

NX-2000 Series

MT / MS / YT / YS **CNC Turning Center**

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NX-2000 series

New NX-2000 series turning & milling center with various modules can be configured with sub-spindle, servo tailstock and Y-axis. The bed casting with horizontal box structure provides minimal thermal displacement. The X/Y/Z axis adopts full box guide way design provides high rigidity and high speed vibration attenuation features.



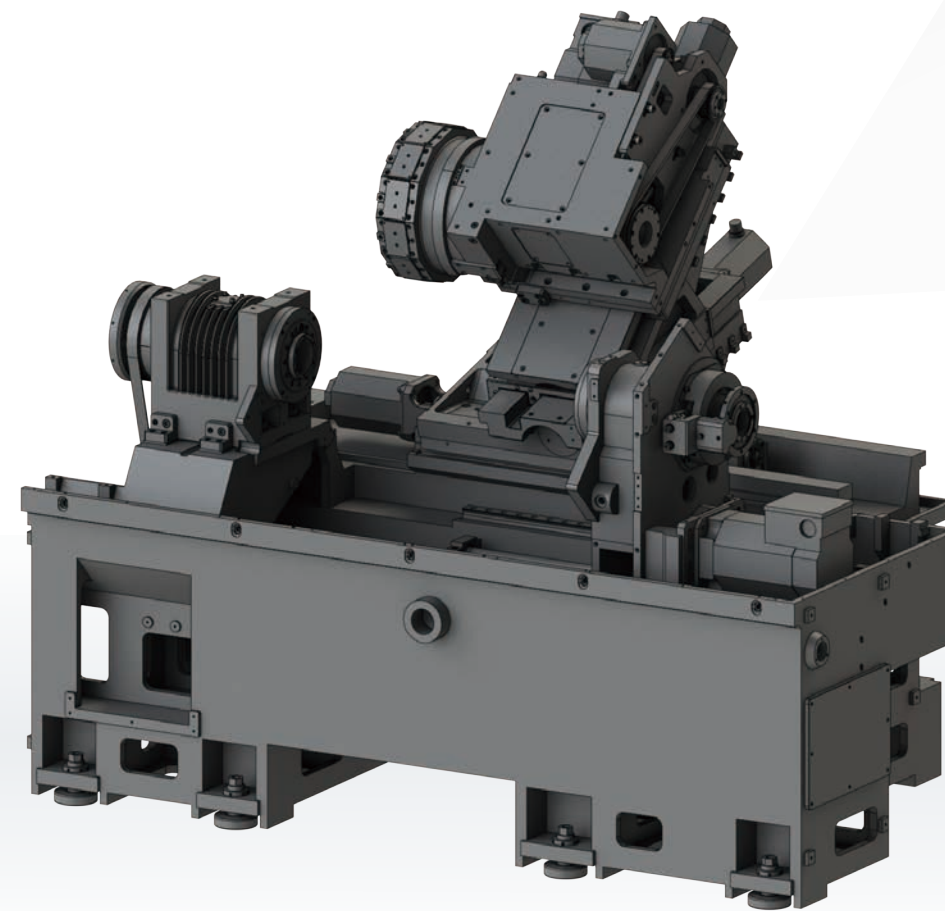
01 Specification Options

	MT	MS	YT	YS
Main Spindle	●	●	●	●
Sub. Spindle	-	●	-	●
T12 Milling Turret	●	●	●	●
Y-Axis	-	-	●	●
Servo Tailstock	●	-	●	-

● Standard - Nope

02 Workpiece Size

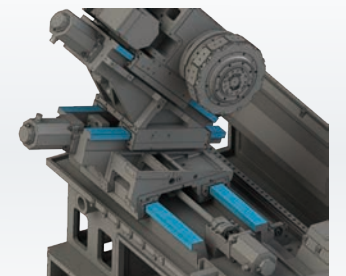
	MT	MS	YT	YS	
Max. Turning Diameter	310	310	310	310	mm
Max. Turning Length	349	349	349	349	mm
Max. Bar Work Capacity Diameter	66	66	66	66	mm



- The Z-axis ballscrew can be compensated via the pretension force.



- The X/Y/Z- axis can choose optical or magnetic scale.



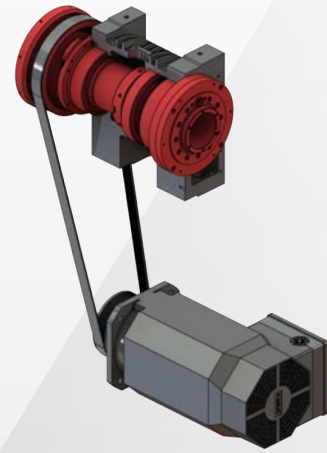
- The X/Y/Z- axis Box Ways design ensures dynamic rigidity and absorbs vibration to maintain accuracy with heavy cutting.

03 Travel & Rapid Traverse

	MT	MS	YT	YS	
X-Axis Travel	221	221	221	221	mm
X-Axis Rapid Traverse	24	24	24	24	m / min
Z-Axis Travel	400	400	400	400	mm
Z-Axis Rapid Traverse	30	30	30	30	m / min
Y-Axis Travel	-	-	±50	±50	mm
Y-Axis Rapid Traverse	-	-	10	10	m / min
B-Axis Travel	510	510	510	510	mm
B-Axis Rapid Traverse	30	30	30	30	m / min

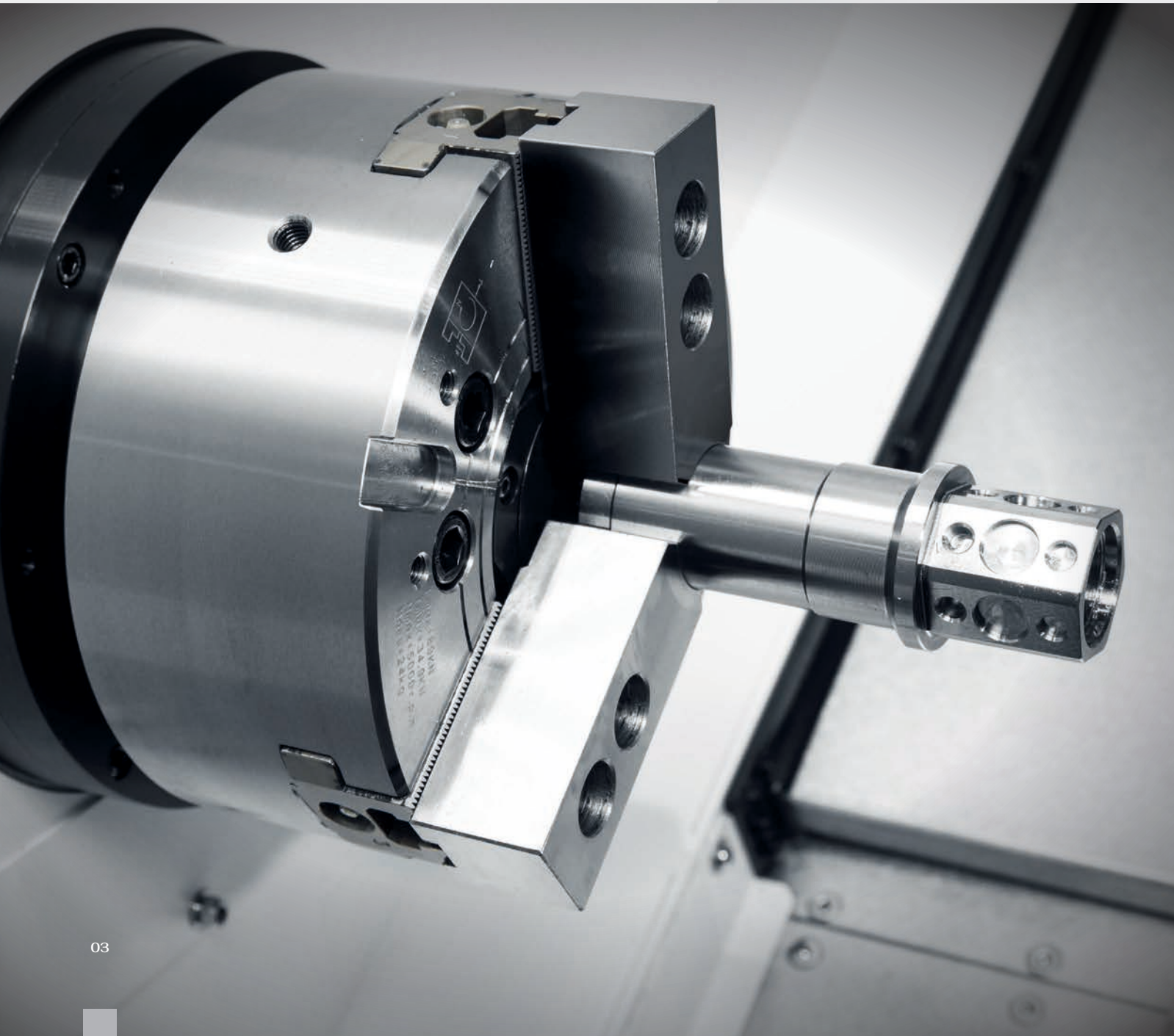
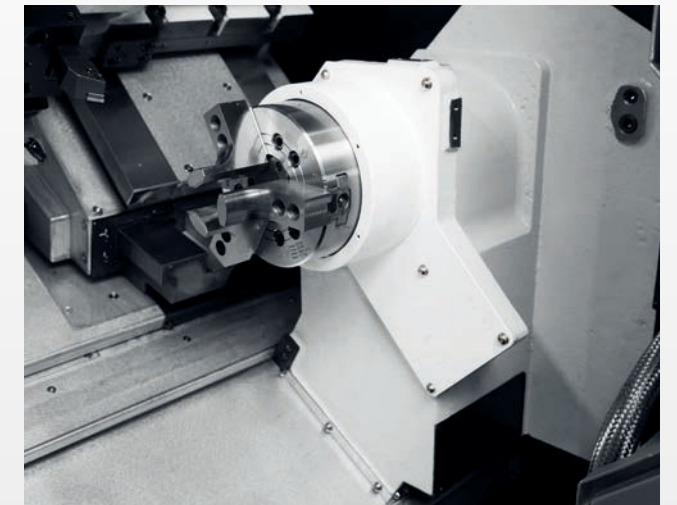
Spindle

The spindle is made in house to ensure the highest quality and reliability, spindle type can be selected according to the requirement of accuracy, torque and cost effective from customer. Motor, through-hole size, spindle speed ratio and spindle nose can be customized according to the requirement from customer.

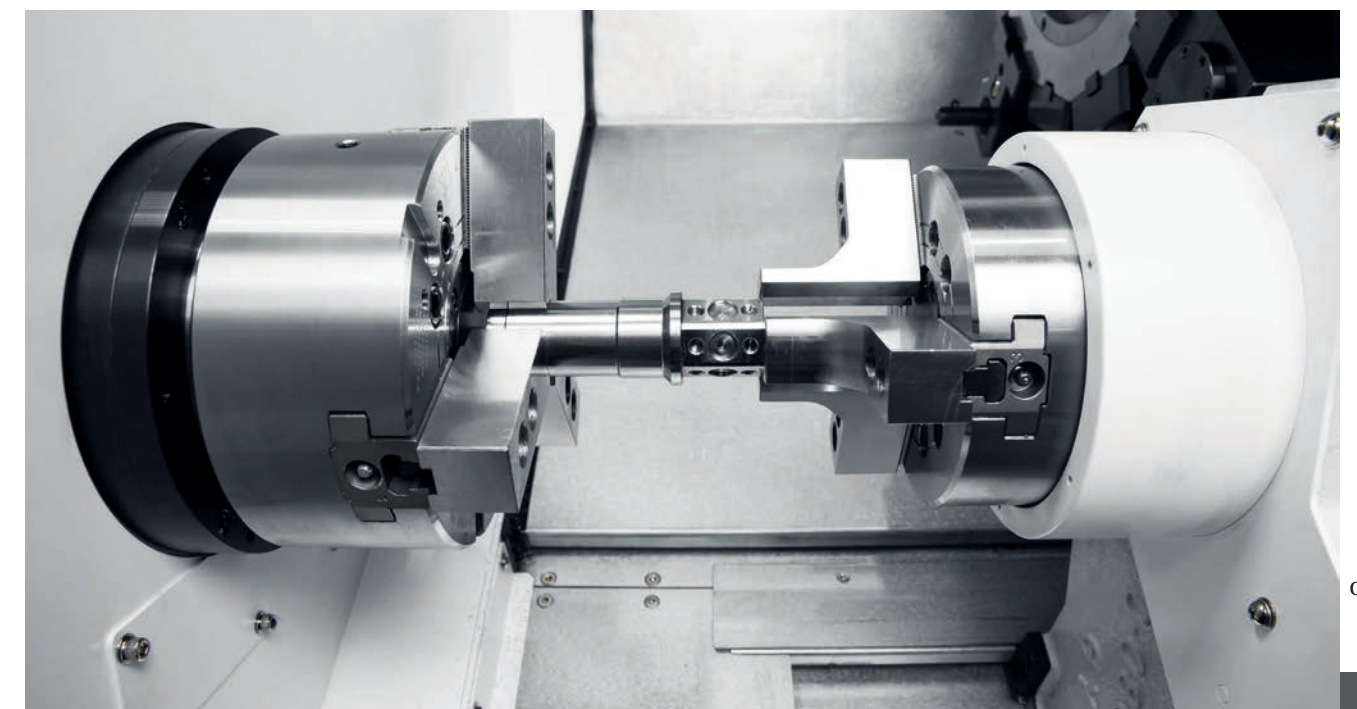
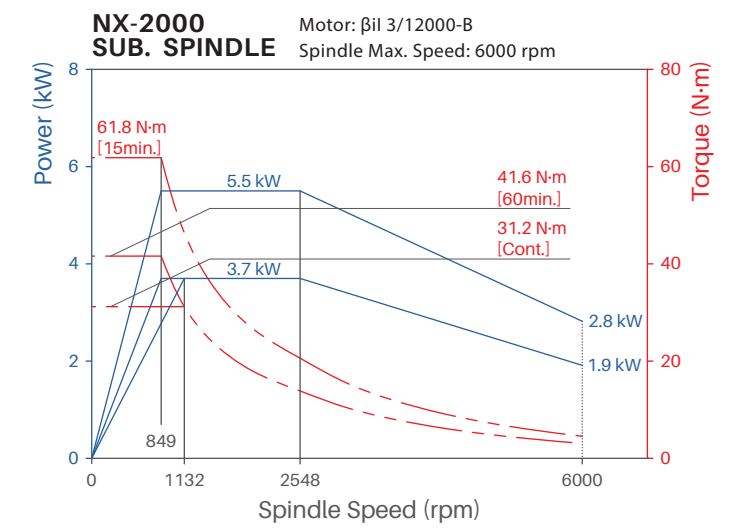
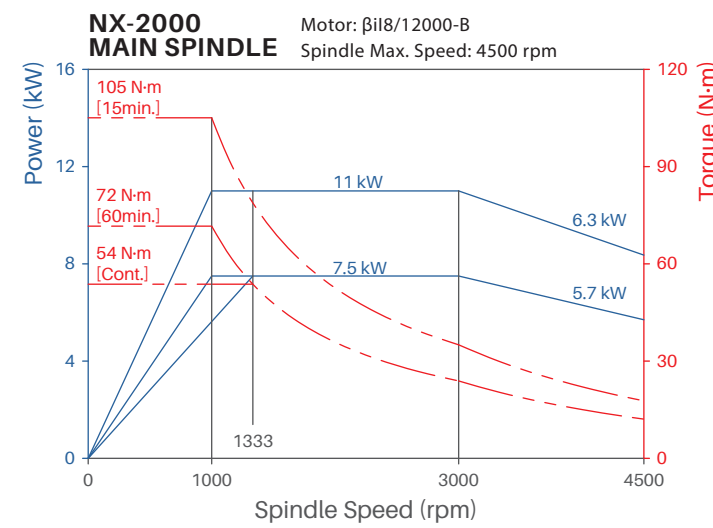


— Belt driven spindle design is economic and easy to maintain.

	Main Spindle	Sub. Spindle	
Spindle Nose	A2-6	ø140 flat	
Spindle Speed	4500	6000	rpm
Through Hole Diameter	76	53	mm
Bearing Inside Diameter	110	80	mm
Motor Output	11 / 7.5	5.5 / 3.7	kW
Max. Torque	105	61.8	N·m

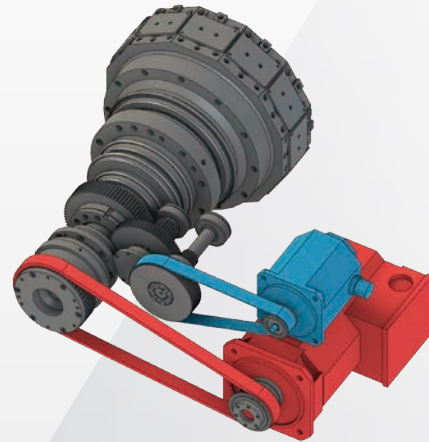


Spindle Output Diagram



Turret

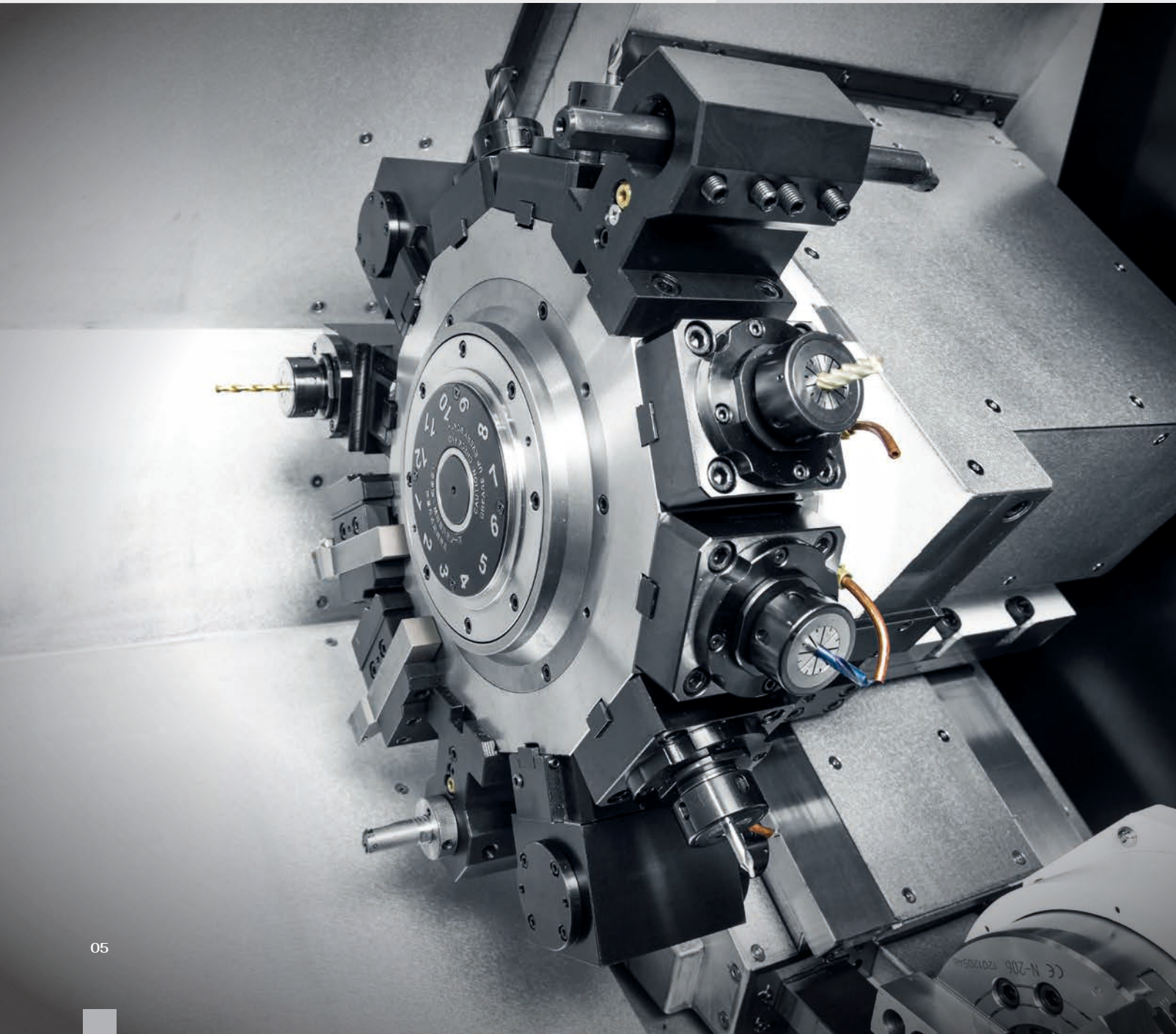
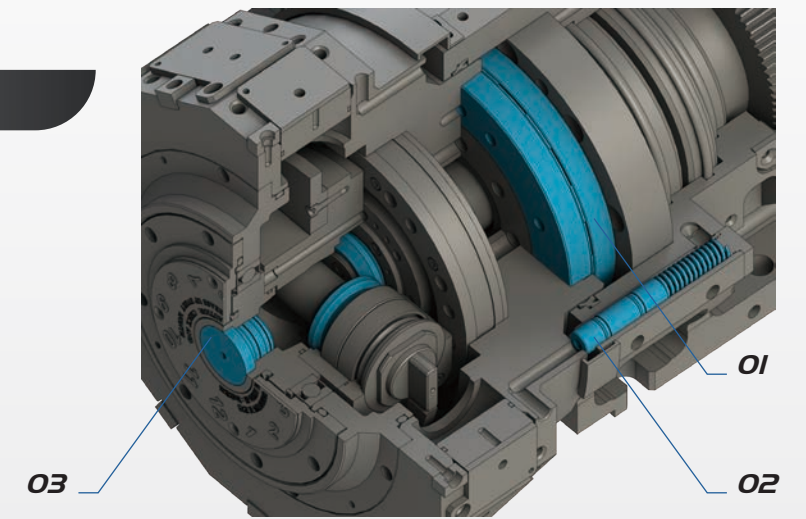
The T12 Milling Turret is a tested in house design that enables combined machining such as milling, drilling and tapping in addition to conventional turning. This allows complex and highly accurate machining in a single cycle for mass production of parts. We can provide a customized needs assessment for special needs regarding numbers of tools, tool holders, milling cutters etc.



— The milling motor is driven by a spindle motor and the tool changer is driven by a servo motor.

Turret Structure

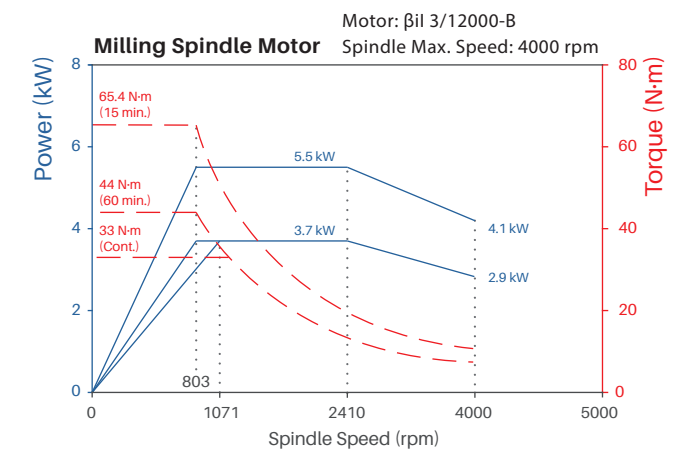
- 01** Curvic coupling OD 210 mm performs high rigidity and accuracy.
- 02** Ready for 70 bar hi-pressure coolant.
- 03** Easy to grease up.



T12 Milling Turret

Number of Tools	12
OD Tool Shank Dimension	25 mm
ID Tool Shank Diameter	40 mm
Milling Shank Diameter	20 mm
Milling Spindle Speed	4000 rpm
Motor Output	5.5 / 3.7 Kw
Max. Torque	65.4 N-m

Spindle Output Diagram



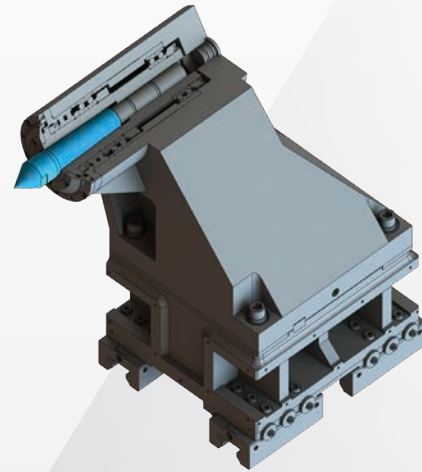
Special Tool Holders

- 01** Gear Hobbing
- 02** Broaching
- 03** Power Skiving
- 04** Adjustable Angle Milling

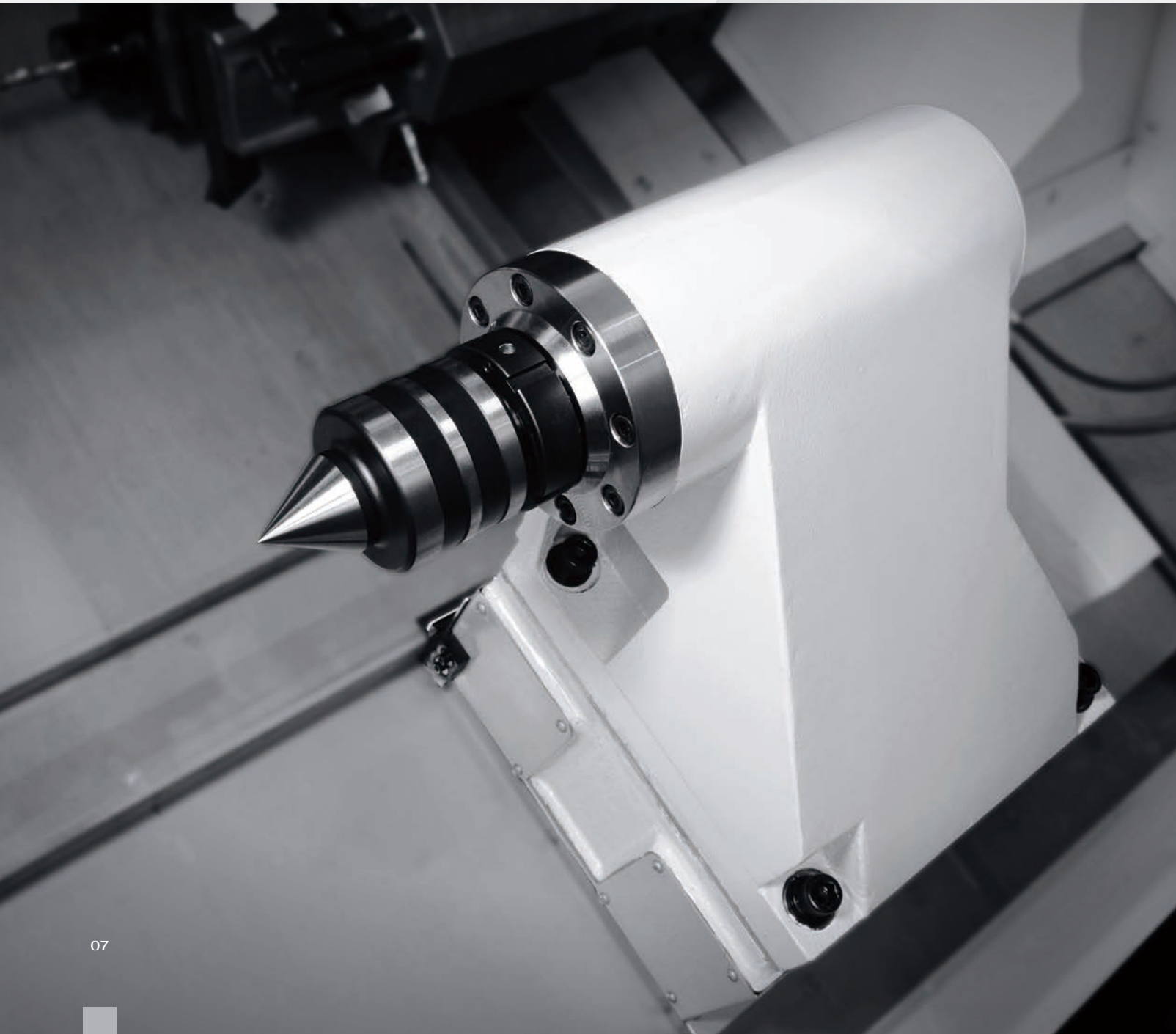


Tailstock

The MT and YT are equipped with a servo tailstock. The tailstock is driven by a servo motor, which has the advantages of easy operation and fast movement. The movement speed is up to 30 meters per minute. Under heavy load conditions, the rotary spindle tailstock with a fixed center can be selected.

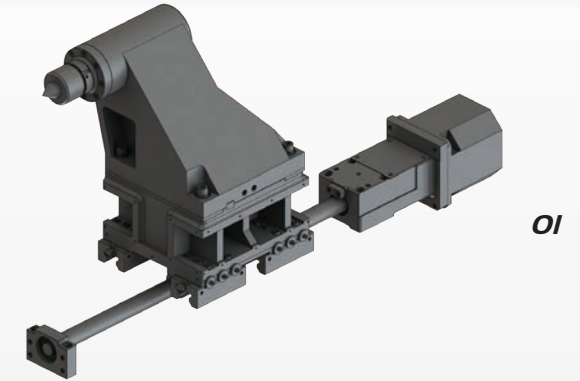


— Tailstock with Built-In Center has a larger load capacity than a fixed mandrel for large workpieces. (Option)



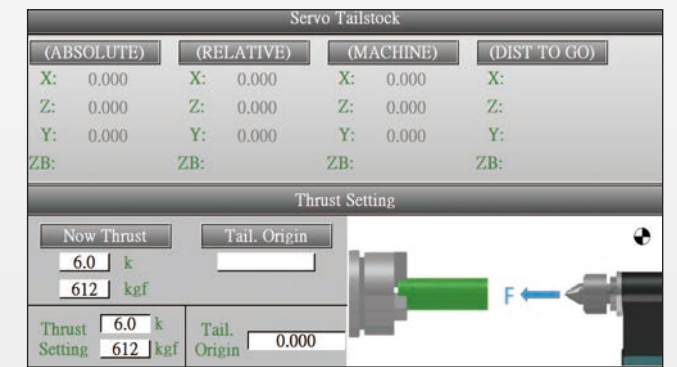
01 Servo Tailstock

Tapered Bore Type	MT.5	
Tailstock Thrust	1 ~ 4	kN
Tailstock Travel	510	mm
Rapid Traverse	30	m/mm
Approach	7	m/mm
Retract	30	m/mm



02 Servo Tailstock Function

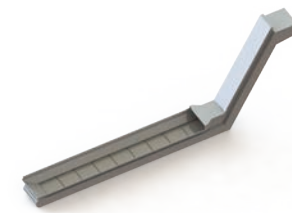
Through the dialog UI interface, it is convenient to set the servo tailstock thrust and origin and other parameters.



01 Chip Conveyor Type

Depending on the part material and chip size, the hinge type or scraper type can be selected.

Hinge Type Chip Conveyor



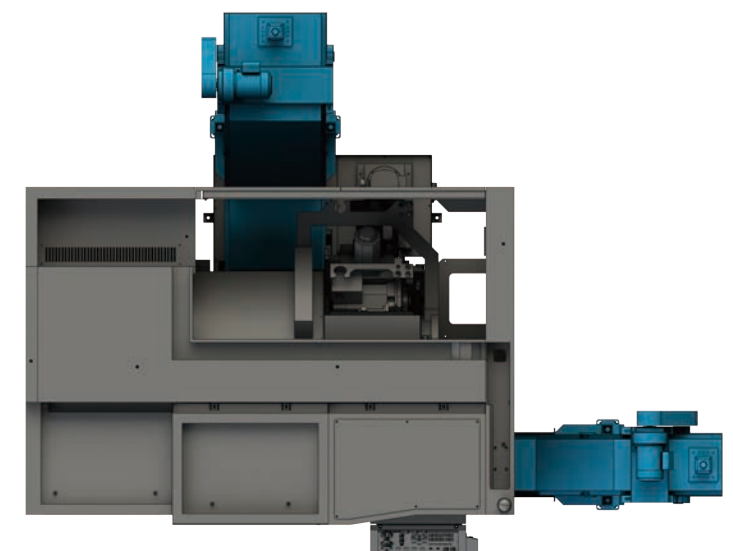
Scraper Type Chip Conveyor



Chip Type	Curly Metallic Chip Steel / Aluminum	Power Metallic Chip Foundry / Aluminum / Brass	Non-Metallic
Hinge Type	○	×	○
Scraper Type	×	○	×

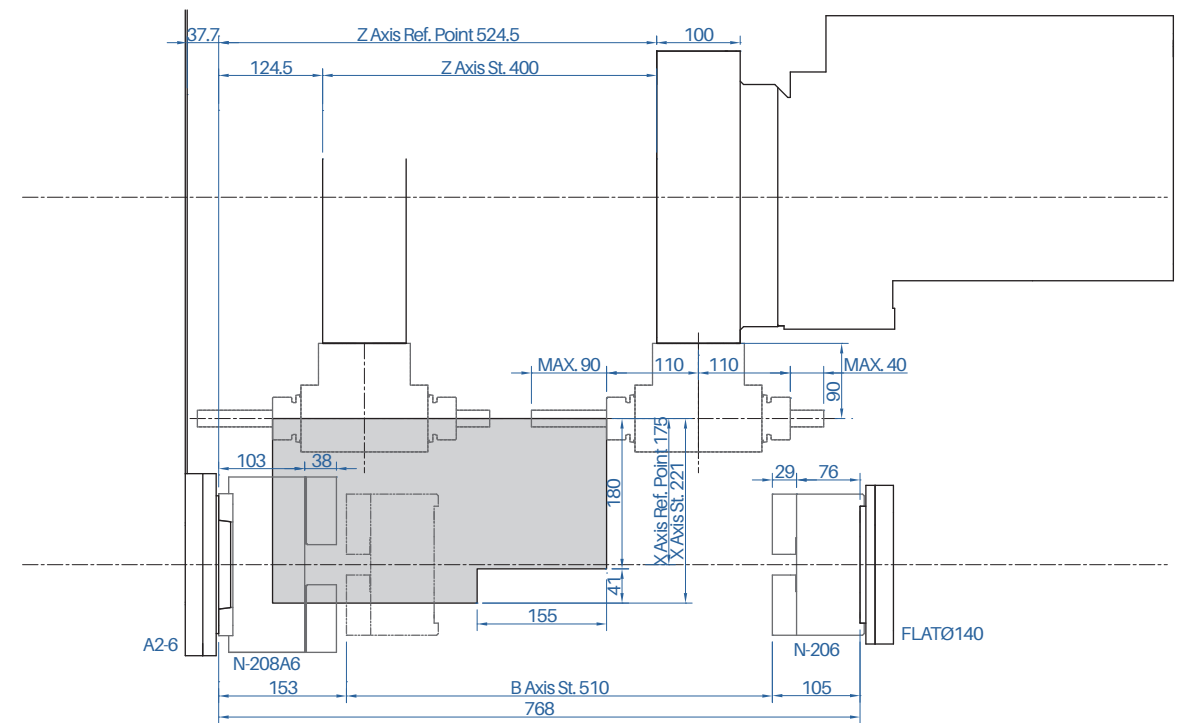
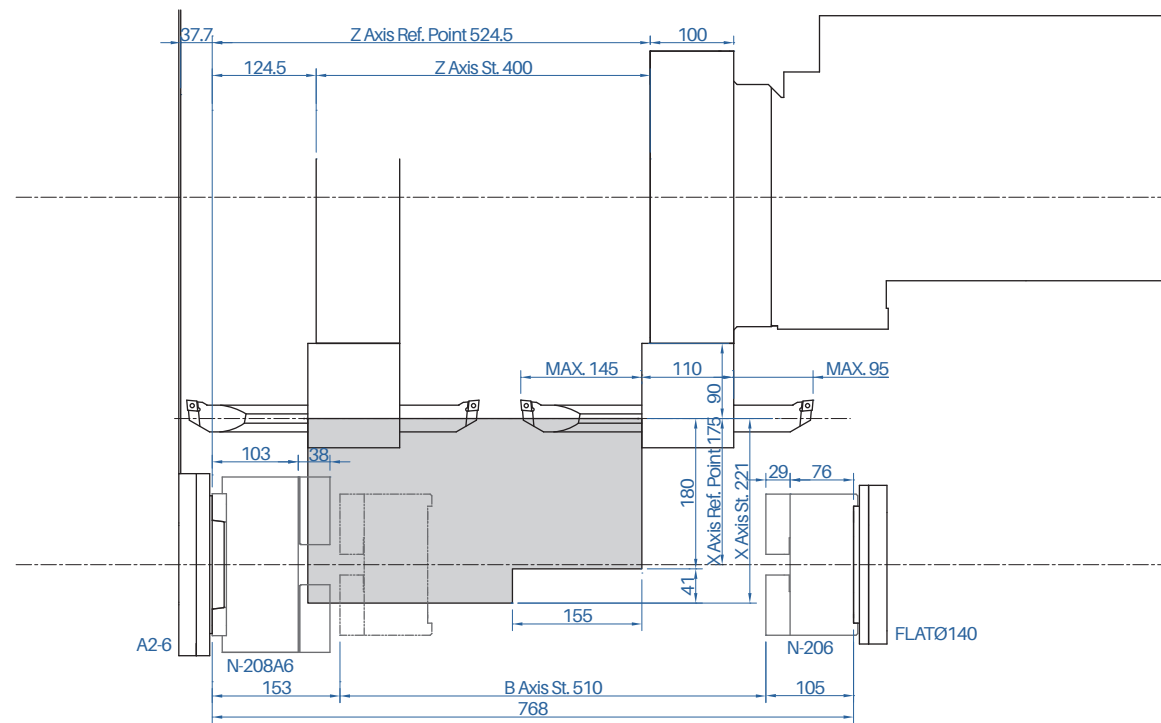
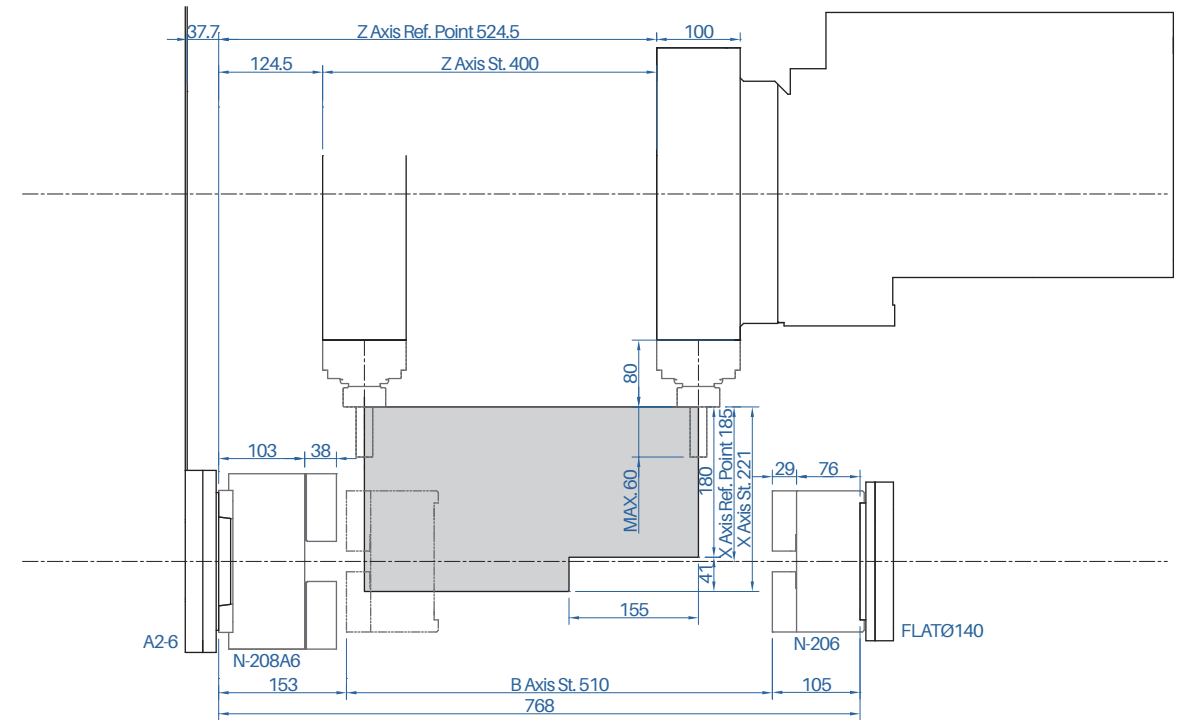
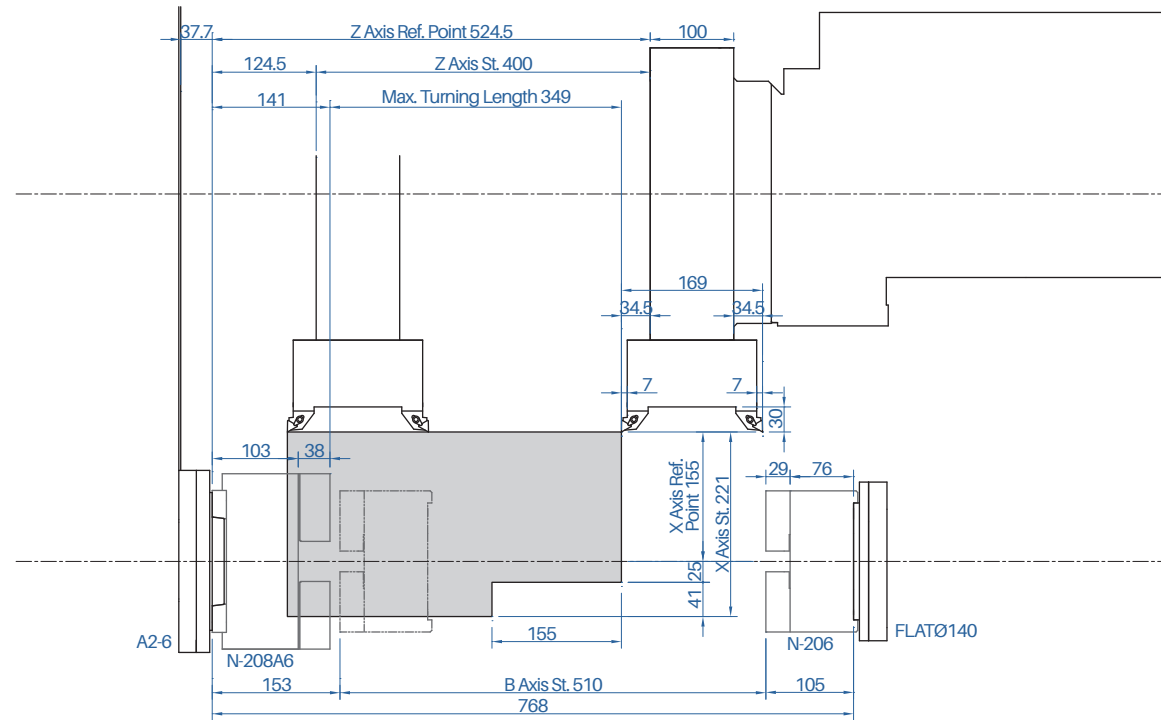
02 Chip Conveyor Configuration

Optional right disposal type or rear disposal type.



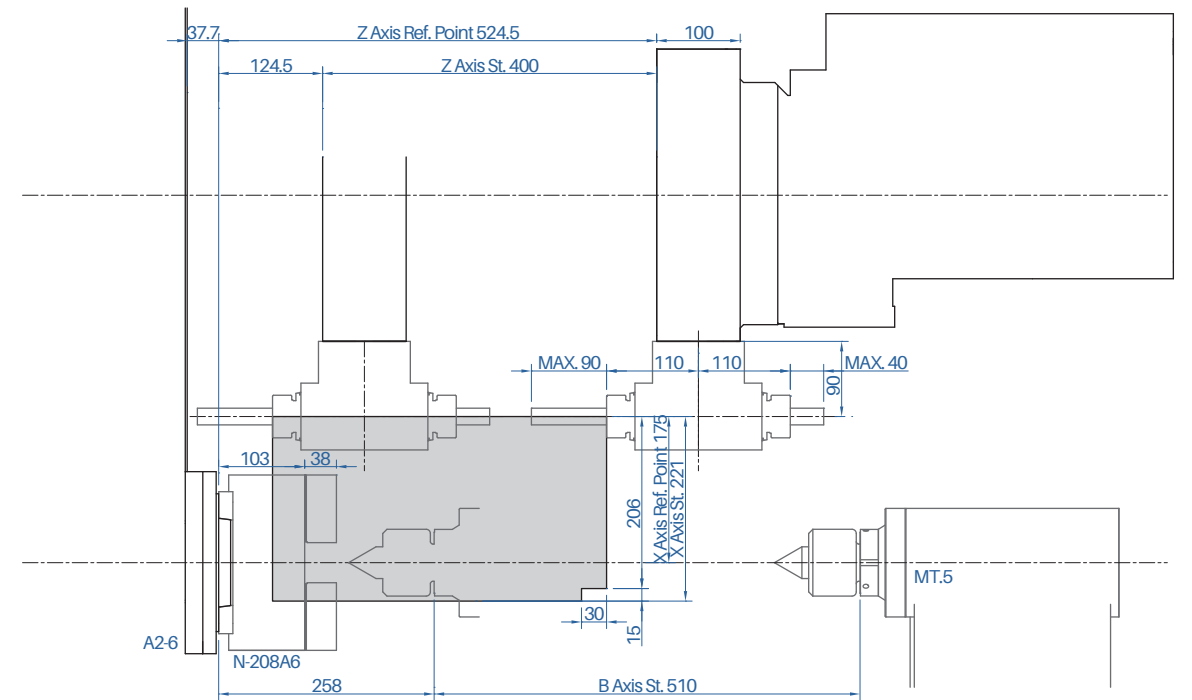
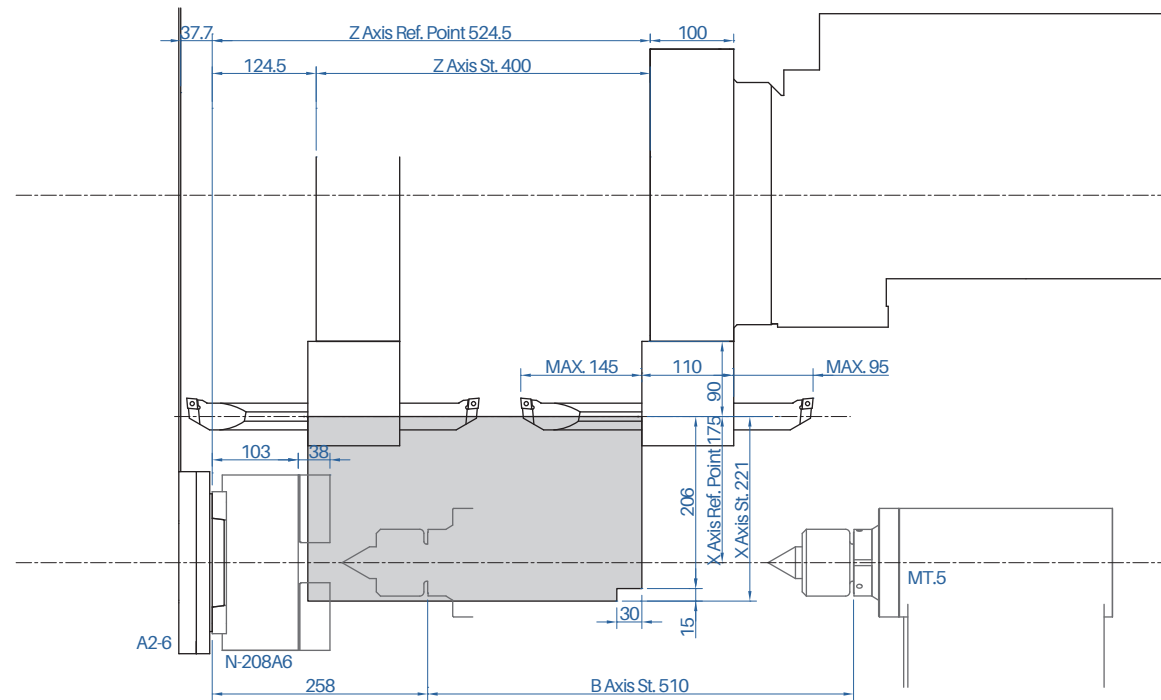
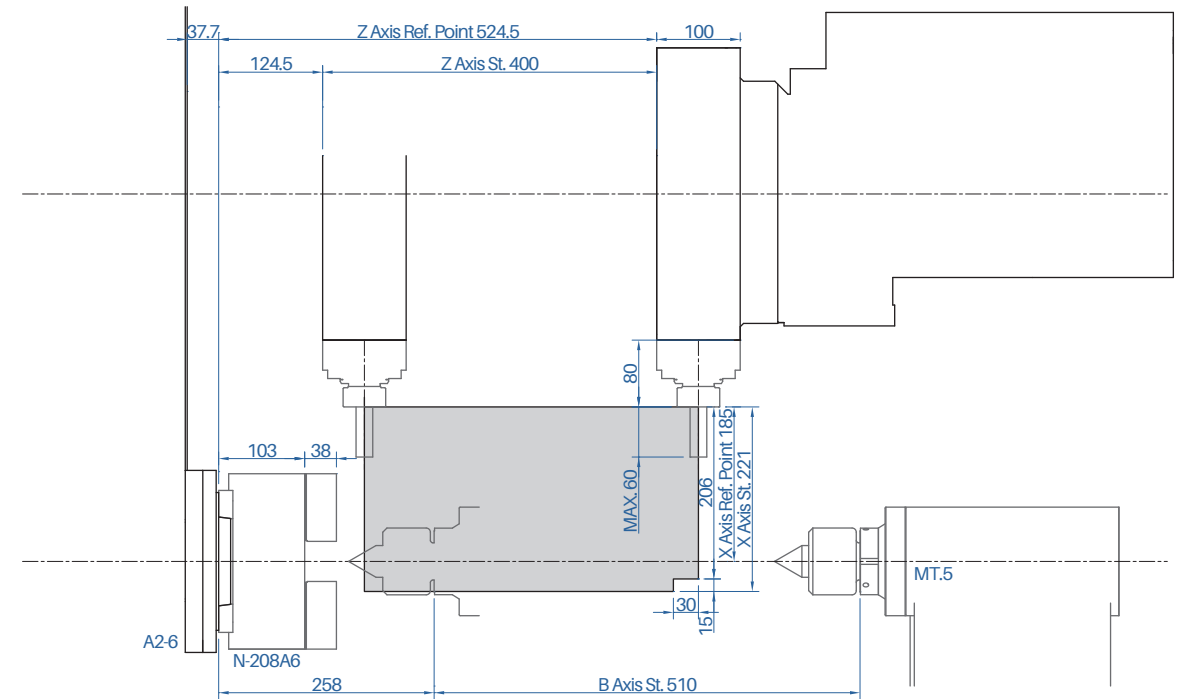
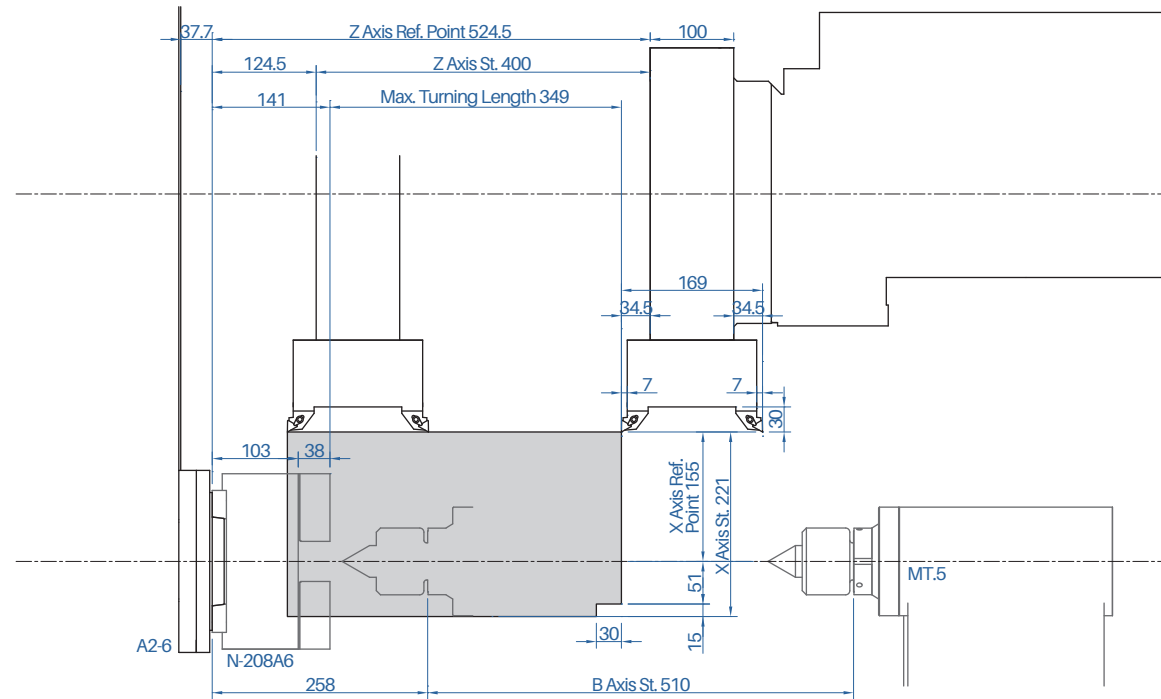
Travel Range

YS / MS



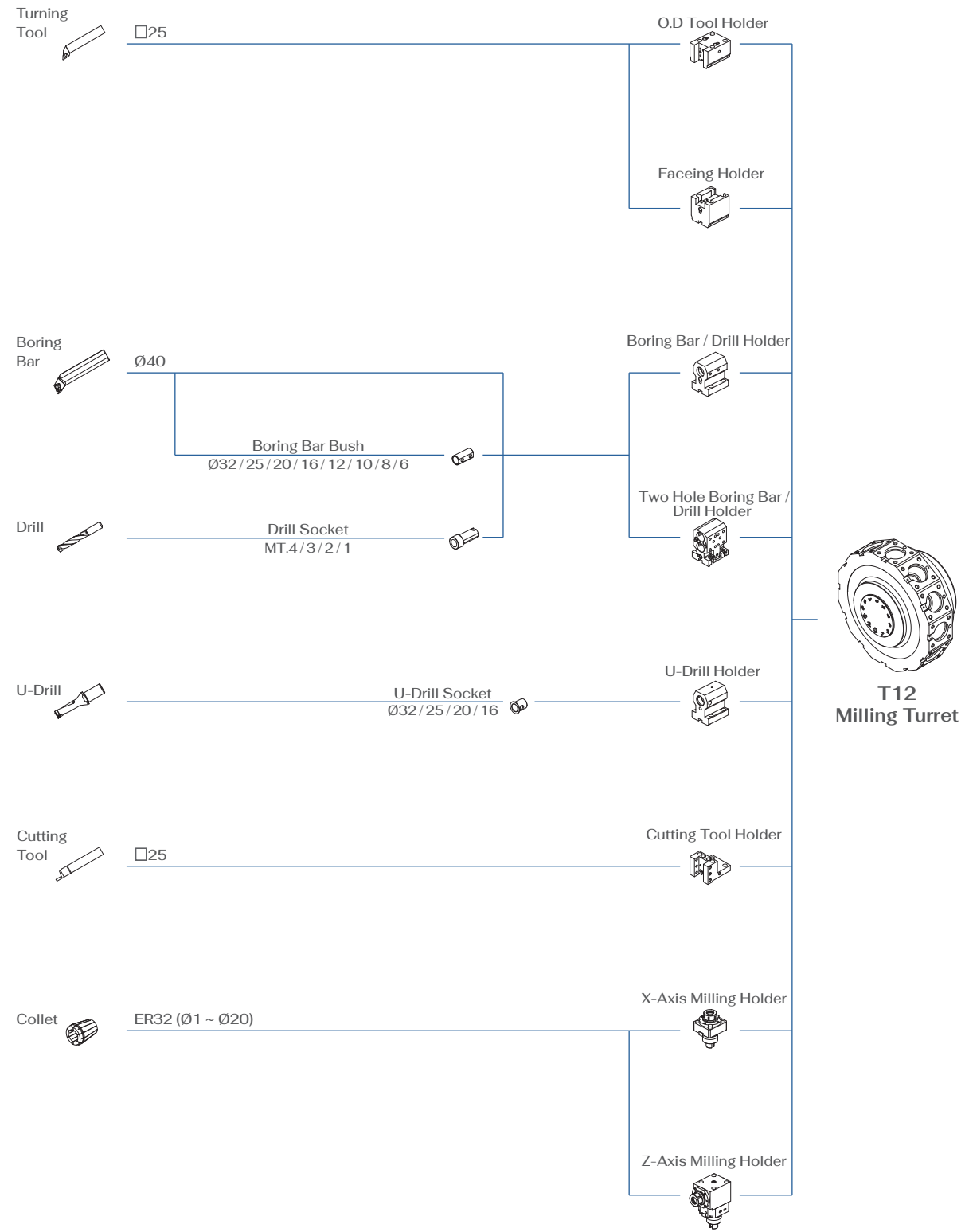
Travel Range

YT / MT

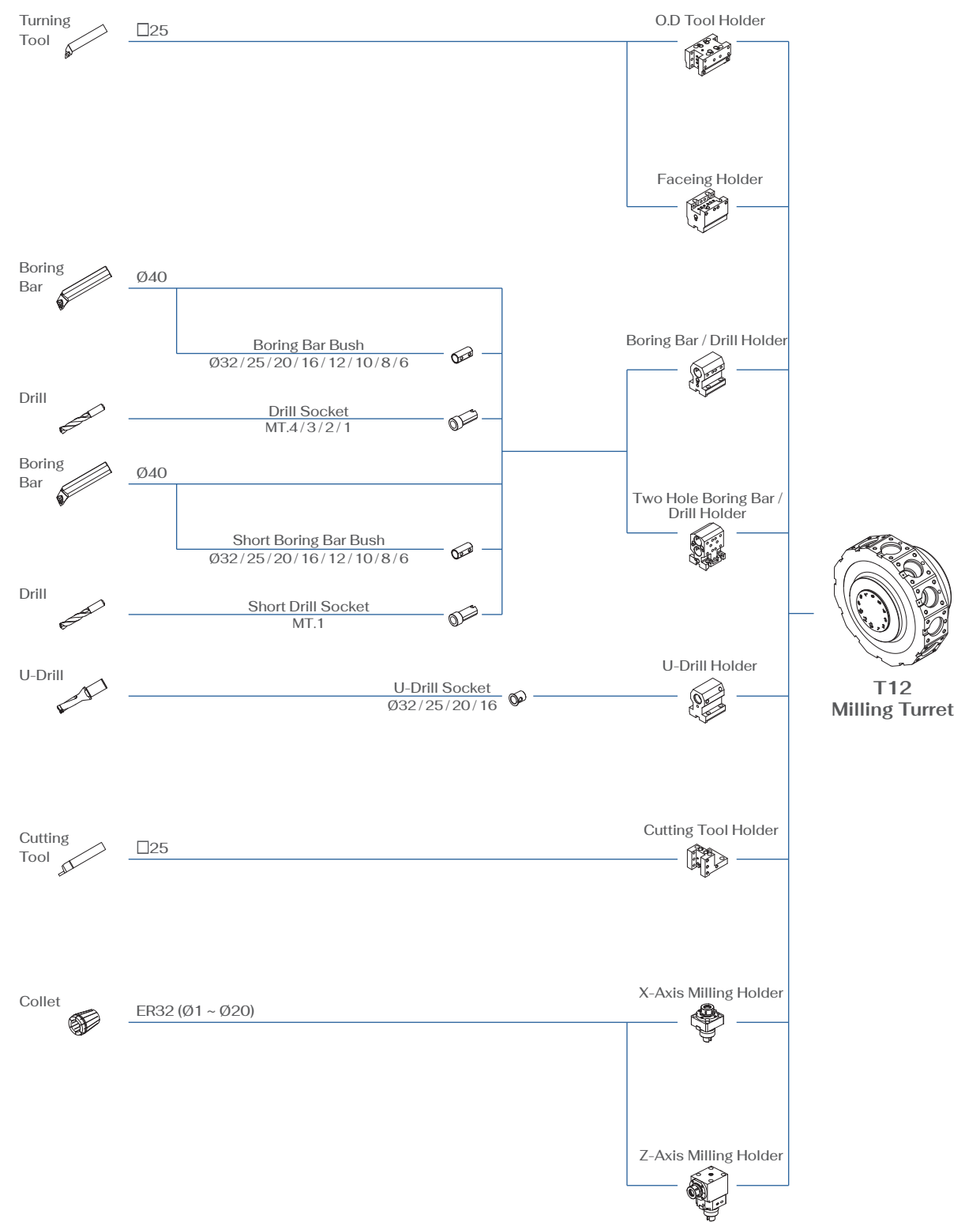


Tooling System

MT / YT



MS / YS



Machine Specifications

Item		MT	MS	YT	YS
Capacity	Max. Swing mm	600	600	600	600
	Standard Turning Diameter mm	245	245	245	245
	Max. Turning Diameter mm	310	310	310	310
	Max. Turning Length mm	349	349	349	349
	Max. Bar Work Capacity mm	66	66	66	66
Travel	X-Axis Travel mm	221	221	221	221
	Z-Axis Travel mm	400	400	400	400
	Y-Axis Travel mm	-	-	±50	±50
	B-Axis Travel mm	510	510	510	510
Main Spindle	Spindle Speed rpm	4500	4500	4500	4500
	Spindle Nose	A2-6	A2-6	A2-6	A2-6
	Through Hole Diameter mm	76	76	76	76
	Bearing Inside Diameter mm	110	110	110	110
Sub. Spindle	Spindle Speed rpm	-	6000	-	6000
	Spindle Nose	-	ø140 flat	-	ø140 flat
	Through Hole Diameter mm	-	53	-	53
	Bearing Inside Diameter mm	-	80	-	80
Turret	Number of Tools	T12	T12	T12	T12
	OD Tool Shank Dimension mm	25	25	25	25
	ID Tool Shank Diameter mm	40	40	40	40
	Milling Shank Diameter mm	20 ER32	20 ER32	20 ER32	20 ER32
	Milling Spindle Speed rpm	4000	4000	4000	4000
Tailstock	Tailstock Type	Live Center	-	Live Center	-
		Built-In Center	-	Built-In Center	-
Tapered Bore Type	MT.5	-	MT.5	-	
	-	-	-	-	
Feedrate	X-Axis Rapid Traverse m / min	24	24	24	24
	Z-Axis Rapid Traverse m / min	30	30	30	30
	Y-Axis Rapid Traverse m / min	-	-	10	10
	B-Axis Rapid Traverse m / min	30	30	30	30
Motor	Main Spindle Motor kW	11 / 7.5	11 / 7.5	11 / 7.5	11 / 7.5
	Sub. Spindle Motor kW	-	5.5 / 3.7	-	5.5 / 3.7
	Milling Spindle Motor kW	5.5 / 3.7	5.5 / 3.7	5.5 / 3.7	5.5 / 3.7
	Index Motor kW	1.2	1.2	1.2	1.2
	X-Axis Servo Motor kW	1.8	1.8	1.8	1.8
	Z-Axis Servo Motor kW	1.8	1.8	1.8	1.8
	Y-Axis Servo Motor kW	-	-	1.4	1.4
B-Axis Servo Motor kW	1.2	1.2	1.2	1.2	
Machine Size	Height mm	1953	1953	1953	1953
	Width mm	2443	2443	2443	2443
	Depth mm	1690	1690	1690	1690
	Weight kg	5840	5850	5890	5900

Standard and Optional Accessories

Accessories	MT	MS	YT	YS
Variable Speed Main Spindle	●	●	●	●
Variable Speed Sub. Spindle	-	●	-	●
Servo Tailstock with Regular Center	●	-	●	-
Servo Tailstock with Rolling Center	◎	-	◎	-
O.D Tool Holder	●	●	●	●
Face Tool Holder	●	●	●	●
U-Drill Tool Holder	●	●	●	●
Boring Bar Tool Holder	●	●	●	●
Boring Bar Bush (Ø6 / Ø8 / Ø10 / Ø12)	●	●	●	●
Boring Bar Bush (Ø16 / Ø20 / Ø25 / Ø32)	●	●	●	●
U-Drill Bush (Ø16 / Ø20 / Ø25 / Ø32)	●	●	●	●
Short Boring Bar Bush (Ø6 / Ø8 / Ø10 / Ø12)	-	●	-	●
Short Boring Bar Bush (Ø16 / Ø20 / Ø25 / Ø32)	-	●	-	●
Drill Bush (MT.1 / MT.2 / MT.3 / MT.4)	◎	◎	◎	◎
Short Drill Bush (MT.1)	-	◎	-	◎
X-Axis Milling Holder	●	●	●	●
Z-Axis Milling Holder	●	●	●	●
Automatic Tool Setter	◎	◎	◎	◎
Manual Tool Setter	◎	◎	◎	◎
Linear Scales	◎	◎	◎	◎
Coolant Pump (400W)	●	●	●	●
Coolant Pump (715W / 750W / 900W / 1400W)	◎	◎	◎	◎
Coolant Chiller	◎	◎	◎	◎
Nut Cooling Ball Screw	◎	◎	◎	◎
Hydraulic System	●	●	●	●
Hydraulic Oil Cooling	◎	◎	◎	◎
Hydraulic Pressure Sensor	●	●	●	●
Lubrication System	●	●	●	●
Hydraulic Chuck	●	●	●	●
Collet Chuck	◎	◎	◎	◎
Foot Switch	●	●	●	●
LED Interior Light	●	●	●	●
LED TAKISAWA Light	●	●	●	●
LED Signal Tower	●	●	●	●
Chip Cart	●	●	●	●
Right Side Chip Conveyor	◎	◎	◎	◎
Rear Side Chip Conveyor	◎	◎	◎	◎
Parts Catcher	◎	◎	◎	◎
Parts Conveyor	◎	◎	◎	◎
Automatic Bar Feeder and Interface	◎	◎	◎	◎
Auto Door	◎	◎	◎	◎
Safety Door Switch	◎	◎	◎	◎
Safety Light Curtain	◎	◎	◎	◎
Air Blow	◎	◎	◎	◎
Oil Skimmer	◎	◎	◎	◎
Oil Mist Collector	◎	◎	◎	◎
Parts Counter	◎	◎	◎	◎
Automatic Power-Off	◎	◎	◎	◎

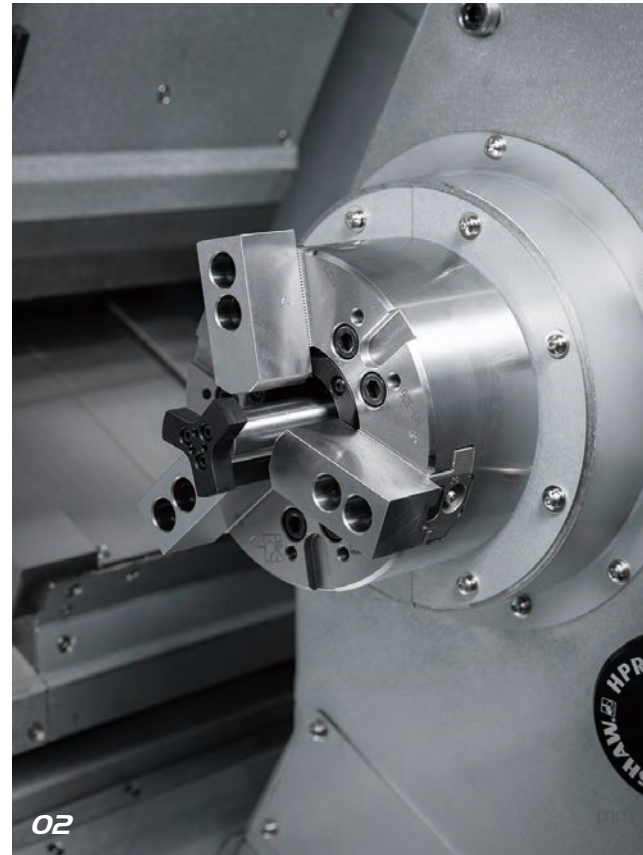
● Standard ◎ Optional - Nope

Special Specification Example



01 Left Spindle Parts Catcher

Max. Parts Dia.	65	mm
Max. Parts Length	130	mm
Max. Parts Weight	3	kg



02 Parts Pusher

Pusher Stroke	95	mm
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Highly Accurate Optional Equipment

There are special requirements for precise machining accuracy and it is necessary to use approved high-precision optional equipment.

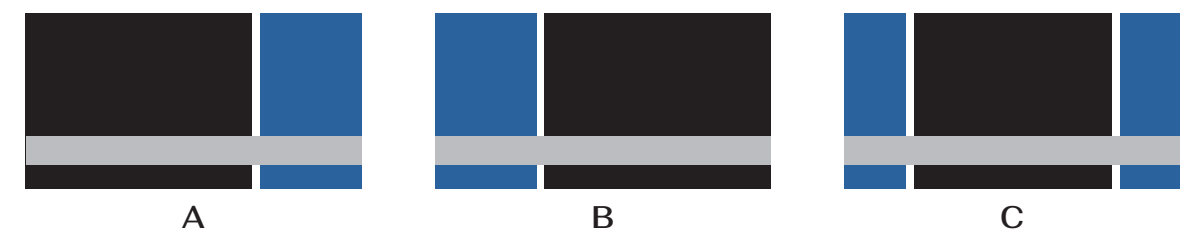
Please contact us for advice on these options.

- 01 Linear Scales
- 02 Automatic | Manual Tool Setter
- 03 Nut Cooling Ball Screw
- 04 Cutting Fluid Cooling
- 05 High Pressure Coolant
- 06 Hydraulic Oil Cooling

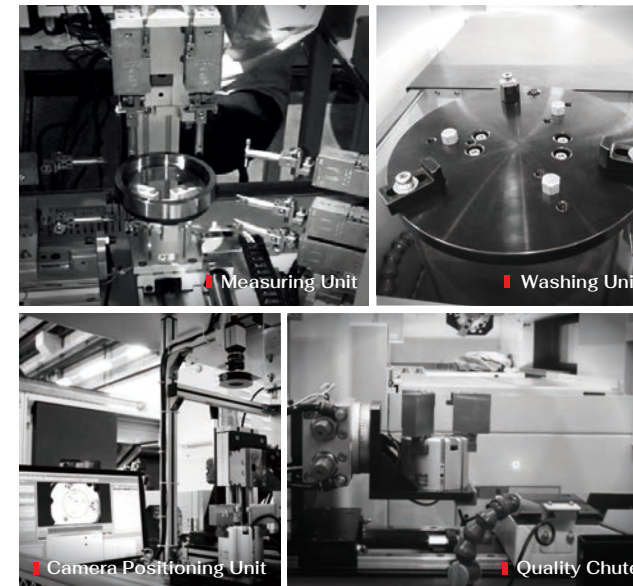


High Speed Gantry Loader System

Layout Variations



Peripheral Equipment



Gantry Loader Specifications

Feedrate

X-Axis Rapid Traverse	180	m / min
Z-Axis Rapid Traverse	150	m / min

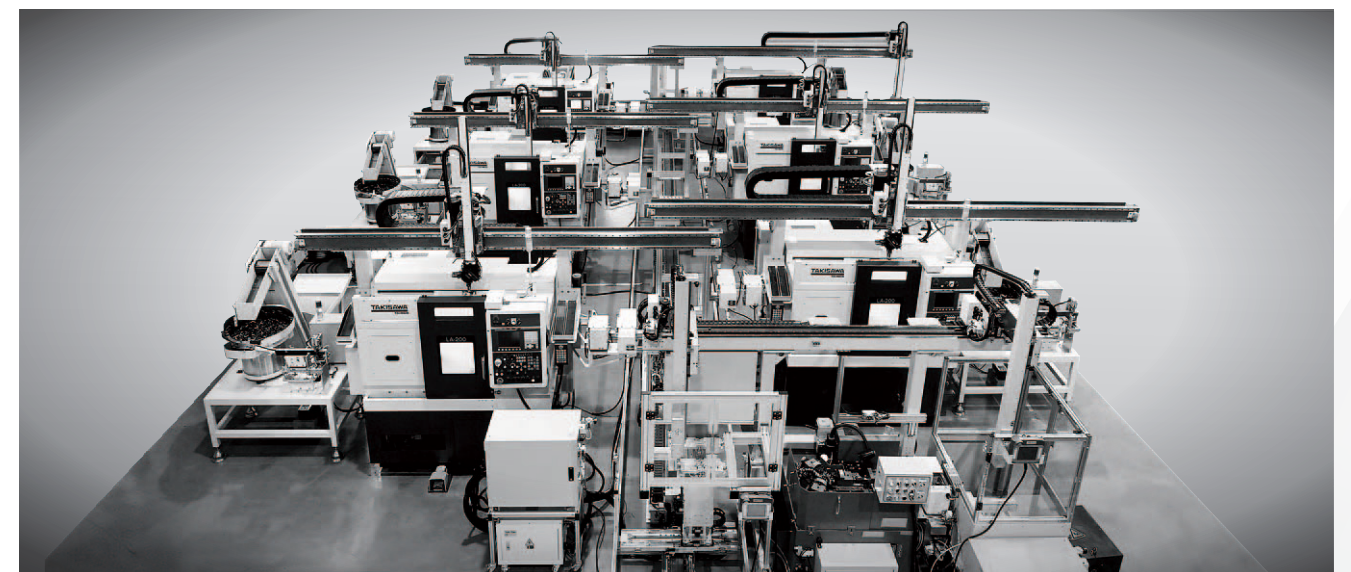
Working Size

O.D	160	mm
Length	100	mm
Weight	3 (x2)	kg

Work Feeder Specifications

Pallet	16	pcs
Loading Weight	40	kg
Max. Height	450	mm
Worker Feeder Width	610	mm

Turn-Key Solution



NC Unit Specifications

Specifications · Contents	MT	YT	MS	YS
Controller				
Oi-TF Plus	●	●	●	●
NC Unit				
10.4" Color LCD	●	●	●	●
Safety Device				
Front Door Interlock	◎	◎	◎	◎
Front Door Locking Mechanism	◎	◎	◎	◎
Safety Relay	◎	◎	◎	◎
Control Panel Breaker with Tripper	◎	◎	◎	◎
Controlled Axes				
Least Input Increment (Linear Axis: 0.001mm, Rotary Axis: 0.001°)	●	●	●	●
Maximum Programmable Dimension (Linear Axis: ±99999.999mm, Rotary Axis: ±360°)	●	●	●	●
Arbitrary angular axis control	-	●	-	●
Least Input Increment C	▲	▲	▲	▲
Inch/Metric Selection	●	●	●	●
Interlock	●	●	●	●
Machine Lock	◎	◎	◎	◎
Emergency Stop	●	●	●	●
Stored Stroke Check 1	●	●	●	●
Stored Stroke Check 2, 3	●	●	●	●
Stroke Limit Check Before Movement	●	●	●	●
Chuck Tailstock Barrie	▲	▲	▲	▲
Mirror Image (Each Axis)	▲	▲	▲	▲
Chamfering ON / OFF	●	●	●	●
Overload Detection	●	●	●	●
Position Switch	●	●	●	●
Operation				
Auto Run (Memory)	●	●	●	●
MDI Run	●	●	●	●
DNC Run	●	●	●	●
DNC Run with Memory Card	●	●	●	●
Program Number Search	●	●	●	●
Sequence Number Search	●	●	●	●
Sequence Number Collation and Stop	●	●	●	●
Wrong Operation Preventive	▲	▲	▲	▲
Buffer Register	●	●	●	●
Dry Run	●	●	●	●
Single Block	●	●	●	●
Jog Feed	●	●	●	●
Manual Reference Point Return	●	●	●	●
Dogless Reference Point Setting	●	●	●	●
Manual Handle Feed 2/3-units	●	●	●	●
Interpolating Functions				
Positioning (G00)	●	●	●	●
Exact Stop Mode (G61)	●	●	●	●
Tapping Mode (G63)	●	●	●	●
Cutting Mode (G64)	●	●	●	●
Exact Stop (G09)	●	●	●	●
Linear Interpolation (G01)	●	●	●	●
Circular Interpolation (G02/G03)	●	●	●	●
Dwell (G04)	●	●	●	●
Polar Coordinate Interpolation	●	●	●	●
Cylindrical Interpolation	●	●	●	●
Helical Interpolation	◎	◎	◎	◎
Thread Cutting	●	●	●	●
Multiple Thread Cutting	●	●	●	●
Thread Cutting Cycle and Retraction	●	●	●	●
Continuous Thread Cutting	●	●	●	●
Variable Lead Thread Cutting	●	●	●	●
Reference Point Return (G28)	●	●	●	●

Specifications · Contents	MT	YT	MS	YS
Reference Point Return Check (G27)	●	●	●	●
2nd Reference Point Return (G30)	●	●	●	●
3rd, 4th Reference Point Return	●	●	●	●
Feed Function				
Rapid Traverse Override (F0, 25%, 50%, 100%)	●	●	●	●
Feed Per Minute	●	●	●	●
Feed Per Revolution	●	●	●	●
Constant Tangential Speed Control	●	●	●	●
Cutting Feedrate Clamp	●	●	●	●
Automatic Acceleration / Deceleration	●	●	●	●
Rapid Traverse Bell-Shaped Accel / Decel	●	●	●	●
Linear Accel/Decel After Feedrate Interpolation	●	●	●	●
Feedrate Override (15 Steps)	●	●	●	●
Jog Override (15 Steps)	●	●	●	●
Override Cancel	●	●	●	●
Manual Feed Per Revolution	▲	▲	▲	▲
Program Input				
Tape Code (EIA / ISO Auto Recognition)	●	●	●	●
Label Skip	●	●	●	●
Parity Check	●	●	●	●
Control In / Out	●	●	●	●
Optional Block Skip, 1 Piece	●	●	●	●
Optional Block Skip (2 to 9 Pieces)	⊕	⊕	⊕	⊕
Program Number O4 Digits	●	●	●	●
Program File Name 32 Characters	●	●	●	●
Sequence Number N5 Digits	-	-	-	-
Sequence Number N8 Digits	●	●	●	●
Absolute/Incremental Command	●	●	●	●
Decimal Point Input /	●	●	●	●
Pocket Calculator Type Decimal Point Input	●	●	●	●
Diameter /Radius Programming (X-Axis)	●	●	●	●
Coordinate System Setting (G50)	●	●	●	●
Auto coordinate System Setting	●	●	●	●
Drawing Dimension Direct Input	●	●	●	●
G-Code System A	●	●	●	●
G-Code System B/C	▲	▲	▲	▲
Chamfering / Corner R Programming	●	●	●	●
Programmable Data Input	●	●	●	●
Sub Program Call (10 Levels)	●	●	●	●
Custom Macro	●	●	●	●
Additional Custom Macro Common Variables	●	●	●	●
Single Canned Cycle	●	●	●	●
Combined Canned Cycle	●	●	●	●
Combined Canned Cycle II	●	●	●	●
Drilling Canned Cycle	●	●	●	●
Circular Interpolation by R programming	●	●	●	●
Macro Executor	●	●	●	●
Coordinate System Shift	●	●	●	●
Coordinate System Shift Direct Input	●	●	●	●
Miscellaneous Function / Spindle Functions				
M Function (M3 Digits)	●	●	●	●
Second Miscellaneous Function (B Function)	◎	◎	-	-
Spindle Functions (S4 Digits)	●	●	●	●
Constant Surface Speed Control	●	●	●	●
Spindle Orientation	●	●	●	●
Rigid Tap (Spindle Center)	●	●	●	●
Rigid Tap (Rotary Tool)	●	●	●	●
Data I/O				
RS-232C Interface for 1 ch	●	●	●	●
Fast Data Server	⊕	⊕	⊕	⊕
External Message	●	●	●	●
External Workpiece Number Search	◎	◎	◎	◎
Memory Card I/O	●	●	●	●

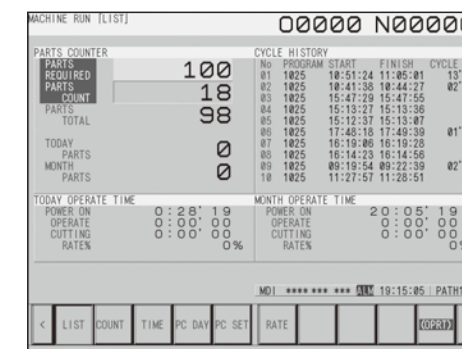
Specifications · Contents	MT	YT	MS	YS
Tool Functions / Tool Offset Functions				
T Function (T2 + 2 Digits)	●	●	●	●
Tool Offsets, 32 Pieces	-	-	-	-
Tool Offsets, 64 Pieces	-	-	-	-
Tool Offsets, 128 Pieces	●	●	●	●
Tool Offsets, 200 Pieces	◎	◎	◎	◎
Tool Offsets, 400 Pieces	-	-	-	-
Tool Geometry Size Data, 128 Pieces	●	●	●	●
Tool Position Offset	●	●	●	●
Tool Diameter / Nose R Compensation	●	●	●	●
Tool Geometry / Wear Compensation	●	●	●	●
Tool Offset Counter Input	●	●	●	●
Tool Offset Measured Value Direct Input	●	●	●	●
Tool Offset Measured Value Direct Input B	◎	◎	◎	◎
Tool Life Management	●	●	●	●
Accuracy Offset Functions				
Backlash Compensation	●	●	●	●
Backlash Compensation by Rapid Traverse / Feedrate	●	●	●	●
Editing				
Part Program Memory Capacity 128Kbyte (320m)	-	-	-	-
Part Program Memory Capacity 320Kbyte (800m)	-	-	-	-
Part Program Memory Capacity 512Kbyte (1280m)	-	-	-	-
Part Program Memory Capacity 1Mbyte	-	-	-	-
Part Program Memory Capacity 2Mbyte	●	●	●	●
Registrable Programs, 63 Programs	-	-	-	-
Registrable Programs, 400 Programs	-	-	-	-
Registrable Programs, 1000 Programs	●	●	●	●
Program Editing	●	●	●	●
Program Protection	●	●	●	●
Extended Program Editing	●	●	●	●
Background Editing	●	●	●	●

Specifications · Contents	MT	YT	MS	YS
Setting / Display				
Status Display	●	●	●	●
Clock Function	●	●	●	●
Current Position Display	●	●	●	●
Program Comment Display (31 Characters)	●	●	●	●
Parameter Setting and Display	●	●	●	●
Alarm Display	●	●	●	●
Alarm Log Display	●	●	●	●
Operator Message Log Display	●	●	●	●
Operation Message Log Display	●	●	●	●
Run Hours and Parts Count Display	●	●	●	●
Actual Speed Display	●	●	●	●
Actual Spindle Speed and T Code Display	●	●	●	●
Floppy Cassette Directory Display	●	●	●	●
Optional Path Name Display	●	●	●	●
Servo Adjustment Screen	●	●	●	●
Maintenance Information Screen	●	●	●	●
Data Protection Key, 1 Kind	●	●	●	●
Help Function	●	●	●	●
Self Diagnostic Function	●	●	●	●
Scheduled Maintenance Screen	●	●	●	●
Hardware & Software System Configuration Display	●	●	●	●
Graphic Display	●	●	●	●
Dynamic Graphic Display	◎	◎	◎	◎
Display Languages				
English	●	●	●	●
Japanese (Kanji)	▲	▲	▲	▲
Other Language	▲	▲	▲	▲
Display Language Dynamic Switching	●	●	●	●

● Standard ◎ Optional ⊕ Special
▲ Parameter setting is required - Nope

Smart Work Manager (Option)

01



It provides simple operation and convenient function.

01 Tool Life Manager

This function can set tool life and wear limit to manage all tools.

02 Load Monitor

Detecting max load to check tool status.

03 Parts and Machine Manager

It offers parts counter, program history, operate time for today or this month.

02



03

