VESTA-1300

Software Optimized Vertical Machining Center

HWACHEON

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Product Overview

Basic Information

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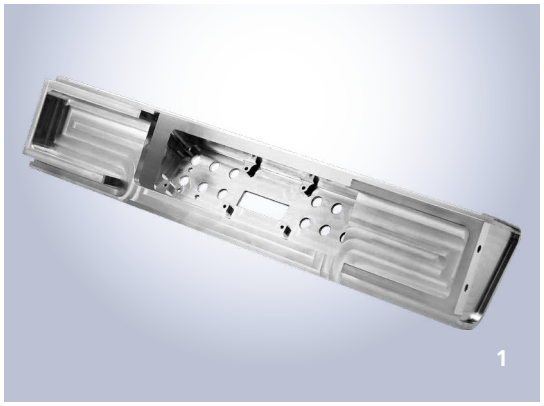
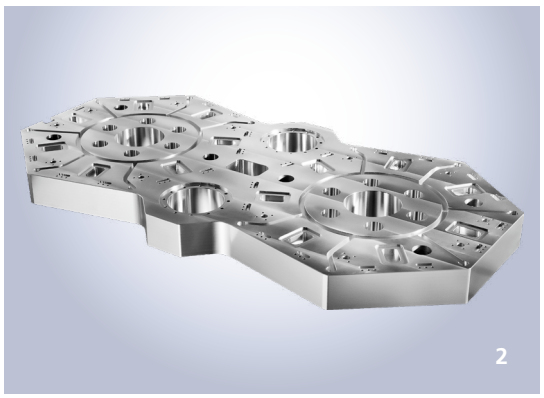
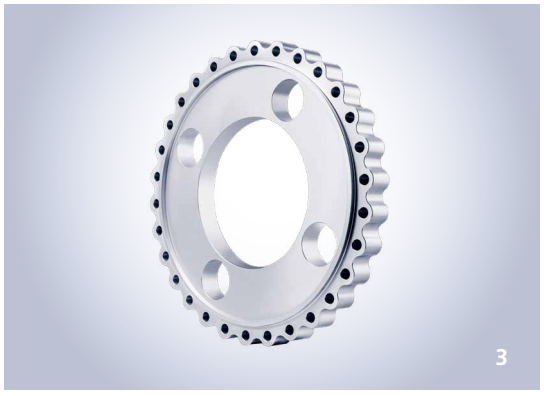






1 Semiconductor Equipment Part / Semiconductor / Aluminum
2 Aerospace Part / Aerospace / Al6061
3 Gear / Robot Arm / Aluminum

670 mm Y-axis Vertical Machining Center with Software Function for Enhanced Productivity and Precision

VESTA-1300 is recommended for powerful cutting based on its stable structure. It is equipped with Hwacheon's proprietary technologies such as productivity enhancement software (HECC, HTLD and OPTIMA) and precision enhancement software (HTDC and HAI) and provides differentiated quality different from existing machining center for parts.

Upgrades for Enhanced Machining Performance

1. Improved table utilization (Max 5 ea 6" vice installation)
2. Enhanced tool switch time and chip to chip time
3. Hwacheon's proprietary software

Enhanced Work Convenience

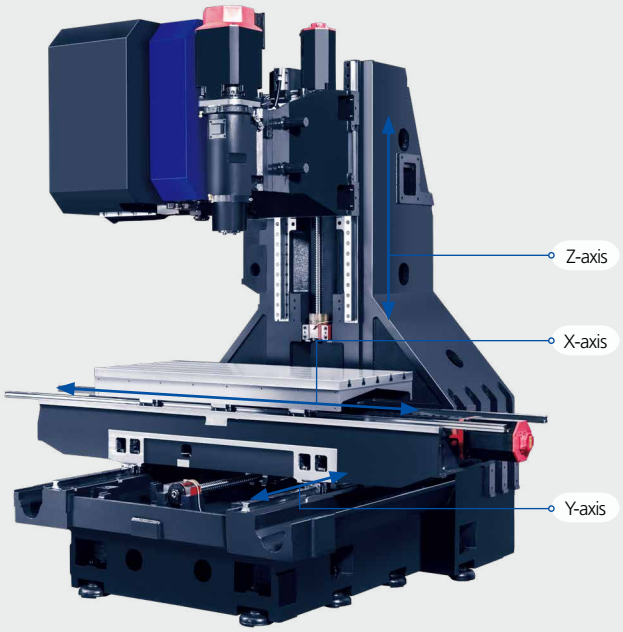
1. Reduction in work fatigue (Front Two-Door)
2. Pendant arm type operator panel
3. The tempered safety glass ensures machining visibility

Easy Maintenance

1. Left & Right Side type chip conveyor
   - **STD :** Side chip bucket
   - **OPT :** Side type lift-up chip conveyor
2. Wide side door for user convenience

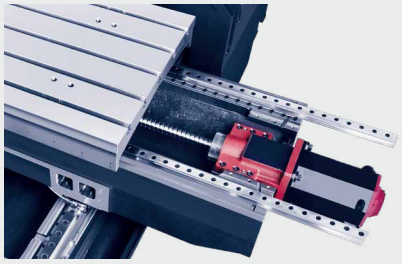
Basic Information

Basic Structure



"Machining Stability Ensured"

· Stable machine structure
(Outstanding rigid base and column structure ensured)
· C type structure for work accessibility



※ X-axis LM Guide

Stroke mm (inch)			Rapid Speed m/min (ipm)		
X-axis	Y-axis	Z-axis	X-axis	Y-axis	Z-axis
1,300 (51.18)	670 (26.38)	650 (25.59)	40 (1,575)	40 (1,575)	32 (1,260)

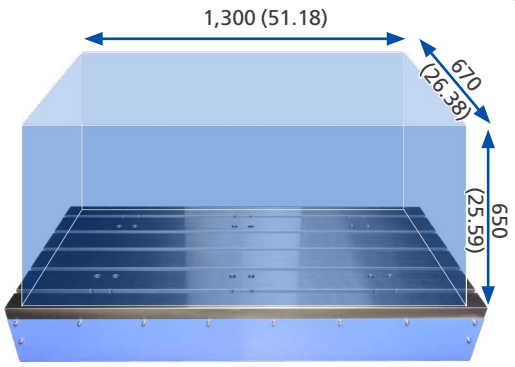
Table

* Unit : mm (inch)

"Wide Workpiece Mounting"

Possible to set workpieces and vices in various sizes
※ Max 5 ea 6" Vice Installation

Table Size mm(inch)	T Slot W x P mm (inch)	Max Loading Capacity kg_f (lb_f)
1,450 x 670 (57.09 x 26.38)	18 x 125 (0.71 x 4.92) Number of T Slot : 5 ea	1,300 (2,866)

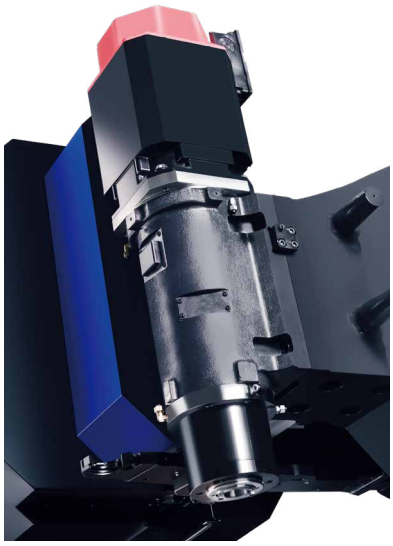


Spindle

Meeting the customer's machining purposes

"Various Specifications for Direct-Coupled Spindles"

	Max Spindle Speed rpm		FANUC		HEIDENHAIN	
			Spindle Motor kW	Max Torque Nm	Spindle Motor kW	Max Torque Nm
BT-40	10,000	Regular Type	18.5	117.7	32	203.7
		CTS (OPT)				
	12,000 (OPT)	Regular Type	18.5	117.7		
		CTS (OPT)				
BT-50 (OPT)	8,000	Regular Type	15	286	-	-
		CTS (OPT)	26	165		



Magazine

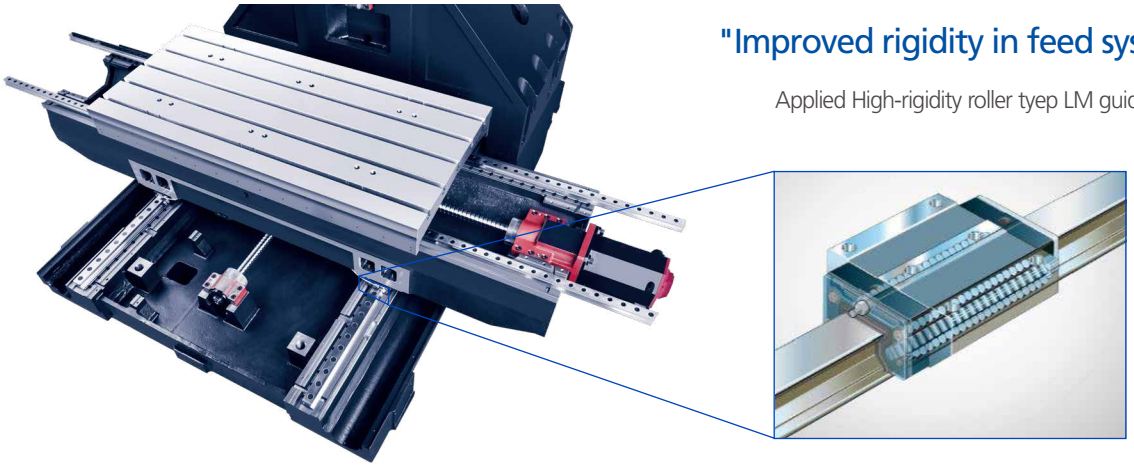
※ BT-40 Magazine

"Magazines in Various Specifications"

Various specifications are available based on users' tool types

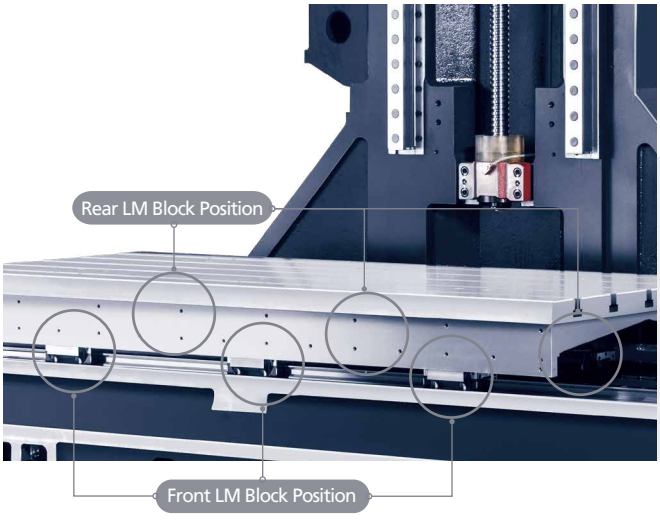
Item \ Tool Shank	BT-40	OPT) CAT-40, SK-40	OPT) BT-50, CAT-50,SK-50
	Drum Type		Chain Type
Tool Storage Capacity	30	24	30
Method of Tool Selection	Memory Random		
Tool Change Type	Swing Arm		

Feed System



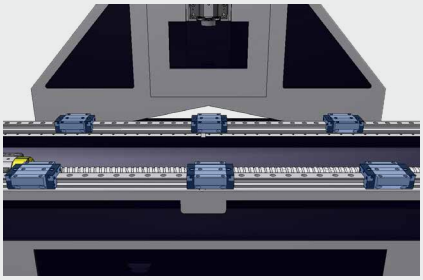
"Improved rigidity in feed system"

Applied High-rigidity roller tyep LM guides

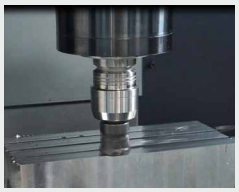


X-Axis Structure for load distribution

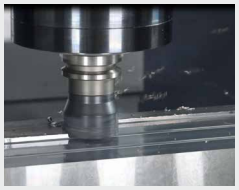
"6 LM Blocks"



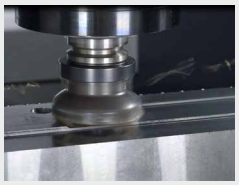
BT-40 Cutting Performance



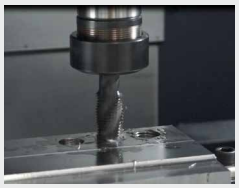
Face mill, Carbon Steel (SM45C)					
Tool Dia mm (inch)	Material Removal Rate cm^3/min	Spindle Speed rpm	Feed mm/min (ipm)	Axial Depth mm (inch)	Radial Depth mm (inch)
50 (1.97) / R8	400	1,500	5,000 (197)	2 (0.08)	40 (1.57)



Face mill, Carbon Steel (SM45C)					
Tool Dia mm (inch)	Material Removal Rate cm^3/min	Spindle Speed rpm	Feed mm/min (ipm)	Axial Depth mm (inch)	Radial Depth mm (inch)
60 (2.36)	360	1,500	3,000 (118)	3 (0.12)	40 (1.57)

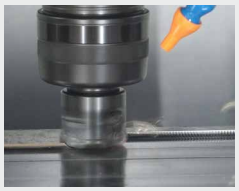


Face mill, Carbon Steel (SM45C)					
Tool Dia mm (inch)	Material Removal Rate cm^3/min	Spindle Speed rpm	Feed mm/min (ipm)	Axial Depth mm (inch)	Radial Depth mm (inch)
80 (3.15)	317	1,500	2,640 (104)	2 (0.08)	60 (2.36)



Tap, Carbon Steel (SM45C)			
Tap Size	Spindle Speed rpm	Feed mm/min (ipm)	Spindle Load %
M28 x P3.0	300	900 (35.4)	100

BT-50 Cutting Performance



Face mill, Carbon Steel (SM45C)					
Tool Dia mm (inch)	Material Removal Rate cm^3/min	Spindle Speed rpm	Feed mm/min (ipm)	Axial Depth mm (inch)	Radial Depth mm (inch)
63 (2.48) / R8	882	1,500	3,920 (154)	5 (0.2)	45 (1.77)

Face mill, Carbon Steel (SM45C)					
Tool Dia mm (inch)	Material Removal Rate cm^3/min	Spindle Speed rpm	Feed mm/min (ipm)	Axial Depth mm (inch)	Radial Depth mm (inch)
80 (3.15) / R2.5	684	1,500	9,500 (374)	1.2 (0.05)	60 (2.36)

End mill, Carbon Steel (SM45C)					
Tool Dia mm (inch)	Material Removal Rate cm^3/min	Spindle Speed rpm	Feed mm/min (ipm)	Axial Depth mm (inch)	Radial Depth mm (inch)
40 (1.57)	336	800	420 (16.5)	40 (1.57)	20 (0.79)

U-Drill, Carbon Steel (SM45C)			
Tool Dia mm (inch)	Material Removal Rate cm^3/min	Spindle Speed rpm	Feed mm/min (ipm)
45 (1.77)	636	1,500	400 (15.75)

※ 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

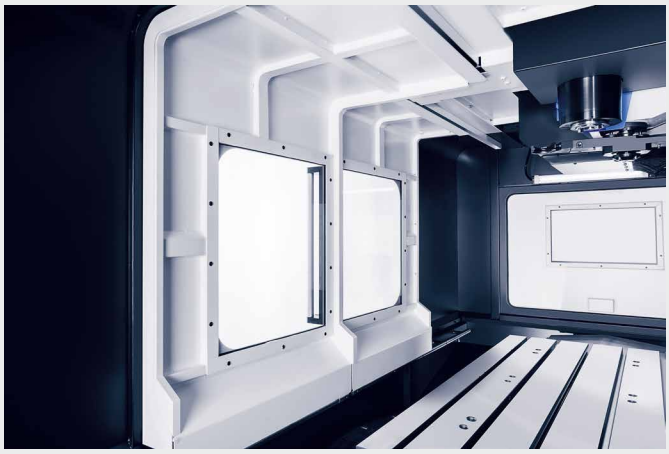
NO.	Item	Description					VESTA-1300
1	Spindle	#40	FANUC	10,000 rpm	18.5 / 11 kW	117.7 Nm	S
2				10,000 rpm (CTS)			O
3				12,000 rpm			O
4			HEIDENHAIN	10,000 rpm	32 / 15 kW	203.7 Nm	O
5				12,000 rpm			O
6		#50	FANUC	8,000 rpm	15 / 11 kW	286 Nm	O
7				8,000 rpm (CTS)	26 / 22 kW	165 Nm	O
8			SIEMENS	8,000 rpm	33 / 22 kW	280 Nm	O
9	Magazine	#40	30 Tools Magazine				S
10		#50	24 Tools Magazine				O
11			30 Tools Magazine				O
12	Tool Shank	#40	BT-40				S
13			BBT-40 / CAT-40 / SK-40				O
14		#50	BT-50				O
15			BBT-50 / CAT-50 / SK-50				O
16	Coolant Function	Head Coolant Pump (0.15 MPa, 0.6 kW)					S
17		CTS Coolant Device			3 MPa	2.2 kW	O
18					7 MPa	2.2 kW	O
19		Oil Mist (Semi dry cutting system)					O
20	Chip Removal Function	Air Blower					S
21		Coil Conveyor (2ea)					S
22		Air Gun					O
23		Coolant Gun					O
24		Lift-up Chip Conveyor			Hinge Type		O
25					Scraper Type		O
26		Mist Collector					O
27	Precision Machining Function	Linear Scare (X / Y / Z)					O
28		Hwacheon Artificial Intelligence Control System (HAI) - 40 Block					S
29		Hwacheon Efficient Contour Control System (HECC)					S
30		Hwacheon Thermal Displacement Control System (HTDC) [Hwacheon Spindle Displacement Control System (HSDC) + Hwacheon Frame Displacement Control System (HFDC)]					S
31		Hwacheon Artificial Intelligence Control System (HAI) - 200 Block					O
32		Hwacheon Artificial Intelligence Control System (HAI) - 400 Block					O
33		Lubrication System					S
34		Spindle Cooler (Jacket Cooling)			Fan Cooler Type		S
35					Oil Cooler Type (12,000 rpm Spindle)		O
36	Measuring & Automation Function	Tool Measuring System – Renishaw / Blum (Touch Type, Laser Type)					O
37		Workpiece Measuring System – Renishaw / Blum (Touch Type)					O
38		Tool Life Management					O
39		Auto Door					O
40		Hwacheon Tool Load Detect System (HTLD)					S
41		Cutting Feed Optimization System (OPTIMA)					S
42	Convenient Functions	Ethernet Interface					S
43		MPG Handle (1ea)					S
44		MPG Handle (3ea)					O
45		Signal Lamp with 3 Color (R, G, Y)					S
46		10.4" Color LCD					S
47		Tool Box					S
48		NC Cooler					O
49		Oil Skimmer					O
50		Air Dryer					O
51		Door Interlock					S
52		Workpiece Coordinate System 48 pairs					S
53		Lubrication Oil Separation Tank					S
54		Perfect Base Around Splash Guard					S
55		Part Program Storage Length 1,280m (512kB)					S
56		Data Server (256MB)					O
57		Data Server (1,024MB)					O
58		Data Server Interface					O
59		Manual Guide i					O
60		Monitoring Solution of Real-time Operational Status (M-VISION Plus)					O
61		Transformer					O
62		4-Axis Interface					O

Detailed Information

USER FRIENDLY DESIGN, A WIDE RANGE OF OPTIONAL FEATURES

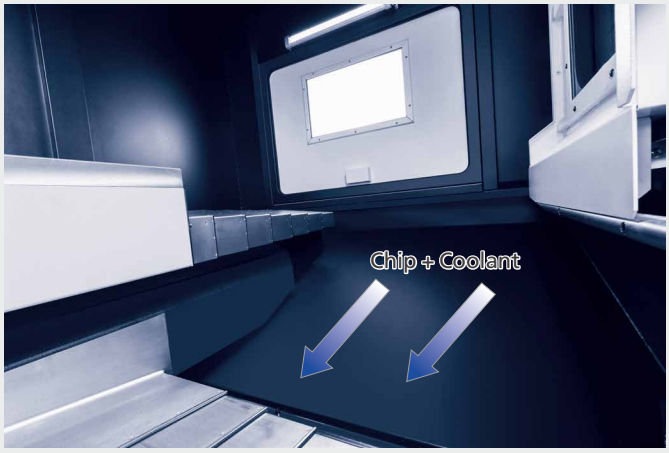
User convenience and various additional function

VESTA-1300 system offers a user friendly design and a wide variety of upgrade options for a faster, more precise machining performance, so you can concentrate on what you do best : creating quality products.



"Improved work environment"

Totally enclosed cover design prevents scattering of chips and coolant while processing, maintaining pleasant work environment

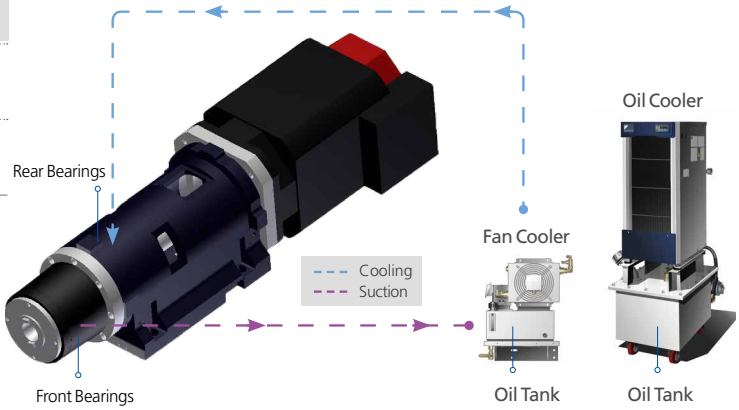


"Excellent Chip Disposal"

Inner structure with wide and big inclination angle and coil conveyors located on left and right of the table provide excellent chip processing capability

Cooling System

	Jacket Cooling	Bearing Lubrication
10,000 rpm (STD) 8,000 rpm (OPT)	Fan Cooler	Grease Type
12,000 rpm (OPT)	Oil Cooler	Air-Oil Type



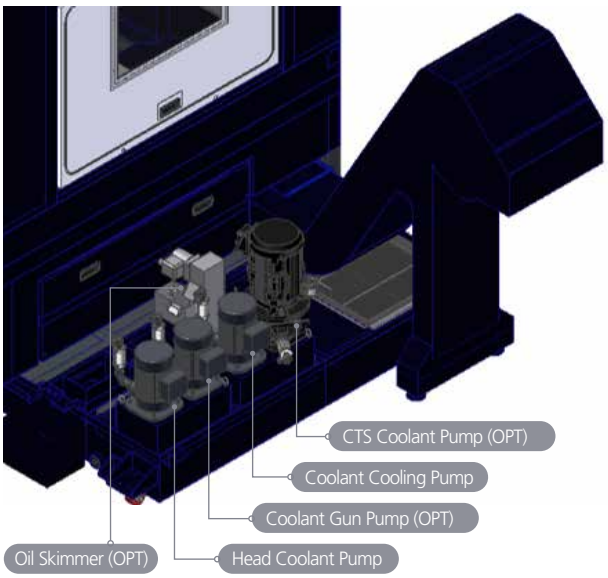
Convenient Maintenance

Improved the manageability of machine through the integration of peripheral devices for required maintenance.

LED Work Light

Long-life LED work lights at three places ensures comfortable working environment and minimizes heat generation.

Excellent Coolant Tank and Chip Removal



※ External Coolant Tank

"Possible to Select Type of Chip Conveyor"

· Hinge Type Chip Conveyor · Scraper Type Chip Conveyor

External Coolant Tank Tank Capacity : 340 ℓ (89.82 gal)

- High capacity tank is positioned on the right side of machine for easier coolant change, tank cleaning and pump maintenance and etc.

· Coolant Pump Specifications

CTS Coolant Pump (OPT) - Pressure : 3 MPa - Power : 2.2 kW

Head Coolant Pump - Power : 0. 6 kW

Coolant Gun Pump - Power : 1.1 kW

· Micro Chip Separation

Chip filter is used to remove micro chips and keep the coolant tank clean.

Detailed Information

Convenient Operator Panel

Pendant Arm Type Operator Panel (STD)

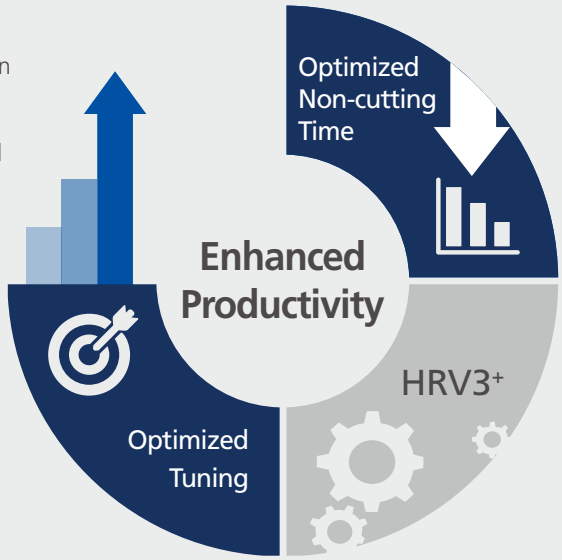
The operator panel is newly designed from the operator's viewpoint and thus enhances the operator's convenience.

"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
- Horizontal keys enhance user convenience.
- 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.

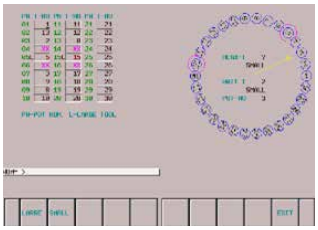
(However, it is necessary to discuss with factory in advance to add and / or change M-codes.)

< 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

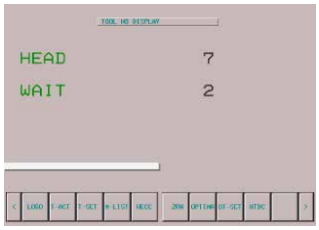
< Tool Management >

Large / Small Diameter Tool Management System



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

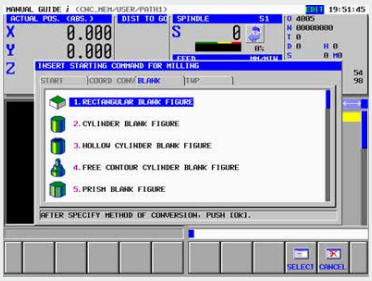
< Tool View >

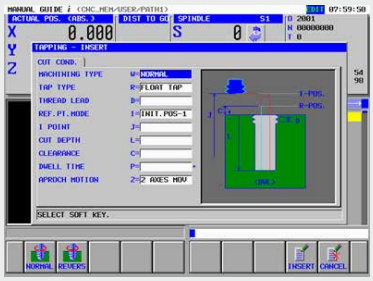


- Head mounted tool check in real time
- Waiting pot mounted tool check in real time

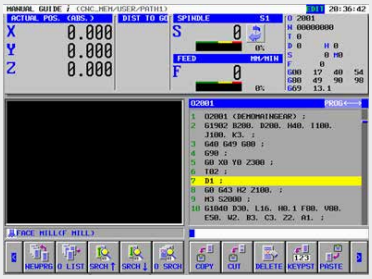
Manual Guide i

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.

Detailed Information

Hwacheon Software

HTLD™ Hwacheon Tool Load Detect — 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.)

HECC® Hwacheon Efficency Contour Control — 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.

OPTIMA™ Cutting Feed Optimization — 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.

HSDC™ Hwacheon Spindle Displacement Control — 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.

HFDC™ Hwacheon Frame Displacement Control — 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.

HTDC™ Hwacheon Thermal Displacement Control — 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.

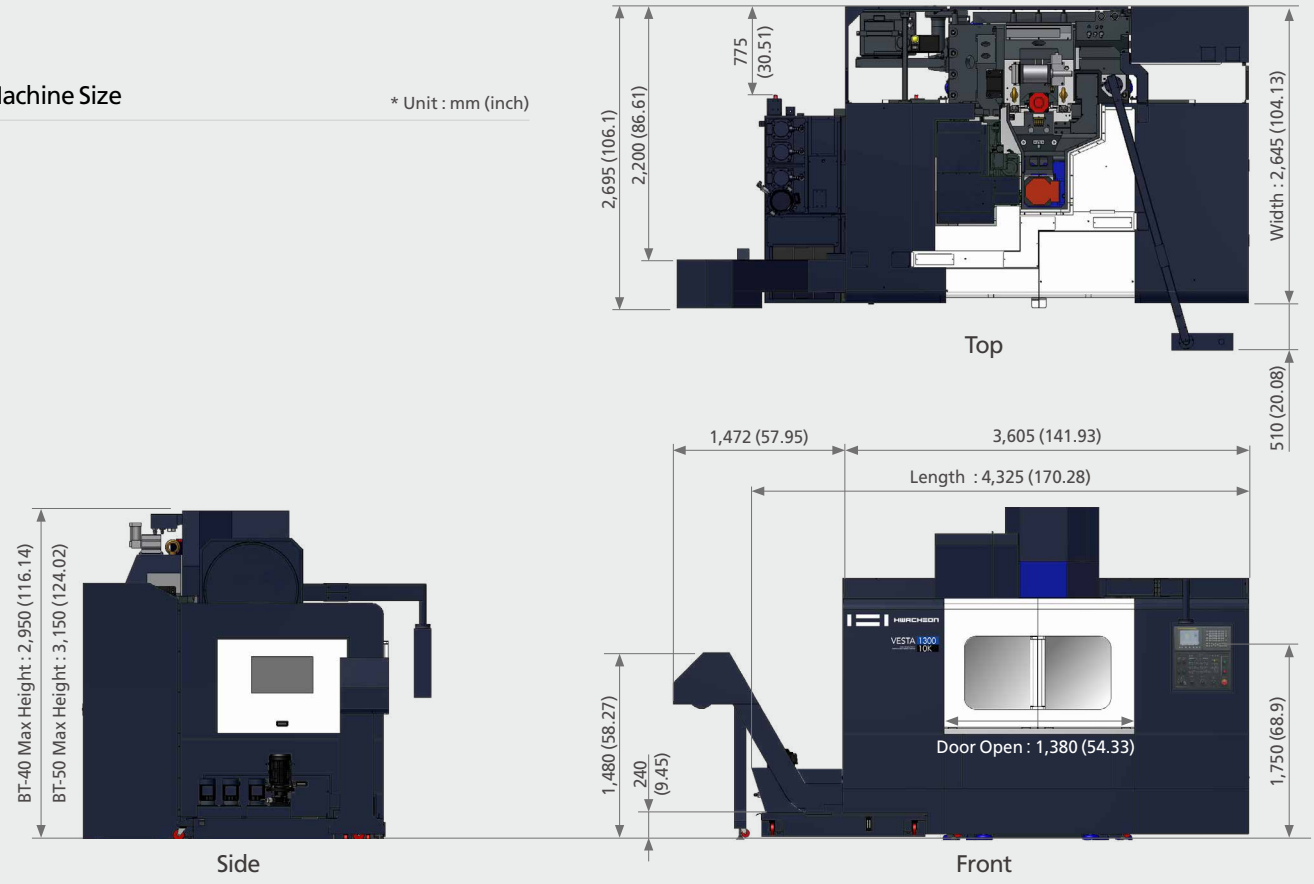
M-VISION PLUS — Monitoring Solution of Real-time Operational Status

"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

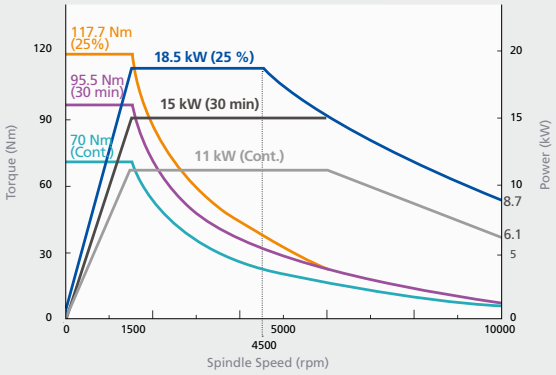
* Unit : mm (inch)



Spindle Power – Torque Diagram

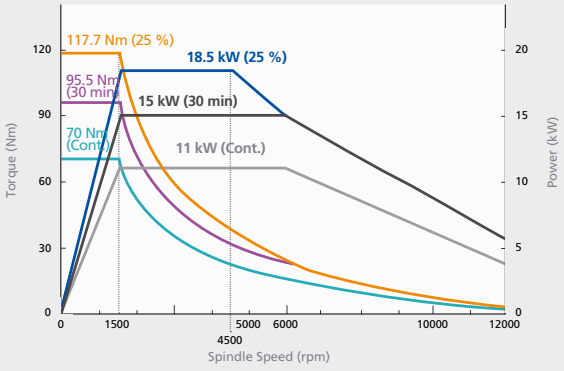
(BT-40) 10,000 rpm

Max Power : 18.5 kW (25 HP) / Max Torque : 117.7 Nm



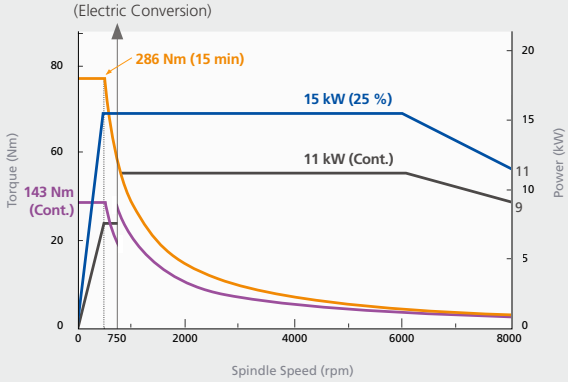
(BT-40) 12,000 rpm (OPT)

Max Power : 18.5 kW (25 HP) / Max Torque : 117.7 Nm



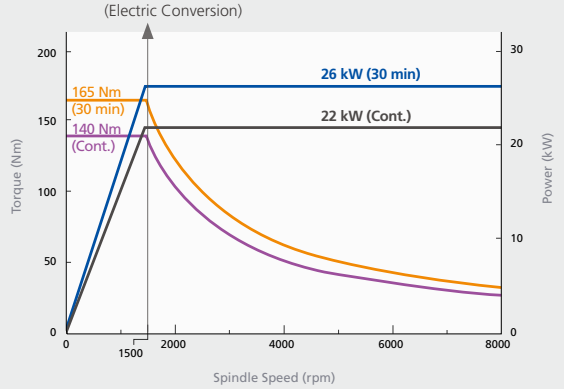
(BT-50) 8,000 rpm (OPT)

Max Power : 15 kW (20 HP) / Max Torque : 286 Nm



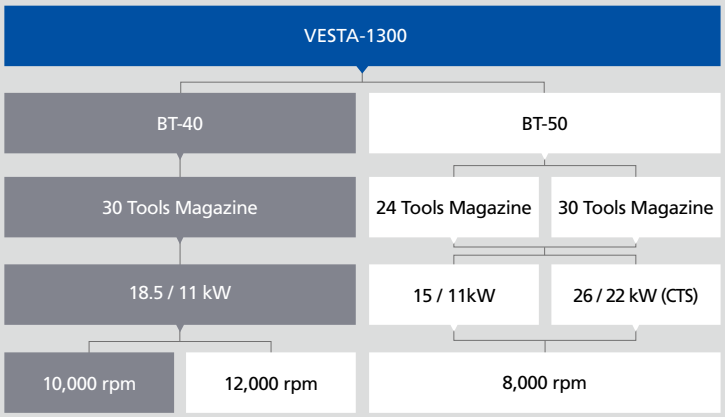
(BT-50) 8,000 rpm (CTS) (OPT)

Max Power : 26 kW (35 HP) / Max Torque : 165 Nm



Detailed Information

Product Line-up



Machine Specifications

Item		VESTA-1300 / BT-40 10,000 rpm	VESTA-1300 / BT-40 12,000 rpm	VESTA-1300 / BT-50 8,000 rpm
Travel				
Stroke (X / Y / Z)	mm (inch)	1,300 / 670 / 650 (15.18 / 26.38 / 25.59)		
Distance from Table Surface to Spindle Gauge Plane	mm (inch)	150 ~ 800 (5.91 ~ 31.5)		
Distance between Columns to Spindle Center	mm (inch)	768 (30.24)		
Table				
Table Size	mm (inch)	1,450 x 670 (57.09 x 26.38)		
Table Loading Capacity	kg_f (lb_f)	1,300 (51.18)		
T Slot (WxP / No. of slots)	mm (inch)	18 x 125 (0.71 x 4.92) / 5 ea		
Spindle				
Max Spindle Speed	rpm	10,000	12,000	8,000
Spindle Motor	kW (HP)	18.5 / 11 (25 / 15) [HEIDENHAIN: 32 / 15(43 / 20)]		15 / 11 (20 / 15) [CTS: 26 / 22 (35 / 30)] [SIEMENS: 33 / 22(44 / 20)]
Type of Spindle Taper Hole	-	ISO#40, 7/24 Taper (BT-40)		ISO#50, 7/24 Taper (BT-50)
Spindle Bearing Inner Diameter	mm (inch)	Ø70 (Ø2.76)		Ø90 (Ø3.54)
Feedrate				
Rapid Speed (X / Y / Z)	m/min (ipm)	40 / 40 / 32 (1,575 / 1,575 / 1,260)		
Feed (X / Y / Z)	mm/min (ipm)	1 ~ 20,000 (0.04 ~ 393.7)		
Motor				
Feed Motor (X / Y / Z)	kW (HP)	3 / 4 / 7 (1.7 / 5.4 / 9.4)		
Coolant Motor	kW (HP)	0.6 (0.8)		
Spindle Cooler Motor	kW (HP)	0.18 (0.2)	2.8 / 3.2 (3.8 / 4.3)	0.18 (0.2)
ATC				
Type of Tool Shank	-	BT-40 (OPT: BBT-40, CAT-40, SK40)		BT-50 (OPT: BBT-50, CAT-50, SK50)
Type of Pull Stud	-	MAS P40T-1 (45°)		BT-50 (90°)
Tool Storage Capacity	ea	30		24 (OPT: 30)
Max Tool Dia(with / without Adjacent Tools)	mm (inch)	Ø75 / Ø150 (Ø2.95 / Ø5.91)		Ø125 / Ø245 (Ø4.92 / Ø9.65)
Max Tool Length	mm (inch)	300 (11.81)		350 (13.78)
Max Tool Weight	kg_f (lb_f)	8 (17.64)		20 (44.09)
Method of Tool Selection	-	Memory Random		
Method of Operation	-	Servo Motor		Geared Motor
Power Source				
Electric Power Supply	kVA	45		45 / CTS:55
Compressed Air Supply (Pressure x Consumption)	-	0.5 ~ 0.7 MPa x 690 Nℓ/min		
Tank Capacity				
Spindle Cooling / Lubrication	ℓ (gal)	20 / 6 (5.28 / 1.59)		
Coolant	ℓ (gal)	340 (89.82)		
Machine Size				
Height	mm (inch)	2,950 (116.14)		3,150 (124.02)
Floor Space (Length x Width)	mm (inch)	4,325 x 2,645 (170.28 x 143.5)		
Weight	kg_f (lb_f)	10,000 (22,046)		24 Tools: 10,500 (23,148) 30 Tools: 11,500 (25,353)
NC Controller		Fanuc 0i-MF		

NC Specifications [Fanuc 0i-MF]

※ S : Standard O : Option

Item	Specification	
Controlled Axis		
Controlled Axis	3-axis	S
Controlled Axis	5-axis (Max)	O
Simultaneously Controlled Axes	3-axis	S
Simultaneously Controlled Axes	4-axis (Max)	O
Least Input Increment	0.001mm, 0.001deg, 0.0001inch	S
Least Input Increment 1 / 10	0.0001mm, 0.0001deg, 0.00001inch	O
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 Required	S
Helical Interpolation	Circular interpolation plus max 2 axes linear interpolation	S
Reference Position Return Check	G27	S
Reference Position Return Return	G28,G29	S
2nd Reference Position Return	G30	S
Skip Function	G31	S
Feed Function		
Rapid Traverse Override	F0, F25, F50, F100	S
Feedrate (mm/min)		S
Feedrate Override	0 ~ 200 %	S
Jog Feed Override	0 ~ 6,000 mm/min	S
Override Cancel	M48, M49	S
Program Input		
Tape Code	EIA / ISO	S
Optional Block Skip	9 ea	S
Program Number	O4 - Digits	S
Sequence Number	N8 - Digits	S
Decimal Point Programming		S
Coordinate Dystem Detting	G92	S
Workpiece Coordinate System	G54 - G59	S
Workpiece Coordinate System Preset		S
Addition of Workpiece Coordinate Pair	48 ea	S
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	S
Canned Cycles for Drilling		S
Automatic Corner Override		S
Feedrate Control With Acceleration in Circular Interpolation		S

Item	Specification	
Program Input		
Scaling		S
Coordinate System Rotation		S
Polar Coordinate Command		S
Programmable Mirror Image		S
Tape Format for Fanuc Series 10 / 11		S
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 / 400 ea	S
Tool Offset Memory C		S
Cutter Compensation C		S
Tool Length Measurement		S
Tool Life Management		O
Tool Length Compensation		S
Editing Operation		
Part program Storage length	1,280 m (512 kB)	S
Number of Register Able Programs	400 ea	S
Background Editing		S
Extended Part Program Editing		S
Play Back		S
Setting and Display		
Clock Function		S
Self-Diagnosis Function		S
Alarm History Display		S
Help Function		S
Graphic Function		S
Run Hour and Parts Count Display		S
Dynamic Garphic Display		O
Multi-language Display	English, German, French, Italian, Chinese, Spanish, Korean, Portuguese, Polish, Hungarian, Swedish, Russian	S
Data Input / Output		
Reader / Puncher Interface Ch1	RS232C	S
Data Server	256 MB / 1,024 MB	O
Data Server Interface		O
Ethernet Interface		S
Memory Card Interface		S
USB Interface		S
Others		
Display Unit	10.4" Color LCD	S
HWACHEON Machining Software		
Hwacheon Artificial Intelligence Control System (HAI) : 40 Block		S
Hwacheon Artificial Intelligence Control System (HAI) : 200 / 400 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) =Hwacheon Spindle Displacement Control System (HSDC) + Hwacheon Frame Displacement Control System (HFDC)		S
4-Axis Interface Function (Option)		
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

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.

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HC-M300-R2.2-201904