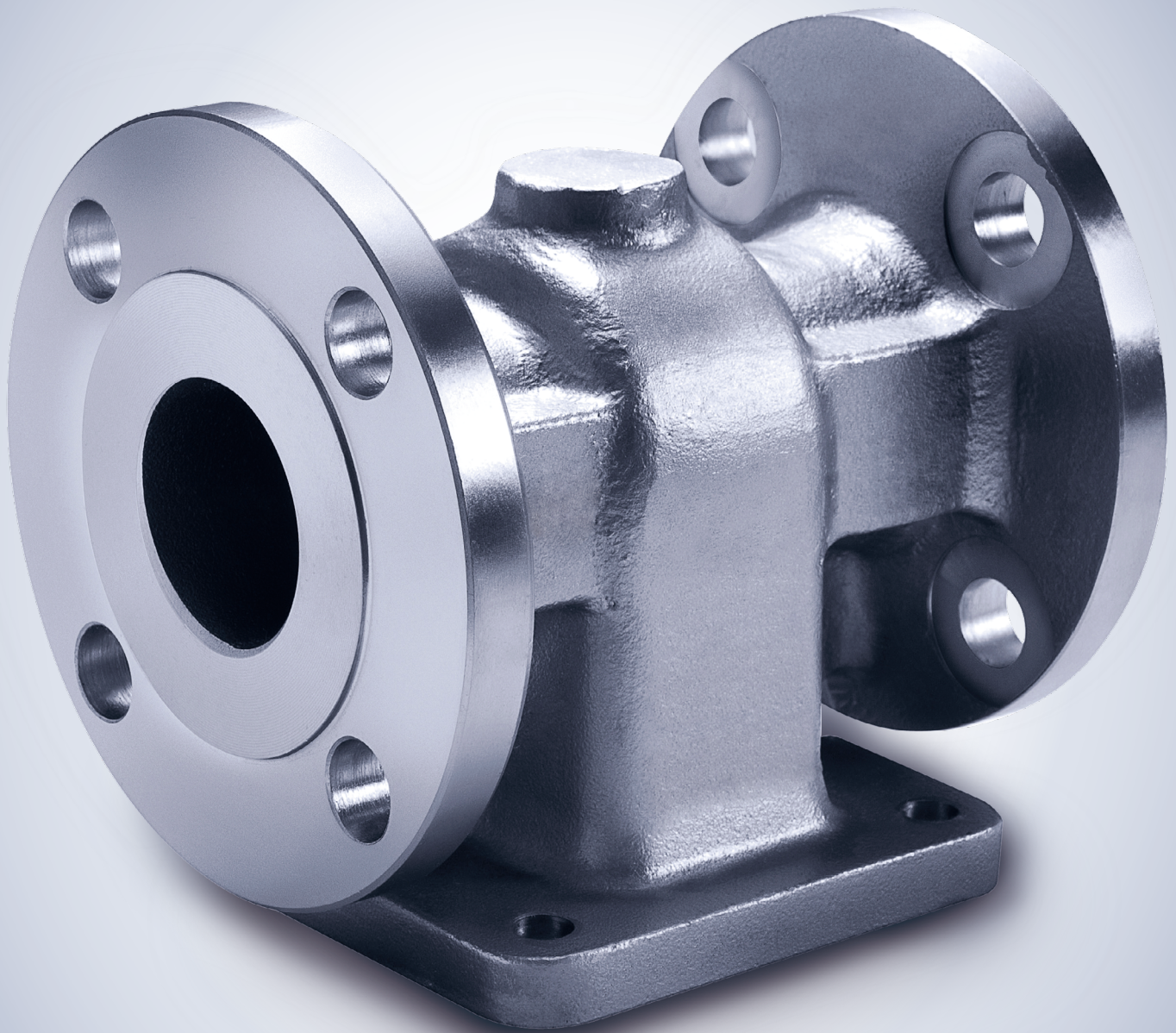


# Hi-TECH 450

Horizontal Turning Center  
Box Way, Gear Box, 10"-15" Chuck





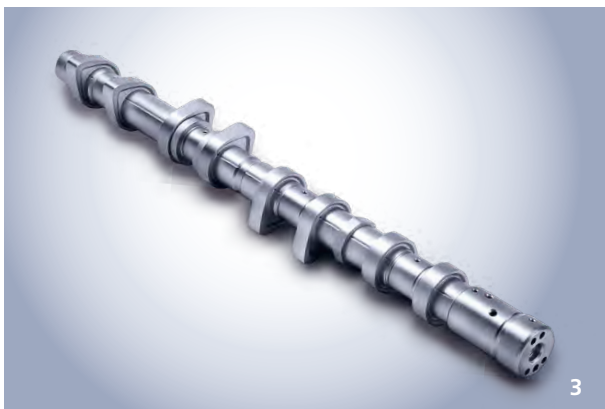
# HORIZONTAL TURNING CENTER BOX WAY, GEAR BOX, 10"-15" CHUCK

## Box way, Gear Box, 10"-15" Chuck Horizontal Turning Center

From basic to multi axis turning, the Hi-TECH 450 is capable of performing a variety of most complex production processes.

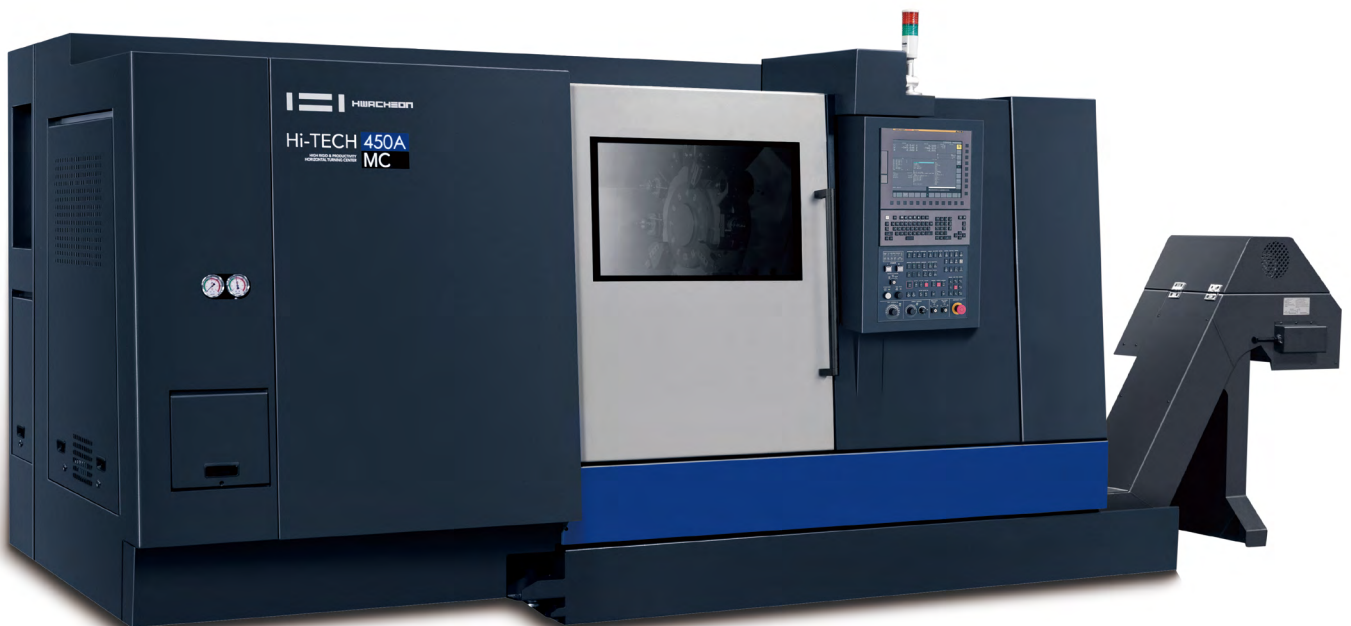
The optional available Y-axis allows even most complex process operations, the gear box for high torque is standard and provides high-speed as well as high-torque machining capability.

1 Valve Body / Plant Industry / CF8M    2 Flange / Automobile / SCM415  
3 Cam Shaft / Automobile / Sintered Alloy    4 Valve Body / Plant Industry / SCW410



# LARGE TASK COMPACT MACHINE FOOTPRINT

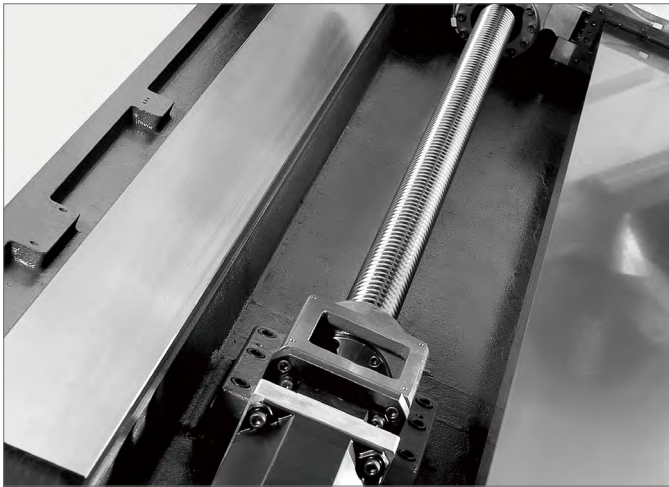
Hi-TECH 450 is the pinnacle of Hwacheon technology. Its small footprint design will provide space efficiency to you, while offering the largest turning diameter as well as turning length among today's mid-size lathes. A variety of options, such as Y-axis, provide higher flexibility. Hi-TECH 450 can be 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 to reduce vibration and allows precision feed during heavy operations.

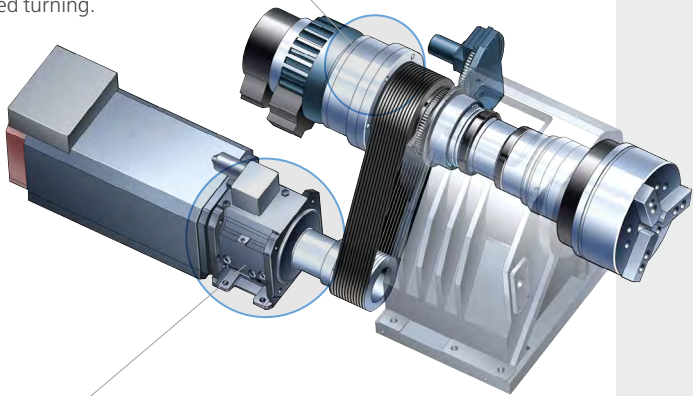


**Box Way Design**

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

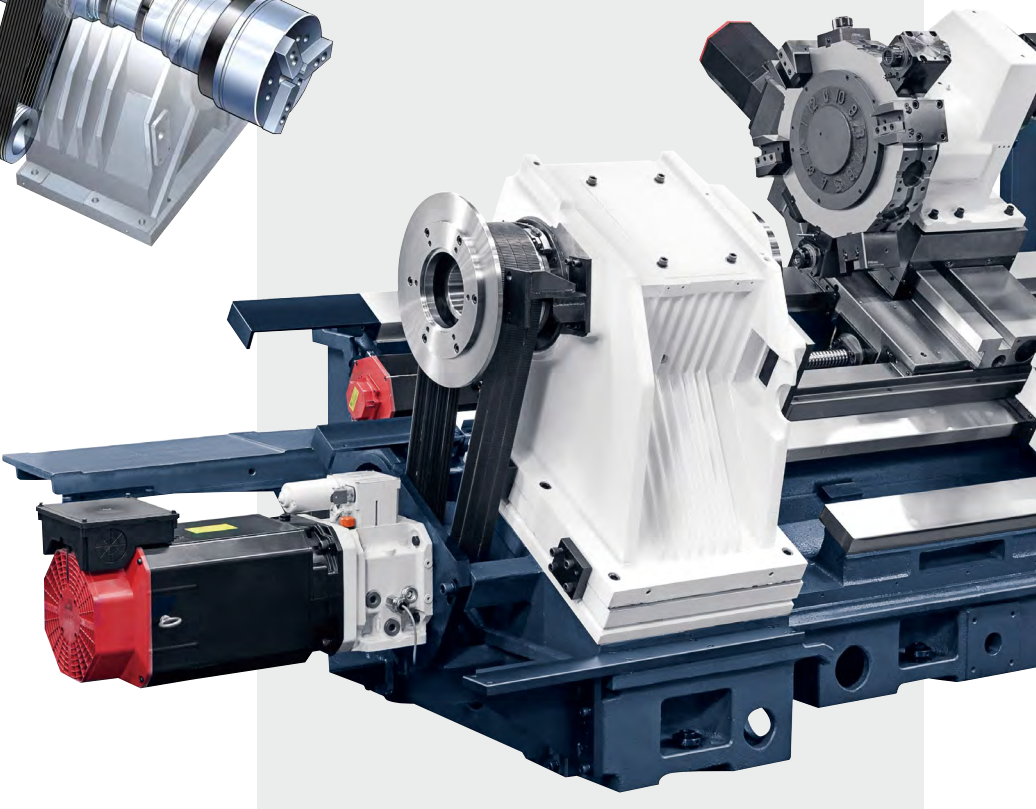
**High-Speed, High-Power Spindle**

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



**Highly Efficient Transmission**

The standard automatic gear box provides extra strength and power at lower speed while providing fast and efficient cutting at higher speeds. The transmission and the spindle motor are separated to minimize heat and vibration interference, to ensure each operation is as stable & consistent as possible.





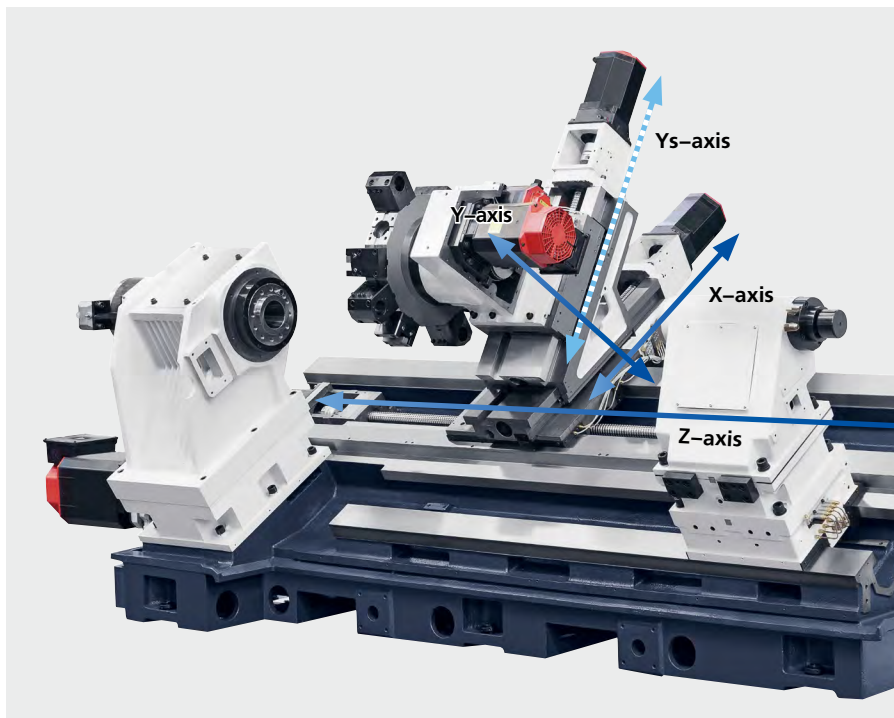
Type	Max Cutting Dia	Max Cutting Length
Hi-TECH 450A	ø420mm	760mm (L : 1,360 , XL : 2,250 , XXL : 3250)
Hi-TECH 450B	ø420mm	737mm (L : 1,337 , XL : 2,227 , XXL : 3227)
Hi-TECH 450C	ø420mm	673mm (L : 1,273 , XL : 2,163 , XXL : 3163)

**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**

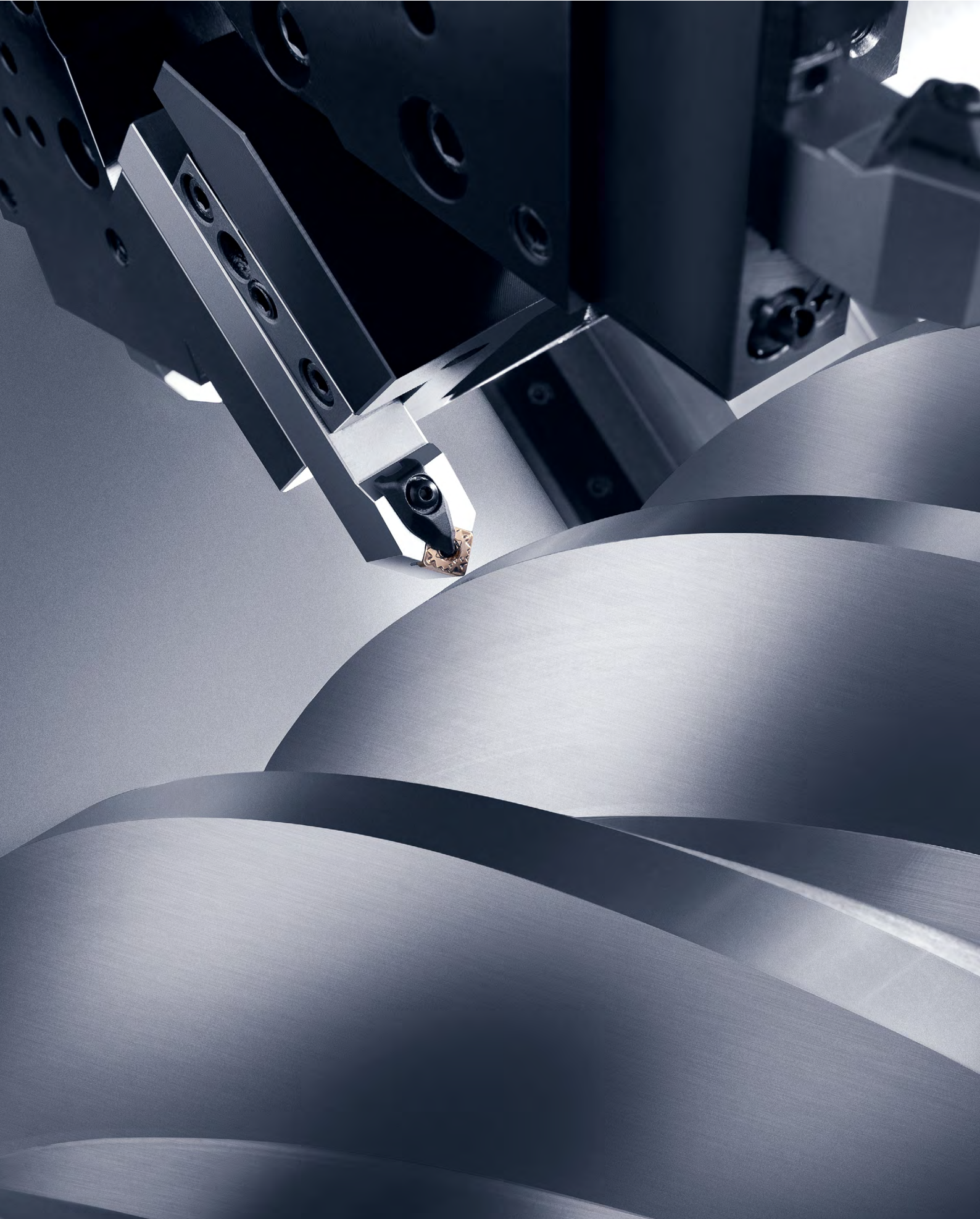
Hi-TECH 450 ensures, that the work piece does not interfere with any moving part within the turning operation zone, for better trouble free results.



**Multi-Process Milling with Y-axis (YMC)**

At customer's request, a Y-axis can be added 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 0.0001 degrees
- Y-axis stroke: 120mm (4.72 inch)  
[±60 mm(±2.36 inch)]

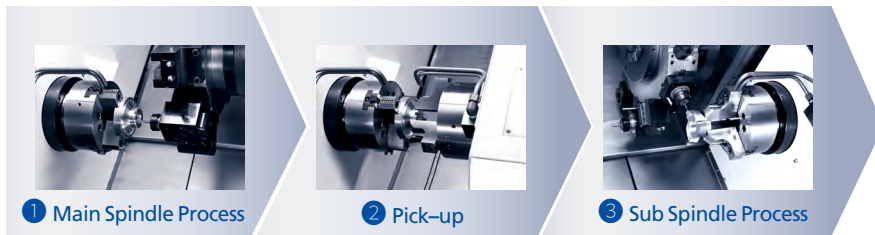


# USER FRIENDLY DESIGN, A WIDE RANGE OF OPTIONAL FEATURES

Hi-TECH 450 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.

## Any Forms and Shapes

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



## Sub Spindle (SMC, 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.

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



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.

**A** Distance between operator and the center of spindle: 450(17.71)[YMC : 474(18.66)] mm(inch)

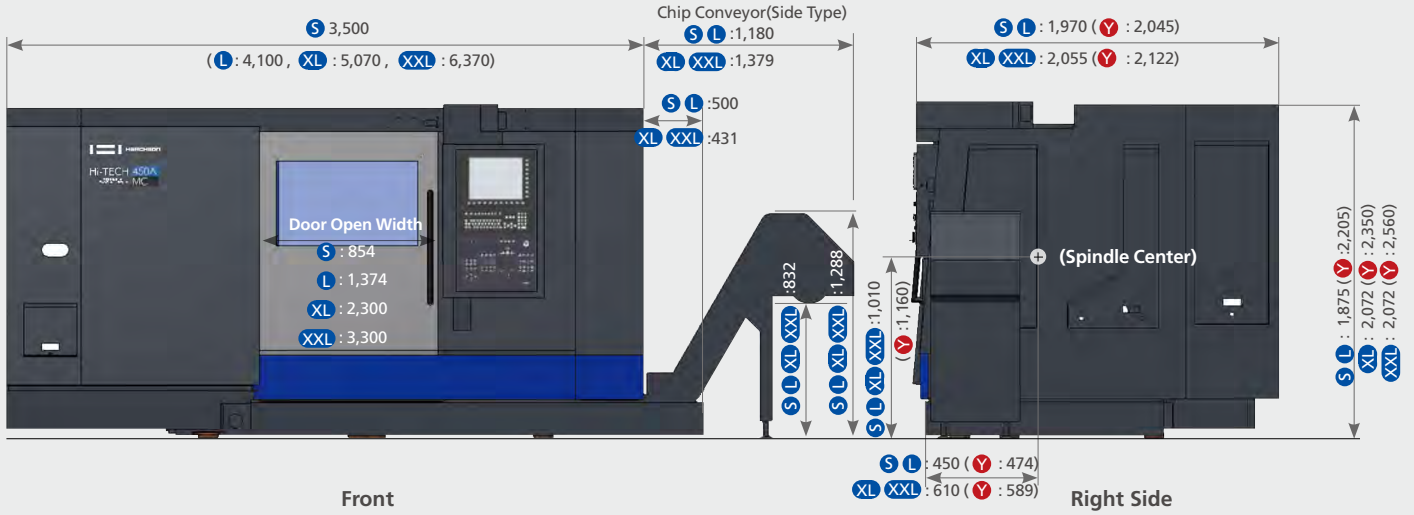
**B** From the floor surface to the spindle center: 1,010 (39.76) mm(inch) [YMC : 1,160(45.67)] mm(inch)

Eco-friendly complete oil-and-coolant separation design

The distance between the operator and the center of the spindle is kept short at the Hi-TECH 450, to ensure loading and unloading are made easy. For an environment-friendly operation, the Z-axis has a complete oil-and-coolant separation design.

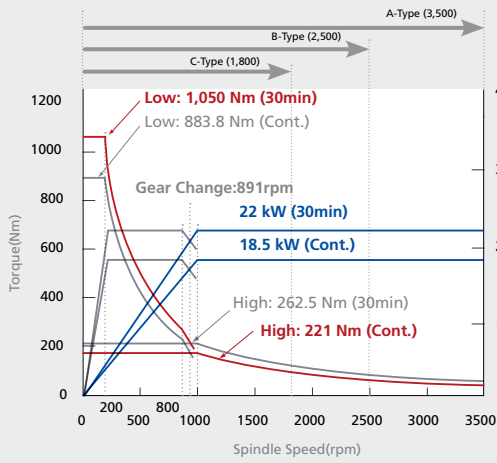
Product Data

S Short Type L Long Type XL Extra Long Type XXL Double Extra Long Type Y Y-axis \* Unit: mm(inch)

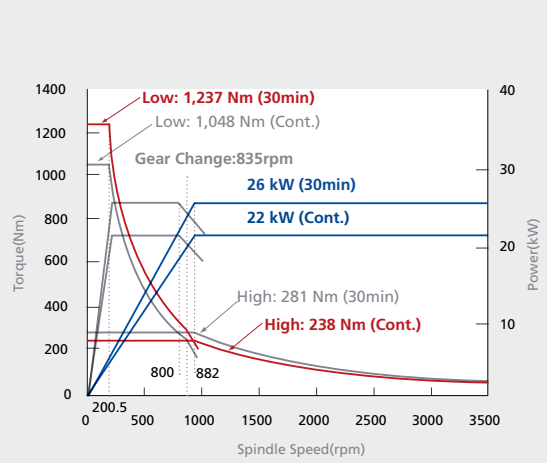


Spindle Power-Torque Diagram

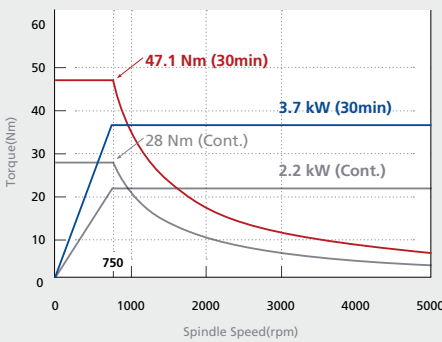
Main Spindle



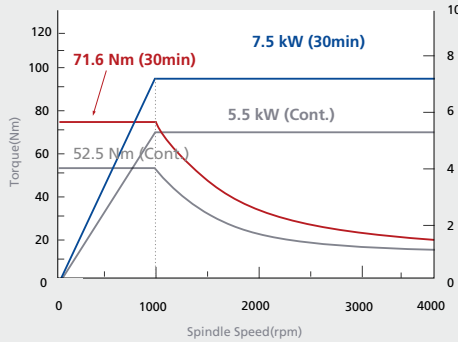
Main Spindle (Opt.)



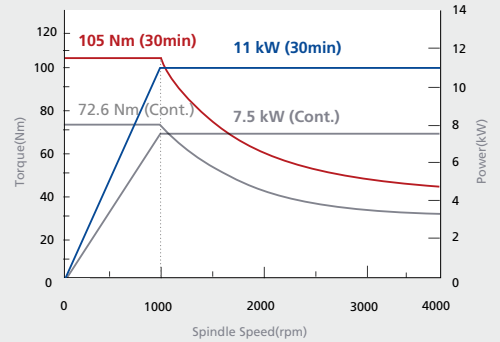
Turnmill (MC)



Sub (SMC / YSMC)



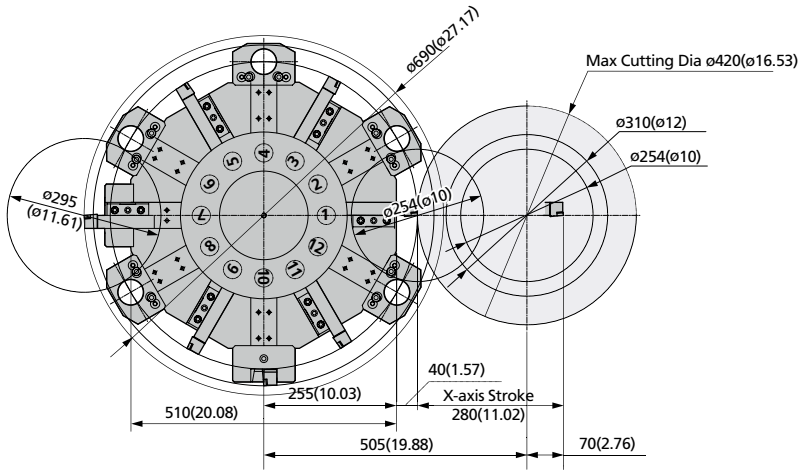
Sub (SMC / YSMC) (Opt.)



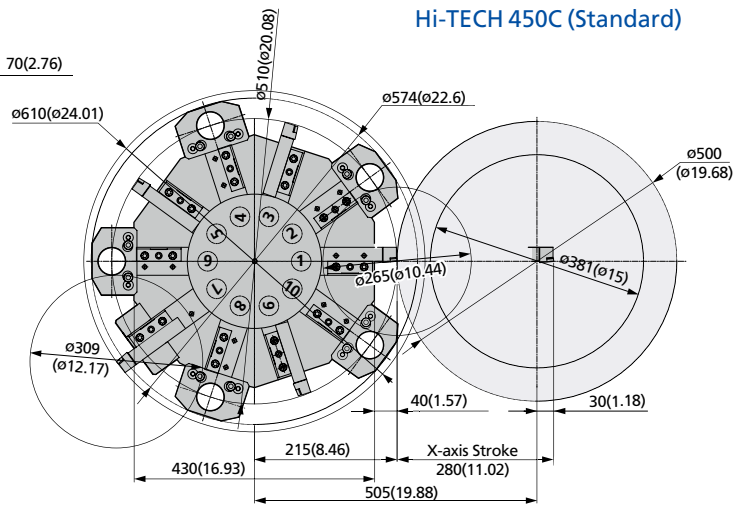
Tool Interference Diagram

※Unit : mm(inch)

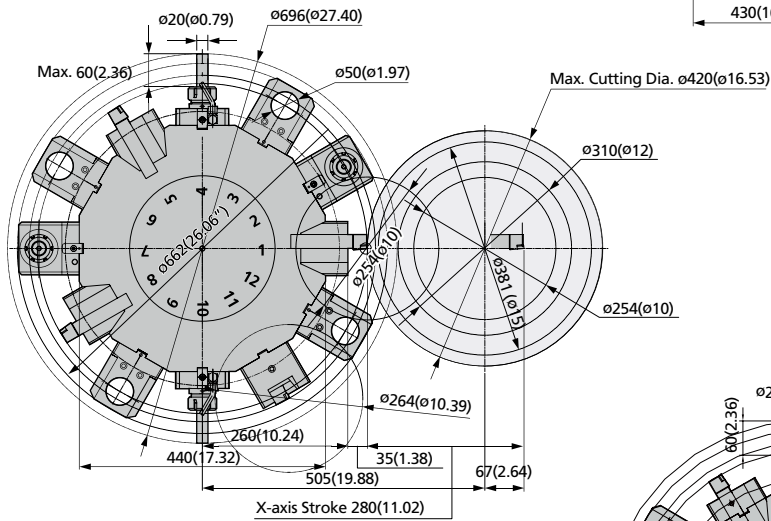
Hi-TECH 450A/B (Standard)



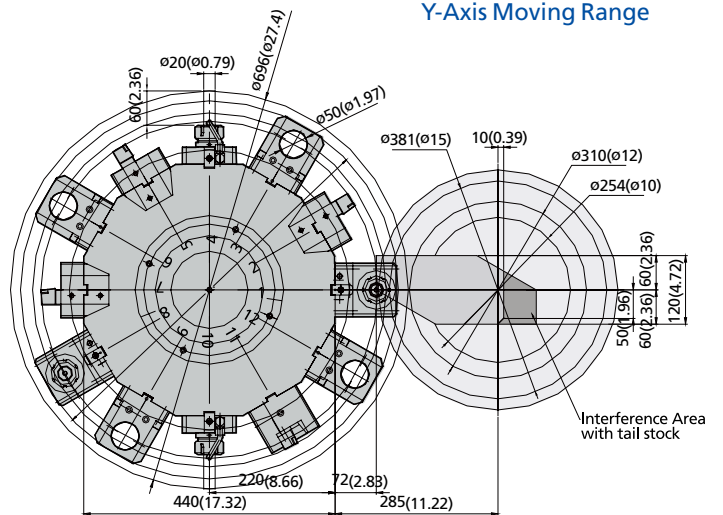
Hi-TECH 450C (Standard)



Hi-TECH 450A/B/C (MC)



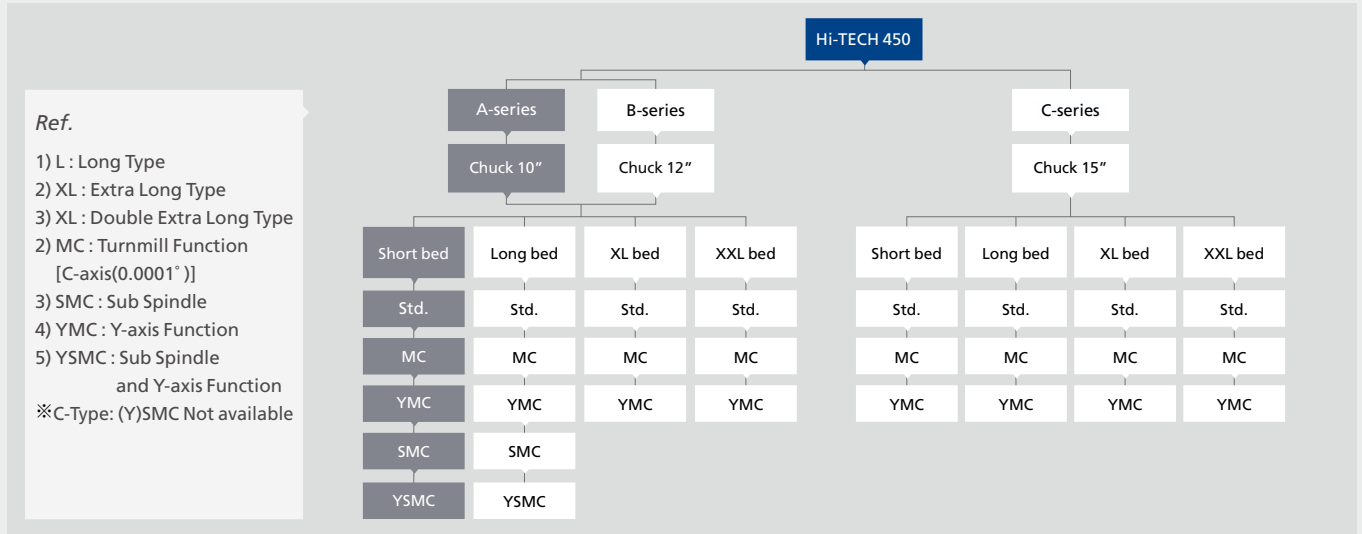
Y-Axis Moving Range





Product Configuration

Each product can be configured to fit your application.



Machine Specifications

ITEM	Hi-TECH 450 SERIES								
	450A	450B	450C	450AL	450BL	450CL			
<b>Capacity</b>									
Swing over Bed	mm (inch)	Ø700 (Ø27.56)							
Swing over Saddle	mm (inch)	Ø550 (Ø21.65)							
Max Cutting Diameter	mm (inch)	Ø420 (Ø16.54)		Ø500 (Ø19.69) [MC Ø420 (Ø16.54)]	Ø420 (Ø16.54)				
Standard Cutting Diameter	mm (inch)	Ø295 (Ø11.61) [MC : Ø254 (Ø10)]		Ø308 (Ø12.13) [MC : Ø254 (Ø10)]	Ø295 (Ø11.61) [MC : Ø254 (Ø10)]				
Max Turning Length	mm (inch)	760 (29.92) [MC : 637 (25.08)]	737 (29.02) [MC : 614 (24.17)]	673 (26.49) [MC : 550 (21.65)]	1,360 (53.54) [MC : 1,237 (48.7)]	1,337 (52.64) [MC : 1,214 (47.8)]	1,273 (50.11) [MC : 1,150 (45.27)]		
Chuck Size	inch	10(sub : 8)		15	10(sub : 8)		12(sub : 8)	15	
<b>Spindle</b>									
Type of Spindle Nose	ASA	A2 - 8 (sub : A2 - 6)		A2 - 11	A2 - 8 (sub : A2 - 6)		A2 - 11		
Max Spindle Speed	rpm	3,500 (sub : 4,000)		2,500 (sub : 4,000)	1,800	3,500 (sub : 4,000)		2,500 (sub : 4,000)	1,800
Through Spindle Hole Diameter	mm (inch)	Ø90 (Ø3.54) [sub : Ø62 (Ø2.44)]		Ø105 (Ø4.13) [sub : Ø62 (Ø2.44)]	Ø132 (Ø5.20)	Ø90 (Ø3.54) [sub : Ø62 (Ø2.44)]		Ø105 (Ø4.13) [sub : Ø62 (Ø2.44)]	Ø132 (Ø5.20)
Max Bar Size	mm (inch)	Ø76 (Ø2.99) [sub Ø51 (Ø2.01)]		Ø89 (Ø3.5) [sub Ø51 (Ø2.01)]	Ø116 (Ø4.57)	Ø76 (Ø2.99) [sub Ø51 (Ø2.01)]		Ø89 (Ø3.5) [sub Ø51 (Ø2.01)]	Ø116 (Ø4.57)
Spindle Bearing Inner Diameter	mm (inch)	Ø140 (Ø5.51) [sub:Ø100 (Ø3.94)]		Ø160 (Ø6.3) [sub:Ø100 (Ø3.94)]	Ø180(Ø7.09)	Ø140 (Ø5.51) [sub:Ø100 (Ø3.94)]		Ø160 (Ø6.3) [sub:Ø100 (Ø3.94)]	Ø180(Ø7.09)
Spindle Motor (30min/cont)	kW(HP)	22 / 18.5 (30 / 25)[Sub : 7.5 / 5.5(10 / 7.5)]		22 / 18.5 (30 / 25)	22 / 18.5 (30 / 25)	22 / 18.5 (30 / 25)[Sub : 7.5 / 5.5(10 / 7.5)]		22 / 18.5 (30 / 25)	22 / 18.5 (30 / 25)
<b>Turret</b>									
Number of Tool Station	ea	12		10 (MC : 12)	12	12		10 (MC : 12)	
Tool Size	mm (inch)	□25 x Ø50 (□1 x Ø2)							
Turret Indexing Time	sec/step	0.25							
<b>Axes</b>									
Rapid Traverse (X / Z / Y / B)	m/min (ipm)	20 / 24 / 10 / 16 (787.4 / 944.8 / 393.7 / 629.92)		20 / 24 / 10 / - (787.4 / 944.8 / 393.7 / -)	20 / 24 / 10 / 16 (787.4 / 944.8 / 393.7 / 629.92)		20 / 24 / 10 / - (787.4 / 944.8 / 393.7 / -)		
Max Stroke (X / Z / Y / B)	mm (inch)	280 / 790 / 120 (±60) / A:690 , B:670 (11.02 / 31.1 / 4.72 / A:27.1 , B:26.3)		280 / 790 / 120 (±60) / - (11.02 / 31.1 / 4.72 / -)	280 / 1,390 / 120 (±60) / A:1,290 , B:1,270 (11.02 / 54.72 / 4.72 / A:50.7 , B:50)		280 / 1,390 / 120 (±60) / - (11.02 / 54.72 / 4.72 / -)		
Feed Motor (X / Z / Y / B)	kW(HP)	4.0(5.4) / 4.0(5.4) / 4.0(5.4) / 1.6(2.2)		4.0 (5.4) / 4.0(5.4) / 4.0(5.4) / -	4.0(5.4) / 4.0(5.4) / 4.0(5.4) / 1.6(2.2)		4.0 (5.4) / 4.0(5.4) / 4.0(5.4) / -		
<b>Tailstock</b>									
Tailstock Travel	mm (inch)	650 (25.59)			1,250 (49.21)				
Quill Dia	mm (inch)	Ø100 (Ø3.94)							
Quill Taper	MT	# 5							
Quill Stroke	mm (inch)	120 (4.72)							
<b>Turnmill</b>									
Spindle Motor	kW (HP)	3.7 / 2.2 (5 / 3)							
Max Spindle Speed	rpm	5,000							
Max Drill / Tap Size	mm (inch)	Ø20 (Ø0.79) / M16							
Min Index Angle	deg	0.0001 (sub : 0.0001)		0.0001	0.0001 (sub : 0.0001)		0.0001		
<b>Tank Capacity</b>									
Lubrication	ℓ(gal)	12 (3.17)							
Hydraulic	ℓ(gal)	50 (13.21)							
Coolant	ℓ(gal)	190 (50.19)			240 (63.4)				
<b>Power Source</b>									
Electrical Power Supply	kVA	STD, MC, YMC: 50 / SMC, YSMC: 55		STD, MC, YMC: 50	STD, MC, YMC: 50 / SMC, YSMC: 55		STD, MC, YMC: 50		
<b>Dimension</b>									
Height	mm (inch)	1,875(Y:2,205) [73.82(Y:86.81)]							
Floor Space (L x W)	mm (inch)	3,500 x 1,970(Y: 2,045)[137.80 x 77.56(Y: 80.51)]			4,100 x 1,970(Y: 2,045)[161.42 x 77.56(Y: 80.51)]				
Weight	kg, (lb.)	STD: 7,500(16,535) / MC: 7,700(16,976) / YMC: 8,200(18,078) / SMC: 8,200(18,078) / YSMC: 9,200(20,283)	STD: 7,600(16,755) / MC: 7,800(17,196) / YMC: 8,300(18,298) / SMC: 8,300(18,298) / YSMC: 9,300(20,503)	STD: 7,700(16,976) / MC: 7,900(17,417) / YMC: 8,400(18,519)	STD: 7,900(17,417) / MC: 8,100(17,857) / YMC: 8,700(19,180) / SMC: 8,700(19,180) / YSMC: 9,500(20,944)	STD: 8,000(17,637) / MC: 8,200(18,078) / YMC: 8,800(19,401) / SMC: 8,800(19,401) / YSMC: 9,600(21,164)	STD: 8,100(17,857) / MC: 8,300(18,298) / YMC: 8,900(19,621)		
<b>NC Controller</b>									
Fanuc Oi-TF Plus									


## Standard and Optional product components

Standard Accessories		Optional Accessories	
• Door Interlock	• Lubrication Unit	• Air Gun	• NC Cooler
• Dual Pressure (C-axis brake)	• Manual Guide i	• Air Blower	• Parts Catcher
• Foot Switch	• Manual & Parts List	• Auto Door (Short Type)	(Hi-TECH 450C is not applicable)
• High Pressure Coolant Pump 0.6 MPa	• Signal Lamp with 3 Colors (R, G, Y)	• Bar Feeder Interface	• Steady Rest (except SMC)
• Hydraulic Chuck & Cylinder (A: 10", B: 12", C: 15")	• Set of Soft Jaws	• Chip Conveyor & Box (Side Type)	• Steady Rest Base (except SMC)
• Hydraulic Unit 40 kg <sub>f</sub> /cm <sup>2</sup>	• Tailstock (MT#5)	• Chuck Clamp/Unclamp Confirm Switch	• Sub Spindle Motor Upgrade (11/7.5kW)
•HLVC (Hwacheon Lathe Vibration Control)	- Tailstock Body Program - Tailstock Quill Program	• Chuck Pressure Check Switch	• Tool & Work Counter, External/Internal
•L-HTLD (Lathe-Hwacheon Tool Load Detect)	• Tool Kit & Box	• Chuck Pressure Compensation	• Tool Presetter (Automatic)
•L-CAL (Lathe Calculator Function)	• Tooling System	• Coolant Gun	• Transformer
•L-COUNT (Work / Tool Counter Management)	• Tool Life Management	• Dual Pressure (Chuck)	• Turnmill Function Including C-axis (0.0001°)
• Leveling Bolt & Plate	• Turret	• Function of Y-axis (±60mm)	• Turnmill Holder (Axial / Radial)
	• Work Light	• Hard Jaw	• Turnmill Motor (5.5/3.7)
	•15" Non touch display (only FANUC)	• High Pressure Coolant Pump 1.5 / 3 / 7 MPa *For 7 MPa, only water soluble coolants are available	• U-Drill Holder
		• Main Spindle Motor Upgrade (26/22kW)	•15" Touch type display (only FANUC)
		• Linear Scale (X, Z-axis)	

## Machine Specifications

ITEM		Hi-TECH 450 SERIES					
		450AXL	450BXL	450CXL	450ALXXL	450BXXL	450CXXL
<b>Capacity</b>							
Swing over Bed	mm (inch)	Ø700 (Ø27.56)					
Swing over Saddle	mm (inch)	Ø550 (Ø21.65)					
Max Cutting Diameter	mm (inch)	Ø420 (Ø16.54)		Ø500 (Ø19.69) [MC Ø420 (Ø16.54)]		Ø420 (Ø16.54)	
Standard Cutting Diameter	mm (inch)	Ø295 (Ø11.61) [MC : Ø254 (Ø10)]		Ø308 (Ø12.13) [MC : Ø254 (Ø10)]		Ø295 (Ø11.61) [MC : Ø254 (Ø10)]	
Max Turning Length	mm (inch)	2,250 (88.58) [MC : 2,127 (83.74)]	2,227 (87.68) [MC : 2,104 (82.83)]	2,163 (85.16) [MC : 2,040 (80.31)]	3,250 (127.95) [MC : 3,127 (123.11)]	3,227 (127.05) [MC : 3,104 (122.2)]	3,163 (124.53) [MC : 3,040 (119.69)]
Chuck Size	inch	10	12	15	10	12	15
<b>Spindle</b>							
Type of Spindle Nose	ASA	A2 - 8		A2 - 11	A2 - 8		A2 - 11
Max Spindle Speed	rpm	3,500	2,500	1,800	3,500	2,500	1,800
Through Spindle Hole Diameter	mm (inch)	Ø90 (Ø3.54)	Ø105 (Ø4.13)	Ø132 (Ø5.20)	Ø90 (Ø3.54)	Ø105 (Ø4.13)	Ø132 (Ø5.20)
Max Bar Size	mm (inch)	Ø76 (Ø2.99)	Ø89 (Ø3.5)	Ø116 (Ø4.57)	Ø76 (Ø2.99)	Ø89 (Ø3.5)	Ø116 (Ø4.57)
Spindle Bearing Inner Diameter	mm (inch)	Ø140 (Ø5.51)	Ø160 (Ø6.3)	Ø180(Ø7.09)	Ø140 (Ø5.51)	Ø160 (Ø6.3)	Ø180(Ø7.09)
Spindle Motor (30min/cont)	kW(HP)	22 / 18.5 (30 / 25)[OPT 26 / 22 (35 / 30)]					
<b>Turret</b>							
Number of Tool Station	ea	12		10 (MC : 12)	12		10 (MC : 12)
Tool Size	mm (inch)	□25 x Ø50 (□1 x Ø2)					
Turret Indexing Time	sec/step	0.25					
<b>Axes</b>							
Rapid Traverse (X / Z / Y)	m/min (ipm)	20 / 20 / 10 (787.4 / 787.4 / 393.7)			20 / 12 / 10 (787.4 / 472.4 / 393.7)		
Max Stroke (X / Z / Y)	mm (inch)	280 / 2,280 / 120 (11.02 / 89.76 / 4.72)			280 / 3,280 / 120 (11.02 / 129.13 / 4.72)		
Feed Motor (X / Z / Y)	kW(HP)	4.0(5.4) / 4.0(5.4) / 4.0(5.4)					
<b>Tailstock</b>							
Tailstock Travel	mm (inch)	2,140 (84.25)			3,140 (123.62)		
Quill Dia	mm (inch)	Ø100 (Ø3.94)					
Quill Taper	MT	# 5					
Quill Stroke	mm (inch)	120 (4.72)					
<b>Turnmill</b>							
Spindle Motor	kW (HP)	3.7 / 2.2 (5 / 3)					
Max Spindle Speed	rpm	5,000					
Max Drill / Tap Size	mm (inch)	Ø20 (Ø0.79) / M16					
Min Index Angle	deg	0.0001 (sub : 0.0001)		0.0001	0.0001 (sub : 0.0001)		0.0001
<b>Tank Capacity</b>							
Lubrication	ℓ(gal)	12 (3.17)					
Hydraulic	ℓ(gal)	50 (13.21)					
Coolant	ℓ(gal)	300 (79.25)			410(108.31)		
<b>Power Source</b>							
Electrical Power Supply	kVA	50					
<b>Dimension</b>							
Height	mm (inch)	2,350 (92.52)			2,560 (100.79)		
Floor Space (L x W)	mm (inch)	5,070 x 2,055(Y: 2,122)[199.61 x 80.91(Y: 83.54)]			6,370 x 2,055(Y: 2,122)[250.79 x 80.91(Y: 83.54)]		
Weight	kg, (lb.)	STD: 9,400 / MC: 9,600 / YMC: 10,100	STD: 9,500 / MC: 9,700 / YMC: 10,200	STD: 9,600 / MC: 9,800 / YMC: 10,300	STD: 12,800 / MC: 13,000 / YMC: 13,500	STD: 12,900 / MC: 13,100 / YMC: 13,600	STD: 13,000 / MC: 13,200 / YMC: 13,700
<b>NC Controller</b>		Fanuc 0i-TF Plus					

## Hwacheon Global Network

 Hwacheon Headquarter  Hwacheon America  Hwacheon Europe  Hwacheon Asia



**HWACHEON**

Please contact 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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