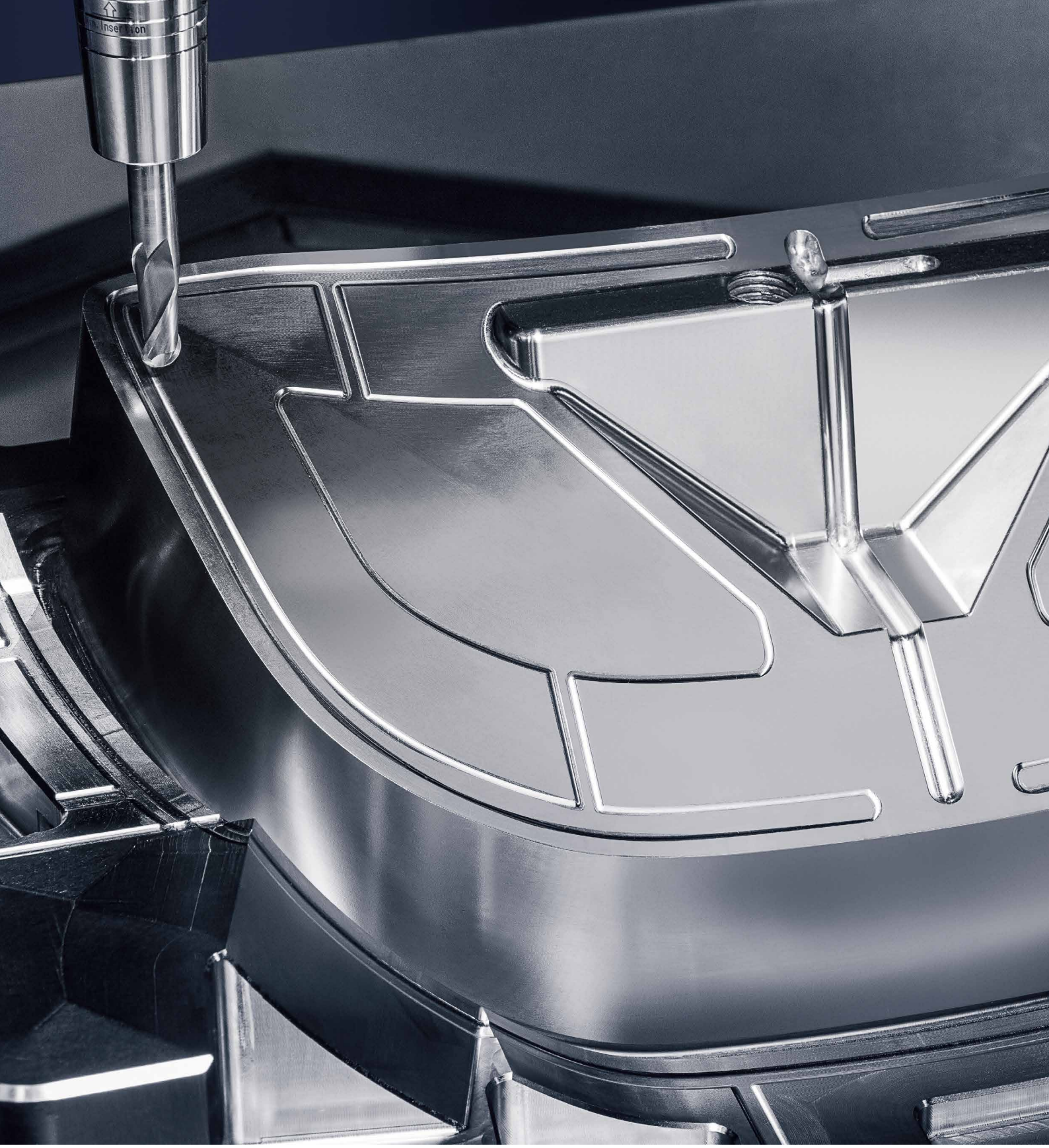


SIRIUS-UM+

High Precision Vertical Machining Center
with 500mm Y-Axis

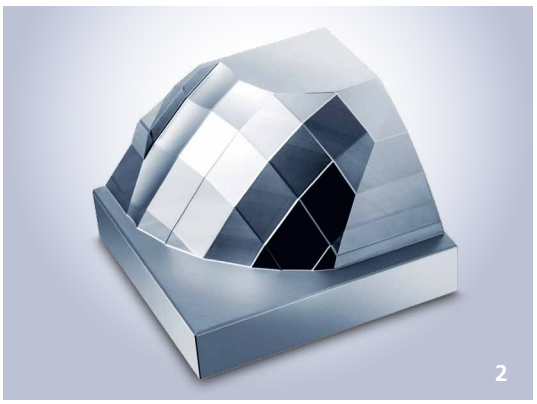
HWACHEON

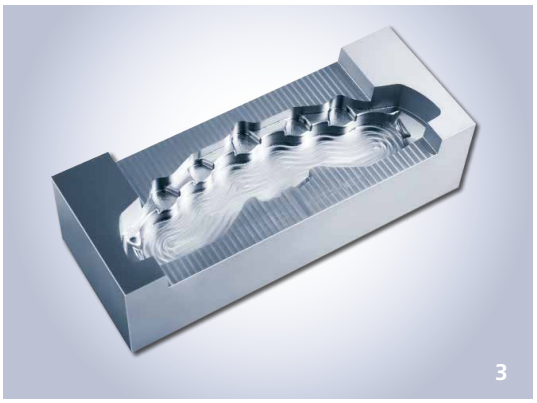
Contents

Product Overview

Basic Information

Detailed Information





1 Cellular Phone Mold / Automobile / NAK80
2 Headlight Mold / Automobile / NAK80
3 Brake Caliper / Automobile / NAK80

HIGH PRECISION 500mm Y-AXIS VERTICAL MACHINING CENTER

SIRIUS-UM+ is a high-precision vertical machining center that boasts the world's best performance. It's powerful roughing and precise finish machining capabilities provide the best machining solution in terms of product quality. Also, users can work more efficiently with this equipment's upgraded extra functions including user conveniences.

High-precision Processing Performance

1. Enhanced the rigidity of feed system
2. Improvement in structural rigidity and low-centered design, for enhanced static accuracy
3. Isolation and control of source of vibration that affects processing
4. Control of heat and frictional heat from both inside and outside that affect processing

Various Extra Functions

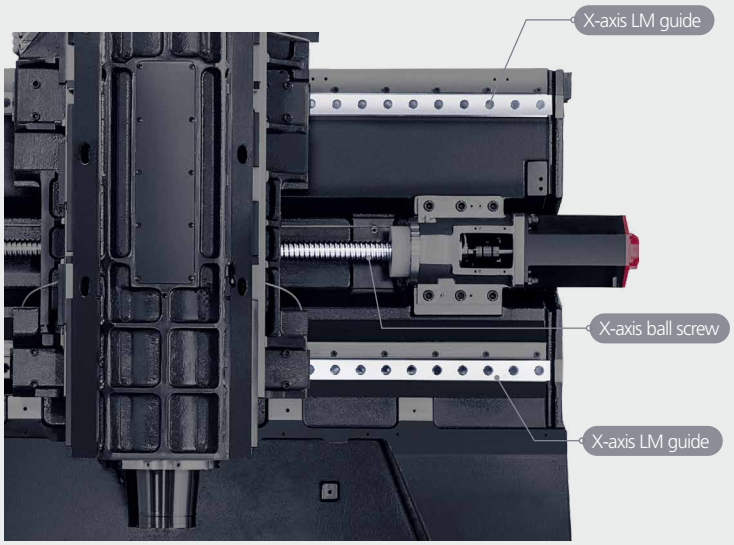
1. Standard: 20,000rpm
   (BBT-40, CAT-40, HSK-A63, SK-40)
   High-speed: 32,000rpm (HSK-E40)
   45,000rpm (HSK-E32)

Enhanced User Convenience

1. Compact cover design
2. Excellent chip disposal

Basic Information

Basic Structure



"Machining Stability Ensured"

- Stable machine structure
  (Outstanding rigid base and column structure ensured)
- Bridge type structure for machining precision
- High rigid roller LM guide for all axis

※ High-rigid and High-precision X-axis ball screw & LM guide.

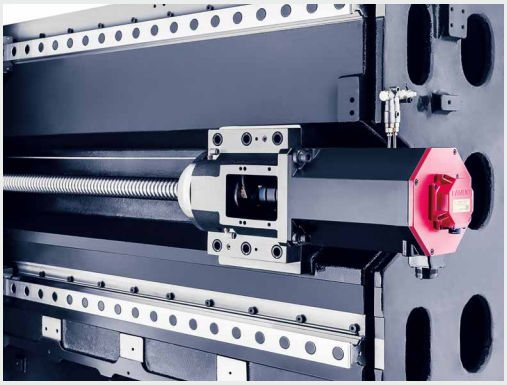
Stroke mm (inch)			Rapid Traverse m/min (ipm)		
X-axis	Y-axis	Z-axis	X-axis	Y-axis	Z-axis
750 (29.93)	500 (19.69)	450 (17.72)	24 (944)	24 (944)	24 (944)

"Enhanced Servo Motor Power for Feed System"

Improved **87%** in X & Y axis servo motor power compared to existing SIRIUS-UM

"X-axis Ball Screw of Improved Rigidity and Machining Precision"

Shorter lead and longer diameter in ball screw, achieving greater rigidity and more precise feed



Table

"Wide Workpiece Mounting Area"

Possible to set workpieces and vices in various sizes

Table Size mm (inch)	T Slot W x P mm (inch)	Max Loading Capacity kg_f (lb_f)
850 x 500 (33.46 x 19.68)	18 x 100 (0.71 x 3.94) Number of T slot: 5ea	700 (1,543)

* Unit: mm (inch)

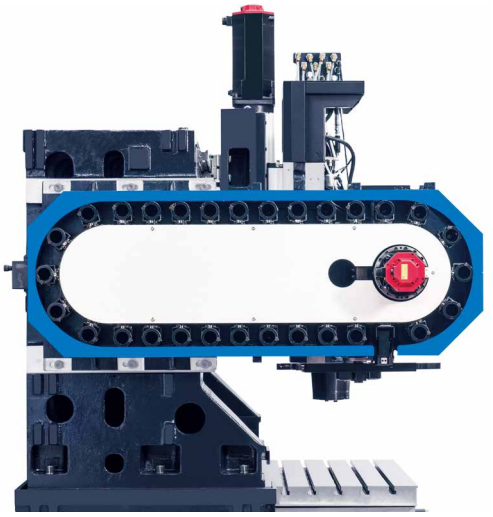
Spindle

Meeting the customer's machining purposes

"Various Specifications for Built-in Motor Spindles"

Max Spindle Speed rpm	Spindle Motor kW	Max Torque Nm
20,000 (STD)	37	221
32,000	18.5	5.9
45,000	7.5	7

Magazine

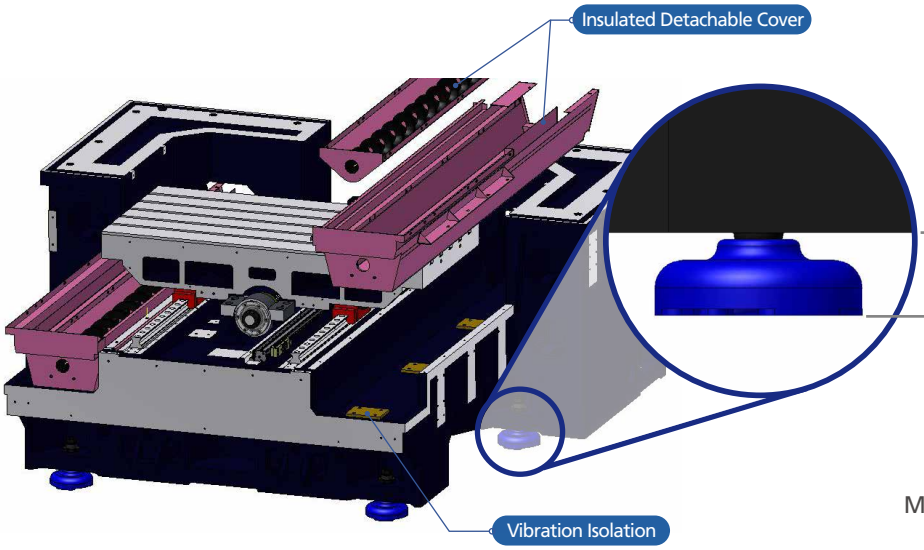


"Magazines in Various Specifications"

Various specifications are available based on users' tool types

	20,000 rpm		32,000 rpm	45,000 rpm
Tool Shank	BBT-40 (STD)	CAT-40, HSK-A63, SK-40	HSK-E40	HSK-E32
Tool Storage Capacity	30ea (OPT: 40, 60ea)			20 (OPT: 40ea)
Magazine Type	Chain Type			
Method of Tool Selection	Memory Random			
Tool Change Type	Swing Arm			

Countermeasures for Vibration and Heat



"Coil Conveyer with Minimal Transfer of Vibration and Heat"

Detachable cover structure is applied to minimize frame deformation due to vibration from coil conveyor operation and chip/coolant heat from friction and processing

60 mm
(2.36 inch)

"Low-centered Design"

Lower bottom surface of base for enhanced base rigidity and improved control of vibration

Minimize the Z-axis frame thermal displacement

"Insulated Frame"

Cutting Performance

Face mill, Carbon Steel (SM45C)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
80 (3.14)	460	1,500	2,400 (94.5)	3 (0.12)	64 (2.52)

Face mill, Plastic Mold Steel (NAK80)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
33 (1.3)	115	2,000	6,000 (236)	0.8 (0.03)	24 (0.94)

Face mill, Plastic Mold Steel (NAK80)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
40 (1.57)	126	1,200	4,500 (177)	1 (0.04)	28 (1.1)

Face mill, Plastic Mold Steel (NAK80)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
50 (1.97)	86	900	1,800 (70.9)	1.5 (0.06)	32 (1.26)

Face mill, Plastic Mold Steel (KP4M)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
33 (1.3)	99	2,000	6,000 (236)	0.5 (0.02)	33 (1.3)

Face mill, Plastic Mold Steel (KP4M)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
33 (1.3)	144	2,000	6,000 (236)	1 (0.04)	24 (0.94)

Face mill, Plastic Mold Steel (KP4M)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
40 (1.57)	210	1,600	5,000 (197)	1.5 (0.06)	28 (1.1)

Face mill, Plastic Mold Steel (KP4M)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
50 (1.97)	180	1,200	1,800 (70.9)	2 (0.08)	50 (1.97)

Face mill, Plastic Mold Steel (KP4M)

Tool Dia mm (inch)	Material Removal Rate cm³/min	Spindle Speed rpm	Feed mm/min (ipm)	Axil Depth mm (inch)	Radial Depth mm (inch)
50 (1.97)	126	1,270	1,800 (70.9)	2 (0.08)	35 (1.38)

* The machining results above are examples based on the factory test standards, and are subjected to the changes in conditions.

Standard / Optional Accessories Status

S : Standard O : Option

NO.	Item	Description			SIRIUS-UM+
1	Spindle	20,000rpm	37 / 18.5kW	221Nm	S
2		32,000rpm	18.5 / 13kW	5.9Nm	O
3		45,000rpm	7.5 / 5.5kW	7Nm	O
4	Magazine	20,000rpm / 32,000rpm	30 Tools Magazine		S
5			40, 60 Tools Magazine		O
6		45,000rpm	20, 40 Tools Magazine		O
7	Tool Shank	20,000rpm	BBT-40		S
8			CAT-40, HSK-A63, SK-40		O
9		32,000rpm	HSK-E40		O
10		45,000rpm	HSK-E32		O
11	Coolant Function	Head Flushing (0.12MPa, 0.75kW)			S
12		CTS Coolant Device (For 7 MPa, only water soluble coolants are available)	3MPa	3.0kW	O
13			7MPa	5.5kW	O
14		Oil Mist (Semi dry cutting system)			O
15	Chip Removal Function	Air Blower			S
16		Coil Conveyor (2ea)			S
17		Air Gun			O
18		Coolant Gun			O
19		Lift-up Chip Conveyor	Hinge Type, Scraper Type, Mesh-drum Filter Type		O
20		Mist Collector (Separately Mounting)			O
21	Precision Machining Function	Linear Scale (X / Y / Z)			O
22		Hwacheon Efficient Contour Control System (HECC)			S
23		Hwacheon Thermal Displacement Control System (HTDC)			S
24		Hwacheon Artificial Intelligence Control System (HAI): 200 Block			S
25		Hwacheon Artificial Intelligence Control System (HAI): 600 Block			O
26		Hwacheon Artificial Intelligence Control System (HAI): 1000 Block			O
27		Lubrication System			S
28		Spindle Cooler	Oil Cooler Type		S
29	Measuring & Automation Function	Tool Measuring System: Renishaw / Blum (Touch Type, Laser Type)			O
30		Workpiece Measuring System: Renishaw / Blum (Touch type)			O
31		Tool Life Management			O
32		Auto Door			O
33		Hwacheon Tool Load Detect System (HTLD)			S
34		Cutting Feed Optimization System (OPTIMA)			S
35	Convenient Function	Ethernet Interface			S
36		MPG Handle (1ea)			S
37		MPG Handle (3ea)			O
38		Signal Lamp with 3 Color (R, G, Y)			S
39		10.4” Color LCD			S
40		Tool Box			S
41		NC Cooler			O
42		Transformer			O
43		Oil Skimmer			O
44		Air Dryer			O
45		Door Interlock			S
46		Workpiece Coordinate System 48 pairs			S
47		Lubrication Oil Separation Tank			S
48		Perfect Base Around Splash Guard			S
49		Part Program Storage Length 256 kB (500ea)			S
50		Data Server (256 MB)			S
51		Data Server (1,024 MB)			O
52		Data Server Interface			S
53		Manual Guide i			O
54		Monitoring Solution of Real-time Operational Status (M-VISION Plus)			O
55		4-axis Interface			O

USER FRIENDLY DESIGN, A WIDE RANGE OF OPTIONAL FEATURES

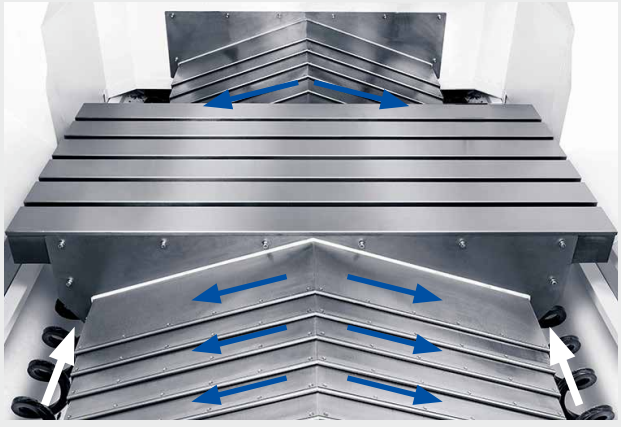
User convenience and various additional function

With a user-centric architecture, SIRIUS-UM+ offers a user-friendly design and a variety of options.
These functions help operators concentrate fully on machining operations and work more safely and efficiently.
Based on Hwacheon's exceptional technological expertise, a wide range of options are available for upgrading performance, ensuring more powerful and precise results.

* Above picture is for reference only.

"High-precision Rotary Table" (OPT)

Hwacheon's own developed rotary table enables stable heavy duty & precise machining with its strong hydraulic clamping system and high rigidity roller drive structure.



* Above picture is for reference only.

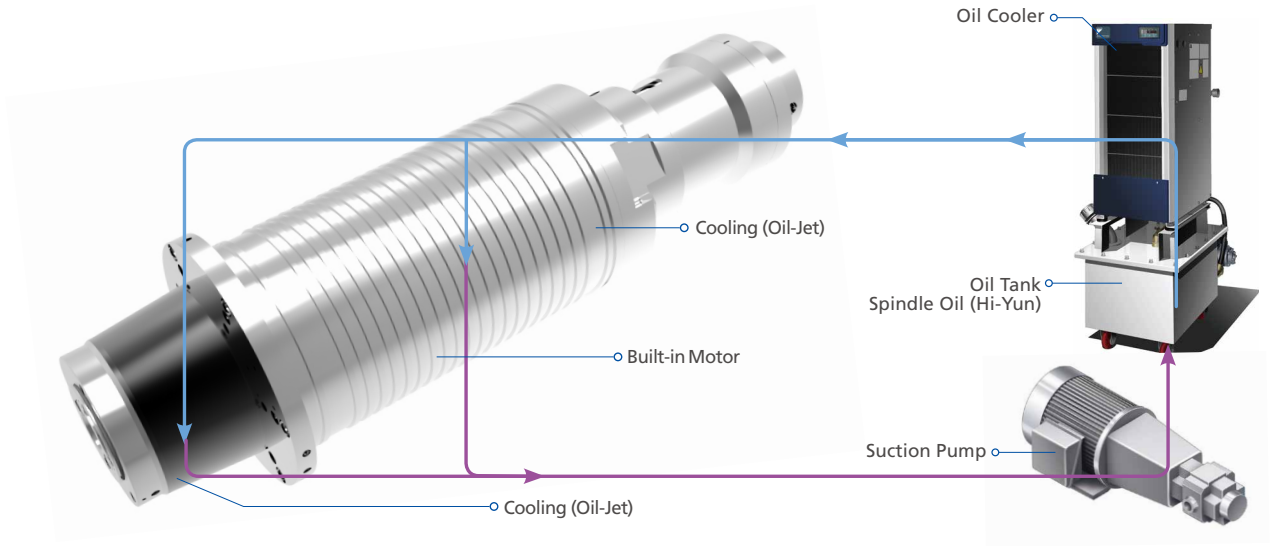
"Excellent Chip Disposal"

Two coil conveyors in the wide and steeply slanted slide cover structure that are located under the table provide excellent chip disposal performance

"Excellent in Isolated Discharge of Chips and Coolant"

Isolated discharge of chips and coolant extends the service life of a coolant tank

Cooling System



Maintenance Unit

Lubrication Method

Using Oil : Viscosity of ISO VG 68
Tank Capacity : 12 ℓ
Power : 57 W
Discharge Rate : 125 cc / 50 Hz
150 cc / 60 Hz
Pressure : 1.7 MPa

Compressed Air Supplier

Pressure : 0.5 ~ 0.7 MPa
Inlet Hose : Ø16
Max Air Consumption : 690 N ℓ /min

Coolant and Chip Removal

"The Coolant Tank and The Automatic Coolant Feeder"

External Coolant Tank Tank Capacity : 220 ℓ (58.12 gal)

- External coolant tank is installed at the rear of machine
  Easy to exchange coolant, clean the tank and maintain pump

· Coolant Pump Specification

Head Coolant Pump - Power : 0.75 kW
Coolant Gun Pump - Power : 0.75 kW

CTS Coolant Pump (OPT)
- Pressure : 3 MPa / 7 MPa
- Power : 3.0 kW / 5.5 kW

* For 7 MPa, only water soluble coolants are available

Convenient Operator Panel

90° Rotating Operator Panel (STD)

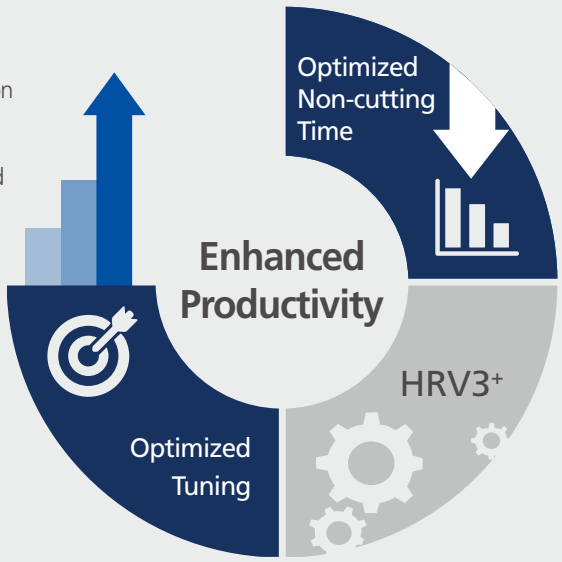
The operator panel is newly designed from the operator's viewpoint and thus enhances the operator's convenience.

"User Friendly Design"

- 10.4" display as standard
  (USB and PCMCIA cards as standard)
- Enhanced operability by optimizing the layout and improving the touch feeling of control buttons
- Separately mounting MPG for workpiece setting convenience.
- Long time continuous DNC operation with the CF card even without the data server.

Machine Optimization (STD)

- Smart rigid tap function applied for machining time reduction.
- The cycle machining as well as the operating time and the acceleration / deceleration speed of feeding system are optimized.
- High-level precision, speed and smoothness are realized by enhanced processing performance of tiny segments.
- Dramatically reduced non-cutting time during machining ensures optimal productivity.
- The latest machining technology adopted.
- Machining surface quality enhanced by HRV3+ control.
  (HRV3+: effectively prevents machine oscillation by controlling the servo current to enhance the machining surface quality.)



"Enhanced Productivity"

Operating Convenience Function

< M-CODE LIST >

- M-CODE LIST
- The screen provides easy and quick search and utilization.

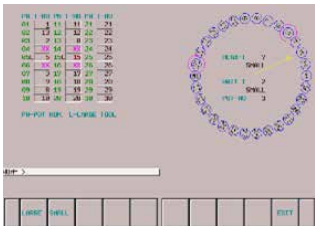
(However, it is necessary to discuss with factory in advance to add and / or change M-codes.)

< GUI (Graphical User Interface) >

- Graphic interface for tool / workpiece measurement
- Automatic offset update function
- Tool setting and damaged tool detection, Workpiece setup and measuring while machining
- Optimized time and failure rate High competitiveness

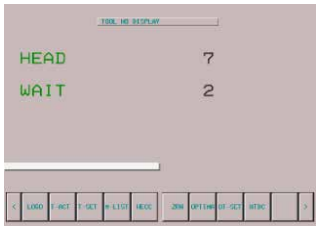
< Tool Management>

Large / Small Diameter Tool Management System



- Magazine tool management system
- Magazine tool check in real time
- Large / small diameter tools setting

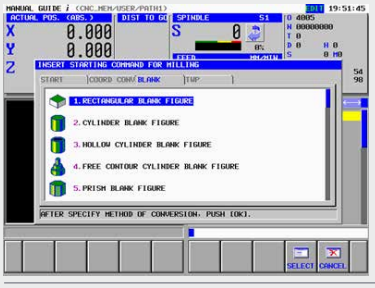
< Tool View >

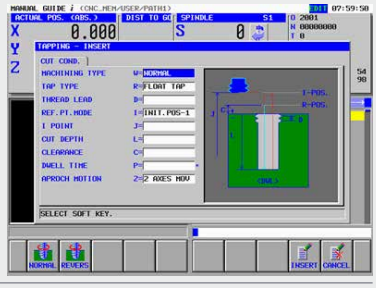


- Head mounted tool check in real time
- Waiting pot mounted tool check in real time

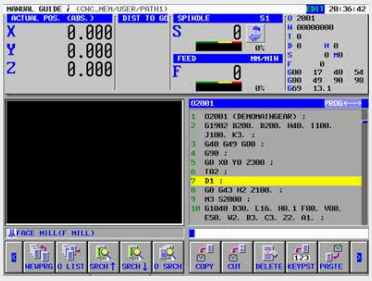
Manual Guide i

With the Manual Guide i, the operator is able to create a machining program for the desired geometry including the pattern simply if he / she enters numeric values for the basic machining geometry.





· Programming in convenient functions and rich machining cycles



· It displays the machine status and the tools in use while machining.

· The realistic machining simulation checks the program.

Hwacheon Software

Hwacheon Tool Load Detect System

"Detect and diagnose the most minute of tool-end point movement"

HTLD constantly monitors the tool wear to prevent accidents, which may occur from a damaged tool and help to stop tool wear from deteriorating the workpiece.
(The load is measured every 8 msec to ensure accuracy.)

Hwacheon High Efficiency Contour Control System

"Roughing quickly, finishing is precisely"

HECC offers an easy to use programming interface for different workpieces and different processing modes. The system provides a precise,custom contour control for the selected workpiece, while prolonging the life of the machine and decreasing process time. The customizable display provides real-time monitoring and quick access.

Cutting Feed Optimization System

"Maximize your productivity with intelligent system"

OPTIMA utilizes an adaptive control method to regulate the feed rate in real time, to sustain the cutting load during a machining process. As a result the tools are less prone to damage and the machining time is optimized.

Hwacheon Spindle Displacement Control System

"Real-time correction for the displacement in the spindle"

When the spindle rotates at high speed, the centrifugal force drives the taper to expand, causing errors in Z axis. HSDC constantly monitors the temperature at each spindle region and makes optimal prediction for thermal displacement. The system then makes necessary adjustments and eff ectively minimizing thermal displacement.

Hwacheon Frame Displacement Control System

"System for maintaining processing accuracy for a long period of machining"

HFDC is equipped with highly sensitive thermal sensors in the casting region where thermal activity is suspected; monitoring and correcting displacement.

Hwacheon Thermal Displacement Control System

"Hwacheon Spindle Displacement Control System + Hwacheon Frame Displacement Control System"

HTDC integrates the Hwacheon Spindle Displacement Control system and the Frame Displacement Control System.

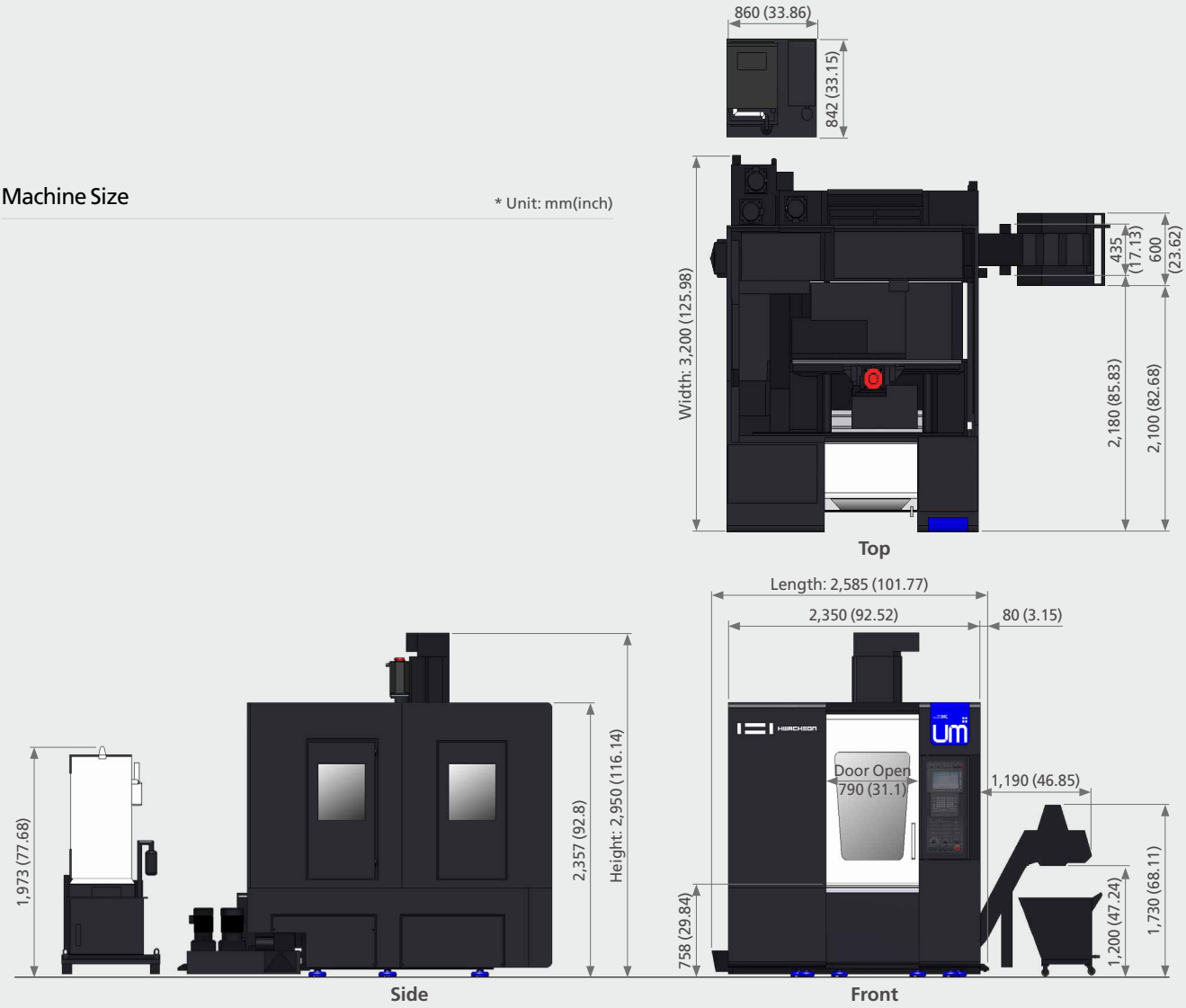
Monitoring Solution of Real-time Operational Status

"See everything everywhere"

- Monitoring system for the User's factory machine management
- User can always check the status of the machine utilizes a smartphone

Machine Size

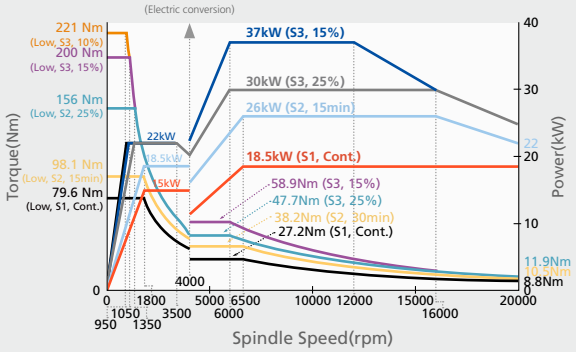
* Unit: mm(inch)



Spindle Power – Torque Diagram

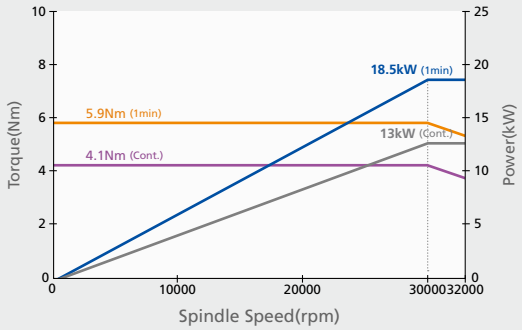
20,000rpm (STD)

Max Power : 37 kW (50 HP) / Max Torque : 221 Nm



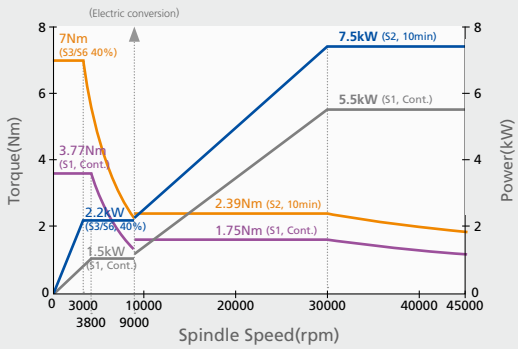
32,000rpm (OPT)

Max Power : 18.5 kW (25 HP) / Max Torque : 5.9 Nm

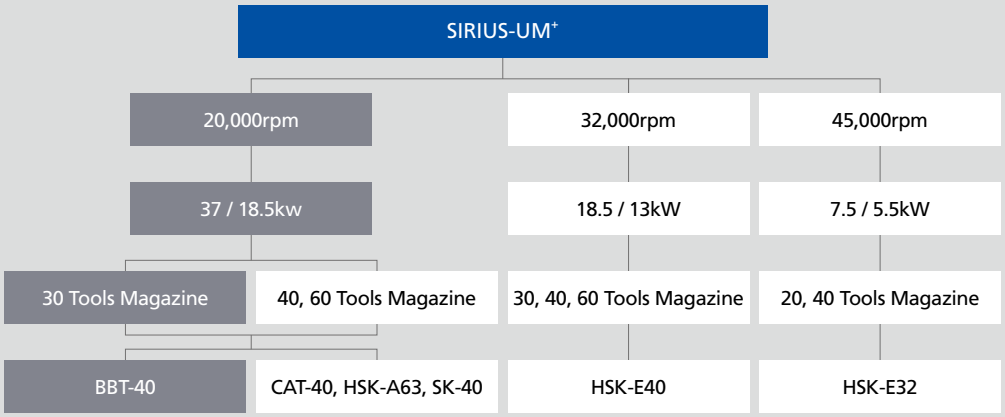


45,000rpm (OPT)

Max Power : 7.5 kW (10 HP) / Max Torque : 7 Nm



Product Line-up



Machine Specifications

Item		SIRIUS-UM+		
Travel				
X-axis Stroke	mm (inch)	750 (29.53)		
Y-axis Stroke	mm (inch)	500 (19.69)		
Z-axis Stroke	mm (inch)	450 (17.72)		
Distance from Table Surface to Spindle Gauge Plane	mm (inch)	150 ~ 600 (5.91 ~ 23.62)		
Distance between Column to Spindle Center	mm (inch)	183 (7.2)		
Distance between Column	mm (inch)	1,090 (42.91)		
Table				
Table Size	mm (inch)	850 x 500 (33.46 x 19.69)		
Table Loading Capacity	kg_f (lb_f)	700 (1,543)		
Table Surface Configuration (T slots W x P / No. of slots)	mm (inch)	18 x 100 (0.71 x 3.94) / 5ea		
Spindle				
Max Spindle Speed	rpm	20,000 (STD)	32,000	45,000
Spindle Motor	kW (HP)	37 / 18.5 (50 / 25)	18.5 / 13 (25 / 17.5)	7.5 / 5.5 (10 / 7.5)
Spindle Bearing Inner Diameter	mm (inch)	Ø70 (2.76)	Ø45 (1.77)	Ø40 (1.57)
Method of Spindle Lubrication & Cooling	-	Oil-Jet Lubrication + Jacket Cooling		
Feedrate				
Rapid Traverse (X / Y / Z)	m/min (ipm)	24 / 24 / 24 (944 / 944 / 944)		
Cutting Feedrate (X / Y / Z)	mm/min (ipm)	1 ~ 24,000 (0.04 ~ 944)		
Motor				
Feed Motor (X / Y / Z)	kW (HP)	3 / 3 / 4 (4 / 4 / 5)		
Coolant Motor (Spindle / Coolant Gun)	kW (HP)	0.75 / 0.75 (1 / 1)		
Spindle Cooler (50 / 60Hz): Inverter Type	kW (HP)	5 / 5.6 (6.7 / 7.5)		
ATC				
Type of Tool Shank	-	BBT-40 (OPT: CAT-40, HSK-A63, SK-40)	HSK-E40	HSK-E32
Type of Pull Stud	-	MAS P40T-1 (45°)	-	-
Tool Storage Capacity	ea	30 (OPT: 40, 60)		20 (OPT: 40)
Max Tool Diameter (With / Without Adjacent Tools)	mm (inch)	Ø75 / Ø150 (2.95 / 5.91)	Ø50 / - (1.97 / -)	Ø32 / - (1.26 / -)
Max Tool Length	mm (inch)	300 (11.81)	200 (7.87)	120 (4.72)
Max Tool Weight	kg_f (lb_f)	8 (17.64)	1.5 (3.31)	0.5 (1.1)
Method of Tool Selection	-	Memory Random		
Method of Operation	-	Servo Motor		
Power Source				
Electric Power Supply	kVA	55		
Compressed Air Supply (Pressure x Consumption)	-	0.5 ~ 0.7MPa x 690 N ℓ/min		
Tank Capacity				
Spindle Cooling / Lubrication	ℓ (gal)	40 / 12 (10.57 / 3.17)		
Coolant	ℓ (gal)	220 (58.12)		
Machine Size				
Height	mm (inch)	2,950 (116.14)		
Floor Space (Length x Width)	mm (inch)	2,585 x 3,200 (101.77 x 125.98)		
Weight	kg_f (lb_f)	8,000 (17,637)		
NC Controller		Fanuc 31i-B		

NC Specifications [Fanuc 31i-B]

S : Standard O : Option

Item	Specification	
Controlled Axis		
Controlled Axis	3-axes	S
Controlled Axis	5-axes (Max)	O
Simultaneously Controlled Axis	3-axes	S
Simultaneously Controlled Axis	4-axes (Max)	O
Least Input Increment 1/10	0.0001mm, 0.0001deg, 0.00001inch	S
inch / metric Conversion	G20, G21	S
Store Stroke Check 1		S
Store Stroke Check 2		S
Mirror Image		S
Stored Pitch Error Compensation		S
Backlash Compensation		S
Operation		
Automatic & MDI Operation		S
DNC Operation by Memory Card	PCMCIA card is required	S
Program Number Search		S
Sequence Number Search		S
Dry Run, Single Block		S
Manual Handle Feed	1Unit	S
Manual Handle Feed Rate	x1, x10, x100	S
Handle Interruption		S
Interpolation Function		
Positioning	G00	S
Linear Interpolation	G01	S
Circular Interpolation	G02, G03	S
Dwell (Per Deconds)	G04	S
Cylindrical Interpolation	4-Axis interface option is equired	O
Helical Interpolation	Circular interpolation plus max 2 axes linear interpolation	S
Nano Smooting		O
Reference Position Return Check	G27	S
Reference Position Return	G28,G29	S
2nd Reference Position Return	G30	S
Skip Function	G31	S
NURBS interpolation		O
Feed Function		
Rapid Traverse Override	F0, F25, F50, F100	S
Feedrate (mm/min)		S
Feedrate Override	0 ~ 200%	S
Jog Feed Override	0 ~ 6,000mm/min	S
Override Cancel	M48, M49	S
Program Input		
Tape Code	EIA / ISO	S
Optional Block Skip	1ea	S
Program Number	O4-digits	S
Sequence Number	N8-digits	S
Decimal Point Programming		S
Coordinate System Detting	G92	S
Workpiece Coordinate System	G54 - G59	S
Workpiece Coordinate System Preset		O
Addition of Workpiece Coordinate Pair	48ea	S
Addition of Workpiece Coordinate Pair	300ea	O
Extend Program Edit Function	Copy / Move / Etc.	S
Manual Absolute ON and OFF		S
Chamfering / Corner R		S
Programmable Data Input	G10	S
Sub Program Call	10 Folds Nested	S
Custom Macro B		S
Addition of Custom Macro Common Variables	#100 - #199, #500 - #999	O
Canned Cycles for Drilling		S
Automatic Corner Override		O

Item	Specification	
Program Input		
Feedrate Control With Acceleration in Circular Interpolation		S
Scaling		O
Coordinate System Rotation		S
Polar Coordinate Command		O
Programmable Mirror Image		O
Tape Format For Fanuc Series 15		O
Manual Guide i		O
Spindle Speed Function		
Spindle Serial Output		S
Spindle Override	50 - 120%	S
Spindle Orientation		S
Rigid Tapping		S
Tool Function / Compensation		
Tool Function	T4-digits	S
Tool Offset Pairs	±6-digits / 200ea	S
Tool Offset Pairs	±6-digits / 400ea, 999ea	O
Tool Offset Memory C		S
Tool Length Measurement		S
Cutter Compensation C		S
Tool Life Management		O
Tool Length Compensation		S
Editing Operation		
Part Program Storage Length / Number of Register Able Programs	256kB / 500ea	S
	512kB / 1000ea, 1MB / 1000ea, 2MB / 1000ea	O
Background Editing		S
Extended Part Program Editing		S
Play Back		O
Setting and Display		
Clock Function		S
Self-diagnosis Function		S
Alarm History Display		S
Help Function		S
Run Hour and Parts Count Display		S
Graphic Function		S
Dynamic Garphic Display		O
Multi-language Display	Chinese, English, French, German, Hungarian, Italian, Korean, Polish, Portuguese, Russian, Spanish, Swedish	S
Data Input / Output		
Reader / Puncher Interface Ch1 / Ch2	RS232C	S
Data Server	256MB	S
Data Server	1,024MB	O
Ethernet Interface		S
Memory Card Interface / USB Interface		S
Auto Data Backup	SRAM + Part Program	S
Others		
Display Unit	10.4" Color LCD	S
Hwacheon Machining Software		
Hwacheon Artificial Intelligence Control System (HAI): 200 Block		S
Hwacheon Artificial Intelligence Control System (HAI): 600 Block		O
Hwacheon Artificial Intelligence Control System (HAI): 1000 Block		O
Hwacheon Efficient Contour Control System (HECC)		S
Hwacheon Tool Load Detect System (HTLD)		S
Cutting Feed Optimization System (OPTIMA)		S
Hwacheon Thermal Displacement Control System (HTDC)		S
4-axis Interface Function		
Controlled Axis	Included 4-axis interface option	O
Simultaneously Controlled Axis	Included 4-axis interface option	O
Control Axis Detach	Included 4-axis interface option	O

Hwacheon Global Network

Hwacheon Headquarters Hwacheon Europe Hwacheon Asia Hwacheon America

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.
UNIT 507, 5TH FLOOR, LOT T2-4, D1 ROAD, SAIGON HI-TECH PARK,
TAN PHU WARD, DISTRICT 9, HO CHI MINH CITY, VIETNAM
TEL: +84 (0)28-2253-2613 FAX: +84 (0)28-2253-2614

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

HC-M308-R1.1-201911