

# NT Series

HIGH PERFORMANCE MULTI-AXIS MILL/TURN CENTER



# HIGH PERFORMANCE MULTI-AXIS MILL/TURN

With flexible Y-axis capability, much more challenging mill/turn jobs can be integrated and achieved within a perfect time. The feature of automation is widely suited for diverse industries, such as automotive, die mold and general job shop.

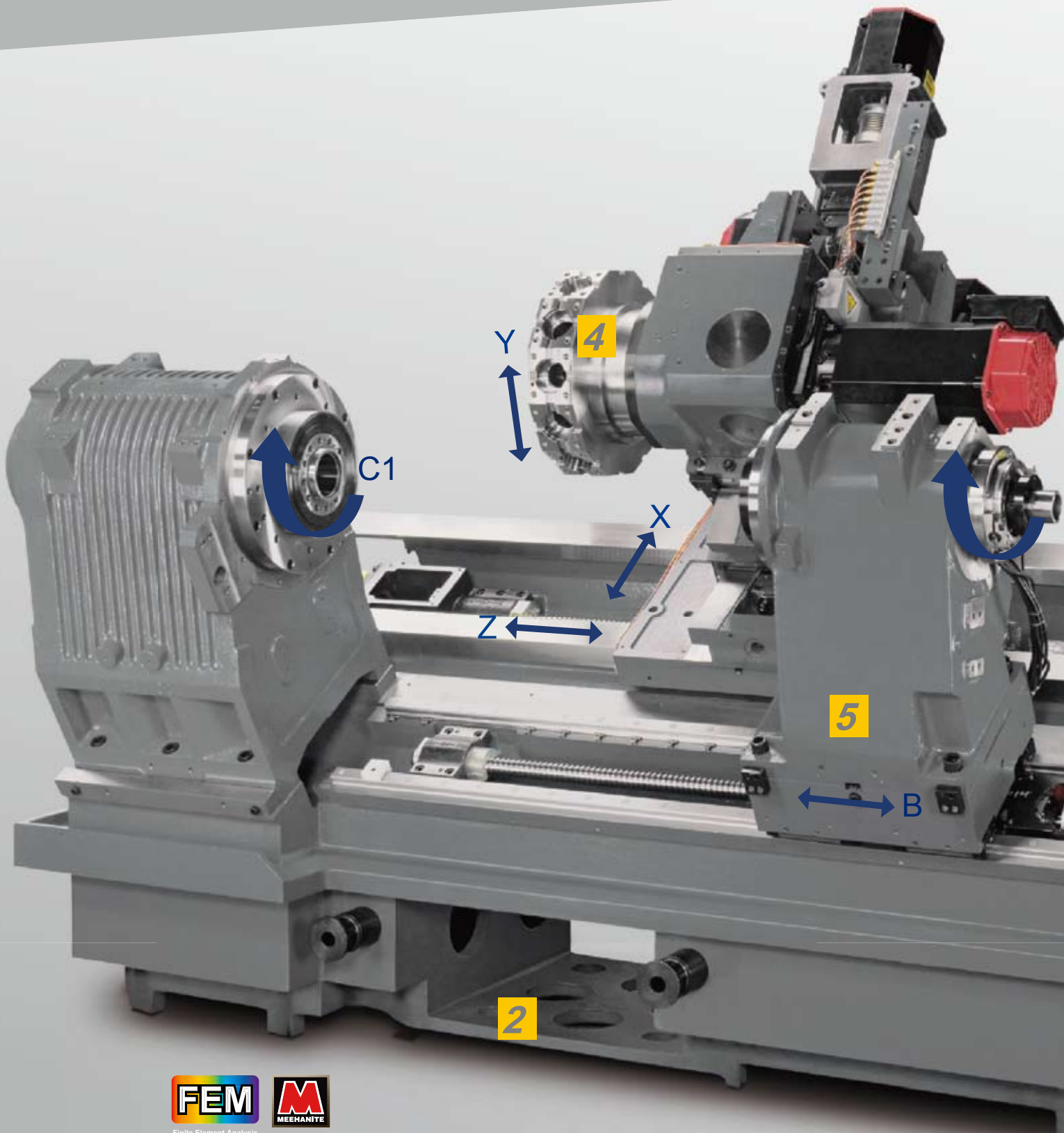


# CENTER

ries **2000Y · 2000SY · 2500Y · 2500SY**



# IDEAL STRUCTURAL RIGIDITY AND DESIGN



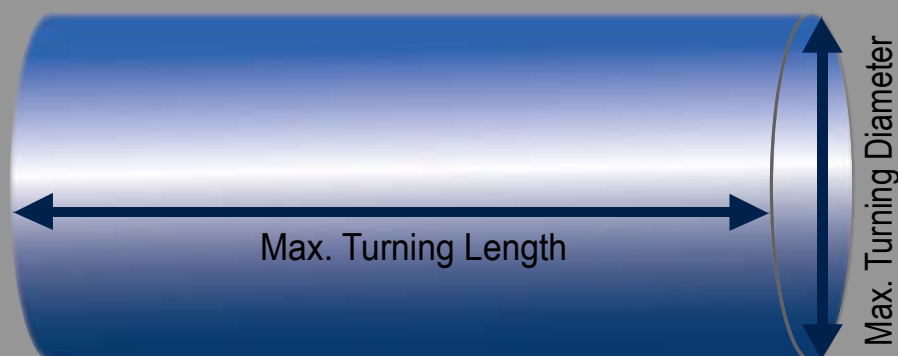
# RIGIDITY

C2



- 1** 30° One-piece Slanted Bed Design:  
Extends the space for chips removal.
- 2** Highly Rigid Bridge Type Base:  
Effectively absorbs vibration and reduces structural deformation.
- 3** Enlarged Box Guideway Width:  
Reinforced through induction hardening process and precision ground for optimum heavy duty milling and turning capabilities.
- 4** Fast & Reliable Motorized Turret:  
Servo-driven design achieves fast tool changing time and reliable indexing.
- 5** Sub Spindle & Programmable Tailstock
  - NT series offers a flexible choice. The NT-2000/2500SY is optimized with sub spindle and the NT-2000/2500Y is with programmable tailstock.
  - Programmable tailstock is driven by servo motor for high precision movement and easy setup, saving 20% operating time compared with the conventional design.
  - The feedrate and thrust force of the tailstock can be adjusted according to the size of workpiece.

# HIGH PERFORMANCE AXIAL MOVEMENT



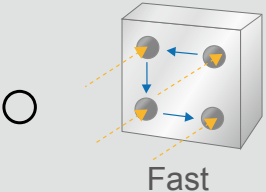
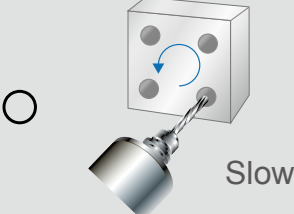
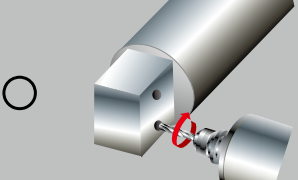
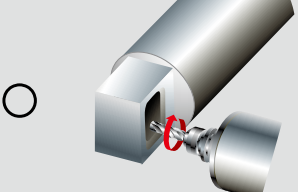
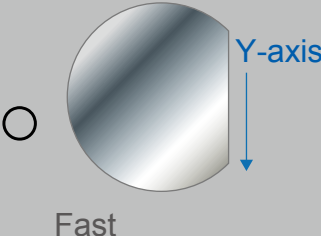
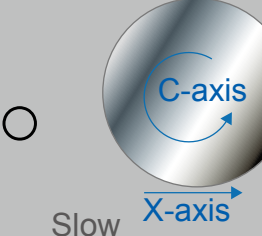

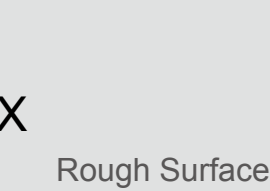
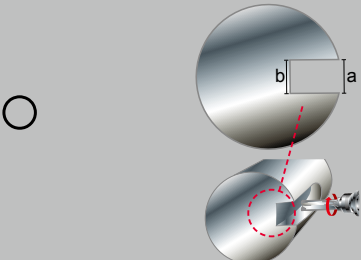
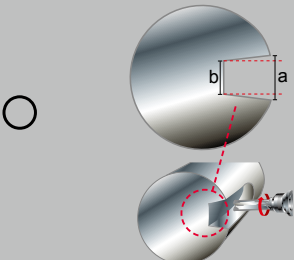
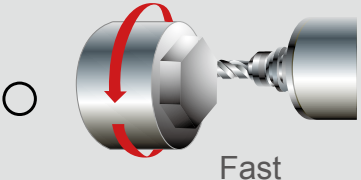

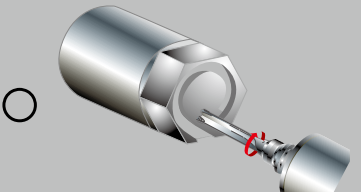
	NT-2000Y	NT-2000SY	NT-2500Y	NT-2500SY
Max. Turning Diameter	ø350mm 13.78"			
Max. Turning Length	519mm 20.43"		686mm 27.00"	

## Flexible Y-axis Capability

- Y plus C-axis integrates mill/turn process and fulfills numerous complex requirements which can do more than general lathes.
- Y-axis travel: 100 (±50)mm. (3.9"±2")
- Y-axis feedrate: 10m/min. (393.70ipm)
- Direct drive motors on X/Y/Z/B-axis reduce backlash and vibration problems and achieve accurate positioning.



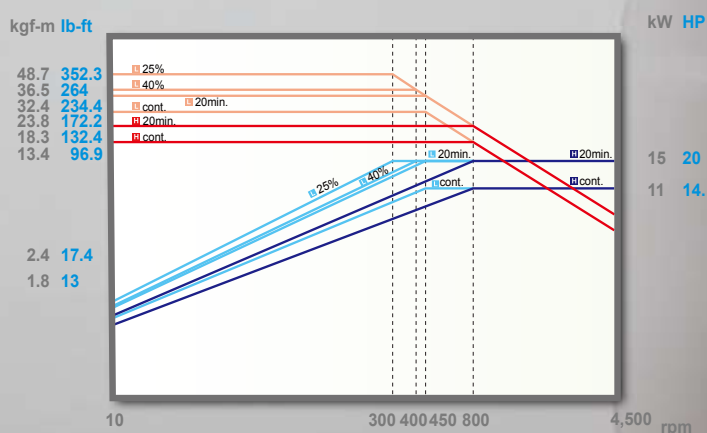
# Flawless Combination of Y & C-axis

	Y & C-axis	C-axis
End Face Drilling		
Off-center Drilling		X
Off-center Side Grooving		X
Large Face Milling		
Contouring		
Keyway Machining		
X & C-axis Polar Interpolation		
X & Y-axis Circular Interpolation		X

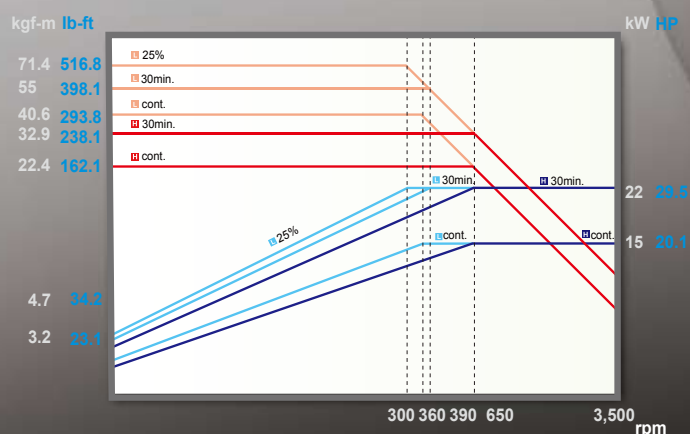
# YCM IN-HOUSE BUILT-IN MOTORIZED MAIN AND SUB SPINDLE

## Spindle Motor Torque Chart

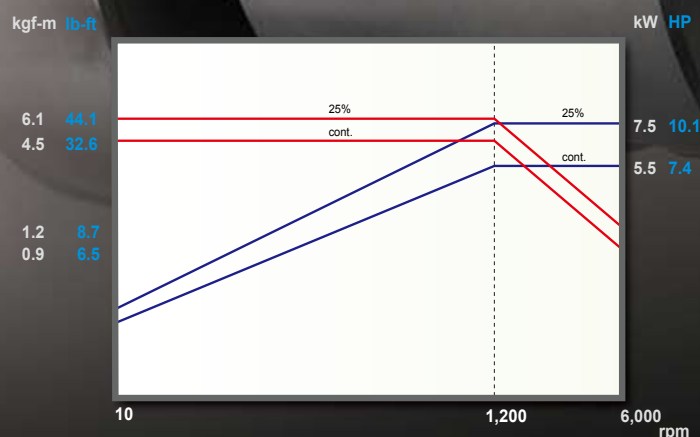
**NT-2000Y/SY**  
MAIN SPINDLE SPEED 4,500rpm



**NT-2500Y/SY**  
MAIN SPINDLE SPEED 3,500rpm



SUB SPINDLE SPEED 6,000rpm

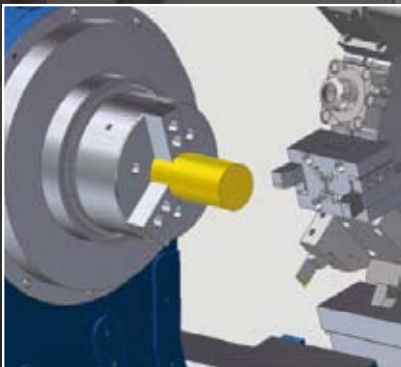


**POWER** L Low Speed H High Speed **TORQUE** L Low Speed H High Speed

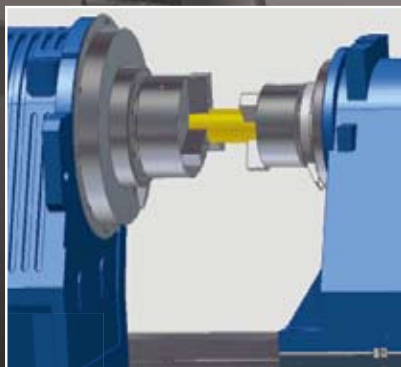


- Built-in motorized design provides low vibration and high accuracy.
- A hybrid design with highly rigid angular contact bearings and roller type bearings .
- Advanced inverter type spindle cooling system effectively controls temperature and reduces thermal deformation.
- C-axis index: 0.001°.

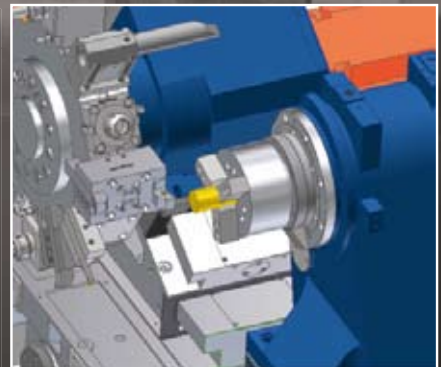
- Continuous machining capability.



Main Spindle



Hand Over



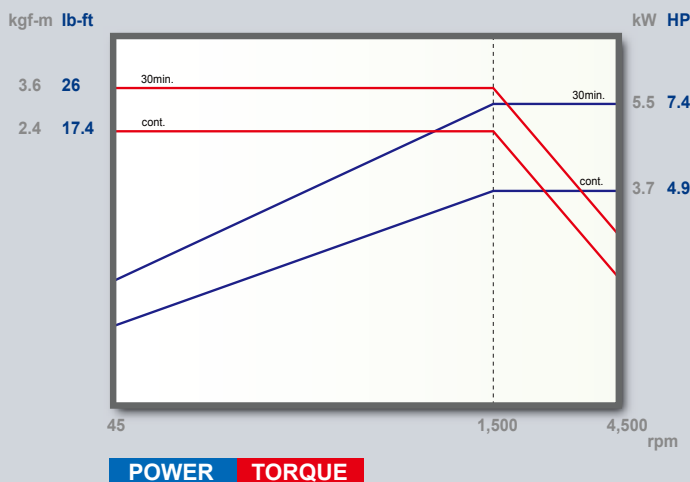
Sub Spindle

# FAST & RELIABLE MOTORIZED TURRET

# 12

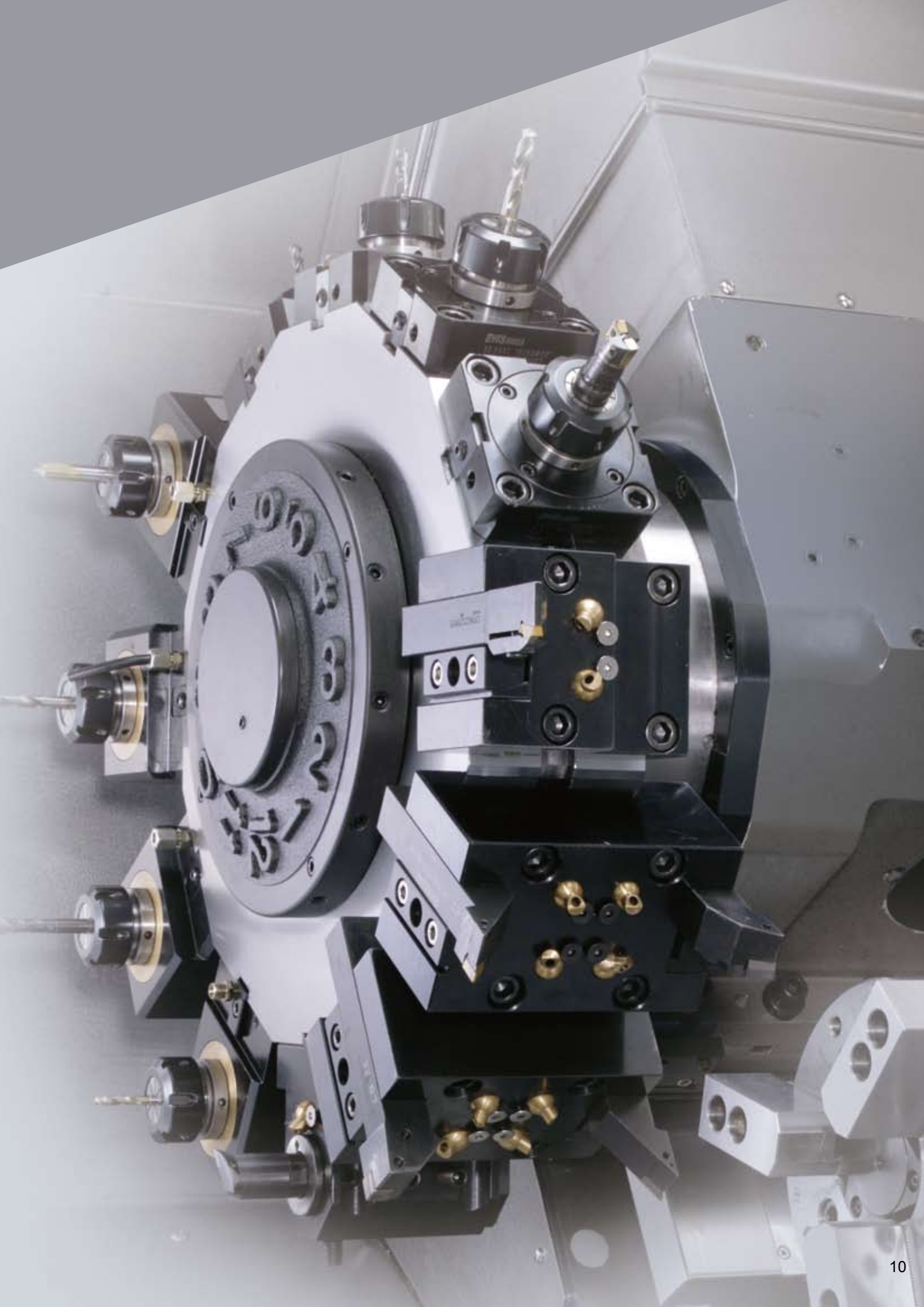
*tools capacity*

LIVE TOOL SPINDLE SPEED 4,500rpm



- 12 tools capacity. All stations are available for live tools.
- A hybrid spindle design combines highly rigid angular contact bearings and roller type bearings which maintain strong rigidity suited for high speed machining and heavy cutting.

- Max. live tool power: 5.5kW 7.38HP.
- Index time: 0.18sec.
- Two types of tooling system, BMT65 and VDI40, are available. BMT tooling system offers strong clamping force maintaining flawless accuracy. VDI tooling system offers fast tool changing capability.



# USER-FRIENDLY & EASY MAINTEN



## **1 Visual Management**

- Oil pressure gauge is set in the front for easy daily check-up.

## **2 Easy Maintenance**

- There are various maintenance windows on machine cover for easy maintenance.



# ANCE



## 3 Safety Designs

- Explosion-proof glass.
- Clear and eco-friendly lighting.
- Safety door is as standard.

## 4 Versatile Coolant Tank

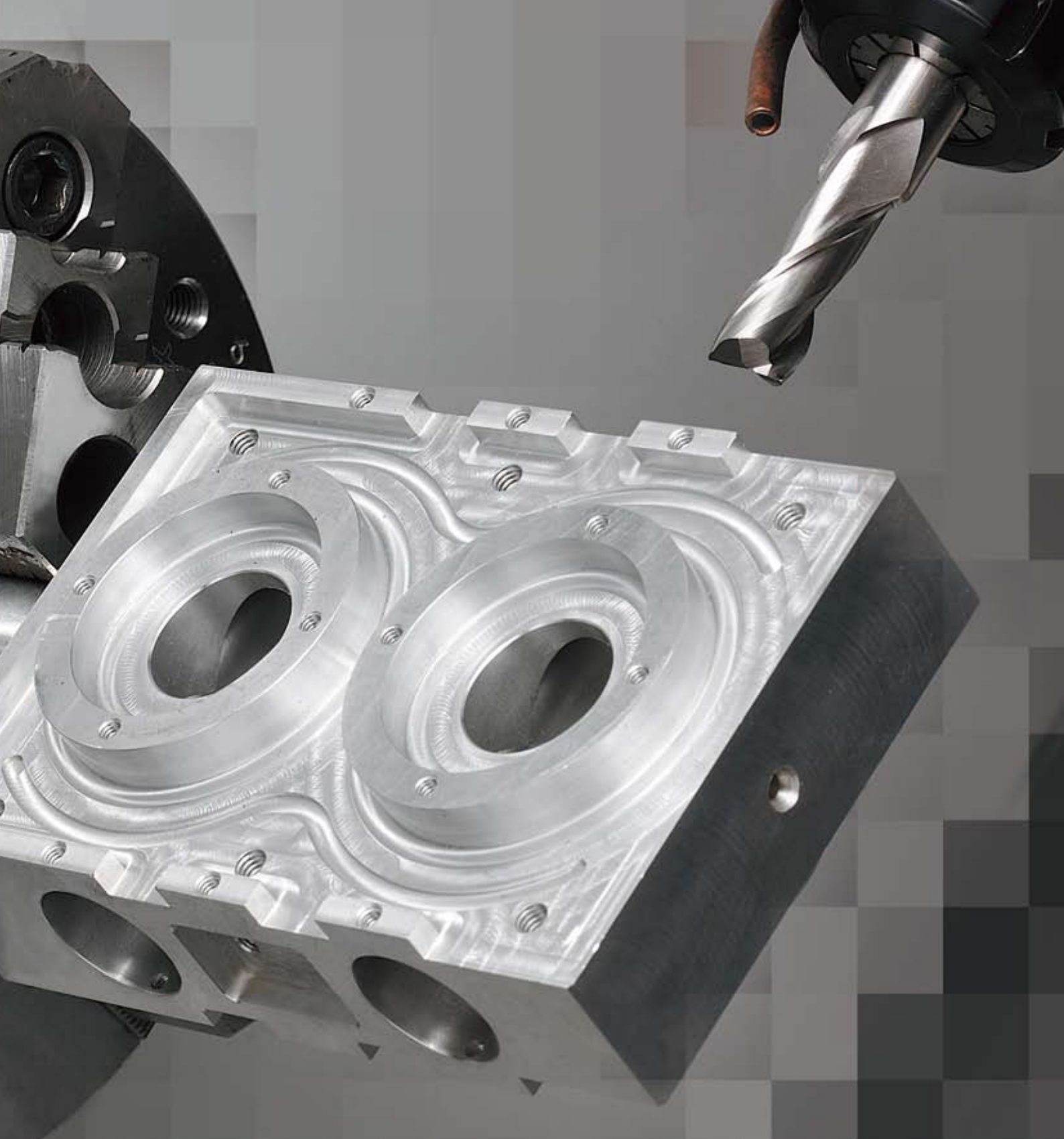
- A special design of coolant tank effectively prevents chips from flowing back into machine.
- The independent coolant tank design isolates the base from heat exposure.

## 5 Convenient Swivel Control Panel

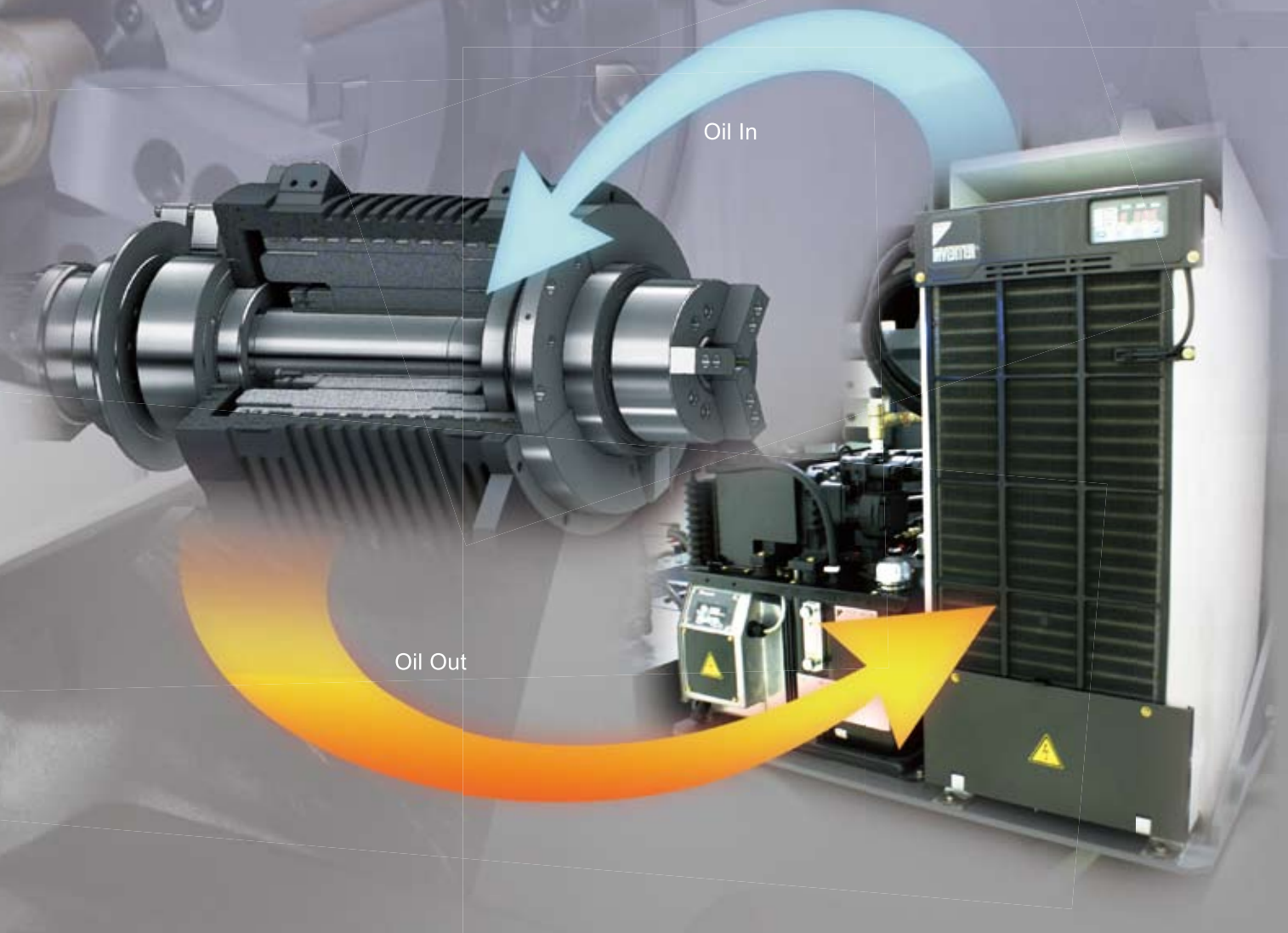
- Easy-to-understand interface.
- Easy-to-access feature.







# GREEN CONCEPTS



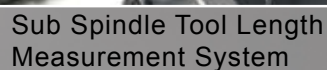
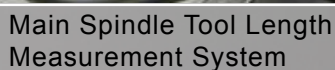
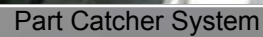
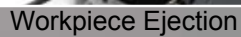
## **Inverter Hydraulic Unit**

- Reduces 20% electricity consumption compared with conventional design.
- Extends hydraulic oil life.
- Compact footprint.

## **Specialized Spindle Cooling System**

- Circulated oil jacket cooling system with advanced inverter type oil cooler ensures effective temperature control and reduces thermal deformation.
- Exhaust fans equipped on machine cover accelerate heat removal.





SPECIFICATIONS

		NT-2000Y		NT-2000SY		NT-2500Y		NT-2500SY	
MACHINING CAPACITY									
Swing Over Bed		ø1,000mm ø39.37" (ø700mm ø27.56" interference with cover)							
Swing Over Carriage		ø870mm ø34.25" (ø700mm ø27.56" interference with cover)							
Standard Turning diameter		ø265mm ø10.43"							
Max. Turning Diameter		ø350mm ø13.78"							
Max. Turning Length		519mm 20.43"				686mm 27"			
MAIN SPINDLE									
Height From The Ground to Spindle		1,160mm 45.67"							
Chuck Size		8"				10"			
Spindle Nose		A2-6				A2-8			
Spindle Front Bearing Inner Diameter		ø120mm ø4.72"				ø140mm ø5.51"			
Hole Through Spindle		ø77mm ø3.03"				ø91mm ø3.58"			
Hole Through Draw Bar		ø52mm (ø66mm) ø2.05" (ø2.60")				ø75mm (ø80mm) ø2.95" (ø3.15")			
Spindle Speed		4,500rpm				3,500rpm			
Max. Spindle Torque		48.7kgf-m 352.24 lb-ft				71.4kgf-m 516.43 lb-ft			
C1-axis Spindle Speed						50rpm			
C1-axis Index Accuracy						0.001°			
SUB SPINDLE									
Chuck Size		—		6"		—		6"	
Spindle Nose		—		A2-5		—		A2-5	
Spindle Front Bearing Inner Diameter		—		ø85mm ø3.35"		—		ø85mm ø3.35"	
Hole Through Spindle		—		ø43mm ø1.69"		—		ø43mm ø1.69"	
Hole Through Draw Bar		—		ø33mm ø1.30"		—		ø33mm ø1.30"	
Spindle Speed		—		6,000rpm		—		6,000rpm	
Max. Spindle Torque		—		6kgf-m 43.4lb-ft		—		6kgf-m 43.4lb-ft	
C2-axis Spindle Speed				100rpm					
C2-axis Index Accuracy		—		0.001°		—		0.001°	
FEEDRATE									
Rapid Feedrate (X/Z/Y)		20/24/10m/min. 787.4/944.9/393.7ipm							
Rapid Feedrate (B)		7m/min. 275.6ipm		20m/min. 787.4ipm		7m/min. 275.6ipm		20m/min. 787.4ipm	
Cutting Feedrate		1~10000mm/min 0.4~393.7ipm							
MAIN TRAVEL									
X-axis Travel		260mm 10.24"							
Z-axis Travel		580mm 22.83"				780mm 30.71"			
Y-axis Travel		100mm (±50mm) 3.94" (±1.97")							
B-axis Travel		—		600mm 23.62"				780mm 30.71"	
MOTOR									
Main Spindle Power		11/15kW 14.8/20HP				15/22kW 20/29.5HP			
Sub Spindle Power		—		5.5/7.5kW 7.4/10.1HP		—		5.5/7.5kW 7.4/10.1HP	
Axis Power (X/Z/Y/B)		4/4/3/3kW 5.4/5.4/4.0/4.0HP							
Turret Power		1.2 1.6HP							
Live Tool Power		5.5 7.4HP							
TURRET									
Turret Type		Live Tooling Servo Turret Hydraulic Clamping							
Turret Capacity		12T							
Tool Standard		BMT65/VDI40							
Shank Height for Square Tool		□25 (□1")							
Shank Diameter for Boring Bar		ø40mm ø1½"		ø40 (ø1½")/ø32 (ø1¼") (double boring holder)		ø40 (ø1½")		ø40 (ø1½")/ø32 (ø1¼") (double boring holder)	
Swing Over Turret		ø720mm ø28.35"							
VDI Live Tool Speed		4,500rpm							
Torque of Milling Tool Motor		3.6kgf-m 26.04lb-ft							
TAILSTOCK									
Tailstock Quill Diameter		ø90 ø3.54"		—		ø90 ø3.54"		—	
Tailstock Quill Taper		Fixed Center (std.) MT-4		—		MT-4		—	
		Live Center (opt.) MT-3		—		MT-3		—	
Tail Stock Stroke		600mm(23.62")		—		800mm(31.5")		—	
GENERAL									
Power Consumption (Transformer)		44kVA (65kVA)		54kVA (65kVA)		51kVA (65kVA)		60kVA (65kVA)	
Machine Weight		6,400kg 14,109lb		6,500kg 14,330lb		7,350kg 16,204lb		7,450kg 16,424lb	
Floor Space		3,411 x 2,140 x 2,260mm 134.29" x 84.25" x 88.98"				3,776 x 2,140 x 2,260mm 132.91" x 84.25" x 88.98"			

Note: The manufacturer reserves the right to modify the design, specifications, mechanisms,etc. to improve the performance of the machine without notice. All the specifications shown above are just for reference.

# ACCESSORIES

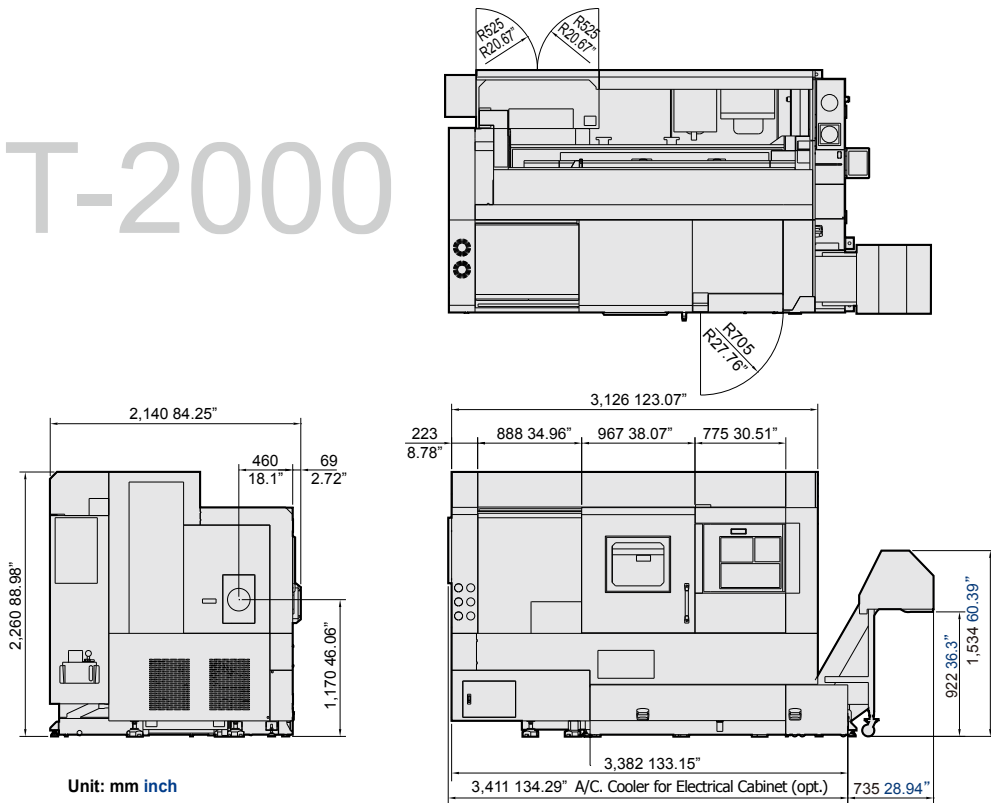
● Standard ○ Option — N/A ★ Parts catcher for sub spindle will come along with workpiece ejection.

		NT-2000Y	NT-2000SY	NT-2500Y	NT-2500SY
Tool Kit		●	●	●	●
Work Lamp		●	●	●	●
Pilot Lamp		●	●	●	●
Safety Door		●	●	●	●
Hydraulic System		●	●	●	●
Spindle Coolant System		●	●	●	●
BMT Tool Holder		●	●	●	●
VDI Tool Holder		○	○	○	○
Hydraulic Hollow Chuck		●	●	●	●
Hard and Soft Jaws 1 Set		●	●	●	●
Additional Hard and Soft Jaws		○	○	○	○
Soft Jaw Former	Main Spindle	○	○	○	○
	Sub Spindle	—	○	—	○
Central Lubrication System		●	●	●	●
Pedal	Main Spindle	●	●	●	●
	Sub Spindle	—	●	—	●
Mechanical Electrical & Operating Manuals		●	●	●	●
Programmable Tailstock		●	—	●	—
Full Chip Enclosure		●	●	●	●
Leveling Blocks and Bolts		●	●	●	●
Air Gun		●	●	●	●
Cutting Air Blast	Main Spindle	●	●	●	●
	Sub Spindle	—	●	—	●
Coolant Equipment System	MTH2-50/5	●	●	●	●
	MTH2-60/6	○	○	○	○
	MTR3-17/17	○	○	○	○
Tailstock Quill Taper	Fixed Type	●	—	●	—
	Live Type	○	—	○	—
Axis Safety Clutch	X/Z-axis	●	●	●	●
	Y/B-axis	○	○	○	○
Chip Conveyor	Right Side	●	●	●	●
	Rear Side	○	○	○	○
Electrical Cabinet	Heat Exchanger	●	●	●	●
	Refrigerated	○	○	○	○
Collet Chuck		○	○	○	○
Pedal for Tailstock		○	—	○	—
Foundation Bolt		○	○	○	○
Automatic Door		○	○	○	○
Milling Tool Attachments		○	○	○	○
Coolant Gun		○	○	○	○
Oil Skimmer		○	○	○	○
Paper Filter		○	○	○	○
Oil-mist Collector		○	○	○	○
Workpiece Length Setter		○	○	○	○
Auto Tool Length Measurement System	Main Spindle	○	○	○	○
	Sub Spindle	—	○	—	○
Bar Feeder		○	○	○	○
Parts Catcher	Main Spindle	○	○	○	○
	Sub Spindle	—	○★	—	○★
Parts Conveyor		○	○	○	○
CNC Control	TXP-200FB	●	●	●	●
	TXP-200FC	○	○	○	○

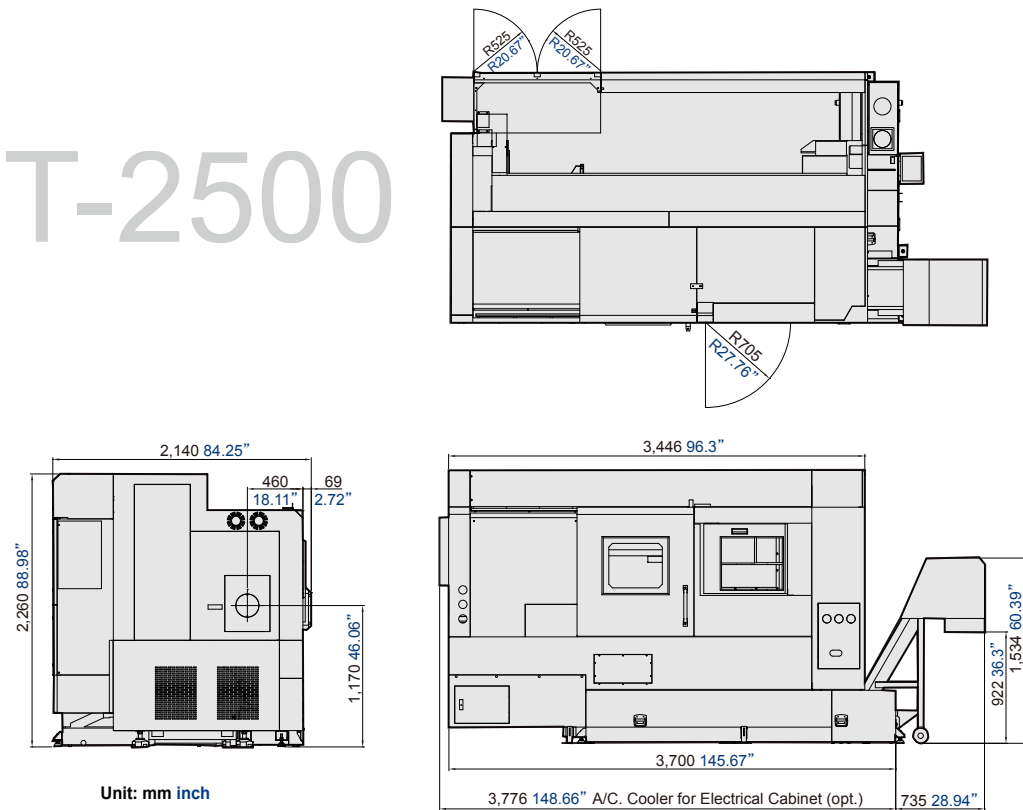
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DIMENSIONS

NT-2000



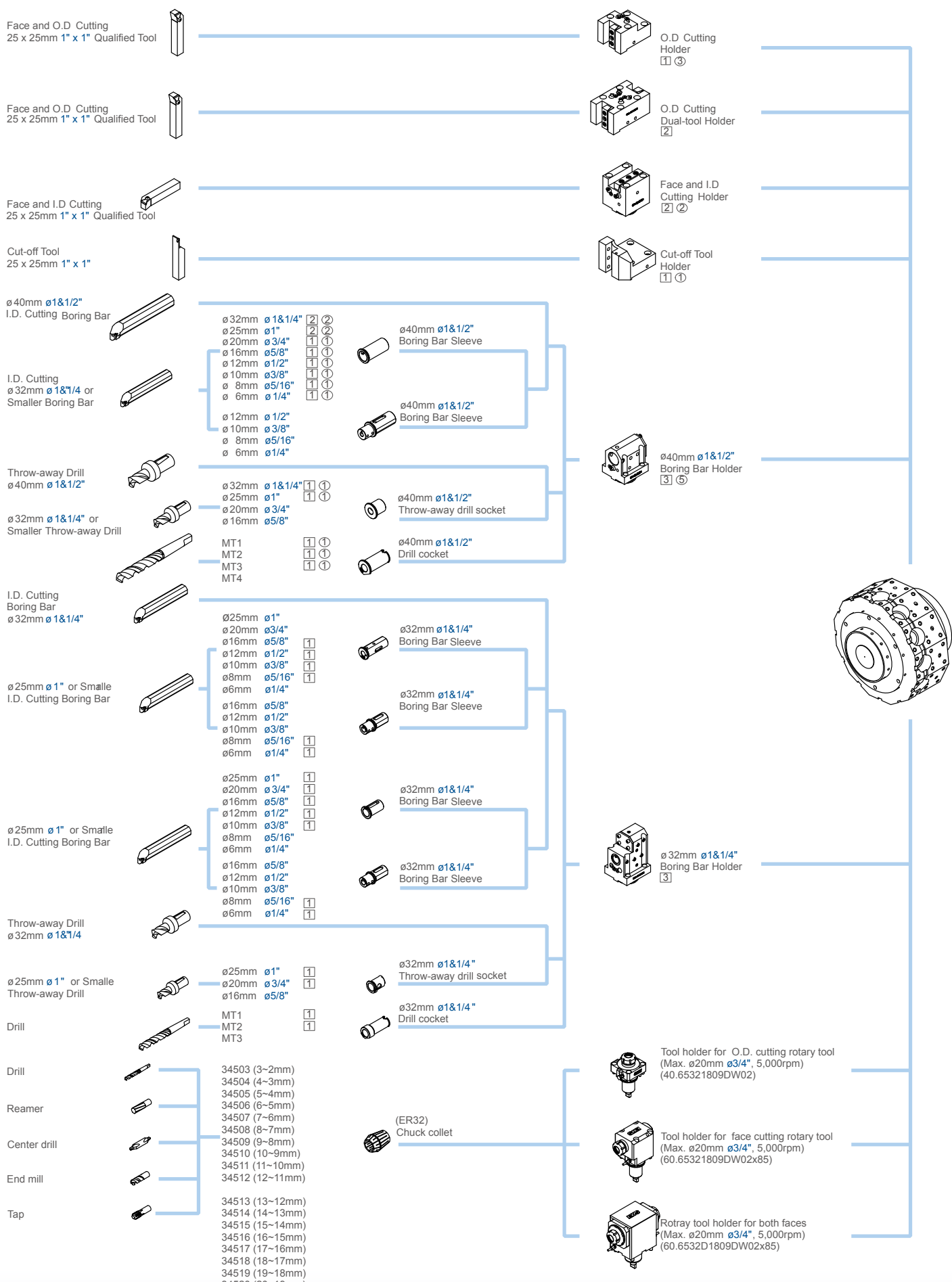
NT-2500





# TOOLING CHART

□ NT-2000SY、NT-2500SY Std. Accessories Qty.  
○ NT-2000Y、NT-2500Y Std. Accessories Qty.





ISO14001 CERTIFIED MANUFACTURE

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