

Accessories

Standard : ● Optional : ★

Description	Modle	MVP-8/10	MVP-11 (#40)	MVP-11 (#50)	MVP-13	MVP-16
1.Full-Enclosed Splash Guard		●	●	●	●	●
2.Full-Enclosed Splash Guard & top cover		★	★	★	★	★
3.Coolant Jets Around Spindle		●	●	●	●	●
4.lubrication system		●	●	●	●	●
5.Spindle Air Curtain		●	●	●	●	●
6.Coolant Tank(with chip bucket)		●	●	●	●	●
7.Fluorescent Lamp		●	●	●	●	●
8.RS-232 Interface		●	●	●	●	●
9.Table Side Air Blast M50 Control		●	●	●	●	●
10.X/Y/Z-axis Ball Screw Enforce Pressure		●	●	●	●	●
11Automatic Power OFF		●	●	●	●	●
12.leveling bolts & blocks		●	●	●	●	●
13.Remote Manual Pulse Generator		●	●	●	●	●
14.Operation Finish Lamp		●	●	●	●	●
15.Operator Panel, Rotary type		●	●	●	-	-
16.Suspension Operator Box		-	-	-	●	●
17.Absolute pulse coder		●	●	●	●	●
18.Operation Manual & Electric Drawing Equipment		●	●	●	●	●
19.Tool Package		●	●	●	●	●
20.Coolant Through Spindle(20BAR)		★	★	★	★	★
21.Coolant Through Spindle(25BAR)		★	★	★	★	★
22.Coolant Through Spindle		★	★	★	★	★
23.Closed Loop Linear Scale Positioning System		★	★	★	★	★
24.Auto Tool Length and Diameter Measurement		★	★	★	★	★
25.Oil Mist Collector System		★	★	★	★	★
26.Fluorescent Lampx2		★	★	★	★	★
27.NC Rotary Table		★	★	★	★	★
28.Link type chip conveyor & portable chip bucket		★	★	★	★	★
29.Spindle Oil Cooler		★	★	★	★	★
30.Auto Workpiece Measurement		★	★	★	★	★
31.Coolant Flushing Device		★	★	★	★	★
32.Hydraulic Hose Coolant gun		★	★	★	★	★
33.Air gun		★	★	★	★	★
34.Oil Fluid Separator		★	★	★	★	★

Standard & Optional Electrical Functions

Hartrol / Standard

- Workpiece Calibration by MPG Directly
- Tool Magazine Display
- Parameter Package
- Threading Cutting (Only for 0i & 31i)
- Monitoring of Tool Status(Only for 0i & 31i)
- Special engraving

Hartnet/Optional

- Management system of Utilizaion
- Machining Time Countdown
- Convenient File Transfer

Electrical Function /Optional

- Lifting Function against gravity
- Retraction for Rigid Tapping
- Intelligent MPG

She Hong INDUSTRIAL CO. LTD.

No.3 Jingke N. Road, Taichung City, 408 Taiwan
www.hartford.com.tw Tel: 886-4-23501980 Fax: 886-4-23581793
CAT.No.: 20231113-E25

All Graphic and text on the catalog have been registered. Those who reprint will be held liable

Hartford

Hartrol · Smartcenter · Robocell

We manufacture intelligent machines only

Hartford
EXCLUSIV
Hartrol on APC

Intelligent Machining Center

MVP Series

- Hartrol Premium controller
- 5-Year warranty on guideways
- Tool change time: 1.38 sec
- Oversized column design



Hartrol Premium®
From tradition to intelligent

Facebook



Website



A.I. Applications inside, Hartrol Premium is the control which provides machining status with advanced features.

Imagine what future machines ought to be outlined.

AiSmartcontrol



Hartford
redefine the future



Major functions
of Hartford AI
controller



Facial
Recognition
system-Face ID



AI Environment
Thermal
Displacement
Compensation



AI Efficient
Lubrication
Management



Highlight on
Intelligent
Auger



AI Navi

AI

- + Hartrol Plus Sync & Update
- + User Connect



Thermal stability solution

- + Spindle Thermal Compensation
- + Casting Thermal Compensation
- + Thermal Symmetry / Thermal Balancing



ZDT

- + Diagnosis Report on Spindle Operation
- + Alarm Report System



IoT

- + Facial Recognition System
- + AI Efficient Lubrication Management
- + Smart Efficient Chip Collection



How to quickly implement automation

Hartford Robot Production Cell

Easy to get started

Hartford Robocell provides you a professional robot training and rich automation experience, to let you quickly learn and easily operate your automation systems

Quality control monitoring

Automation systems have to pass all the strict Quality Control tests at every stage like design, assembly, testing, final inspection and shipment, complete quality control processes for all the products.

Professional analysis

Robocell Machining optimization service, to let you be on the top by using professional machining methods

What definition of Automation interface only :



- 1. Automatic Door
- 2. Automatic Interface
- 3. Pneumatic/ Hydraulic Interface
- 4. Other options

1. Automatic Door

- Pneumatic/Automatic Door System_Operating Door
- Pneumatic/ Servo Automatic Door System_Right Side Door

2. Automatic Interface

- I/O Preparation
- Profibus Link Preparation
- CC-Link Preparation
- EtherNet/IP Link Preparation

3. Pneumatic/ Hydraulic Interface

- 1/2/3 Cell Automatic Pneumatic/ Hydraulic Interface in the machine

4. Other options

- High Pressure Spray Nozzle with Automatic Preparation
- HStainless Base
- High-volume chip-removal system comprising dual side augers (MVP-11/13/16)

Detailed specifications please contact our sales staff

Superior Value in Mould Making

A perfect demonstration for machining accuracy and ability.

Hartford Plug & Play is designed for die & mold industry. It can not only boost your machining efficiency but also be your best partner.



1. Shoe mold



2. 3D Ear

Actual Cutting Test

Model: MVP-16

■ Spindle: 15,000 rpm DDS type, 11kW ■ Cutting material : S45C



Face milling

Tool diameter Ø80 mm
Feed rate 1800 mm/min
Cutting depth 3mm
Cutting width 65mm
Cutting volume 351cc/min



End milling

Tool diameter Ø63 mm
Feed rate 4200 mm/min
Depth 30 mm
Cutting width 3 mm
Cutting volume 378cc/min



Tapping

Tool diameter M24 x 3 mm
Feed rate 540 mm/min
Cutting depth 30 mm



Drilling

Tool diameter Ø40 mm
Feed rate 140mm/min
Cutting depth 40 mm

All the results featured in this catalogue were produced under strict testing condition in a special zed testing environment. Under different testing conditions and in less than ideal testing environments. That the test results may vary form those shown in this catalogue.

The very first step for fully intelligent machining.

What is HartrolPremium?

Hartrol premium is a brand new intelligent controller Hartrol , Hartnet and Hartford electrical function together which developed and made by Hartford.

HMI and operation is user friendly, it can achieve :

1. Internet connection, collect and analyze data, monitoring by portable device
2. Intelligent control: Auto revise human error and operating basis
3. Real time update new APPs

The difference between Hartrol plus and others

Function	Hartrol Premium	Others
Screen Size	19"Multi-touch Panel	10.4" (OPT:15")
Look Ahead Block	2700(G5P20000)	400(1000 Max.)
Hard Drive	32GB SSD	NO
Smoothing Interpolation	SSS 4G	Option
Industry 4.0	Hartford UserConnect	NO



The Intelligent Controller You Should Have

With three major solutions, Hartrol Plus takes you machining to the next level.

Highly optimized and intelligent controls bring even more capabilities and productivity to your metal cutting processes.

With ease use, advanced automation, and smart data collection, Hartrol plus is essential tool for enhancing performance on your production floor.

Cost down to 20%

Multi Touch Screen
CCD remote management
E-book
Remote Management
Cutting Condition Calculator
Stand-by Mode

Productivity increased 23%

HartCAM
AFC= Automatic Feedrate Control.
SSS-4G
Machining Time Countdown for Single Block
Optimized Machining Program
Automatic measurement

Efficiency increased 20%

MES(Manufacturing Execution System)
Machine Utilization Management
Operator Performance Management
24 Hours a Day Management
Remote Management
Hartford Userconnect

Hartford
UserConnect

- Alert Notification
- Remote Diagnoses
- Remote Value Enhancement
- Remote Monitoring & Management

Hartford APP Store

The main technologies of Hartford smartcenter include intelligent managing system, status monitoring, alarm predicting, machine status diagnosis, crash preventing, 3D program simulation, machining efficiency improving...etc. All the intelligent functions help you control the machine status and assure the job quality.



Hartford smartcenter APP



The fuctions mentioned above will need to option the Hartrol plus controller or Dual screen with Fanuc controller.

What Hartford APP can do for you?

The integrated intelligent functions of Hartrol plus could achieve your machining requirements.
For more Hartrol Plus functions, please contact our sales person.

AI Environment Thermal Displacement Compensation(opt.)

Vertical machining center : **0.03mm**
Thermal displacement problem is improved up to **60%**
It can achieve good accuracy as in constant temperature room.



AI Facial recognition system(opt.)

Face ID log-in authority
Recognition time: **2 seconds**
Recognition accuracy: **100%**



Highlight on Intelligent Auger(opt.)

50% efficacy increases

- Intelligent auger automatically proceeds cleaning iron chips based on electrical current of spindle.
- Intelligent auger automatically performing reversal mode in case amount of iron chips outnumbers, preventing from machine stop. Auger is overly shielded



AI Efficient Lubrication Management(opt.)

50% lubrication saved.

- Auto-adjustment oil supply base on machining condition.
- 50% oil consumption saved



On line update

With online updating system similar to smart phone will make sure your operating system stays the latest version with Hartford.

- 24hr** ➡ Live updating , no boundary no time zone difference.
- NEW** ➡ Synchronize with Hartford for the latest information and functions.
- Easy** ➡ One key updating, easy and fast !



The Hartrol plus NC version must be A6 or above



Graphical user interfaces for part setting, inspection, tool setting

- Ease of use
- Increasing usability
- Eliminating manual set-up tasks
- Increasing efficiency



Hartford ZDT

Eliminate machine down time and increase efficiency. ZDT—

- Ease of use
- Check parts status clearly
- Eliminating unexpected down time
- Instant notification to your machine and your portable device

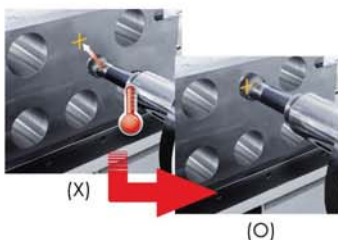


AFC(opt.)

Machining efficiency is increased by **21%** ↑

Controls the feed rate depending on the machining situation

- Adjusting feed rate automatically
- Lengthen your tool life
- Reduce machining time



Thermal compensation on spindle(opt.)

No worries about HEAT!!

- Machine with compensation
#40 spindle thermal extension is within 0.03mm
#50 spindle thermal extension is within 0.02mm
- Machine without compensation
Spindle thermal extension is around 0.10mm

Notes: Above test is under room temperature



Tough, rugged and durable for MVP

Optimal rigid design construction assures stability,
deformation-free precision year after year.



The picture shows MVP-10



Full range of linear guideway five-year warranty:

Warranty coverage will not apply under following conditions

1. Improper operation (collision)
2. Lack of regular cleaning of accumulated debris causing damage to the linear rails & carriages.

1. 3-axis with $\varnothing 50$ ballscrew

- MVP-13 & MVP-16 assemble with $\varnothing 50$ ballscrew on 3-axis.
- Supported by high precision angular contact thrust bearings.
- All servo motors with absolute encoders.
- Increase efficiency and dependability. (Mitsubishi & Fanuc only).

2. 4 linear guideways on base

- 4 linear guideways on base
- Increased machine stability.
- Available with MVP-13& MVP-16



Z-axis servo motor coupled directly to ballscrew

- No more timer belt, the motor is connect directly to the ballscrew.
- No risk of backlash or servo drag.
- Increase your machining efficiency and dependability.



High sped tool change time (Opt.)

- Minimum tool change time is **1.38** sec. (#40 opt.)
- Boost your machining efficiency.



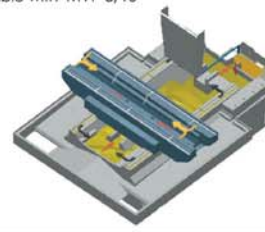
Oversized column & widest base design

- Column width is **1100mm** and base is **1600mm** for MVP-8 & MVP-10.
- Increased width of interface between the column and base.
- Enhances machine stability.
- Increases machine rigidity and efficiency.



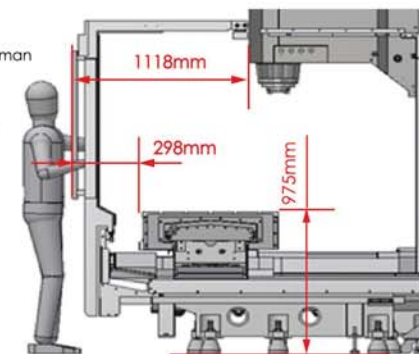
One-piece bed design

- Separates oil and coolant on the machine effectively.
- Prevents coolant contamination problems.
- Available with MVP-8/10



Easy for operation

- MVP-16 design meets the human engineering principle.
- Allows the operator to load and unload workpiece with ease.



Spindles Manufactured by Hartford Offer Quality Assurance

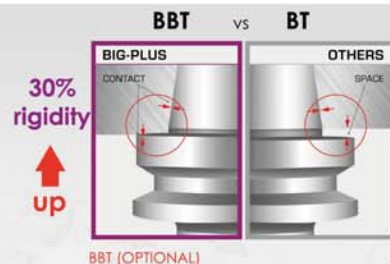
Machine Dimensions

Spindle type

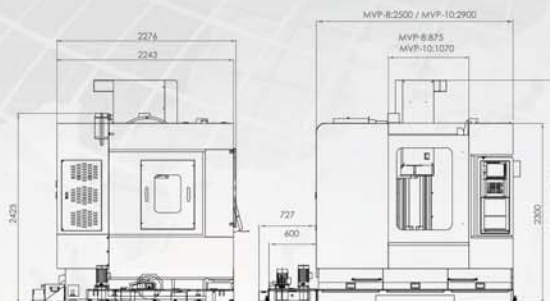
- #40 Pulley 12000rpm (MVP-16)
- #40 DDS opt.15000/20000rpm
- #50 DDSopt.10000rpm (MVP-16)
- #50 Gear opt.6000/8000rpm(MVP-16)

BBT option

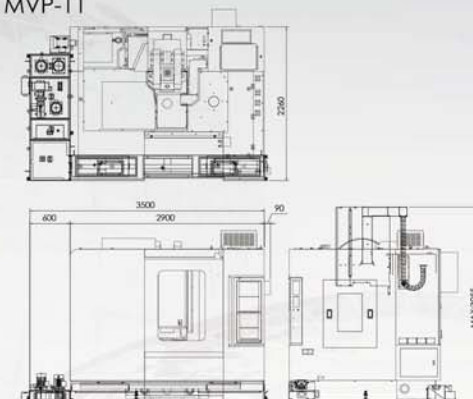
- Dual contact between the contact and the flanges.
- Improves the rigidity, accuracy, speed and performance.
- Radial deflection, vibration and deviation are significantly reduced.
- Unavailable with DDS 20,000 rpm spindle.



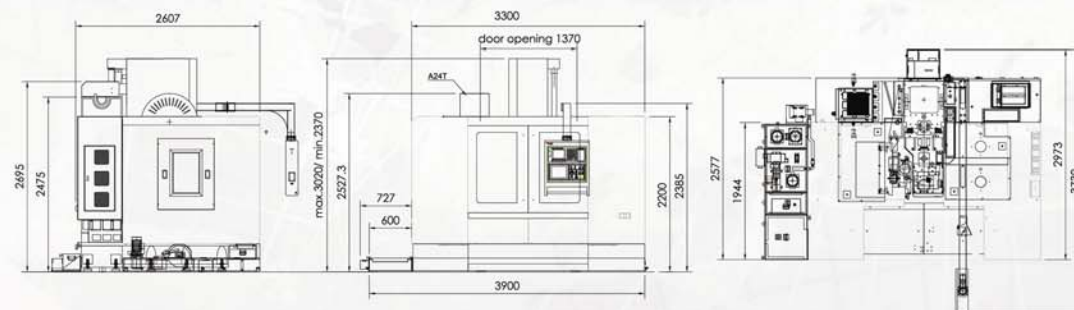
MVP-8/10



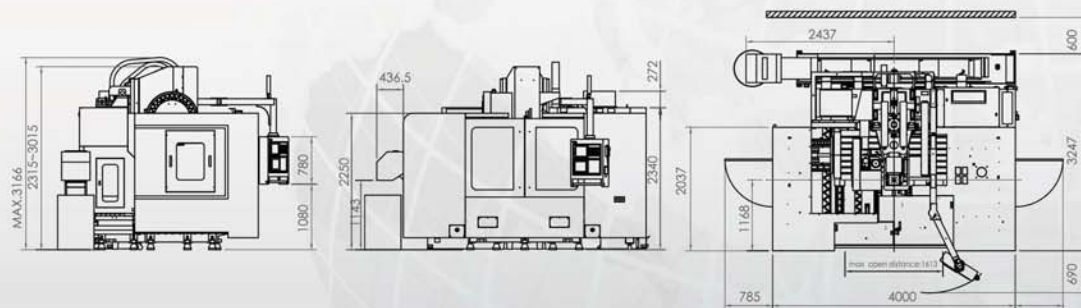
MVP-11



MVP-13

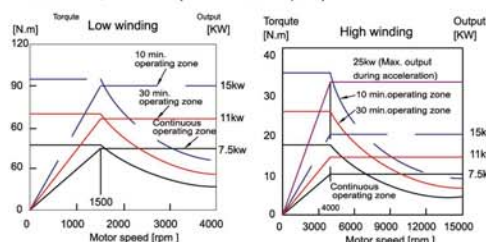


MVP-16

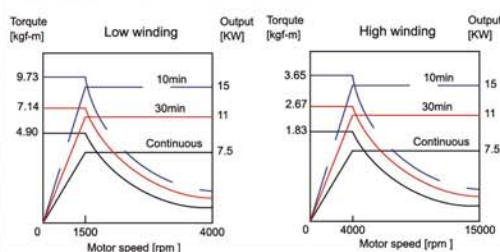


Spindle torque diagram

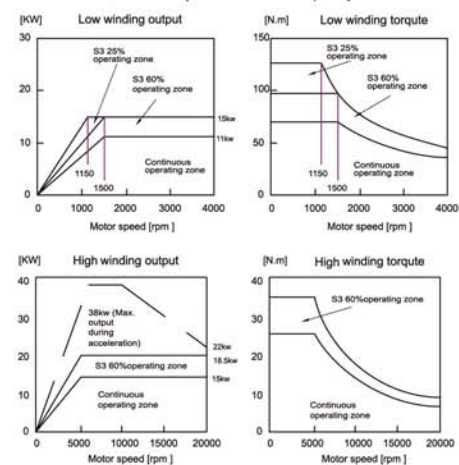
Fanuc a8/15000 it(DDS 15000 rpm)



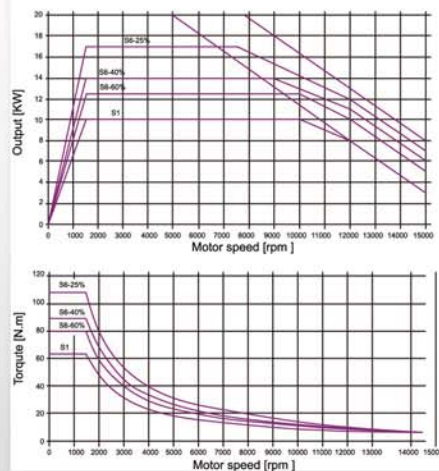
Mitsubishi SJ-VKS26-90ZT-S01x 15000



Fanuc a8/2000 it(DDS 20000 rpm)



HEIDENHAIN: QAN200UH x 15000



Machine Specifications

Model			unif	MVP-8	MVP-10	MVP-11			MVP-13		MVP-16		
Table	Working surface	mm	1000 x 560	1150 x 560	1270 x 600			1400 x 700		1750 x 820			
	T-slot Width x pitch(number)	mm	18 x 100(5)	18 x 100(5)	18 x 100(5)			18 x 100(7)		18 x 100(7)			
	Max. load (Average)	kg	500	700	1000			1500		2000			
Travel	X -axis travel	mm	860	1050	1100			1300		1600			
	Y -axis travel	mm	530	530	600			700		820			
	Z -axis travel	mm	630	630	630			650		700 660 opt.820			
	Guide way (X / Y / Z)	type	Linear Guide Way	Linear Guide Way	Linear Guide Way	X/Y:Linear Guide Way Z: Box Way		Linear Guide Way		Linear Guide Way X/Y:Linear Guide Way Z: Box Way			
	Distance from spindle to table	mm	85~715	85~715	100~730			120~770	180~830	120~820 opt.320~1020 150~810 opt.200~1020			
Distance from spindle center to column			mm	600	600	641	645		780		900 865		
Spindle	Spindle nose taper	rpm	#40	#40	#40	#40	#50	#40	#50	#40	#50	#50	
	Spindle speed(Gear)	rpm	-	-	-	6000 / 8000		-	6000	-	6000 / 8000 6000 / 8000		
	Spindle speed(Pulley)	rpm	8000/10000 /12000	8000/10000/12000	8000/10000 /12000	8000/10000 /12000	-	8000/10000 /12000	-	8000/10000 /12000	-	-	
	Spindle speed(DDS)	rpm	10000/12000 /15000/20000	10000/12000 /15000/20000	10000/12000/ 15000/20000	10000/12000 /15000	10000 /12000	10000/12000/ 15000/20000	10000/12000	10000/12000 /15000/20000	10000/12000	10000/12000	
Feed	Cutting feedrate (X / Y / Z)	m/min	20/20/20	20/20/20	20/20/20	20/20/12		20/20/20		20/20/20	20/20/20	20/20/12	
	Rapid traverse rate (X / Y / Z)	m/min	36/36/36 opt.48/48/36	36/36/36 opt.48/48/36	36/36/36	36/36/20		36/36/30		32/32/24	32/32/24	32/32/18	
ATC	Capacity	pcs	A:24(30)	A:24(30)	A:24(30/40)		A:24(32)	A:24(30)	A:24	A:24(30/40)	A:24(32/40)		
	Max. tool weight	kg	7	7	7			7	20	7	20		
	Max. tool size(dia.x length)	mm	A: Ø 75x300L	A: Ø 75x300L	A: Ø 75x300L		A: Ø105 x300L	A: Ø 75 x 300L	A: Ø 125 x 350L	A: Ø 75x300L	A: Ø125x350L		
	Tool shank		BT40 (BBT / CAT / DIN / HSK A63))	BT40 (BBT / CAT / DIN / HSK A63)	BT40(BBT / CAT / DIN / HSK A63)		BT50(BBT/ CAT/DIN)	BT40 (BBT / CAT / DIN)	BT50(BBT/ CAT / DIN)	BT40(BBT/CAT /DIN/HSK A63)	BT50 (BBT/ CAT / DIN)		
	Pull stub bolt		P40T - 1 (CAT - 40 / DIN 69872)	P40T-1(CAT-40 / DIN 69872)	P40T-1(CAT-40 / DIN 69872)		P50T-1(CAT50 /DIN69872)	P40T-1(CAT-40 /DIN 69872)	P50T-1 (CAT-50 / DIN69872)	P40T-1(CAT-40 / DIN 69872)	P50T-1 (CAT-50 / DIN69872)		
Motor	Spindle drive motor (cont./30 min)	kw	5.5 / 7.5 opt. 7.5/11 ,11/15,15/18.5	5.5 / 7.5 opt. 7.5 / 11, 11 / 15 , 15 / 18.5	5.5 / 7.5 opt. 7.5 / 11, 11 / 15 , 15 / 18.5		11/15 opt. 15/18.5	7.5/11 opt. 11/15 ,15/18.5	11 / 15 opt. 15/18.5	7.5/11 opt. 11/15, 15/18.5	11/15 opt. 15/18.5, 18.5/22, 22/26		
Positioning Accuracy	Positioning accuracy (JIS B6330) , without linear scale	mm	±0.008	±0.008	±0.008			±0.008		±0.008			
	Repeatability (JIS B6330) , without linear scale	mm	±0.002	±0.002	±0.003			±0.003		±0.003			
	Positioning accuracy (JIS B6330) , with linear scale	mm	±0.006	±0.006	±0.006			±0.006		±0.006			
	Repeatability (JIS B6330) , with linear scale	mm	±0.002	±0.002	±0.002			±0.002		±0.002			
	Positioning accuracy (VDI 3441)	mm	0.010 / MGPS:0.008	0.010 / MGPS:0.008	0.010 / MGPS:0.008			0.014		0.018			
	Repeatability(VDI 3441)	mm	0.006 / MGPS:0.005	0.006 / MGPS:0.005	0.006 /MGPS:0.005			0.008		0.010			
Other	Required air pressure	kg/cm ²	6.5	6.5	6.5			6.5		6.5			
	Electric power requirement	KVA	20~45	20~45	20~45			20~45		25~45	30~50		
	Machine weight	kg	6400	6700	6300	7500	8000	9000		10650	11500		
	Coolant tank(standard)	L	283	303	306			363		440			
	Machine dimension(LxWxH)	mm	2500 x 2276x 2850	2900 x 2276x 2850	2240 x 2900x 3055			3300 x 2607x 2370		4000 x 2947 x 3015			
	Floor space (standard tank)	mm	3100 x 2556	3500 x 2556	2714 x 3500			4000 x 3730		4437 x 3940			