

MCH-630

MCV-720

VERTICAL MACHINING CENTER

MCV-1020A

MCV-1200
MCV-1200BA

MCV-1020BA

MCV-1250

MCV-1450

MCV-1700

MCV-2100

MCV-2600

DCM-2213



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The Latest and Best Quality Machinery.
DAHLIH®



MCV-1200BA

Newly designed for
increased stability

MCV-1200

An all-round product A perfect combination of quality and efficiency

- » Built with Dah Lih's tradition of high reputation and fine craftsmanship.
- » The major casting parts are designed and analyzed by "Finite Element Analysis" for optimum structural rigidity and accuracy.
- » The entire machine is ruggedly constructed throughout for lifetime accuracy and rigidity.
- » Coolant jets around the spindle provide excellent cooling effect on the cutting tool and workpiece.
- » Three axes are mounted with linear guide ways (Standard equipment on MCV-1200).
- » The machine can be directly loaded into a container. The compactly constructed machine is designed to fully utilize its internal space for maximum working range, allowing more functions to challenge the competition.
- » The ram type head design offers the highest stability and cutting accuracy (Standard design on MCV-1200).
- » 10,000 rpm direct-drive spindle is standard (For model MCV-1200 only).

MCV-1200 MCV-1200BA



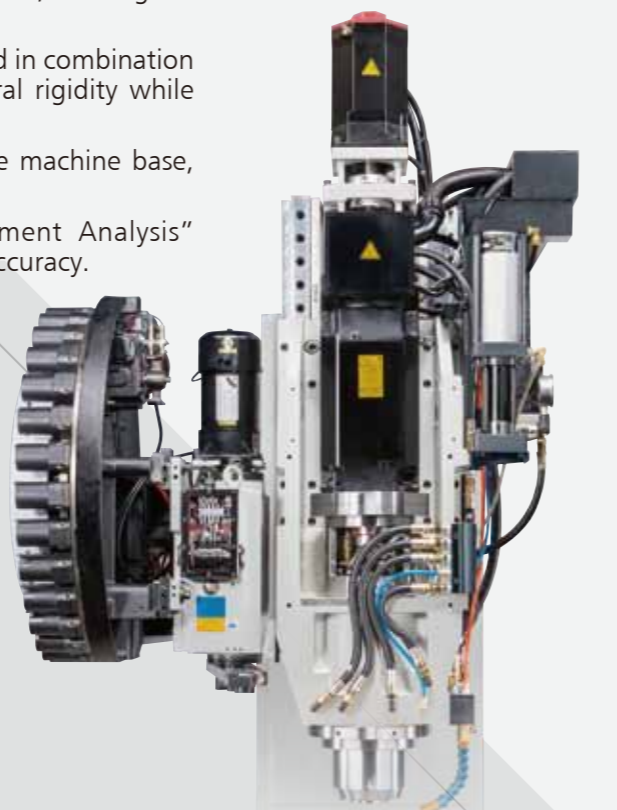
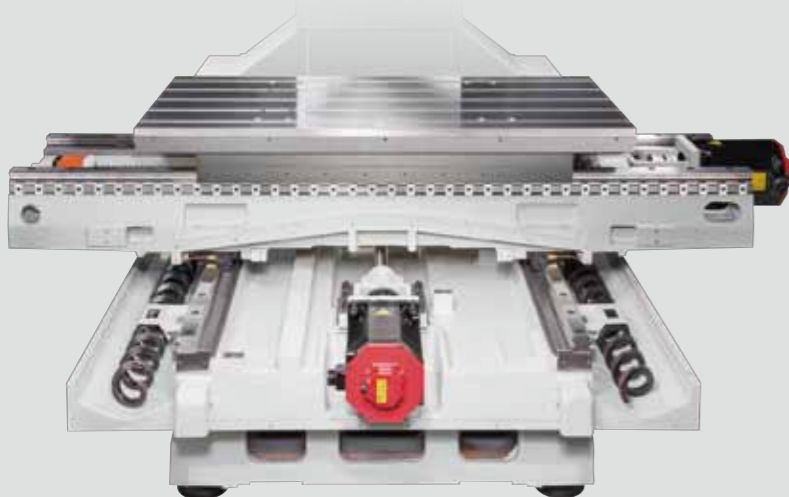
MCV-1200 vertical machining center

High rigidity. High precision. Minimum vibration. Minimum noise. Easy to install and maintain.

Optimal stability, rigidity and accuracy

- » All structural parts are manufactured from high quality cast iron, assuring the best possible stability of the structure.
- » The box type column and base are symmetrically constructed in combination with reinforced cross ribs. This results in greater structural rigidity while reducing thermal deformation to a minimum.
- » Extra wide column bottom allows a rigid fastening to the machine base, providing a solid foundation for precision machining.
- » All major castings are analyzed through "Finite Element Analysis" software to ensure excellent machine rigidity and cutting accuracy.

- » The ram type head design effectively reduces the thermal growth of the spindle head and eliminates overhang problem. Z-axis slide ways are designed on the column to avoid unstable machining due to the variation of rigidity caused by the difference of spindle head position.
- » The machine is equipped with a 10,000 rpm direct-drive spindle. 15,000 rpm is available (Optional) to suit high speed machining. Upon request, a 15,000 rpm built-in type spindle can be installed.



- » Extra large span between Y-axis slide ways maintains gravity point in machine base when table travels on X axis. This feature prevents overhang problem on saddle and increases machining stability.
- » Machine base is equipped with chip augers on both sides for quick chip removal. With these chip augers, the heat from chips is effectively removed to avoid structural deformation.



- » Two-step structure design on the column allows customer to increase column height when required.
- » Three-axis slide ways are mounted with ball/roller type linear ways.

The best choice for precision machining

- » Precision parts machining
- » Molds and dies

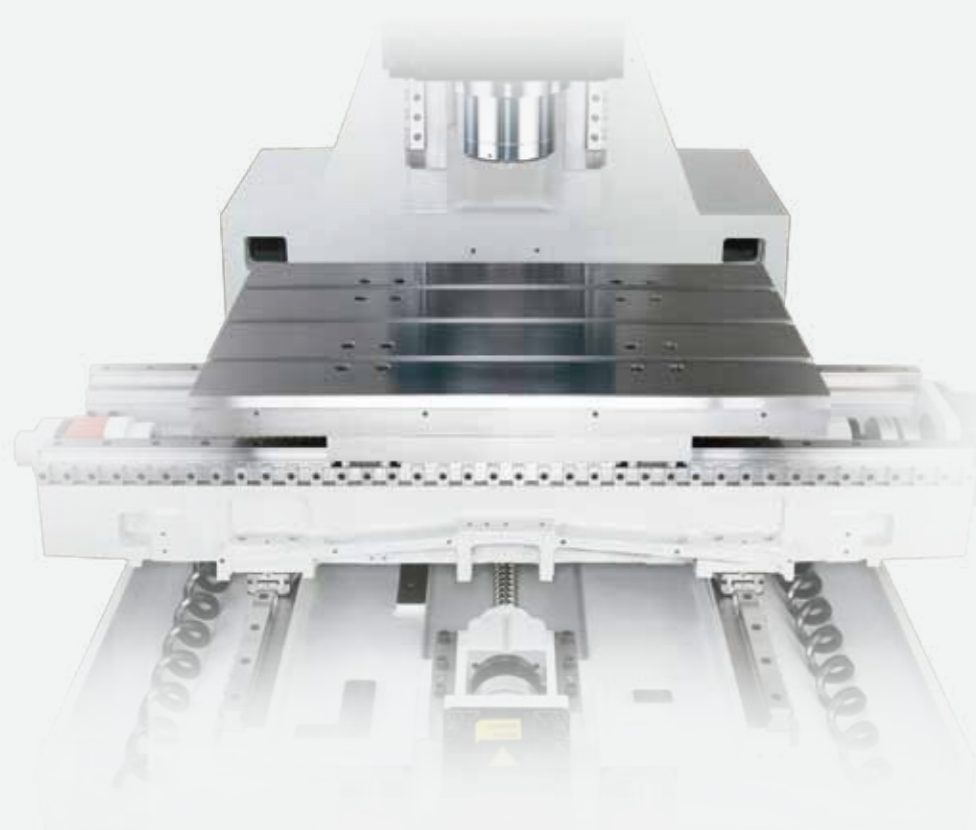


MCV-1200BA vertical machining center

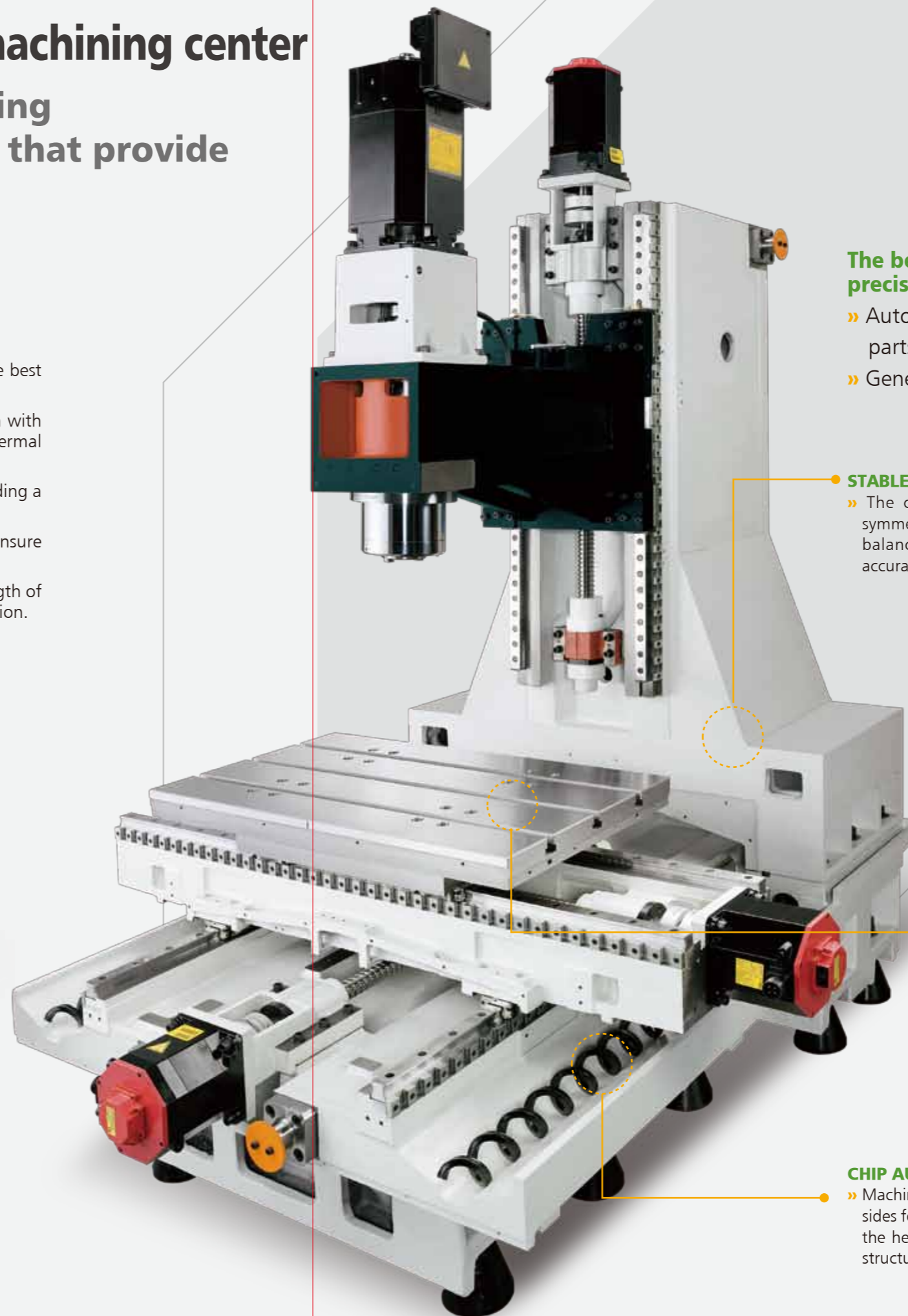
High speed, high precision machining
Designed from advanced concepts that provide unrivalled machining efficiency.

Perfect machine structure design Stable! Rigid! Precise!

- » All structural parts are manufactured from high quality cast iron, assuring the best possible stability of the structure.
- » The box type column and base are symmetrically constructed in combination with reinforced ribs. This results in greater structural rigidity while reducing thermal deformation to a minimum.
- » Extra wide column bottom allows a rigid fastening to the machine base, providing a solid foundation for precision machining.
- » All major castings are analyzed through "Finite Element Analysis" software to ensure excellent machine rigidity and cutting accuracy.
- » The feed systems on three axes are separately constructed for reducing the length of ball screws, while ensuring excellent rotational inertia during high speed rotation.



- » Extra large span between Y-axis slide ways maintains gravity point in machine base when table travels on X axis. This feature prevents overhang problem on saddle and increases machining stability.



The best choice for precision machining

- » Automotive and motorcycle parts machining.
- » General parts machining

STABLE COLUMN

- » The column is a reversed "Y" shape symmetrically constructed with superior balanced design for high machining accuracy.

CONVENIENT TABLE DISMANTLING AND MOUNTING

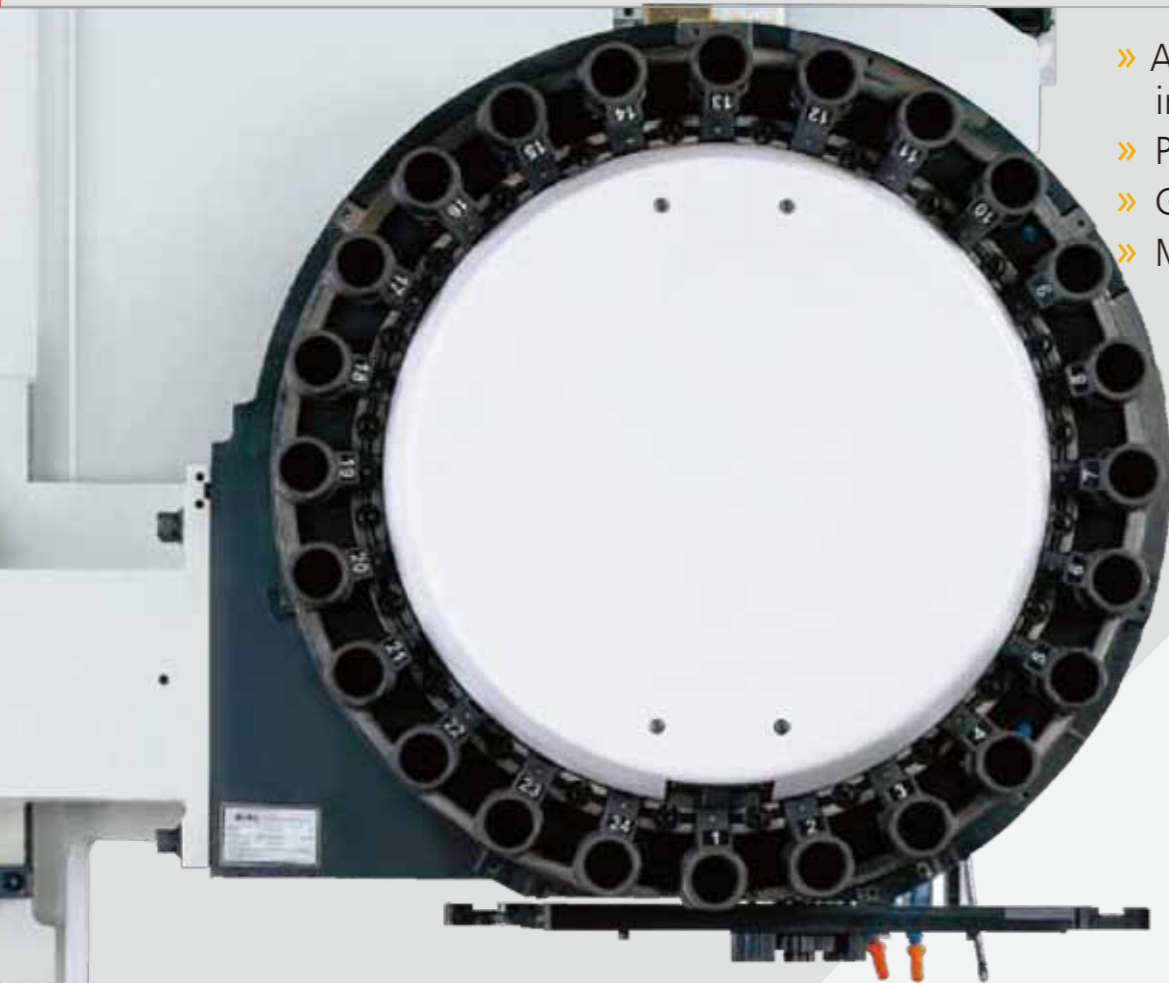
- » The table is fastened downward, making table dismantling and mounting easier. It is also convenient for maintenance and adjustment.

CHIP AUGERS

- » Machine base is equipped with chip augers on both sides for quick chip removal. With these chip augers, the heat from chips is effectively removed to avoid structural deformation.

A new generation of vertical machining center

Designed for precision machining in various industries



- » Automotive and motorcycle industry.
- » Precision parts machining.
- » General machining.
- » Molds and dies.

CAM type tool magazine

It provides fast tool change with dependable performance. The CAM type tool magazine rotation is driven by a cylindrical CAM for fast and dependable tool change. Tool loading capacity is 24 tools. Random tool selection allows for efficient tool change.

- CAM type ATC (24 tools)

Max. tool Dia. x Length	Ø x mm	Ø 90 x 300
Max. tool weight	kg	7
Max. tool dia. (Adjacent empty tool)	Ø mm	Ø 180



Column support

- » The column is fully supported through the full width of the base. Combined with positioning keys and tapered gibs, it achieves complete support, resulting in greater rigidity.



Y-axis telescopic guard

- » The telescopic guard provided at the rear side of Y axis increases chip prevention on Y axis.



X, Y-axis linear ways

- » The X, Y-axis linear ways are fixed with clamping pieces, which tighten linear ways securely by means of bolts. This results in a stable tightening force, free of any instability problem that may be caused by the friction force from tapered gibs.





- » A standard equipment on MCV-1200.
- » An optional equipment on MCV-1200BA.

All new MCV-1200 / MCV-1200BA

Equipped with direct-drive spindle for ultra high machining accuracy

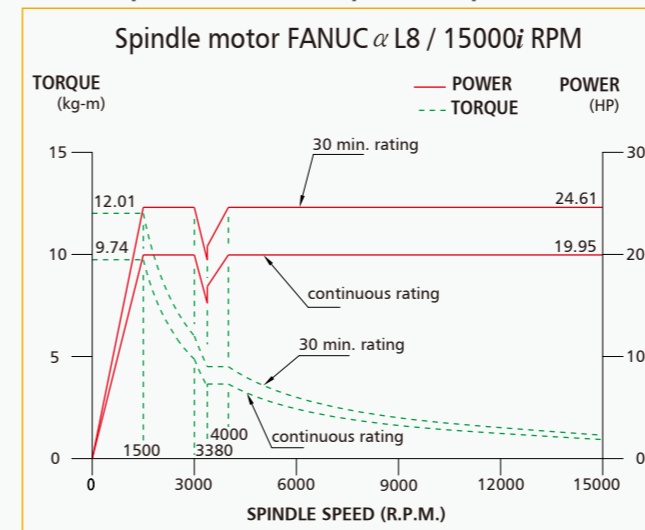
- » Low cost » Minimum vibration » Minimum noise » Easy to install
- » Easy to maintain » High rigidity » High accuracy



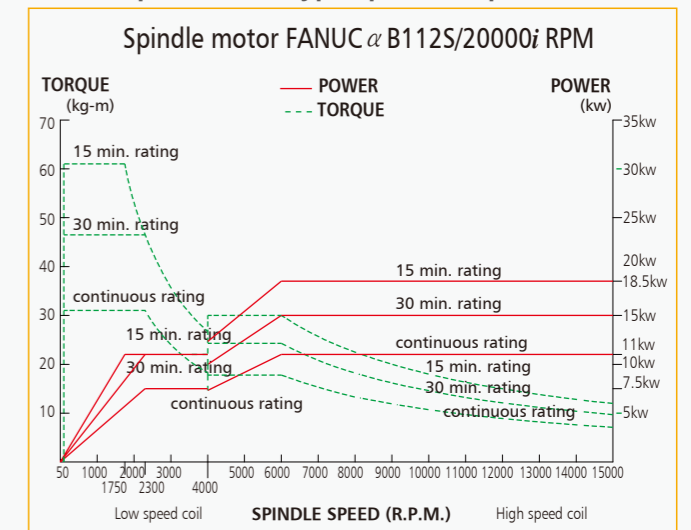
High speed, high precision machining

Designed with advanced concepts that enhance speed and efficiency

15,000 rpm direct-drive spindle (Optional)



15,000 rpm built-in type spindle (Optional)



BENEFITS OF DIRECT-DRIVE SPINDLE

Low Cost

- » The high speed direct-drive spindle has a lower cost than that of the built-in type spindle.

Low Vibration & Low Noise

- » The direct-drive spindle is not affected by the side force that usually occurs on a belt-drive spindle. Therefore, it reduces vibration, noise and tool wear.

Convenient To Install And Maintain

- » The direct-drive spindle is easy to install. As the spindle and the motor is separated, its maintenance cost is lower than that of the built-in type spindle.

High Rigidity

- » The inside diameter of spindle bearing is $\varnothing 70\text{mm}$, featuring high rigidity to resist heavy cutting.

High Precision

- » The temperature growth and the motor heat of the direct-drive spindle have less impact on spindle head displacement than the belt-drive spindle, providing more stable machining accuracy.



» STANDARD



LATEST ADVANCED CNC CONTROL

Available to equip with Fanuc, Heidenhain and other brands of CNC controllers.



HEAT EXCHANGER FOR CONTROL CABINET

The high performance heat exchanger ensures a constant temperature inside the control cabinet. It provides protection for electronic components, controller and motor driver.

SPINDLE COOLER

It is used for cooling the spindle and ball screws.



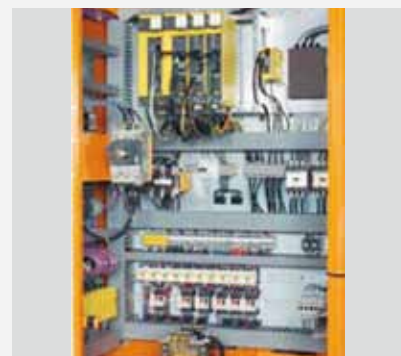
WORK LIGHT

This machine is equipped with a waterproof work light, providing lighting for the working area. The light features soft illumination without being irritating to the operator's eyes.



CONVENIENT AIR AND LUBRICATION SYSTEM MAINTENANCE

The air/lubrication systems are centralized at the back of the machine for convenient maintenance and inspection.



WELL-PLANNED ELECTRICAL CABINET

- » The centralized electrical cabinet saves wiring time and permits convenient maintenance.
- » The electrical cabinet is equipped with a heat exchanger to ensure constant temperature in the electrical cabinet. It also provides protection for electronic components, controller and motor driver.

More Powerful and Efficient Operations with Extra Optional Accessories

» OPTIONS



AUTOMATIC TOOL LENGTH MEASURING DEVICE (DAHLI)



FLAT TYPE CHIP CONVEYOR



AUTOMATIC WORKPIECE MEASURING DEVICE



COOLANT WASH



COOLANT THROUGH SPINDLE DEVICE (TOOL NOT INCLUDED)



4TH AXIS CONTROL AND ROTARY TABLE



THREE-AXIS FEED SYSTEMS

» The feed systems on three axes are separately designed for reducing the length of ball screws, while ensuring excellent rotational inertia during high speed rotation.

COOLANT THROUGH BALLSCREW

» The design of coolant through ball screws on three axes minimizes thermal expansion on ball screws and improves machining accuracy (optional).

SPECIFICATIONS, ACCESSORIES AND DIMENSIONS

SPECIFICATIONS

MODEL	MCV-1200	MCV-1200BA
TABLE		
Table surface area	1300 x 640 mm	1300 x 640 mm
T-slots (Width x No. x Pitch)	18 x 5 x 125 mm	18 x 5 x 125 mm
Max. table load	1000 kg	1000 kg
TRAVEL		
X / Y / Z-axis	1200 mm / 600 mm / 500 mm	1200 mm / 600 mm / 600 mm
Distance from spindle nose to table top	100~600 mm	150~750 mm
Distance from spindle center to column surface	805 mm	805 mm
Slide way type (X, Y, Z-axis)	Linear ways	X, Y-axis linear ways/Z-axis box ways
FEED		
Rapid traverse rate	X axis 30 m/min Y axis 30 m/min Z axis 18 m/min	30 m/min 30 m/min 18 m/min
Cutting feed rate	10000 mm/min	10000 mm/min
Minimum Input Increment	0.001mm	0.001mm
SPINDLE		
Spindle type	Direct-drive	Belt-drive
Spindle motor (30 min./cont. rating)	7.5kW (10HP) / 5.5kW (7.4HP)	11kW (14.7HP) / 7.5kW (10HP)
Spindle nose taper	N.T.40	N.T.40
Spindle speed	10000 rpm	8000 rpm
Spindle bearing size	Ø70 mm	Ø70 mm
Spindle bearing lubrication	Grease	Grease
A.T.C.		
Tool magazine capacity	24T	24T
Tool holder	BT40	BT40
Pull stud	Jaw type 45° pull head	Jaw type 45° pull head
Max. tool weight	7 kg	7 kg
Max. tool length	300 mm	300 mm
Max. tool diameter (Adjacent empty tool)	Ø90 (180) mm	Ø90 (180) mm
Tool selection	Random	Random
MOTORS		
X axis drive motor	2.5kW (3.4HP)	2.5kW (3.4HP)
Y axis drive motor	2.5kW (3.4HP)	2.5kW (3.4HP)
Z axis drive motor	2.5kW (3.4HP)	3kW (4HP)
OTHERS		
Power required	36KVA	36KVA
Air pressure required (Air supply)	6 kg/cm ²	6 kg/cm ²
Coolant pump	3/4HP	3/4HP
Coolant tank capacity (Total capacity)	365L	365L
Machine weight	7500kgf	7500kgf
Floor area occupied	3150 x 4060mm	3150 x 4060mm

Specifications are subject to change without prior notice.

» STANDARD

- Heat exchanger
- Removable manual pulse generator
- Fully enclosed splash guard
- RS-232 interface
- Automatic power off
- Call light
- Automatic lubrication equipment
- Work light
- Tool kit
- Spare fuses
- Swing type operator panel
- Spindle oil cooler
- Rigid tapping
- Chip augers on base

» OPTIONS

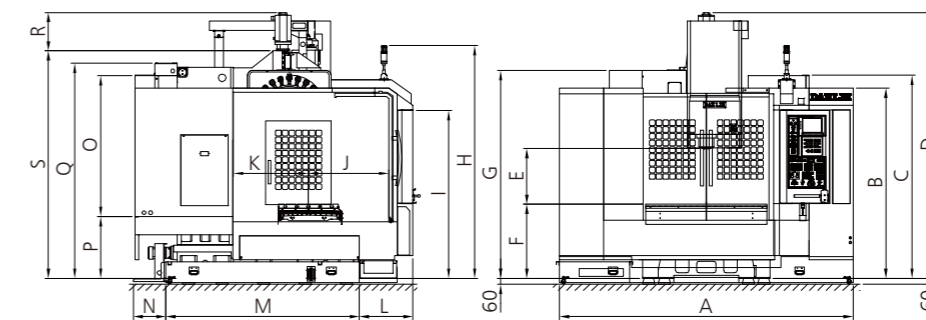
- Screw type chip conveyor
- Flat type chip conveyor and chip bin
- 4th axis control and rotary table
- Coolant through spindle with filter
- Bed coolant wash
- Automatic tool length measuring device
- Automatic workpiece measuring device
- Linear scale
- 12,000/15,000 rpm direct-drive spindle
- 15,000 rpm built-in type spindle
- Coolant through ball screw
- 30, 32, 40-tool CAM type ATC

- CAM type ATC (32/40 tools optional)

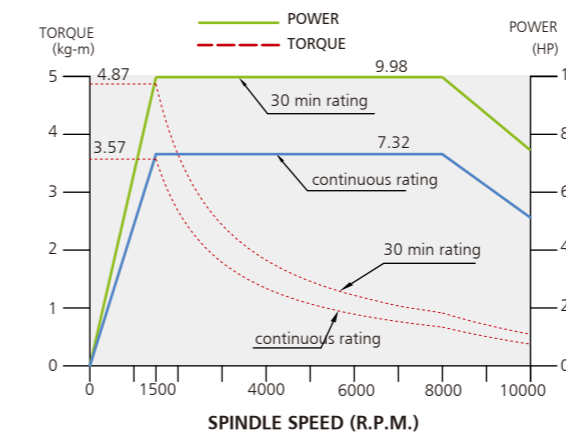
Max. tool Dia. x Length	Ø x mm	Ø 76 x 300
Max. tool weight	kg	7
Max. tool weight (Adjacent empty tool)	Ø mm	Ø 150

- Roller type linear ways on Z axis

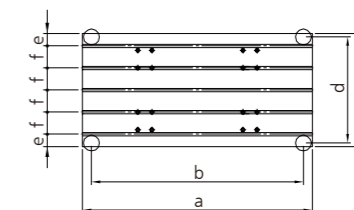
MACHINE DIMENSIONS



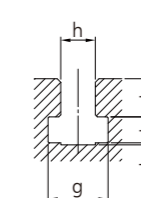
MCV-1200 spindle power/torque diagram (10,000 RPM) (STANDARD)



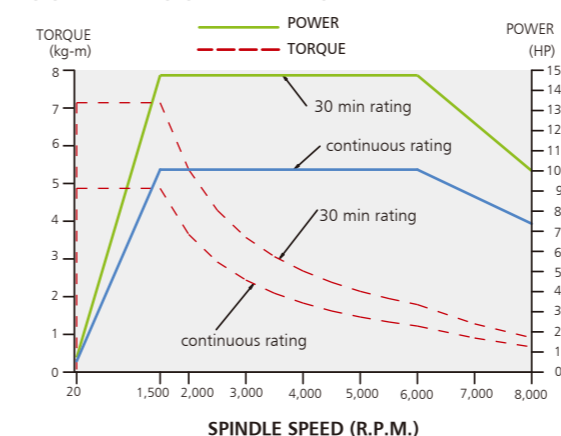
TABLE



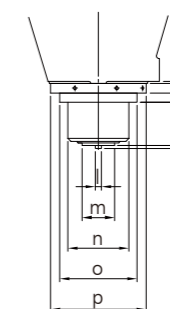
T-SLOT



MCV-1200BA spindle power/torque diagram (8,000 RPM) (STANDARD)



SPINDLE



EXTERNAL DIMENSIONS

Model	MCV-1200/MCV-1200BA	
Unit	mm	inch
A	3150	124.02
B	2040	80.31
C	2178	85.75
D	2852/2587	112.28/101.85
E	100-600/150-750	3.93-23.62/5.91-29.53
F	795	31.30
G	2232/2382	87.87/93.78
H	2496	98.27
I	1800	70.87
J	863	33.98
K	505-1105	19.88-43.50
L	575	22.64
M	2075	81.69
N	350	13.78
O	1510	59.45
P	665	26.18
Q	2307	90.83
R	412/317	16.22/12.48
S	2440/2270	96.06/89.37
T	725	28.54
U	1575	62.01
V	385	15.16
W	1930	75.98
X	1050	41.34
Y	695	27.36
Z	4060	159.84
AA	1760	69.29
AB	495	19.49
AC	475	18.70
AD	2200	86.61
AE	900	35.43

TABLE & T-SLOT

Model	MCV-1200/MCV-1200BA	
Unit	mm	inch
a	1300	51.18
b	1200	47.24
c	640	25.20
d	600	23.62
e	70	2.76
f	125	4.92
g	31.5	1.24
h	18	0.71
i	20	0.87
j	13.5	0.69
k	1	0.04
l	14	0.55
m	85	3.35
n	160	6.30
o	202	7.95
p	250	9.84
q	5	0.20
r	25	0.98
s	24	0.94
t	113	4.45
u	8	0.31