

# 4000 Series

L4000/M/L/LM | L4000C/MC/LC/LMC

HYUNDAI WIA Heavy Duty CNC Turning Center

# Technical Leader

The CNC Turning Center L4000 series, designed by Hyundai WIA with years of expertise and the latest technology, is a Turning Center that maximizes productivity and performance.

MODEL	Chuck Size			Bed		Turret		
	15"	18"	21"	Standard	Long	10 Stations	12 Stations	Mill Turret
L4000	●	○		●		●	○	
L4000L	●	○			●	●	○	
L4000M	●	○		●			●	●
L4000LM	●	○			●		●	●
L4000C			●	●		●	○	
L4000LC			●		●	●	○	
L4000MC			●	●			●	●
L4000LMC			●		●		●	●

●: Standard ○: Option

# 4000 Series

Heavy-Duty Cutting and Large Work Capacity, CNC Turning Center

- Box guideways for heavy-duty cutting
- One-piece bed structure with high rigidity
- Stabilized main spindle structure to minimize thermal displacement
- Specialized in heavy cutting by applying 2-Step gear box type main spindle (Max. Torque Opt. 3,378 N·m)



# 01 BASIC STRUCTURE

High Rigidity Bed & Structure for Heavy Duty Cutting CNC Turning Center

## Servo Turret

- No. of Tools : 10 [12] EA
- Tool Size (O.D/I.D)
  - 32/Ø60 (Ø1 1/4"/Ø2 1/4")
- Mill Turret : BMT75 ('M' Type)

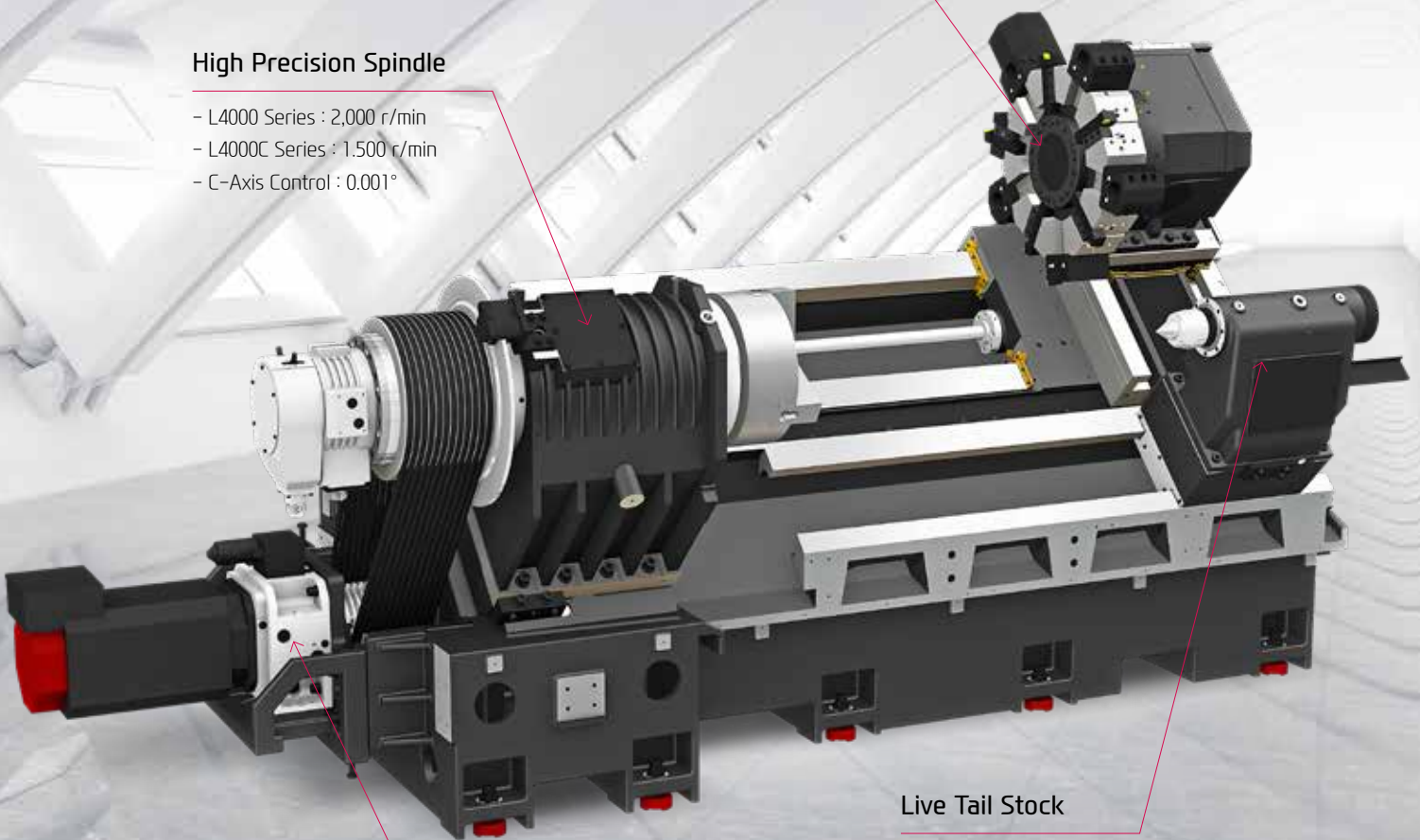
## High Precision Spindle

- L4000 Series : 2,000 r/min
- L4000C Series : 1,500 r/min
- C-Axis Control : 0.001°

## 2-step Gear Box

## Live Tail Stock

- Taper : MT#6
- [MT#5 : Built-In Opt.]

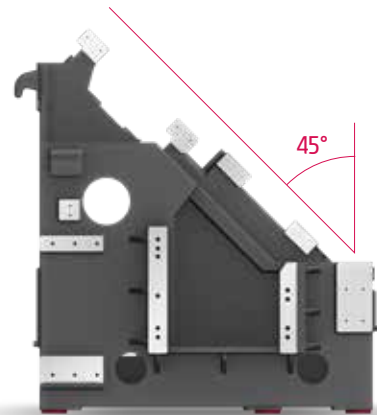


# HIGH RIGIDITY STRUCTURE FOR HEAVY DUTY CUTTING

## ALL-IN-ONE TYPE OF BED

### High Precision & Rigidity, One-Piece Structure

The L4000 Series features a 45° slant bed design which is developed through finite element analysis (FEA) to absorb vibration and minimize thermal displacement so as to maintain high stability.



## GUIDEWAY

### Box Guideway

With the mounting of box guideways on all axes, the machine offers excellent vibration absorption even against during heavy-duty cutting, enabling high-quality machining.

### Improved saddle rigidity

The contact area between the saddle and the cross-slide has been increased for high rigidity.

### Ball Screw

Large diameter ball screws with preloading prevent deformation due to heat. Also double-anchor support method improves rigidity.



**Rapid Traverse Rate (X/Z)** 16/20 m/min (623/787 ipm)

### Travel (X/Z)

L4000/4000M | L4000C/4000MC

330/1,105 mm (13"/43.5")

L4000L/4000LM | L4000LC/4000LMC

330/2,200 mm (13"/86.6")



# 02 HIGH PRECISION SPINDLE

Long Lasting, High Accuracy & Excellent Performance CNC Turning Center

## Spindle Specifications

[ ] : Option

MODEL	Speed	Motor (Max./Cont.)	Torque (Max./Cont.)	Driving Method
L4000/L	2,000 rpm	35/26/22 kW (47/35/29.5 HP)	2,450/1,540 N.m (1,807/1,135.8 lbf.ft)	Belt + 2-Step Gear
		[37/30 kW (50/40 HP)]	[3,378/2,739 N.m (2,491.5/2,020.2 lbf.ft)]	
L4000C/LC	1,500 rpm	37/30 kW (50/40 HP)	3,378/2,739 N.m (2,491.5/2,020.2 lbf.ft)	Belt
L4000M/LM	2,000 rpm	30/22 kW (40/29.5 HP)	1,611/993 N.m (1,188.2/732.4 lbf.ft)	
L4000MC/LMC	1,500 rpm	[37/30 kW (50/40 HP)]	[3,378/2,739 N.m (2,491.5/2,020.2 lbf.ft)]	Belt + 2-Step Gear
		37/30 kW (50/40 HP)	2,457/1,992 N.m (1,812.2/1,469.2 lbf.ft)	

# HEAVY DUTY CUTTING & HIGH ACCURACY

## MAIN SPINDLE

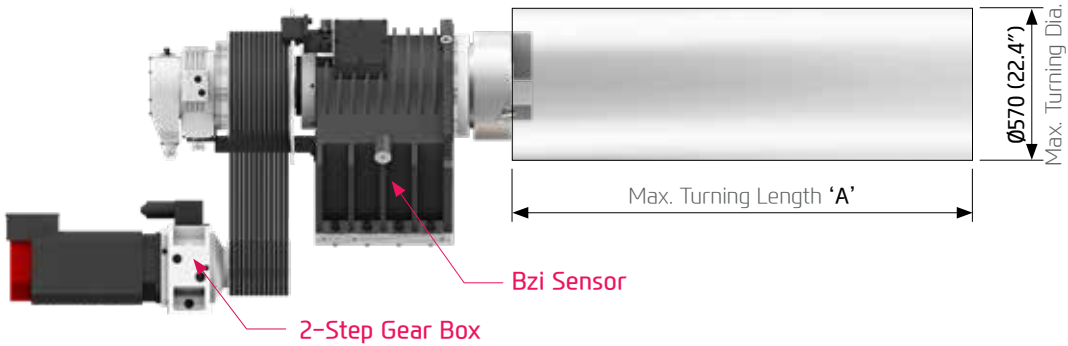
### Spindle Ideal for Heavy Cutting

High-precision double-row cylindrical roller bearings and angular contact bearings offer increasement in rigidity of the spindle. In addition, the two-step gearbox guarantees strong torque at low speed and stable machining capability at high speed.



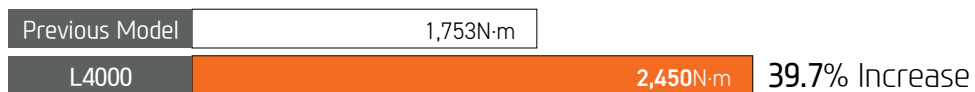
### C-Axis Control ('M' Type)

The C axis is capable of 0.001° control when milling turret is applied. Machining capability is strengthened with turning and milling operations.



MODEL	Chuck Size	'A'	MODEL	Chuck Size	'A'
L4000	15"	1,043 mm (41.1")	L4000C	21"	1,025 mm (40.4")
L4000M		958 mm (37.7")	L4000MC		940 mm (37")
L4000L		2,138 mm (84.2")	L4000LC		2,120 mm (83.5")
L4000LM		2,053 mm (80.8")	L4000LMC		2,035 mm (80.1")

#### ● Improved Spindle Torque



#### ● Improved Machining Performance (Swing on carriage)





# 03 SERVO TURRET

High speed, High Accuracy, Highly Reliable Servo Turret

## Standard Turret

[ ] : Option

No. of Tools

10 [12] EA

Tool Size (O.D./I.D)

□ 32/Ø60 mm  
(Ø1 1/4"/Ø2 1/4")

Indexing Time

0.25 sec

## Mill Turret

Type	Speed	Motor (Max./Cont)	Torque (Max./Cont)	Collet Size
BMT75	4,000 rpm	11/7.5/5.5 kW (15/10/7.5 HP)	140/70 N·m (103.2/51.6 lbf.ft)	ER40-Ø26 (1")
		[23/7.5 kW (31/10 HP)]	[146/48 N·m (107.7/35.4 lbf.ft)]	



# VARIOUS DRIVEN PRECISION BMT TOOL HOLDERS

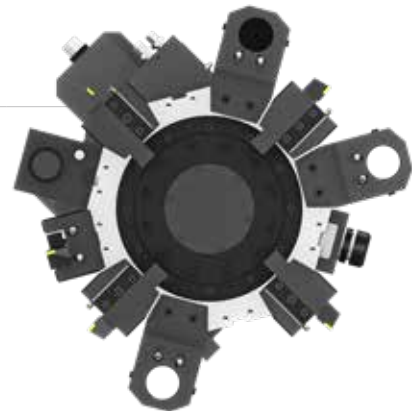
## SERVO TURRET



### Standard Turret

The turret of L4000 series is applied with high performance AC servo motor, improving machining reliability. 3-piece coupling shows excellent performance in indexing.

Powerful hydraulic tool clamping minimizes tool tip deviation caused by load.



### BMT75 Mill Turret ('M' Type)

The BMT turret secures the tool with four bolts and key on the tool mounting surface of the turret, making it possible to powerfully fix the tool, ensuring high reliability in rigidity and precision.

STRAIGHT MILLING HEAD

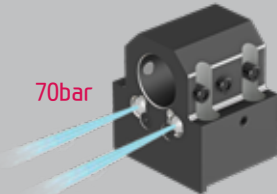


ANGULAR MILLING HEAD



### Mill Tool Holder

Machining capability has increased with the addition of straight milling head tool holder.



**70Bar High Pressure Coolant OPTION**

Turret is designed to utilize **70bar** high pressure coolant and it shows optimum performance in machining difficult-to-cut material.

# 04 USER CONVENIENCE

Various Devices for User Friendly

## TAIL STOCK & STEADY REST

### High-performance Tail Stock

The large tailstock of  $\varnothing 120\text{mm}$  is applied for high rigidity. The tailstock provides extra support with 120mm (4.7") travel. (MT#5 Built-in Tail Stock : Option)

Taper	Quill Dia.	Quill Travel
Live : MT#6	$\varnothing 120\text{ mm}$ ( $\varnothing 4.7''$ )	120 mm (4.7")

#### ● Improved Tailstock Thrust

Previous Model	13.8 kN	
L4000 Series	17.2 kN	24.6% Increase



### Steady Rest **OPTION**

For long parts, such as shafts, the steady rest increases rigidity and minimizes vibration.

<Manual Hyd. Steady Rest / Programable Hyd. Steady Rest - SMW K 4.1 /  $\varnothing 90\sim\varnothing 330$  ( $\varnothing 3.5''\sim\varnothing 13''$ )>

## HIGH PRECISION SYSTEM



### Automatic Q-Setter

Quick and accurate tool calibration can be done by contacting the tool tip with the sensor.



### Linear Scale

Linear scales increase positioning accuracy and reduce distortion caused by thermal growth, thus ensuring a more accurate finished part



### Long Boring Tool holder

When using long boring tool holder, deeper inner diameter machining is possible, enabling faster and more precise machining.

Optional

## COOLANT UNIT



Standard Coolant (Nozzle)



Chuck Coolant (Upper Chuck)



Chuck Air Blow (Upper Chuck)



Gun Coolant

## CHIP DISPOSAL SOLUTION

### Chip Conveyor

Timely and effective disposal of chips will enhance productivity as well as the working environment.



Hinge	Chip Type : Roughing Chip, Long Chip, Chip complex	Material : SS41, 45C, Cast Steel	Front-Right Direction
	Highly efficient when disposing a lot of chips. Capable of handling stringy chips..		
Scraper	Chip Type : Finely broken chip blown out	Material : cast Iron, Nonferrous	
	Convenient for shortly cut chips.		
❖ Screw	Chip Type : The lower portion of micro-chips	Material : Steel, Casting	
	Compresses and ejects chips to reduce chip Trouble.		
❖ Drum Filter	Chip Type : Powder, Micro Chip	Material : AL	
	Advantageous in precision, as the chips do not flow in to the coolant nozzle.		

❖ When ordering a screw or drum filter chip conveyor, prior consult with hyundai wia's sales person.



# 05 HYUNDAI WIA FANUC – SMART PLUS

The Compatible All-round Control



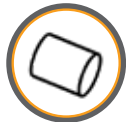
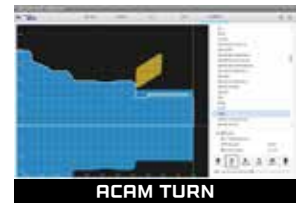
**15" Touch-type Monitor as a standard**

- Fast Cycle Time Technology
- Smart Machine Control
- Smart Servo Control Technology
- Conversational Program
- i-HMI
- Part Program Storage
- No. of Registerable Programs
- Fine Surface Technology
- Smart Guide-i
- Machining-aid Function
- 5120M (2MB)
- 1000 EA

## ACAM (Automatic CAM)

Cloud-based automatic CAM S/W that automatically creates NC programs only by inputting drawing files

Cloud-based  
Intelligent Programming



**Material definition**  
Block/Shape Cutting  
condition DB by materials



**Model Input**  
2d/3d drawing input



**Tool Definition**  
Tool library  
Tool's file In/Output



**Automatic Process Creating**  
Intelligent automatic  
process creating



**Simulation**  
2D/3D simulation  
File transfer to machine

## MMS (Machine Monitoring System)



### 1. MMS Cloud

A cloud server-based equipment monitoring system for collecting and analyzing facility operation data.

### 2. MMS Edge

A client server-based tool monitoring system for collection/analysis of facility operation data. (Compatible with client MES / ERP interface)

## SMART CNC (FANUC SMART PLUS)



### 1. Dialogue Program (Smart Guide-i)

This software offers the maximum user convenience through dialogue manipulation from setup to processing. This includes writing processing programs and simulation checks.

### 2. LAUNCHER

This software offers shortcuts for quick access to specialized features and frequently used features.

# SPECIFICATIONS

## Standard & Optional

● : Standard ○ : Option ☆ : Prior Consultation - : Non Applicable

Spindle		L4000/L	L4000M/LM
Main Spindle	15"	●	●
Hollow Chuck 3 Jaw	18"	○	○
Main Spindle	15"	☆	☆
Solid Chuck 3 Jaw	18"	☆	☆
Standard Soft Jaw (1set)		●	●
Chuck Clamp Foot Switch		●	●
2 Steps Hyd. Pressure Device		○	○
Spindle Inside Stopper		☆	☆
C-axis (0.001")		-	-
Cs contouring function		●	●
Chuck Open/Close Confirmation Device		●	●
2 Steps Chuck Foot Switch		○	○
Turret			
Tool Holder		●	●
10 station Turret		●	-
12 station Turret		○	●
Mill Turret	BMT	-	●
Straight Milling Head (Radial)	Collet Type, 1ea	-	●
Angular Milling Head (Axial)	Collet Type, 1ea	-	●
Straight Milling Head (Radial)	Adapter Type	-	-
Angular Milling Head (Axial)	Adapter Type	-	-
Boring Sleeve		●	●
Drill Socket		○	○
U-Drill Holder		○	○
U-Drill Holder	CAP (1EA)	○	○
Extension Holder	For Out-Dia	●	-
Angle Head		-	☆
Tail Stock & Steady Rest			
Live-center Tail Stock (MT #6)		●	●
Built-in Tail Stock (MT #5)		○	○
Manual Type Steady Rest		☆	☆
Manual Hyd. Steady Rest		☆	☆
Programmable Hyd. Steady Rest (SMW K 4.1)		○	○
Fixed Center		●	●
2 Steps Tail Stock Pressure System		☆	☆
Quill Forward/Reverse Confirmation Device		●	●
Tail Stock Foot Switch (When Tail Stock is selected)		●	●
Coolant & Air Blow			
Standard Coolant (Nozzle)		●	●
Chuck Coolant (Upper Chuck)		☆	☆
Gun Coolant		○	○
Through Spindle Coolant (Only for Special Chuck)		☆	☆
Chuck Air Blow (Upper Chuck)		○	○
Tail Stock Air Blow (Upper Tail Stock)		☆	☆
Turret Air Blow		☆	☆
Air Gun		○	○
Through Spindle Air Blow (Only for Special Chuck)		☆	☆
High Pressure Coolant	4.5Bar	●	●
	6Bar	○	○
	20Bar	○	○
	70Bar	○	○
Power Coolant System (For Automation)		☆	☆
Coolant Chiller		☆	☆
Chip Disposal			
Coolant Tank	315 ℓ (83.2 gal)	●/-	●/-
	420 ℓ (111 gal)	-/●	-/●
Chip Conveyor (Hinge/Scraper)	Front (Right)	○	○
	Front (Rear)	-	-
Special Chip Conveyor (Drum Filter)		☆	☆
Chip Wagon	Standard (180 ℓ [47.5 gal])	○	○
	Swing (200 ℓ [52.8 gal])	○	○
	Large Swing (290 ℓ [76.6 gal])	○	○
	Large Size (330 ℓ [87.2 gal])	○	○
	Customized	☆	☆

Safety Device		L4000/L	L4000M/LM
Total Splash Guard		●	●
Chuck Hydraulic Pressure Maintenance Interlock		●	●
Electric Device			
Call Light	1Color : ●	●	●
Call Light & Buzzer	3Color : ● ■ ■ B	○	○
Electric Cabinet Light		○	○
Remote MPG		○	○
Workcounter	Digital	○	○
Totalcounter	Digital	○	○
Toolcounter	Digital	○	○
Multi-Tool counter	6ea	○	○
	9ea	○	○
Electric Circuit Breaker		○	○
AVR (Auto Voltage Regulator)		☆	☆
Transformer	40kVA	○	○
Auto Power Off		○	○
Measurement			
Q-Setter	Manual	☆	☆
	Automatic	○	○
Work Close Confirmation Device (Only for Special Chuck)	TACO	☆	☆
	SMC	☆	☆
Work Setter		☆	☆
Linear Scale	X Axis	○	○
	Z Axis	○	○
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆
Environment			
Air Conditioner		○	○
Oil Mist Collector		☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○
MQL (Minimal Quantity Lubrication)		☆	☆
Fixture & Automation			
Auto Door		○	○
Auto Shutter (Only for Automatic System)		-	-
Sub Operation Panel		☆	☆
Bar Feeder Interface		○	○
Bar Feeder (FEDEK)		○	○
Extra M-Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (IN & OUT)	16 Contact	○	○
	32 Contact	○	○
Parts Catcher		-	-
Turret Work Pusher (For Automation)		☆	☆
Hyd. Device			
Standard Hyd. Cylinder	Hollow	●	●
Standard Hyd. Unit	60bar/27 ℓ (7.1 gal)	●	●
S/W			
Automatic CAM (HW-ACAM)		-	-
Dialogue Program (HW-DPRO)		○	○
DNC software (HW-eDNC)		○	○
Machine Monitoring System (HW-MMS Cloud)		☆	☆
Machine Monitoring System (Customer Installation : HW-MMS Edge)		☆	☆
Smart Guide-1 : FANUC		●	●
Smart S/W		☆	☆
ETC			
Tool Box		●	●
Customized Color	Need Munsel No.	☆	☆
CAD & CAM		☆	☆

❖ 4 channel of TDC(Thermal Displacement Compensation) device is recommended, when more than 6 bar of high pressure coolant is applied, for the high quality machining.

Specifications are subject to change without notice for improvement. / Please refer to the S/W catalog (iRIS) for details by S/W product.



# SPECIFICATIONS

## Standard & Optional

● : Standard ○ : Option ☆ : Prior Consultation - : Non Applicable

Spindle		L4000C/LC	L4000MC/LMC
Main Spindle	21"	●	●
Hollow Chuck 3 Jaw		●	●
Main Spindle	21"	☆	☆
Solid Chuck 3 Jaw			
Standard Soft Jaw (1set)		●	●
Chuck Clamp Foot Switch		●	●
2 Steps Hyd. Pressure Device		○	○
Spindle Inside Stopper		☆	☆
C-axis (0.001")		-	●
Cs contouring function		●	●
Chuck Open/Close Confirmation Device		●	●
2 Steps Chuck Foot Switch		○	○
<b>Turret</b>			
Tool Holder		●	●
10 station Turret		●	-
12 station Turret		○	●
Mill Turret	BMT	-	●
Straight Milling Head (Radial)	Collet Type, 1ea	-	●
Angular Milling Head (Axial)	Collet Type, 1ea	-	●
Straight Milling Head (Radial)	Adapter Type	-	-
Angular Milling Head (Axial)	Adapter Type	-	-
Boring Sleeve		●	●
Drill Socket		○	○
U-Drill Holder		○	○
U-Drill Holder	CAP (1EA)	○	○
Extension Holder	For Out-Dia	●	-
Angle Head		-	☆
<b>Tail Stock &amp; Steady Rest</b>			
Live-center Tail Stock (MT #6)		●	●
Built-in Tail Stock (MT #5)		○	○
Manual Type Steady Rest		☆	☆
Manual Hyd. Steady Rest		☆	☆
Programmable Hyd. Steady Rest (SMW K 4.1)		○	○
Fixed Center		●	●
2 Steps Tail Stock Pressure System		☆	☆
Quill Forward/Reverse Confirmation Device		●	●
Tail Stock Foot Switch (When Tail Stock is selected)		●	●
<b>Coolant &amp; Air Blow</b>			
Standard Coolant (Nozzle)		●	●
Chuck Coolant (Upper Chuck)		☆	☆
Gun Coolant		○	○
Through Spindle Coolant (Only for Special Chuck)		☆	☆
Chuck Air Blow (Upper Chuck)		○	○
Tail Stock Air Blow (Upper Tail Stock)		☆	☆
Turret Air Blow		☆	☆
Air Gun		○	○
Through Spindle Air Blow (Only for Special Chuck)		☆	☆
High Pressure Coolant	4.5Bar	●	●
	6Bar	○	○
	20Bar	○	○
	70Bar	○	○
Power Coolant System (For Automation)		☆	☆
Coolant Chiller		☆	☆
<b>Chip Disposal</b>			
Coolant Tank	315 ℓ (83.2 gal)	●/-	●/-
	420 ℓ (111 gal)	-/●	-/●
Chip Conveyor (Hinge/Scraper)	Front (Right)	○	○
	Front (Rear)	-	-
Special Chip Conveyor (Drum Filter)		☆	☆
Chip Wagon	Standard (180 ℓ [47.5 gal])	○	○
	Swing (200 ℓ [52.8 gal])	○	○
	Large Swing (290 ℓ [76.6 gal])	○	○
	Large Size (330 ℓ [87.2 gal])	○	○
	Customized	☆	☆

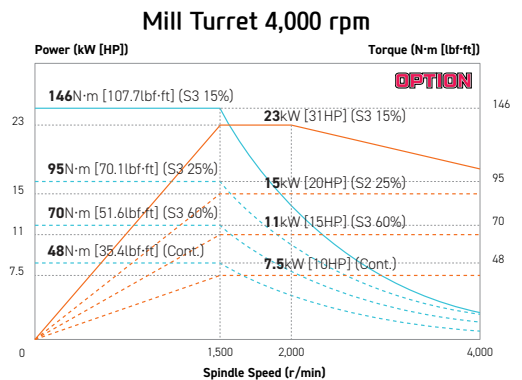
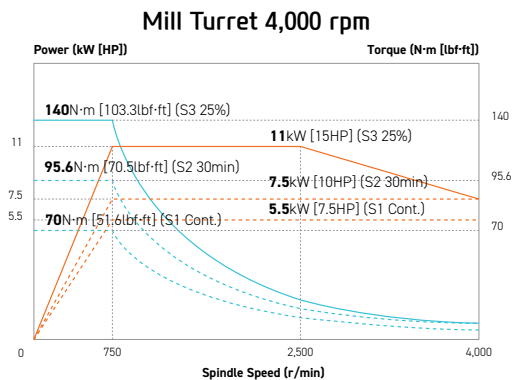
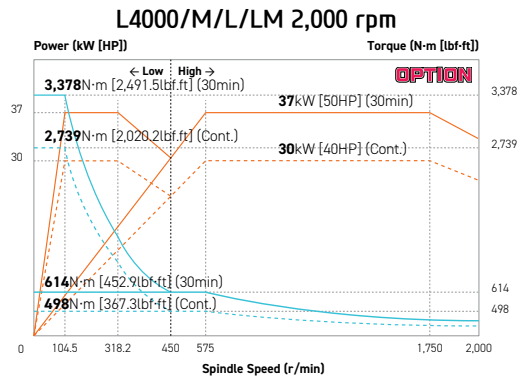
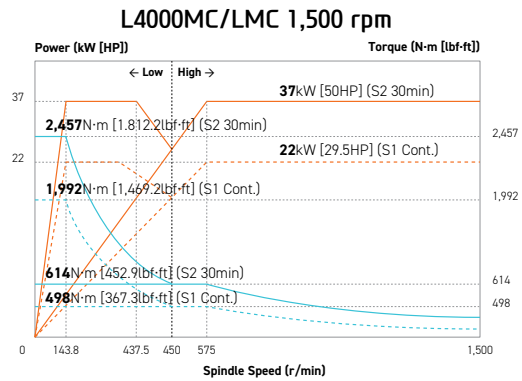
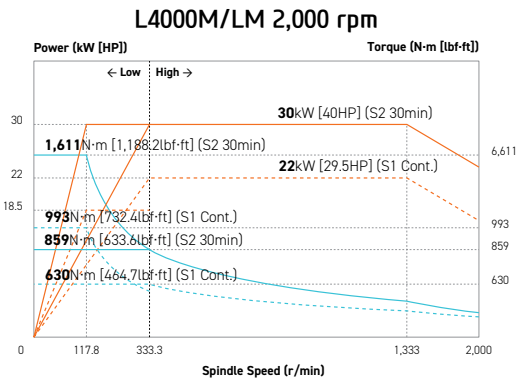
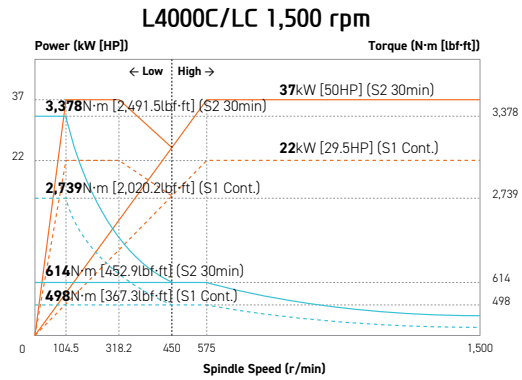
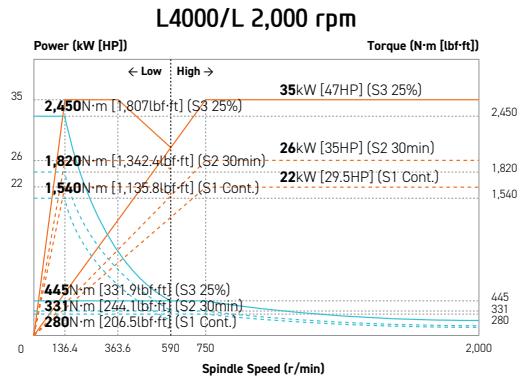
Safety Device		L4000C/LC	L4000MC/LMC
Total Splash Guard		●	●
Chuck Hydraulic Pressure Maintenance Interlock		●	●
<b>Electric Device</b>			
Call Light	1Color : ●	●	●
Call Light & Buzzer	3Color : ●●● B	○	○
Electric Cabinet Light		○	○
Remote MPG		○	○
Workcounter	Digital	○	○
Totalcounter	Digital	○	○
Toolcounter	Digital	○	○
Multi-Tool counter	6ea	○	○
	9ea	○	○
Electric Circuit Breaker		○	○
AVR (Auto Voltage Regulator)		☆	☆
Transformer	40kVA	○	○
Auto Power Off		○	○
<b>Measurement</b>			
Q-Setter	Manual	☆	☆
	Automatic	○	○
Work Close Confirmation Device (Only for Special Chuck)	TACO	☆	☆
	SMC	☆	☆
Work Setter		☆	☆
Linear Scale	X Axis	○	○
	Z Axis	○	○
Coolant Level Sensor (Only for Chip Conveyor)		☆	☆
<b>Environment</b>			
Air Conditioner		○	○
Oil Mist Collector		☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○
MQL (Minimal Quantity Lubrication)		☆	☆
<b>Fixture &amp; Automation</b>			
Auto Door		○	○
Auto Shutter (Only for Automatic System)		-	-
Sub Operation Panel		☆	☆
Bar Feeder Interface		○	○
Bar Feeder (FEDEK)		○	○
Extra M-Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (I/F & O/I/T)	16 Contact	○	○
	32 Contact	○	○
Parts Catcher		-	-
Turret Work Pusher (For Automation)		☆	☆
<b>Hyd. Device</b>			
Standard Hyd. Cylinder	Hollow	●	●
Standard Hyd. Unit	60bar/45 ℓ (11.9 gal)	●	●
<b>S/W</b>			
Automatic CAM (HW-ACAM)		-	-
Dialogue Program (HW-DPRO)		○	○
DFC software (HW-eDFC)		○	○
Machine Monitoring System (HW-MMS Cloud)		☆	☆
Machine Monitoring System (Customer Installation : HW-MMS Edge)		☆	☆
Smart Guide-i : FANUC		●	●
Smart S/W		☆	☆
<b>ETC</b>			
Tool Box		●	●
Customized Color	Need Munsel No.	☆	☆
CAD & CAM		☆	☆

◆ 4 channel of TDC(Thermal Displacement Compensation) device is recommended, when more than 6 bar of high pressure coolant is applied, for the high quality machining.

Specifications are subject to change without notice for improvement. / Please refer to the S/W catalog (iRS) for details by S/W product.

# SPECIFICATIONS

## Spindle Output/Torque Diagram

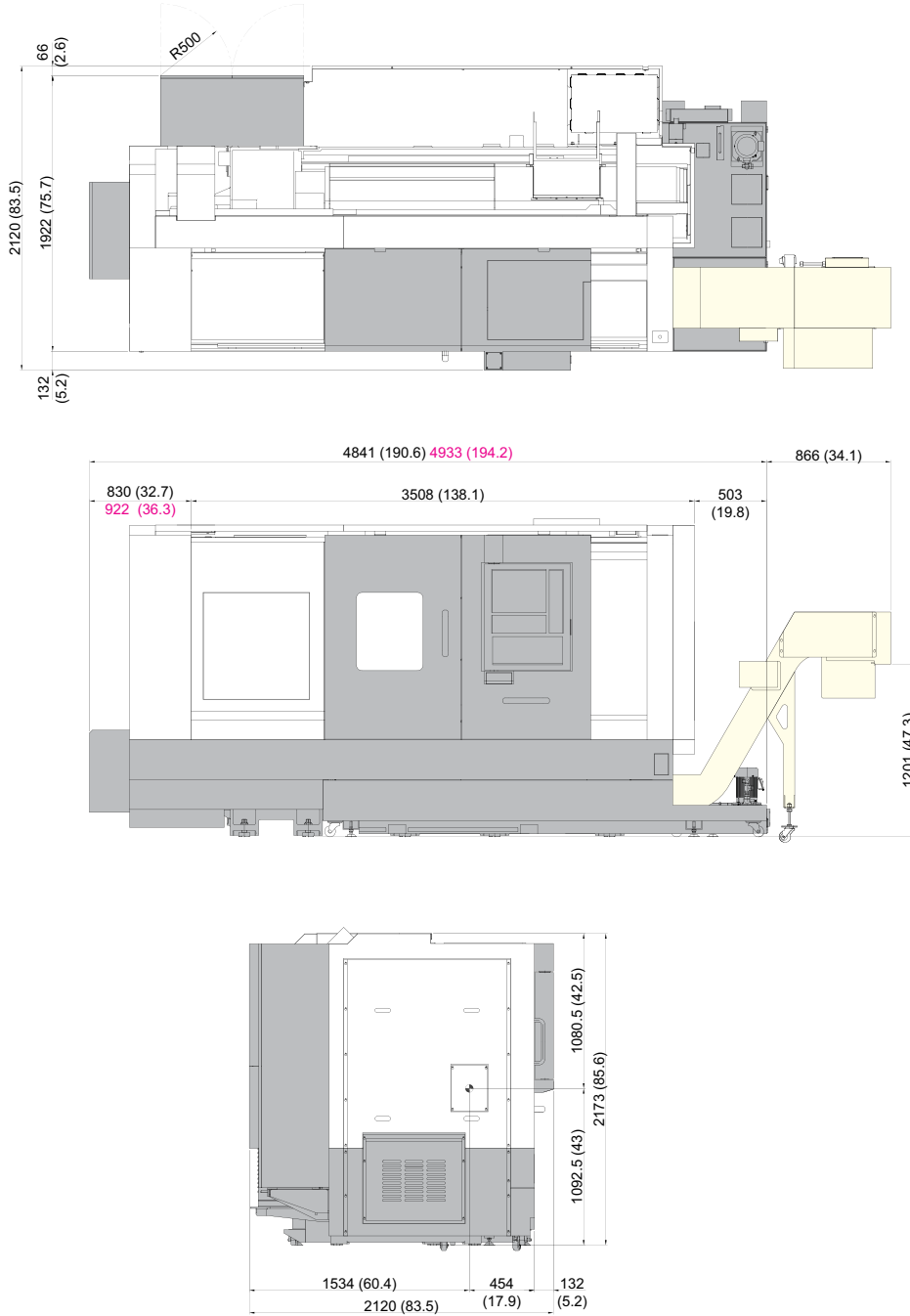


# SPECIFICATIONS

## External Dimensions

unit : mm(in)

L4000/M  
L4000C/MC



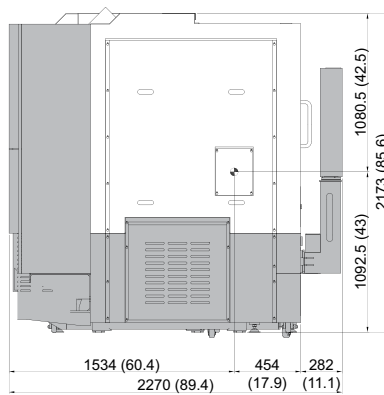
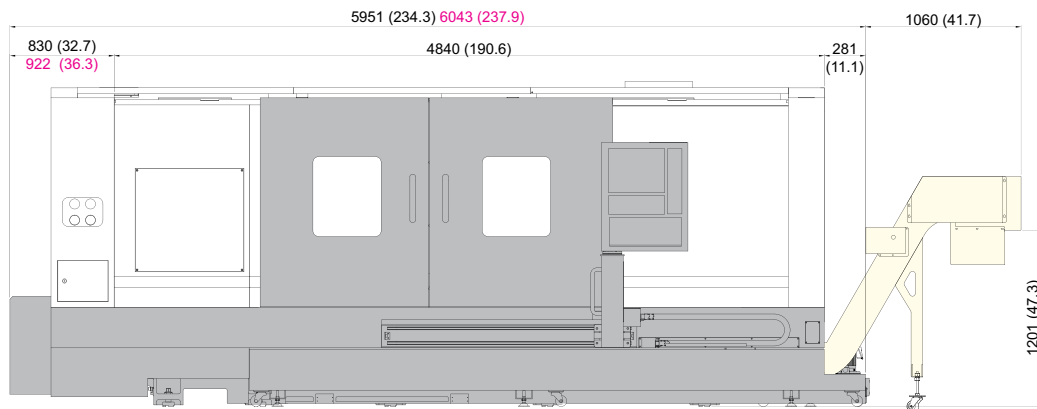
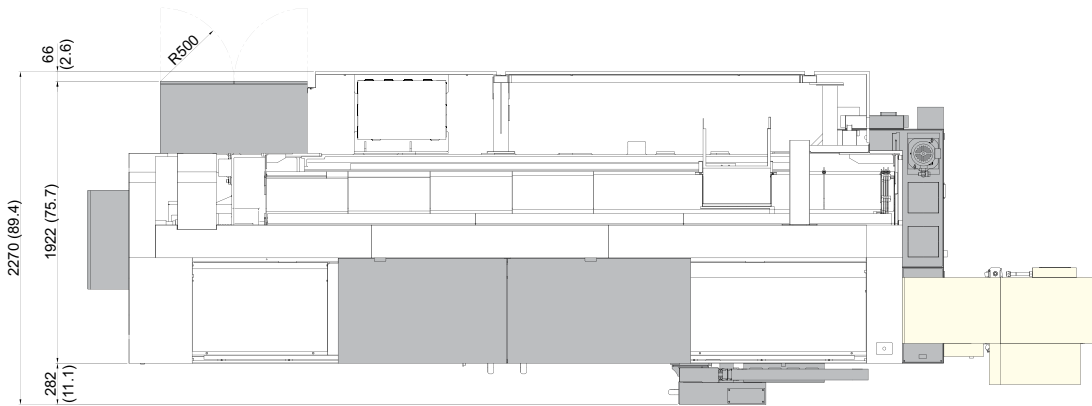


# SPECIFICATIONS

## External Dimensions

unit : mm(in)

L4000L/LM  
L4000LC/LMC



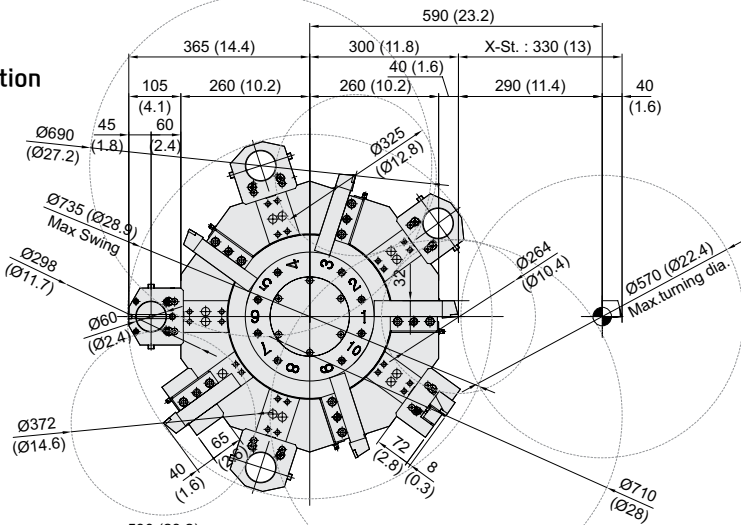
# SPECIFICATIONS

## Interference

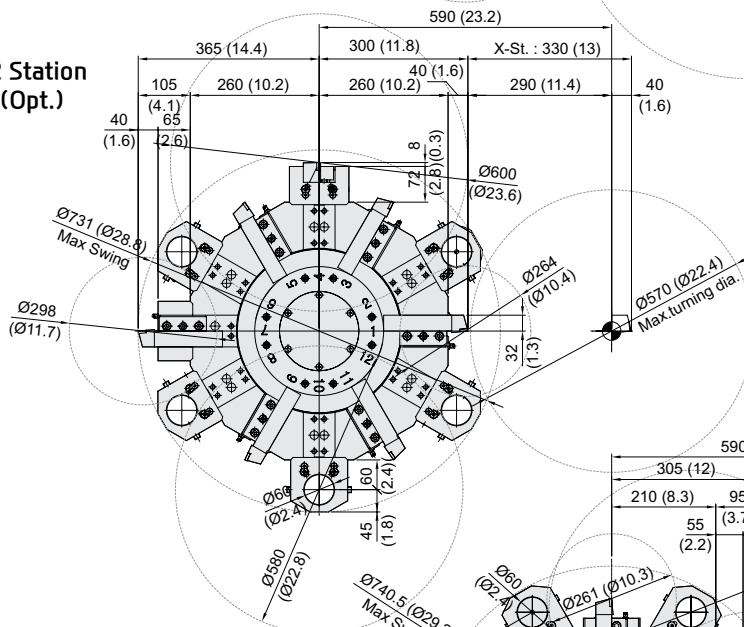
unit : mm(in)

L4000/L  
L4000C/LC

10 Station

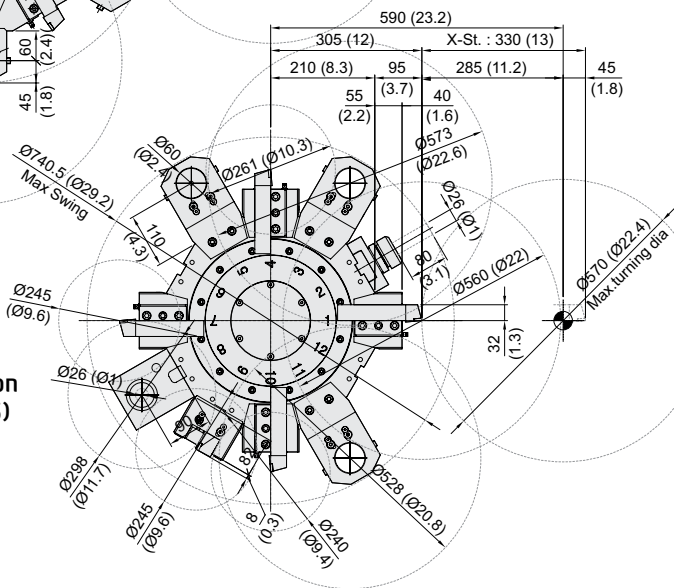


12 Station  
(Opt.)



L4000M/LM  
L4000MC/LMC

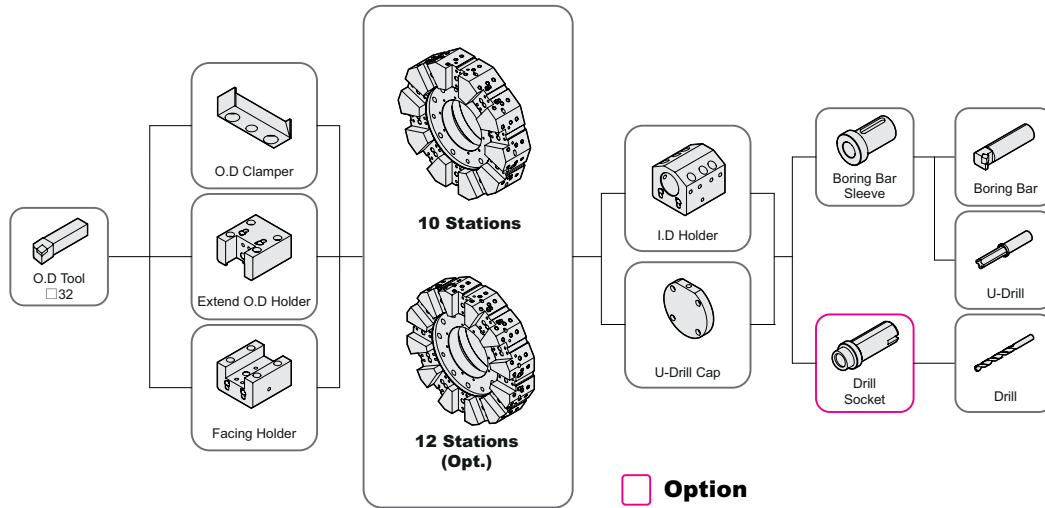
12 Station  
(BMT75)



# SPECIFICATIONS

## Tooling System

unit : mm(in)



### L4000/C/L/LC – Tooling Parts Detail

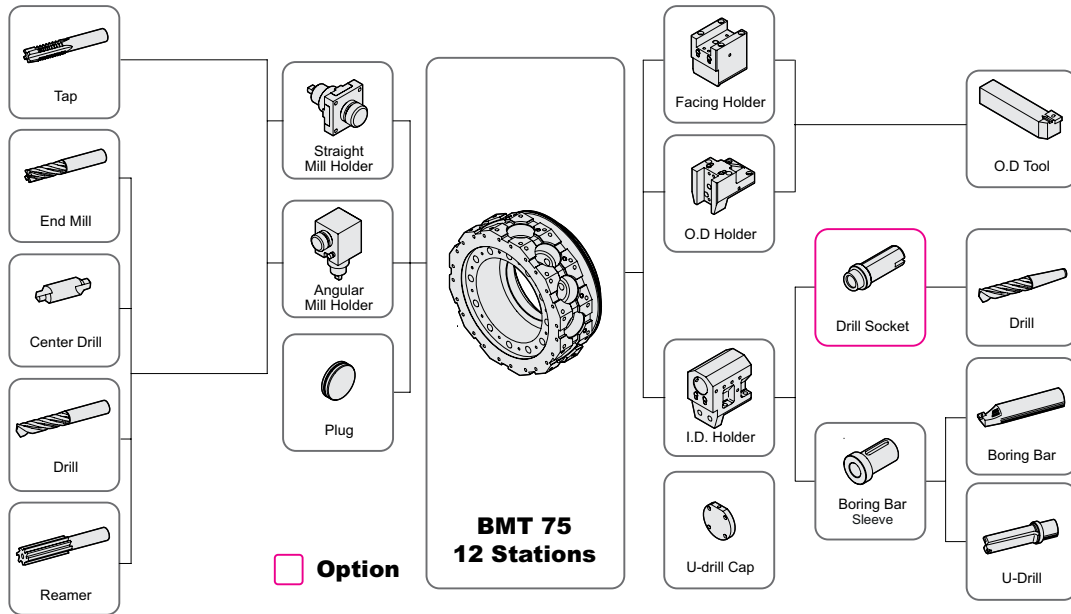
ITEM			10 Station		Opt. 12 Station	
			mm Unit	inch Unit	mm Unit	inch Unit
Turning Holder	O.D Holder	Right/Left	4	4	5	5
		Extension	1	1	1	1
	Facing Holder	1	1	1	1	
Boring Holder	I.D Holder	Single	4	4	5	5
		C-Clip	Opt.	Opt.	Opt.	Opt.
	U-Drill Holder	Cap	1	1	1	1
Driven Holder	Straight Mill Holder	Standard	-	-	-	-
	Angular Mill Holder	Standard	-	-	-	-
Socket	Boring	Ø16 (Ø5/8")	1	1	1	1
		Ø20 (Ø3/4")	1	1	1	1
		Ø25 (Ø1")	1	1	1	1
		Ø32 (Ø1 1/4")	1	1	1	1
		Ø40 (Ø1 1/2")	1	1	1	1
		Ø50 (Ø2")	1	1	1	1
	Drill	MT 2	Opt.	Opt.	Opt.	Opt.
		MT 3	Opt.	Opt.	Opt.	Opt.
		MT 4	Opt.	Opt.	Opt.	Opt.
	ER Collet		-	-	-	-
	Adapter Set		-	-	-	-



# SPECIFICATIONS

## Tooling System

unit : mm(in)



## L4000M/MC/LM/LMC - Tooling Parts Detail

ITEM			12 Station	
			mm Unit	inch Unit
Turning Holder	O.D Holder	Right/Left	4	4
		Extension	-	-
	Facing Holder		1	1
Boring Holder	I.D Holder	Single	3	3
		C-Clip	Opt.	Opt.
	U-Drill Holder	Cap	1	1
Driven Holder	Straight Mill Holder	Standard	1	1
	Angular Mill Holder	Standard	1	1
Socket	Boring	Ø16 (Ø5/8")	1	1
		Ø20 (Ø3/4")	1	1
		Ø25 (Ø1")	1	1
		Ø32 (Ø1 1/4")	1	1
		Ø40 (Ø1 1/2")	1	1
		Ø50 (Ø2")	1	1
	Drill	MT 2	Opt.	Opt.
		MT 3	Opt.	Opt.
		MT 4	Opt.	Opt.
	ER Collet		Opt.	Opt.
Adapter Set		-	-	

Specifications are subject to change without notice for improvement.

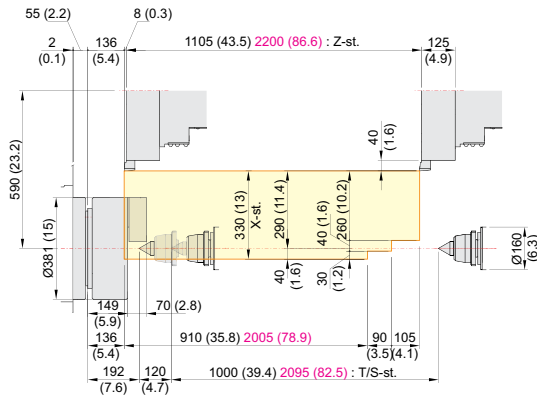
# SPECIFICATIONS

## Tooling Travel Range

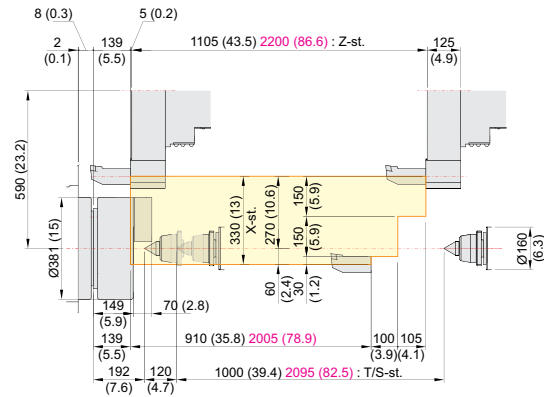
unit : mm(in)

L4000  
L4000L

### O.D Tool

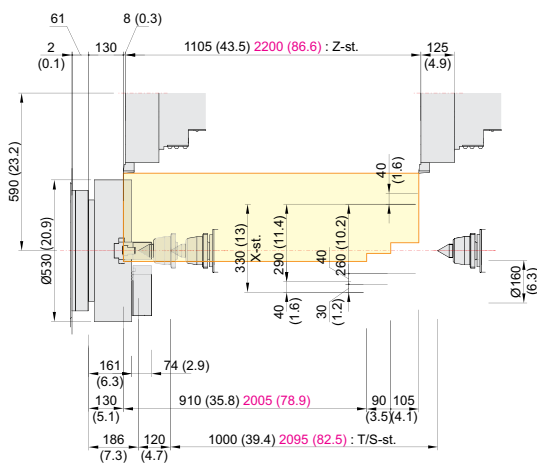


### I.D Tool

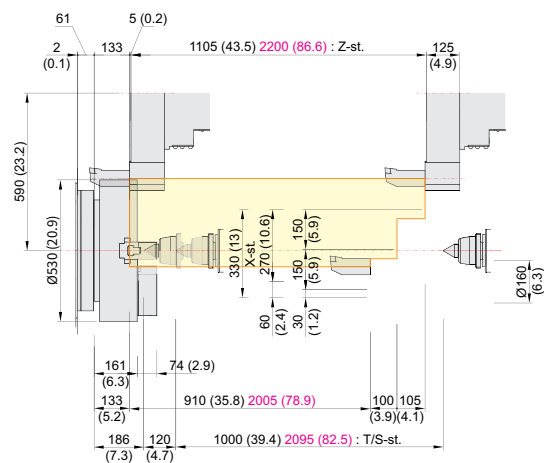


L4000C  
L4000LC

### O.D Tool



### I.D Tool



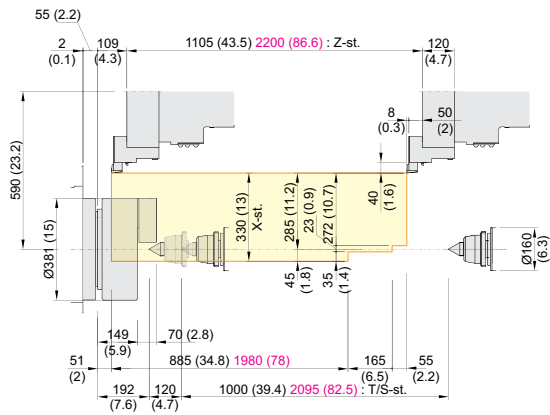
# SPECIFICATIONS

## Tooling Travel Range

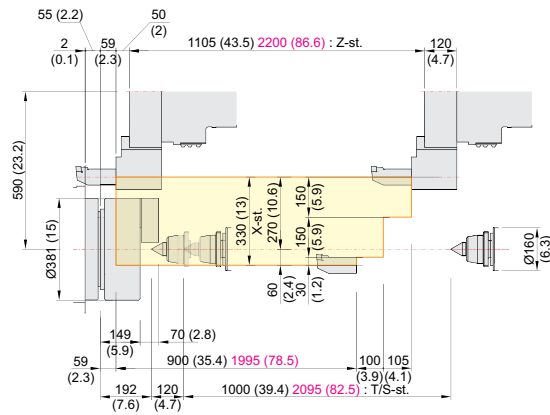
unit : mm(in)

**L4000M**  
**L4000LM**

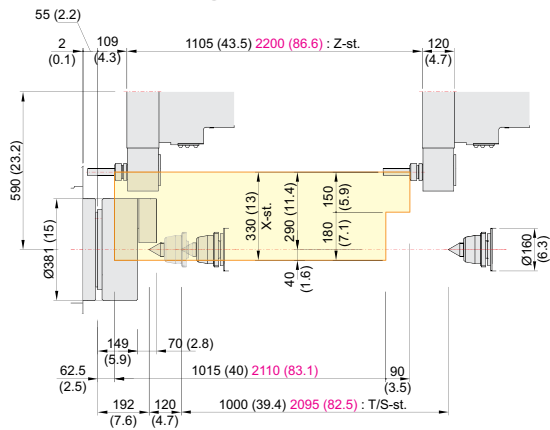
### O.D Tool



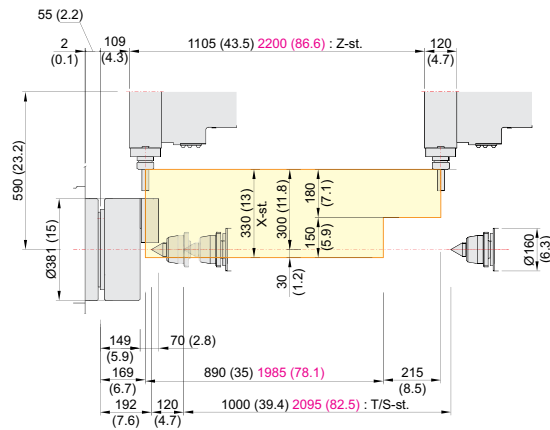
### I.D Tool



### Angular driven



### Axial driven



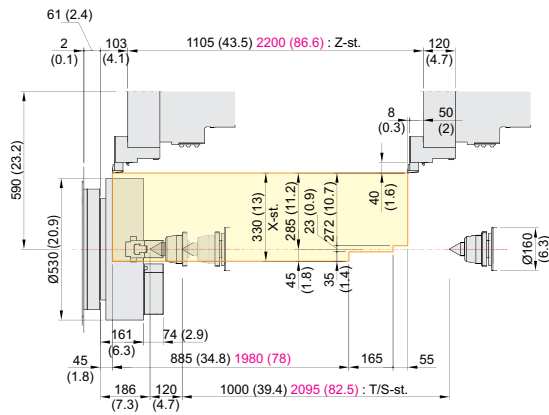
# SPECIFICATIONS

## Tooling Travel Range

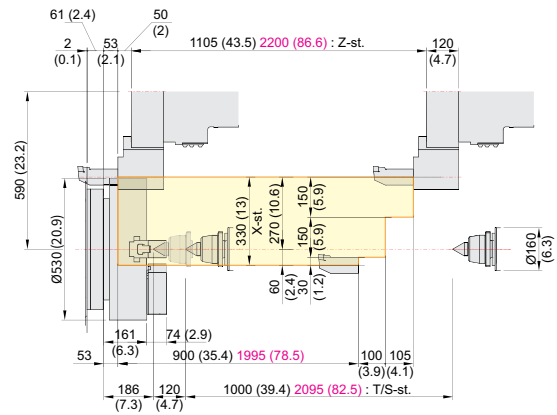
unit : mm(in)

L4000MC  
L4000LMC

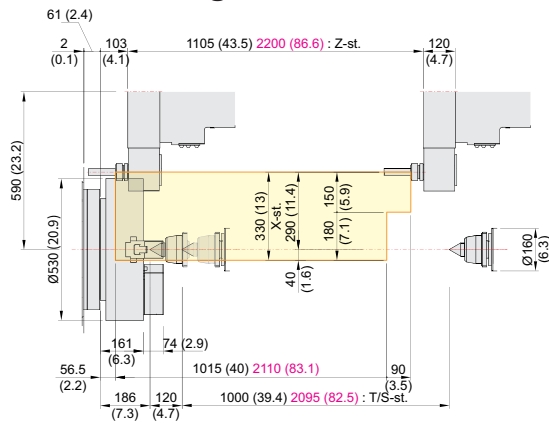
### O.D Tool



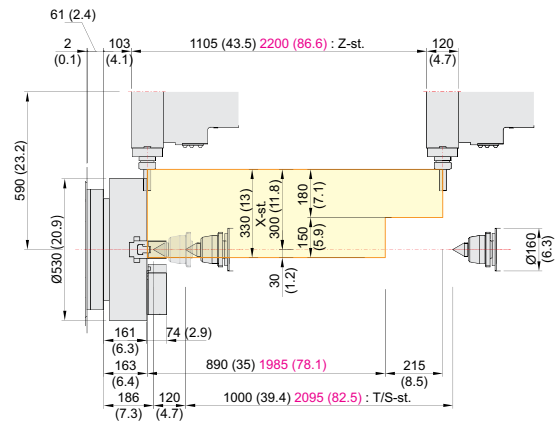
### I.D Tool



### Angular driven



### Axial driven





# SPECIFICATIONS

## Specifications

[ ] : Option

ITEM			L4000	L4000M
CAPACITY	Swing Over the Bed	mm(in)	Ø800 (Ø31.5")	
	Swing Over the Carriage	mm(in)	Ø590 (Ø23.2")	
	Max. Turning Dia.	mm(in)	Ø570 (Ø22.4")	
	Max. Turning Length	mm(in)	1,043 (41.1")	958 (38.6")
	Bar Capacity	mm(in)	Ø117 (Ø4.6")	
SPINDLE	Chuck Size	inch	15" [18"]	
	Spindle Bore	mm(in)	Ø131 (Ø5.2")	
	Spindle Speed (rpm)	r/min	2,000 [2,000]	
	Motor (Max/Cont.)	kW(HP)	35/26/22 (47/35/29.5) [37/30 (50/40)]	30/22 (40/29.5) [37/30 (50/40)]
	Torque (Max/Cont.)	Nm(lbf-ft)	2,450/1,540 (1,807/1,135.8) [3,378/2,739 (2,491.5/2,020.2)]	1,611/993 (1,188.2/732.4) [3,378/2,739 (2,491.5/2,020.2)]
	Spindle Type	-	Belt + 2 Step Gear	Belt [Belt + 2 Step Gear]
	Spindle Nose	-	A2-11	
	C-axis Indexing	deg	0.001	
FEED	Travel	X/Z mm(in)	330/1,105 (13"/43.5")	
	Rapid Traverse Rate	X/Z m/min(ipm)	16/20 (623/787)	
	Slide Type	-	Box Guide	
TURRET	No. of Tools	ea	10 [12]	12
	Tool Size	OD mm(in)	□ 32 (□ 1 1/4")	
		ID mm(in)	Ø60 (Ø 1/2")	
	Indexing Time	sec/step	0.25	
LIVE TOOL	Milling Tool Speed (rpm)	r/min	-	4,000
	Motor (Max/Cont.)	kW(HP)	-	11/7.5/5.5 (15/10/7.5) [23/7.5 (31/10)]
	Torque (Max/Cont.)	Nm(lbf-ft)	-	140/70 (103.3/51.6) [146/48 (107.7/35.4)]
	Collet Size	mm(in)	-	ER40-Ø26 (1)
	Type	-	-	BMT75
TAIL STOCK	Taper	-	MT#6 : Live-center [MT#5 : Built-In]	
	Quill Dia.	mm(in)	Ø120 (Ø4.7")	
	Quill Travel	mm(in)	120 (4.7")	
	Travel	mm(in)	1,000 (39.4")	
TANK CAPACITY	Coolant Tank	ℓ (gal)	315 ℓ (83.2)	
	Lubricating Tank	ℓ (gal)	4 ℓ (1.1)	
POWER SUPPLY	Electric Power Supply	kVA	32kVA	
	Thickness of Power Cable	mm²	Over 25	
	Voltage	V/Hz	220/60 (200/50*)	
MACHINE	Floor Space (L×W)	mm(in)	4,841×2,120 (190.6"×83.5")	
	Height	mm(in)	2,173 (85.6")	
	Weight	kg(lb)	8,300 (18,298)	8,400 (18,519)
CNC	Controller	-	HYUNDAI WIA FANUC i Series - Smart Plus	

Specifications are subject to change without notice for improvement.

# SPECIFICATIONS

## Specifications

[ ] : Option

ITEM			L4000C	L4000MC
CAPACITY	Swing Over the Bed		mm(in) Ø800 (Ø31.5")	
	Swing Over the Carriage		mm(in) Ø590 (Ø23.2")	
	Max. Turning Dia.		mm(in) Ø570 (Ø22.4")	
	Max. Turning Length		1,025 (40.4")	940 (37")
	Bar Capacity		mm(in) Ø165 (Ø6.5")	
SPINDLE	Chuck Size		inch 21"	
	Spindle Bore		mm(in) Ø181 (Ø7.1")	
	Spindle Speed (rpm)		r/min 1,500	
	Motor (Max/Cont.)		37/30 (50/40)	37/30 (50/40)
	Torque (Max/Cont.)		3,378/2,739 (2,491.5/2,020.2)	2,457/1,992 (1,812.2/1,469.2)
	Spindle Type		Belt + 2 Step Gear	
	Spindle Nose		A1-15	
	C-axis Indexing		deg 0.001	
FEED	Travel	X/Z	mm(in) 330/1,105 (13"/43.5")	
	Rapid Traverse Rate	X/Z	m/min(ipm) 16/20 (623/787)	
	Slide Type		- Box Guide	
TURRET	No. of Tools		10 [12]	12
	Tool Size	OD	mm(in) □ 32 (□ 1 1/4")	
		ID	mm(in) Ø60 (Ø2 1/2")	
	Indexing Time		sec/step 0.25	
LIVE TOOL	Milling Tool Speed (rpm)		-	4,000
	Motor (Max/Cont.)		-	11/7.5/5.5 (15/10/7.5) [23/7.5 (31/10)]
	Torque (Max/Cont.)		-	140/70 (103.3/51.6) [146/48 (107.7/35.4)]
	Collet Size		-	ER40-Ø26 (1)
	Type		-	BMT75
TAIL STOCK	Taper		- MT#6 : Live-center [MT#5 : Built-In]	
	Quill Dia.		mm(in) Ø120 (Ø4.7")	
	Quill Travel		mm(in) 120 (4.7")	
	Travel		mm(in) 1,000 (39.4")	
TANK CAPACITY	Coolant Tank		ℓ (gal) 315 ℓ (83.2)	
	Lubricating Tank		ℓ (gal) 4 ℓ (1.1)	
POWER SUPPLY	Electric Power Supply		kVA 32kVA	
	Thickness of Power Cable		mm <sup>2</sup> Over 25	
	Voltage		V/Hz 220/60 (200/50*)	
MACHINE	Floor Space (L×W)		mm(in) 4,933×2,120 (194.2"×83.5")	
	Height		mm(in) 2,173 (85.6")	
	Weight		8,700 (19,180)	8,800 (19,400)
CNC	Controller		- HYUNDAI WIA FANUC i Series - Smart Plus	

# SPECIFICATIONS

## Specifications

[ ] : Option

ITEM			L4000L	L4000LM
CAPACITY	Swing Over the Bed	mm(in)	Ø800 (Ø31.5")	
	Swing Over the Carriage	mm(in)	Ø590 (Ø23.2")	
	Max. Turning Dia.	mm(in)	Ø570 (Ø22.4")	
	Max. Turning Length	mm(in)	2,138 (84.2")	2,053 (80.8")
	Bar Capacity	mm(in)	Ø117 (Ø4.6")	
SPINDLE	Chuck Size	inch	15" [18"]	
	Spindle Bore	mm(in)	Ø131 (Ø5.2")	
	Spindle Speed (rpm)	r/min	2,000	
	Motor (Max/Cont.)	kW(HP)	35/26/22 (47/35/29.5) [37/30 (50/40)]	30/22 (40/29.5) [37/30 (50/40)]
	Torque (Max/Cont.)	Nm(lbf-ft)	2,450/1,540 (1,807/1,135.8) [3,378/2,739 (2,491.5/2,020.2)]	1,611/993 (1,188.2/732.4) [3,378/2,739 (2,491.5/2,020.2)]
	Spindle Type	-	2 Step Gear + Belt	Belt [Belt + 2 Step Gear]
	Spindle Nose	-	A2-11	
	C-axis Indexing	deg	0.001	
FEED	Travel	X/Z mm(in)	330/2,200 (13"/86.6")	
	Rapid Traverse Rate	X/Z m/min(ipm)	16/20 (623/787)	
	Slide Type	-	Box Guide	
TURRET	No. of Tools	ea	10 [12]	12
	Tool Size	OD mm(in)	□ 32 (□ 1 1/4")	
		ID mm(in)	Ø60 (Ø 1/2")	
	Indexing Time	sec/step	0.25	
LIVE TOOL	Milling Tool Speed (rpm)	r/min	-	4,000
	Motor (Max/Cont.)	kW(HP)	-	11/7.5/5.5 (15/10/7.5) [23/7.5 (31/10)]
	Torque (Max/Cont.)	Nm(lbf-ft)	-	140/70 (103.3/51.6) [146/48 (107.7/35.4)]
	Collet Size	mm(in)	-	ER40-Ø26 (1)
	Type	-	-	BMT75
TAIL STOCK	Taper	-	MT#6 : Live-center [MT#5 : Built-In]	
	Quill Dia.	mm(in)	Ø120 (Ø4.7")	
	Quill Travel	mm(in)	120 (4.7")	
	Travel	mm(in)	2,095 (82.5")	
TANK CAPACITY	Coolant Tank	ℓ (gal)	420 ℓ (111)	
	Lubricating Tank	ℓ (gal)	4 ℓ (1.1)	
POWER SUPPLY	Electric Power Supply	kVA	32kVA	
	Thickness of Power Cable	mm²	Over 25	
	Voltage	V/Hz	220/60 (200/50*)	
MACHINE	Floor Space (L×W)	mm(in)	5,951×2,270 (234.3"×89.4")	
	Height	mm(in)	2,173 (85.6")	
	Weight	kg(lb)	10,500 (23,149)	10,600 (23,369)
CNC	Controller	-	HYUNDAI WIA FANUC i Series - Smart Plus	

Specifications are subject to change without notice for improvement.

# SPECIFICATIONS

## Specifications

[ ] : Option

ITEM			L4000LC	L4000LMC
CAPACITY	Swing Over the Bed		mm(in) Ø800 (Ø31.5")	
	Swing Over the Carriage		mm(in) Ø590 (Ø23.2")	
	Max. Turning Dia.		mm(in) Ø570 (Ø22.4")	
	Max. Turning Length		2,120 (83.5")	2,035 (80.1")
	Bar Capacity		mm(in) Ø165 (Ø6.5")	
SPINDLE	Chuck Size		inch 21"	
	Spindle Bore		mm(in) Ø181 (Ø7.1")	
	Spindle Speed (rpm)		r/min 1,500	
	Motor (Max/Cont.)		37/30 (50/40)	37/30 (50/40)
	Torque (Max/Cont.)		3,378/2,739 (2,491.5/2,020.2)	2,457/1,992 (1,812.2/1,469.2)
	Spindle Type		Belt + 2 Step Gear	
	Spindle Nose		A1-15	
	C-axis Indexing		deg 0.001	
FEED	Travel	X/Z	mm(in) 330/2,200 (13"/86.6")	
	Rapid Traverse Rate	X/Z	m/min(ipm) 16/20 (623/787)	
	Slide Type		- Box Guide	
TURRET	No. of Tools		10 [12]	12
	Tool Size	OD	mm(in) □ 32 (□ 1 1/4")	
		ID	mm(in) Ø60 (Ø2 1/2")	
	Indexing Time		sec/step 0.25	
LIVE TOOL	Milling Tool Speed (rpm)		-	4,000
	Motor (Max/Cont.)		-	11/7.5/5.5 (15/10/7.5) [23/7.5 (31/10)]
	Torque (Max/Cont.)		-	140/70 (103.3/51.6) [146/48 (107.7/35.4)]
	Collet Size		-	ER40-Ø26 (1)
	Type		-	BMT75
TAIL STOCK	Taper		- MT#6 : Live-center [MT#5 : Built-In]	
	Quill Dia.		mm(in) Ø120 (Ø4.7")	
	Quill Travel		mm(in) 120 (4.7")	
	Travel		mm(in) 2,095 (82.5")	
TANK CAPACITY	Coolant Tank		ℓ (gal) 420 ℓ (111)	
	Lubricating Tank		ℓ (gal) 4 ℓ (1.1)	
POWER SUPPLY	Electric Power Supply		kVA 32kVA	
	Thickness of Power Cable		mm <sup>2</sup> Over 25	
	Voltage		V/Hz 220/60 (200/50*)	
MACHINE	Floor Space (L×W)		mm(in) 6,043×2,270 (237.9"×89.4")	
	Height		mm(in) 2,173 (85.6")	
	Weight		10,900 (24,030)	11,000 (24,251)
CNC	Controller		- HYUNDAI WIA FANUC i Series - Smart Plus	



# CONTROLLER

## HYUNDAI WIA FANUC i Series – Smart Plus

[ ] : Option

Controlled axis / Display / Accuracy Compensation	
Control axes	2 axes (X, Z) / 3 axes (X, Z, C) / 4 axes (X,Z,Y,C) 5 axes (X, Z, B, C, A) / 6 axes (X, Z, Y, B, C, A) 7 axes (X1/Z1, X2/Z2, B2, C1/C2)
Simultaneously controlled axes	2 axes [Max. 4 axes]
Designation of spindle axes	3 axes [Max. 4 axes]
Least setting Unit	X, Z, Y, B axes : 0.001 mm (0.0001 inch) C, A axes : 0.001 deg
Least input increment	X, Z, Y, B axes : 0.001 mm (0.0001 inch) C, A axes : 0.001 deg
Inch / Metric conversion	G20 / G21
High response vector control	
Interlock	All axes / Each axis
Machine lock	All axes
Backlash compensation	± 0~9999 pulses (exc.Rapid traverse / Cutting feed)
Position switch	
LCD / MDI	15 inch LCD unit (with Touch Panel)
Feedback	Absolute motor feedback
Stored stroke check 1	Over travel
Stored stroke check 2, 3	
PMC axis control	
Operation	
Automatic operation (Memory)	
MDI operation	
DNC operation	Needed DNC software / CF card
Program restart	
Wrong operation prevention	
Program check function	Dry run
Single block	
Search function	Program Number / Sequence Number
Interpolation functions	
Nano interpolation	
Positioning	G00
Linear interpolation	G01
Circular interpolation	G02, G03
Exact stop mode	Single : G09, Continuous : G61
Dwell	G04, 0 ~ 9999.9999 sec
Skip	G31
Reference position return	1st reference : G28, 2nd reference : G30 Ref. position check : G27
Thread synchronous cutting	G33
Thread cutting retract	
Variable lead thread cutting	
Multi / Continuous threading	
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse Jog : 0~2,000 mm/min (79 ipm) Manual handle : x1, x10, x100 pulses Reference position return
Cutting Feed command	Direct input F code
Feedrate override	0 ~ 200% (10% Unit)
Rapid traverse override	1%, F25%, 50%, 100%
Override cancel	
Feed per minute	G98
Feed per revolution	G99
Look-ahead block	1 block
Program input	
Tape Code	EIA / ISO
Optional block skip	9 ea
Program stop / end	M00, M01 / M02, M30
Maximum command unit	± 999,999.999 mm (± 99,999.9999 inch)
Plane selection	X-Y : G17 / Z-X : G18 / Y-Z : G19
Workpiece coordinate system	G52, G53, 6 pairs (G54 ~ G59)
Manual absolute	Fixed ON
Programmable data input	G10
Sub program call	10 folds nested
Custom macro	#100 ~ #199, #500 ~ #999
G code system	A, B/C
Programmable mirror image	G51.1, G50.1
G code preventing buffering	G4.1
Direct drawing dimension program	Including Chamfering / Corner R
Conversational Program	Smart Guide-i

Program input	
Multiple repetitive cycles	I, II
Canned cycle for turning	
Auxiliary function / Spindle speed function	
Auxiliary function	M & 4 digit
Level-up M Code	High speed / Multi / Bypass M code
Spindle speed function	S & 5 digit , Binary output
Spindle override	0% ~ 150% (10% Unit)
Multi position spindle orientation	M19 (S##)
Rigid tapping	
Constant surface speed control	G96, G97
Tool function / Tool compensation	
Tool function	T & 2 digit + Offset 2 digit
Tool life management	
Tool offset pairs	128 pairs
Tool nose radius compensation	G40, G41, G42
Geometry / Wear compensation	
Direct input of offset measured B	
Editing function	
Part program storage size	5,120m (2MB)
No. of registerable programs	1,000 ea
Program protect	
Background editing	
Extended part program editing	Copy, move and change of NC program
Memory card program edit	
Data input / output & Interface	
I/O interface	CF card, USB memory Embedded Ethernet interface
Screen hard copy	
External message	
External key input	
External workpiece number search	
Automatic data backup	
Setting, display and diagnosis	
Self-diagnosis function	
History display & Operation	Alarm & Operator message & Operation
Run hour / Parts count display	
Maintenance information	
Actual cutting feedrate display	
Display of spindle speed / T code	
Graphic display	
Operating monitor screen	Spindle / Servo load etc.
Power consumption monitoring	Spindle & Servo
Spindle / Servo setting screen	
Multi language display	Support 24 languages
Display language switching	Selection of 5 optional Languages
LCD Screen Saver	Screen saver
Unexpected disturbance torque	BST (Back spin torque limit)
Function for machine type	
Cs contour control (C & A axes)	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Polar coordinate interpolation	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Cylindrical interpolation	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Polygon turning (2 Spindles)	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Canned cycle for drilling	Mill, MS, Y, SY, LF-Mill, TTMS, TTSY
Spindle orientation expansion	MS, SY, TTS, TTMS, TTSY
Spindle synchronous control	MS, SY, TTS, TTMS, TTSY
Torque control	MS, SY, TTS, TTMS, TTSY
Y axis offset	Y, SY, TTSY
Arbitrary angular control	Y, SY, TTSY
Composite / Superimposed control	MS, SY, TTS, TTMS, TTSY
Balance cutting	TTS, TTMS, TTSY
Option	
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Tool offset pairs	200 pairs
Helical interpolation	
Optional block skip	40 ea, 200 ea (AICC II)

Figures in inch are converted from metric values.

The FANUC controller specifications are subject to change based on the policy of company CNC supplying.



# MOVEMENT FOR BETTER TOMORROW



## ECO FRIENDLY

Protect the environment for all humanity and generation to come

**01**

**Achieve  
carbon  
neutrality**

- Develop Net-zero Roadmap
- Heighten carbon emissions management
- Achieve carbon neutrality goals

**02**

**Boost  
resource  
circulation**

- Detail plans to reduce environmental impact
- Gradually reduce pollutant emissions
- Build eco-friendly supply chain

**03**

**Establish  
environmental  
management  
framework**

- Set up environmental management process
- Assess business impact of climate change risks

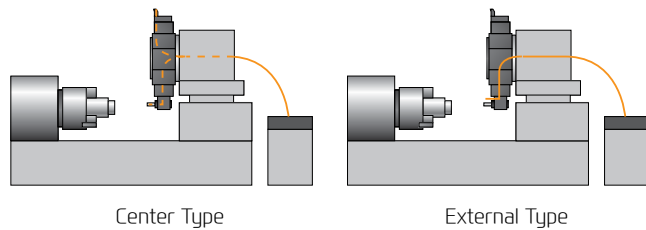


# HYUNDAI WIA ECO SYSTEM

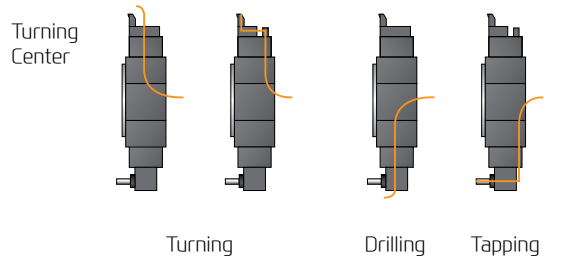
## MQL (Minimal Quantity Lubrication)

The goal of this system is to spray only the amount of lubricant required to prevent heat and chip build up at the cutting tool or work piece face.

### Example of Turning Center Application



### Example of Etc.



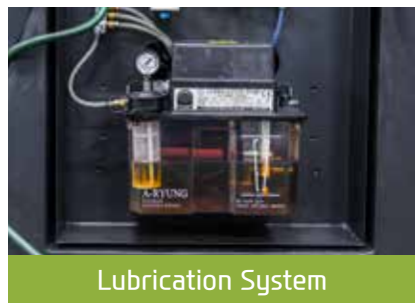
Oil Skimmer

An oil skimmer can increase coolant and tool life by removing tramp oil contaminants.



Mist Collector

Mist Collector reduces the amount of smoke and oil mist in the air. This helps build a safe and comfortable working environment and improve durability.



Lubrication System

By applying lubricant only when the machines axis are moving lubrication consumption is reduced by compared to standard systems.

# HYUNDAI WIA ENERGY SAVING

## HW-ESS (HYUNDAI WIA Energy Saving System)

HYUNDAI WIA Machine tool provides the optimum power saving function that can easily save energy with an intuitive user interface.



1. **Machine-ready power saving function** : Put all servo motors and other motors into sleep mode when no control or operation is done for a set time
2. **Work light auto-off function** : The work light is turned off automatically when no control or operation is done for a set time
3. **Chip conveyor auto power saving** : Operation/non operation time (timer) can be set to save energy
4. **Auto Power-off** : Auto power off after ending the an operation after a period of time
5. **Eco function** : Machine ready sleep mode can be activated/de-activated from the controller panel
6. **Power consumption monitor** : Real time power consumption can be monitored through the OP screen



You Tube HYUNDAI WIA MT

[www.youtube.com/HYUNDAIWIAMT](http://www.youtube.com/HYUNDAIWIAMT)

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With its top-quality HYUNDAI WIA machine tool creates a new and better world.



<http://machine.hyundai-wia.com>

HYUNDAI WIA Machine Tools  
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### HEADQUARTER

**Changwon Technical Center/R&D Center/Factory** 153, Jeongdong-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Korea TEL : +82 55 280 9114 FAX : +82 55 282 9114

**Overseas Sales Team /R&D Center** 37, Cheoldobangmulgwan-ro, Uiwang-si, Gyeonggi-do, Korea TEL : +82 31 8090 2539

### OVERSEAS OFFICES

**HYUNDAI WIA Machine America corp.** 450 Commerce Blvd, Carlstadt, NJ 07072, USA TEL : +1-201-987-7298

**HYUNDAI WIA Europe GmbH** Alexander-Fleming-Ring 57, 65428 Rüsselsheim Germany TEL : +49-0-6142-9256-0

**HYUNDAI WIA Machine Tools China** 2-3F, Bldg6, No.1535 Hongmei Road, Xuhui District, Shanghai, China TEL : +86-21-6427-9885

**India Branch Office** #4/169, 1st Floor, LOTTE BLDG, Rajiv Gandhi Salai, (OMR), Kandanchavadi, Chennai - 600096, Tamilnadu, India TEL : +91-76-0490-3348

**Vietnam Branch Office** Flat number 05, Service and Trade Center of Viet Huong Industrial Zone, Highway 13, Thuan Giao, Thuan An, Binh Duong, Vietnam TEL : +84-3-5399-5099

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