



# Hi-TECH 350

Horizontal Turning Center  
Box Way, Y-Axis, 8"-10" Chuck





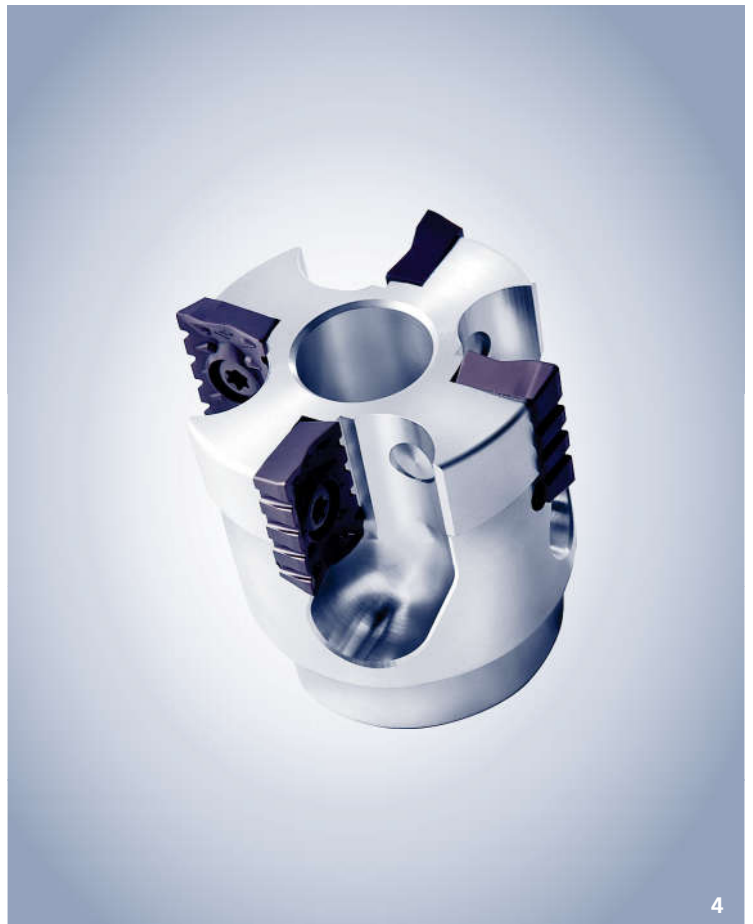
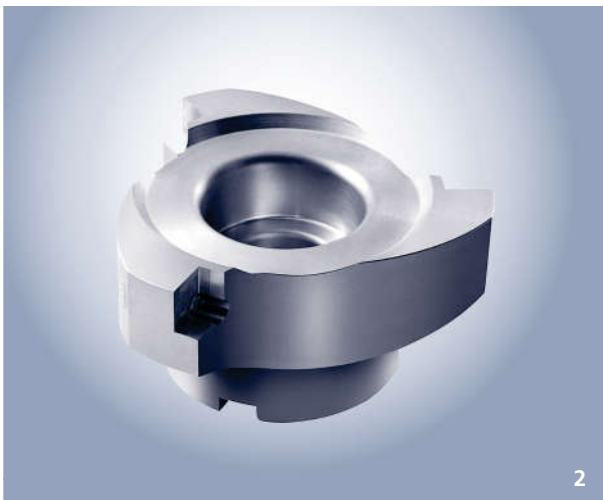
# HORIZONTAL TURNING CENTER BOX WAY, Y-AXIS, 8"-10" CHUCK

## Box way, Y-Axis, 8"-10" Chuck Horizontal Turning Center

From basic to multi axis turning, the Hi-TECH 350 is capable of performing a variety of most complex production processes.

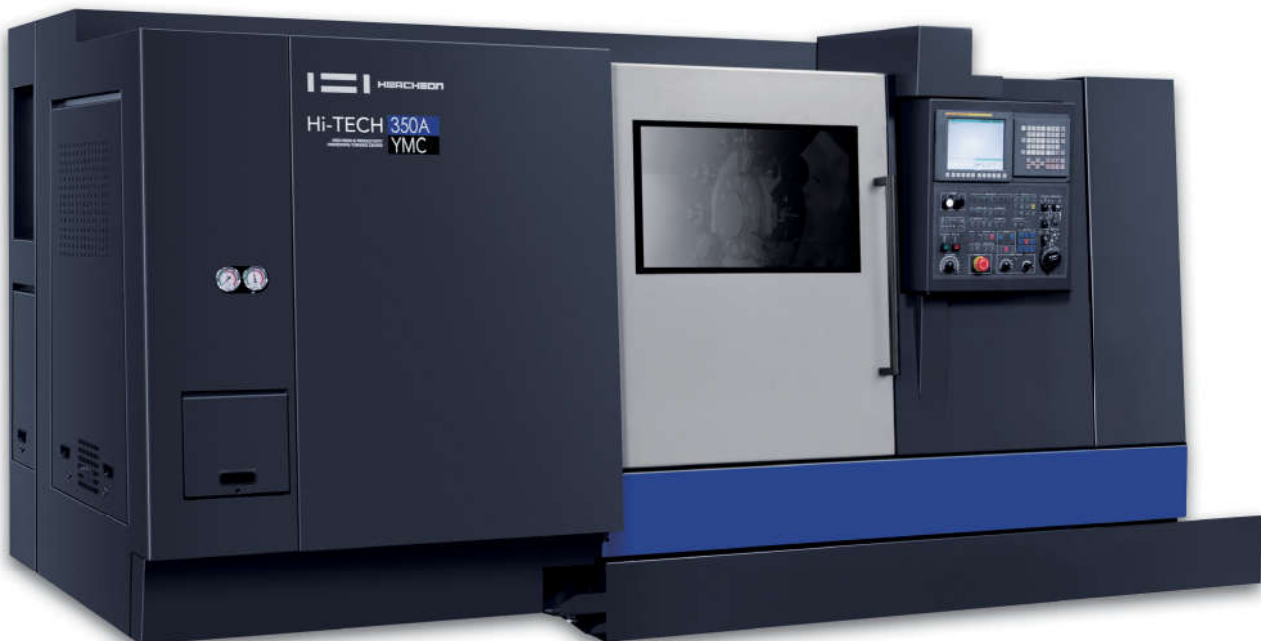
The standard Y-axis allows even most complex process operations, the headstock for high torque and high power provides high-speed as well as high-torque machining capability.

1 Valve Body / Plant Industry / CF8M    2 Face Cutter/Machine Tool Industry/Aluminum alloy  
3 Cable Link Connector/Plant Industry/CF8M    4 Cutter/Machine Tool Industry/Aluminum alloy



# MULTI AXIS HEAVY DUTY CUTTING WITH BOX WAY

Hi-TECH 350 is the pinnacle of Hwacheon technology. Its box way structure will enable to maintain high-rigidity and high-precision machining, while offering the largest turning diameter as well as turning length among today's mid-size lathes. A variety of options, such as Y-axis, provide higher flexibility. Hi-TECH 350 can be configured to ensure the perfect setup for your production needs and requirements - whether you have to manufacture is a hydraulic valve, connectors, flanges or long shafts.





### Hand-Scraped To Perfection

The guide-ways are hand-scraped and polished to the highest precision based on Hwacheon's 60 years craftsmanship experience, this is to reduce vibration and allows precision feed during heavy operations.

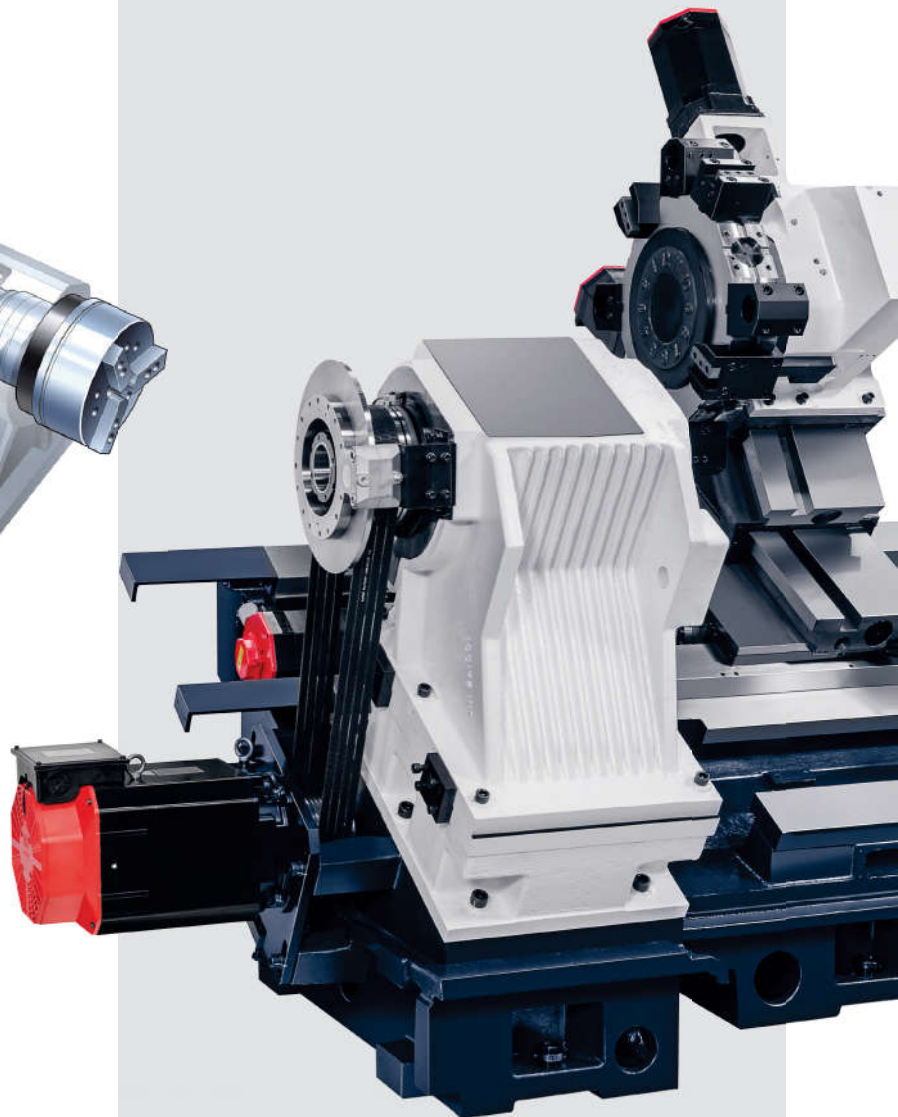
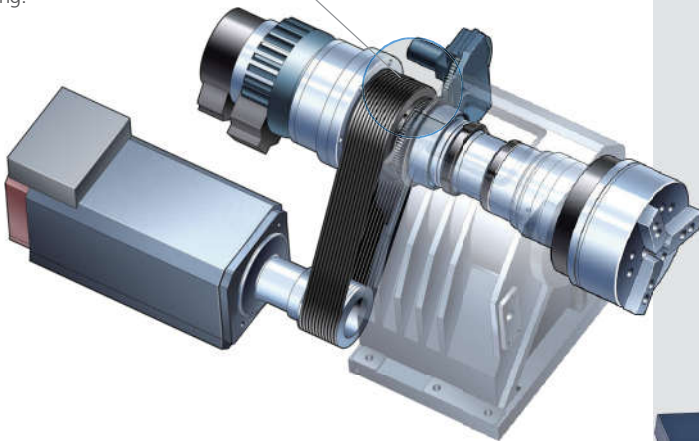


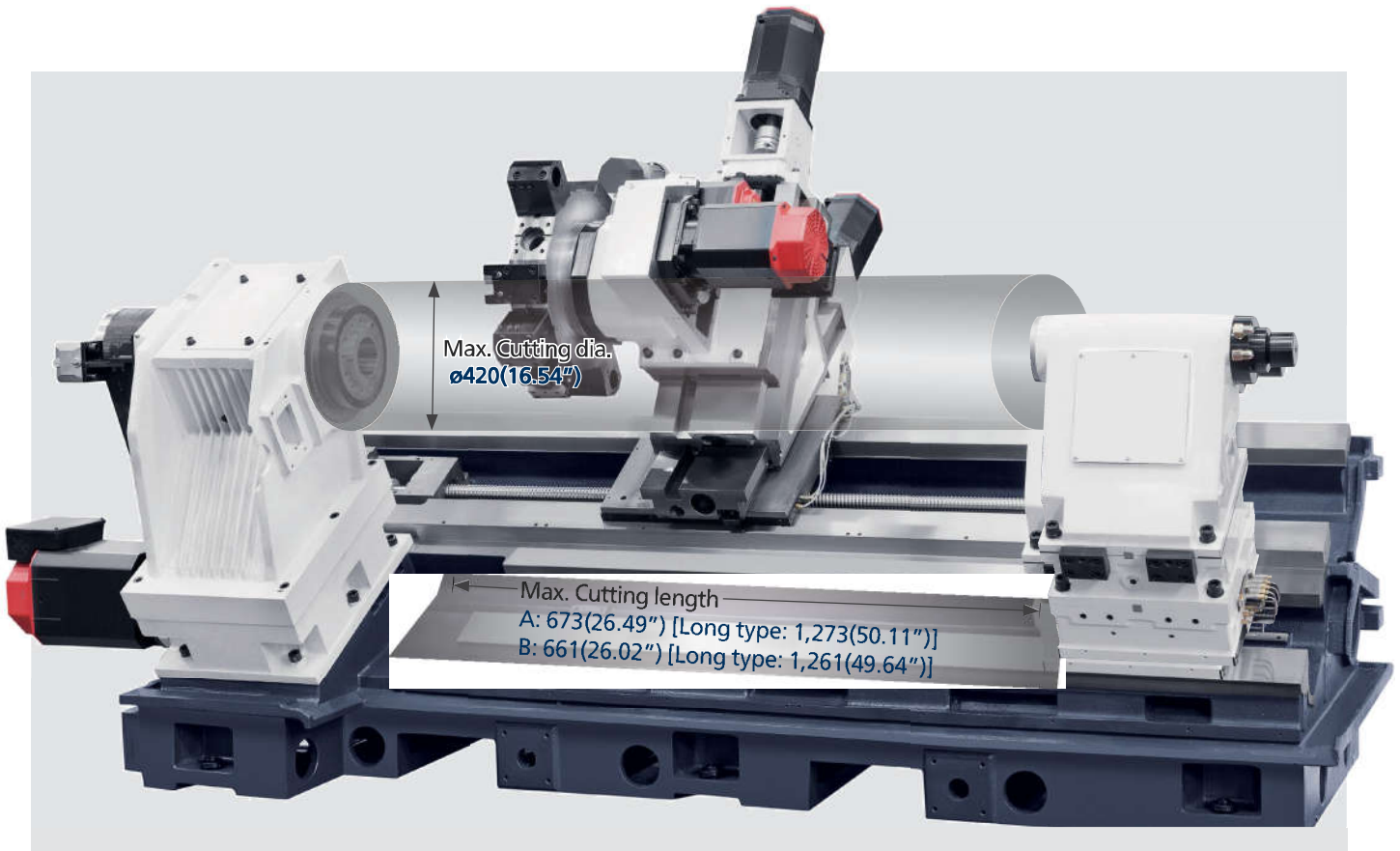
### Box Way Design

All guide-ways are designed as sturdy box way to maintain durability and highest precision even during prolonged machining operation.

### High-Speed, High-Power Spindle

The high output spindle provides stable and precise machining at high speed turning.





Max. Cutting dia.  
 $\varnothing 420(16.54")$

Max. Cutting length  
 A: 673(26.49") [Long type: 1,273(50.11")]  
 B: 661(26.02") [Long type: 1,261(49.64")]

**Rigid One Piece Frame Structure**

The single-frame bed structure eliminates heat distortion, absorbs vibration, and provides quality surface roughness and highest precision at high speed operations.

**Interference Free Cutting Diameter**

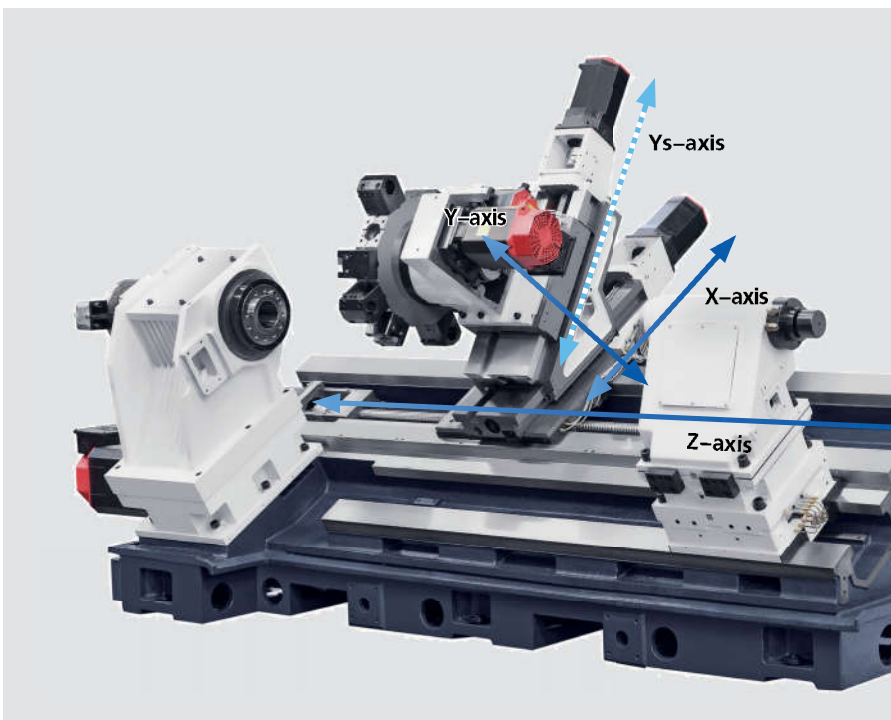
Hi-TECH 350 ensures, that the work piece does not interfere with any moving part within the turning operation zone, for better trouble free results.

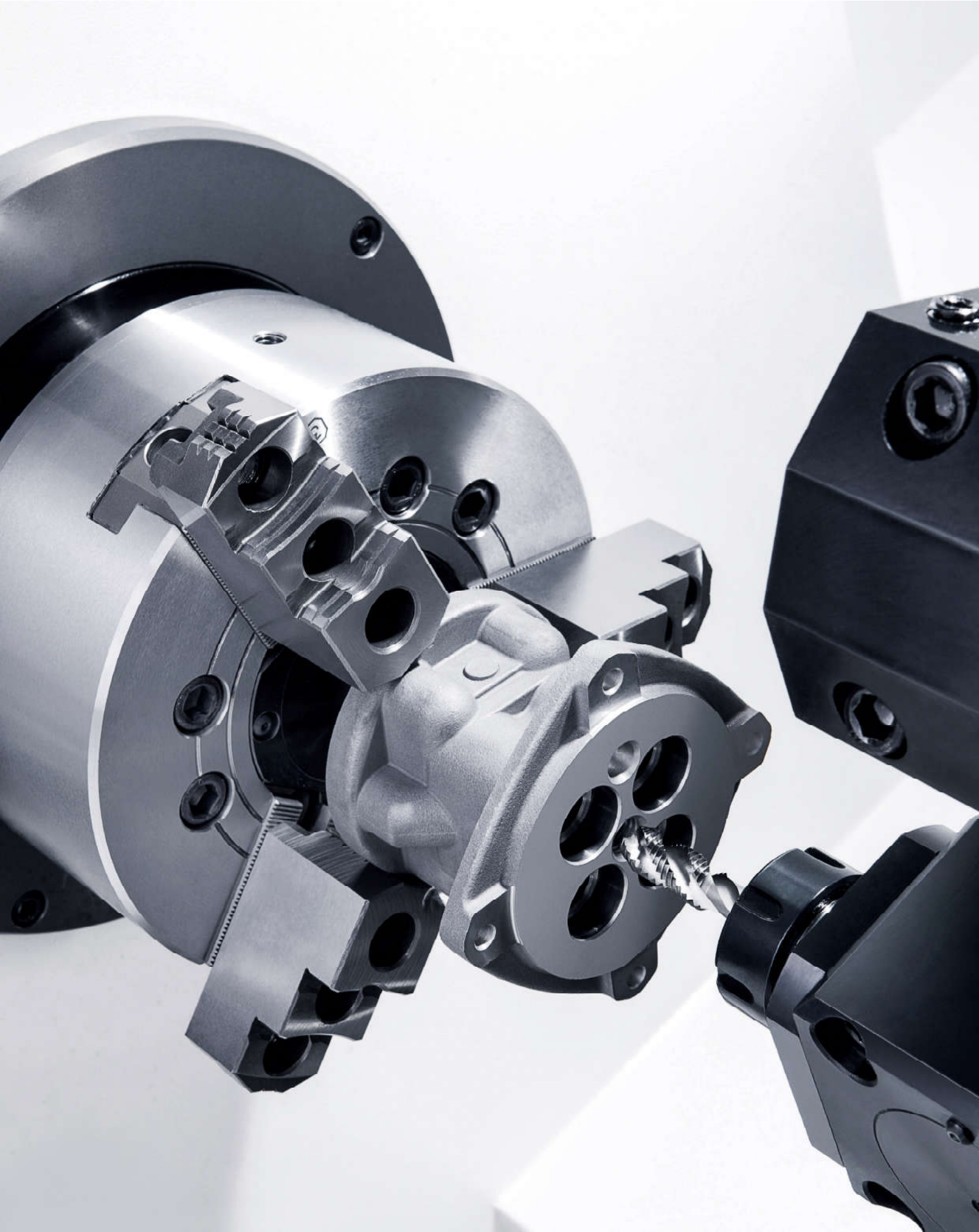
- Max. Cutting Dia. :  $\varnothing 420\text{mm}$
- Max. Cutting Length
- A : 673mm (L: 1,273mm)
- B : 661 mm (L: 1,261mm)

**Multi-Process Milling with Y-axis (std.)**

Standard Y-axis is able to achieve complete process operations on even complex work pieces. From turning to milling, with a single setting. This saves not only time but more additional set-ups making your work more efficient it's like having two machines in one.

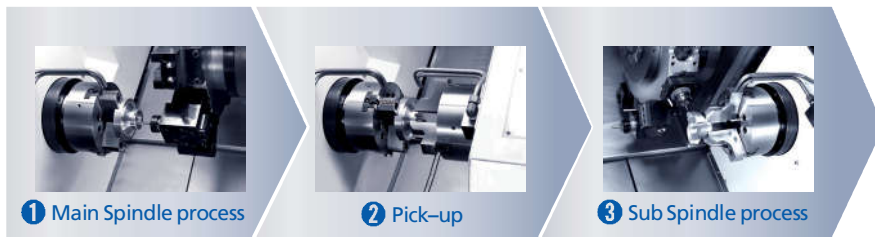
- Spindle indexing: by 0.001 degrees
- Y-axis stroke: 120(4.72") [ $\pm 60(\pm 2.36")$ ]





# USER FRIENDLY DESIGN, A WIDE RANGE OF OPTIONAL FEATURES

Hi-TECH 350 is designed with the end-user in mind. Its user-friendly design and a variety of supplementary features and options make it powerful, faster and more precise. For highest machining performance.



### Sub Spindle (YSMC)

With the addition of the sub spindle, the main and the sub spindles work in sync to complete the first and second operation of your process, to ensure your work is highly productive.

### Any Forms and Shapes

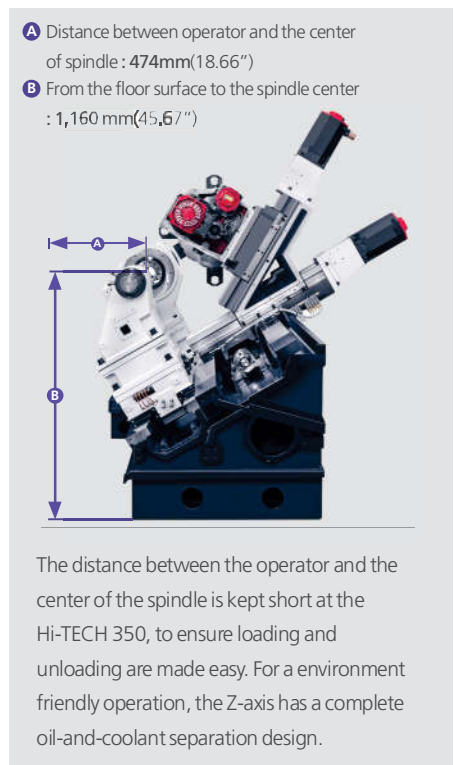
Control multiple axes simultaneously using the turn-mill function and the C-axis spindle.

### L-HTLD: Hwacheon Lathe Tool Load Detect System (Option)



The Hwacheon Lathe Tool Load Detect System constantly detects and diagnoses the tool load under a process to prevent tool wear and damage, and to keep your machine and tools in optimal shape.

Load Detection Limit 1	Load Detection Limit 2
Alarm + Feed Hold	Alarm + Machine Stop
> When the LIMIT 1 Alarm sounds, the system holds the feed and the machine goes into standby.	> When the LIMIT 2 Alarm sounds, the system stops the machine, and must be reset to operate it.

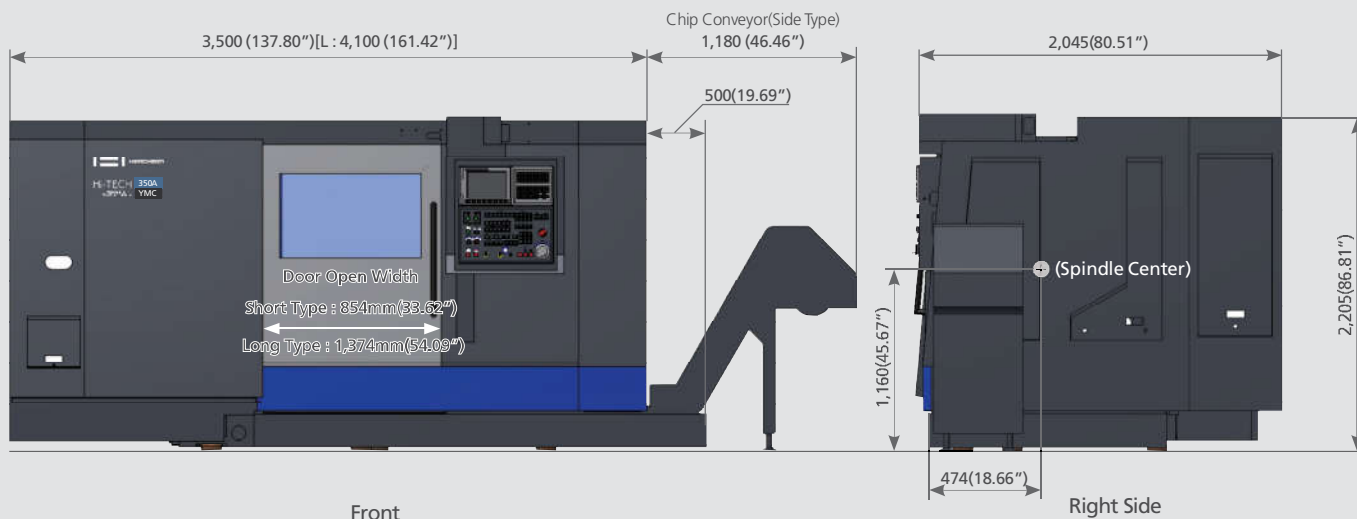


The distance between the operator and the center of the spindle is kept short at the Hi-TECH 350, to ensure loading and unloading are made easy. For an environment friendly operation, the Z-axis has a complete oil-and-coolant separation design.



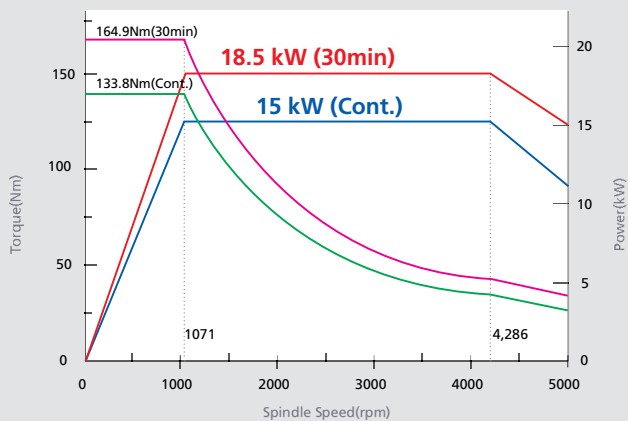
Product Data

\* Unit: mm(inch)

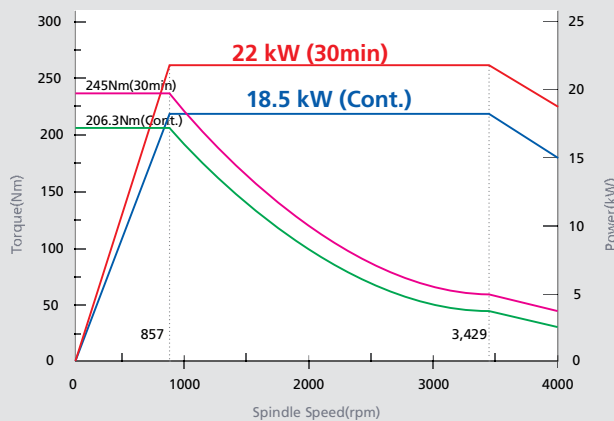


Spindle Power-Torque Diagram

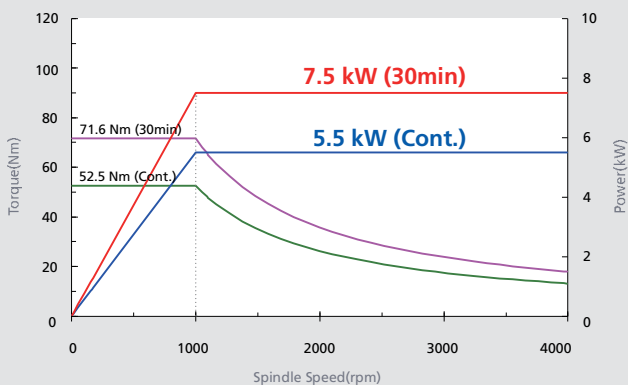
Main Spindle (Hi-TECH 350A)



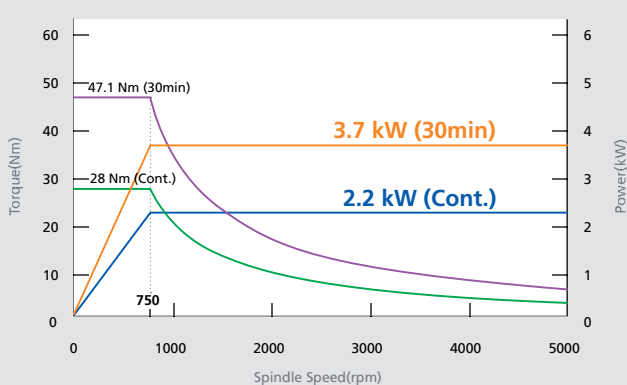
Main Spindle (Hi-TECH 350B)



Sub Spindle



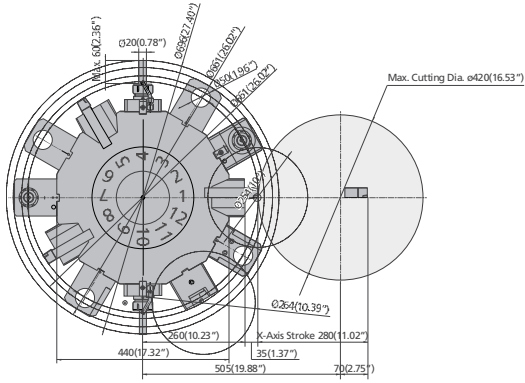
Turnmill



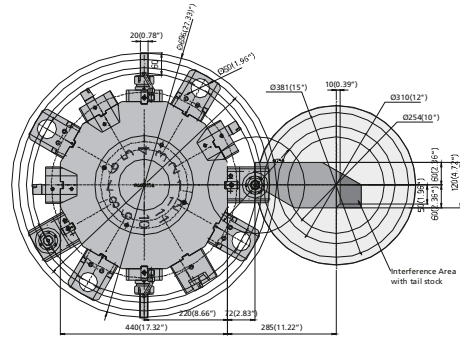
Tool Interference Diagram

※ Unit : mm(inch)

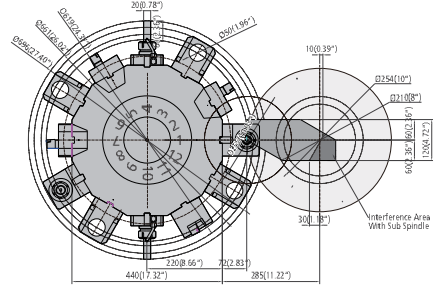
Hi-TECH 350A/B



Y-Axis Moving Range(YMC)



Y-Axis Moving Range(YSMC)

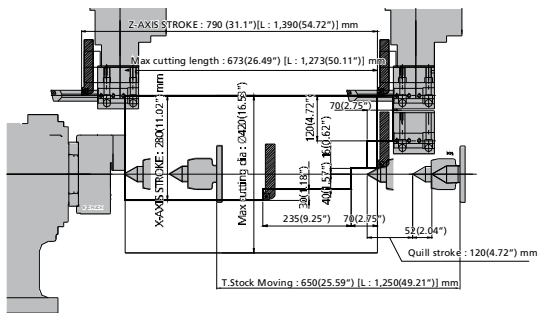


Moving Range

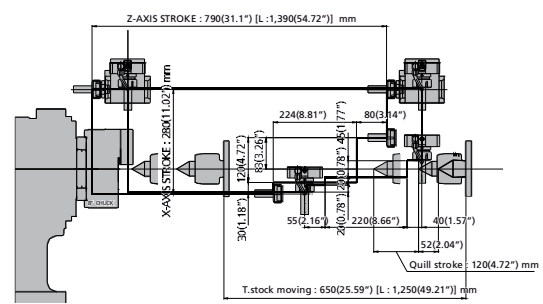
※ Unit : mm(inch)

Hi-TECH 350A(YMC)

O.D & I.D Holder

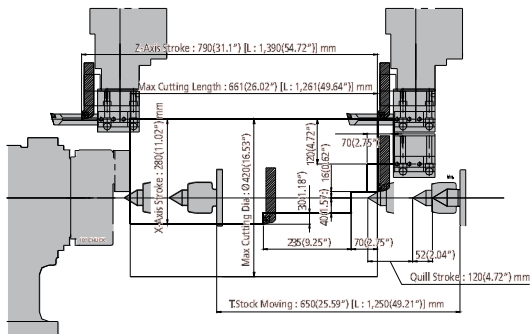


Axial & Radial Turnmill Holder

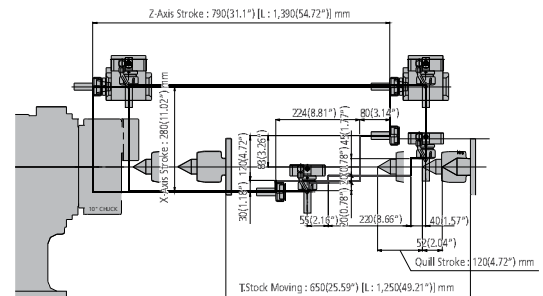


Hi-TECH 350B(YMC)

O.D & I.D Holder



Axial & Radial Turnmill Holder



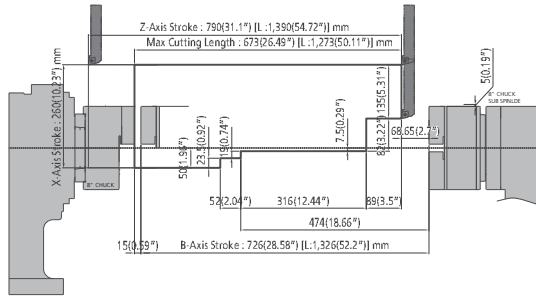
Moving Range

※Unit: mm(inch)

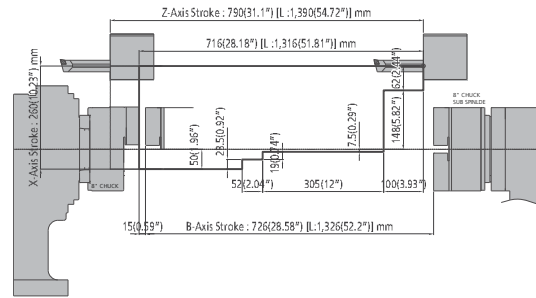
L: Long Type

Hi-TECH 350A(YSMC)

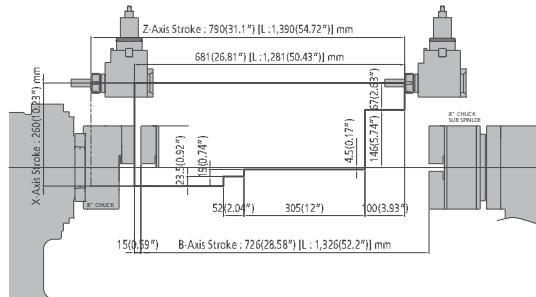
O.D Holder



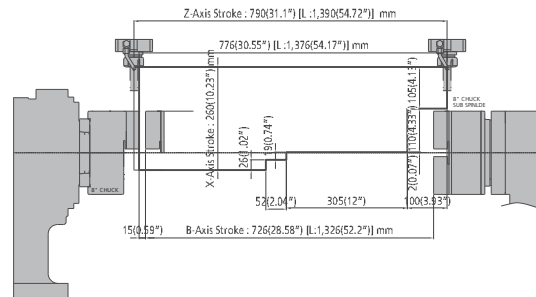
I.D Holder



Radial Turnmill Holder

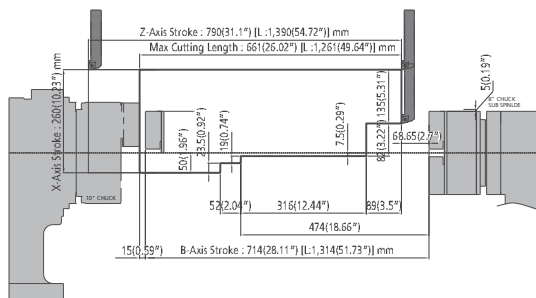


Axial Turnmill Holder

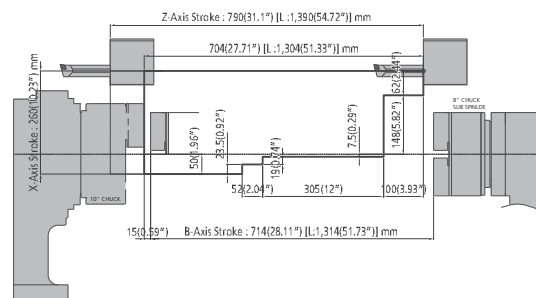


Hi-TECH 350B(YSMC)

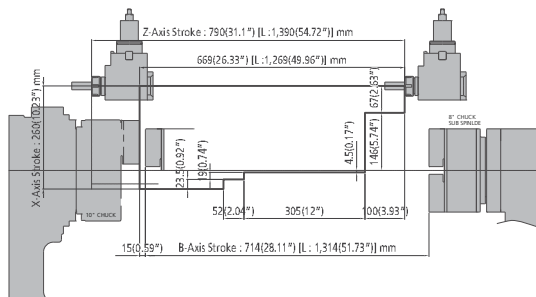
O.D Holder



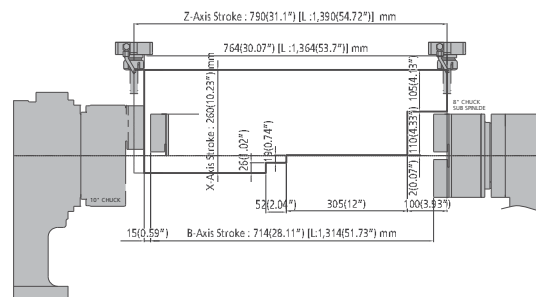
I.D Holder



Radial Turnmill Holder

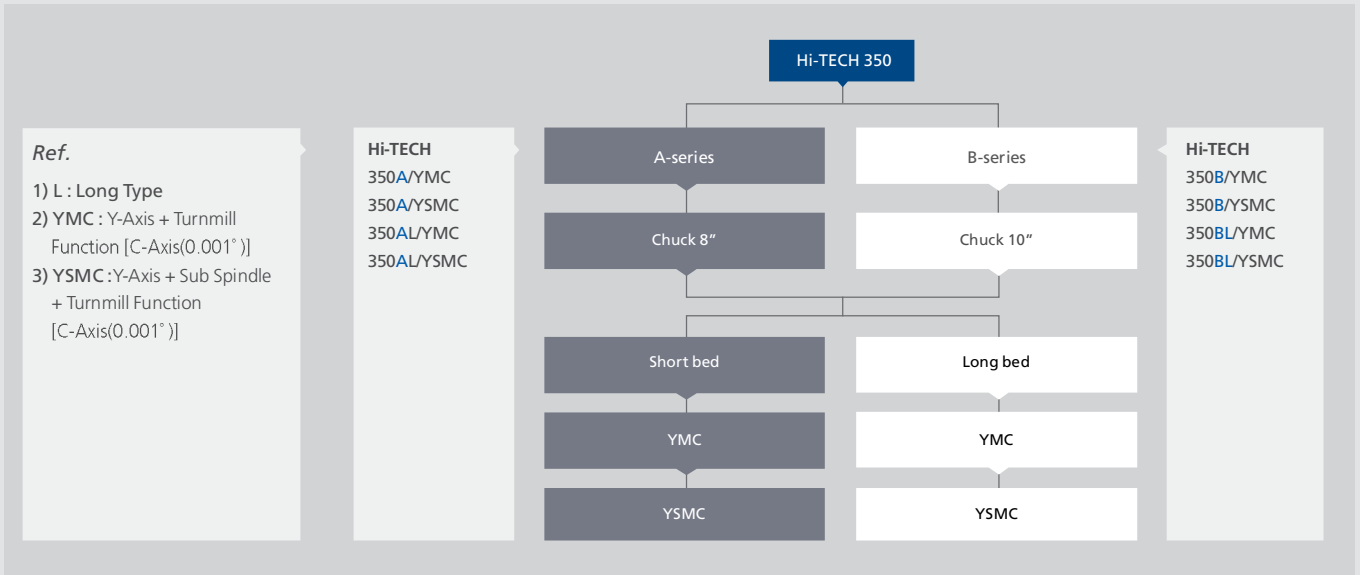


Axial Turnmill Holder



Product Configuration

Each product can be configured to fit your application.



Machine Specifications

ITEM	Hi-TECH 350A YMC[YSMC]	Hi-TECH 350AL YMC[YSMC]	Hi-TECH 350B YMC[YSMC]	Hi-TECH 350BL YMC[YSMC]
<b>Capacity</b>				
Swing over Bed	mm (inch)	Ø700 (27.56")		
Swing over Saddle	mm (inch)	Ø550 (21.65")		
Max. Cutting Diameter	mm (inch)	Ø420 (16.54")		
Standard Cutting Diameter	mm (inch)	Ø254 (10")		
Max. Cutting Length	mm (inch)	673 (26.49")	1,273(50.11")	661(26.02")
Chuck Size	inch	8" [Sub: 8"]		10" [Sub: 8"]
<b>Spindle (Main &amp; Sub)</b>				
Type of Spindle Nose	ASA	A2-6 [Sub: A2-6]		A2-8 [Sub: A2-6]
Max. Spindle Speed	rpm	5,000 [Sub: 4,000]		4,000 [Sub: 4,000]
Through Spindle Hole Diameter	mm (inch)	Ø75 (Ø2.95") [Sub: Ø62(Ø2.44")]		Ø90 (Ø3.54") [Sub: Ø62(Ø2.44")]
Max. Bar Size	mm (inch)	Ø65 (Ø2.56") [Sub: Ø51(Ø2.01")]		Ø76 (Ø2.99") [Sub: Ø51(Ø2.01")]
Spindle Bearing Inner Diameter	mm (inch)	Ø100 (Ø3.94") [Sub: Ø100 (Ø3.94")]		Ø130 (Ø5.11") [Sub: Ø100 (Ø3.94")]
Spindle Motor (30min/cont)	kW(HP)	18.5/15 (25/20) [Sub: 7.5/5.5 (10/7.5)] [Option: 22/18.5 (30/25) [Sub: 7.5/5.5 (10/7.5)]]		22/18.5 (30/25) [Sub: 7.5/5.5 (10/7.5)]
<b>Turret</b>				
Number of Tool Station	ea	12		
Tool Size (OD x ID)	mm (inch)	□25 x Ø50 (□1" x Ø2")		
Turret Indexing Time	sec/step	0.25		
<b>Axes</b>				
Rapid Speed (X / Z / Y / B)	m/min (ipm)	20/24/10/16 (787/945/394/630)		
Max. Stroke (X / Z / Y / B)	mm (inch)	280(YSMC: 260)/790/120/726 [11.02"(YSMC: 10.2")/31.1"/4.72"/28.58"]	280(YSMC: 260)/1,390/120/1,326 [11.02"(YSMC: 10.2")/54.72"/4.72"/52.2"]	280(YSMC: 260)/790/120/714 [11.02"(YSMC: 10.2")/31.1"/4.72"/28.11"]
Feed Motor (X / Z / Y / B)	kW(HP)	4.0/4.0/4.0/1.6 (5.5/5.5/5.5/2.2)		
<b>Tailstock</b>				
Tailstock Travel	mm (inch)	650 (25.59")	1,250 (49.21")	650 (25.59")
Quill Dia.	mm (inch)	Ø100 (Ø3.94")		
Taper Hole	MT	# 5		
Quill Stroke	mm (inch)	120 (4.72")		
<b>Turnmill</b>				
Rotary Tool Spindle Motor	kW(HP)	3.7 / 2.2		
Max. Rotary Tool Speed	rpm	5,000		
Max. Drill / Tap Size	mm (inch)	Ø20 (Ø0.79") x M16		
Min. Spindle Indexing Angle	°(deg)	0.001° [Sub : 0.001°]		
<b>Tank Capacity</b>				
Lubrication	ℓ (gal)	12(3.17)		
Hydraulic	ℓ (gal)	50(13.21)		
Coolant	ℓ (gal)	190 (50.19)		240 (63.40)
<b>Power Source</b>				
Electrical Power Supply	kVA	YMC: 50, YSMC: 55		
<b>Dimension</b>				
Height	mm (inch)	2,205(86.81")		
Floor Space (L x W)	mm (inch)	3,500 x 2,045 (137.8" x 80.51")	4,100 x 2,045 (161.42"x80.51")	3,500 x 2,045 (137.8" x 80.51")
Weight	kg,(lb.)	YMC: 6,400(14,110) / YSMC: 7,400(16,315)	YMC: 7,700(16,976) / YSMC: 8,700(19,181)	YMC: 6,400(14,110) / YSMC: 7,400(16,315)
<b>NC Controller</b>				
Fanuc 0i-TF				

## Standard and Optional product components




Standard Accessories		Optional Accessories	
• Air blower (YSMC Type)	• Turret	• Air Blower (YMC Type)	• Set of Hard Jaws
• Door interlock	• Tool Kit & Box	• Air gun	• Steady Rest Base (Manual, Programmable)
• Foot switch	• Turnmill Function Including	• Auto Door (Short Type)	- only YMC Type
• High Pressure Coolant Pump (6Bar)	C-axis (0.001°)	• Bar Feeder Interface	• Signal Lamp with 3 Colors (R, G, Y)
• Hydraulic Unit 40 kg / cm <sup>2</sup>	• Tailstock (MT#5)[YMC Type]	• Chip Conveyor & Box (Side Type)	• Tool life management
• Hydraulic Chuck & Cylinder (A: 8", B: 10")	- Tailstock body program	• Chuck Dual Pressure System	• Tool presetter (Automatic)
• Leveling bolt & plate	- Tailstock quill program	• Chuck Pressure Compensation	• Tool & work counter (External / Internal)
• Lubrication Unit	• Y-Axis (±60mm)	• Chuck Pressure Check Switch	• Transformer
• Manual Guide i	• 10.4" Color LCD	• Coolant Gun	• Turnmill holder (Axial / Radial)
• Manual & Parts List		• High Pressure Coolant Pump 15/30/70bar	• Turnmill Spindle Motor Upgrade (5.5/3.7kW)
• Signal Lamp with 2 Colors (R, G)		• L-HTLD (Lathe-Hwacheon Tool Load Detect)	• U-Drill Holder
• Set of Soft Jaws		• Linear Scale (X, Z-Axis)	• 15" Color LCD (only FANUC)
• Tooling System		• NC cooler	
		• Parts catcher	

## NC Specifications [Fanuc0i-TF]

※ - : Not available S : Standard O : Option

ITEM	SPECIFICATION	YMC	YSMC	ITEM	SPECIFICATION	YMC	YSMC
<b>Controlled axis</b>				<b>Program input</b>			
Controlled axis (Cs axis)	-	4-Axes	6-Axes	Tape code	EIA / ISO	S	S
Simultaneously controlled axes	-	4-Axes	4-Axes	Optional block skip	9 ea	S	S
Least input increment	0.001 mm, 0.001 deg, 0.0001 inch	S	S	Program number	O4-Digits	S	S
Least input increment 1/10	0.0001 mm, 0.0001 deg, 0.00001 inch	O	O	Sequence number	N8-Digits	S	S
inch/metric conversion	G20, G21	S	S	Decimal point programming		S	S
Stored stroke check 1, 2, 3		S	S	Coordinate system setting	G50	S	S
Chamfering on / off		S	S	Coordinate system shift		S	S
Backlash compensation		S	S	Workpiece coordinate system	G54-G59	S	S
<b>Operation</b>				Workpiece coordinate system preset	G92.1	S	S
Automatic & MDI operation		S	S	Direct drawing dimension programming		S	S
Program number search		S	S	G code system	A	S	S
Sequence number search		S	S	Programmable data input	G10	S	S
Dry run, single block		S	S	Sub program call	10 folds nested	S	S
Manual handle feed	1Unit	S	S	Custom macro B / Canned cycles		S	S
Manual handle feed rate	x1, x10, x100	S	S	Addition of custom macro -common variables	#100-#199, #500-#999	S	S
<b>Interpolation function</b>				Multiple repetitive cycle		S	S
Positioning	G00	S	S	Multiple repetitive cycle II		S	S
Linear interpolation	G01	S	S	Canned cycles for drilling		S	S
Circular interpolation	G02, G03	S	S	Manual Guide i		S	S
Dwell (Per seconds)	G04	S	S	<b>Spindle speed function</b>			
Polar coordinate interpolation	G12.1 / G13.1	S	S	Constant surface speed control	G96 / G97	S	S
Cylindrical interpolation	G7.1	S	S	Spindle override	50-120 %	S	S
Threading / Multiple threading	G32 / -	S	S	Spindle orientation		S	S
Threading retract		S	S	Rigid tapping		S	S
Continuous threading		S	S	Spindle synchronous control		S	S
Variable lead threading	G34	S	S	<b>Editing operation</b>			
Reference position return 1st	G28	S	S	Part program storage length	1,280m (512 kB)	S	S
Reference position return check	G27	S	S	Number of register able programs	400 ea	S	S
2,3,4th reference position return	G30	S	S	Background editing		S	S
Arbitrary speed threading		O	O	Extended part program editing		S	S
<b>Feed function</b>				Play back		S	S
Rapid traverse override	F0, F25, F50, F100	S	S	<b>Operation / Display</b>			
Feed per minute (mm/min)	G98	S	S	Clock function		S	S
Feed per revolution (mm/rev)	G99	S	S	Self-diagnosis function / Alarm history display		S	S
Rapid traverse bell-shaped acceleration / Deceleration		S	S	Help function / Graphic function		S	S
Feedrate override	0-150 %	S	S	Run hour and parts count display		S	S
Jog feed override	0-1,260 mm/min	S	S	Graphic function		S	S
<b>Tool function / Compensation</b>				Dynamic Graphic display		O	O
Tool function	T4-digits	S	S	<b>Data input / Output</b>			
Tool offset pairs	128 pairs	S	S	Reader / Puncher interface CH1, 2	RS232C	S	S
Tool nose radius compensation		S	S	Ethernet interface		S	S
Tool geometry / Wear compensation		S	S	Memory card interface		S	S
Tool life management		O	O	USB card interface		S	S
Automatic tool offset	Tool presetter option is required	O	O				
Direct input tool offset value measured B	Tool presetter option is required	O	O				
<b>Others</b>							
Display unit	10.4" Color LCD	S	S				

## Hwacheon Global Network

 Hwacheon Headquarter  Hwacheon America  Hwacheon Europe  Hwacheon Asia



**HWACHEON**

Please call us for product inquiries.

[www.hwacheon.com](http://www.hwacheon.com)

The product design and specifications may change without prior notice.  
Read the operation manual carefully and thoroughly before operating the product,  
and always follow the safety instructions and warnings labels attached on the surfaces of the machines.

### HEAD OFFICE

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