
Electric spindle:
- A2-5 spindle nose runout 0.001 mm
- A2-6 spindle nose runout 0.0015 mm
- A2-8 spindle nose runout 0.0025 mm

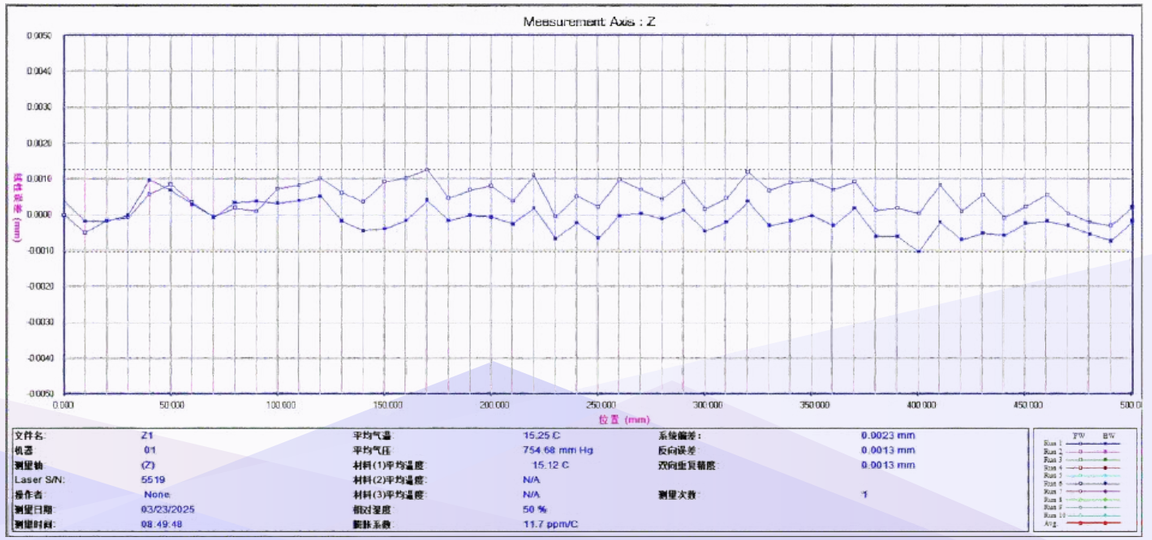


Positioning accuracy & Repeatability

Accuracy	Positioning Accuracy (VDI3441)μm		Repeatability Accuracy (VDI3441) μm	
Axis	X	Z	X	Z
EI-65Li+C	6	6	3	3
EL-52Li+MSY	3	3	1.5	1. 5

Axis Accuracy

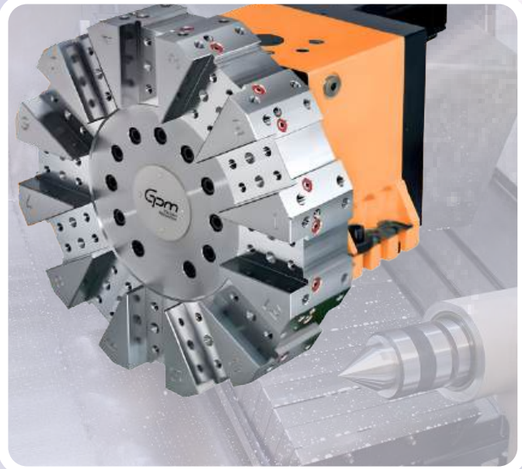




High-precision SAUTER Turrets

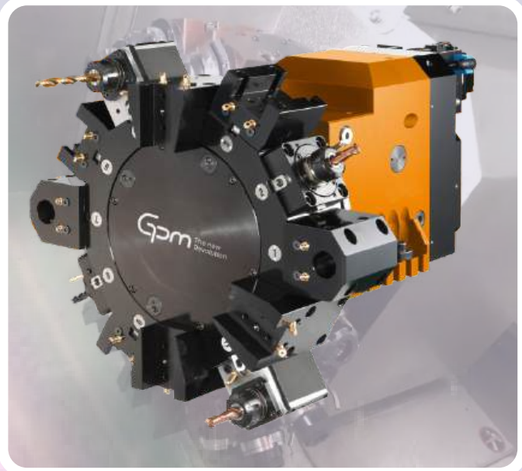
Servo Turret

The servo turret utilizes a high precision curved-tooth coupling for servo-driven tool disc rotation. It offers precise positioning with cam control and accommodates 10/12 tool holders.



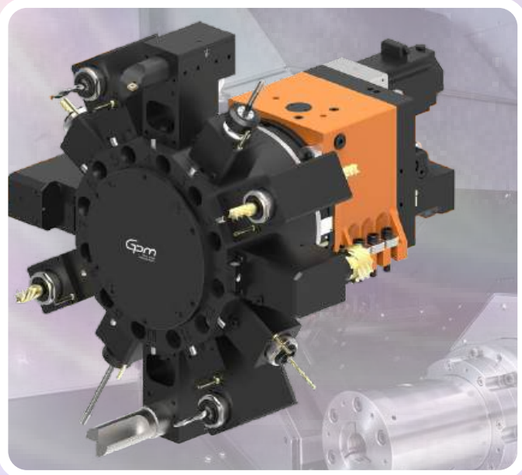
BMT Power Turret

The SAUTER BMT55/65/75 power turret uses a high-precision curvic coupling and is driven by a servo motor to index the tool position. It has the advantages of short tool indexing times and high positioning accuracy.



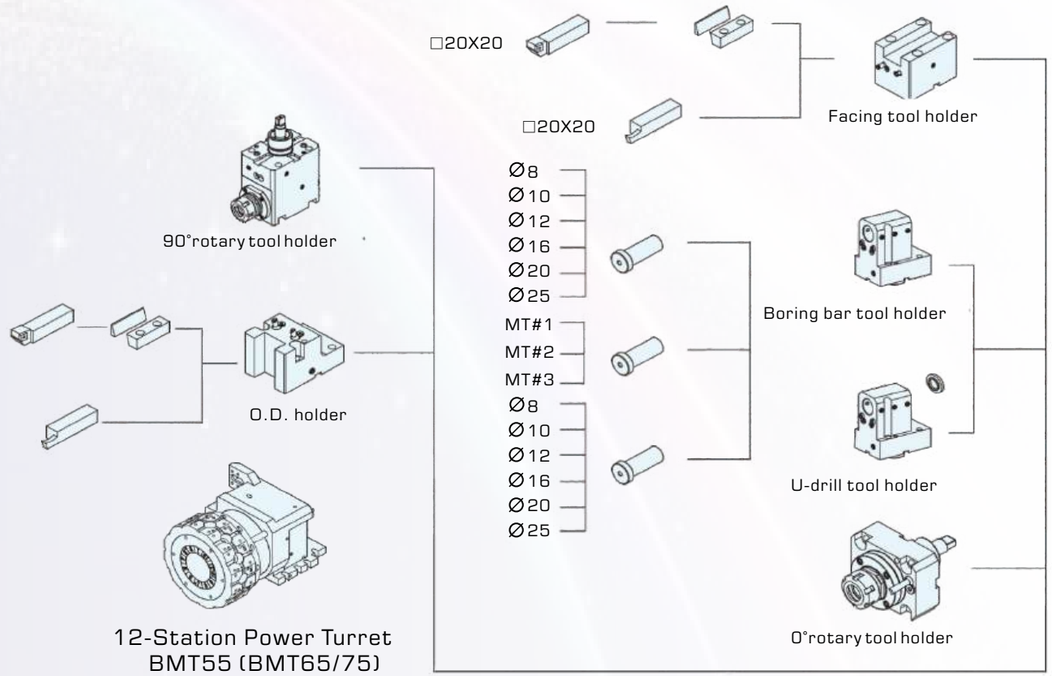
VDI Power Turret

The optional VDI30/40/50 tool system allows for quick tool change and greatly improved production efficiency.

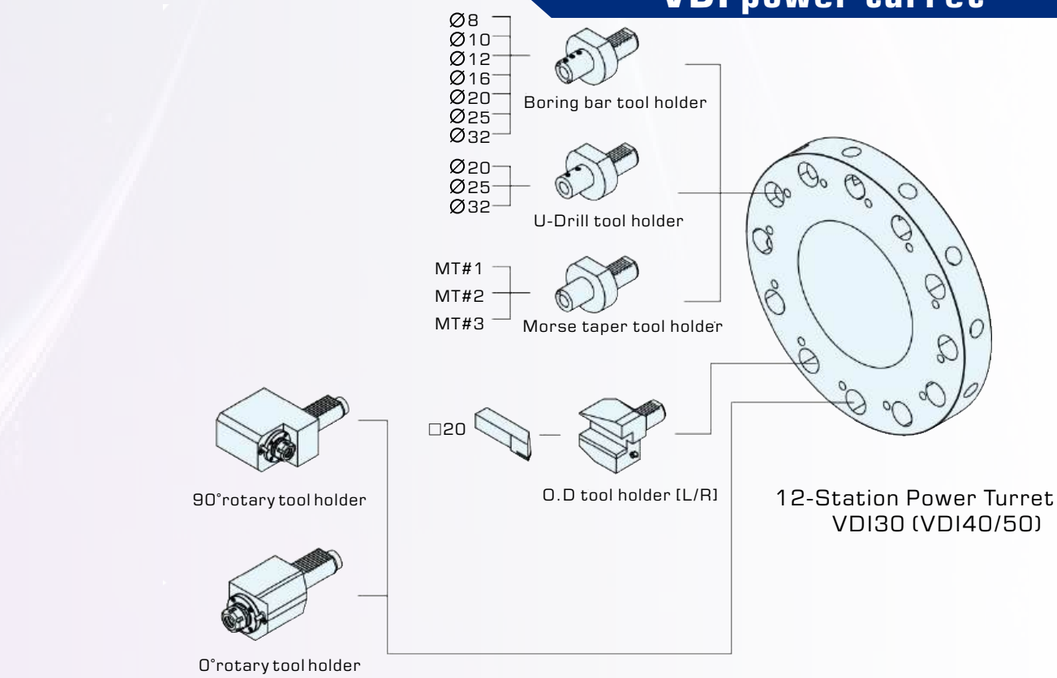


Tooling System

BMT power turret



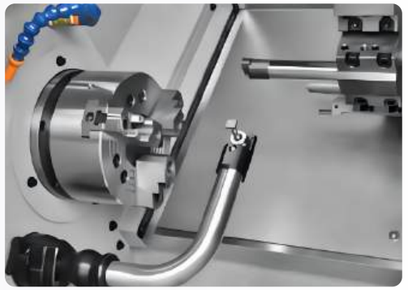
VDI power turret



Optional Peripheral Equipment

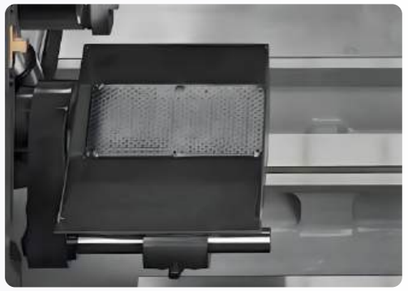
Tool Setter

A tool inspection arm automatically detects tool tip wear It ensures high-precision machining quality, maintaining stability and effectively reducing machine downtime.



Parts Catcher

After finishing the machining cycle, the workpiece is automatically transferred to the collection box by parts conveyor.



Steady Rest

A movable steady rest can reduce self-weight and centrifugal force effects on long workpieces, ensuring concentricity control. Main body travel can be hydraulic, servo-driven, or manual.

Bar Feeder

LNS DH65/DH65L diameter from 5-65mm,length 1210/1510 mm bar feeder can automatically feeds raw material bars into the spindle for continuous operation, increasing production capacity and reducing labor costs.

Oil Mist Collector

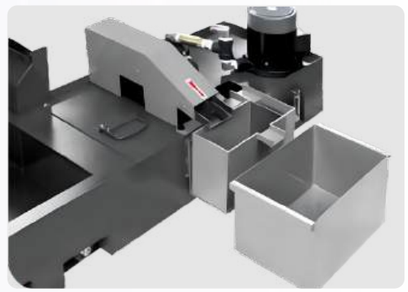
It can effectively separate fine oil mist particles, reducing pollution and damage to the workplace and machinery, saving costs, and protecting the environment.

Grating Scale

The linear scale encoder measures position during servo motion, ensuring accuracy and speed while eliminating errors arising from backlash, pitch error, and thermal displacement due to the heat generated by the ball screw.

Oil-Coolant Skimmer

This device removes floating oil from coolant, prolong its lifespan and improving machining efficiency, and product quality, and providing environmental protection.



Control Panel

A Fanuc control panel with touch screen is standard and optional Siemens is also available. Comes with a 90 degree swivel for quick programming and control of the machine.

Turn Mill Lathe+C Parameters

Model	unit	EL-42Li+C		EL-52Li+C		EL-65Li+C		EL-75Li+C			EL-80Li+C		
Control system	-	FANUC Oi-TF		FANUC Oi-TF		SIEMENS 828D		SIEMENS 828D			SIEMENS 828D		
Working Range													
Max. Swing over bed	mm	560		600		650		750			930		
Max. Swing over slide	mm	340		370		420		480			550		
Max. Turning diameter (Disc/shaft)	mm	420/320		480/350		500/380		630/450			700/500		
Max. Turning length	mm	500	700	1000	1500	1000	1500	1000	1500	2000	2000	3000	4000
Belt Spindle (C axis)													
Nose	-	A2-6		A2-6	A2-8	A2-8	A2-11	A2-11		A2-15	A2-15		
Hole/bar through	mm	66/52		66/52	75/65	87/75	105/90	105/90		132/120	132/120		
Chuck size	inch	8		8	10	10	12	12		15	21		
Max. Speed	rpm	4000		4000	3500	3000	2000	2000		1200	1200		
Encoder indexing	degree	0.001		0.001		0.001		0.001			0.001		
Power (S1/S6 40%)	kw	11/15		11/15	15/18.5	22/41.8		22/41.8		28.42	28/42		
Output torque (S1/S6 40%)	Nm	157/210		260/350	357/508	525/925		630/1100		801/1365	801/1365		
Axis													
Guideway	-	Linear (Op:hard)											
X-axis travel	mm	230		270		280		350			500		
Z-axis travel	mm	550	750	1150	1650	1050	1600	1120	1650	2180	2120	3120	4120
X/Z feeding speed	m/min	30		24		24		20			20		
X/Z motor power/torque	kw/Nm	2.5/20		3.0/27		3.55/20		3.55/20			4/27		
X/Z axis position accuracy (full travel)	mm	0.005		0.007		0.008		0.008			0.008		
X/Z axis Re-position accuracy (full travel)	mm	0.003		0.004 (1000mm)		0.004 (1000mm)		0.004 (1000mm)			0.004 (1000mm)		
Power Turret													
Turret type	-	BMT55 (Op:VDI30)		BMT55 (Op:VDI40)		BMT65 (Op:VDI50)		BMT65 (Op:VDI50)			BMT75		
Numbers	T	12		12		12		12			12		
Cutting tool shank	mm	25x25		25x25		32x32		32x32			32x32		
Boring tool diameter	mm	32		32		40		40			50		
Milling speed	rpm	6000		6000		5000		5000			5000		
Rated power	kw	4.5		4.5		4.9		4.9			4.9		
Rated torque	Nm	18/48		18/48		20		20			20		
Tailstock													
Moving method	-	Hard/Turret Slide Driving (Op: Linear / Servo driving)											
Travel	mm	450	650	1050	1350	920	1380	920	1380	1900	1900	2850	3800
Sleeve taper	-	M4#		M5#		M5#		M6#			M6#		
Sleeve diameter / travel (hydraulic)	mm	100	80	100	110	100	110	180		160	180/160		
Others													
Coolant power	w	350		500		700		700			750		
Water tank	L	190		220	270	220	270	220	270	320	320	350	400
Hydraulic tank capacity	L	50		50		50		50			50		
Total power	kva	25/30		30		35		45			55		
LxWxH (chip conveyor)	mm	3140x2120x2060	3140x2150x2060	3500x2070x2120	4100x2070x2120	3970x2240x2340	4600x2240x2340	3850x2100x1950	4560x2100x1950	4880x2100x1950	4880x2330x2180	5880x2330x2180	6880x2330x2180
Weight	kg	4900	5700	6900	8800	7000	9000	7200	9200	11000	12000	15000	18000

Turn Mill Lathe+CY Parameters

Model	unit	EL-42Li+CY	EL-52Li+CY	EL-75Li+CY
Control system	-	FANUC Oi-TF	FANUC Oi-TF	FANUC Oi-TF
Working Range				
Max. Swing over bed	mm	560	600	650
Max. Swing over slide	mm	240	260	320
Max. Turning diameter (Disc/shaft)	mm	280/220	320/240	400/300
Max. Turning length	mm	450	650	900
Belt Spindle (C axis)				
Nose	-	A2-6	A2-6	A2-8
Hole/bar through	mm	66/52	66/52	87/75
Chuck size	inch	8	8	10
Max. Speed	rpm	4000	4000	3000
Encoder indexing	degree	0.001	0.001	0.001
Power (S1/S6 40%)	kw	11/15	11/15	15/18.5
Output torque (S1/S6 40%)	Nm	157/210	260/350	357/508
Axis				
Guideway	-	Linear (Op:hard)		
X-axis travel	mm	210	240	300
Y-axis travel	mm	±40	±50	±60
Z-axis travel	mm	550	750	1050
X/Y/Z feeding speed	m/min	30	30	24
X/Y/Z motor power/torque	kw/Nm	2.5/20	2.5/20	3.0/27
X/Y/Z axis Re-position accuracy (full travel)	mm	0.003	0.003	0.004
Power Turret				
Turret type	-	BMT55 (Op:VDI30)	BMT55 (Op:VDI40)	BMT65 (Op:VDI50)
Numbers	T	12	12	12
Cutting tool shank	mm	25x25	25x25	25x25
Boring tool diameter	mm	32	32	32
Milling speed	rpm	6000	6000	6000
Rated power	kw	4.5	4.5	4.5
Rated torque	Nm	18/48	18/48	18/48
Tailstock				
Moving method	-	Hard/Turret Slide Driving (Op: Linear / Servo driving)		
Travel	mm	450	650	1050
Sleeve taper	-	MT4#	MT5#	MT5#
Sleeve diameter / travel (hydraulic)	mm	100/80	100/80	100/110
Others				
Coolant power	w	350	350	500
Water tank	L	190	190	220
Hydraulic tank capacity	L	50	50	50
Total power	kva	30	30	45
LxWxH (chip conveyor)	mm	3140x2220x2460	3140x2220x2460	3850x2300x2500
Weight	kg	5600	6400	7900

Turn Mill Lathe+MS Parameters

Model	unit	EL-42Li+MS		EL-52Li+MS	
Control system	-	Siemens 828D		Siemens 828D	
Working Range					
Max. Swing over bed	mm	560		600	
Max. Swing over slide	mm	340		370	
Max. Turning diameter (Disc/shaft)	mm	420/320		480/350	
Max. Turning length	mm	400/600		850	
Electrical Main/Sub-Spindle (C1/C2 axis)					
Nose	-	A2-6	A2-5	A2-8	A2-6
Hole/bar through	mm	66/52	56/45	87/75	66/52
Chuck size	inch	8	6	10	8
Max. Speed	rpm	4500	6000	4000	4500
Encoder indexing	degree	0.001		0.001	
Rated power (S1)	kw	23	11	30	23
Rated torque (S1)	Nm	110	42	290	110
Spindle nose runout	mm	0.0015	0.001	0.002	0.0015
Axis					
Guideway	-	Linear			
X-axis travel	mm	230		270	
Z1-axis travel	mm	550	750	1100	
Z2-axis travel	mm	450	650	1000	
X/Z1/Z2 feeding speed	m/min	30/24/20		30/24/20	
X/Z1/Z2 motor power/torque	kw/Nm	3.0/18		3.55/22	
X/Z1/Z2 axis position accuracy (full travel)	mm	0.005		0.006	
X/Z1/Z2 axis Re-position accuracy (full travel)	mm	0.0025		0.003	
Power Turret					
Turret type	-	BMT55 (Op:VDI30/40)		BMT65 (Op:VDI50)	
Numbers	T	12		12	
Cutting tool shank	mm	25x25		25x25	
Drilling/milling tool collet	-	ER25		ER32	
Boring tool diameter	mm	32		32	
Milling speed	rpm	5000		5000	
Rated/max power	kw	4.56/6.28		4.56/6.28	
Rated/max torque	Nm	14.5/81		14.5/81	
Others					
Coolant power	W	350		750	
Water tank	L	190		220	
Hydraulic tank capacity	L	50		50	
Total power	kva	50		70	
LxWxH (chip conveyor)	mm	3140x2120x2060		3140x2120x2060	
Weight	kg	5500		6200	

Turn Mill Lathe+MSY Parameters

Model	unit	EL-42Li+MSY		EL-52Li+MSY		EL-75Li+MSY	
Control system	-	Siemens 828D		Siemens 828D		Siemens 828D	
Working Range							
Max. Swing over bed	mm	550		600		650	
Max. Swing over slide	mm	240		260		320	
Max. Turning diameter (Disc/shaft)	mm	280/220		320/240		400/300	
Max. Turning length	mm	400		600		850	
Electrical Main/Sub-Spindle (C1/C2 axis)							
Nose	-	A2-6	A2-5	A2-6	A2-5	A2-8	A2-6
Hole bar through	mm	66/52	56/45	66/52	56/45	87/75	66/52
Chuck size	inch	8	6	8	6	10	8
Max. Speed	rpm	4500	6000	4500	6000	4000	4500
Encoder indexing	degree	0.001		0.001		0.001	
Power (S1/S6 40%)	kw	23	11	23	11	30	23
Output torque (S1/S6 40%)	Nm	110	42	110	42	290	110
Spindle nose runout	mm	0.0015	0.001	0.0015	0.001	0.002	0.0015
Axis							
Guideway	-	Linear					
X-axis travel	mm	210		240		300	
Y-axis travel	mm	±40		±50		±60	
Z1-axis travel	mm	550		750		1050	
Z2-axis travel	mm	400		600		800	
X/Y/Z1/Z2 feeding speed	m/min	30/15/24/20		30/15/24/20		30/15/24/20	
X/Y/Z1/Z2 motor power/torque	kw/Nm	3.0/18		3.0/18		3.55/22	
X/Z axis position accuracy (full travel)	mm	0.005		0.005		0.006	
X/Z axis Re-position accuracy (full travel)	mm	0.0025		0.0025		0.003	
Power Turret							
Turret type	-	BMT55 (Op:VDI30)		BMT55 (Op:VDI40)		BMT65 (Op:VDI50)	
Numbers	T	12		12		12	
Cutting tool shank	mm	25x25		25x25		25x25	
Drilling/milling tool collet	-	ER25		ER25		ER32	
Boring hole diameter	mm	32		32		32	
Milling speed	rpm	5000		5000		5000	
Rated/max power	kw	4.56/6.28		4.56/6.28		4.56/6.28	
Rated/max torque	Nm	14.5/81		14.5/81		14.5/81	
Others							
Coolant power	w	350		350		5700	
Water tank	L	190		190		220	
Hydraulic tank capacity	L	50		50		50	
Total power	kva	50		50		70	
LxWxH (chip conveyor)	mm	4460x2220x2470		4460x2220x2470		4950x2300x2500	
Weight	kg	5800		6800		8600	

Standard & Optional Configurations

Standard Configuration	Option Configuration
1. 30° one-piece casting slant bed	1. C0 Ultra-high precise ball screw
2. Power turret 12 positions	2. Machine guideway constant temperature
3. Axis linear roller guideway	3. Italy BF gear reducer
4. C3 high precise ball screw	4. Oil-water separator
5. C axis indexing 0.001°	5. Oil-mist collector
6. FANUC β main motor, FANUC axis motor	6. Parts catcher + conveying belt
7. Cutting coolant system	7. Bar feeder
8. Fully enclosed protective cover	8. RENISHAW tool re-setter
9. Hydraulic system	9. RENISHAW workpiece measurement
10. Hydraulic 3-jaw chuck, standard hard jaw	10. High pressure coolant device
11. Automatic lubrication device	11. Rotating window
12. Water gun	12. HEIDENHAIN optical grating scale
13. Air gun	13. Mandrel for geometric accuracy test
14. Electric cabinet air conditioner	14. Collision avoidance dynamic detection system
15. Electronic handwheel	15. High pressure 20 bar coolant
16. CF card and USB interface	16. Steady rest
17. Transformer	17. Additional warranty
18. Chip conveyor + chip collector	18. Siemens 828 system, 10.4" color screen
19. Collet foot switch	
20. Work light	
21. Safety door lock	
22. Work completion indicating light	
23. A set of tools for adjustment	
24. 8 tool holders including 2 drive holders	
25. Leveling bolts and pads	
26. Operation and maintenance manual	
27.FANUC 0i-TF/10.4" color screen	