



MACO



Processing Machinery

All Series Catalogue

VMC

MX Series

MS Series

QH Series

MH Series

DV Series

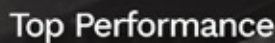
M3 Series

U Series

UF Series



Fine Craftsmanship

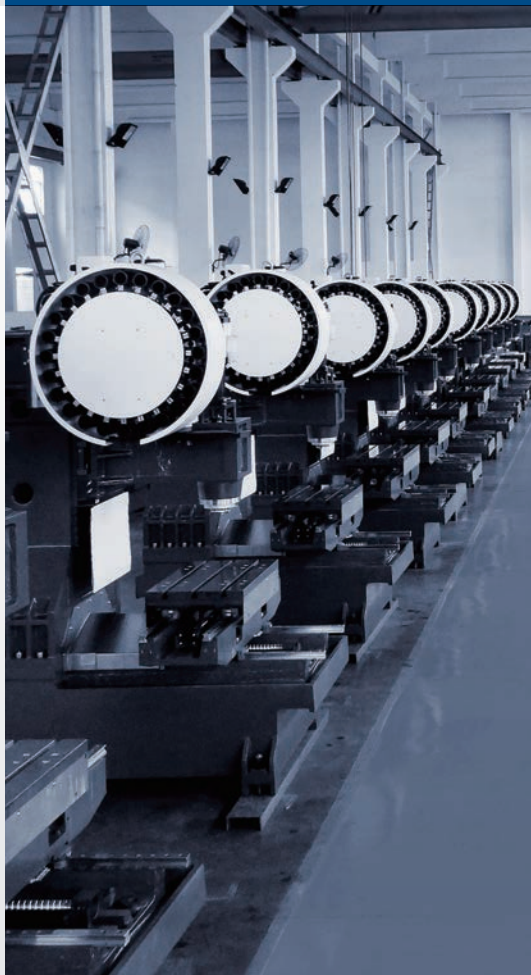


Top Performance

www.macocnc.com

MASTER AUTOMATIC CO., LTD

MACO



ABOUT US

A new brand with over 20 years of experience. We are the only manufacturer integrating machining centers, parts, and magazines in the industry. MACO started out producing tool magazines, and became the first company to supply magazines to various well known machine tool manufacturers.

Slowly but surely, MACO turned to produce OEM machine tools, that followed market changes and customer needs. At present, MACO has it's own brand, and within a few years, MACO has produced Vertical, Horizontal, Double Column and Five-Axis machining centers based on solid foundations and previous OEM experiences.

Not only is MACO a manufacturer but we are also an end user. MACO uses it's own chaining centers for manufacturing to ensure that quality and to know it's own products better. MACO aims to provide the best machine tools and services for our customers.



About us

THE MISSION CONTINUOUS MONITORING

Management

From magazine production to machine tools assembly, MACO monitor the entire produce process and quality, while providing comfortable working environment to create better efficiency.

Agreement

Believe in customer-first, quality-first, continuous improvement, permanent management.

Creativity

Innovation techniques, continuously to provide customized products to meet customers' demand.

Obligation

Employees at MACO and partners are essential key to our success. MACO welcome you to join us.



Ningbo China

Located at CIXI, with 10,000 s.q.m.
Produce vertical and double-column machining centers.

MACO Ningbo uses components imported from MACO Taiwan. VITECH provides a sales network throughout the regions of China.



Taiwan Headquarters

Located in Fung Chau Industrial Zone, with 4,000 s.q.m. Producing all series of products.

Mainly sell MACO machine tools internally and internationally. OEM and branding are both



Company Profile

1992

MACO established in Taiwan. Specialize in CNC ATC manufacturing. MACO becomes one of leading ATC manufacturers in Taiwan, providing Carousel Type ATC to many well-known Taiwan CNC machine tool manufacturers.

2004

MACO China Ningbo established. Offer CNC machine frame and ATC manufacturing for China market. MACO Taiwan launched the first Tapping & Drilling center T-5 along with production of CNC vertical machining centers.

2006

MACO has successfully transformed to a CNC machinery manufacturer. The start of T, V and LV series production.

2011

MACO started the development of Horizontal and Double column machining centers.

2012

Launched DV series in 2012 during international exhibition.

2013

First Horizontal Machining Center in 2013 TIMTOS. MACO established dealerships through Europe region

2015

MACO established dealerships in N. & S. America. 5 Axes machining centers in development.

2017

U Series 5 Axes Machining Center in 2017 TIMTOS Partnership with European Twin Spindle Horizontal Machines project. Offer ODM with a US 5 Axes machinery manufacturer.

Company History

Service Items

Service Items



Communication

Knowing customers' requirement. Provide the most suitable product recommendation.



Customization

Offer customized machine based on machine configuration. It can be a complete machine or partially built.



Design

MACO designs all series of products with partnership from Europe and US.



Production

MACO team complete all assembly in-house along with installing self produced disc-type magazines.



Sale and Service

Our commitment to sales and services are second to none in the industry.



Office	Factory	Factory	Office	Office
Shenzhen	Ningbo Zhejiang	Taiwan Taichung	Shanghai	Shengyang

Operations Center Overseas Spots

All Models

VMC

T-5	T-7
V-5F	V-6
LV-700	LV-850
LV-1050	LV-860E
LV-1060E	LV-1170
LV-1370	LV-1685
MV-1685	

MX

MX-2	MX-3
MX-4	MX-5
MX-6	

MS

MS-500

QH

QH-400	QH-400A
QH-500	QH-630
QH-800	QH-810

MH

MH-400A	MH-500A
MH-630A	MH-800A

DV

DV13 Series	DV16 Series
DV20 Series	DV24 Series
DV28 Series	DV32 Series

M3

M3-1080
M3-1210

U

U4
U6
U8

UF

UF 5
UF 8
UF 11

Overseas



Expansion base



**Based in Taiwan and China
Aiming for the World**

MALCO

Taiwan Headquarters

VMC Series

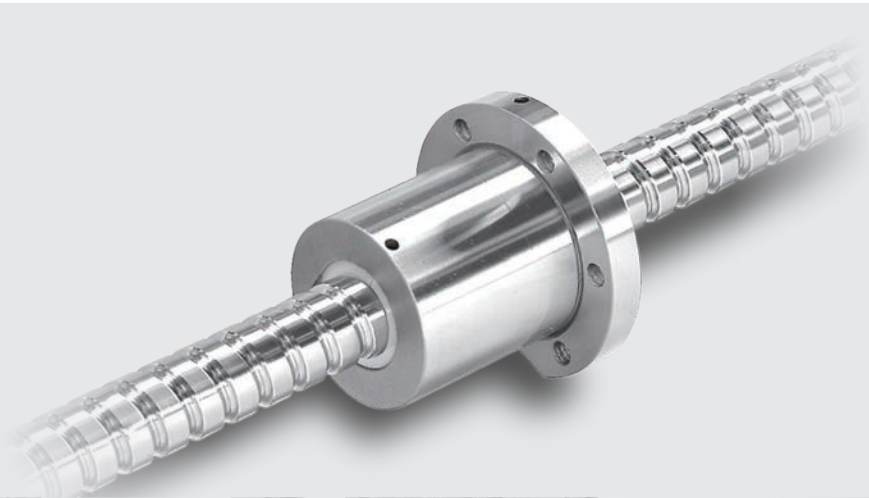
T / LV / MV High-Speed Vertical Machining Center

Recognized by Domestic and Oversea Customers



- All series ATC are self-produced by MACO.
- The short spindle nose design allow spindle motor to function more efficiently with longer spindle usage time.
- The Z-axis is designed with no counterbalance weight in combination with servo motor drive with brake to improve Z-axis drive performance. Therefore, high speed and better surface finish can be achieved.

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2	3
	4



1. High-Speed Voiceless Ball Screw

Selected large diameter ball screw, design of return unit can absorb the noise which comes from steel balls' impact, then greatly reduce the noise.

2. Roller Type Linear Guideway

LV-700 ~ LV-1685 apply the roller type linear guideway provides an increase in rigidity especially subjected to a heavy load and also maintains high accuracy of machining also features minimum wear to extend the life-span.

3. Quality Inspection System

Laser and ball bar inspection is standard test procedure for accuracy. Spindle dynamic balance adjustment on all spindle prior to delivery.

4. MACO Brand Arm Type Tool Changer

Standard with 24T. The tool changer features high speed, the change times is only 1.3 seconds which can reduce non-cutting time and increase production efficiency.

VMC Series

T / LV / MV High-Speed Vertical Machining Center

Recognized by Domestic and Oversea Customers

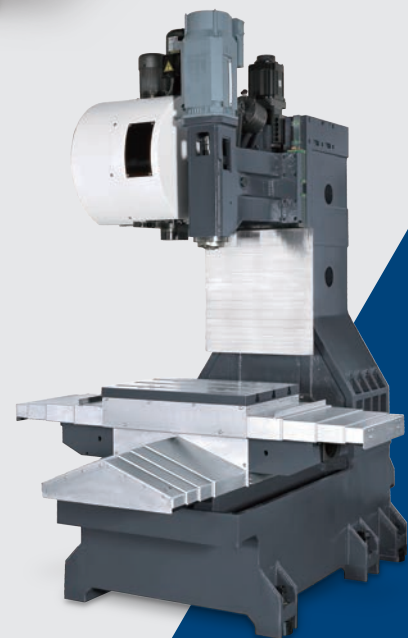


	T-5	T-7
X-axis Travel	500 mm	700 mm
Y-axis Travel	400 mm	400 mm
Z-axis Travel	300 mm	300 mm
Table Size (LxW)	620 x 420 mm	800 x 420 mm
Table Loading Capacity	250 kg	300 kg
Spindle Transmission	Direct-Drive	Direct-Drive
Spindle Speed	12,000 rpm	12,000 rpm
Spindle Motor	3.7 / 5.5 kw	3.7 / 5.5 kw





	V-5F	V-6
X-axis Travel	500 mm	600 mm
Y-axis Travel	400 mm	400 mm
Z-axis Travel	450 mm	450 mm
Table Size (LxW)	620 x 420 mm	700 x 420 mm
Table Loading Capacity	250 kg	300 kg
Spindle Transmission	Direct-Drive	Direct-Drive
Spindle Speed	12,000 rpm	10,000 rpm
Spindle Motor	3.7 / 5.5 kw	3.7 / 5.5 kw



VMC Series

T / LV / MV High-Speed Vertical Machining Center

Recognized by Domestic and Oversea Customers



	LV-700	LV-850	LV-1050
X-axis Travel	700 mm	800 mm	1000 mm
Y-axis Travel	500 mm	500 mm	500 mm
Z-axis Travel	550 mm	550 mm	550 mm
Table Size (LxW)	800 x 450 mm	1000 x 450 mm	1100 x 550 mm
Table Loading Capacity	350 kg	500 kg	600 kg
Spindle Transmission	Belt-Drive	Belt-Drive	Belt-Drive
Spindle Speed	10,000 rpm	10,000 rpm	10,000 rpm
Spindle Motor	5.5 / 7.5 kw	5.5 / 7.5 kw	7.5 / 11 kw





	LV-860E	LV-1060E
X-axis Travel	800 mm	1000 mm
Y-axis Travel	600 mm	600 mm
Z-axis Travel	600 mm	600 mm
Table Size (LxW)	1000 x 550 mm	1200 x 550 mm
Table Loading Capacity	550 kg	600 kg
Spindle Transmission	Belt-Drive	Belt-Drive
Spindle Speed	10,000 rpm	10,000 rpm
Spindle Motor	7.5 / 11 kw	7.5 / 11 kw



VMC Series

T / LV / MV High-Speed Vertical Machining Center

Recognized by Domestic and Oversea Customers

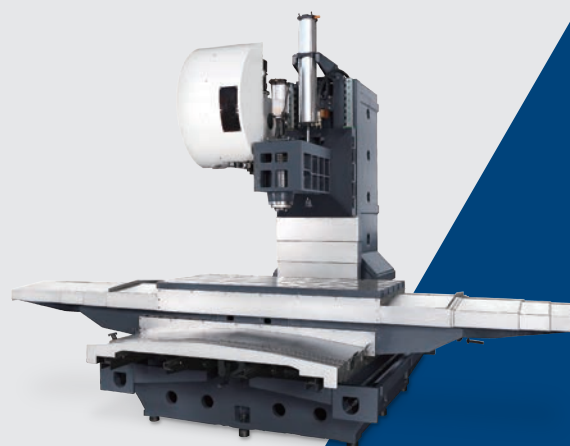


	LV-1170	LV-1370
X-axis Travel	1100 mm	1300 mm
Y-axis Travel	700 mm	700 mm
Z-axis Travel	700 mm	700 mm
Table Size (LxW)	1200 x 700 mm	1400 x 700 mm
Table Loading Capacity	900 kg	1,000 kg
Spindle Transmission	Belt-Drive	Belt-Drive
Spindle Speed	10,000 rpm	10,000 rpm
Spindle Motor	11 / 15 kw	11 / 15 kw





	LV-1685
X-axis Travel	1600 mm
Y-axis Travel	850 mm
Z-axis Travel	800 mm
Table Size (LxW)	1700 x 800 mm
Table Loading Capacity	1,500 kg
Spindle Transmission	Belt-Drive
Spindle Speed	10,000 rpm
Spindle Motor	11 / 15 kw



VMC Series

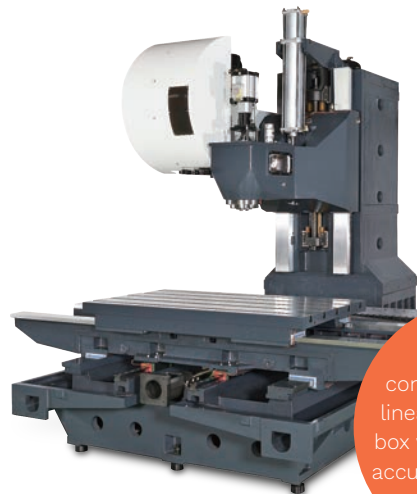
T / LV / MV High-Speed Vertical Machining Center

Recognized by Domestic and Oversea Customers



Box-way design for heavy cutting

	MV-1685
X-axis Travel	1600 mm
Y-axis Travel	850 mm
Z-axis Travel	800 mm
Table Size (LxW)	1700 x 800 mm
Table Loading Capacity	2,000 kg
Spindle Transmission	Gear Type
Spindle Speed	6,000 rpm
Spindle Motor	15 / 18.5 kw



Base casting is constructed with 2 linear guideways & 2 box ways is to ensure accuracy and stability with longer lifetime.



Machine Accessories

Standard Accessories

- MITSUBISHI M80A / Fanuc OiMF Plus
- BT-30 12,000 rpm Direct-drive spindle (T-5 / T-7 / V-5F)
- BT-40 10,000 rpm Belt-drive spindle (V6 ~ LV-1685)
- BT-50 6,000 rpm Gear Type (MV-1685)
- Gripper type tool magazine 14T (T-5 / T-7)
- Arm type tool magazine 20 / 24T (V / LV / MV Series)
- Spindle oil coolant system
- Built-in coolant nozzles (Excluded T Series)
- Oil skimmer
- Screw type chip conveyor & cart
- Bed flushing
- Heat exchanger
- Automatic lubrication system
- Ethernet transmission
- LED Work light / Alarm light
- Rigid tapping
- M30 automatic power off
- Coolant gun / Air gun

Optional Accessories

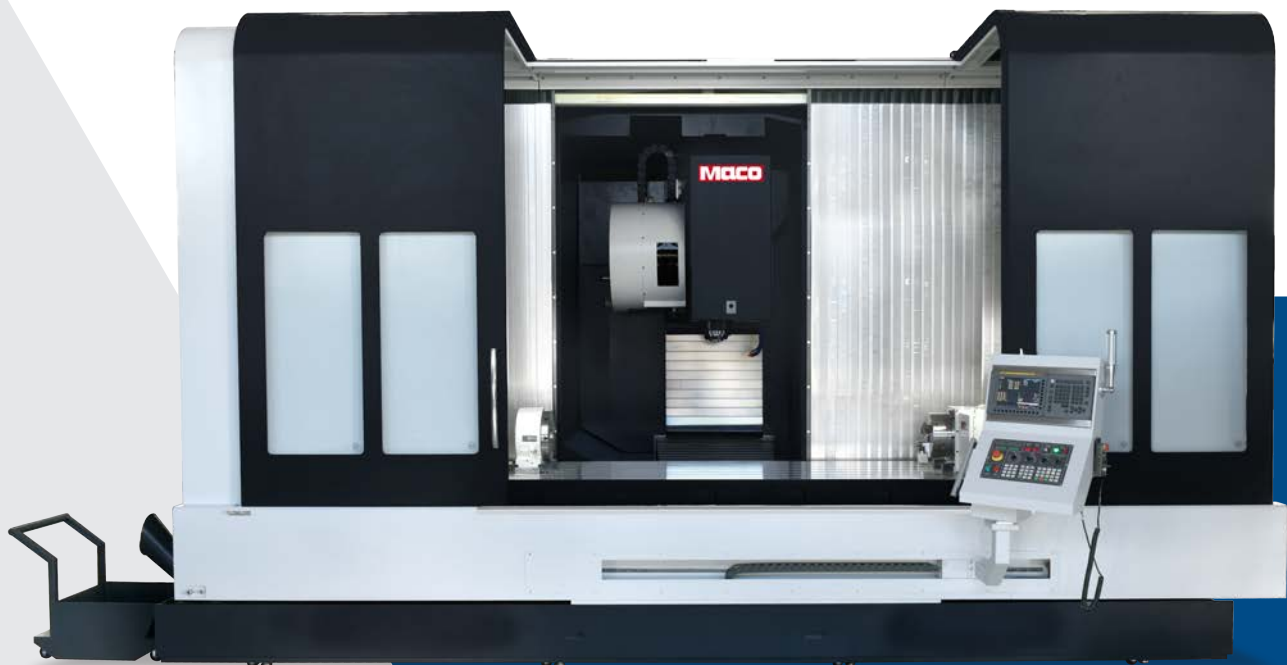
- BBT-40 10,000 / 12,000 / 15,000 / 24,000 rpm Direct-drive spindle
- 20,000 rpm Built-in spindle
- Servo magazine
- Coolant through spindle 20 / 50 bar
- Programmable coolant nozzle adjustment
- Pneumatic counter-balance on Z-axis
- Link chain type chip conveyor & cart
- 4th axis rotary table and tailstock
- Tool length measurement
- Workpiece measurement

- Design and specification are subject to change without prior notice.
- Option tool shank selection: HSK / SK / CAT / BBT / DIN / ISO...and so on.

MX Series

Moving Column Vertical Machining Center

Designed for Processing Long Workpiece



- The MX series offers a variety of splash guarding design and options. The MX may be customized according to customer requirements and provide the most suitable machine for your application.

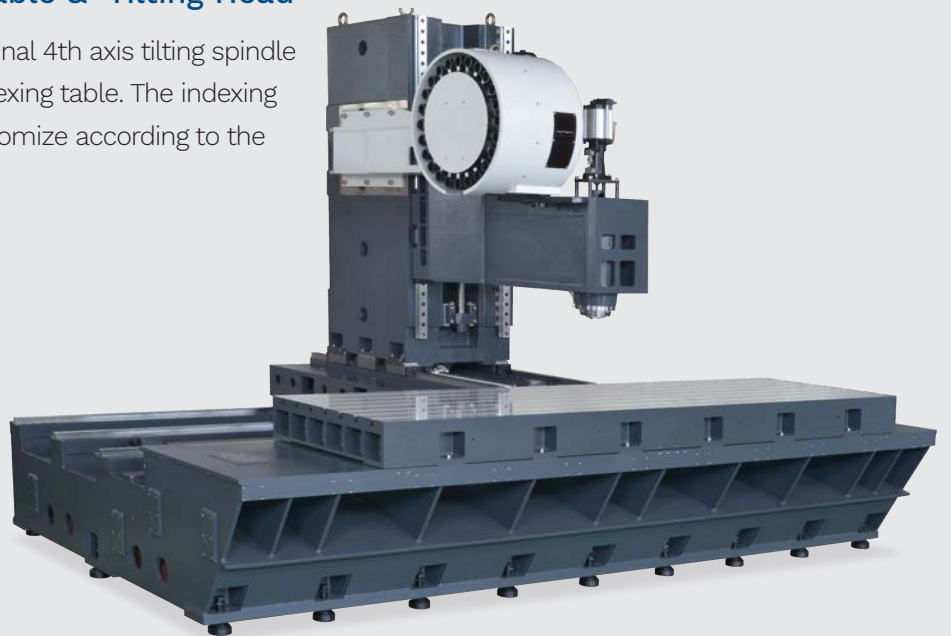


1. Fixed Machine Table Design

- The MX work table size design is 2,200 ~ 6,200 mm. Moreover, it may install divider in the working area for multiple machining of workpieces simultaneously.

2. 4th Axis Rotary Table & Tilting Head

- The MX offers optional 4th axis tilting spindle head with an indexing table. The indexing table may customize according to the requirement.



MX Series

Moving Column Vertical Machining Center

Designed for Processing Long Workpiece



MX Series

	MX-2	MX-3	MX-4	MX-5	MX-6
X-axis Travel	2000 mm	3000 mm	4000 mm	5000 mm	6,000 mm
Y-axis Travel	600 mm	600 mm	600 mm	600 mm	600 mm
Z-axis Travel	600 mm	600 mm	600 mm	600 mm	600 mm
Table Size (LxW)	2200 x 600 mm	3200 x 600 mm	4200 x 600 mm	5200 x 600 mm	6,200 x 600 mm
Table Loading Capacity	2,000 kg	3,000 kg	4,000 kg	5,000 kg	6,000 kg
Spindle Transmission	Belt-Drive	Belt-Drive	Belt-Drive	Belt-Drive	Belt-Drive
Spindle Speed	10,000 rpm	10,000 rpm	10,000 rpm	10,000 rpm	10,000 rpm
Spindle Motor	11 / 15 kw	11 / 15 kw	11 / 15 kw	11 / 15 kw	11 / 15 kw



Machine Accessories

Standard Accessories

- Fanuc Oi-MF Plus
- BBT-40 10,000 rpm Belt-drive spindle
- Arm type tool magazine 24T
- Built-in coolant nozzles
- Spindle oil coolant system
- Oil skimmer
- Screw type chip conveyor & cart
- Coolant gun / Air gun
- Heat exchanger
- Rigid tapping
- Semi enclosure
- LED Work light / Alarm light
- M30 automatic power off
- Standard CE safety switch

Optional Accessories

- MITSUBISHI M80A
- BBT-40 12,000 / 15,000 rpm Direct-drive spindle
- Chain type tool magazine 30 / 40T
- Coolant through spindle 20 / 50 bar
- XYZ axes linear scale
- Link chain type chip conveyor & cart
- Tool length measurement
- Workpiece measurement
- Air conditioner
- 4th axis rotary table and tailstock
- Tilting spindle head
- Indexing table
- Full enclosure
- Automatic door
- Transformer
- CE mark

- Design and specification are subject to change without prior notice.
- Option tool shank selection: HSK / SK / CAT / BBT / DIN / ISO...and so on.

MS Series

Moving Column Vertical Machining Center (Twin Pallet)

Effectively Reduce the Cycle Time



MS Series

MS-500

X-axis Travel	500 mm
Y-axis Travel	400 mm
Z-axis Travel	450 mm
Table Size (LxW)	700 x 1090 mm (700 x 500 mm for each pallet)
Table Loading Capacity	350 kg
Spindle Transmission	Belt-Drive
Spindle Speed	10,000 rpm
Spindle Motor	5.5 / 7.5 kw



Machine Accessories

Standard Accessories

- Fanuc Oi-MF Plus
- BBT-40 10,000rpm Direct-drive spindle
- Arm type tool magazine 24T
- Built-in coolant nozzles
- Spindle oil coolant system
- Oil skimmer
- Screw type chip conveyor & cart
- Coolant gun / Air gun
- Heat exchanger
- LED Work light / Alarm light
- M30 automatic power off
- Standard CE safety switch

Optional Accessories

- MITSUBISHI M80A
- BBT-40 12,000 / 15,000 rpm Direct- drive spindle
- Coolant through spindle 20 / 50 bar
- XYZ axes linear scale
- Link chain type chip conveyor & cart
- Tool length measurement
- Workpiece measurement
- Air conditioner
- Automatic door
- Transformer
- CE mark

- Design and specification are subject to change without prior notice.
- Option tool shank selection: HSK / SK / CAT / BBT / DIN / ISO...and so on.

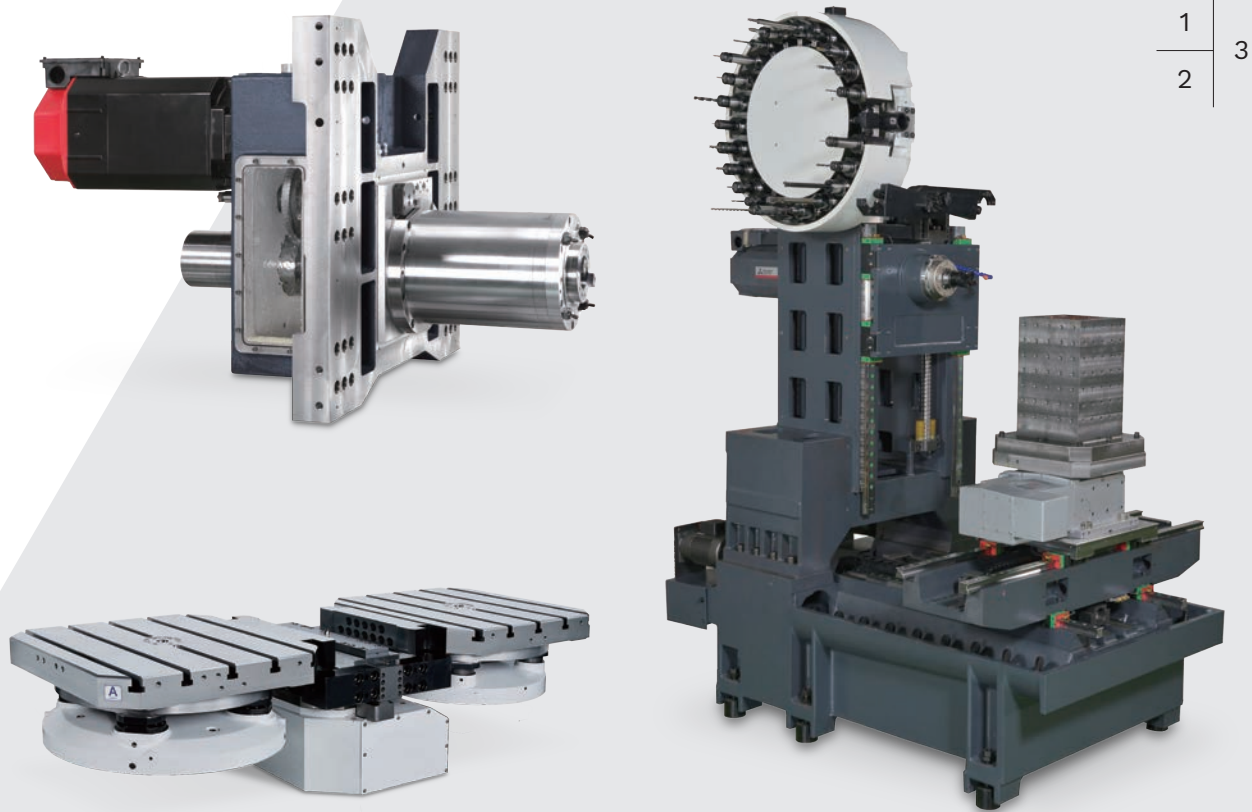
QH Series

High-Speed Fixed Column Horizontal Machining Center

Designed Specifically for Small Parts



- The fast, reliable and long-life tool changer offer stability and dependability in tool change process.
- The QH models offer rigid structure design, high loading capacity, high precision and high speed feed system.
- The high precision two-step speed gear-drive spindle offer various cutting conditions.



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1. High Precision, High Rigidity, Two-Step Speed Gear-Drive Spindle

- The #50 spindle has high precision bearings with maximum speed of 6000 rpm, combined with two-step speed change makes the machine suitable for various cutting conditions.
- The spindle is driven by an extra powerful motor with 15 / 18.5 KW (22 / 26 KW optional) in combination with 2-step gears for speed change, that products great torque output up to 489 NM (718 NM) for heavy cutting.
- Long spindle nose design with less interference range makes it suitable for deep hole machining.

2. Automatic Pallet Change (A.P.C) (QH-400A only)

- High loading capacity : Hydraulic drive and bear the weight of 350kg x 2
- High repeatability accuracy : Designed with high precision positioning cones to ensure stability of table and within ± 0.005 mm of repeatability.
- Using automatic pallet change may shorten machining time and increase working efficiency.

3. Rotary table (B-axis)

- The rotary table is driven by a servo system.
- With the three-piece clutch ($\pm 5''$ accuracy) to ensure positioning accuracy.

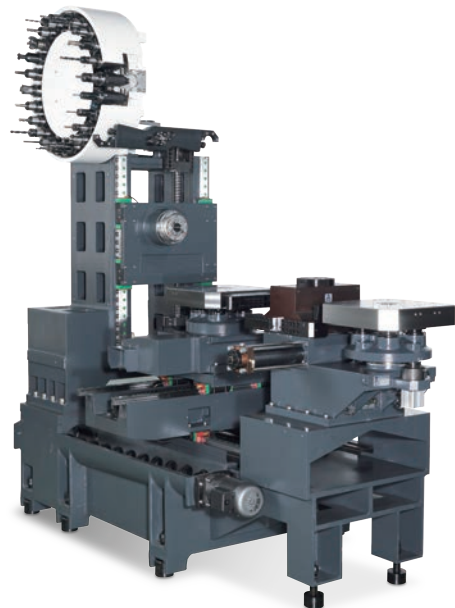
QH Series

High-Speed Fixed Column Horizontal Machining Center

Designed Specifically for Small Parts

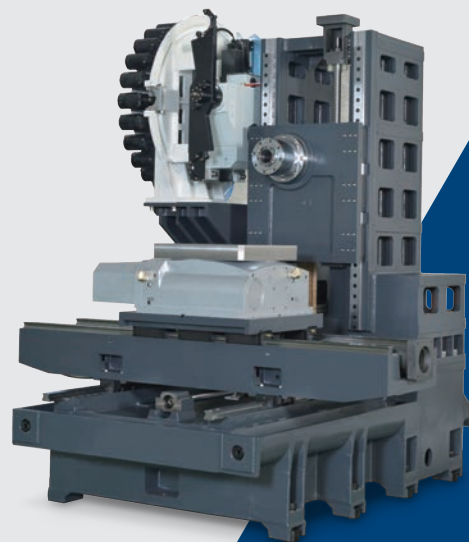


	QH-400	QH-400A
X-axis Travel	600 mm	600 mm
Y-axis Travel	500 mm	430 mm
Z-axis Travel	500 mm	500 mm
Table Size (LxW)	400 x 400 mm	400 x 400 mm
Table Loading Capacity	350 kg	350 kg
Spindle Transmission	Direct-Drive	Direct-Drive
Spindle Speed	12,000 rpm	12,000 rpm
Spindle Motor	7.5 / 11 kw	7.5 / 11 kw





	QH-500	QH-630
X-axis Travel	800 mm	1000 mm
Y-axis Travel	700 mm	800 mm
Z-axis Travel	700 mm	800 mm
Table Size (LxW)	500 x 500 mm	630 x 630 mm
Table Loading Capacity	500 kg	1,200 kg
Spindle Transmission	Belt-Drive	Belt-Drive
Spindle Speed	6,000 rpm	6,000 rpm
Spindle Motor	22 / 26 kw	22 / 26 kw



QH Series

High-Speed Fixed Column Horizontal Machining Center

Designed Specifically for Small Parts



	QH-800	QH-810
X-axis Travel	1200 mm	1600 mm
Y-axis Travel	1000 mm	1000 mm
Z-axis Travel	1000 mm	1000 mm
Table Size (LxW)	800 x 800 mm	800 x 1000 mm
Table Loading Capacity	3,000 kg	3,000 kg
Spindle Transmission	Gear Type	Gear Type
Spindle Speed	6,000 rpm	6,000 rpm
Spindle Motor	15 / 18.5 kw	15 / 18.5 kw





Machine Accessories

Standard Accessories

- MITSUBISHI M80A / Fanuc OiMF Plus
- BBT-40 12,000 rpm Direct-drive spindle (QH-400 / QH-400A)
- BT-50 6,000 rpm Belt-drive spindle (QH-500 / QH-630)
- BT-50 6,000 rpm Gear type spindle (QH-800 / QH-810)
- Arm type tool magazine 24 / 40T
- Spindle oil coolant system
- Cutting coolant system
- Automatic lubrication system
- Roller type linear guideway
- Oil skimmer
- Screw type chip conveyor & cart
- Heat exchanger
- Full enclosure / Semi enclosure (QH-800 / QH-810)
- Coolant gun / Air gun
- Bed flushing (Excluded QH-800 / 810)
- LED Work light / Alarm light
- Leveling bolts and adjusting pad
- M30 automatic power off
- Rigid tapping

Optional Accessories

- BBT-40 10,000 / 12,000 / 15,000 rpm Direct-drive spindle
- BT-50 6,000 rpm Gear type spindle (QH-500 / QH-630)
- Chain type tool magazine 32 / 40 / 60T
- Coolant through spindle 20 / 50 bar
- Link chain type chip conveyor & cart
- Tool length measurement
- Workpiece measurement
- Fixture system
- Transformer
- CE mark

- Design and specification are subject to change without prior notice.
- Option tool shank selection: HSK / SK / CAT / BBT / DIN / ISO...and so on.

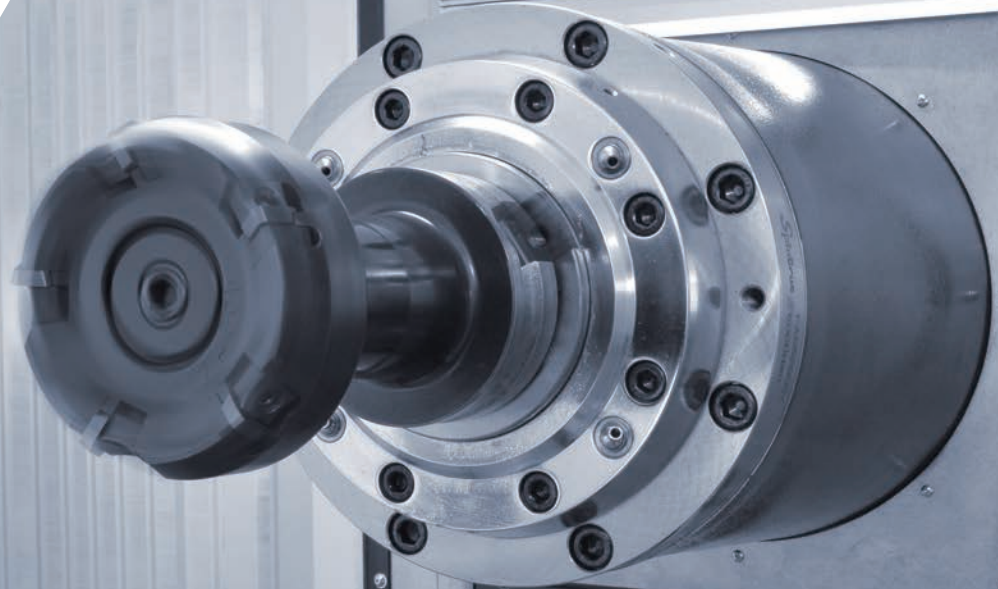
MH Series

High-Speed Moving Column Horizontal Machining Center

High-Speed, Better Cost-Effective



- High accuracy, High loading capacity.
- Pallet indexation angle is 0.001° with hydraulic drive exchanger system. The air tight detection device optimize the accuracy and efficiency during pallet exchange process.
- The column design is symmetrical double-wall structure. It can effectively prevent the thermal deformation caused by temperature rise and may affect the cutting precision.

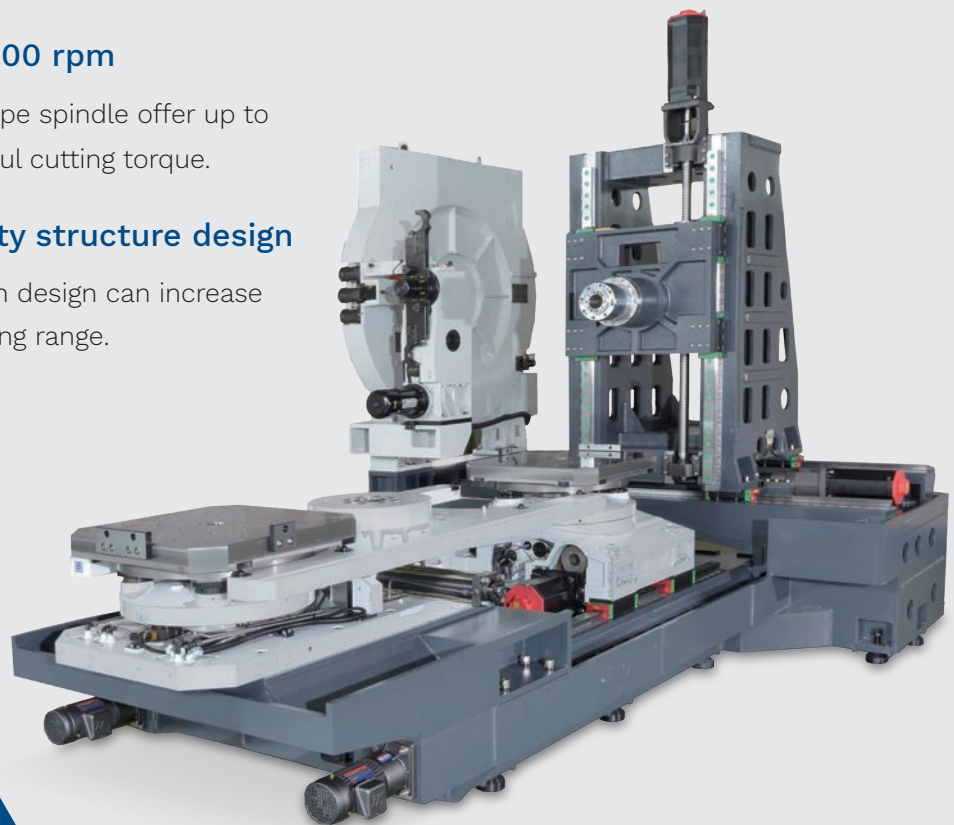


1. Gear type spindle 6,000 rpm

- The heavy-duty gear type spindle offer up to 6,000 rpm of powerful cutting torque.

2. MH High-rigidity structure design

- Moving column design can increase the processing range.



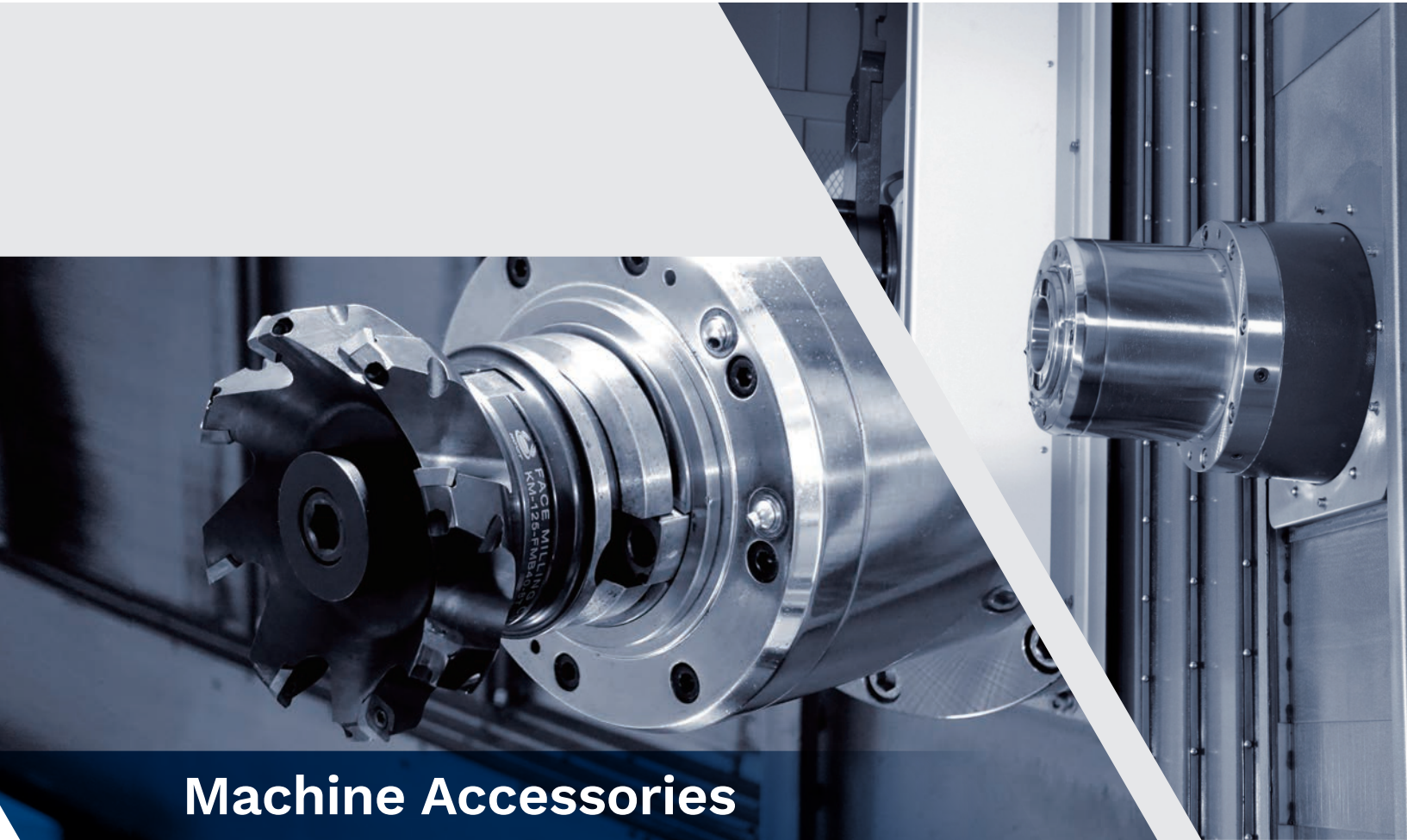
MH Series

High-Speed Moving Column Horizontal Machining Center

High-Speed, Better Cost-Effective



	MH-400A	MH-500A	MH-630A	MH-800A
X-axis Travel	650 mm	800 mm	1000 mm	1200 mm
Y-axis Travel	500 mm	700 mm	800 mm	1000 mm
Z-axis Travel	500 mm	700 mm	800 mm	1000 mm
Table Size (LxW)	400 x 400 mm	500 x 500 mm	630 x 630 mm	800 x 800 mm
Table Loading Capacity	400 kg	500 kg	1,200 kg	2,000 kg
Spindle Transmission	Direct-Drive	Gear Type	Gear Type	Gear Type
Spindle Speed	10,000 rpm	6,000 rpm	6,000 rpm	6,000 rpm
Spindle Motor	11 / 15 kw	22 / 26 kw	22 / 26 kw	22 / 26 kw
APC Exchange Time (Hydraulic Gear)	6 sec	8 sec	8 sec	10 sec



Machine Accessories

Standard Accessories

- FANUC 0iMF Plus
- BBT-40 10,000 rpm Direct-drive spindle (MH-400A)
- BT-50 6,000 rpm Gear type spindle
- Arm type tool magazine 40T
- Built-in coolant nozzles
- Spindle oil coolant system
- Cutting coolant system
- Heat exchanger
- Oil skimmer
- Top / Bed flushing
- Rigid tapping
- M30 automatic power off
- Chain type chip conveyor & cart
- LED Work light / Alarm light

Optional Accessories

- FANUC 31iMB / MITSUBISHI M80A
- BBT-40 12,000 rpm Direct-drive spindle (MH-400A)
- BBT-40 / BT-50 10,000 rpm Belt-drive / Direct-drive spindle
- Chain type tool magazine 60 / 120 T
- XYZ axes ballscrew hollow cooling system
- Coolant through spindle 20 / 50 bar
- Tool length measurement
- Workpiece measurement
- Front / Side door safety switch
- XYZ axes linear scale
- B-axis encoder
- Table T-slot
- Air conditioner
- Transformer
- CE mark

- Design and specification are subject to change without prior notice.
- Option tool shank selection: HSK / SK / CAT / BBT / DIN / ISO...and so on.

DV Series

Double Column Machining Center

Features Heavy Cutting and
Processing in Molding

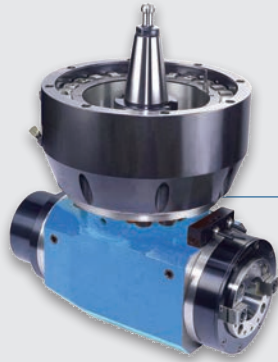


- The standard gear spindle for DV series is 6,000 rpm for different spindle type to achieve various processing demand.
- XYZ three axes are direct transmission mechanism to increase the torque of servo motor and ensured the servo motor driven accuracy.
- The one-piece base which features a high-strength rib design that effectively prevent machining vibrations and improve the cutting stability.



Auto. Change 90° Angle Milling Head

Head Exchange	Hydraulic	Division Angle	5° (OPT.=1°)
Tool Clamping	Cylinder	Tool Taper	BT-50
Max. Speed	3,500 rpm	CTS	OPT.



Semi-Auto. 90° Angle Milling Head

Head Exchange	Bolt	Division Angle	5°
Tool Clamping	Cylinder	CTS	OPT.
Max. Speed	3,500 rpm		



Manual 90° Angle Milling Head

Head Exchange	Bolt	Max. Speed	2,500 rpm
Tool Clamping	Bolt	Division Angle	5°



Auto. Change Extend Milling Head 500mm

Head Exchange	Hydraulic	Division Angle	None
Tool Clamping	Cylinder	Length	300L / 500L
Max. Speed	3,500 rpm	Tool Taper	BT-50



Auto. Change Orthogonal Milling Head

Head Exchange	Hydraulic	Division Angle	5° (OPT.=1°)
Tool Clamping	Cylinder	Tool Taper	BT-50
Max. Speed	3,500 rpm	CTS	OPT.



5-axis Head

Head Exchange	Hydraulic	Division Angle	None
Tool Clamping	Cylinder	Tool Taper	HSK-A63
Max. Speed	18,000 rpm	CTS	STD.

DV Series

Double Column Machining Center

Features Heavy Cutting and Processing in Molding



DV13 series

	DV-2013	DV-3013	DV-4013
X-axis Travel	2100 mm	3100 mm	4100 mm
Y-axis Travel	1300 mm	1300 mm	1300 mm
Z-axis Travel	800 mm	800 mm	800 mm
Table Size (LxW)	2000 x 1100 mm	3000 x 1100 mm	4000 x 1100 mm
Table Loading Capacity	4,000 kg	5,000 kg	6,000 kg
Spindle Transmission	Gear Box	Gear Box	Gear Box
Spindle Speed	6,000 rpm	6,000 rpm	6,000 rpm
Spindle Motor	18.5 / 22 kw	18.5 / 22 kw	18.5 / 22 kw



DV16 series

	DV-2016	DV-3016	DV-4016
X-axis Travel	2100 mm	3100 mm	4100 mm
Y-axis Travel	1600 mm	1600 mm	1600 mm
Z-axis Travel	800 mm	800 mm	800 mm
Table Size (LxW)	2000 x 1400 mm	3000 x 1400 mm	4000 x 1400 mm
Table Loading Capacity	4,000 kg	5,000 kg	6,000 kg
Spindle Transmission	Gear Box	Gear Box	Gear Box
Spindle Speed	6,000 rpm	6,000 rpm	6,000 rpm
Spindle Motor	18.5 / 22 kw	18.5 / 22 kw	18.5 / 22 kw

DV Series

Double Column Machining Center

Features Heavy Cutting and Processing in Molding



DV20 series

	DV-3220	DV-4220	DV-5220
X-axis Travel	3200 mm	4200 mm	5200 mm
Y-axis Travel	2000 mm	2000 mm	2000 mm
Z-axis Travel	1000 mm	1000 mm	1000 mm
Table Size (LxW)	3000 x 1800 mm	4000 x 1800 mm	5000 x 1800 mm
Table Loading Capacity	10,000 kg	12,000 kg	15,000 kg
Spindle Transmission	Gear Box	Gear Box	Gear Box
Spindle Speed	6,000 rpm	6,000 rpm	6,000 rpm
Spindle Motor	22 / 26 kw	22 / 26 kw	22 / 26 kw



DV24 series

	DV-3224	DV-4224	DV-5224
X-axis Travel	3200 mm	4200 mm	5200 mm
Y-axis Travel	2400 mm	2400 mm	2400 mm
Z-axis Travel	1000 mm	1000 mm	1000 mm
Table Size (LxW)	3000 x 2000 mm	4000 x 2000 mm	5000 x 2000 mm
Table Loading Capacity	12,000 kg	14,000 kg	18,000 kg
Spindle Transmission	Gear Box	Gear Box	Gear Box
Spindle Speed	6,000 rpm	6,000 rpm	6,000 rpm
Spindle Motor	22 / 26 kw	22 / 26 kw	22 / 26 kw

DV Series

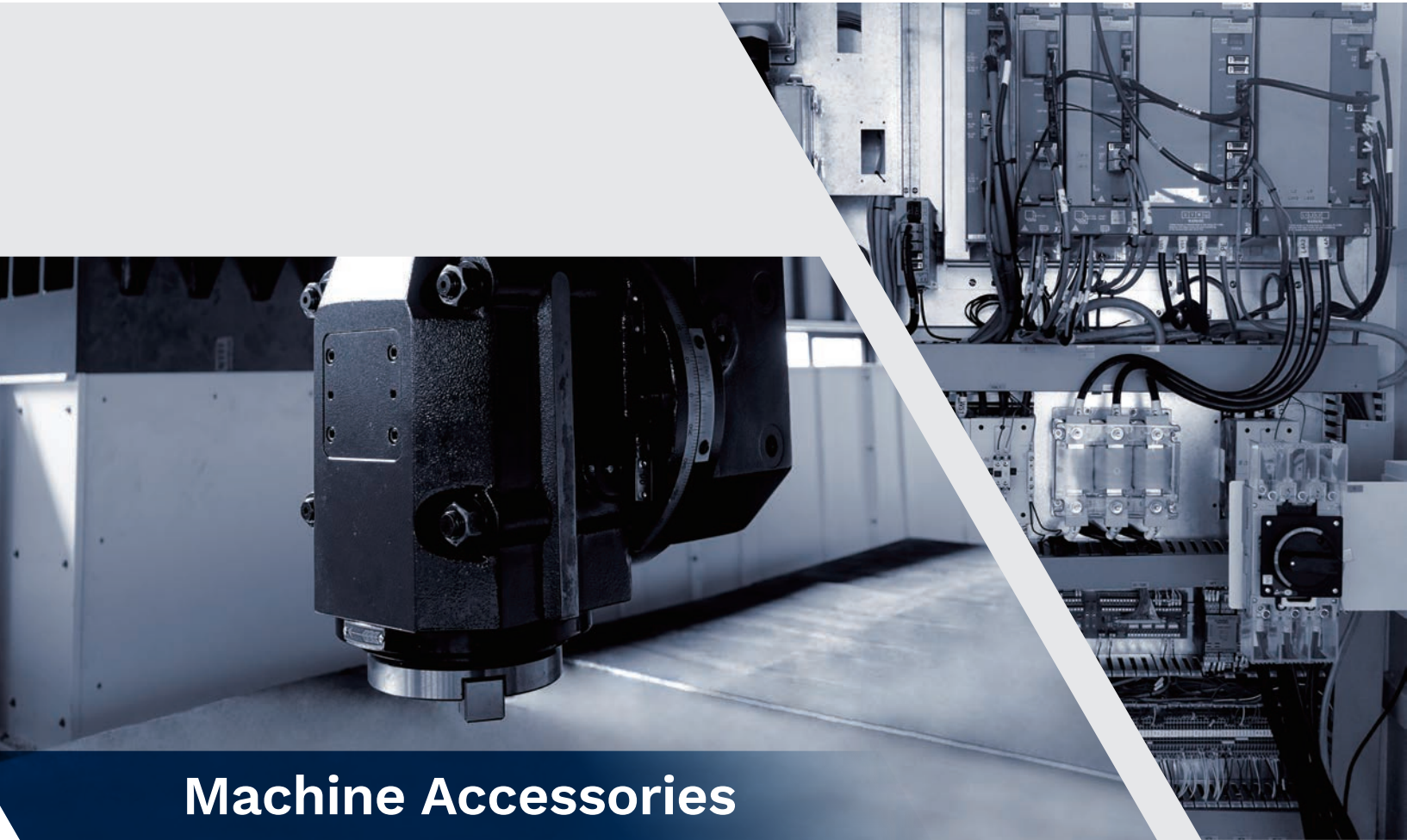
Double Column Machining Center

Features Heavy Cutting and Processing in Molding



DV28/32 series

	DV-4228	DV-5228	DV-4232	DV-5232
X-axis Travel	4200 mm	5200 mm	4200 mm	5200 mm
Y-axis Travel	2800 mm	2800 mm	3200 mm	3200 mm
Z-axis Travel	1000 mm	1000 mm	1000 mm	1000 mm
Table Size (LxW)	4200 x 2200 mm	5200 x 2200 mm	4200 x 2400 mm	5200 x 2400 mm
Table Loading Capacity	16,000 kg	20,000 kg	16,000 kg	20,000 kg
Spindle Transmission	Gear Box	Gear Box	Gear Box	Gear Box
Spindle Speed	6,000 rpm	6,000 rpm	6,000 rpm	6,000 rpm
Spindle Motor	22 / 26 kw	22 / 26 kw	22 / 26 kw	22 / 26 kw



Machine Accessories

Standard Accessories

- Fanuc OiMF Plus / MITSUBISHI M80A
- XYZ three-axes linear guide (DV13 / 16 Z-Axis box-way)
- BT-50 6,000 rpm Gear type spindle
- Arm type tool magazine 24T
- Spindle oil coolant system
- Spindle air blast equipment
- Link chain type chip conveyor & cart
- Vertical arm type operation panel
- Coolant gun / Air gun
- Automatic lubrication system
- Front / Side door safety switch
- LED Work light / Alarm light
- M30 automatic power off
- Cutting coolant system
- Dual oil cylinder
- Semi enclosure
- Heat exchanger
- Rigid tapping

Optional Accessories

- FANUC 31iMB
- Tool length measurement
- Workpiece measurement
- Auto. change orthogonal milling head
- Auto. change 90° angle milling head
- Semi-auto. 90° angle milling head
- Manual 90° angle milling head
- Auto. Change extend milling head 500mm
- 5-axis head
- BT-50 6,000 rpm Belt-drive spindle
- BT-50 10,000 rpm Direct-drive spindle
- Coolant through spindle 20 bar
- Scraper type chip conveyor & cart
- Pendant type control panel
- XYZ three axes linear scale
- Chain type tool magazine 32 / 40 / 60 T
- Oil mist collector
- Air conditioner
- Full enclosure
- Oil skimmer
- CE mark

· Design and specification are subject to change without prior notice.
 · Option tool shank selection: HSK / SK / CAT / BBT / DIN / ISO...and so on.

M3 Series

High-Speed Double Column Machining Center

High-Speed and High-Accuracy



M3 Series

	M3-1080	M3-1210
X-axis Travel	1050 mm	1200 mm
Y-axis Travel	800 mm	1000 mm
Z-axis Travel	500 mm	500 mm
Table Size (LxW)	1100 x 800 mm	1300 x 1000 mm
Table Loading Capacity	800 kg	1,200 kg
Spindle Transmission	Direct-Drive	Direct-Drive
Spindle Speed	15,000 rpm	15,000 rpm
Spindle Motor	7.5 / 11 kw	7.5 / 11 kw



Machine Accessories

Standard Accessories

- Fanuc Oi-MF Plus
- BBT-40 15,000 rpm Direct-drive spindle
- Umbrella type tool magazine 20T
- Built-in coolant nozzle
- Spindle oil coolant system
- Oil skimmer
- Screw type chip conveyor & cart
- Roller type linear guideway
- Coolant gun / Air gun
- Heat exchanger
- Full enclosure
- Automatic lubrication system
- LED Work light / Alarm light
- M30 automatic power off

Optional Accessories

- MITSUBISHI M80A
- BBT-40 20,000 rpm Direct-drive spindle
- HSK-40 24,000 rpm Built-in spindle
- HSK-40 30,000 rpm Built-in spindle
- XYZ axes linear scale
- Tool length measurement
- Workpiece measurement
- Dust collector
- Oil mist collector
- Transformer
- CE mark

- Design and specification are subject to change without prior notice.
- Option tool shank selection: HSK / SK / CAT / BBT / DIN / ISO...and so on.

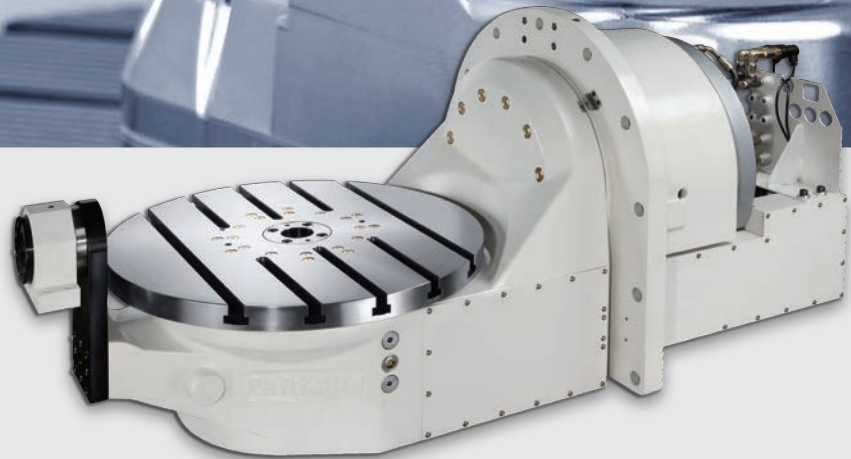
U Series

5 Axes Machining Center

Excellent Universal Milling Performance



- All mechanical parts are guided by Finite Element Analysis. The one-piece high tension casting structure allow column and saddle to be perfectly matched. The X and Y axes are combined with cross-slide design to ensure high stability and machining accuracy.



1	2
3	

1. High-Speed Spindle

- Adopting high-speed 12,000 rpm direct-drive spindle, the vibration generated is relatively low, and isolates the heat from motor to enhance the accuracy of extended machining cycles.

2. Workpiece Measurement Device (OPT.)

- Workpiece measurement system adopts BLUM TC series which is high-speed and high-accuracy measurement point for mass production of workpieces.

3. Rotary Table + Heidenhain Encoder

- B / C axis with Heidenhain encoder to ensure high machining accuracy.
- Rotary table with advanced B / C-axis
- The maximum table loading is 300 kg (Horizontal).
- B-axis swiveling range is -50° ~ +110°.

U Series

5 Axes Machining Center

Excellent Universal Milling Performance



	U4	U6	U8
X-axis Travel	400 mm	620 mm	800 mm
Y-axis Travel	350 mm	520 mm	900 + 300 mm
Z-axis Travel	350 mm	460 mm	620 mm
B-axis Tilting Range	-50° ~ +110°	-50° ~ +110°	±120°
C-axis Rotating Range	360°	360°	360°
Table Diameter	Ø450	Ø650	Ø800
Table Loading Capacity	150 (Tilting) 200 (Horizontal) kg	200 (Tilting) 300 (Horizontal) kg	500 (Tilting) 1,000 (Horizontal) kg
Spindle Transmission	Direct-Drive	Direct-Drive	Direct-Drive
Spindle Speed	12,000 rpm	12,000 rpm	12,000 rpm
Spindle Motor	12 / 14.4 kw	12 / 14.4 kw	17 / 20.4 kw



Machine Accessories

Standard Accessories

- SIEMENS 840 Dsl
- BBT-40 12,000 rpm Direct-drive spindle
- Arm type tool magazine 30T (U4)
- Chain type tool magazine 32T (U6 / U8)
- XYZ three-axes linear guide
- B-axis / C-axis linear scale
- Front / Side door safety switch
- Z-axis motor-stop system
- Spindle oil coolant system
- Spindle air-curtain system
- Spindle air blast equipment
- Built-in coolant nozzles
- Rigid tapping
- Coolant system
- Auto-lubrication system
- Cutting fluid system
- Link chain type chip conveyor & cart
- Air conditioner
- Coolant gun / Air gun
- Bed flushing
- Full enclosure
- M30 automatic power off
- LED Work light / Alarm light

Optional Accessories

- HEIDENHAIN TNC 640 / 620
- Fanuc OiMF Plus (4 Simultaneous axes)
- SIEMENS 828 Dsl (4 Simultaneous axes)
- BBT-40 15,000 rpm Direct-drive spindle
- Arm type tool magazine 24 / 30 T
- Chain type tool magazine 40T
- XYZ axes linear scale
- Coolant through spindle 20 bar
- Table fixture air pressure
- Oil skimmer
- Screw type chip conveyor & cart
- Tool length measurement
- Workpiece measurement
- Oil mist collector
- CE mark

- Design and specification are subject to change without prior notice.
- Option tool shank selection: HSK / SK / CAT / BBT / DIN / ISO...and so on.

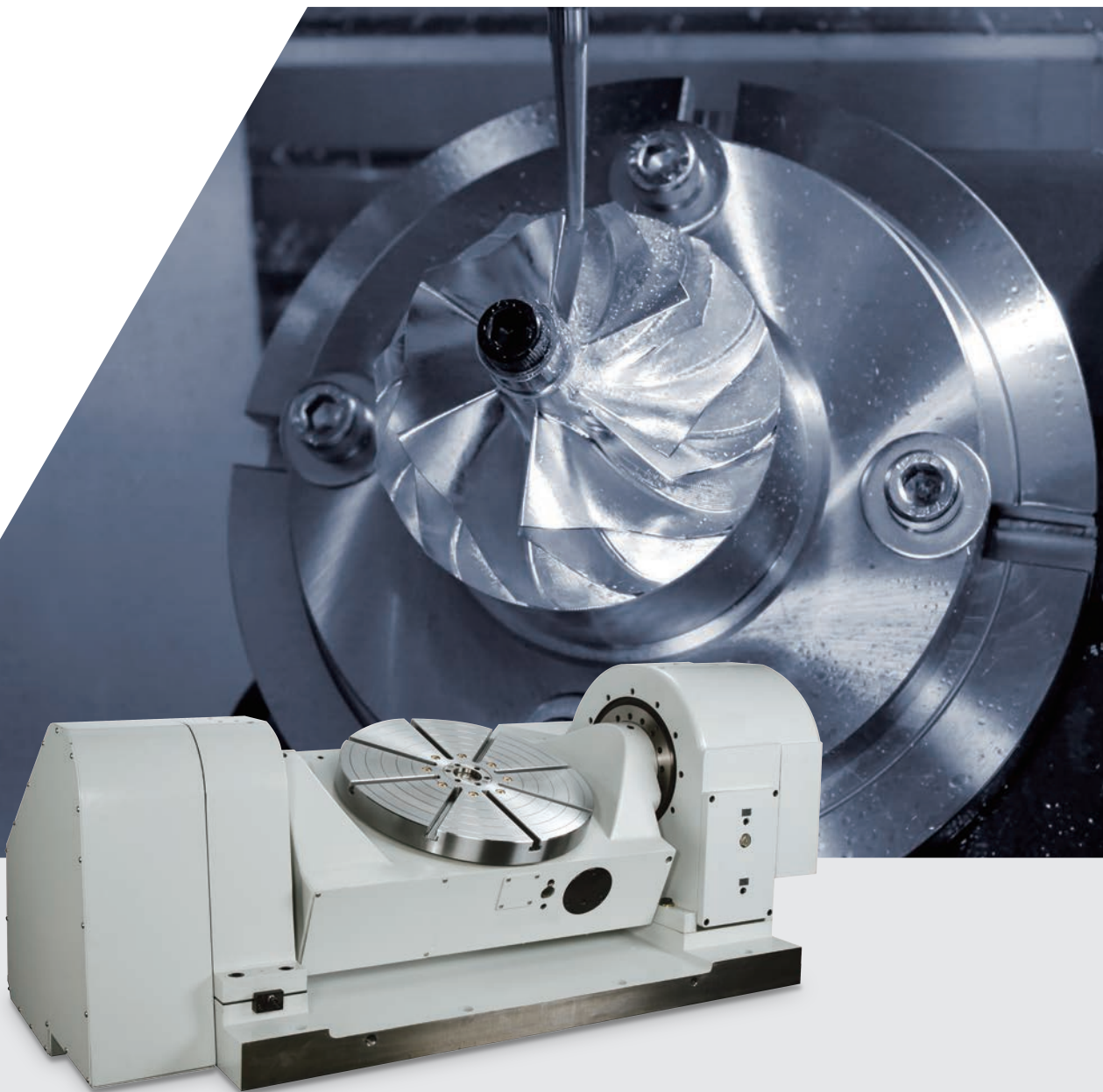
UF Series

5 Axes Machining Center

High-Speed, High Accuracy, High Efficiency



- Equipped with high-speed direct-driven spindle, three-axes linear guideways and high-efficiency A / C two axes tilting rotary table, combined with high rigidity mechanical structure body to offer 5 axes machining ability. Applicable to small to medium-sized complex free-form surface machining applications.
- Integrated multi-face machining on the same rotary table to reduce setup work and fixture preparing, improve the cutting efficiency but reduce the total cutting time.



	UF 5	UF 8	UF 11
X-axis Travel	500 mm	800 mm	1100 mm
Y-axis Travel	400 mm	600 mm	700 mm
Z-axis Travel	450 mm	600 mm	700 mm
A-axis Tilting Range	+30° ~ -110°	+30° ~ -110°	+30° ~ -110°
C-axis Rotating Range	360°	360°	360°
Table Diameter	Ø170	Ø350	Ø500
Table Loading Capacity	250 kg	550 kg	700 kg
Spindle Transmission	Direct-Drive	Direct-Drive	Direct-Drive
Spindle Speed	20,000 rpm	12,000 rpm	12,000 rpm
Spindle Motor	4.8 kw	11 kw	11 kw

MACO

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