

Hi-TECH 850

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



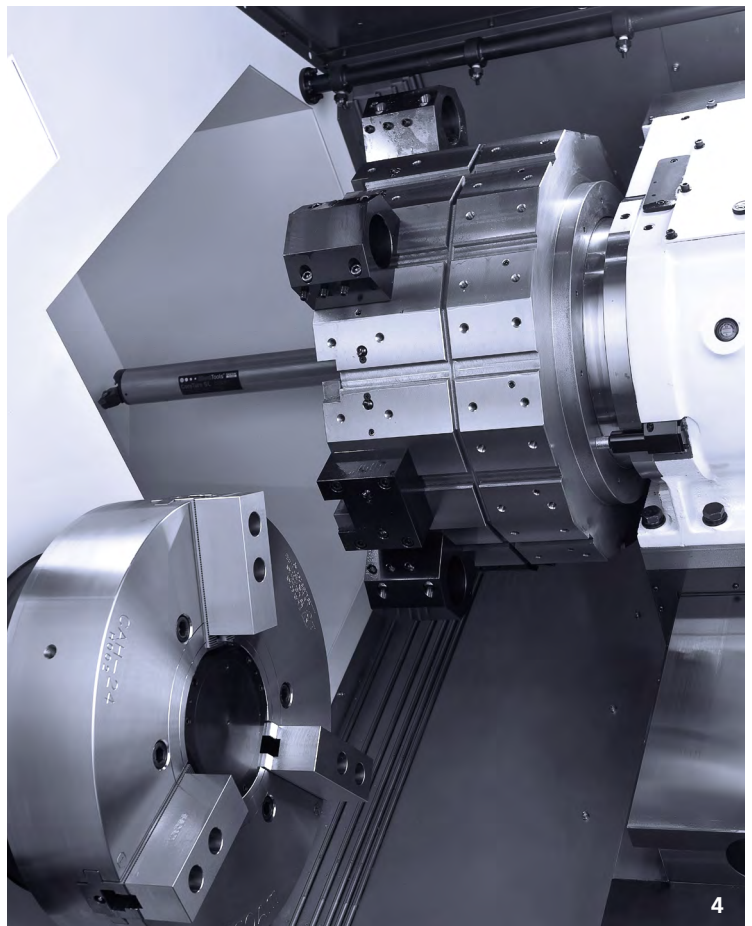
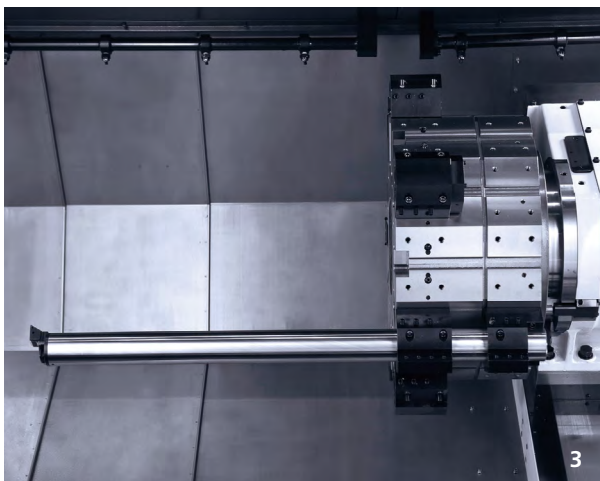


EXTRA-LARGE HORIZONTAL TURNING CENTER 32" CHUCKER

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

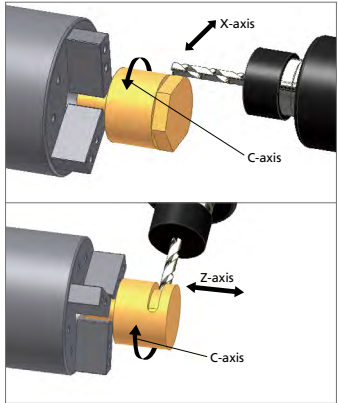
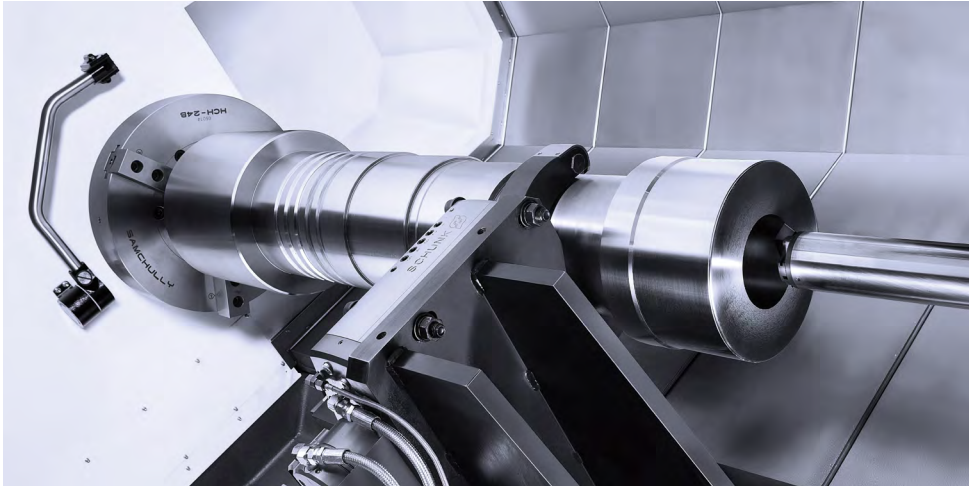
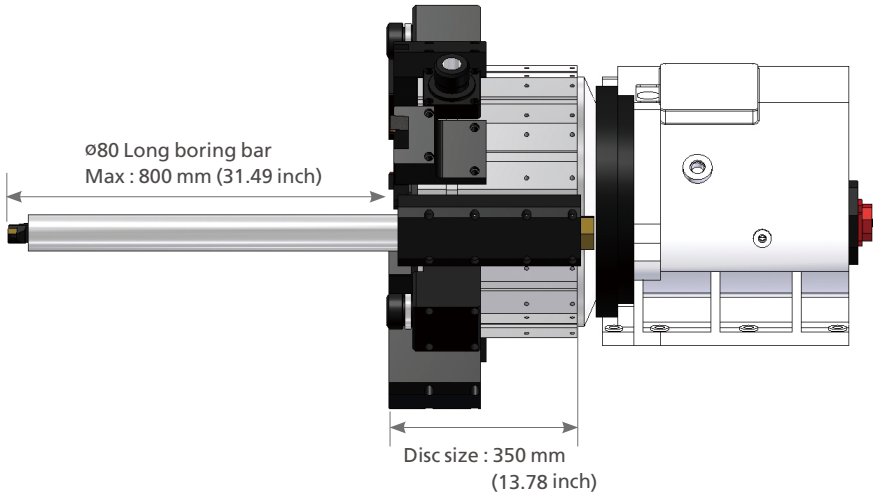
Hi-TECH 850 has a integrated 45-degree slant bed frame to minimize heat distortion, all guide way are designed as solid Box guide ways to maintain rigidity and precision even during prolonged operations. Its automatic transmission system allows low-speed, high-torque turning as well as high-speed machining, 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 (Ø130xØ110x1,200)	570-DCLNT-16	M43 (3step / High speed)	0.1	0.1	260	650	1.671
	570-3C-80 1200 DNMG 150604LK (For finishing)					750	1.170

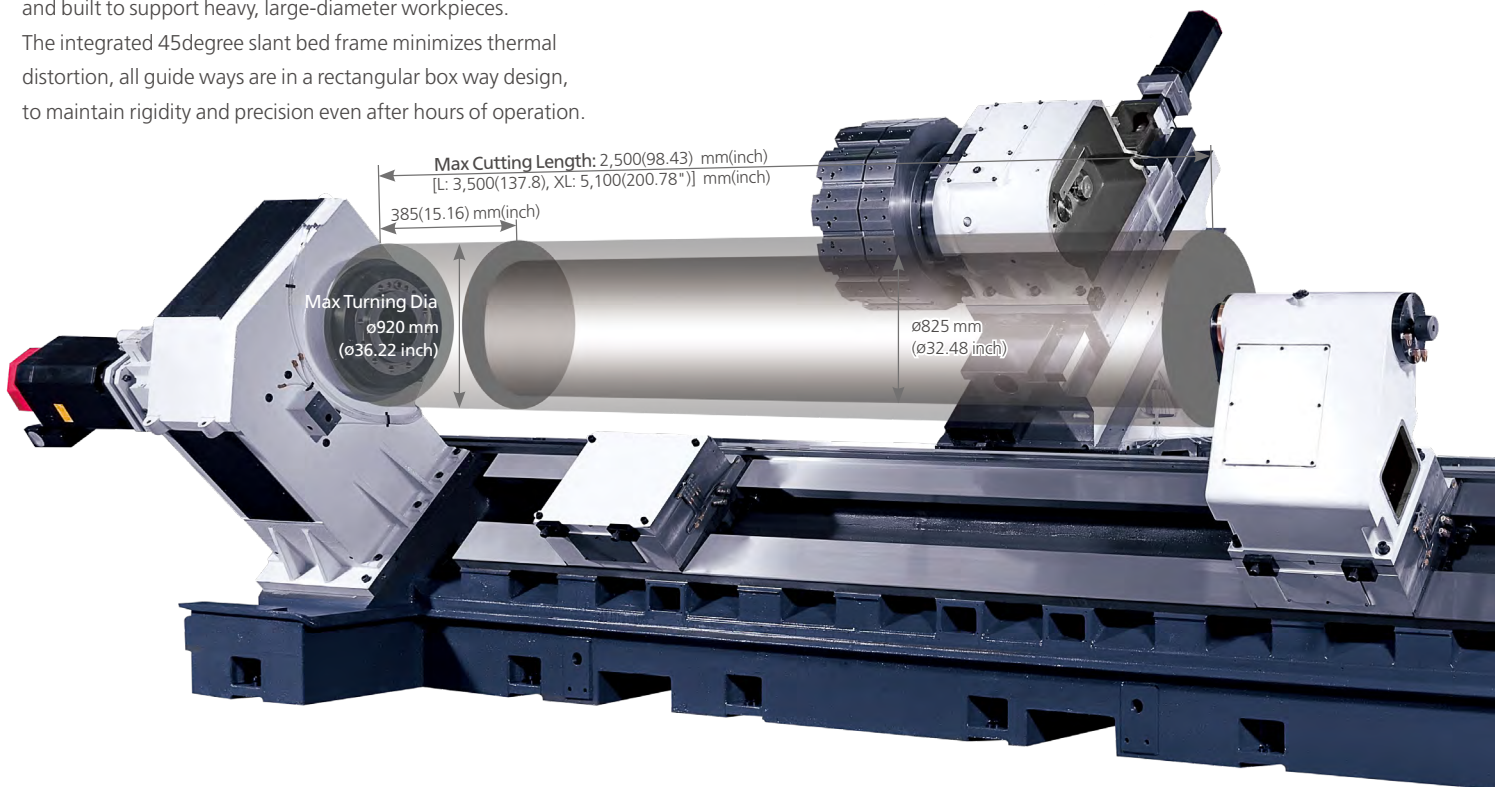
Multi-process milling with Y-axis (YMC)

- Spindle indexing: by 0.0001 degree
- Y-axis stroke: 220(±110)mm [8.66"(±4.33")]

The largest cutting diameter and cutting length in its class (ø825/5,100mm)

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.

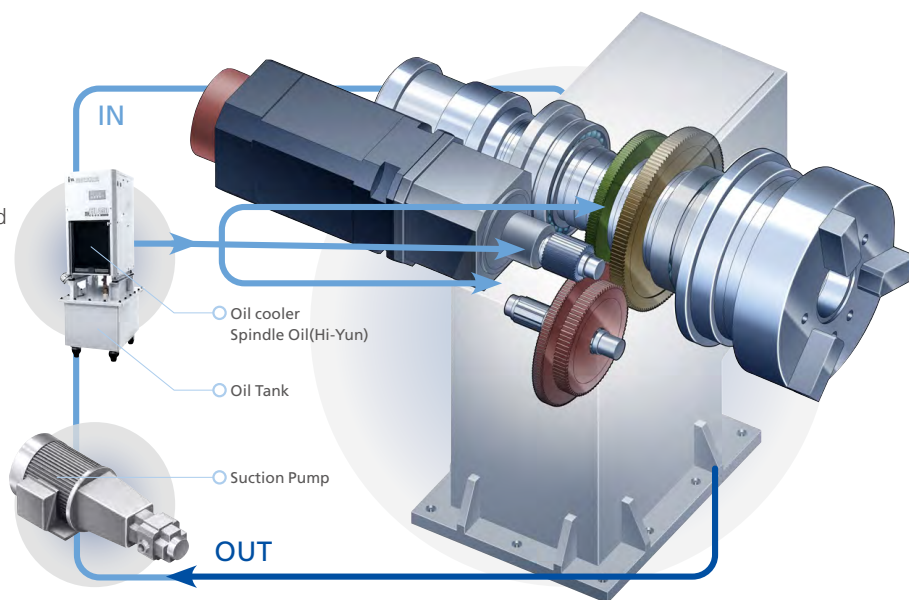


Gear-Driven Spindle System

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. ø825x5,100mm).

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

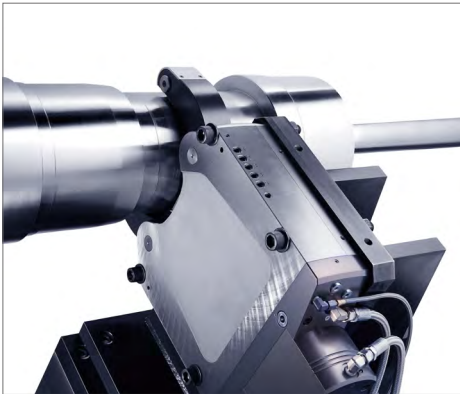


USER FRIENDLY DESIGN, A WIDE RANGE OF OPTIONAL FEATURES

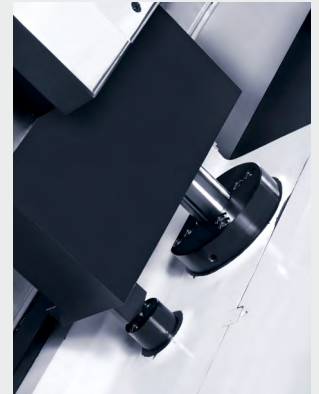
Hi-TECH 850 is designed with the end user in mind. Its user-friendly machine design and a variety of supplementary features ensure a stronger, faster and more precise machining performance.

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 $\phi 510\text{mm}$ 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 (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

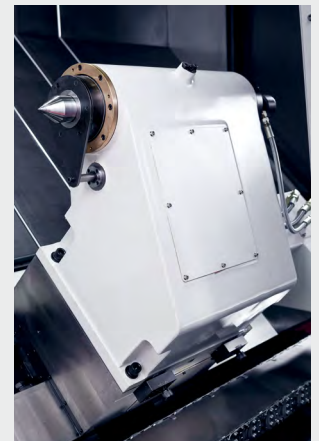
Alarm + Feed Hold

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

Load Detection Limit 2

Alarm + Machine Stop

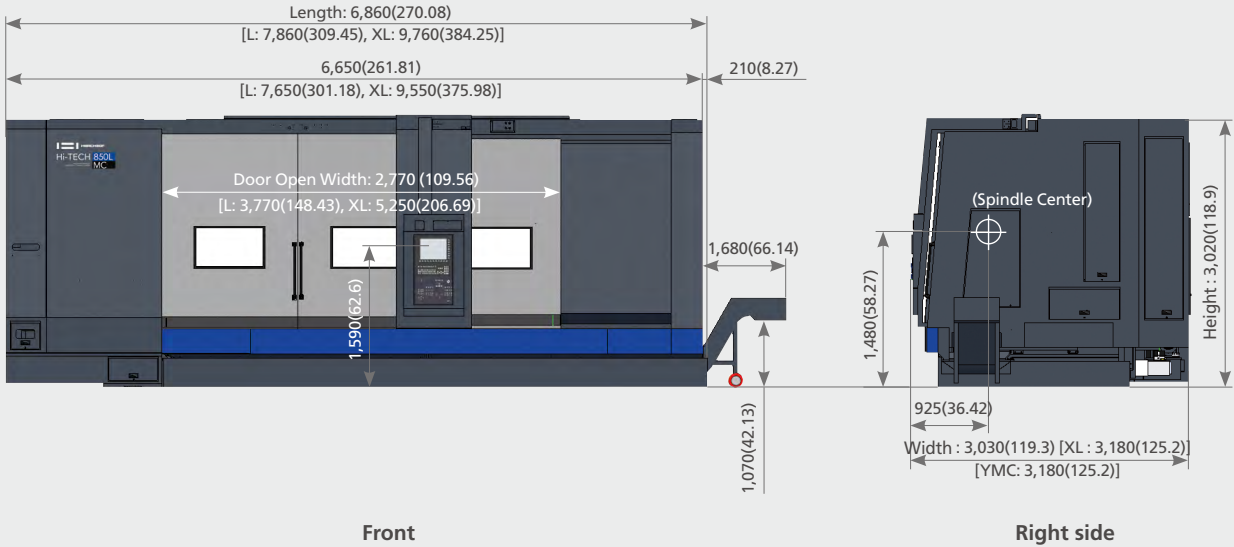
> When the LIMIT 2 Alarm sounds, the system stops the machine, and must be reset to operate it.



Product Data

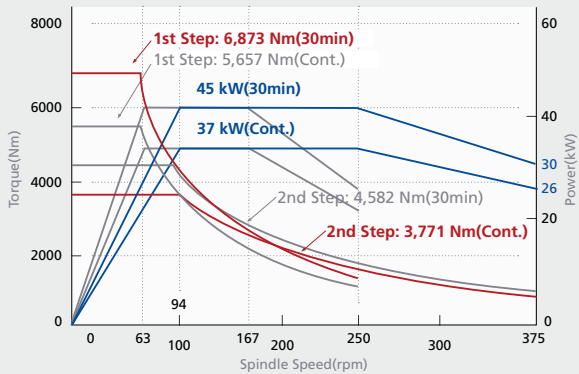
* Unit: mm(inch)

L : Long Bed
XL : Extra Long Bed

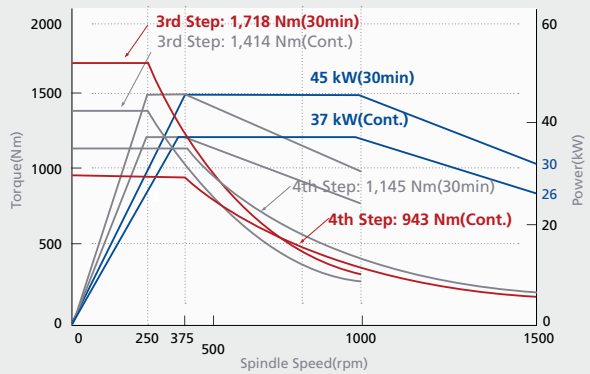


Spindle Power-Torque Diagram

1 / 2 Step (With 24" Chuck)



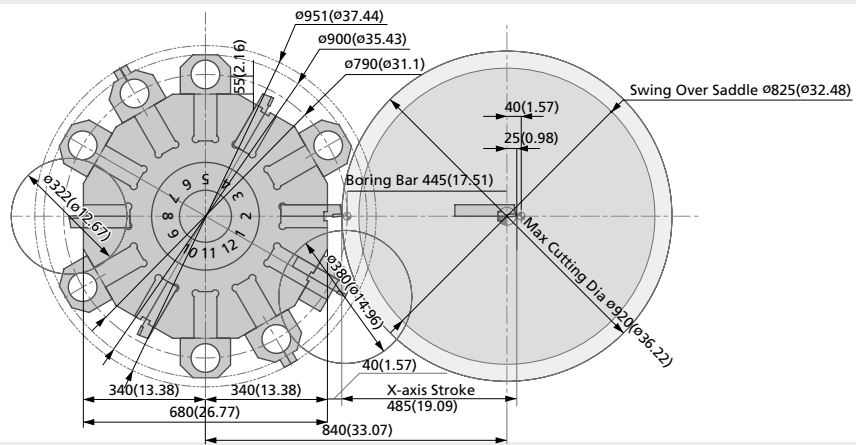
3 / 4 Step (With 24" Chuck)



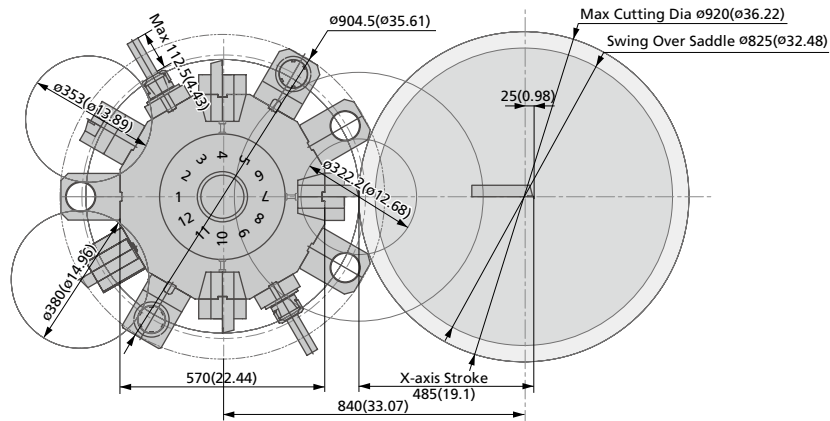
Tool Interference Diagram

※Unit : mm(inch)

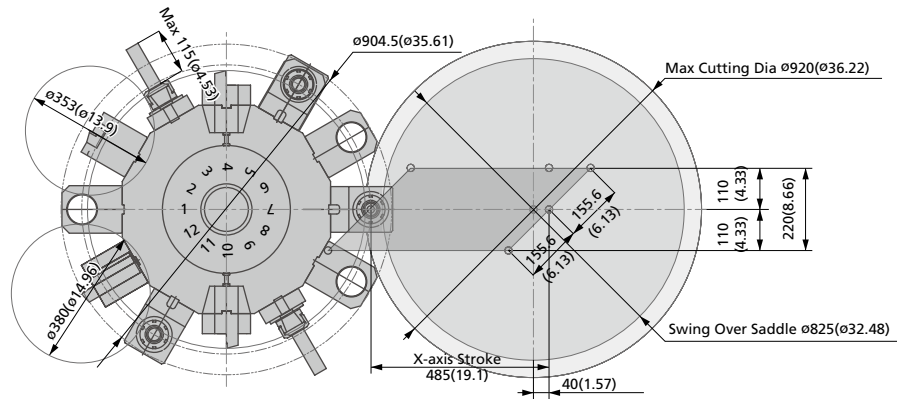
Standard Tool Interference



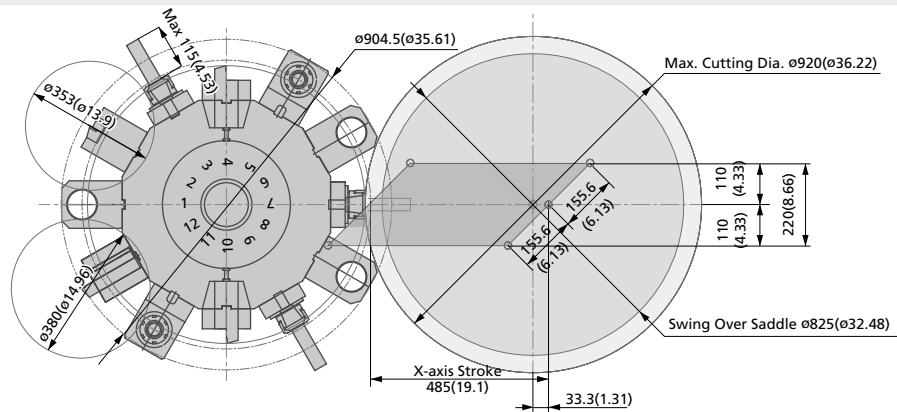
MC Tool Interference



YMC Radial Turnmill Holder

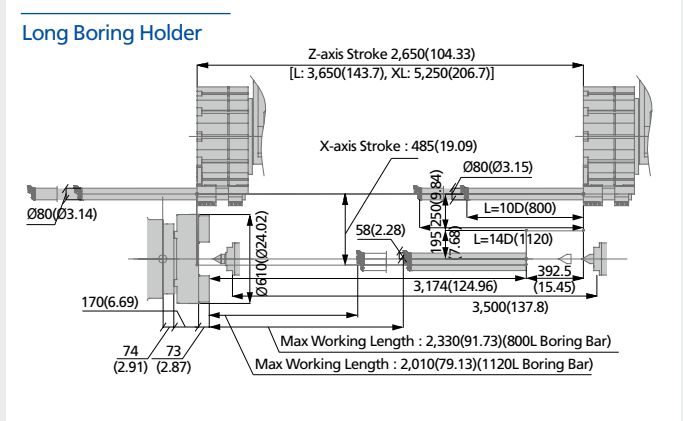
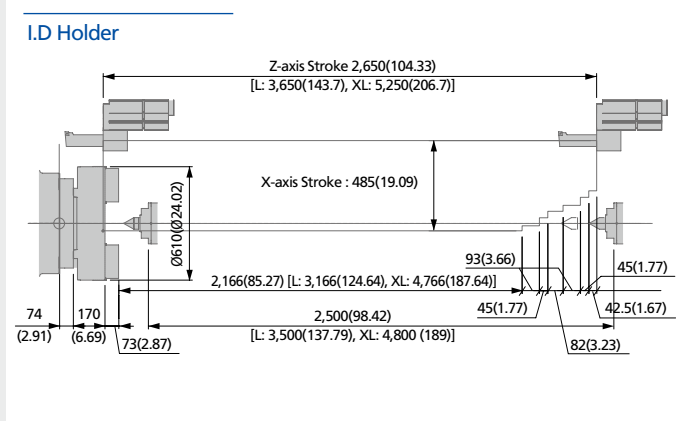
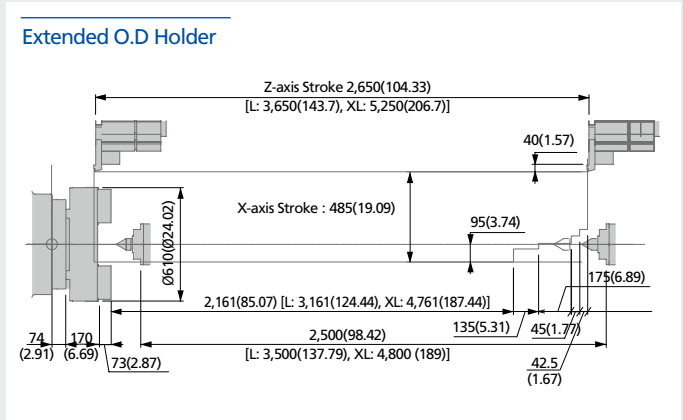
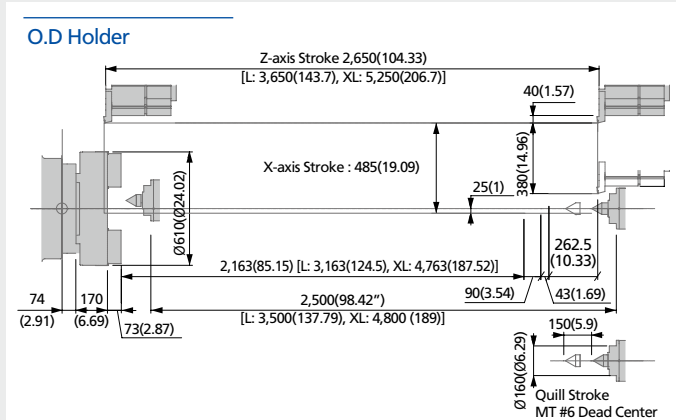


YMC Axial Turnmill Holder



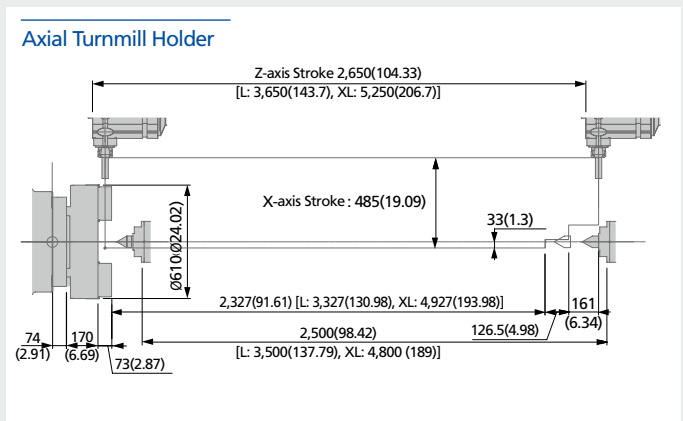
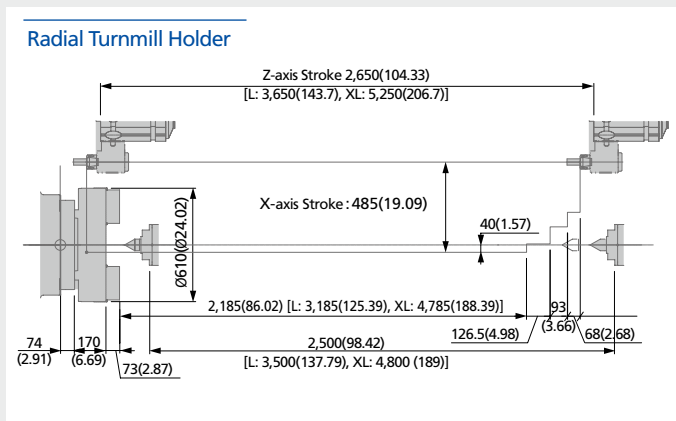
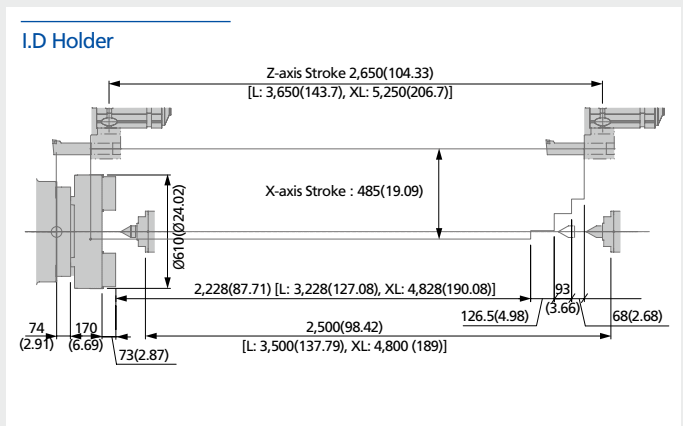
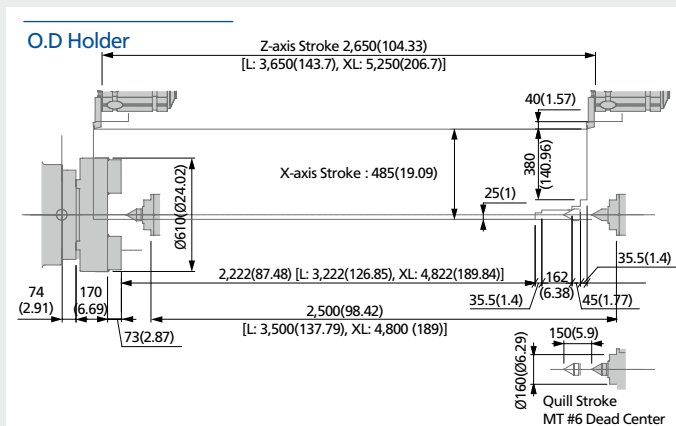
Moving Range
Standard

※Unit: mm(inch)



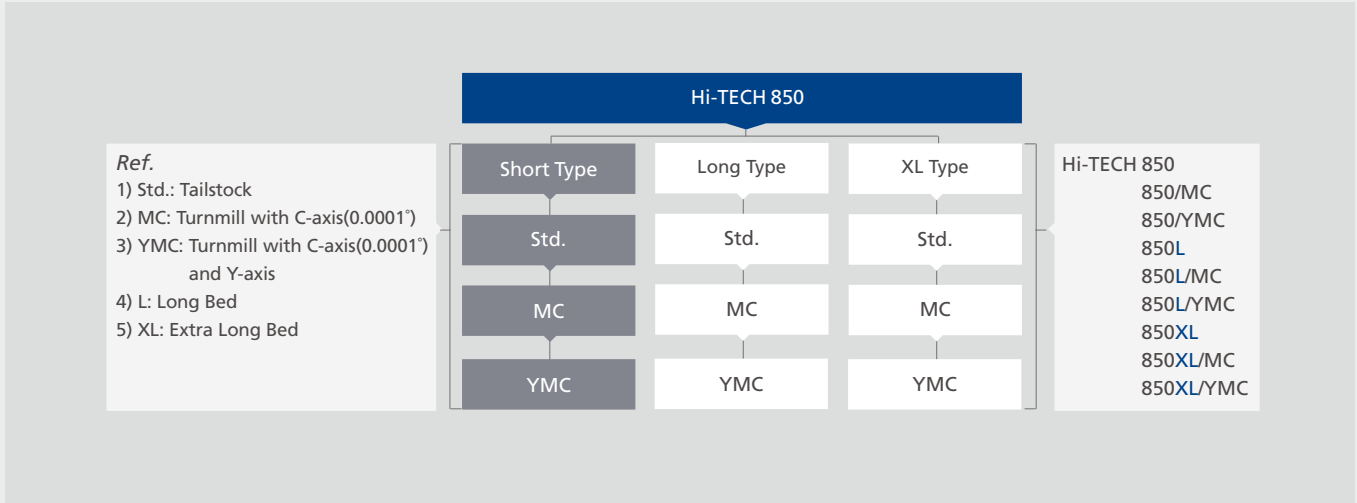
MC

※Unit: mm(inch)



Product Configuration

Each product can be configured to fit your application.



Machine Specifications

ITEM	Hi-TECH 850 SERIES						
	850 / 850MC	850YMC	850L / 850LMC	850LYMC	850XL / 850XLMC	850XLYMC	
Capacity							
Swing over Bed	mm (inch)	Ø1,050 (Ø41.34)					
Max Cutting Dia [Cutting Length]	mm (inch)	Ø920 (Ø36.22) [385 (15.16)]					
Standard Cutting Diameter	mm (inch)	Ø380 (Ø14.96)					
Max Cutting Length [Cutting Dia]	mm (inch)	2,500 (98.42) [Ø825 (Ø32.48)]	3,500 (137.79) [Ø825 (Ø32.48)]		5,100 (200.78) [Ø825 (Ø32.48)]		
Chuck Size (Opt)	inch	24 / 32					
Spindle							
Type of Spindle Nose	ASA	A2-15					
Max Spindle Speed	rpm	1,500 (24"Chuck: 1,400, 32"Chuck: 1,200)					
Through Spindle Hole Diameter	mm (inch)	Ø185 (Ø7.28)					
Max Bar Size	mm (inch)	Ø164 (Ø6.46)					
Spindle Bearing Inner Diameter	mm (inch)	Ø240 (Ø9.45)					
Spindle Motor	kW (HP)	45 / 37 (60 / 50)					
Turret							
Number of Tool Station	ea	12					
Tool Size	mm (inch)	□32 x Ø80 (□1.25 x Ø3)					
Turret Indexing Time	sec / step	0.3					
Axes							
Rapid Traverse (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)	10 / 9 / - (393.7 / 354.3 / -)	10 / 9 / 10 (393.7 / 354.3 / 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)	485 / 5,250 / - (19.1 / 206.7 / -)	485 / 5,250 / 220 (19.1 / 206.7 / 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)	6 / 9 / - (8 / 12 / -)	6 / 9 / 7 (8 / 12 / 9.3)
Tailstock							
Quill Dia	mm (inch)	Ø160 (Ø6.3)					
Quill Stroke	mm (inch)	150 (5.91)					
Quill Taper	MT	# 6					
Turnmill							
Spindle Motor	kW (HP)	11/7.5 (15/10)					
Max Spindle Speed	rpm	2,500					
Max Drill / Collet Size	mm (inch)	Ø32 (Ø1.25) / ER50					
Min Index Angle	deg	0.0001					
Tank Capacity							
Lubrication	ℓ (gal)	12 (3.17)					
Hydraulic	ℓ (gal)	50 (13.21)					
Coolant	ℓ (gal)	400 (105.67)	550 (145.3)		700 (184.9)		
Power Sources							
Electrical Power Supply	kVA	85					
Dimension							
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)	9,760 x 3,180 (384.25 x 125.2)	
Weight	kg _r (lb _r)	Std.: 22,000 (48,502) MC: 22,500 (49,604)	23,500 (51,809)	Std.: 25,600 (56,438) MC: 26,100 (57,541)	27,100 (59,745)	Std.: 30,000 (66,139) MC: 30,500 (67,241)	32,000 (70,548)
NC Controller							
Fanuc Oi-TF Plus							

Standard and Optional Product Components





Standard Accessories		Optional Accessories	
•Coolant System	•Lubrication System	•Air Blower	•Mist Collector
•Chuck Pressure Compensation	•Manual Guide i	•Air Gun	•NC Cooler
•Door Interlock	•Operation Manual & Parts List	•Arbitrary Speed Threading	•Oil Skimmer
•Dual Pressure (C-axis brake)	•Signal Lamp with 3 Colors (R, G, Y)	•Chip Conveyor & Box, Side Type	•Programmable Hy'd Steady Rest Base (Max. 2 Pieces)
•Foot Switch	•Spindle Air Curtain	•Chuck Clamp/Unclamp Confirm Switch	•Set of Hard Jaw (24"/32")
•High Pressure Coolant Pump, 0.6 MPa	•Spindle Cooling System	•Chuck Pressure Check Switch	•Set of Soft Jaw (24"/32")
•Hydraulic Cylinder	•Standard Turret, 12 Stations	•Coolant Gun	•Steady Rest Set (Max. Ø510mm)
•Hydraulic Unit	•Tailstock (MT#6)	•Dual Pressure (Chuck)	•Tool & Work Counter, External/Internal
•HLVC (Hwacheon Lathe Vibration Control)	- Tailstock Body Program	•Function of Y-axis (±110mm)	•Tool Presetter (Automatic)
•L-HTLD (Lathe-Hwacheon Tool Load Detect)	- Tailstock Quill Program	•High Pressure Coolant Pump, 1.5/ 3/ 7 MPa *For 7 MPa, only water soluble coolants are available	•Transformer
•L-CAL (Lathe Calculator Function)	•Tooling System	•Hydraulic Chuck, 24"/ 32"	•Turnmill Function Including C-axis (0.0001")
•L-COUNT (Work / Tool Counter Management)	•Tool Holder for Long Boring Bar, 1 Set	•Linear Scale (X/ Y/ Z)	•Turnmill Holder, Axial / Radial
•Leveling Bolt & Plate	•Tool Life Management	•Long Boring Bar Holder (Ø100)	•U-Drill Holder
	•Tool Kit & Box		•15" Touch type display (only FANUC)
	•Work Light		
	•15" Non touch display (only FANUC)		

NC Specifications [Fanuc Oi-TF Plus]

※ - : Not available S : Standard O : Option

Item	Specification	STD	MC	YMC	Item	Specification	STD	MC	YMC
Controlled Axis					Program Input				
Controlled Axis (Cs Axis)	2 - Axes	2-Axes	3-Axes	4-Axes	G Code System	A	S	S	S
Simultaneously Controlled Axes	2 - Axes	2-Axes	3-Axes	4-Axes	Programmable Data Input	G10	S	S	S
Least Input Increment	0.001 mm, 0.0001 deg, 0.0001 inch	S	S	S	Sub Program Call	10 folds nested	S	S	S
Least Input Increment 1 / 10	0.0001 mm, 0.00001 inch	O	O	O	Custom Macro B		S	S	S
Inch / Metric Conversion	G20, G21	S	S	S	Addition of Custom Macro -common Variables	#100 ~ #199, #500 ~ #999	S	S	S
Store Stroke Check 1		S	S	S	Canned Cycles		S	S	S
Store Stroke Check 2, 3		S	S	S	Multiple Repetitive Cycle		S	S	S
Chamfering on / off		S	S	S	Multiple Repetitive Cycle II		S	S	S
Backlash Compensation		S	S	S	Canned Cycles for Drilling		S	S	S
Operation					Manual Guide i		S	S	S
Automatic & MDI Operation		S	S	S	Spindle Speed Function				
Program Number Search		S	S	S	Constant Surface Speed Control	G96 / G97	S	S	S
Sequence Number Search		S	S	S	Spindle Override	0 ~ 150%	S	S	S
Dry Run, Single Block		S	S	S	Spindle Orientation		S	S	S
Manual Handle Feed	1Unit	S	S	S	Rigid Tapping		S	S	S
Manual Handle Feed Rate	x1, x10, x100	S	S	S	Spindle Synchronous Control		-	-	-
Interpolation Function					Tool Function / Compensation				
Positioning	G00	S	S	S	Tool Function	T4-digits	S	S	S
Linear Interpolation	G01	S	S	S	Tool Offset Pairs	128 pairs	S	S	S
Circular Interpolation	G02,G03	S	S	S	Tool Nose Radius Compensation		S	S	S
Dwell (Per Seconds)	G04	S	S	S	Tool Geometry / Wear Compensation		S	S	S
Polar Coordinate Interpolation	G12.1 / G13.1	-	S	S	Tool Life Management		S	S	S
Cylindrical Interpolation	G7.1	-	S	S	Automatic Tool Offset		S	S	S
Threading	G32	S	S	S	Direct Input Tool Offset Value Measured B	Tool presetter option is required	S	S	S
Multiple Threading		S	S	S	Editing Operation				
Continuous Threading		S	S	S	Part Program Storage Length	5,120 m (2MB)	S	S	S
Threading Retract		S	S	S	Number of Register Able Programs	Max.1000 ea	S	S	S
Variable Lead Threading	G34	S	S	S	Background Editing		S	S	S
Ref Position Return 1st	G28	S	S	S	Extended Part Program Editing		S	S	S
Ref Position Return Check	G27	S	S	S	Play Back		S	S	S
2 / 3 / 4th Ref Position Return	G30	S	S	S	Operation / Display				
Arbitrary Speed Threading		O	O	O	Clock Function		S	S	S
Feed Function					Self-diagnosis Function		S	S	S
Rapid Traverse Override	F0, F25, F50, F100	S	S	S	Alarm History Display		S	S	S
Feed Per Minute (mm/min)	G98	S	S	S	Help Function		S	S	S
Feed Per Revolution (mm/rev)	G99	S	S	S	Run Hour and Parts Count Display		S	S	S
Rapid Traverse Bell-shaped Acceleration / Deceleration		S	S	S	Graphic Function		S	S	S
Feedrate Override	0 ~ 150%	S	S	S	Multi-language Display		S	S	S
Jog Feed Override	0 ~ 1,260 mm/min	S	S	S	Korean, English, German, French, Italian, Chinese, Spanish, Portuguese, Polish, Hungarian, Swedish, Russian				
Program Input					Data Input / Output				
Tape Code	EIA / ISO	S	S	S	Ethernet Interface		S	S	S
Optional Block Skip	9 ea	S	S	S	Memory Card Interface		S	S	S
Program Number	04-digits(1-9999)	S	S	S	USB Card Interface		S	S	S
Sequence Number	N8 - Digits	S	S	S	Others				
Decimal Point Programming		S	S	S	Display Unit	15" Non touch display	S	S	S
Coordinate System Setting	G50	S	S	S	Fanuc i-HMI	15" Touch type display	O	O	O
Coordinate System Shift		S	S	S	Others				
Workpiece Coordinate System (G52 ~ G59)		S	S	S	L-HTLD (Hwacheon Tool Load Detect System)		S	S	S
Workpiece Coordinate System Preset (G92.1)		S	S	S	L-CAL (Lathe Calculator Function)		S	S	S
Direct Drawing Dimension Programming		S	S	S	L-COUNT (Work / Tool Counter Management)		S	S	S
					HLVC (Hwacheon Lathe Vibration Control)		S	S	S
					M-VISION Pro		O	O	O

Hwacheon Global Network

 Hwacheon Headquarter  Hwacheon America  Hwacheon Europe  Hwacheon Asia



HWACHEON

Please contact us for product inquiries.

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

HWACHEON MACHINE TOOL CO., LTD.

123-17, HANAMSANDAN 4BEON-RO, GWANGSAN-GU, GWANGJU, KOREA
TEL: +82-62-951-5111 FAX: +82-62-951-0086

SEOUL OFFICE

46, BANGBAE-RO, SEOCHO-GU, SEOUL, KOREA
TEL: +82-2-523-7766 FAX: +82-2-523-2867

USA

HWACHEON MACHINERY AMERICA, INC.

555 BOND STREET, LINCOLNSHIRE, ILLINOIS, 60069, USA
TEL: +1-847-573-0100 FAX: +1-847-573-9900

SINGAPORE

HWACHEON ASIA PACIFIC PTE. LTD.

21 BUKIT BATOK CRESCENT, #08-79 WCEGA TOWER,
658065, SINGAPORE
TEL: +65-6515-4357 FAX: +65-6515-4358

VIETNAM

HWACHEON MACHINE TOOL VIETNAM CO., LTD.

HCM: TRAINING CENTER, KCM CAO, Q.9, HCMC, VIET NAM
TEL: +84-28-6275-7011
HN: SO 11, D. HUU NGHI, VSIP BAC NINH, VIET NAM
TEL: +84-22-2390-8981

GERMANY

HWACHEON MACHINERY EUROPE GMBH

JOSEF-BAUMANN STR. 25, 44805, BOCHUM, GERMANY
TEL: +49-234-912-816-0 FAX: +49-234-912-816-60

INDIA

HWACHEON MACHINE TOOL INDIA PVT. LTD.

LUNKAD SKY VISTA, UNIT NO.202, 2ND FLOOR PLOT NO.84,
LOHEGAON, VIMAN NAGAR, PUNE 411014, INDIA
TEL: +91-96-73-986633

CHINA

HWACHEON MACHINE TOOL CHINA CO., LTD.

B03A LIANGUAN JUHE INTERNATIONAL HARDWARE CITY, NO.
143 ZHENANZHONG ROAD, JINXIA, CHANGAN TOWN,
DONGGUAN CITY, GUANDONG PROVINCE, CHINA #523852
TEL: +86-769-8932-0601 FAX: +86-769-8932-0602