

# Hi-TECH 850

Extra-Large Horizontal Turning Center  
32" Chucker with Y-Axis



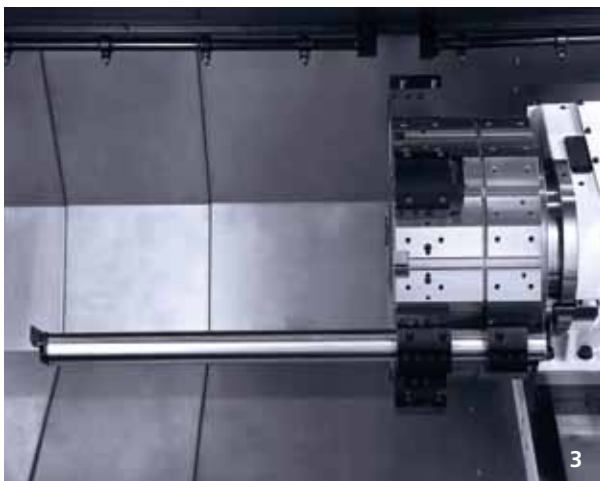


# EXTRA-LARGE HORIZONTAL TURNING CENTER 32" CHUCKER

**The horizontal turning center perfect for the production of large-size Products and tough materials**

Hi-TECH 850 is capable of handling a variety of complex jobs from turning to milling in a single process. Its extra-wide and extra-rigid Turret, the stability provided by the one piece casting bed and box way design are ideal for turning of large sized workpieces.

1 Shaft / Sample / SM45C    2 Box way slide  
3 Long Boring Bar  $\varnothing 80$  / L800mm    4 Customization Design



# HIGH PERFORMANCE EXTRA-LARGE TURNING CENTER

Hi-TECH 850 has a integrated 45-degree slant bed frame to minimize heat distortion, all guide way are designed as solid Box guide ways to maintain rigidity and precision even during prolonged operations. Its automatic transmission system allows low-speed, high-torque turning as well as high-speed machining, the optional Y-axis ensures process-integrated operations of complex large workpieces in one setting.

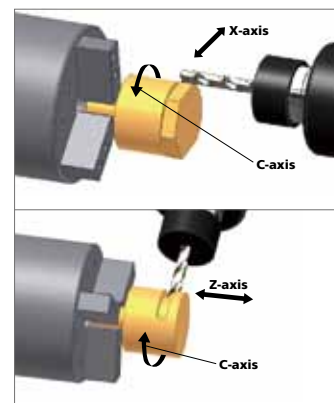
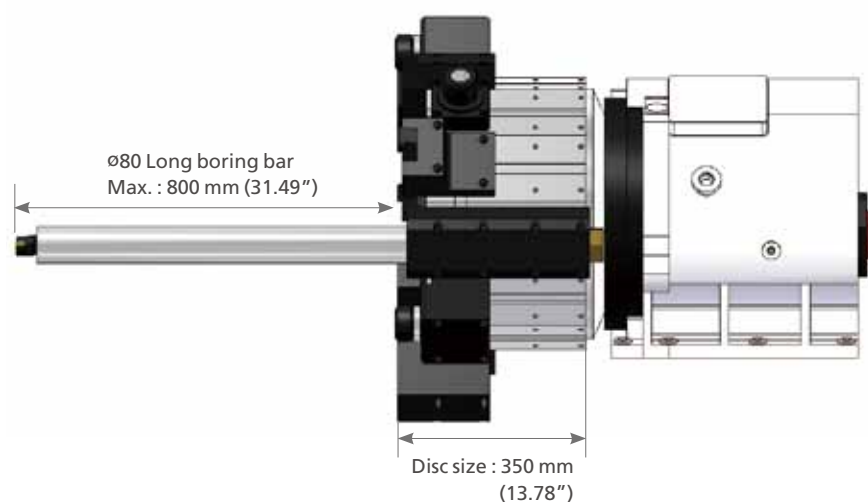




# EXTRA-LONG BORING BAR

Maximum diameter / length of the boring bar : D = Ø80 mm / L = 800 mm

Maximize your productivity by adding a Y-axis to your Hi-TECH 850 center. This is an ideal option if you want to complete complex processes including turning and milling in a single setting. A added Y-axis will save time and avoid secondary clamping of your part, eliminating down time and increase your profit.



Material	Tool	Gear position	Cutting depth (mm)	Feedrate (mm/rev)	Cutting speed (m/mm)	Tool length (mm)	Roughness [Ra(μm)]
STKM 13C (Ø130 x Ø110 x 1,200)	570-DCLNT-16 570-3C-80 1200 DNMG 150604LK (For finishing)	M43 (3step / High speed)	0.1	0.1	260	650	1.671
						750	1.170

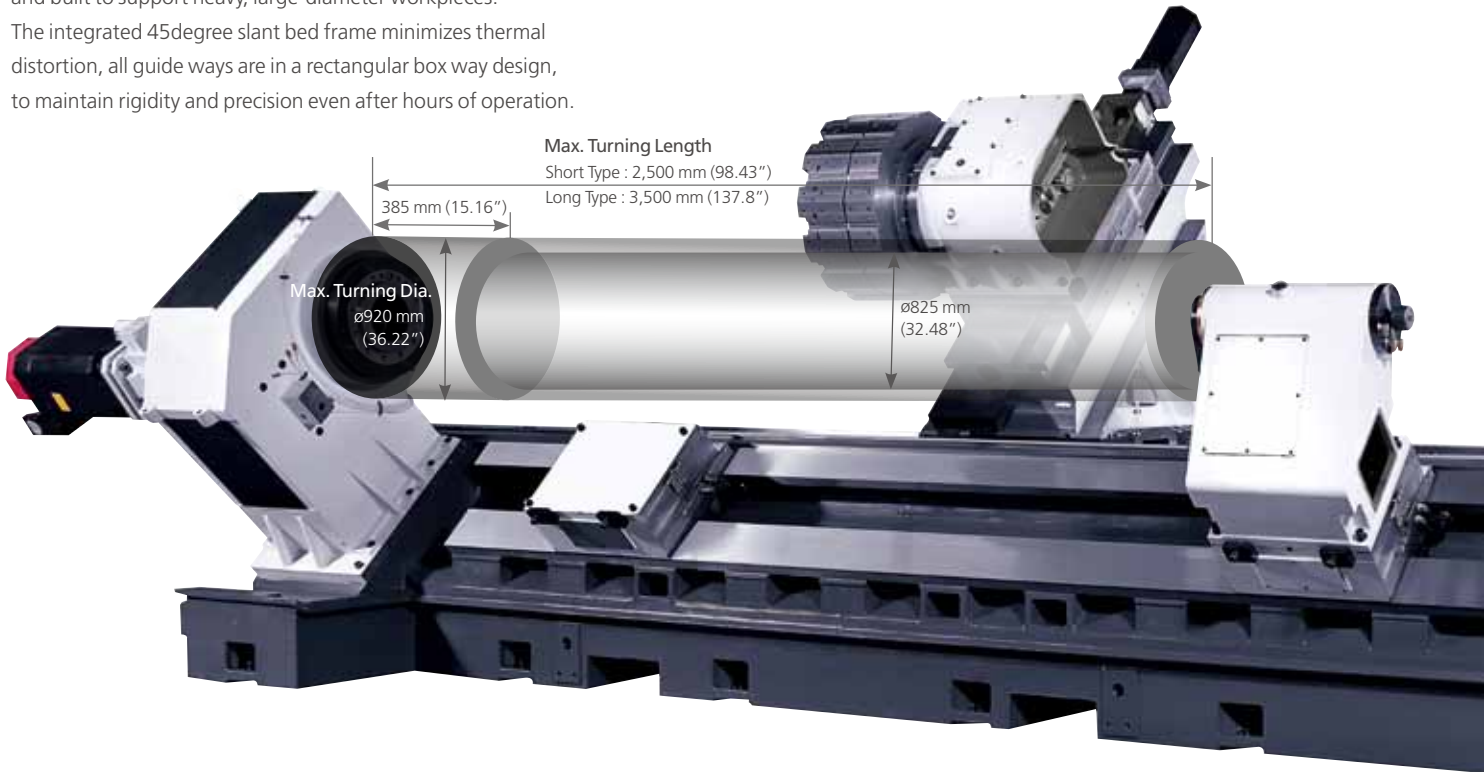
## Multi-process milling with Y-axis (YMC)

- Spindle indexing: by 0.001 degree
- Y-axis stroke: 220(±110)mm [8.66"(±4.33")]

**The largest cutting diameter and cutting length in its class (ø825/3,500mm)**

The spindle, the tailstock and the steady rest system is designed and built to support heavy, large-diameter workpieces.

The integrated 45degree slant bed frame minimizes thermal distortion, all guide ways are in a rectangular box way design, to maintain rigidity and precision even after hours of operation.

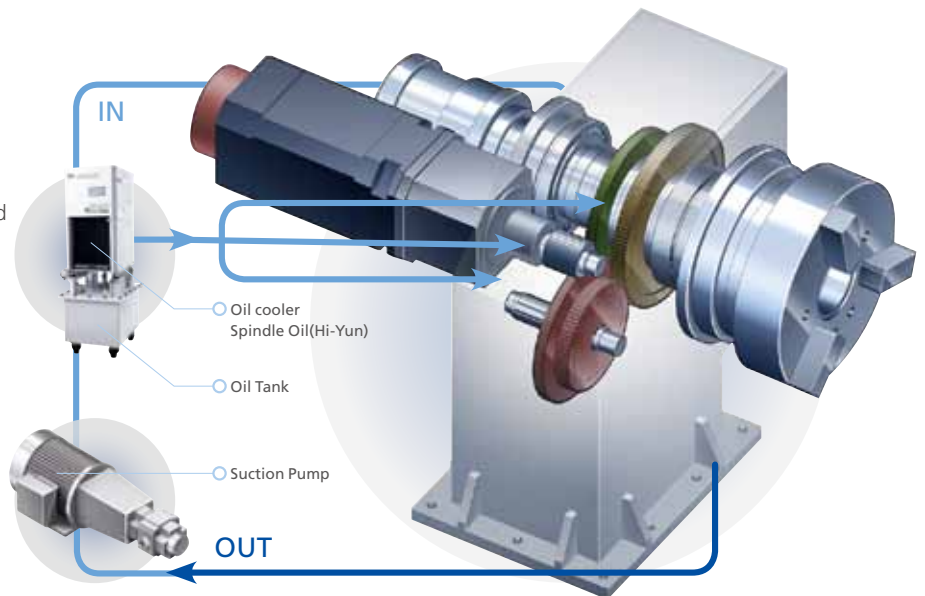


**Gear-driven spindle system**

The four-speed transmission with the high-performance gear decelerator provides high amount of torque at low speed. The bearing assembly is cooled and lubricated by Hwacheon's unique Oil-Jet cooling system, the gear box Temperature is regulated by oil circulation for consistent spindle performance. This four-speed spindle performs best when turning heavy and large workpieces (Max. ø825x3,500mm).

**Turning data**

Material : SM45C  
 Dimensions : ø400 x 200mm  
 Turning speed : V=120 mm/min  
 Tool & Insert: CNMG 1606-PR M41 (1st gear)  
 power output range



Cutting Depth (mm)	5	6	7	8	9	10
Recommended Feed (mm/rev)	0.82	0.68	0.58	0.51	0.46	0.41
Maximum Feed (mm/rev)	1.3	1.08	0.92	0.81	0.73	0.65



# USER FRIENDLY DESIGN, A WIDE RANGE OF OPTIONAL FEATURES

Hi-TECH 850 is designed with the end user in mind. Its user-friendly machine design and a variety of supplementary features ensure a stronger, faster and more precise machining performance.

## Best steady rest performance in its class(Option)

Hi-TECH 850 provides up to 2 sets of steady rest, each can hold up to a diameter of  $\varnothing 560\text{mm}$  workpiece. The best hydraulic steady rest in its class. The programmable steady rest base can also be ordered separately.



## The programmable hydraulic tailstock



## 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

#### Alarm + Feed Hold

> When the LIMIT 1 Alarm sounds, the system holds the feed and the machine goes into standby.

### Load Detection Limit 2

#### Alarm + Machine Stop

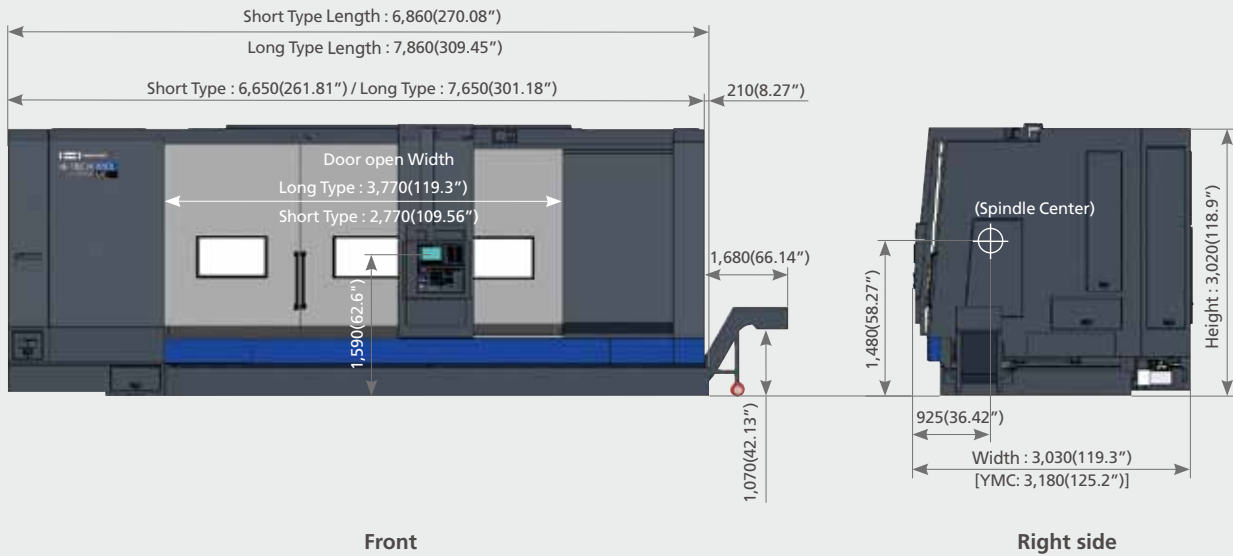
> When the LIMIT 2 Alarm sounds, the system stops the machine, and must be reset to operate it.





Product Data

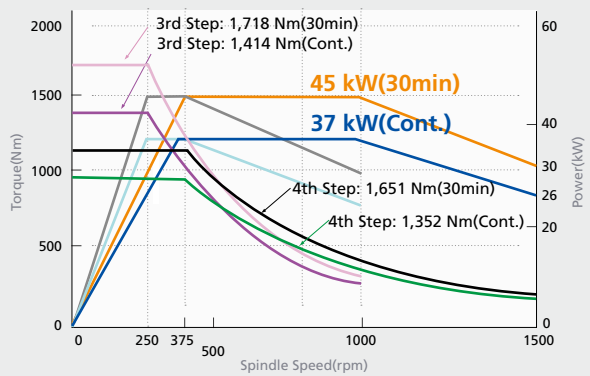
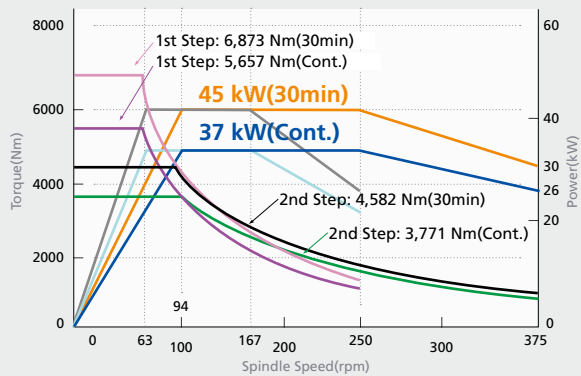
\* Unit: mm(inch)



Spindle Power-Torque Diagram

1 / 2 step (With 24" Chuck)

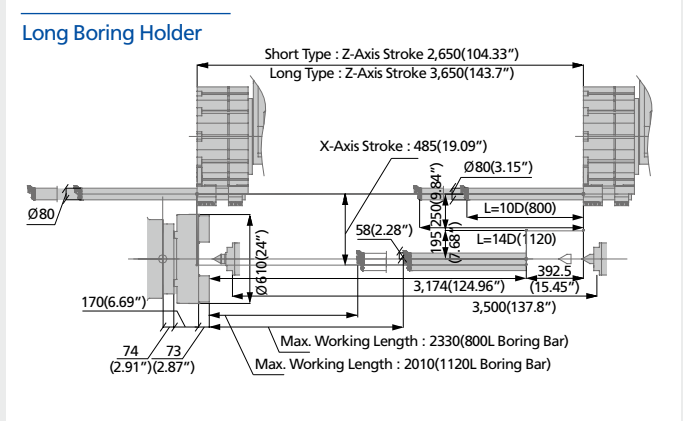
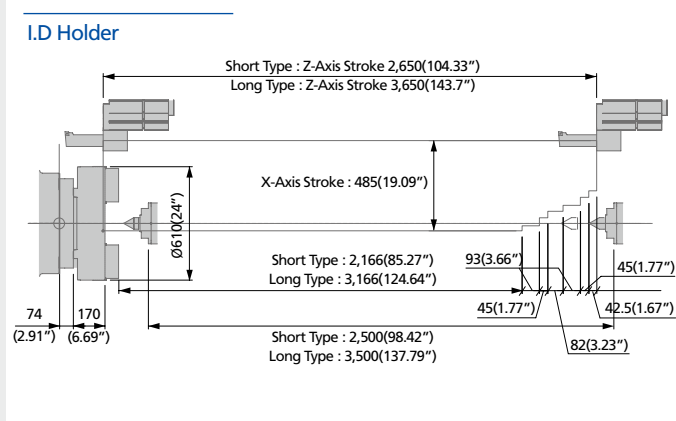
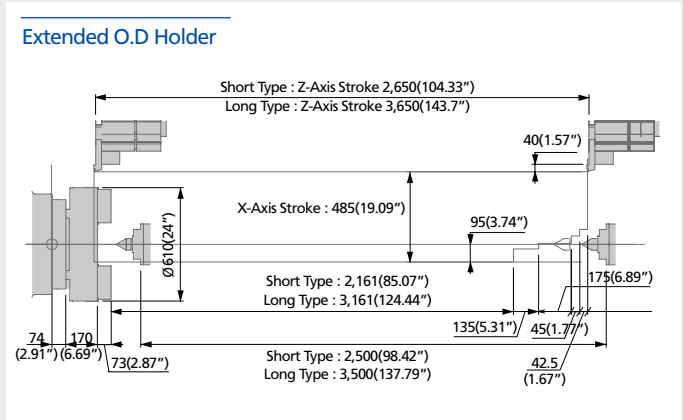
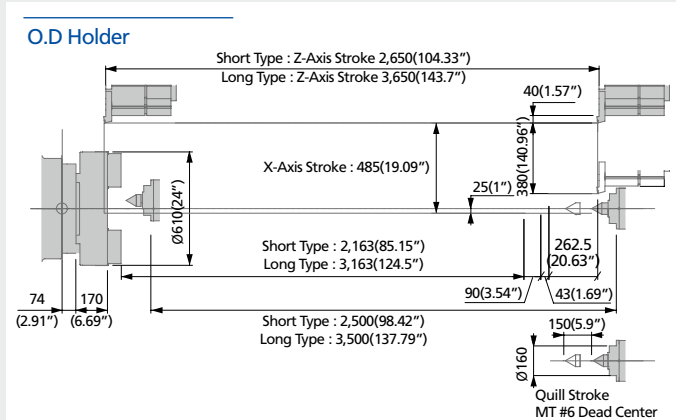
3 / 4 step (With 24" Chuck)





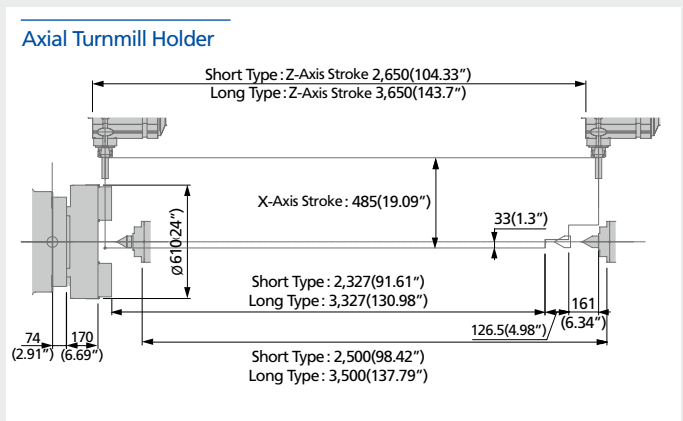
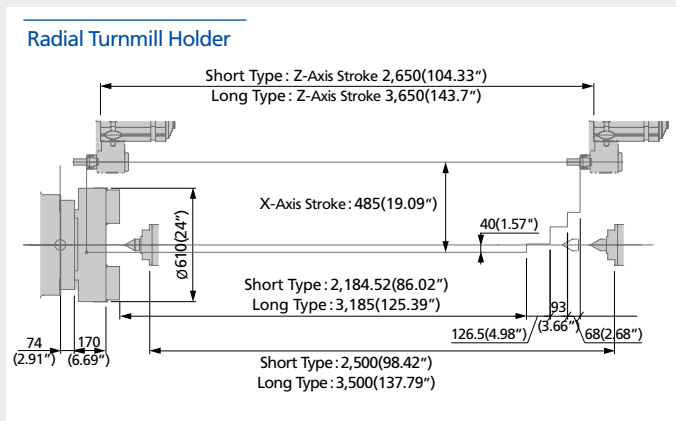
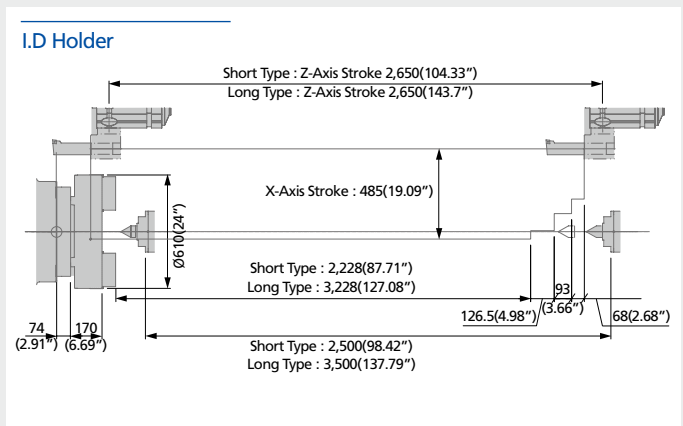
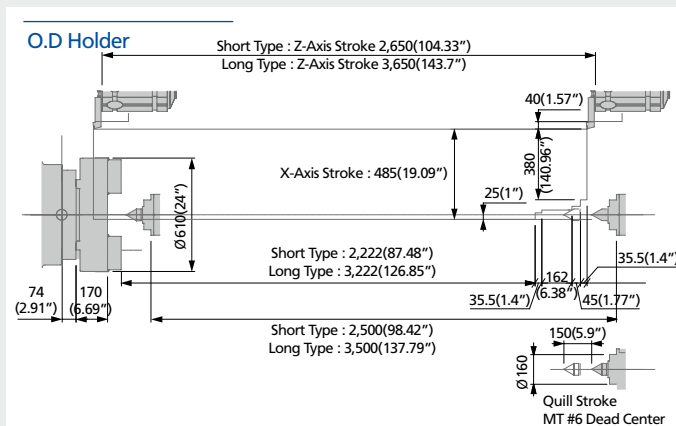
**Moving Range**  
**Standard**

※Unit: mm(inch)



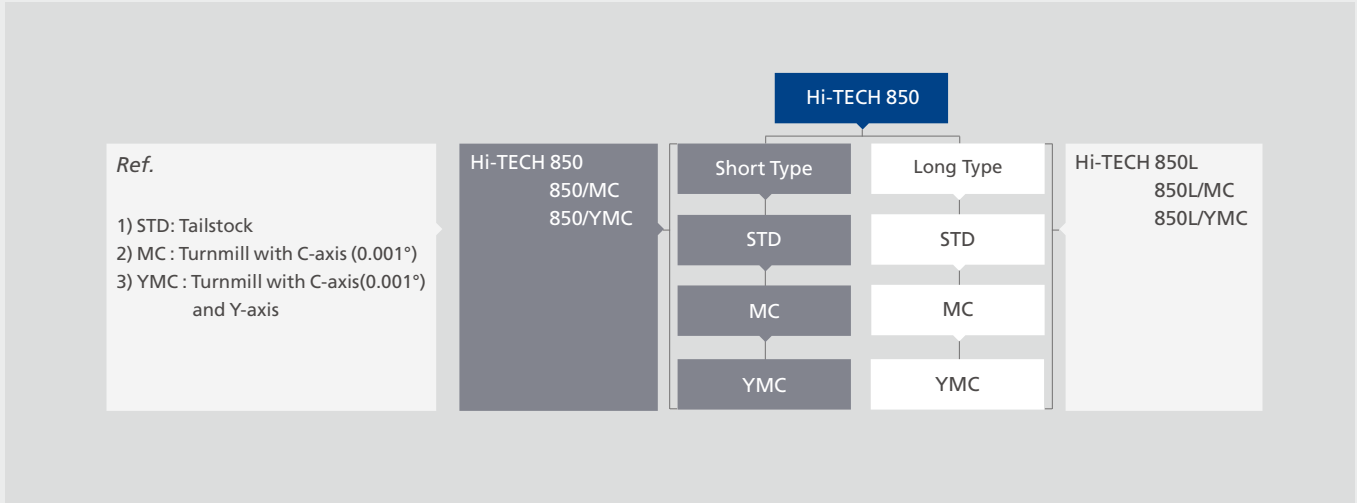
**MC**

※Unit: mm(inch)



**Product Configuration**

Each product can be configured to fit your application.



**Machine Specifications**

ITEM	Hi-TECH 850 SERIES					
	850	850/MC	850/YMC	850L	850L/MC	850L/YMC
<b>Capacity</b>						
Swing over Bed	mm (inch)	Ø1,050 (41.34")				
Swing over Cross slide	mm (inch)	Ø825 (32.48")				
Max. Cutting diameter (ØD x L)	mm (inch)	Ø920 (36.22") x 385 (15.16")				
Standard Cutting diameter	mm (inch)	Ø380 (14.96")				
Max. Cutting length (ØD x L) (with 24" chuck)	mm (inch)	Ø825 (32.48") x 2,500 (98.42")		Ø825 (32.48") x 3,500 (137.8")		
Chuck Size (Opt.)	inch	24" / 32"				
<b>Spindle</b>						
Type of spindle nose	ASA	A2-15				
Max. Spindle speed	rpm	1,500 (24") / (1,200(32"))				
Through spindle hole diameter	mm (inch)	Ø185 (7.28")				
Max. Bar Size	mm (inch)	Ø164 (6.46")				
Spindle bearing inner diameter	mm (inch)	Ø240 (9.45")				
Spindle motor	kW (HP)	45 / 37 (60 / 50)				
<b>Turret</b>						
Number of tool station	ea	12				
Tool size (OD x ID)	mm (inch)	□32 x Ø80 (□1.25" x Ø3.15")				
Turret indexing time	sec / step	0.3				
<b>Feed rates</b>						
Rapid speed (X / Z / Y)	m/min (ipm)	10 / 12 / - (393.7 / 472.4 / -)	10 / 12 / 10 (393.7 / 472.4 / 393.7)	10 / 10 / - (393.7 / 393.7 / -)	10 / 10 / 10 (393.7 / 393.7 / 393.7)	
Max. Stroke (X / Z / Y)	mm (inch)	485 / 2,650 / - (19.1" / 104.33" / -)	485 / 2,650 / 220 (19.1" / 104.33" / 8.66")	485 / 3,650 / - (19.1" / 143.7" / -)	485 / 3,650 / 220 (19.1" / 143.7" / 8.66")	
Feed Motor (X / Z / Y)	kW (HP)	6 / 6 / - (8 / 8 / -)	6 / 6 / 7 (8 / 8 / 9.3)	6 / 6 / - (8 / 8 / -)	6 / 6 / 7 (8 / 8 / 9.3)	
<b>Tailstock</b>						
Quill Dia.	mm (inch)	Ø160 (6.3")				
Quill Stroke	mm (inch)	150 (5.91")				
Quill Taper	MT	#6				
<b>Turnmill (Opt.)</b>						
Spindle motor	kW (HP)	-	11 / 7.5(15 / 10)	-	11/7.5 (15 / 10)	
Max. Spindle speed	rpm	-	2,500	-	2,500	
Max. Drill / Collet size	mm (inch)	-	Ø32 (1.25") / ER50	-	Ø32 (1.25") / ER50	
Min. Index angle	° (deg)	-	0.001°	-	0.001°	
<b>Tank Capacity</b>						
Lubrication	ℓ (gal)	12 (3.7)				
Hydraulic	ℓ (gal)	50 (13)				
Coolant	ℓ (gal)	400 (105.67)		550 (145.3)		
<b>Power Sources</b>						
Electrical power supply	kVA	75				
<b>Dimension</b>						
Height	mm (inch)	3,020 (118.9")				
Floor space (L x W)	mm (inch)	6,860 x 3,030 (270.08" x 119.3")	6,860 x 3,180 (270.08" x 125.2")	7,860 x 3,030 (309.45" x 119.3")	7,860 x 3,180 (309.45" x 125.2")	
Weight	kg (lb)	17,000 (37,479)	17,500 (38,581)	18,500 (40,786)	22,000 (48,502)	23,500 (51,809)
<b>NC Controller</b>						
Fanuc 0i-TD						



## Standard and Optional product components

Standard Accessories		Optional Accessories	
• Door interlock	• Tailstock (MT#6)	• Air blower	• Mist collector
• Coolant Shower System	- Tailstock Body program	• Air chuck 2set	• NC cooler
• Coolant system	- Tailstock Quill program	- Long pipe machining	• Oil skimmer
• Foot switch	• Tooling system	• Air gun	• Programmable Hy'd steady rest base (Max. 2 pieces)
• High pressure coolant pump 6 bar	• Tool holder for long boring bar 1Set	• Chip conveyor & box (Side type)	• Signal lamp with 3 colors (R, G, Y)
• Hydraulic cylinder	• Tool kit & box	• Chuck dual pressure system	• Soft Jaw (24" / 32")
• Leveling bolt & plate	• Turret with 12 station	• Chuck pressure check switch	• Tool & work counter, External / Internal
• Lubrication system	• Work light	• Chuck pressure compensation	• Tool life management
• Manual guide i	• 10.4" LCD monitor	• Coolant gun	• Tool presetter (Automatic)
• Operation manual & parts list		• Function of Y-axis (±110mm)	• Transformer
• Safety full cover set		• Hard Jaw (24" / 32")	• Turnmill function including C-axis (0.001°)
• Signal lamp with 2 colors (R, G)		• High pressure coolant pump 15 bar	• Turnmill holder, Axial / Radial
• Spindle cooling system		• Hydraulic chuck (24" / 32")	• U-Drill Holder
		• Hydraulic steady rest (Max. Ø560mm)	
		• L-HTLD	
		(Lathe-Hwacheon Tool Load Detect)	
		• Linear Scale	

## NC Specifications [FanucOi-TD]

※ - : Not available S : Standard O : Option

ITEM	SPECIFICATION	STD	MC	YMC
<b>Controlled axis</b>				
Controlled axis (Cs axis)	2-Axes	2-Axes	3-Axes	4-Axes
Simultaneously controlled axes	2-Axes	2-Axes	3-Axes	4-Axes
Least input increment	0.001mm, 0.001deg, 0.0001inch	S	S	S
Least input increment 1/10	0.0001mm, 0.0001deg, 0.00001inch	O	O	O
inch/metric conversion	G20, G21	S	S	S
Stored stroke check 1		S	S	S
Stored stroke check 2,3		S	S	S
Mirror image		S	S	S
Backlash compensation		S	S	S
<b>Operation</b>				
Automatic & MDI operation		S	S	S
Program number search		S	S	S
Sequence number search		S	S	S
Dry run, single block		S	S	S
Manual handle feed	1Unit	S	S	S
Manual handle feed rate	x1, x10, x100	S	S	S
<b>Interpolation function</b>				
Positioning	G00	S	S	S
Linear interpolation	G01	S	S	S
Circular interpolation	G02, G03	S	S	S
Dwell (Per seconds)	G04	S	S	S
Polar coordinate interpolation	G12.1 / G13.1	-	S	S
Cylindrical interpolation	G7.1	-	S	S
Threading / Continuous threading	G32	S	S	S
Multiple threading / Threading Retract		S	S	S
Variable lead threading	G34	S	S	S
Reference position return 1st	G28	S	S	S
Reference position return check	G27	S	S	S
2,3,4th reference position return	G30	S	S	S
<b>Feed function</b>				
Rapid traverse override	F0, F25, F50, F100	S	S	S
Feed per minute (mm/min)	G98	S	S	S
Feed per revolution (mm/rev)	G99	S	S	S
Rapid traverse bell-shaped acceleration/deceleration		S	S	S
Feedrate override	0-150 %	S	S	S
Jog feed override	0-1,260 mm/min	S	S	S
<b>Tool function / compensation</b>				
Tool function	T4-digits	S	S	S
Tool offset pairs	64 pairs	S	S	S
Tool nose radius compensation		S	S	S
Tool geometry / wear compensation		S	S	S
Tool life management		O	O	O
Automatic tool offset	Tool presetter option is required	O	O	O
Direct input tool offset value measured B	Tool presetter option is required	O	O	O
<b>Others</b>				
Display unit	10.4" Color LCD	S	S	S

ITEM	SPECIFICATION	STD	MC	YMC
<b>Program input</b>				
Tape code	EIA RS244 / ISO840	S	S	S
Optional block skip	1 ea	S	S	S
Program number	O4-Digits	S	S	S
Sequence number	N5-Digits	S	S	S
Decimal point programming		S	S	S
Coordinate system setting	G50	S	S	S
Coordinate system shift		S	S	S
Workpiece coordinate system	G54-G59	S	S	S
Workpiece coordinate system preset	G92.1	S	S	S
Direct drawing dimension programming		S	S	S
G code system	A	S	S	S
Programmable data input	G10	S	S	S
Sub program call	10 folds Nested	S	S	S
Custom macro B		S	S	S
Addition of custom macro -common variables	#100-#199, #500-#999	S	S	S
Canned cycles		S	S	S
Multiple repetitive cycle		S	S	S
Multiple repetitive cycle II		S	S	S
Canned cycles for drilling		S	S	S
Small-hole peck drilling cycle		S	S	S
Manual guide i		S	S	S
<b>Spindle speed function</b>				
Constant surface speed control	G96 / G97	S	S	S
Spindle override	50-120 %	S	S	S
Spindle orientation		S	S	S
Rapid tapping		O	S	S
<b>Editing operation</b>				
Part program storage length	1,280m (512 kB)	S	S	S
Number of register able programs	400 ea	S	S	S
Background editing		S	S	S
Extended part program editing		S	S	S
Play back		S	S	S
<b>Operation / Display</b>				
Clock function		S	S	S
Self-diagnosis function		S	S	S
Alarm history display / Help function		S	S	S
Run hour and parts count display		S	S	S
Graphic function		S	S	S
Multi-language display	Korean, English, German, French, Italian, Chinese, Spanish, Portuguese, Polish, Hungarian, Swedish, Russian	S	S	S
<b>Data input/output</b>				
Reader / Puncher interface CH1	RS232C	S	S	S
Reader / Puncher interface CH2	RS232C	S	S	S
Ethernet interface		S	S	S
Memory card interface		S	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.

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