



<<TURNING SERIES-BOX SLIDE GUIDE>>

杭州上翔精密机械有限公司

HANGZHOU SHANGXIANG PRECISION MACHINERY CO.,LTD



Boxslide way 8 inch series

TS-8B high rigidity turning machine
TS-8BM high rigidity turning center
TS-8BL high rigidity turning machine
TS-8BLM high rigidity turning center

Boxslide way 10 inch series

TS-10B high rigidity turning machine
TS-10BM high rigidity turning center

Boxslide ways 12/15 inch series

TS-12B high rigidity turning machine
TS-12BM high rigidity turning center
TS-12BMY high rigidity turning center with y axis
TS-15BM heavy duty turning center

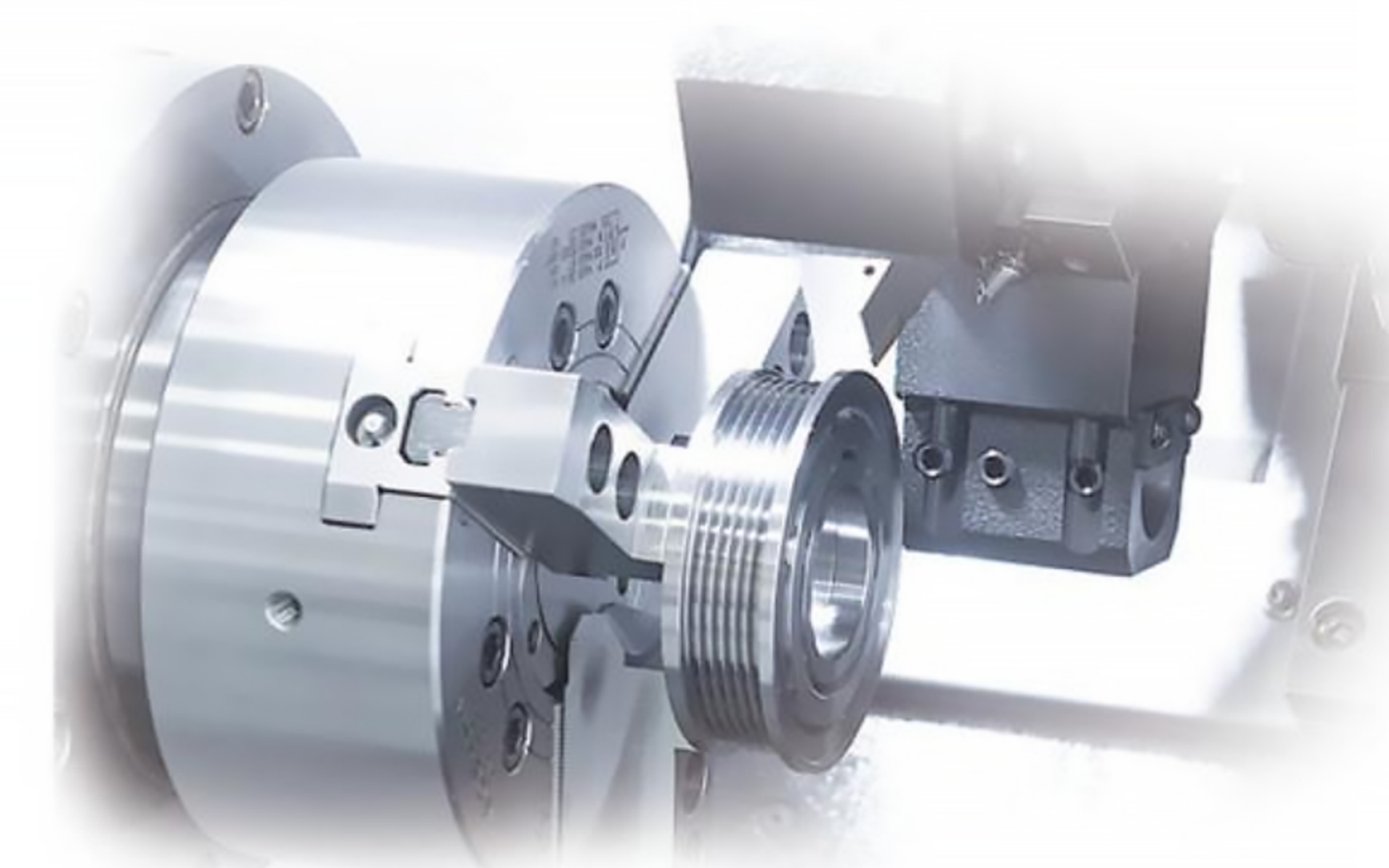
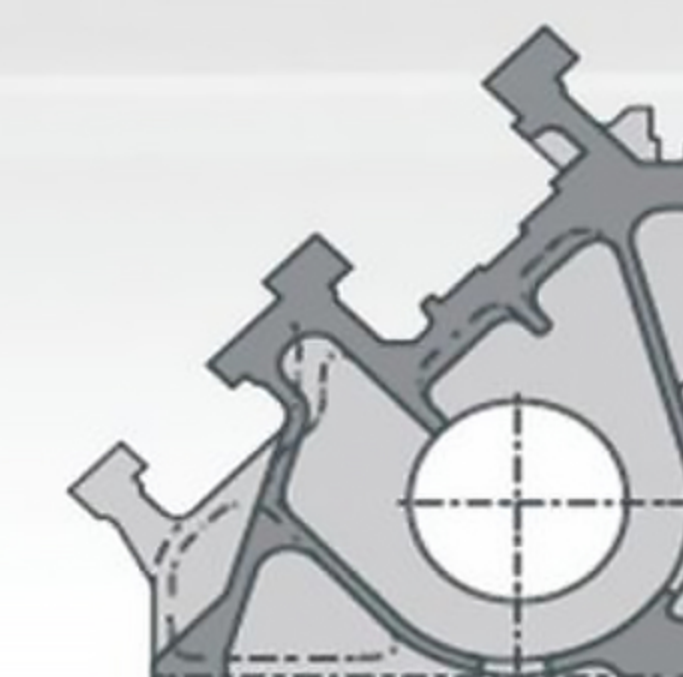
NC/BMT 刀塔刀具干涉图 NC/BMT Turret tool interference diagram

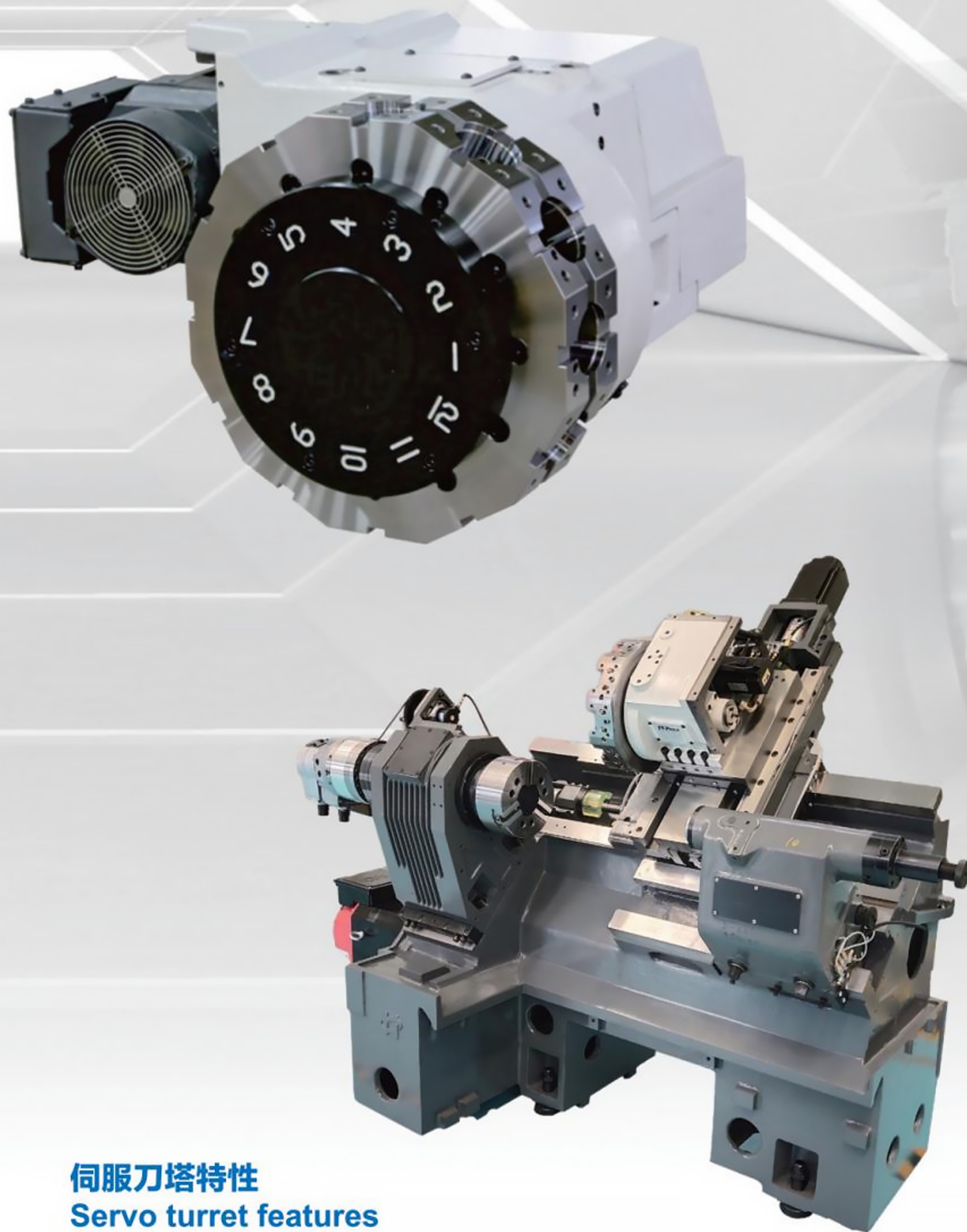
TS-8B high rigidity turning machine

TS-8BM high rigidity turning center

机型特性 Model features

- 45°斜床整体结构, 具有最佳加工稳定性, 且排屑顺畅;
- 45° tilting bed integral structure, with optimum machining stability and smooth chip discharge;
- 一体装配式主轴, 采用高刚性轴承结构, 确保轴向受力及径向受力;
- Integrated assembly spindle with high-rigidity bearing structure to ensure axial and radial forces;
- 床身采用 HT300 铸件一体成型, 能提供较大的防震阻尼及减低变形量, 使得机台不但耐用而且具有特别突出的性能表现
- The bed is integrally made from HT300 castings, which provide greater shock-proof damping and reduced deflection, and the machine table features with durability and outstanding performance.
- X, Z 为宽润的硬轨滑道, 快速进给率达 20 米 / 分, 经硬化处理及精密研磨, 采用可视化多点集中润滑系统, 独特硬轨铲刮装配工艺, 且有吸振之功能, 减少了刀具损耗, 提高了工件质量。
- The X and Z axes have a wide hard-track slide with a rapid feed rate up to 20 m/min, and are subject to the hardening and precision grinding treatment. A visual multi-point centralized lubrication system is used with a unique hard-track scraper assembly process and a vibration-absorbing function, which reduces tool wear and improves workpiece quality.
- 手工铲花: 所有滑板, 主轴台, 刀塔, 尾座, 及滚珠导螺杆结构与基座接触面皆以手工铲花, 以达成优异的组装精度、结构刚性及均衡负载
- Manually scrapped: All contact surfaces of the slide, spindle table, turret, tailstock and ball-bearing screw structure as well as the base are manually-scraped to realize excellent assembly accuracy, structural rigidity and load balance.





伺服刀塔特性 Servo turret features

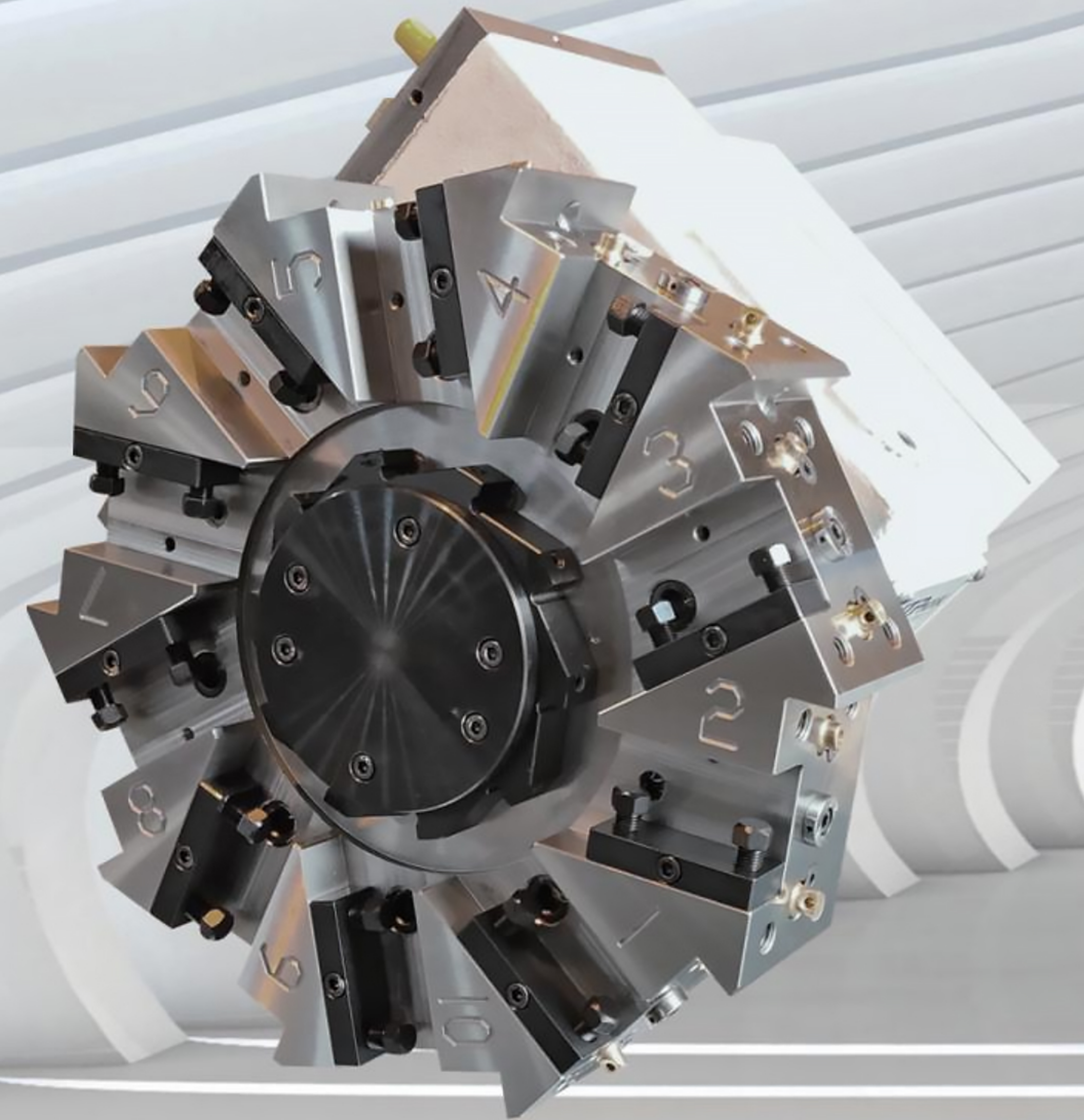
- 高刚性的整体设计
- High-rigidity overall design
- 搭配高精度的三片式放射型离合器
- Equipped with high-precision three-plate radial clutch
- 确保其定位精度、重复定位精度
- Ensure positioning accuracy and repeat positioning accuracy
- 搭配伺服马达驱动刀盘旋转
- Equipped with servomotor-driven turret rotation
- 进行双向或是任意就近选刀
- Bi-directional or close-to-anywhere tool selection
- 使用油压原理放松、夹紧离合器
- Clutch release and clamping by oil-pressure principle
- 配合近接开关回授离合器动作信号
- Cooperate with proximity switch to feedback the clutch action signal
- 迅速且精准的达到换刀动作
- Fast and precise tool change
- 最近换刀时间 0.25 秒, 最远换刀时间 0.5 秒
- 0.25 seconds for the closest tool change, 0.5 seconds for the furthest tool change

Main parameters

Parameter		Model	TS-8B	TS-8BM
Capacity	Turning diameter on the bed surface		Φ460 mm	Φ600 mm
	Max turning diameter		Φ400mm	Φ350mm
	Turning diameter on the slide		Φ260mm	Φ350mm
	Max turning length		400mm	330mm
Spindle and chuck	Spindle nose(chuck size)		A2-6(8")	A2-6(8")
	Spindle motor power		11/15KW	11/15KW
	Max spindle speed		3000rpm	3000rpm
	Spindle bore diameter		Φ61mm	Φ61mm
	Bar through-hole diameter		Φ52mm	Φ52mm
Feed	X/Z axis ball screw		3210/3210	3210/3210
	X-axis limit travel		245mm	245mm
	Z-axis limit travel		420mm	420mm
	X/Z axis rapid feedrate		20/20 m/min	20/20 m/min
	X and Z axis connection method		Direct connect	Direct connect
Accuracy	Machining accuracy		IT6	IT6
	positioning accuracy		±0.005mm	±0.005mm
	Repeatpositioning accuracy		±0.003mm	±0.003mm
Turret	Turret model		NC80-V10-300	BMT45/12T/ER25/4000rpm
	Turret center height dimensions		80	80
	Tool size		25×25	25×25
	Boring tool holder dimensions		40mm	32mm
Tailstock	Sleeve diameter		75mm	75mm
	Sleeve stroke		80mm	80mm
	Max tailstock travel		400mm	400mm
	Taper		MT4	MT4
Other	Machine Bed		full casting 45° bed	full casting 45° bed
	Machine size		2200/1500/1700mm	2200/1500/1700mm
	Power supply		25KVA	30KVA
Weight	Machine weight		3.5T	4T
CNC controller: FANUC,MITSUBISHI,SIEMENS,SYNTEC,GSK ETC				

TS-8BL high rigidity turning machine

TS-8BLM high rigidity turning center

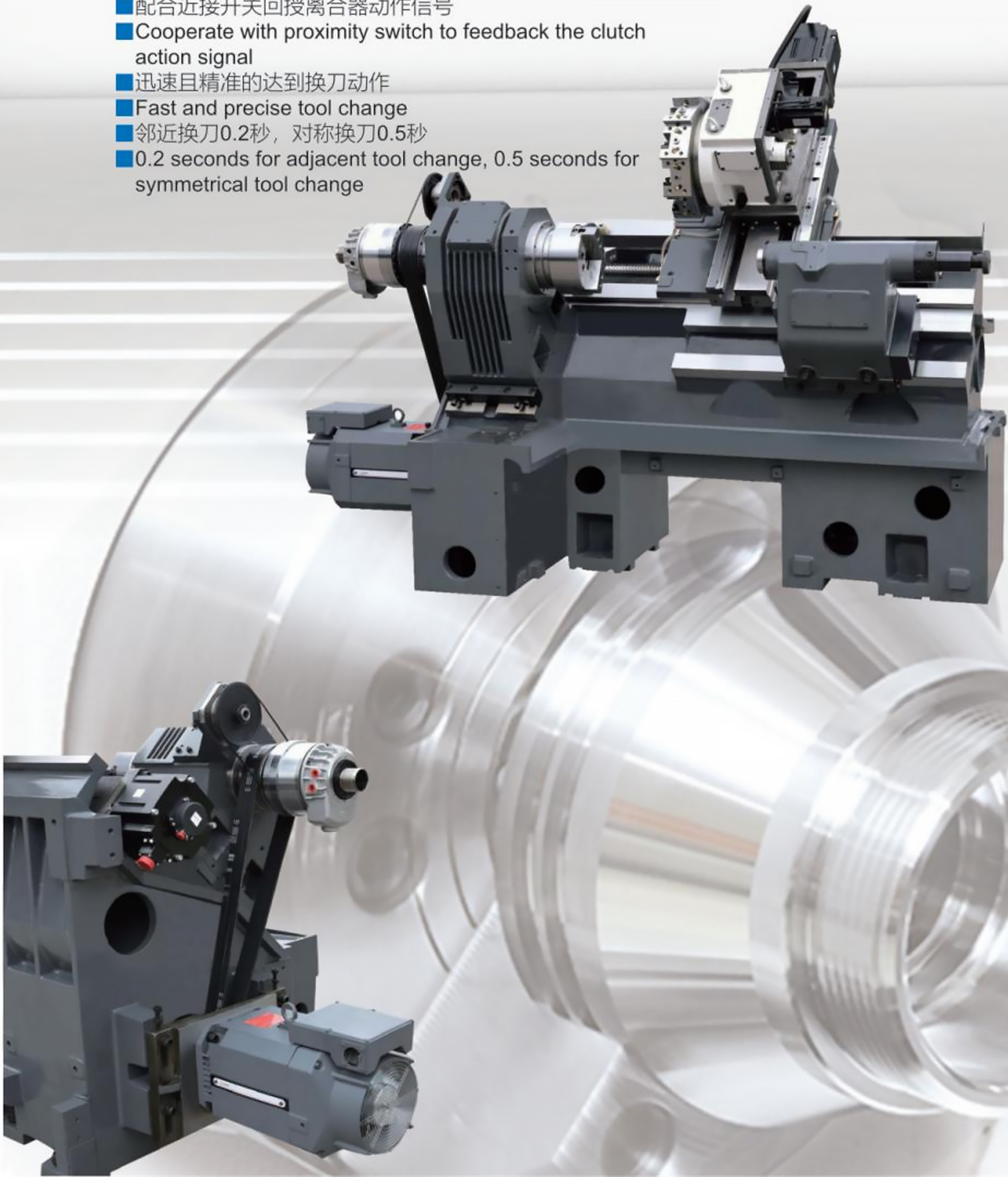


机型特性 Model features

- 45°斜床式结构, 具有最佳加工稳定性, 而且除屑更容易;
- 45 ° tilting bed structure, with optimum machining stability and smooth chip discharge;
- X, Z 轴为宽润的硬轨滑道, 配合大跨距设计, 在重切削时, 更凸显独特稳定性, 经硬化处理及精密研磨人工铲配;
- The X and Z axes have a wide hard-track slide with a large span design, which provides unique stability during heavy cutting, subject to the hardened and precision grinding and manual fit-scaper;
- 床身采用 HT300 铸铁一体成型, 具有高刚性结构;
- The bed is integrally made from HT300 castings, with high-rigidity construction;
- X/Z 轴快速进给率 24 米 / 分钟;
- The rapid feed rate of X/Z axis is 24 m/min;

伺服刀塔特性 Servo turret features

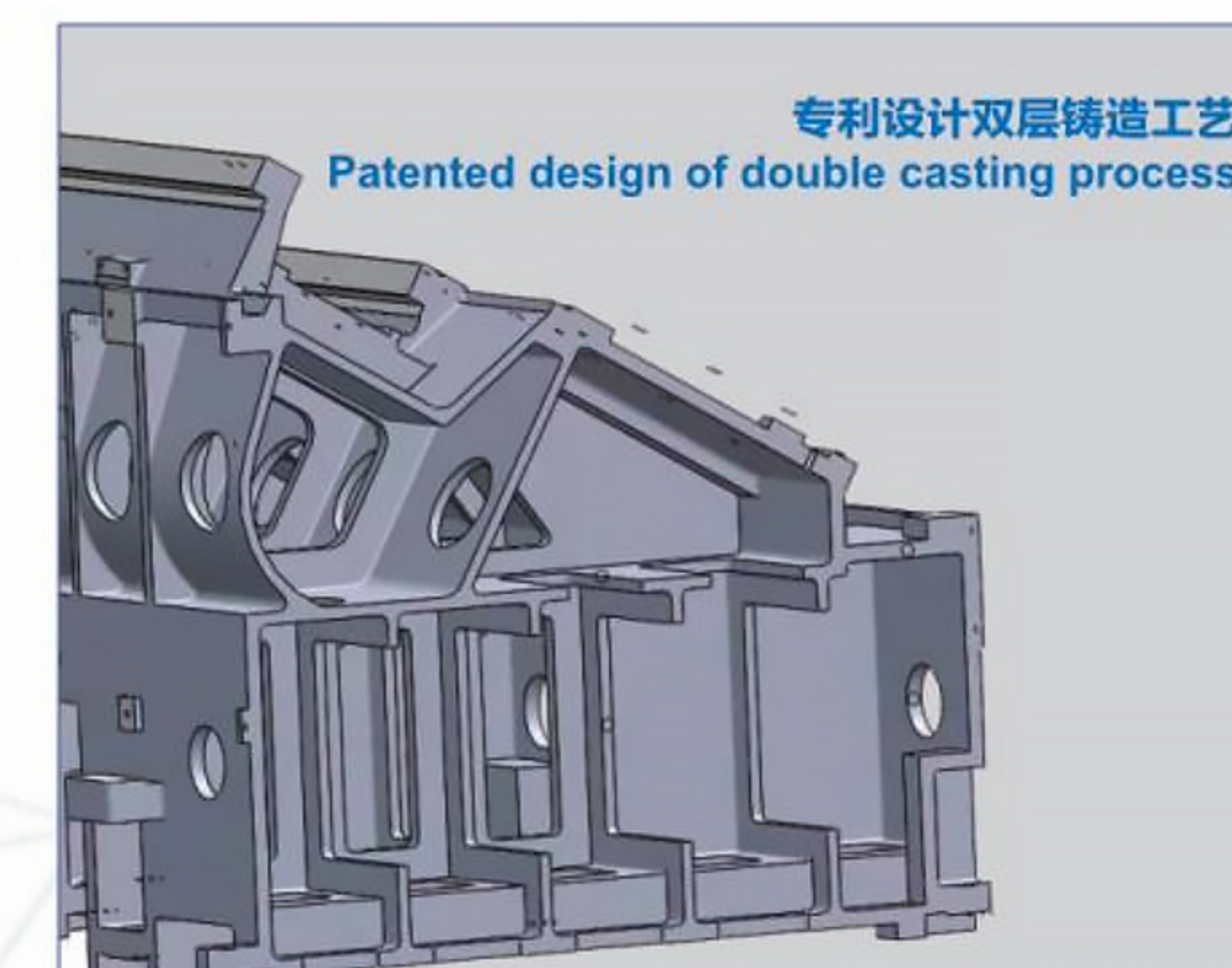
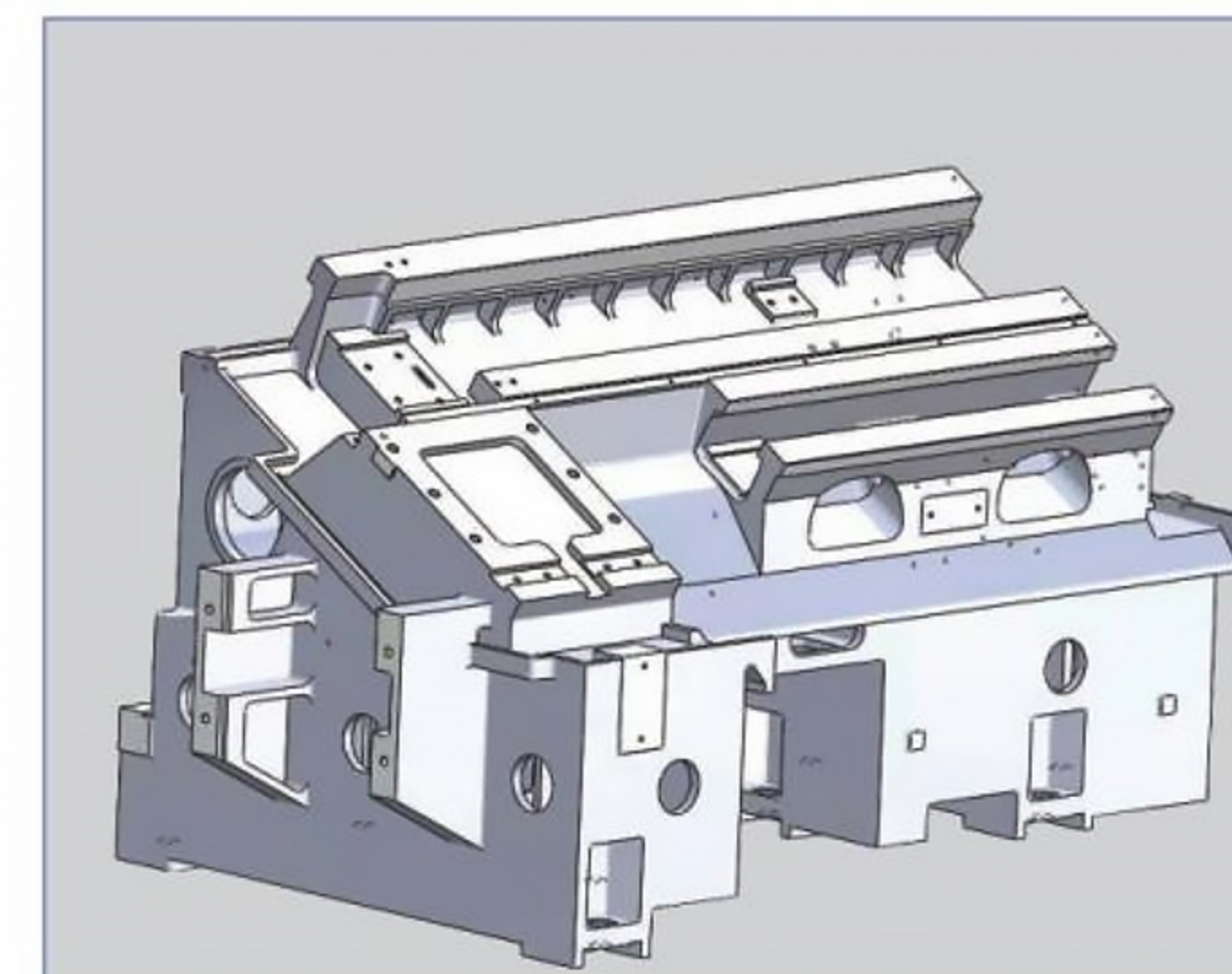
- 伺服刀塔特性
- Servo turret features
- 高刚性的整体设计
- High-rigidity overall design
- 搭配高精密的三片式放射型离合器
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- Ensure positioning accuracy and repeat positioning accuracy
- 搭配伺服马达驱动刀盘旋转
- Equipped with servomotor-driven turret rotation
- 进行双向或是任意就近选刀
- Bi-directional or close-to-anywhere tool selection
- 使用油压原理放松、夹紧离合器
- Clutch release and clamping by oil-pressure principle
- 配合近接开关回授离合器动作信号
- Cooperate with proximity switch to feedback the clutch action signal
- 迅速且精准的达到换刀动作
- Fast and precise tool change
- 邻近换刀0.2秒，对称换刀0.5秒
- 0.2 seconds for adjacent tool change, 0.5 seconds for symmetrical tool change



Main parameters			
Parameter		Model	
		TS-8BL	TS-8BLM
Capacity	Turning diameter on the bed surface	Φ450 mm	Φ600 mm
	Max turning diameter	Φ360mm	Φ380mm
	Turning diameter on the slide	Φ300mm	Φ350mm
	Max turning length	520mm	450mm
Spindle and chuck	Spindle nose(chuck size)	A2-6(8")	A2-6(8")
	Spindle motor power	11/15KW	11/15KW
	Max spindle speed	3500rpm	3500rpm
	Spindle bore diameter	Φ61mm	Φ61mm
	Bar through-hole diameter	Φ52mm	Φ52mm
Feed	X/Z axis ball screw	3210/4010	3210/4010
	X-axis limit travel	180mm	210mm
	Z-axis limit travel	560mm	560mm
	X/Z axis rapid feedrate	24/24 m/min	24/24 m/min
	X and Z axis connection method	Direct connect	Direct connect
Accuracy	Machining accuracy	IT6	IT6
	positioning accuracy	±0.005mm	±0.005mm
	Repeatpositioning accuracy	±0.003mm	±0.003mm
Turret	Turret model	NC145-V10-330	BMT45/12T/ER25/4000rpm
	Turret center height dimensions	115	80
	Tool size	25×25	25×25
	Boring tool holder dimensions	40mm	32mm
Tailstock	Sleeve diameter	75mm	75mm
	Sleeve stroke	80mm	80mm
	Max tailstock travel	500mm	500mm
	Taper	MT4	MT4
Other	Machine Bed	full casting 45° bed	full casting 45° bed
	Machine size	2700*1800*1900mm	2700*1800*2100mm
	Power supply	25KVA	30KVA
Weight	Machine weight	4.5T	4.8T
CNC controller: FANUC,MITSUBISHI,SIEMENS,SYNTEC,GSK ETC			

TS-10B high rigidity turning machine

TS-10BM high rigidity turning center



最佳的优化结构分析 Optimum optimized structural analysis

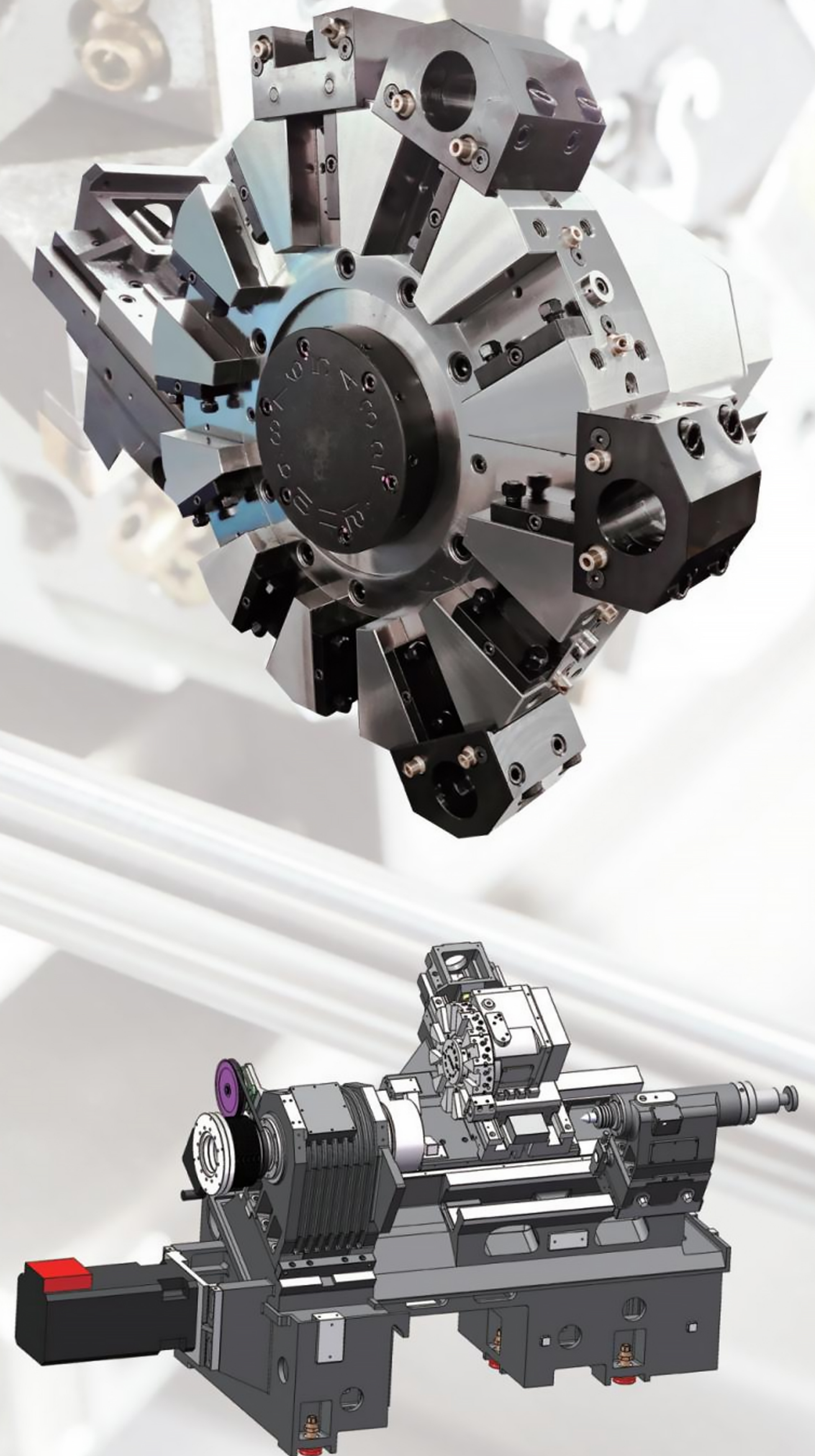
通过结构分析使主要单元结构达到最优化，并且通过降低设备高度，使其在重切削加工中也能维持床身的动态刚度。高强度 HT300 铸铁一体成型之坚固结构床身。中频淬火矩形导轨 (52-54 °)，一次装夹精密磨削，滑板贴专用耐磨片，经人工铲刮精密配合，轴承座，电机座均采用铲刮镶嵌式装配。而且，TS-10B、TS-12B 系列采用 30 ° 倾斜型床身，大幅提高了其加工稳定性及精度保持性。

Structural analysis has been carried out to optimize the structure of the main units and to maintain the dynamic stiffness of the bed even during heavy cutting processing by reducing the machine height. Robustly constructed bed made of integrally high-strength HT300 cast iron. Medium-frequency hardened rectangular guideways (52-54 °), precision grinding in one clamping, special wear plates on the slide, precision fit by manual scraping, bearing blocks and motor blocks are scraped and flush-mounted. Furthermore, the TS-10B and TS-12B series have a 30 ° inclined bed, which significantly improves their machining stability and accuracy retention.

独立集成式切削液箱冷却液箱安装在床身的前面，以防止泄漏，并通过使用高功率冷却液保持稳定的加工。

Separately integrated cutting fluid tank and coolant tank are mounted at the front of the bed to prevent leakage and to maintain stable machining by using high power coolant.

Main parameters					
Parameter		Model	TS-10B(1000)	TS-10BM(1000)	TS-10BMY(1000)
Capacity	Turning diameter on the bed surface		Φ620mm	Φ620mm	Φ730mm
	Max turning diameter		Φ520mm	Φ450mm	Φ450mm
	Turning diameter on the slide		Φ350mm	Φ350mm	Φ400mm
	Max turning length		550mm/(1060mm)	500mm/(1000mm)	500mm/(1000mm)
Spindle and chuck	Spindle nose(chuck size)		A2-8(10")	A2-8(10")	A2-8(10")
	Spindle motor power		11/15KW	11/15KW	11/15KW
	Max spindle speed		3000rpm	3000rpm	3000rpm
	Spindle bore diameter		Φ85mm	Φ85mm	Φ85mm
	Bar through-hole diameter		Φ75mm	Φ75mm	Φ75mm
Feed	X/Z axis ball screw		3210/4010	3210/4010(5010)	3210/4010(5010);3208(Y)
	X-axis limit travel		290mm	290mm	290mm
	Z-axis limit travel		610(1150)mm	610(1150)mm	610(1150)mm
	X/Z axis rapid feedrate		20/20 m/min	20/20 m/min	24/24,8 m/min
	X and Z axis connection method		Direct connect	Direct connect	Direct connect
Accuracy	Machining accuracy		IT6	IT6	IT6
	positioning accuracy		±0.006mm	±0.006mm	±0.006mm
	Repeatpositioning accuracy		±0.004mm	±0.004mm	±0.004mm
Turret	Turret model		NC100-V12-400	BMT55/12T/ER32/4000rpm	BMT55-Y(±50mm)/12T
	Turret center height dimensions		100	100	170
	Tool size		25×25	25×25	25×25
	Boring tool holder dimensions		40mm	40mm	40mm
Tailstock	Sleeve diameter		100mm	100mm	100mm
	Sleeve stroke		80mm	80mm	80mm
	Max tailstock travel		500(1000)mm	500(1000)mm	500(1000)mm
	Taper		MT5	MT5	MT5
Other	Machine Bed		full casting 30° bed	full casting 30° bed	full casting 30° bed
	Machine size		3200(3700)* 1900*1900mm	3200(3700)*1900*2100mm	3200(3700)*1900*2100mm
	Power supply		30KVA	35KVA	35KVA
Weight	Machine weight		5(6.6)T	5(6.6)T	5(6.8)T
CNC controller: FANUC,MITSUBISHI,SIEMENS,SYNTEC,GSK ETC					

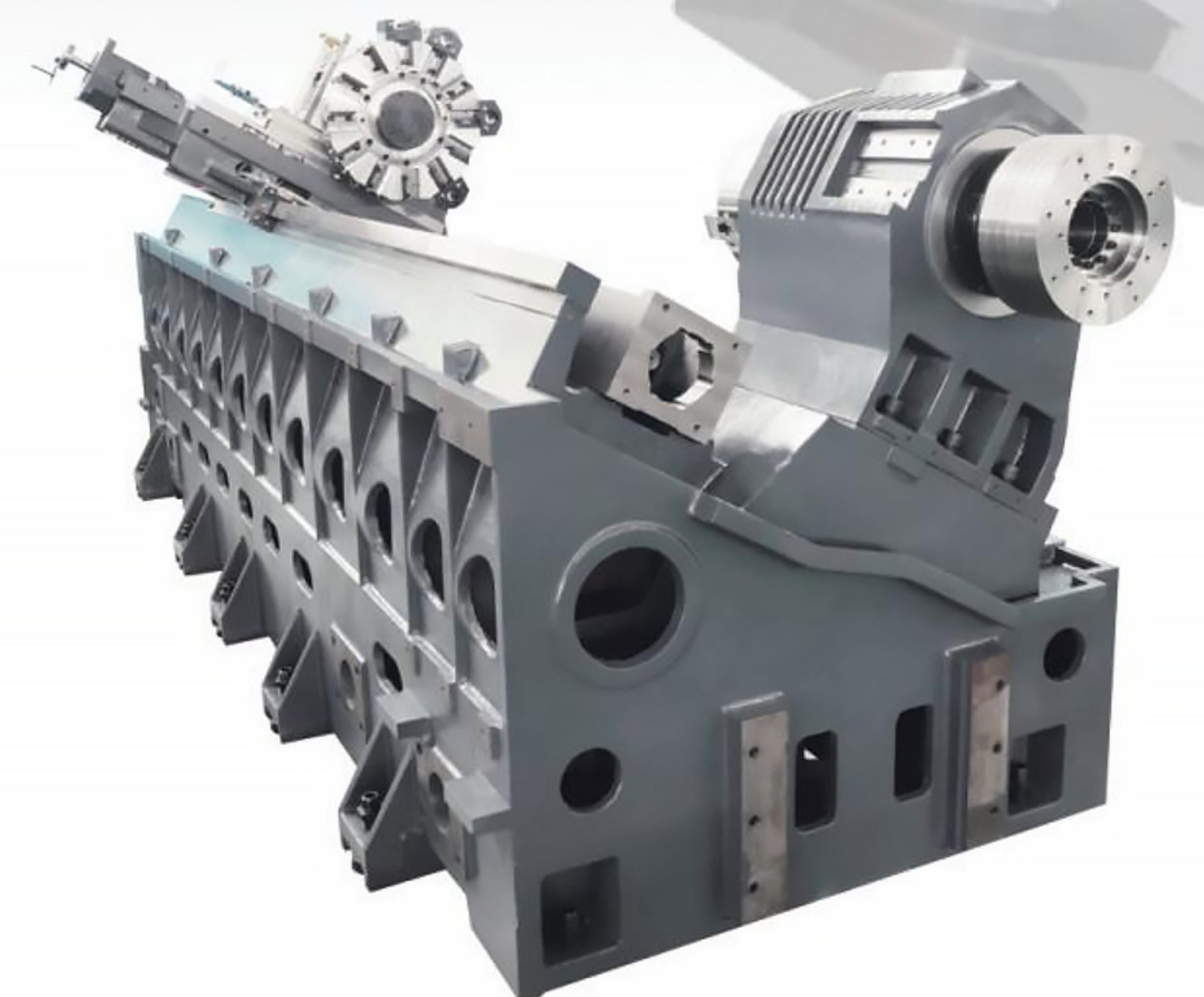
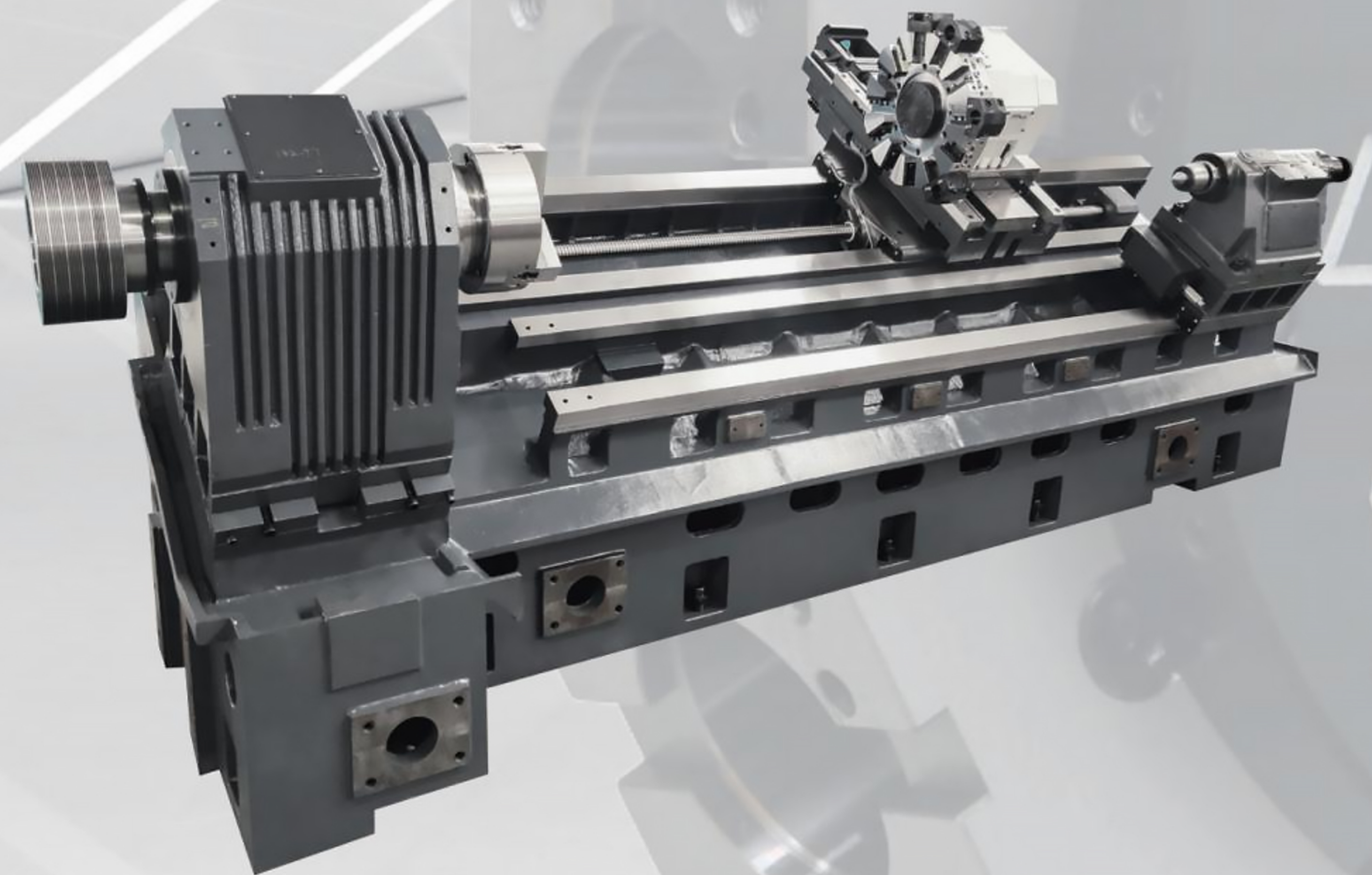


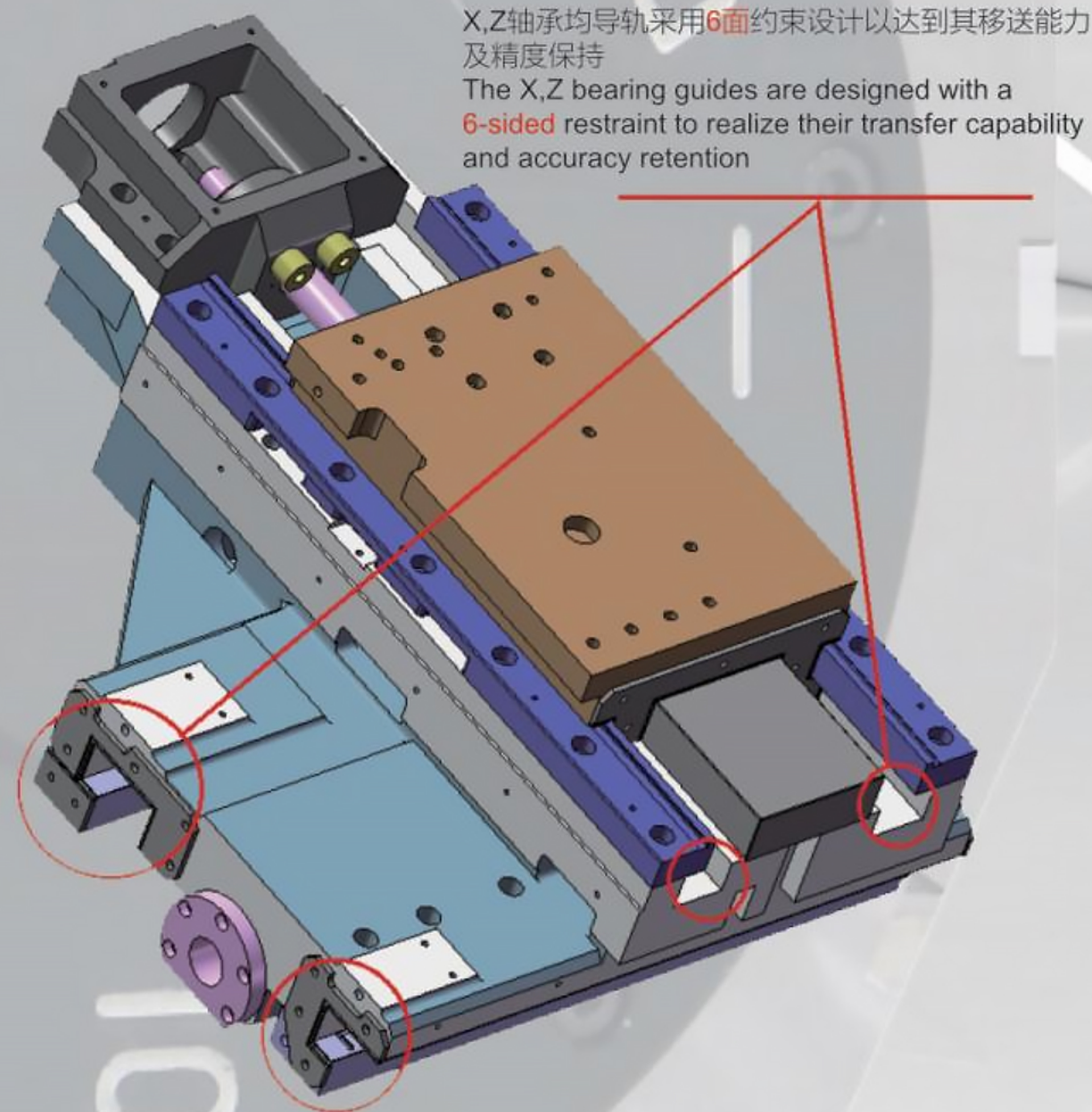
TS-12B high rigidity turning machine

TS-12BM high rigidity turning center

TS系列的所有的轴都采用箱式导轨设计，具有更好的移动能力。箱式导轨具有强大的抵消切削所造成的振动的能力，减小刀具损耗，提高加工稳定性。密封内藏式结构 TS 系列的 X 轴的设计通过采用密封内藏式结构，可以尽量减少刀塔受到切屑的损坏。

All axes of the TS series are designed with box guideways for better movement. The box guideway has a strong ability to counteract vibration caused by cutting, reducing tool wear and improving machining stability. The X-axis of the TS series is designed to minimize damage to the turret due to chips thanks to a sealed embedded structure.





X,Z轴承均导轨采用6面约束设计以达到其移送能力及精度保持
The X,Z bearing guides are designed with a 6-sided restraint to realize their transfer capability and accuracy retention

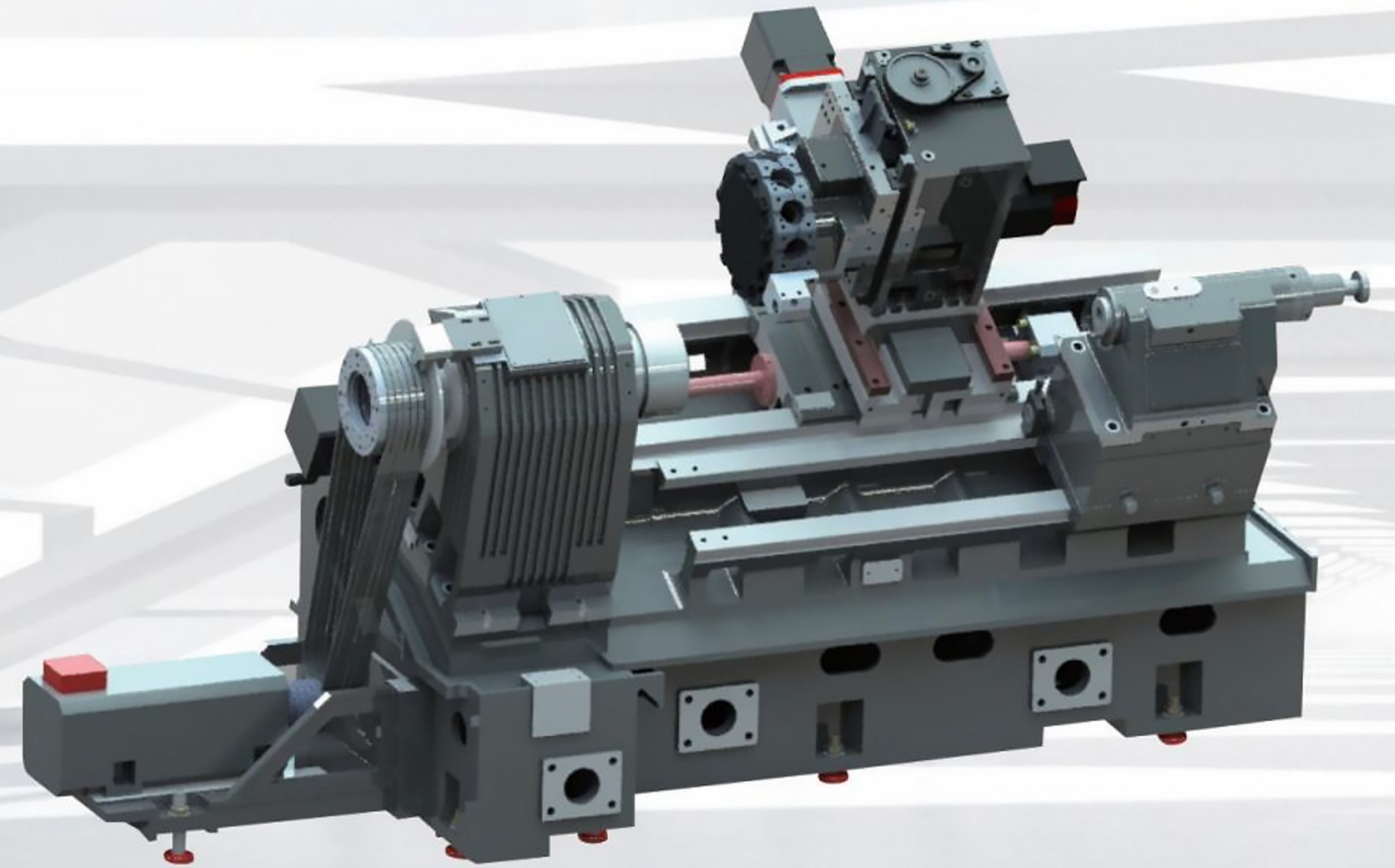


30°倾斜型床身独特双层铸造工艺
Unique double casting process for a 30° inclined

Main parameters

Parameter		Model	TS-12B -750/1000/1500/2000/(3000)	TS-12BM -750/1000/1500/2000/(3000)
Capacity	Turning diameter on the bed surface		Φ730mm	φ 730mm
	Max turning diameter		Φ630mm	φ550mm
	Turning diameter on the slide		Φ450mm	φ440mm
	Max turning length		740/1020/1640/2180/(3200)	630/930/1500/2100/(3000)
Spindle and chuck	Spindle nose(chuck size)		A2-8(12")/A2-11(15")	A2-8(12")/A2-11(15")
	Spindle motor power		15/18.5KW	15/18.5KW
	Max spindle speed		2800/1800rpm	2800/1800rpm
	Spindle bore diameter		Φ87/102mm	φ87/102mm
	Bar through-hole diameter		Φ75/86mm	φ75/86mm
Feed	X/Z axis ball screw		4008/5010(6310)	4008/5010(6310)
	X-axis limit travel		325mm	325mm
	Z-axis limit travel		760/1100/1700/2300 /(3300)	760/1100/1700/2300 /(3300)
	X/Z axis rapid feedrate		20/20 m/min	20/20 m/min
	X and Z axis connection method		Direct connect	Direct connect
Accuracy	Machining accuracy		IT6	IT6
	positioning accuracy		±0.006mm	±0.006mm
	Repeatpositioning accuracy		±0.004mm	±0.004mm
Turret	Turret model		NC125-V12-450	BMT65/12T/ER32/4000rpm
	Turret center height dimensions		125	125
	Tool size		25×25	25×25
	Boring tool holder dimensions		40mm	40mm
Tailstock	Sleeve diameter		130mm	130mm
	Sleeve stroke		120mm	120mm
	Max tailstock travel		785/1085/1685/2285(3200)	785/1085/1685/2285(3200)
	Taper		MT5	MT5
Other	Machine Bed		full casting 30° bed	full casting 30° bed
	Machine size		"4250/4500/5000/6000" 2200* 2300mm"	"4250/4500/5000/6000" 2200* 2400mm"
	Power supply		35KVA	40KVA
Weight	Machine weight		7.5/8.5/10.5/(12.5)T	8/9/11/(13)T
CNC controller: FANUC,MITSUBISHI,SIEMENS,SYNTEC,GSK ETC				

TS-12BMY high rigidity turning center with Y axis

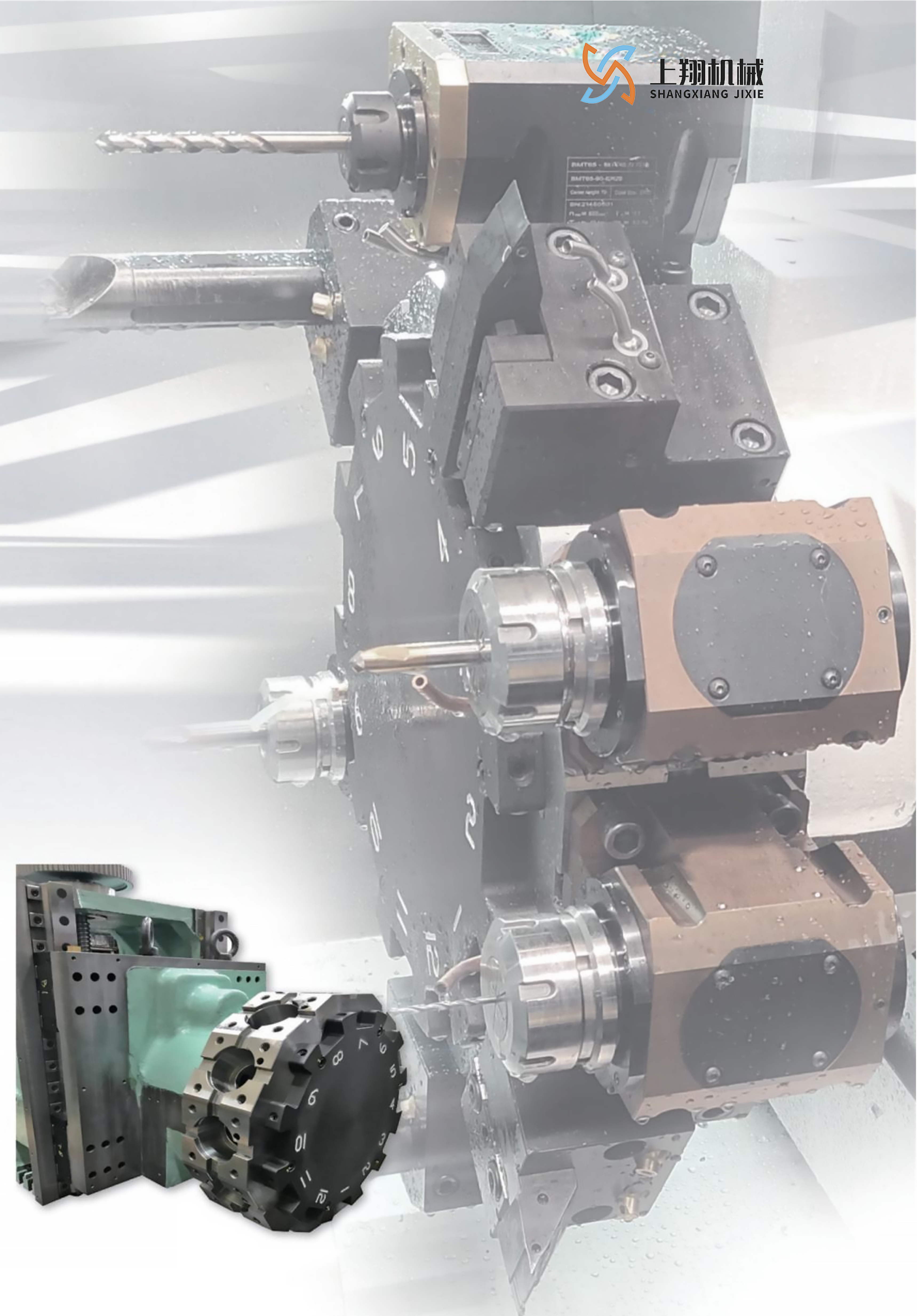


伺服动力刀塔特性 Servo-powered turret features

- 有着伺服刀塔迅速、精准的换刀性能,再搭配上高转速动力轴的动力铣削达到车、
- Fast and precise tool change for servo turret, combined with high-speed power shaft for powerful milling and turning
- 铣复合式的卓越加工能力
- Excellent machining capability in combined milling type
- 刀座安装采用高刚性 BMT 安装接口
- Highly machinable BMT installation interfaces for tool holders
- 动力传动轴使用伺服主轴马达驱动
- Servo spindle motor for the power transmission shaft
- 动力输出采用 DIN1809 一字形方式
- Power output by DIN 1809 linear shaped
- 旋转工具最高转速可达 5000RPM
- Rotating tool speed up to 5000RPM
- 动力刀塔采用正 Y 轴设计,箱中箱重心驱动结构于刀塔一体,使加工时受力均衡;
- Adopting a positive Y-axis design, the center of gravity driving structure in the box is integrated with the turret, ensuring balanced force during processing;
- 搭配高刚性伺服动力刀塔,实现轴向,径向 Y 轴铣削功能,主轴 C 轴插补,分度,定位功能,主轴油压盘式碟刹。
- Equipped with high rigidity servo-powered turret, it realizes axial and radial Y-axis milling functions, spindle C-axis interpolation, indexing, positioning functions, and spindle oil-pressure disc brake.

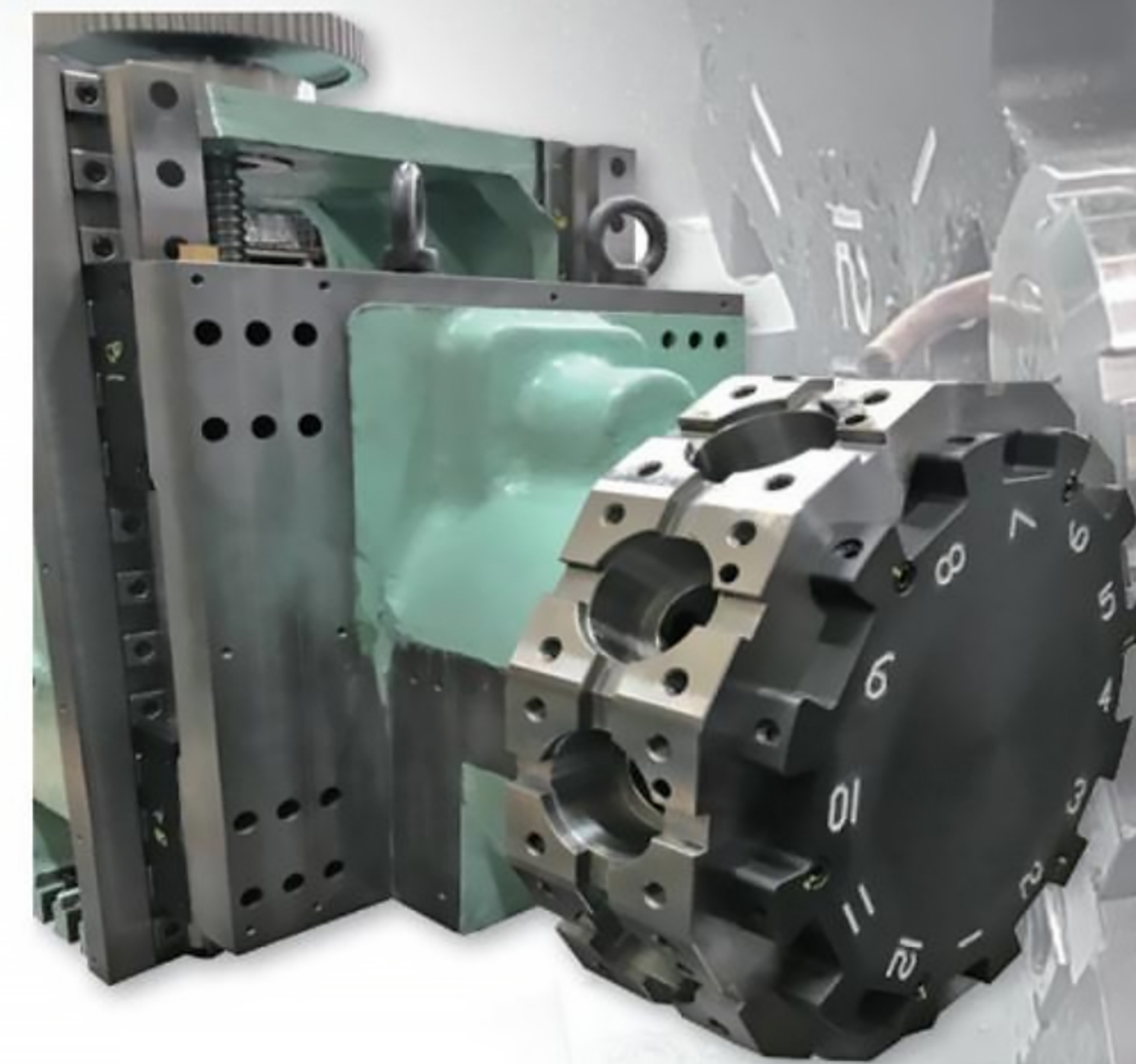
Main parameters

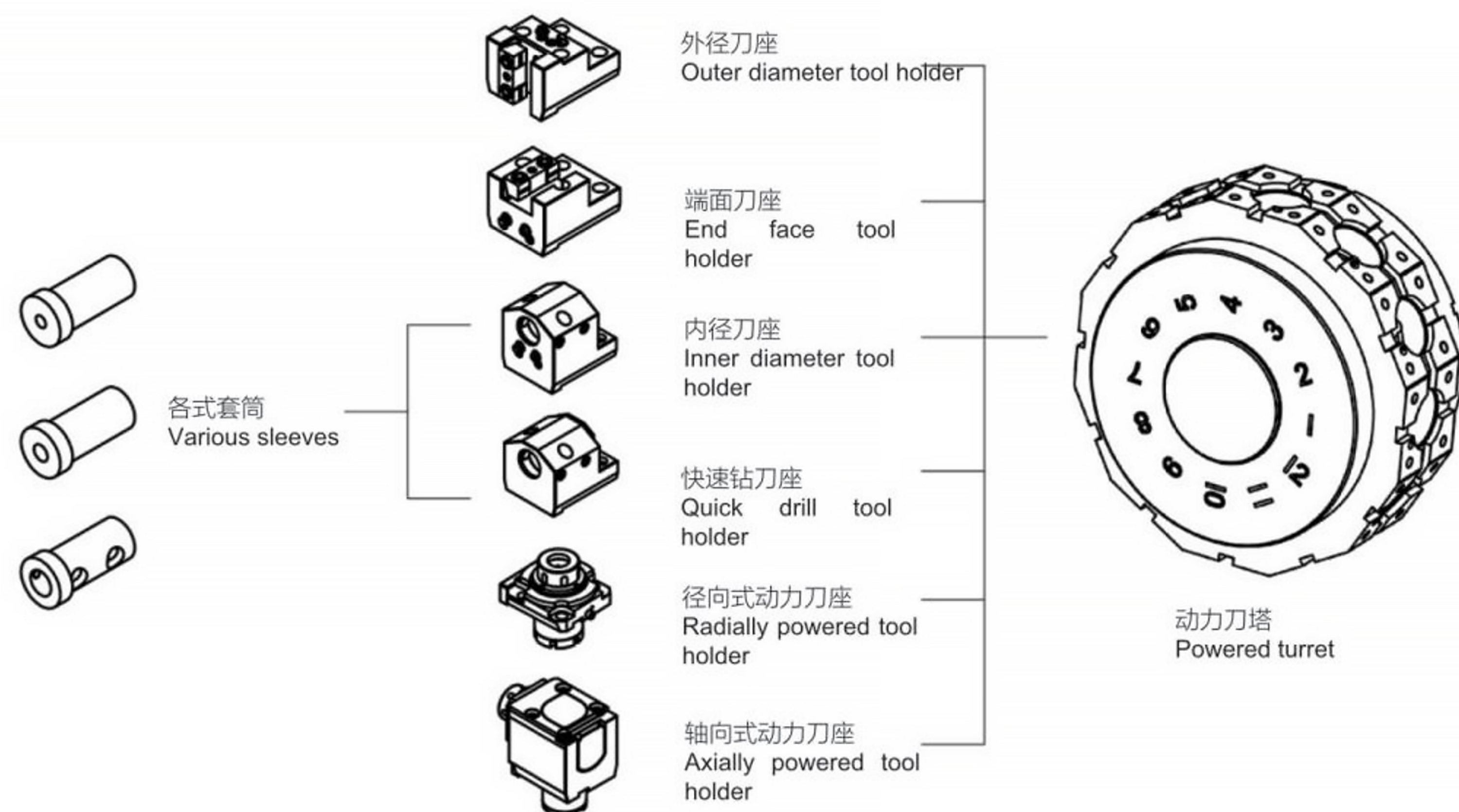
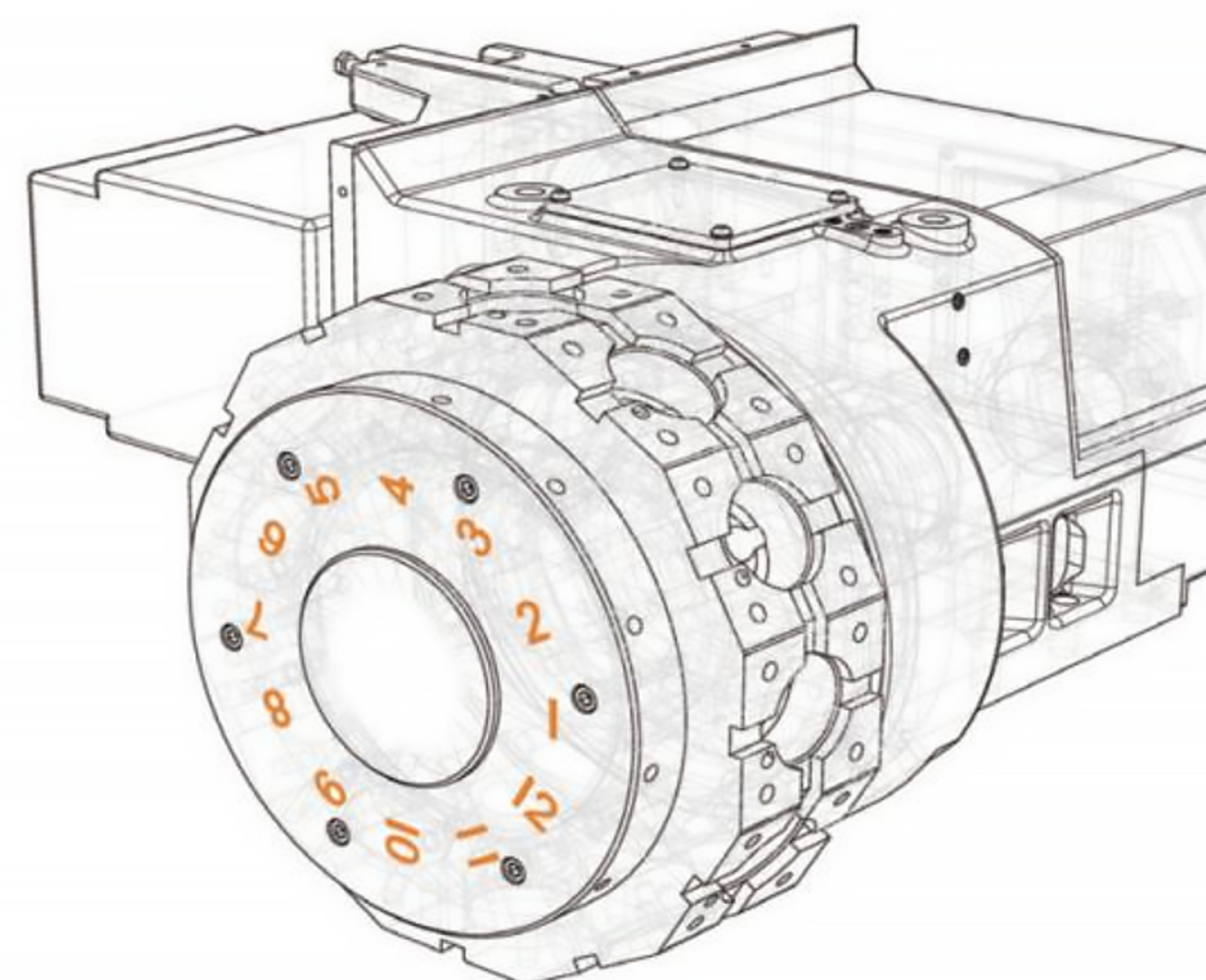
Parameter		Model	TS-12BMY -750/1000/1500/2000/(3000)
Capacity	Turning diameter on the bed surface		Φ920mm
	Max turning diameter		Φ560mm
	Turning diameter on the slide		Φ450mm
	Max turning length		530/830/1430/2030/(3000)
Spindle and chuck	Spindle nose(chuck size)		A2-8(12")/A2-11(15")
	Spindle motor power		15/18.5KW
	Max spindle speed		2800/1800rpm
	Spindle bore diameter		Φ87/102mm
	Bar through-hole diameter		Φ75/86mm
Feed	X/Z axis ball screw		4008/5010(6310)
	X-axis limit travel		325mm
	Z-axis limit travel		760/1085/1685/2285/(3300)
	Y-axis limit travel		±60mm
	X/Z/Y axis rapid feedrate		20/20/8 m/min
	X and Z axis connection method		Direct connect
Accuracy	Machining accuracy		IT6
	positioning accuracy		±0.006mm
	Repeatpositioning accuracy		±0.004mm
Turret	Turret model		BMT65/ER32/4000rpm
	Tool size		25×25
	Boring tool holder dimensions		40mm
Tailstock	Sleeve diameter		130mm(Opt-Built in rotation)
	Sleeve stroke		80mm
	Max tailstock travel		785/1085/1685/2280(3200)
	Taper		MT5
Other	Machine Bed		full casting 30° bed
	Machine size(L*W*H)		"4250/4500/5000/6000* 2200* 2480mm"
	Power supply		40KVA
Weight	Machine weight		8/9/11/(13)T
CNC controller: FANUC,MITSUBISHI,SIEMENS,SYNTEC,GSK ETC			



Main parameters

Parameter		Model	TS-15BM	TS-15BMY	TS-15SMY
Capacity	Turning diameter on the bed surface		Φ1000mm	Φ1000mm	Φ1000mm
	Max turning diameter		Φ750mm	Φ750mm	Φ750mm
	Turning diameter on the slide		Φ820mm	Φ820mm	Φ820mm
	Max turning length(MM)		850/1850/2850/3850/4850/5850	850/1850/2850/3850/4850/5850	750/1750/2750/3750/4750/5750
Spindle and chuck	Spindle nose(chuck size)		A2-11(15")	A2-11(15")	A2-11(15")
	Spindle motor power		15/18.5KW	15/18.5KW	15/18.5KW
	Max spindle speed		1000rpm	1000rpm	1000rpm
	Spindle bore diameter		Φ132mm	Φ132mm	Φ132mm
	Bar through-hole diameter		Φ118mm	Φ118mm	Φ118mm
Feed	X/Zaxis ball screw		4010/6320	4010/6320	4010/6320
	X-axis limit travel		425mm	425mm	425mm
	Z-axis limit travel		1/2/3/4/5/6m	1/2/3/4/5/6m	1/2/3/4/5/6m
	X/Z,Y,Z1 axis rapid feedrate		5/10 m/min	5/10,8(Y) m/min	5/10,5(Z1) m/min
	X and Z axis connection method		Reducer 1:3	Reducer 1:3	Reducer 1:3
Accuracy	Machining accuracy		IT6	IT6	IT6
	positioning accuracy		±0.008mm	±0.008mm	±0.008mm
	Repeatpositioning accuracy		±0.005mm	±0.005mm	±0.005mm
Turret	Turret model		NC125-V12-400	BMT65/12T/ER40/4000rpm	BMT65-Y/12T/ER40/4000rpm
	Turret center height dimensions		125	125	125
	Tool size		32×32	32×32	32×32
	Boring tool holder dimensions		50mm	50mm	50mm
Tailstock	Sleeve diameter		120mm	120mm	A2-8(12") sub-spindle size
	Sleeve stroke		150mm	150mm	1000rpm(sub-spindle speed)
	Max tailstock travel		0.75/1.75/2.75/3.75/4.75/5.75M	0.75/1.75/2.75/3.75/4.75/5.75M	0.75/1.75/2.75/3.75/4.75/5.75M
	Taper		MT6	MT6	75mm(sub-spindle bar trough)
Other	Machine Bed		full casting 45° bed	full casting 45° bed	full casting 45° bed
	Machine size Length		4/5/6/7/8/9/10m	4/5/6/7/8/9/10m	4/5/6/7/8/9/10m
	Machine size width*height		2.25*2.4m	2.25*2.5m	2.25*2.4m
	Power supply		40KVA	50KVA	60KVA
Weight	Machine weight		8/11/14/17/20/23t	8/11/14/17/20/23t	8/11/14/17/20/23t
CNC controller: FANUC,MITSUBISHI,SIEMENS,SYNTEC,GSK ETC					





1 BMT-45-V12_290

2 BMT-55-V12_350

3 BMT-65-V12_380

