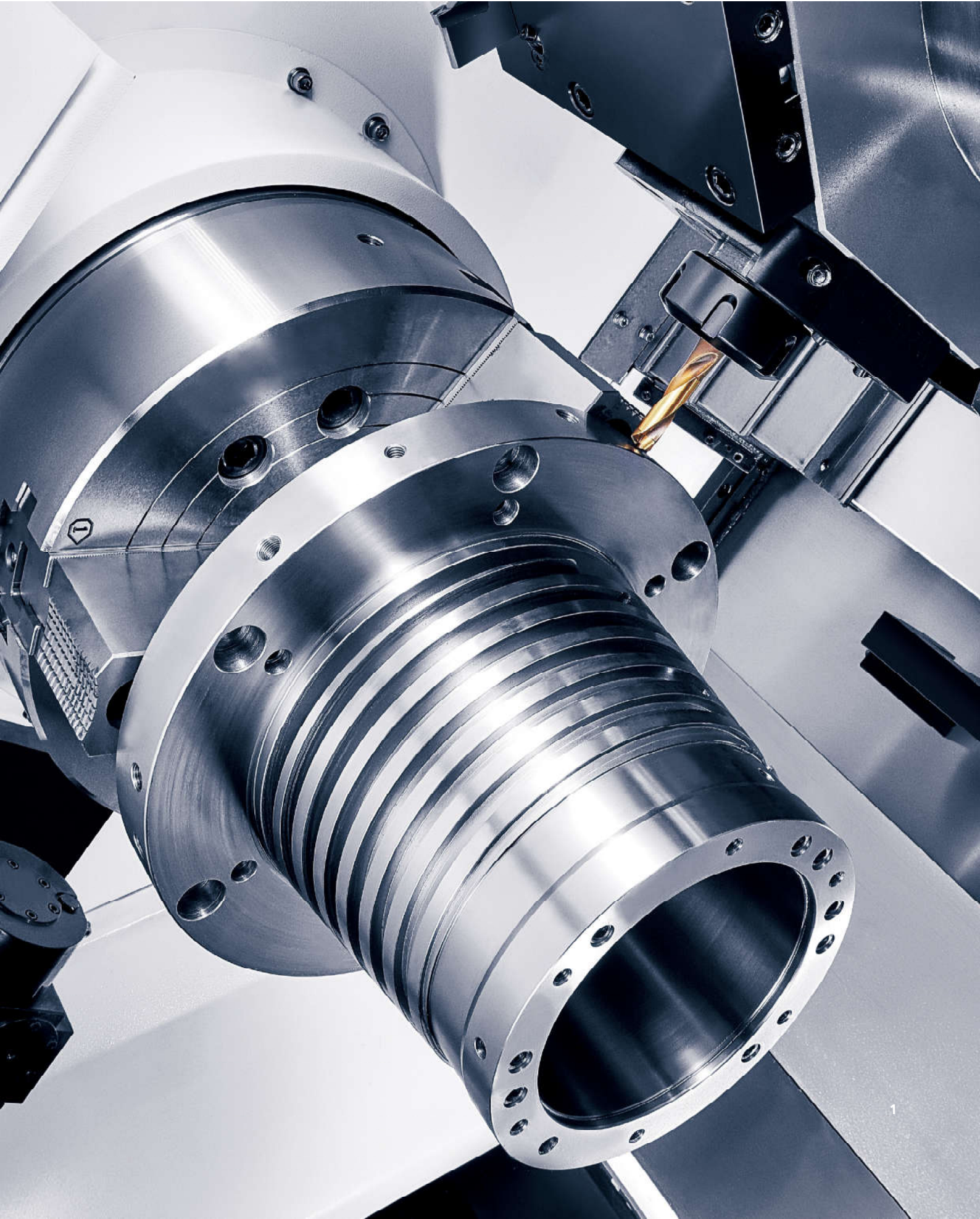




# Hi-TECH 700

Extra-Large Horizontal Turning Center



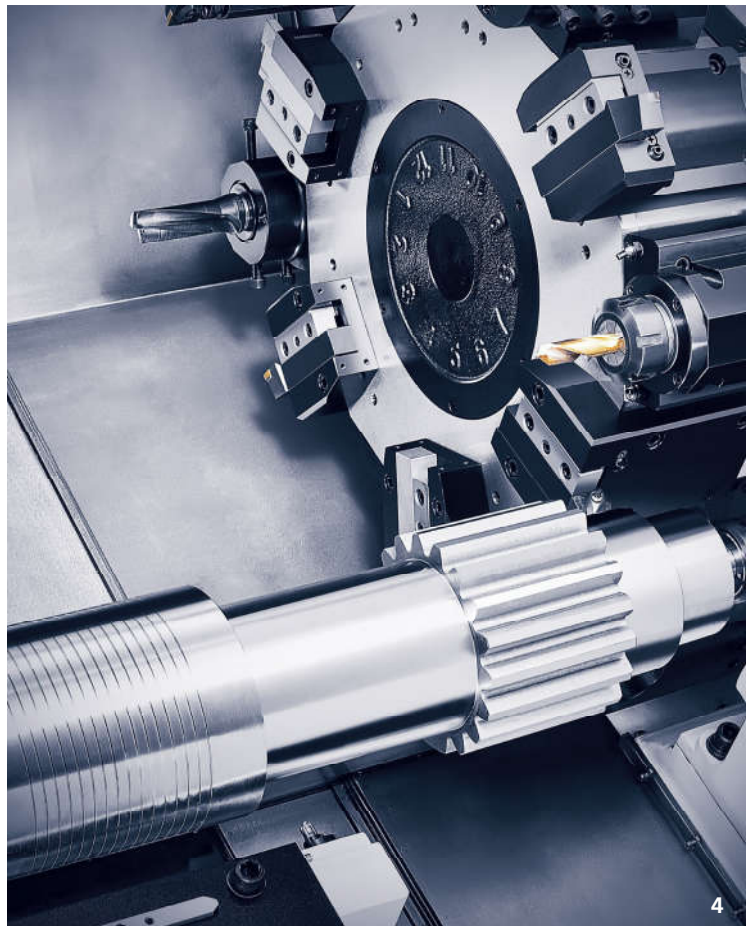
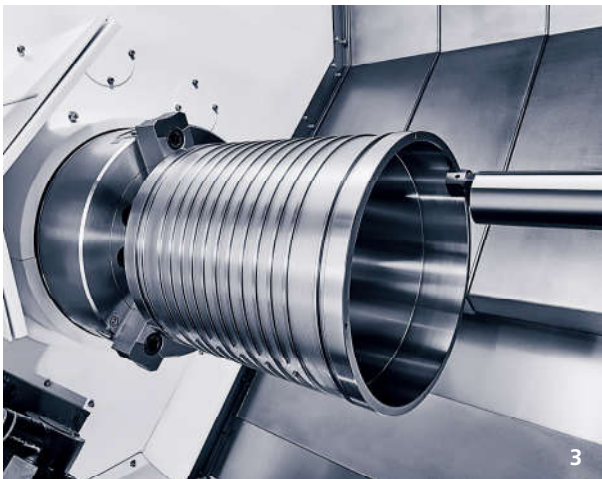
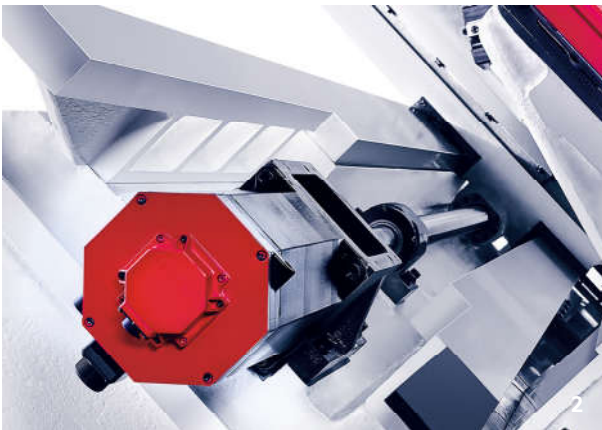


# HEAVY-DUTY HORIZONTAL TURNING CENTER

## Best structure for Heavy Duty Turning

Hi-TECH 700 is capable of handling heavy duty turning and milling in a single process. Its 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 Spindle Housing / Sample / SM45C    2 Box way slide  
3 Motor Housing / Machine Tool Industry / SM45C    4 Customization Design



# HIGH PERFORMANCE EXTRA-LARGE TURNING CENTER

Hi-TECH 700 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, Hwacheon's advanced, patented design prevents deterioration of the workpiece from thermal displacement





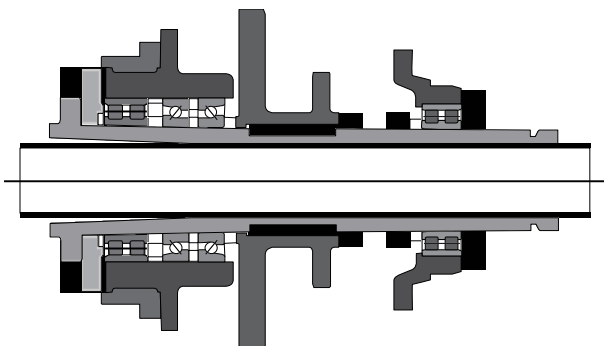
### Hand-Scraped to Perfection

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.

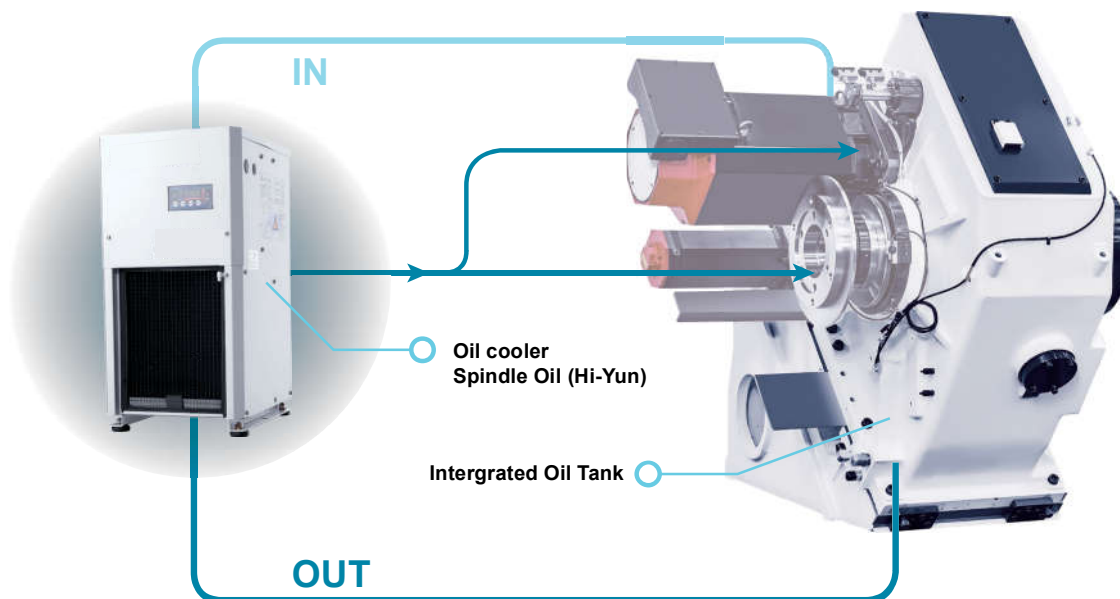


### Box Way Design

Hi-TECH 700's box way guide design improves rigidity and precision after many hours of continued operation.



- Ultra-precision(Ø180mm(7.09")) double row of cylindrical roller bearings in the front and duplex angular thrust bearings ensure excellent stabilities for heavy duty cutting
- By adopting the powerful spindle motor 37kW(Opt. 45kW). Heavy duty cutting and abnormal workpiece can be possible with superior machining



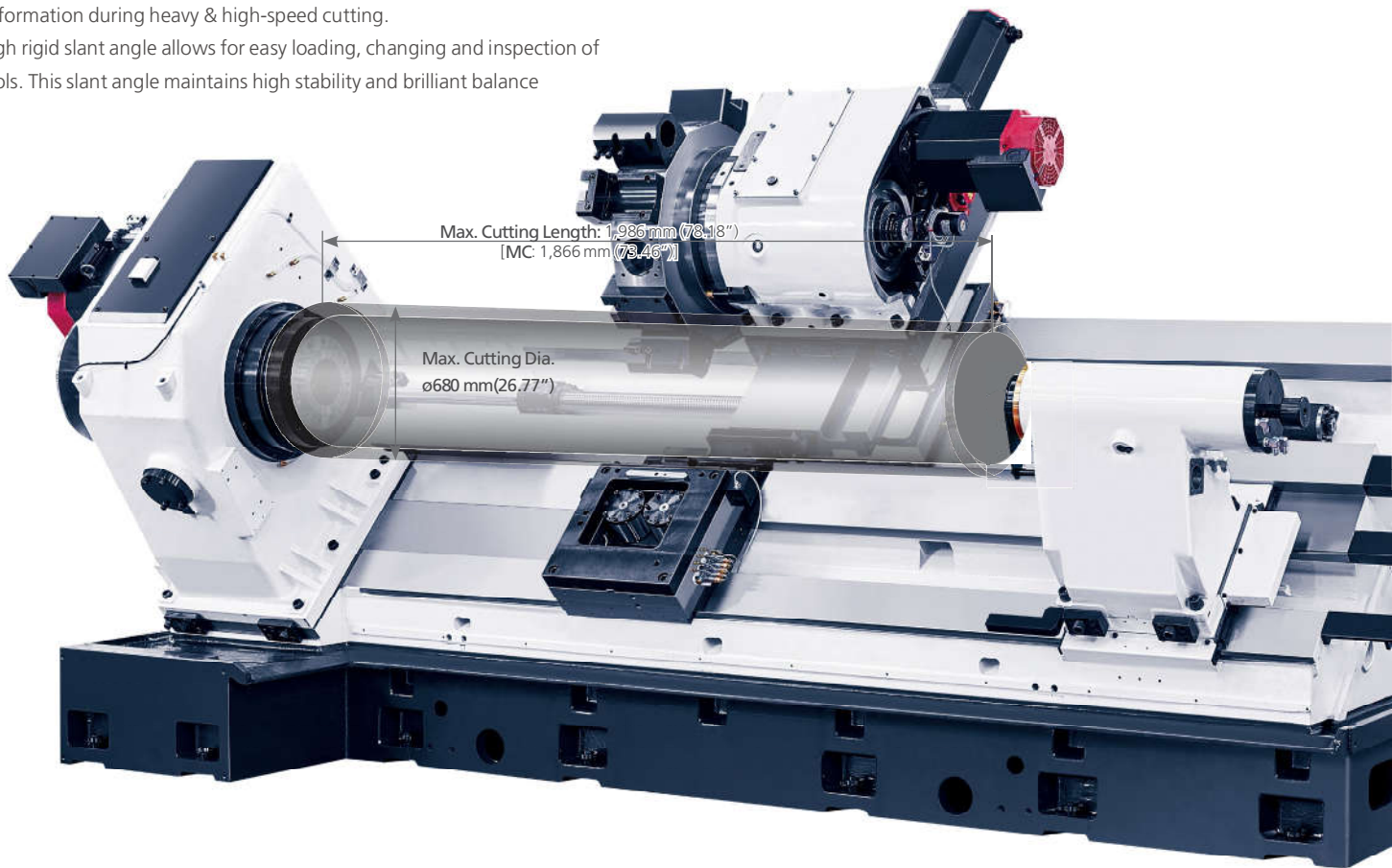
-The thermal deformation of the spindle is minimized. Because generated heat is removed by Jet Lubrication system as well as circulating jacket inside. For this reason, the accuracy of the machining is raised and constantly stabilized.

<b>Chuck Size(inch)</b>	: 15"(Opt. 18"/21"/24")
<b>Type of Spindle Nose(ASA)</b>	: A2-11
<b>Max. Spindle speed(rpm)</b>	: 1,800
<b>Spindle Motor power(kW/HP)</b>	: 37/30(50/40)

## High Rigid, Stable Bed Frame

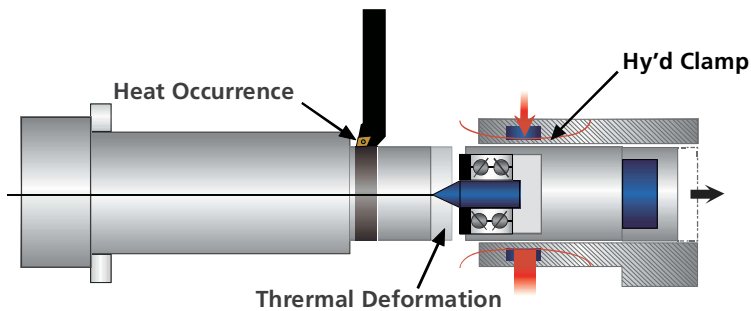
The heavily ribbed torque tube design processed with fine grain meehanite prevents twisting and deformation. This design ensure high rigidity with no deformation during heavy & high-speed cutting.

High rigid slant angle allows for easy loading, changing and inspection of tools. This slant angle maintains high stability and brilliant balance



## The Programmable Hydraulic Tailstock (Standard)

The tailstock can be programmed to position itself in semi-auto, and it provides firm support for extra-long workpieces to guarantee machining precision. The built-in Tailstock can be operated either by the foot switch or by programming, while providing firm, stable oil-pressure chucking.



- The quill is activated by foot pedal or program.
- The Tailstock Body is activated by program.
- Absorbed thermal deformation ensures high precision machining

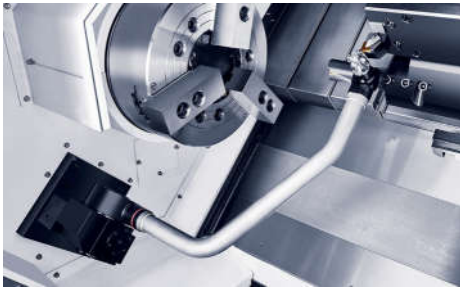


Quill Dia.	: Ø150mm(Ø5.9")
Quill Stroke	: 150mm(5.9")
Tailstock Stroke	: 1,878mm(73.93")
Quill Taper	: MT#5



# USER FRIENDLY DESIGN, A WIDE RANGE OF OPTIONAL FEATURES

Hi-TECH 700 is designed to be user friendly, so you can concentrate on what you do best: creating quality products—without losing your valuable time to the worries of machine failure and safety. A wide variety of performance upgrade options are available for faster, more precise machining.



### Tool Presetter (Option)

The tool presetter employs a highly accurate sensor to precisely compute for the coordinate settings in less than 15 seconds per tool. Different tool shapes and their tolerance values are entered automatically for the coordinate calculations.

### 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

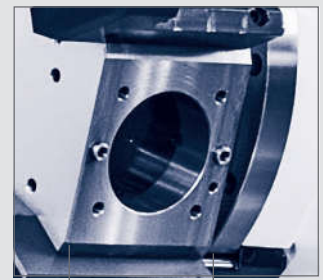
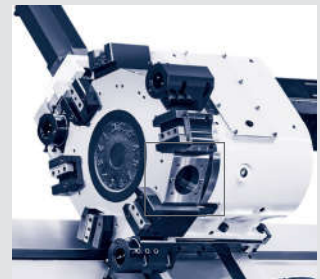
> When the LIMIT 1 Alarm sounds, the system holds the feed and the machine goes into standby.

#### 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.

### Wide type Turret Disk (Option)



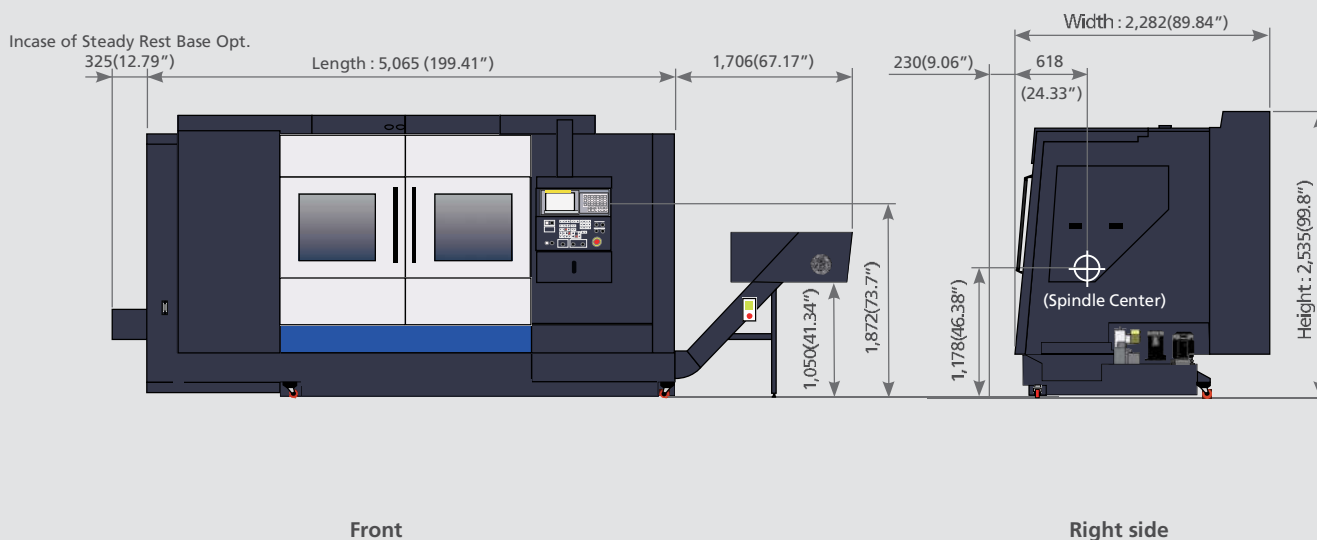
Width of Turret Disk

Std. type Turret Disk	: 135mm(5.31")
<b>Wide type Turret Disk</b>	<b>: 200mm(7.87")</b>
MC type Turret Disk	: 166mm(6.53")
<b>Wide type Turret Disk</b>	<b>: 200mm(7.87")</b>



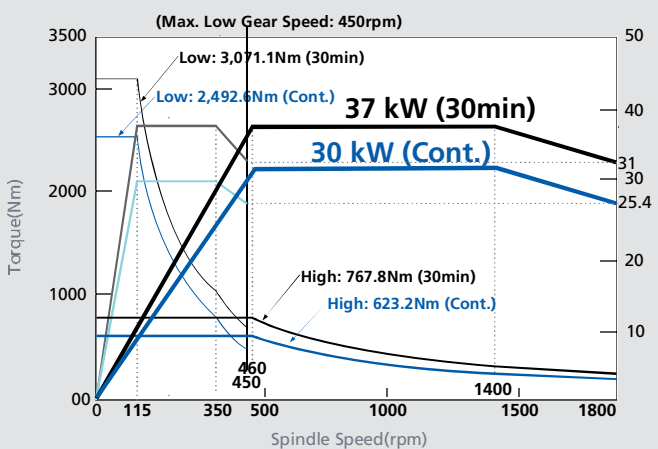
Product Data

\* Unit: mm(inch)

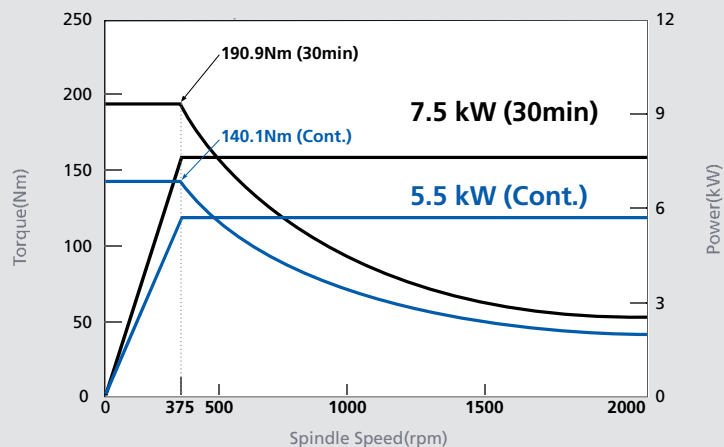


Spindle Power-Torque Diagram

Hi-TECH 700 / Std.



Hi-TECH 700 / MC (Turnmil)

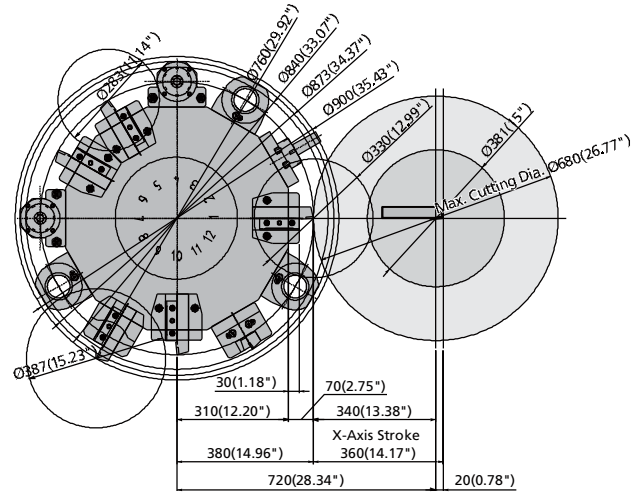
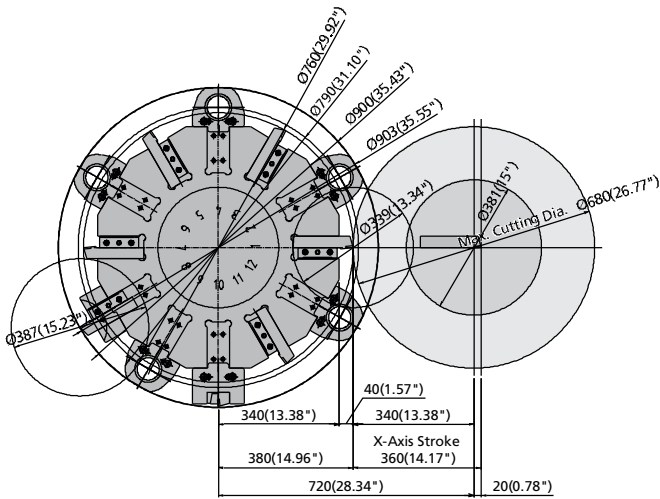


### Tool Interference Diagram

※ Unit: mm(inch)

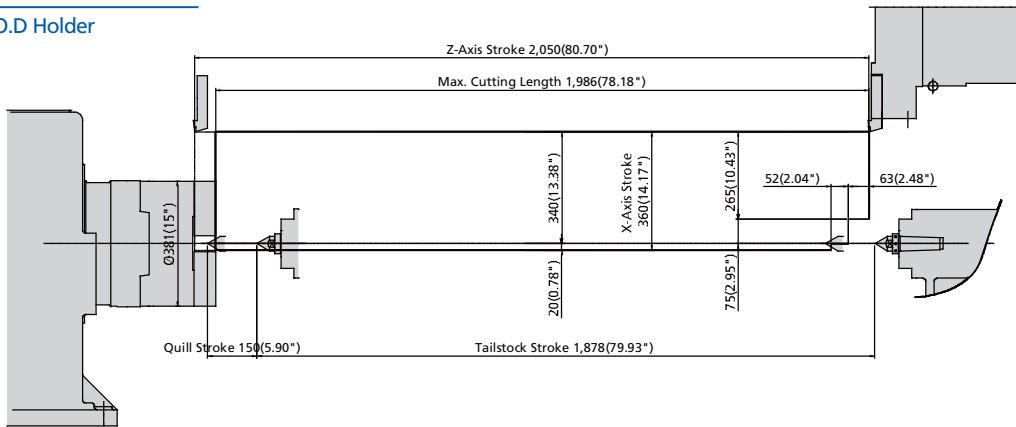
Hi-TECH 700 /Std.

Hi-TECH 700/MC

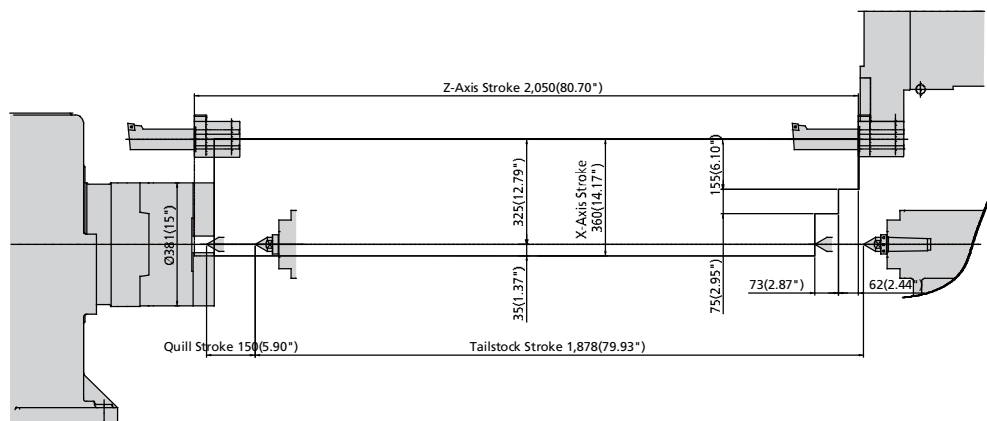


### Moving Range Standard

O.D Holder



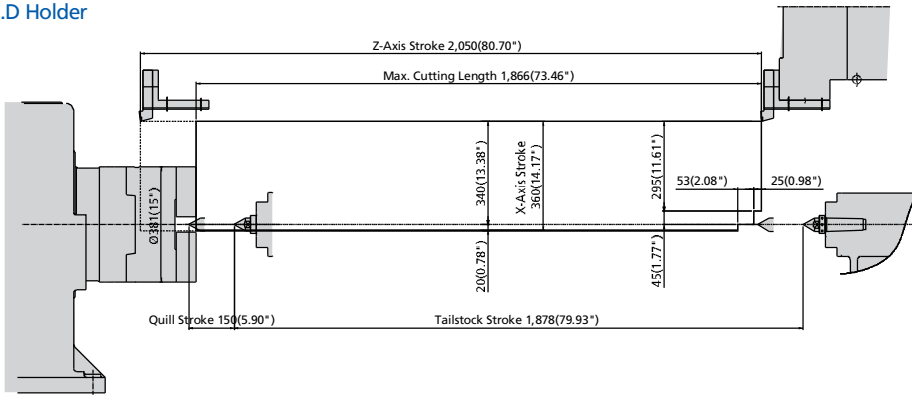
I.D Holder



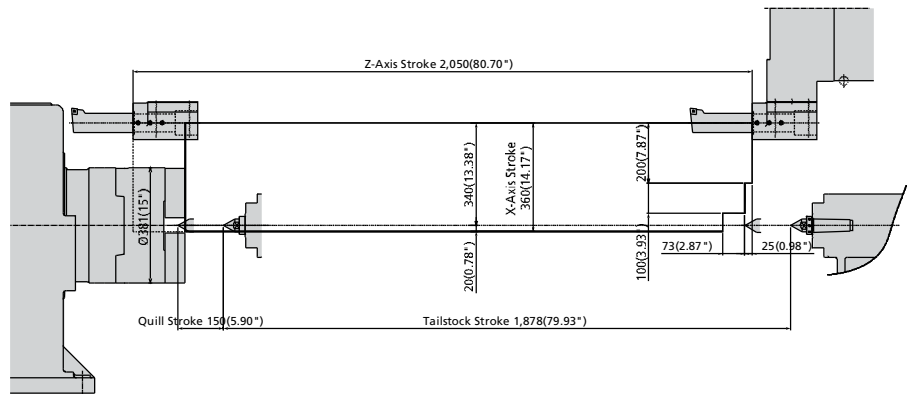
**Moving Range**  
**MC**

※Unit: mm(inch)

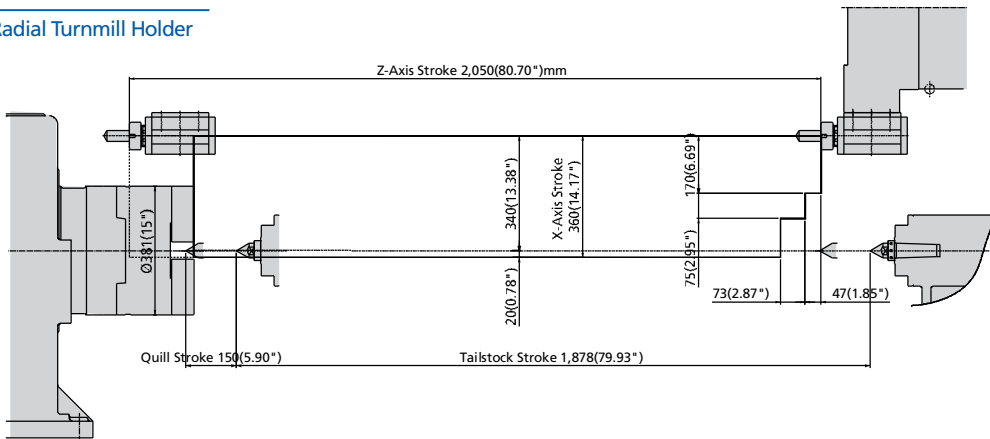
**O.D Holder**



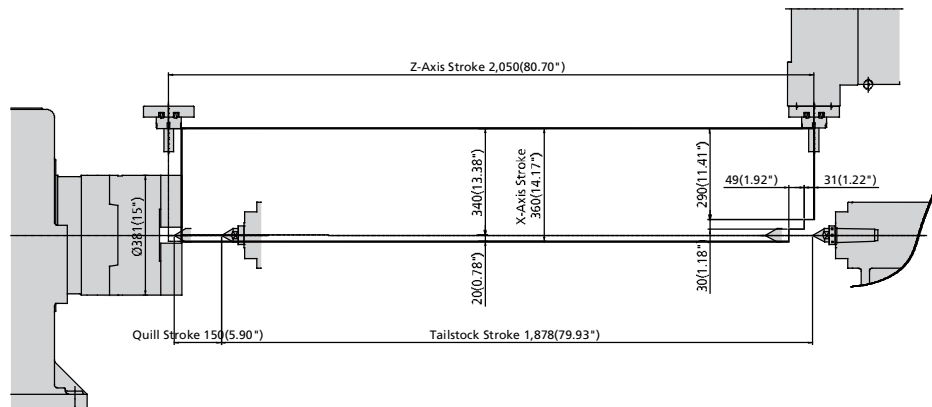
**I.D Holder**



**Radial Turnmill Holder**

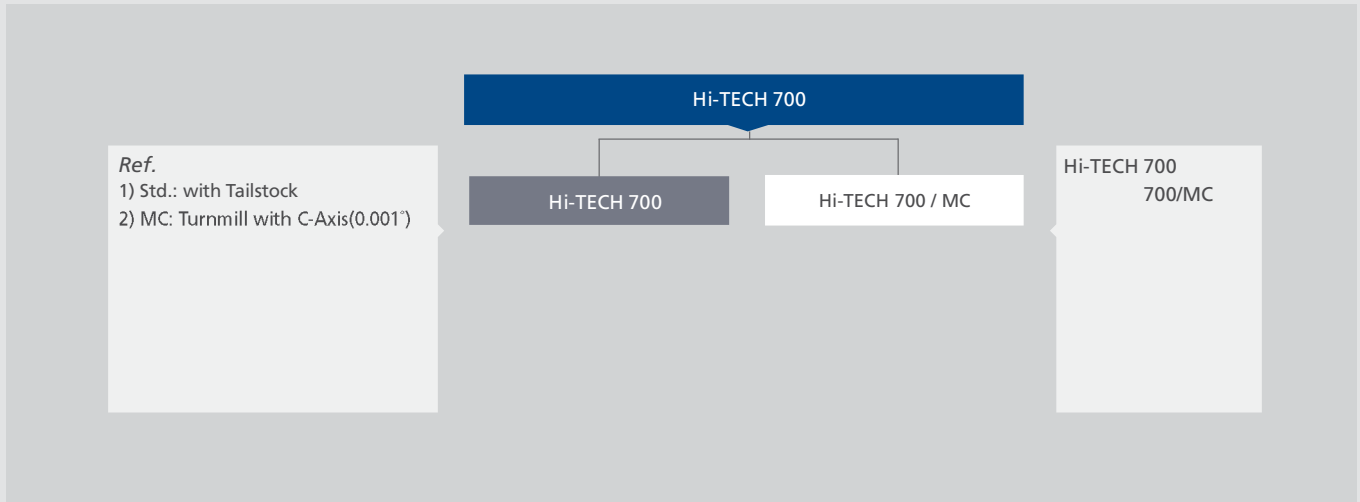


**Axial Turnmill Holder**



## Product Configuration

Each product can be configured to fit your application.



## Machine Specifications

ITEM	HI-TECH 700 SERIES	
	HI-TECH 700	HI-TECH 700/MC
<b>Capacity</b>		
Swing over Bed	mm (inch)	Ø900 (Ø35.43")
Max. Cutting Dia.	mm (inch)	Ø680 (Ø26.77")
Standard Cutting Dia.	mm (inch)	Ø387 (Ø15.23")
Max. Cutting Length	mm (inch)	1,986 (78.18")
Chuck Size	inch	15"
<b>Spindle</b>		
Type of Spindle Nose	ASA	A2-11
Max. Spindle Speed	rpm	1,800
Through Spindle Hole Dia.	mm (inch)	Ø132 (Ø5.2")
Max. Bar Size	mm (inch)	Ø116 (Ø4.56")
Spindle Bearing Inner Dia.	mm (inch)	Ø180 (Ø7.09")
Spindle Motor	kW (HP)	37 / 30 (50 / 40)
<b>Turret</b>		
Number of Tool Station	ea	12
Tool Size	mm (inch)	□32 × Ø60 (□1.25" × Ø2.5")
Turret Indexing Time	sec / step	0.4
<b>Axes</b>		
Rapid Speed (X / Z)	m/min (ipm)	18/18
Max. Stroke (X / Z)	mm (inch)	360/2,050(14.17"/80.70")
Feed Motor (X / Z)	kW (HP)	6 / 6 (8 / 8)
<b>Tailstock</b>		
Quill Dia.	mm (inch)	Ø150 (Ø5.9")
Quill Stroke	mm (inch)	150 (5.9")
Quill Taper	MT	# 5
<b>Turnmill (MC)</b>		
Spindle Motor	kW (HP)	-
Max. Spindle Speed	rpm	2,000
Max. Drill / Tap Size	mm (inch)	Ø32 (Ø1.26") / M24
Min. Index Angle	° (deg)	0.001°
<b>Tank Capacity</b>		
Lubrication	ℓ (gal)	12 (3.2)
Hydraulic	ℓ (gal)	50 (13.2)
Coolant	ℓ (gal)	300(79)
<b>Power Sources</b>		
Electrical Power Supply	kVA	75
<b>Dimension</b>		
Height	mm (inch)	2,535 (99.8")
Floor Space (L x W)	mm (inch)	5,065x2,282(199.41"x89.84")
Weight	kg <sub>r</sub> (lb <sub>r</sub> )	15,000(33,069)
<b>NC Controller</b>		
Fanuc 0i-TF		

## Standard and Optional Product Components

Standard Accessories		Optional Accessories	
• Coolant System	• Tailstock with Dead Center (MT#5)	• Air Blower	• Oil Skimmer
• Door Interlock	- Tailstock Body Program	• Air Gun	• Set of Hard Jaw (15" / 18" / 21" / 24")
• Foot Switch	- Tailstock Quill Program	• Bar Feeder Interface	• Signal Lamp with 3 Colors (R, G, Y)
• Hydraulic Chuck&Cylinder, 15"Hollow	• Tooling System	• Chip Conveyor & Box, Side Type	• SpindleMotor Upgrade, 45/37kW (60/50HP)
• Hydraulic Unit	• Tool Kit & Box	• Chuck Dual Pressure	• Tool & Work Counter, External/ Internal
• Leveling Bolt & Plate	• Work Light	• Chuck Pressure Check Switch	• Tool Life Management
• Lubrication System	• 10.4" Color LCD	• Chuck Pressure Compensation	• Tool Presetter (Automatic)
• Manual Guide i		• Coolant Gun	• Transformer
• Operation Manual & Parts List		• High Pressure Coolant, 6/ 15/ 30/ 70bar	• Turnmill Function Including C-axis
• Signal Lamp with 2 Colors (R, G)		• Hydraulic Chuck, 18" / 21" / 24"	(0.001°)
• Spindle Air Curtain		• Hydraulic Steady Rest Base Set	• Turnmill Holder, Axial / Radial
• Spindle Cooling System		• Hydraulic Steady Rest Set	• Turret for VDI 60
• Standard Turret, 12 Stations		• L-HTLD	• U-Drill Holder
		(Lathe-Hwacheon Tool Load Detect)	• Wide Type Turret Disk-BMT75
		• NC Cooler	• 15" Color LCD (only FANUC)

## NC Specifications [Fanuc Oi-TF]

※ - : Not available S : Standard O : Option

ITEM	SPECIFICATION	Std.	MC
<b>Controlled axis</b>			
Controlled axis (Cs axis)	2-Axes	2-Axes	3-Axes
Simultaneously controlled axes	2-Axes	2-Axes	3-Axes
Least input increment	0.001mm, 0.001deg, 0.0001inch	S	S
Least input increment 1/10	0.0001mm, 0.0001deg, 0.00001inch	O	O
inch/metric conversion	G20, G21	S	S
Stored stroke check 1,2,3		S	S
Chamfering on/off		S	S
Backlash compensation		S	S
<b>Operation</b>			
Automatic & MDI operation		S	S
Program number search		S	S
Sequence number search		S	S
Dry run, single block		S	S
Manual handle feed	1Unit	S	S
Manual handle feed rate	x1, x10, x100	S	S
<b>Interpolation function</b>			
Positioning	G00	S	S
Linear interpolation	G01	S	S
Circular interpolation	G02, G03	S	S
Dwell (Per seconds)	G04	S	S
Polar coordinate interpolation	G12.1 / G13.1	-	S
Cylindrical interpolation	G7.1	-	S
Threading	G32	S	S
Continuous threading		S	S
Multiple threading / Threading Retract		S	S
Variable lead threading	G34	S	S
Reference position return 1st	G28	S	S
Reference position return check	G27	S	S
2,3,4th reference position return	G30	S	S
Arbitrary speed threading		O	O
<b>Feed function</b>			
Rapid traverse override	F0, F25, F50, F100	S	S
Feed per minute (mm/min)	G98	S	S
Feed per revolution (mm/rev)	G99	S	S
Rapid traverse bell-shaped acceleration/deceleration		S	S
Feedrate override	0-150 %	S	S
Jog feed override	0-1,260 mm/min	S	S
<b>Tool function / compensation</b>			
Tool function	T4-digits	S	S
Tool offset pairs	128 pairs	S	S
Tool nose radius compensation		S	S
Tool geometry / wear compensation		S	S
Tool life management		O	O
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

ITEM	SPECIFICATION	Std.	MC
<b>Program input</b>			
Tape code	EIA / ISO	S	S
Optional block skip	9 ea	S	S
Program number	O4-Digits	S	S
Sequence number	N8-Digits	S	S
Decimal point programming		S	S
Coordinate system setting	G50	S	S
Coordinate system shift		S	S
Workpiece coordinate system	G54-G59	S	S
Workpiece coordinate system preset	G92.1	S	S
Direct drawing dimension programming		S	S
G code system	A	S	S
Programmable data input	G10	S	S
Sub program call	10 folds Nested	S	S
Custom macro B		S	S
Addition of custom macro -common variables	#100-#199, #500-#999	S	S
Canned cycles		S	S
Multiple repetitive cycle		S	S
Multiple repetitive cycle II		S	S
Canned cycles for drilling		S	S
Manual Guide i		S	S
<b>Spindle speed function</b>			
Constant surface speed control	G96 / G97	S	S
Spindle override	50-120 %	S	S
Spindle orientation		S	S
Rigid tapping		O	S
<b>Editing operation</b>			
Part program storage length	1,280m (512 kB)	S	S
Number of register able programs	400 ea	S	S
Background editing		S	S
Extended part program editing		S	S
Play back		S	S
<b>Operation / Display</b>			
Clock function		S	S
Self-diagnosis function		S	S
Alarm history display / Help function		S	S
Run hour and parts count display		S	S
Graphic function		S	S
Dynamic graphic display		O	O
Multi-language display	Korean, English, German, French, Italian, Chinese, Spanish, Portuguese, Polish, Hungarian, Swedish, Russian	S	S
<b>Data input/output</b>			
Reader / Puncher interface CH1, CH2	RS232C	S	S
Ethernet interface		S	S
Memory card interface		S	S
USB card interface		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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