



MANFORD

POWER & DETERMINATION

CNC VERTICAL MACHINING CENTER

High Standard Quality Control



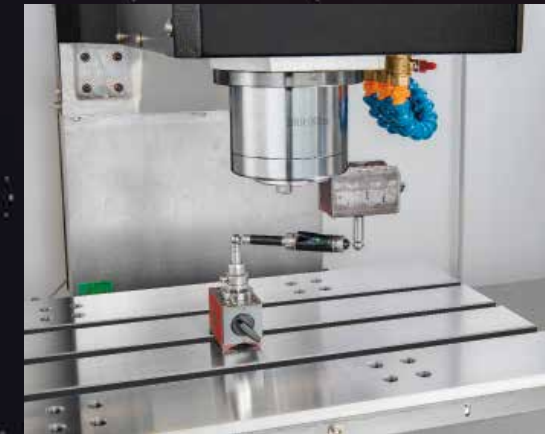
Manford Machinery Co., Ltd.
was established in year 1987.



Headquarter



Factory: 25,120 m²



Ball Bar Test



Laser Test



CMM Measurement



Spindle Noise & Vibration Test



Spindle Motor Balancing



Stress Vibration Relief

CNC Vertical Machining Centers

01

Linear Guideways Series

VL-550 / VL-610 / VL-800	5-6
VL-850 / VL-1000	7-8
VL-1050 / VL-1200	9-10
VL-1300 / VL-1600	11-12
VL-1690 / VL-2090	13-14

02

Box Ways Series

VH-510 / VH-610	15-16
VH-850 / VH-1000	17-18
VH-1100 / VH-1300	19-20
VH-1320	21-22
VH-1600 / VH-2000	23-24

03

Economic Type Machining Centers

EH-610	33-34
VM-760 / VM-1000	35-36

04

High Speed Machining Centers

VF-700	37-38
VF-1000	39-40

05

Drilling & Tapping Centers

TP-510	41-42
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06

APC Series

TP-510 APC	43-44
VL-850 APC	45-46

Specification

Optional Accessories	25-26
VL Series	27-30
VH Series	31-32

VL-550 / VL-610 VL-800

Linear Guideways



* LED strip light is an option

Flexible to equip with automatic loading & unloading system (customized / option)



- **Elastic Type Exchange Method**
The finished parts can be pulled out directly and then continue to input the blank parts to shorten the exchange time.
- **Flexible Parts Tray Exchange**
Equips with parts loading trays and tray cart, customers only need to change the parts loading tray based on each different part geometry, flexible for different part geometry loading and unloading (parts loading trays size is customized).
- **Safety Guard Protection**
Safety Guarding and CE norm is available as option.
- **Compact Machine Width**
Extra width 1,100 mm floor occupation needed after combining with CNC machining center, very compactible design.

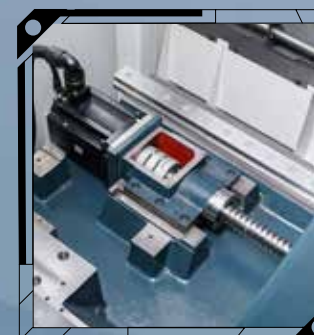
Frame VL-550



Frame VL-800



Arm Type 24 Tools
(Option)



Axes motors are directly
connected with ballscrews
which provide high efficient
movement control and
lower noise features.

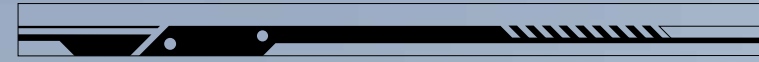


4th Axis / 5th Axis Rotary &
Tilting Table (Option)



Linear Guideways suitable for fast
cutting to ensure the fine cutting
surface and quality for high precision
requirement.

VL-850 VL-1000



Linear Guideways



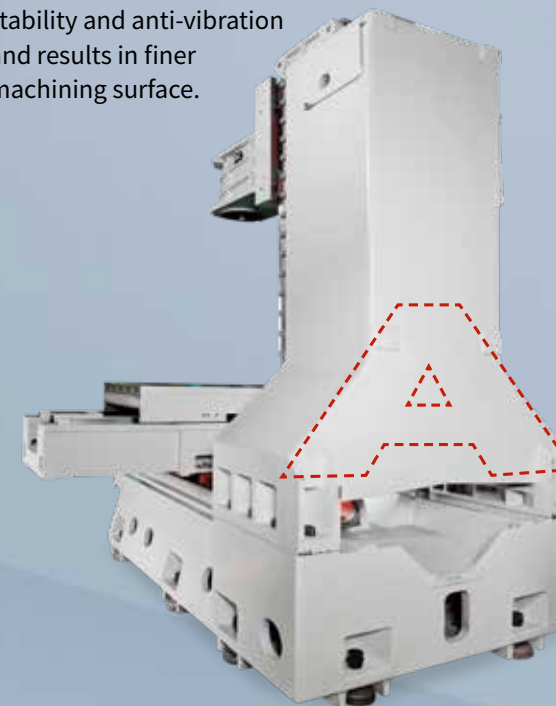
* This is standard guarding design
(LED strip light is an option)



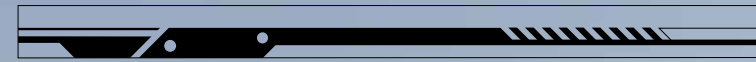
* This is standard
guarding design
(LED strip light is an option)

A Shape Column Structure

A shape column offers larger combination surface with machine base, thus the column's center of gravity is lower which contributes the better performances on cutting stability and anti-vibration and results in finer machining surface.



VL-1050 VL-1200



Linear Guideways



* This is standard guarding design
(LED strip light is an option)

Roller Type Linear Guideways (for VL-1050 is an option)

With low friction and no hysteresis features, specially suitable for 3D machining and high precision machining. Increase the quality of machining surface which save the manual buffing process on the surface of workpiece.

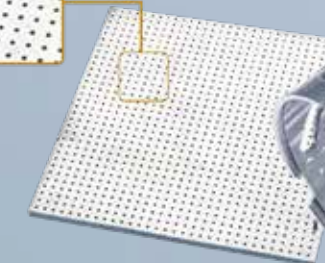
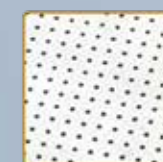


Frame VL-1200

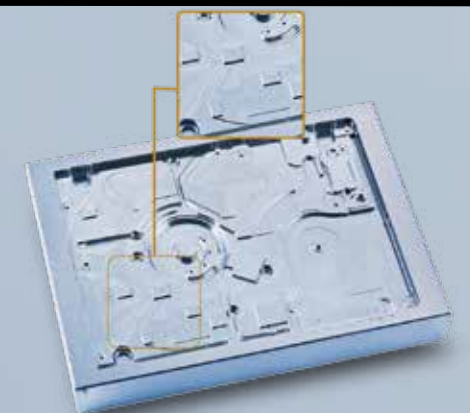


* This LED strip light is an option

High Efficient Applications



Process: Square net holes M1.0 tapping
Tool: Tapping tool M1.0 P0.25 mm
Tapping Speed (Max.): 6,000 rpm / 1,250 mm/rpm
Holes Q'ty: 1,024 (32 X 32)
Process Method: Rigid tapping
Time: 26' 57" / 1,024 (1.68 sec./hole)



For molding machining, a high speed machining center can execute the deep concave machining or remove small arc angle, no need to use expensive EDM machining.

VL-1300 VL-1600

Linear Guideways



* LED strip light is an option

Machine Features

Spindle center to column surface has sufficient throat depth, good for large milling tool loading & unloading.



Instead of counter-weight balance design, adopts bigger power motor directly driven spindle head up and down to provide outstanding cutting flatness.

Frame VL-1600



Machine Features



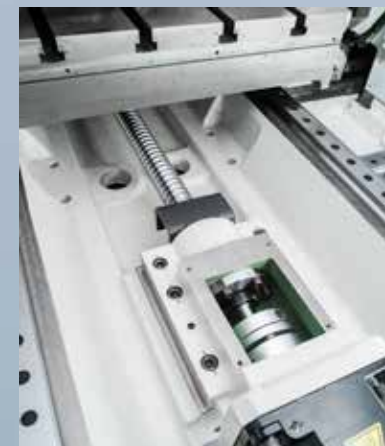
Equips with six sliding blocks for linear guideways of column which provides spindle head more stronger support, suitable for heavy cutting process.



BT#50 6,000 rpm Spindle (Option)

This spindle is suitable for heavy cutting, with high material removal rate. Besides, the spindle is with high precision and low temperature rise features.

Machine Features



45 mm Oversized Ballscrew

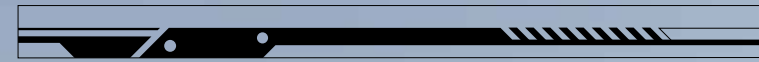
VL-1300/VL-1600 adopt high precision ballscrews transmission which can achieve best movement accuracy control.



Dual Chip Removal Screws

Dual chip removal screws can transfer the chips out of machine to avoid chips accumulated and save the man-power cost to clean the chips.

VL-1690 VL-2090



Linear Guideways



* This is standard guarding design
(LED strip light is an option)

Frame VL-1690
(Counter-weight balance is standard)



Wide Cutting Area

Spindle center to Y axis column has 900 mm travel which provides big cutting area for workpiece loading & unloading.



* This is standard guarding design
(LED strip light is an option)

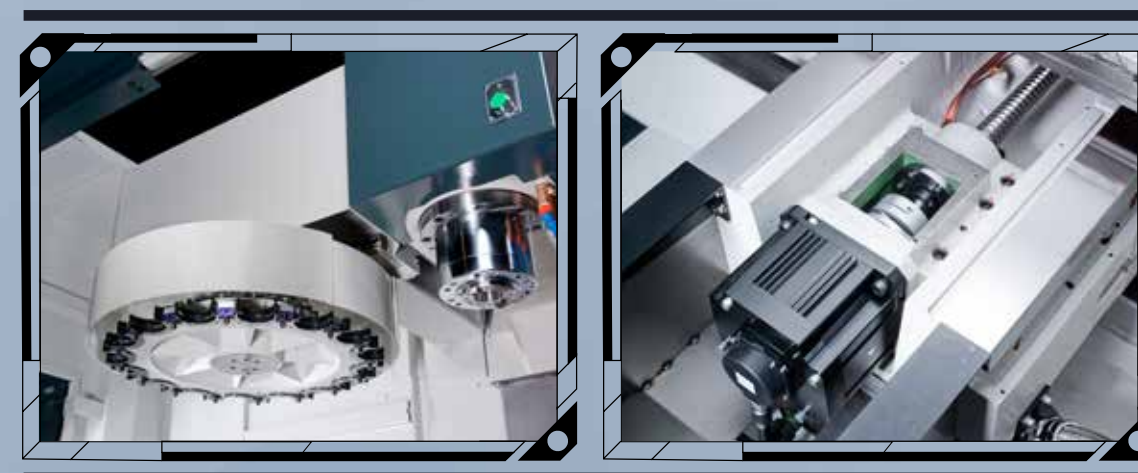


VH-510 VH-610

Box Ways



* LED strip light is an option



Reliable Armless Type Tool Magazine

Equips with armless type 16 tools tool magazine (available for arm type 20 tools as an option).

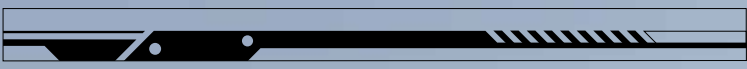
Axes motors are direct driven.

Frame VH-610

(Counter-weight balance is optional)



VH-850 VH-1000

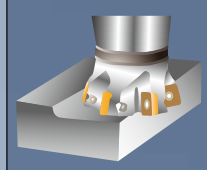


Box Ways



* This is standard guarding design
(LED strip light is an option)

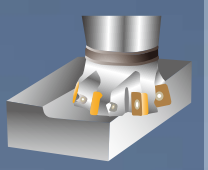
Milling S45C Steel



Physical Cutting Test VH-850 / Gear Head / BT40 / 8,000 rpm (Option) FANUC Control

Max. Chip Removal	
588 cc³/min	
Tool	Ø80 mm x 4T
Spindle Speed	800 rpm
Cutting Feed Rate	2,800 mm/min
Cutting Width	70 mm
Cutting Depth	3.0 mm

Milling S45C Steel



Physical Cutting Test VH-1000 / Gear Head / BT40 / 6,000 rpm (Option) FANUC Control

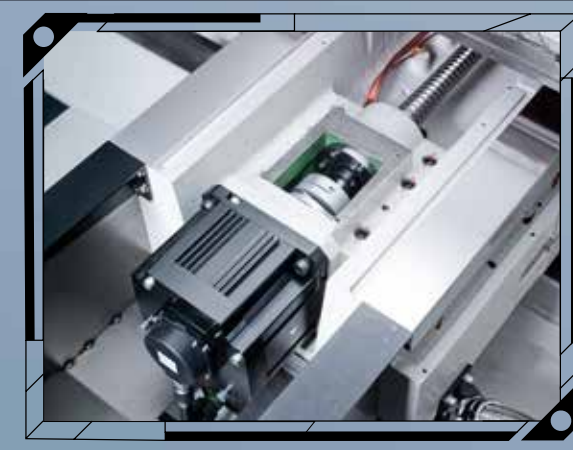
Max. Chip Removal	
487 cc³/min	
Tool	Ø80 mm x 4T
Spindle Speed	800 rpm
Cutting Feed Rate	2,500 mm/min
Cutting Width	65 mm
Cutting Depth	3.0 mm



Frame VH-1000
(Counter-weight balance is optional)



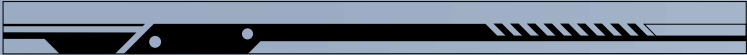
Gear Head (Option)



Axes motors are direct driven.

VH-1100

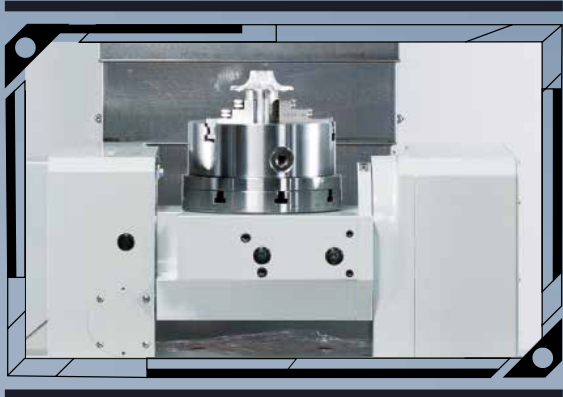
VH-1300



Box Ways

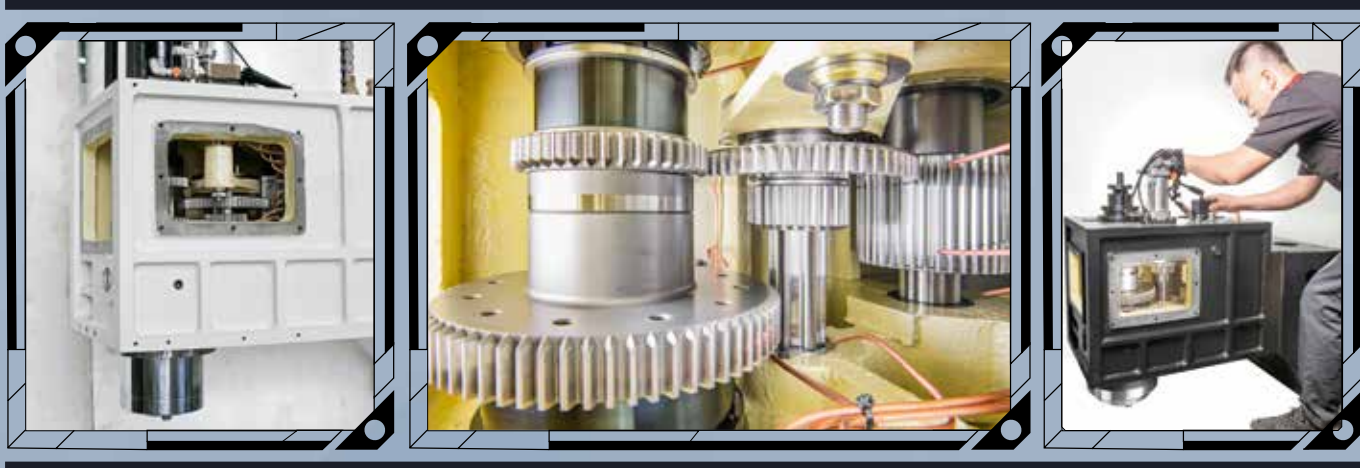


* This is standard guarding design
(LED strip light is an option)



4th axis / 5th axis rotary & tilting table (Option)

Available Spindle Head Type	VH-1100	VH-1300
Belt #40	Standard	Standard
Belt #50	Option	Option
Gear #40	Option	Option
Gear #50	Option	Option

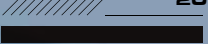
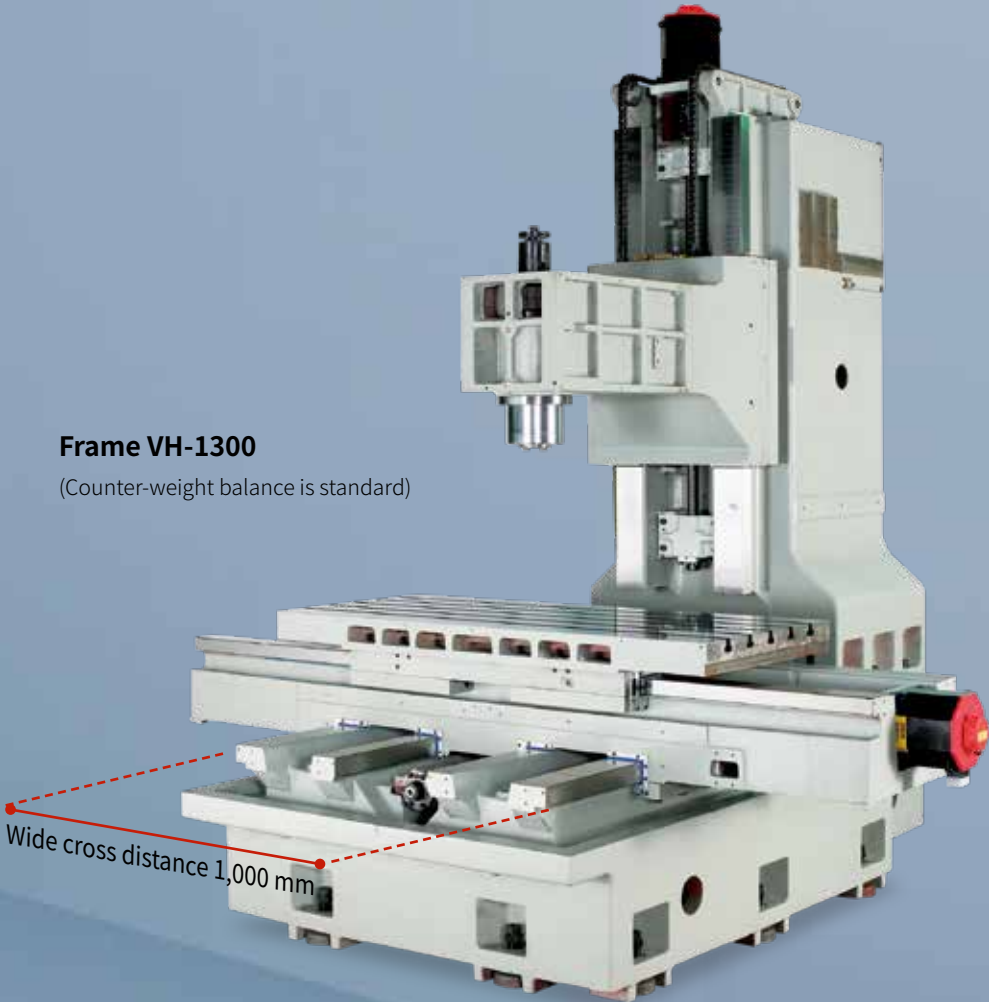


Gear Head (Option)

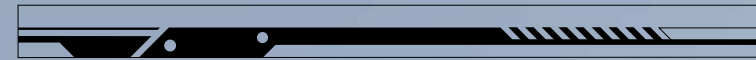
Adopts made in Japan zero class high precision gears with two steps speed change, provides high torque cutting feature.

Gear Head Unit is assembled in house to ensure the gear head quality and accuracy.

Frame VH-1300
(Counter-weight balance is standard)



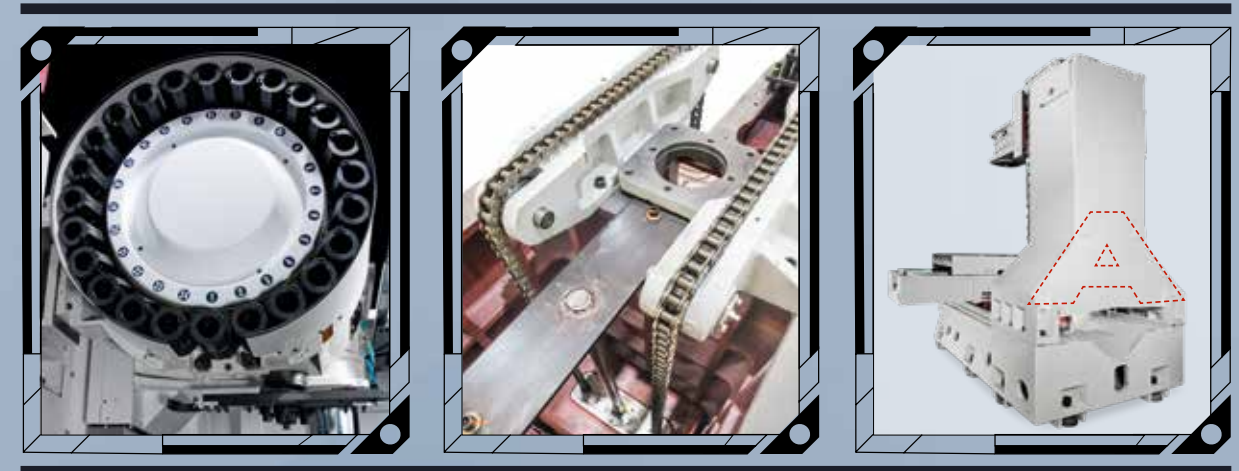
VH-1320



Box Ways



* This is standard guarding design
(LED strip light is an option)



Arm Type 24 Tools (standard)

Counter-weight Balance
(standard)

A Shape Column Structure

A shape column offers larger combination surface with machine base, thus the column's center of gravity is lower which contributes the better performances on cutting stability and anti-vibration and results in finer machining surface.

Frame VH-1320

(Counter-weight balance is standard)



VH-1600

VH-2000

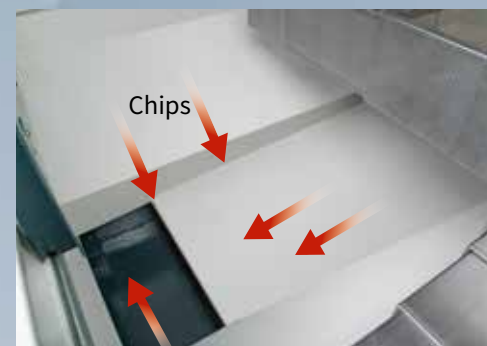
Box Ways



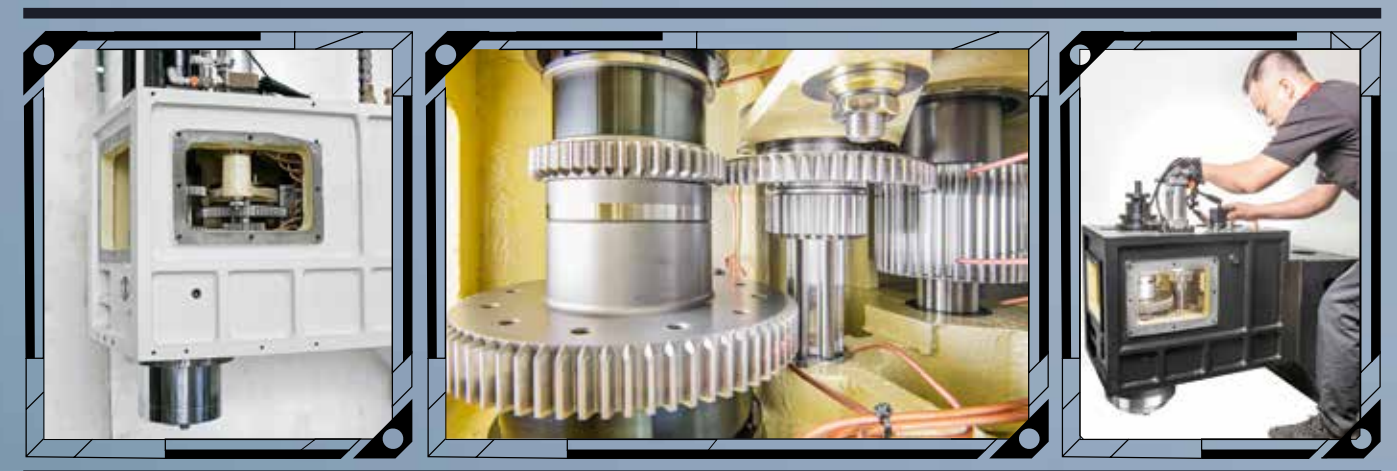
Frame VH-1600
(counter-weight
balance is standard)



Semi-enclosed Guarding
(Option)



Large flow chip flushing function to avoid the chips accumulated in the inside of machine guarding area and can bring the heat away from the machining area.

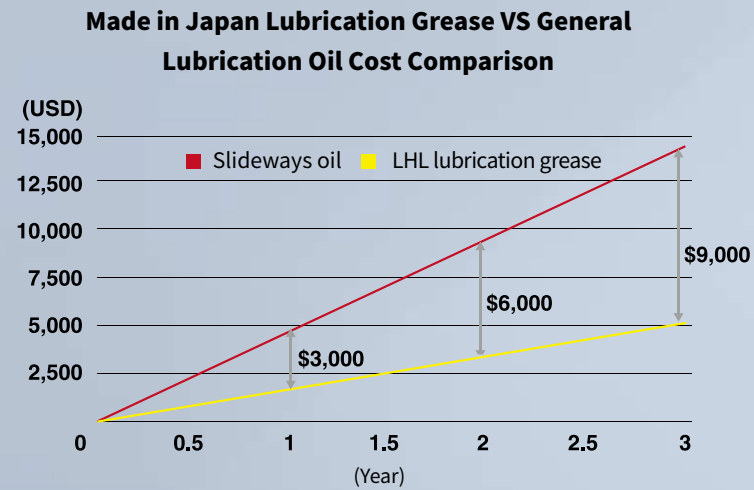


Gear Head (Option)

Adopts made in Japan zero class high precision gears with two steps speed change, provides high torque cutting feature.

Gear Head Unit is assembled in house to ensure the gear head quality and accuracy.

Optional Accessories



Compare with high speed lubrication oil, the oil consumption of LHL lubrication grease system is 90% less and the oil consumption of pump motor is 80% less.



Chain type 40 tools tool magazine



NC 4th axis rotary table



Chip conveyor



Coolant Through Spindle



CTS 30 bars



CTS 70 bars (with 300L coolant tank)



Programmable Control Coolant Unit



Automatic Tool Length Measurement System



Automatic Workpiece Measurement System

Standard Accessories

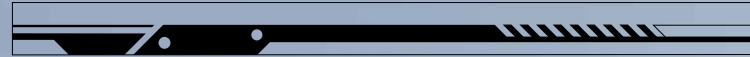
- Rigid tapping
- Spindle side coolant nozzles & air blast nozzle
- Auto lubrication with pump
- Auto power off
- Remote handwheel
- RJ-45 interface and cable
- Program light
- LED work light
- Coolant system with pump
- Heat exchanger for electrical cabinet
- 3-axes way covers
- Full guarding
- Air gun
- Coolant gun
- Power cable
- Operation manuals
- Tools & box
- Leveling bolts & plates
- Drawer type chip removal (for models below VL-1000)
- Screw type chip conveyor (for models above VL-1050)

Optional Accessories

- Spindle oil cooler
- Air conditioner for electrical cabinet
- Rear side coolant wash for chip removal
- LHL central lubrication system
- Programmable coolant device
- Coolant through spindle 30 bars / 70 bars
- 4th & 5th axis rotary / tilting table
- Linear scale (3 axes)
- Automatic tool length measurement
- Automatic workpiece measurement
- Screw type chip conveyor with bucket (for models below VL-1000)
- Chain type chip conveyor with bucket
- Scraper type chip conveyor with bucket

- Oil skimmer
- Oil mist collector
- Transformer
- CE

VL Machine Specifications



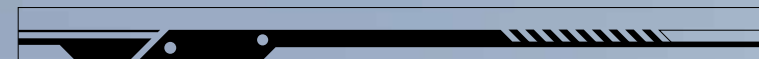
* Option

Model	VL-550	VL-610	VL-800	VL-850	VL-1000
TRAVEL					
X/Y/Z travel	550 / 410 / 460 mm	610 / 460 / 510 mm	850 / 510 / 510 mm	850 / 510 / 560 mm	1,020 / 510 / 560 mm
X/Y/Z ballscrews	C3 32 mm	C3 40 mm	C3 40 mm	C3 40 mm	C3 40 mm
Spindle nose to table surface	130 ~ 590 mm	125 ~ 630 mm	135 ~ 645 mm	150 ~ 710 mm	150 ~ 710 mm
TABLE					
Table size	600 x 320 mm	800 x 450 mm	950 x 500 mm	1,000 x 500 mm	1,200 x 500 mm
T-slot (Size/Q'ty/Dist)	14 mm x 3 x 100 mm	18 mm x 3 x 100 mm	18 mm x 5 x 100 mm	18 mm x 5 x 100 mm	18 mm x 5 x 100 mm
Max. table load	350 kgs	400 kgs	400 kgs	800 kgs	800 kgs
SPINDLE					
Taper	BT40	BT40	BT40	BT40	BT40
Speed	10,000 rpm	10,000 rpm	10,000 rpm	8,000 rpm	8,000 rpm
Transmission	Belt	Belt	Belt	Belt	Belt
FEED RATE					
Rapid feed rate of X/Y/Z Axes	36 / 36 / 36 M/min	36 / 36 / 36 M/min	36 / 36 / 36 M/min	36 / 36 / 36 M/min	36 / 36 / 36 M/min
Cutting feed rate	1 ~ 10 M/min	1 ~ 10 M/min	1 ~ 10 M/min	1 ~ 10 M/min	1 ~ 10 M/min
AUTOMATIC TOOL CHANGER					
Tool storage capacity	Armless 16	Armless 16	Armless 16	Armless 16	Armless 16
	(*Arm 24)	(*Arm 24)	(*Arm 24)	(*Arm 24)	(*Arm 24)
Max. tool diameter	Full : Ø100 mm Next empty : Ø150 mm	Full : Ø100 mm Next empty : Ø150 mm	Full : Ø100 mm Next empty : Ø150 mm	Full : Ø100 mm Next empty : Ø150 mm	Full : Ø100 mm Next empty : Ø150 mm
Max. tool length	250 mm	250 mm	250 mm	250 mm	250 mm
Max. tool weight	7 kgs	7 kgs	7 kgs	7 kgs	7 kgs
CNC CONTROL & MOTOR					
CNC control	Mitsubishi / Fanuc	Mitsubishi / Fanuc	Mitsubishi / Fanuc	Mitsubishi / Fanuc	Mitsubishi / Fanuc
Spindle motor	10 HP (5.5/7.5 kW)	15 HP (7.5/11 kW)	15 HP (7.5/11 kW)	15 HP (7.5/11 kW)	15 HP (7.5/11 kW)
MACHINE SIZE					
Machine dimensions (LxWxH)	2,080 x 2,342 x 2,616 mm	2,240 x 2,580 x 2,909 mm	2,680 x 2,405 x 2,914 mm	2,980 x 2,955 x 3,044 mm	2,980 x 2,955 x 3,044 mm
Machine net weight (approx.)	2,800 kgs	4,000 kgs	3,680 kgs	5,000 kgs	5,190 kgs

The mentioned specifications & dimensions are subject to change without notice.



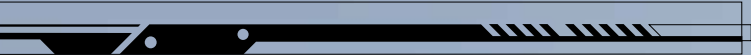
VL Machine Specifications



* Option

Model	VL-1050	VL-1200	VL-1300	VL-1600	VL-1690	VL-2090
TRAVEL						
X/Y/Z travel	1,050 / 610 / 610 mm	1,200 / 610 / 610 mm	1,300 / 700 / 700 mm	1,600 / 700 / 700 mm	1,600 / 900 / 850 mm	2,000 / 900 / 850 mm
X/Y/Z ballscrews	C3 40 mm	C3 40 mm	C3 45 mm	C3 45 mm	C3 50 mm	C3 50 mm
Spindle nose to table surface	150 ~ 760 mm	150 ~ 760 mm	130 ~ 830 mm	130 ~ 830 mm	150 ~ 1,000 mm	150 ~ 1,000 mm
TABLE						
Table size	1,150 x 600 mm	1,300 x 600 mm	1,450 x 700 mm	1,750 x 700 mm	1,800 x 850 mm	2,200 x 850 mm
T-slot (Size/Q'ty/Dist)	18 mm x 5 x 100 mm	18 mm x 5 x 100 mm	18 mm x 5 x 125 mm	18 mm x 5 x 125 mm	5 mm x 22 x 150 mm	5 mm x 22 x 150 mm
Max. table load	700 kgs	1,200 kgs	1,500 kgs	1,500 kgs	1,500 kgs	2,000 kgs
SPINDLE						
Taper	BT40	BT40	BT40	BT40	BT40	BT40
Speed	8,000 rpm	8,000 rpm	8,000 rpm	8,000 rpm	8,000 rpm	8,000 rpm
Transmission	Belt	Belt	Belt	Belt	Belt	Belt
FEED RATE						
Rapid feed rate of X/Y/Z Axes	36 / 36 / 36 M/min	36 / 36 / 36 M/min	30 / 30 / 24 M/min	30 / 30 / 24 M/min	20 / 20 / 15 M/min	15 / 15 / 12 M/min
Cutting feed rate	1 ~ 10 M/min	1 ~ 10 M/min	1 ~ 10 M/min	1 ~ 10 M/min	1 ~ 10 M/min	1 ~ 10 M/min
AUTOMATIC TOOL CHANGER						
Tool storage capacity	Arm 24	Arm 24	Arm 24	Arm 24	Arm 24	Arm 24
	(*Arm 30)	(*Arm 30)	(*Arm 30)	(*Arm 30)	(*Arm 30)	(*Arm 30)
Max. tool diameter	Full : Ø80 mm	Full : Ø80 mm	Full : Ø80 mm	Full : Ø80 mm	Full : Ø80 mm	Full : Ø80 mm
	Next empty : Ø150 mm	Next empty : Ø150 mm	Next empty : Ø125 mm	Next empty : Ø125 mm	Next empty : Ø150 mm	Next empty : Ø150 mm
Max. tool length	300 mm	300 mm	300 mm	300 mm	300 mm	300 mm
Max. tool weight	7 kgs	7 kgs	7 kgs	7 kgs	7 kgs	7 kgs
CNC CONTROL & MOTOR						
CNC control	Mitsubishi / Fanuc	Mitsubishi / Fanuc	Mitsubishi / Fanuc	Mitsubishi / Fanuc	Mitsubishi / Fanuc	Mitsubishi / Fanuc
Spindle motor	15 HP (7.5/11 kW)	15 HP (7.5/11 kW)	15 HP (7.5/11 kW)	15 HP (7.5/11 kW)	20 HP (11/15 kW)	20 HP (11/15 kW)
MACHINE SIZE						
Machine dimensions (LxWxH)	3,050 x 2,472 x 2,994 mm	3,530 x 3,165 x 3,197 mm	3,730 x 3,240 x 3,238 mm	4,430 x 3,236 x 3,236 mm	4,330 x 4,321 x 3,527 mm	5,130 x 4,321 x 3,486 mm
Machine net weight (approx.)	6,310 kgs	6,310 kgs	8,510 kgs	8,860 kgs	16,000 kgs	17,390 kgs
The mentioned specifications & dimensions are subject to change without notice.						

VH Machine Specifications

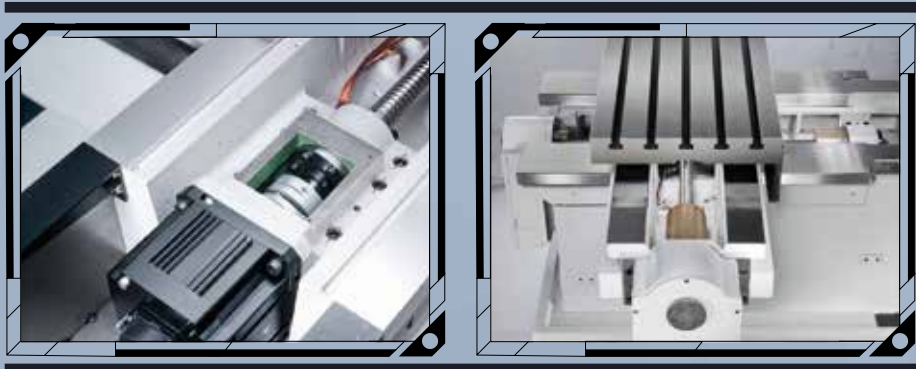


* Option

	Model	VH-510	VH-610	VH-850	VH-1000	VH-1100	VH-1300	VH-1320	VH-1600	VH-2000
TRAVEL										
X/Y/Z travel		510 / 410 / 460 mm	610 / 460 / 510 mm	850 / 510 / 560 mm	1,020 / 510 / 560 mm	1,100 / 700 / 710 mm	1,300 / 700 / 710 mm	1,320 / 710 / 650 mm	1,600 / 800 / 800 mm	2,000 / 900 / 800 mm
X/Y/Z ballscrews		C3 32 mm	C3 40 mm	C3 40 mm	C3 40 mm	C3 40 mm		C3 45 mm	C3 50 mm	
Spindle nose to table surface		130 ~ 590 mm	130 ~ 640 mm	130 ~ 690 mm		130 ~ 840 mm		130 ~ 780 mm	200 ~ 1,000 mm	
TABLE										
Table size		600 x 370 mm	800 x 450 mm	1,000 x 500 mm	1,200 x 500 mm	1,300 x 650 mm	1,500 x 650 mm	1,500 x 700 mm	1,800 x 840 mm	2,200 x 850 mm
T-slot (Size/Q'ty/Dist))		14 mm x 3 x 100 mm	18 mm x 3 x 100 mm	18 mm x 5 x 100 mm		18 mm x 5 x 100 mm		18 mm x 5 x 100 mm	22 mm x 5 x 150 mm	
Max. table load		500 kgs	800 kgs	750 kgs		1,300 kgs	1,500 kgs	1,500 kgs	2,200 kgs	2,500 kgs
SPINDLE										
Taper		BT40		BT40		BT40			BT40	
Speed		10,000 rpm		8,000 rpm		8,000 rpm			8,000 rpm	
Transmission		Belt		Belt		Belt			Belt	
FEED RATE										
Rapid feed rate of X/Y/Z Axes		24 / 24 / 16 M/min		24 / 24 / 16 M/min		24 / 24 / 15 M/min			15 / 15 / 12 M/min	
Cutting feed rate		1 ~ 10 M/min		1 ~ 10 M/min		1 ~ 10 M/min			1 ~ 10 M/min	
AUTOMATIC TOOL CHANGER										
Tool storage capacity		Armless 16		Armless 16		Arm 24			Arm 24	
		(*Arm 20)		(*Arm 24)		(*Arm 30)			(*Arm 30)	
Max. tool diameter		Full : Ø100 mm		Full : Ø100 mm		Full : Ø80 mm			Full : Ø120 mm	
		Next empty : Ø150 mm		Next empty : Ø150 mm		Next empty : Ø150 mm			Next empty : Ø200 mm	
Max. tool length		250 mm		250 mm		300 mm			350 mm	
Max. tool weight		7 kgs		7 kgs		7 kgs			7 kgs	
CNC CONTROL & MOTOR										
CNC contorl		Mitsubishi / Fanuc		Mitsubishi / Fanuc		Mitsubishi / Fanuc			Mitsubishi / Fanuc	
Spindle motor		10 HP (5.5/7.5 kW)	15 HP (7.5/11 kW)	15 HP (7.5/11 kW)		15 HP (7.5/11 kW)			20 HP (11/15 kW)	
MACHINE SIZE										
Machine dimensions (LxWxH)		2,000 x 2,305 x 2,460 mm	2,160 x 2,435 x 2,550 mm	2,980 x 2,955 x 3,044 mm		3,200 x 3,349 x 3,150 mm		3,800 x 2,522 x 2,900 mm	4,400 x 3,325 x 3,300 mm	5,500 x 3,540 x 3,300 mm
Machine net weight (approx.)		2,800 kgs	4,000 kgs	6,200 kgs	5,650 kgs	5,770 kgs	9,200 kgs	9,350 kgs	18,000 kgs	25,000 kgs
The mentioned specifications & dimensions are subject to change without notice.										

EH-610

Economic Machining Center



Axes motors are direct driven.

Box way design on all slide ways

Frame EH-610

* Option

	BOX WAYS	EH-610
TRAVEL		
X/Y/Z travel		610 / 350 / 460 mm
X/Y/Z ballscrews		C3 32 mm
Spindle nose to table surface		70 ~ 530 mm
TABLE		
Table size		710 x 350 mm
T-slot (Size/Q'ty/Dist)		16 mm x 5 x 63 mm
Max. table load		350 kgs
SPINDLE		
Taper		BT40
Speed		10,000 rpm
Transmission		Belt
FEED RATE		
Rapid feed rate of X/Y/Z Axes		15 / 15 / 15 M/min
Cutting feed rate		1 ~ 10 M/min
AUTOMATIC TOOL CHANGER		
Tool storage capacity		Armless 16
		(*Arm 20)
Max. tool diameter		Full : Ø100 mm
		Next empty : Ø150 mm
Max. tool length		250 mm
Max. tool weight		7 kgs
CNC CONTROL & MOTOR		
CNC control		Mitsubishi
Spindle motor		10 HP (5.5/7.5 kW)
MACHINE SIZE		
Machine dimensions (LxWxH)		1,920 x 1,758 x 2,310 mm
Machine net weight (approx.)		2,600 kgs
The mentioned specifications & dimensions are subject to change without notice.		

- P4 angular contact spindle bearings
- High grade casst main frame is annealed & stress relieved
- Box way design on Y/Y/Z axis is hardened and ground.
- High grade TURCITE B is coated and with precision hand-scraping, giving maximum wear resistance.

Standard Accessories

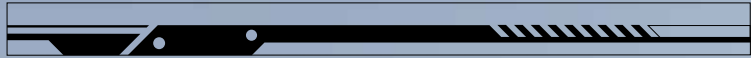
- Rigid tapping
- Spindle side coolant nozzles & air blast nozzle
- Auto lubrication with pump
- Auto power off
- Remote handwheel
- RJ-45 interface and cable
- Program light
- LED work light
- Coolant system with pump
- Heat exchanger for electrical cabinet
- 3-axes way covers
- Full guarding
- Air gun
- Coolant gun
- Power cable
- Operation manuals
- Tools & box
- Leveling bolts & plates
- Drawer type chip removal

Optional Accessories

- Spindle oil cooler
- Air conditioner for electrical cabinet
- High pressure coolant flush
- Coolant through spindle 30 bars
- Linear scale (3 axes)
- Automatic workpiece measurement
- Screw type chip conveyor
- Oil skimmer
- Transformer
- CE

VM-760

VM-1000



Economic Machining Center



Standard guarding design

- P4 angular contact spindle bearings.
- High grade cast main frame is annealed & stress relieved.
- Precision linear guideways on all axes.
- Direct drive transmission between servo motor and ballscrew by coupling provides enhances rigidity, stability and precision of the machines.

Standard Accessories

- Rigid tapping
- Spindle side coolant nozzles & air blast nozzle
- Auto lubrication with pump
- Auto power off
- Remote handwheel
- RJ-45 interface and cable
- Program light
- ED work light
- Coolant system with pump
- Heat exchanger for electrical cabinet
- 3-axes way covers
- Full guarding
- Air gun
- Coolant gun
- Power cable
- Operation manuals
- Tools & box
- Leveling bolts & plates
- Drawer type chip removal

Optional Accessories

- Spindle oil cooler
- Air conditioner for electrical cabinet
- High pressure coolant flush
- Coolant through spindle 30 bars
- Linear scale (3 axes)
- Automatic tool length measurement
- Automatic workpiece measurement
- Screw type chip conveyor
- Oil skimmer
- Tool stand
- Document stand
- Transformer
- CE

CNC VERTICAL MACHINING CENTERS



Frame VM-760

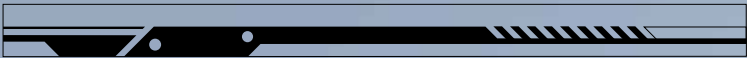


Made in Japan LHL Lubrication System (Option)

* Option

LINEAR WAYS	VM-760	VM-1000
TRAVEL		
X/Y/Z travel	760 / 400 / 400 mm	1,020 / 400 / 400 mm
X/Y/Z ballscrews	C5 32 mm	C5 32 mm
Spindle nose to table surface	102 ~ 502 mm	102 ~ 502 mm
TABLE		
Table size	1,270 x 305 mm	1,524 x 305 mm
T-slot (Size/Q'ty/Dist)	16 mm x 3 x 102 mm	16 mm x 3 x 102 mm
Max. table load	200 kgs	300 kgs
SPINDLE		
Taper	BT40	BT40
Speed	10,000 rpm	10,000 rpm
Transmission	Belt	Belt
FEED RATE		
Rapid feed rate of X/Y/Z Axes	12 / 12 / 12 M/min	12 / 12 / 12 M/min
Cutting feed rate	1 ~ 10 M/min	1 ~ 10 M/min
AUTOMATIC TOOL CHANGER		
Tool storage capacity	Armless 16	Armless 16
	(*Arm 20)	(*Arm 20)
Max. tool diameter	Full : Ø100 mm	Full : Ø100 mm
	Next empty : Ø150 mm	Next empty : Ø150 mm
Max. tool length	250 mm	250 mm
Max. tool weight	7 kgs	7 kgs
CNC CONTROL & MOTOR		
CNC control	Mitsubishi	Mitsubishi
Spindle motor	10 HP (5.5/7.5 kW)	10 HP (5.5/7.5 kW)
MACHINE SIZE		
Machine dimensions (LxWxH)	2,510 x 2,110 x 2,418 mm	3,020 x 2,115 x 2,391 mm
Machine net weight (approx.)	2,500 kgs	2,700 kgs
The mentioned specifications & dimensions are subject to change without notice.		

VF-700



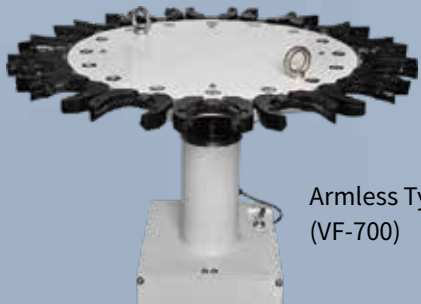
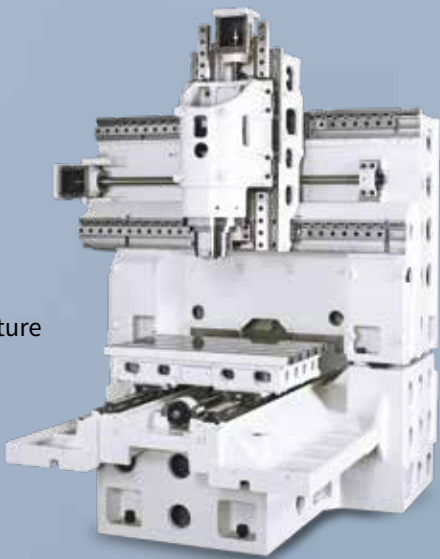
High Speed Machining Center



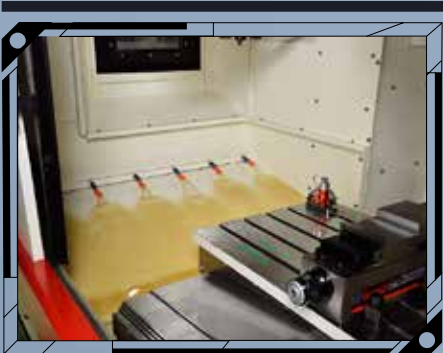
Direct Type Spindle 12,000 rpm

-
- Z axis servo brake eliminates the need for the typical heavy cast iron counter weight and chain assembly. The reduced mass and weight allow quick rapid traverse rates and better surface finishing on mold machining.
 - Servo motor and ball screws are directly coupled for backlash-free transmission to keep low inertia and high efficiency output, offering excellent dynamic precision during 3 axes simultaneous contour cutting.
 - Large room inside the sheet metal, so you can place big size object.
 - Heaving-duty roller bearing linear guideways with 45mm rail width has large contact surface between sliding roller block and rail.

Machine Structure



Armless Type 16 Tools
(VF-700)



High Pressure Pump Flushin Unit (Option)

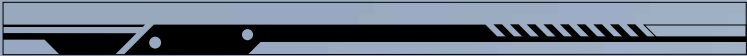


Automatic Workpiece Measurement
System (Option)

VF-700	
TRAVEL	
X/Y/Z travel	700 / 510 / 410 mm
X/Y/Z ballscrews	C3 40 mm
Spindle nose to table surface	150 ~ 560 mm
TABLE	
Table size	800 x 510 mm
T-slot (Size/Q'ty/Dist)	18 mm x 5 x 100 mm
Max. table load	500 kgs
SPINDLE	
Taper	BT40
Speed	12,000 rpm
Transmission	Direct type
FEED RATE	
Rapid feed rate of X/Y/Z Axes	36 / 36 / 36 M/min
Cutting feed rate	1 ~ 20 M/min
AUTOMATIC TOOL CHANGER	
Tool storage capacity	Armless 16
Max. tool diameter	Full : Ø100 mm
	Next empty : Ø190 mm
Max. tool length	300 mm
Max. tool weight	6 kgs
CNC CONTROL & MOTOR	
CNC control	Fanuc
Spindle motor	15 HP (7.5/11 kW)
MACHINE SIZE	
Machine dimensions (LxWxH)	2,630 x 1,805 x 2,810 mm
Machine net weight (approx.)	5,800 Kgs
The mentioned specifications & dimensions are subject to change without notice.	



VF-1000



High Speed Machining Center



-
- The enlarged roller bearing linear motion guides perform extreme rigidity.
 - The gantry machine frame of rigid dual wall castings ensures low vibration performance in high speed machining and results in the utmost surface finishing on works, and better tool service life.
 - The symmetrical box-headstock design assures cutting rigidity while Z axis is moving rapidly.
 - Direct-drive spindle deploys high precision ball type hybrid bearings to get less thermal expansion coefficient and low vibration.

Standard Accessories

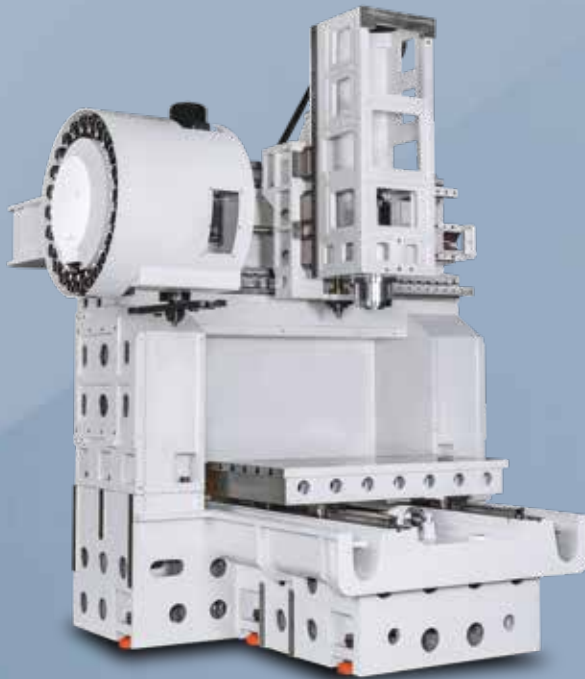
- Rigid tapping
 - Spindle side coolant nozzles & air blast nozzle
 - Auto lubrication with pump
 - Auto power off
- Remote handwheel
 - RJ-45 interface and cable
 - Program light
 - LED work light
 - Coolant system with pump
- Heat exchanger for electrical cabinet
 - Full guarding
 - Air gun
 - Coolant gun
- Power cable
 - Operation manuals
 - Tools & box
 - Leveling bolts & plates
 - Screw type chip conveyor

Optional Accessories

- Air conditioner for electrical cabinet
 - High pressure coolant flush
 - LHL central lubrication system
 - Programmable coolant device
 - Coolant through spindle 30 bars
- 4th axis rotary table
 - Linear scale (3 axes)
 - Automatic tool length measurement
 - Automatic workpiece measurement
 - Chain type chip conveyor with bucket
- Scraper type chip conveyor with bucket
 - Oil skimmer
 - Oil mist collector
 - Transformer
 - CE



Direct Type Spindle 12,000 rpm



VF-1000	
TRAVEL	
X/Y/Z travel	1,020 / 610 / 510 mm
X/Y/Z ballscrews	C3 40 mm
Spindle nose to table surface	150 ~ 560 mm
TABLE	
Table size	1,100 x 600 mm
T-slot (Size/Q'ty/Dist)	18 mm x 5 x 100 mm
Max. table load (Kgs)	1,000 kgs
SPINDLE	
Taper	BT40
Speed	12,000 rpm
Transmission	Direct type
FEED RATE	
Rapid feed rate of X/Y/Z Axes	36 / 36 / 36 M/min
Cutting feed rate	1 ~ 20 M/min
AUTOMATIC TOOL CHANGER	
Tool storage capacity	Arm 24
Max. tool diameter	Full : Ø78 mm
	Next empty : Ø150 mm
Max. tool length	300 mm
Max. tool weight	7 kgs
CNC CONTROL & MOTOR	
CNC control	Fanuc
Spindle motor	15 HP (7.5/11 kW)
MACHINE SIZE	
Machine dimensions (LxWxH)	3,840 x 2,415 x 3,560 mm
Machine net weight (approx.)	8,000 kgs
The mentioned specifications & dimensions are subject to change without notice.	



Disc Type Tool Magazine (VF-1000)

Equips with arm type 24 tools.



Roller Type Linear Guideways



Made in Japan LHL Lubrication System (Option)

TP-510

Drilling & Tapping Centers

Drill, Tapping, Engraving & Milling

Rigid casting design provides sufficient rigidity during high speed movement and heavy cutting, which is not only suitable for drilling & tapping but also for engraving & milling.



Frame TP-510



Equips with Robot (Option)



Smaller ATC Plate

Front Side Disc Type ATC

ATC Springs And Fix Bolts

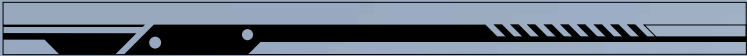


Inside Guarding Flushing

Made in Japan LHL Lubrication System (Option)

4th Axis / 5th Axis Rotary & Tilting Table (Option)

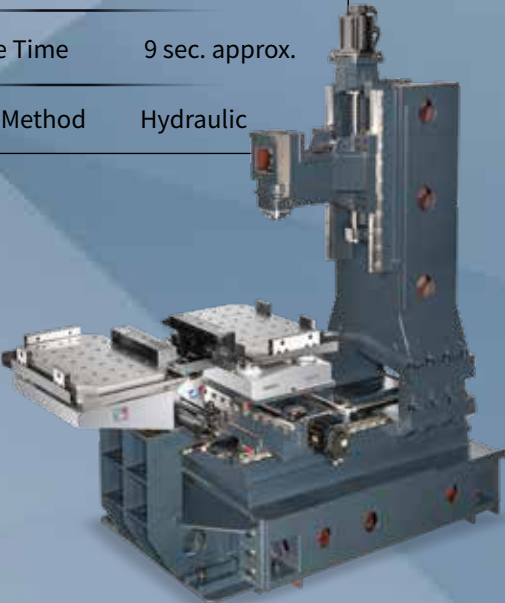
TP-510 APC



APC Series



Automatic Pallet Changer	
Table Size	600 x 400 mm
Exchange Time	9 sec. approx.
Rotating Method	Hydraulic



* Option

	TP-510	TP-510 APC
TRAVEL		
X/Y/Z travel	510 / 410 / 330 mm	510 / 400 / 330 mm
X/Y/Z ballscrews	C3 32 mm	C3 32 mm
Spindle nose to table surface	200 ~ 530 mm	200 ~ 530 mm
TABLE		
Table size	650 x 400 mm	600 x 400 mm
T-slot (Size/Q'ty/Dist)	14 mm x 3 x 125 mm	35 holes - M16 x P2.0
Max. table load	300 kgs	500 kgs (250 kgs*2)
SPINDLE		
Taper	BT30	BT30
Speed	10,000 rpm	10,000 rpm
Transmission	Direct type	Direct type
FEED RATE		
Rapid feed rate of X/Y/Z Axes	48 / 48 / 60 M/min	48 / 48 / 60 M/min
Cutting feed rate	1 ~ 12 M/min	1 ~ 12 M/min
AUTOMATIC TOOL CHANGER		
Tool storage capacity	Front Disc Type 14	Front Disc Type 14
	(* Front Disc Type 21)	(* Front Disc Type 21)
Max. tool diameter	Full : Ø80 mm	Full : Ø80 mm
Max. tool length	150 mm	150 mm
Max. tool weight	3 kgs	3 kgs
CNC CONTROL & MOTOR		
CNC control	Mitsubishi	Mitsubishi
Spindle motor	2.2/3.7 kW (low-inertia)	2.2/3.7 kW (low-inertia)
MACHINE SIZE		
Machine dimensions (LxWxH)	1,650 x 2,150 x 2,320 mm	3,197 x 1,650 x 2,435 mm
Machine net weight (approx.)	2,600 kgs	3,300 kgs
The mentioned specifications & dimensions are subject to change without notice.		

Standard Accessories

- Rigid tapping
 • Spindle side coolant nozzles & air blast nozzle
 • Auto lubrication with pump
 • Auto power off
- Fixed handwheel
 • RJ-45 interface and cable
 • Program light
 • LED work light
 • Coolant system with pump
- Heat exchanger for electrical cabinet
 • 3-axes way covers
 • Full guarding
 • Air gun
 • Coolant gun
- Power cable
 • Operation manuals
 • Tools & box
 • Leveling bolts & plates
 • Standard rear chip removal

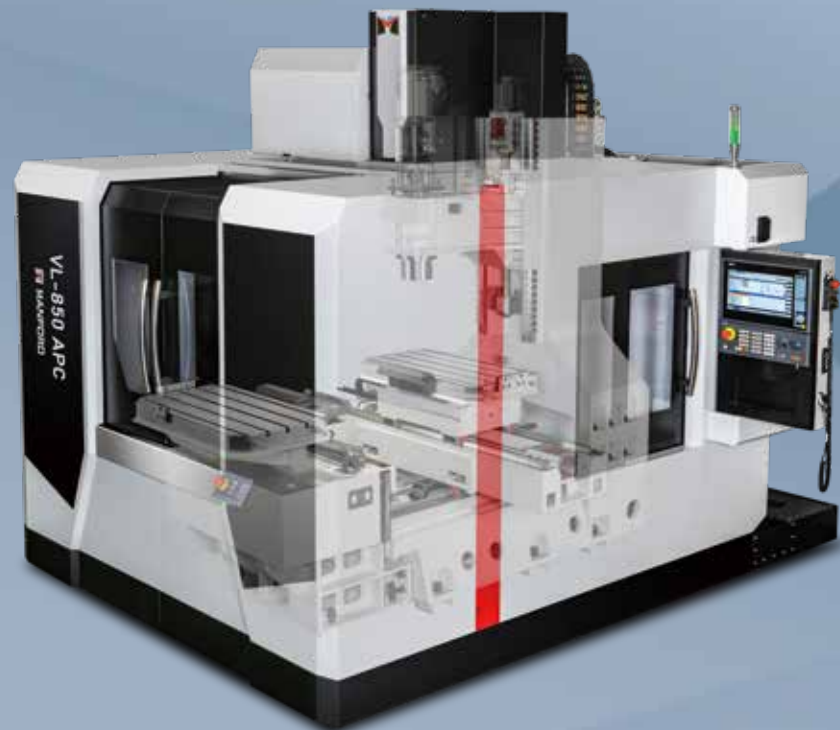
Optional Accessories

- Spindle oil cooler
 • Air conditioner for electrical cabinet
 • High pressure coolant flush
 • LHL central lubrication system
 • Programmable coolant device
- Coolant through spindle 30 bars / 70 bars
 • 4th axis / 5th axis rotary and tilting table
 • Linear scale (3 axes)
 • Automatic tool length measurement
 • Automatic workpiece measurement

- Oil skimmer
 • Oil mist collector
 • Transformer
 • CE

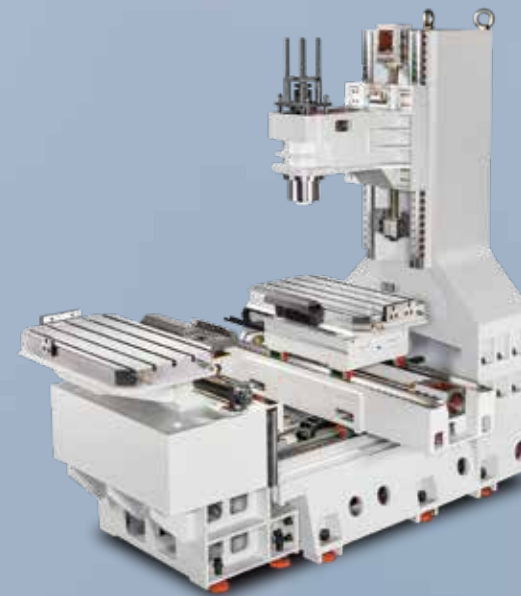
VL-850 APC

APC Series



Automatic Pallet Changer

Exchange Time	12 sec. approx.
Rotating Method	Hydraulic (opt. Servo)
Rotating Diameter	1,535 mm



Roller Type Linear Guideways

VL-850 APC	
TRAVEL	
X/Y/Z travel	850 / 510 / 560 mm
X/Y/Z ballscrews	C3 40 mm
Spindle nose to table surface	350 ~ 910 mm
TABLE	
Table size	850 x 500 mm
T-slot (Size/Q'ty/Dist)	18 mm x 5 x 100 mm
Max. table load	500 kgs (250 kgs * 2)
SPINDLE	
Taper	BT40
Speed	8,000 rpm
Transmission	Belt
FEED RATE	
Rapid feed rate of X/Y/Z Axes	36 / 36 / 36 M/min
Cutting feed rate	1 ~ 10 M/min
AUTOMATIC TOOL CHANGER	
Tool storage capacity	Arm 30 (Chain type)
Max. tool diameter	Full : Ø80 mm / Next empty : Ø150 mm
Max. tool length	300 mm
Max. tool weight	7 kgs
CNC CONTROL & MOTOR	
CNC control	Mitsubishi / Fanuc
Spindle motor	10 HP (5.5/7.5 kW)
MACHINE SIZE	
Machine dimensions (LxWxH)	2,900 x 3,740 x 2,866 mm
Machine net weight (approx.)	6,000 kgs
The mentioned specifications & dimensions are subject to change without notice.	

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