



L.K Machinery Corp.

# MV/MVP/MVD

## Vertical Machining Center



力勁機械股份有限公司  
L.K. Machinery Corp. (TAIWAN)

40763 台中市西屯區科園路30號  
No.30, Keyuan Rd., Xitun Dist. Taichung City 40763, Taiwan  
TEL: +886-4-2461-9797 FAX: +886-4-2461-1555  
E-mail: lktw\_sales@lkmachinery.com.tw  
www.lkmachinery.com.tw



CE ISO 9001

- ✓ Machining All Kinds Of Mechanical/ Assembly Parts
- ✓ For General Precision Molds

- ✓ 4 or 5-axes Rotary Table Motion for Complex Parts
- ✓ For Variety Or Small Amounts Of Parts

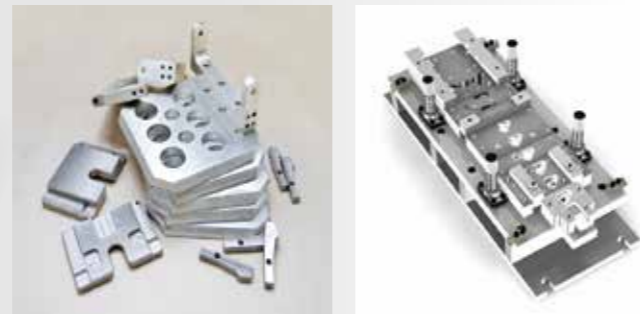
# MV Series

## STRONG CUTTING

- Widely Use In Exact Parts And Toolings
- Extraordinary Flexibility In Application
- Highest Efficiency In Production
- Super Spindle Power With 15Kw Standard

High efficiency, rare kinds but massive production is the elementary necessity that every manufacturer wins competition in worldwide markets. The proven quality of MV Series machines are in providing of customers' productivity.

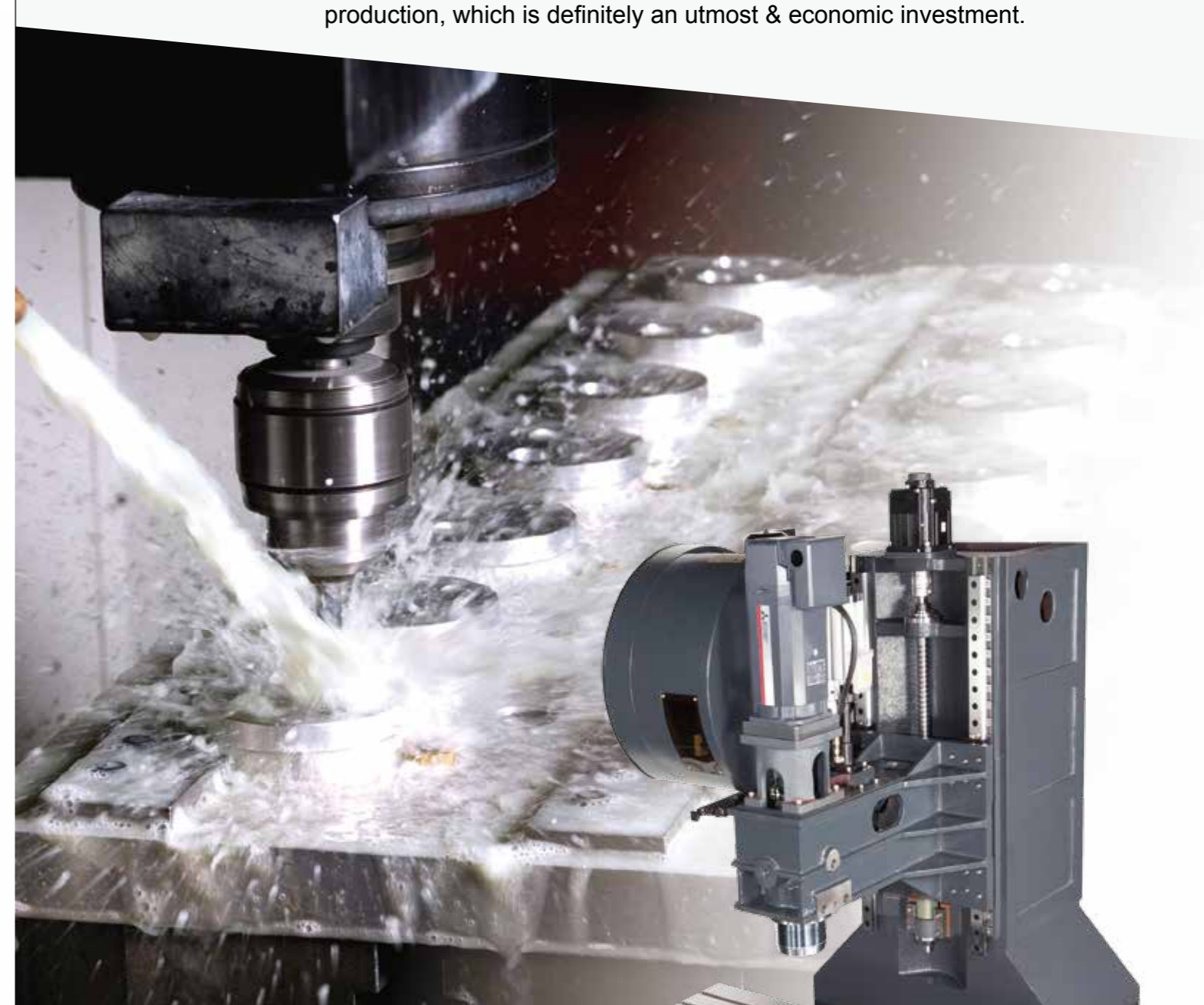
Standard Spindle Motor with 11/15Kw is also worked with servo motors in 3-axes with 2/2/3Kw, and continuingly offers asked power and thrust, while doing heavy cutting. Enlarged the castings of column and head on MV series, in order to allow Y-axis travel up to 600mm; make the applications widely use to ultimate ranges.



- Machining all kinds of mechanical/ assembly parts
- for general precision molds
- 4 or 5-axes rotary table motion for complex parts
- for variety or small amounts of parts

## Extensively Use In All Kinds Of Applications

No matter of machinery/assembly parts, or general machining for molds, MV Series machines can let you have the ultimate efficiency in production, which is definitely an utmost & economic investment.



Face Milling		
Tool	D63-45° F.M. Cutter	D63-45° F.M. Cutter
Spindle	1500	4000
Feedrate	1500	6000
Cutting Depth	5mm	4mm
Cutting Width	50mm	60mm
Material	S45C	ALC
Chip removal rate	375C.C.	1440CC.

Drilling		
Tool	D50 Tapper-Shank Drill	D50 Tapper-Shank Drill
Spindle	260	300
Feedrate	26	60
Cutting Depth	35mm	35mm
Material	S45C	AL5083

End Milling		
Tool	D40 4-blade E.M. Cutter	D40 4-blade E.M. Cutter
Spindle	2000	2500
Feedrate	1600	3000
Cutting Depth	3.0mm	10.0mm
Cutting Width	35mm	25mm
Material	S45C	ALC
Chip removal rate	168C.C.	750C.C.

Tapping		
Tool	M24 x P3 Tap	M30 x P3.5 Tap
Spindle	150	200
Feedrate	450	700
Cutting Depth	30mm	35mm
Material	S45C	AL5083



- ✓ Low Deflection Under Heat
- ✓ Low Cutting Vibration

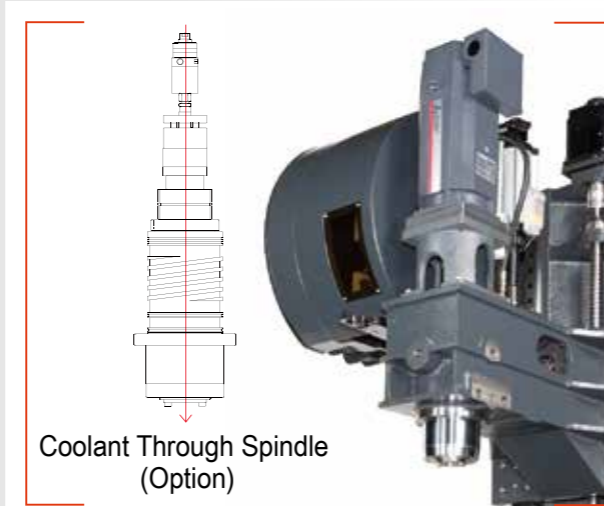
- ✓ Low Noise
- ✓ High Chips Removal

# MVP Series

## ACCURATE & CONSTANT

High Speed and Steady Auto Tool Change System  
Direct Drive High Speed Spindle at **10000** rpm

Direct Drive Spindle with 10,000rpm is the standard for MVP Series. Motor and spindle are connected by high precise coupling, and perform excellent transmission, display outstanding cutting.



L.K.'s oil lubrication makes the possibility of coolant be worse and spoiled much LESS than other normal choices on the markets. The film of oil has better consistency, which can be pretty mitigating the problem of wearing parts/ assembling out. With higher benefit of economics, the general expense per year, including man power, can be decreased one time at least.



TOOL TO TOOL/ 2 SECS.  
For MVP Series, Arm type of tool changing system is STANDARD. Hi-speed and constant of tool changing can supply you best effect & quality of impressive manufacture.

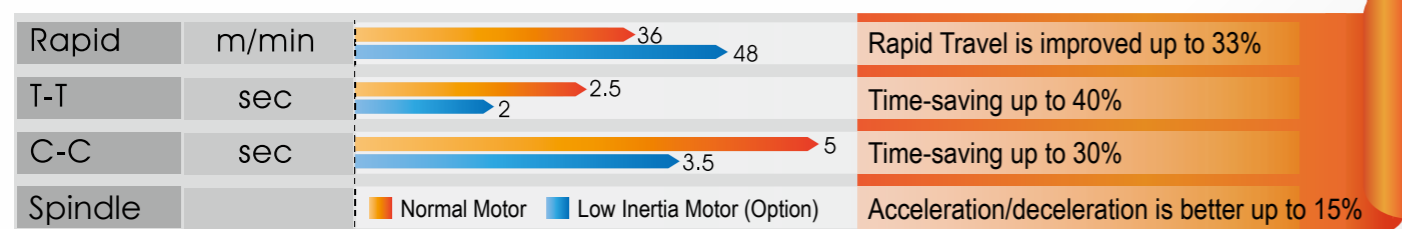


### Comparison In Turning Characteristic

MODEL	MVP-650	MVP-850	MVP-1050
CNC Control	Mitsubishi M80		
Spindle Motor(10/min)(Cont.)	7.5 / 11 kw		
X/Y/Z Rapid Feedrate	48 / 48 / 36		
Tapping Efficiency M6xP1(sec/hole)	ADC 1.89		

### Comparison of Cutting Efficiency

■ Regular CNC Machine ■ ProMill



## 48 Rapid Travel M/Min.

To fit with the requirement of cutting forging mental, the high rapid travel is important; except to have hi-functional & hi-speed spindle, L.K. Machinery chooses powerful motors on axes, which can be supplied successively thrust. At the meantime, MVP series is not only used powerful motors on axes, but also are equipped with pre-loaded ballscrews and high-class linear guideway, machines just can be demonstrated qualified cutting presentation.

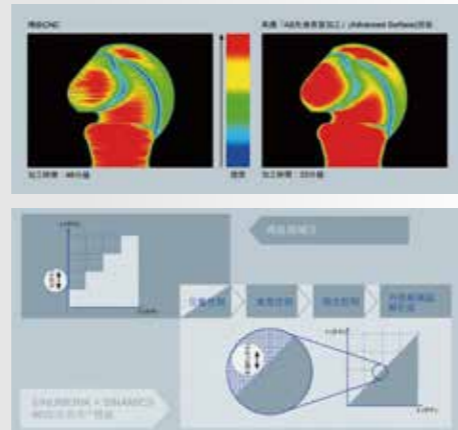
- ✓ Deep Hole Turning
- ✓ Able To Do Scrap Chopper With Small Diameter

- ✓ Fine And Smooth Of Job's Surface
- ✓ Delicate Finish Of 3D-Curve And Corner

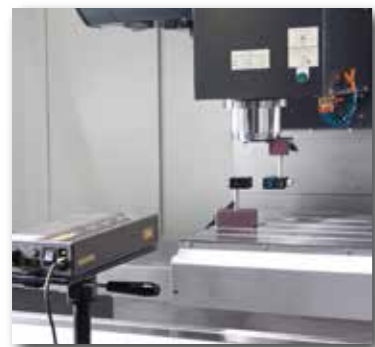
# MVD Series

## PRECISION & EFFICIENCY

Specialized Design For Manufacturing Molds  
Hi-speed And Hi-accuracy Performance

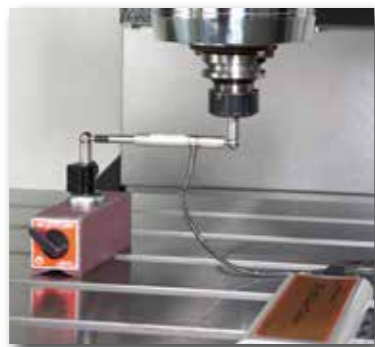


MVD Series is designed for mold-manufacturing, which is carried with characteristics of mighty capability and incomparable accuracy; be adopted with Direct Drive Spindle at 12,000rpm (BT-40). By the sketch of BT-40 as option chuck, it can be delivered remarkable performance, which is aimed at various kinds of strong hardness of mold and fixture.



### Laser Calibration

Roller screws of 3 axes have to be inspected by Laser Calibration. The backlash in every checked pitch is automatically compensated into CNC, and enhancing the maximum positioning as well as repeatability accuracy of the machine.



### Ball Bar Test

In connection with the entire accuracy of the machine, L.K. Machinery always performs Ball Bar Test to all machines centers, in order to be certain the roundness, straightness, concentricity, parallelism and perpendicularity reaching to the best condition.



### High Power Motor

For the sake of reaching to the maximum production, L.K. Machining Center is assembled with low inertia motor, and it can offer hi-torque at low speed. At the same time, its acceleration/ deceleration output shortens the tapping time to the minimum.

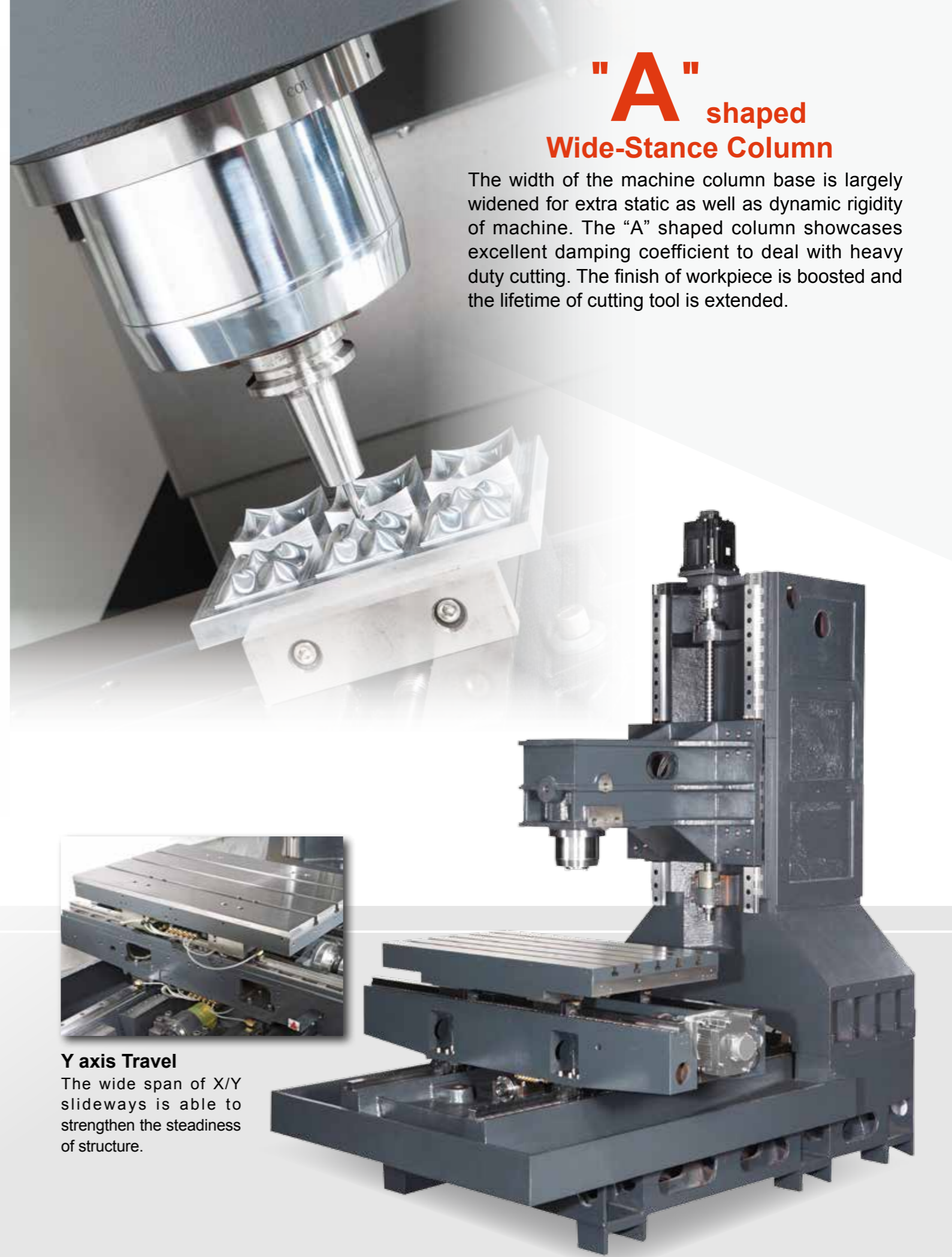


### Y axis Travel

The wide span of X/Y slideways is able to strengthen the steadiness of structure.

## "A" shaped Wide-Stance Column

The width of the machine column base is largely widened for extra static as well as dynamic rigidity of machine. The "A" shaped column showcases excellent damping coefficient to deal with heavy duty cutting. The finish of workpiece is boosted and the lifetime of cutting tool is extended.



## MITSUBISHI M80 control

Synchronic tapping function at high-speed(OMR-DD)In spindle and servo control is paired with a function of tolerance compensation at high-speed, so superior precision and hi-speed of tapping is able to be achieved.



## SIEMENS 828D control

MVD Series is adopted with Siemens 828D control, which is operated friendly and edited cutting programs easily.



### High-speed Turning Mode

The process is made by a sequence of slight movement amounts and also several segments can be read; in this condition, it can be executed the turning by 33,000 segments/min. at a high speed. (Corresponding model:M80 Type A)

### High-accuracy Control Mode

- At the section of corner made by two straight lines, while executing the movement of finishing round face, it can be done auxiliary control instantly in accordance with the locus of instruction.
- At the same time decrease the tolerance when the movement of finishing round face is possible toward inner side. The practical control in locus is more approached to a value by instruction.

### Interpolation Control of 10 Nano

Even to a commend of turning sequence by unit of one nano, the interpolation by a unit of 10 nano can be processed also; hence the more accurate turning is able to be carried out.

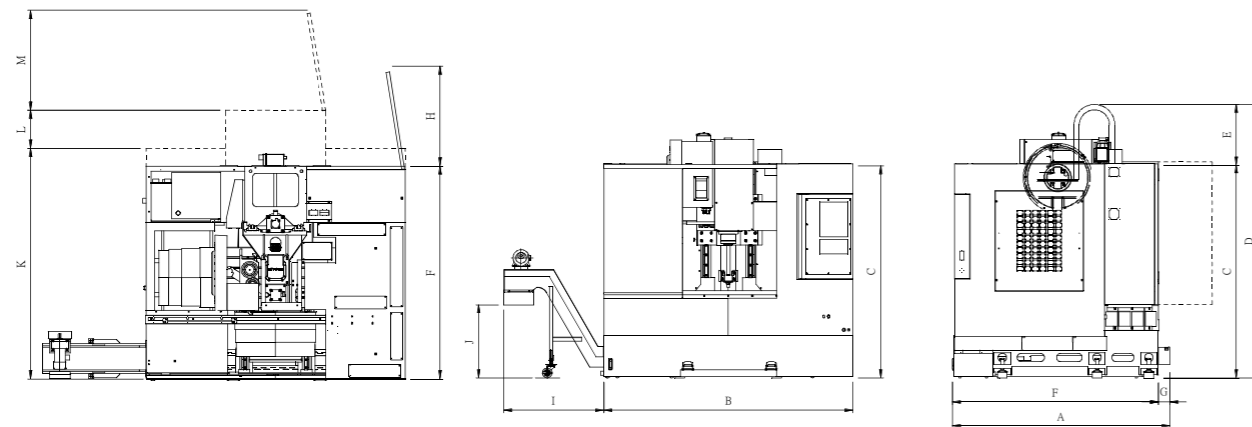
### Powerful Functions In Operation

- Siemens
- Function of "SINUMERIK MDynamics", it can be read the programs in advance, and also enhanced the finish of parts' surface.
- Potent operation of machinery dynamics can be presented ultra-excellence in cutting.
- 80 bits of NANO<sup>FP</sup> Accuracy Operation, it is a real controlled-circuit for hi-accuracy completely.

### Friendly Operation

- Function of ShopMail- In accordance with a single job, or small batches of producing needs, it shortens the time of editing programs.
- Function of programGUIDE- On the basis of the demand of massive production, use the most flexible capability to enrich the production capacity.

## Dimension Drawing



	A	B	C	D	E	F	G	H	I	J	K	L	M
MV/MVP-650	2270	2200	2200	2850	630	2150	120	-	1040	760	2311	382	1000
MV/MVP/MVD-850	2270	2600	2220	2850	630	2150	120	1000	1040	760	-	-	-
MV/MVP/MVD-1050	2270	3000	2220	2850	630	2150	120	1000	1040	800	-	-	-

## MV Specification

Item/ Model	Unit	MV-650	MV-850	MV-1050
<b>Control</b>		Mitsubishi M80		
<b>3 Axes Travel</b>				
X-axis Travel	mm (inch)	650 ( 25.6" )	850 ( 33.5" )	1050 ( 41.3" )
Y-axis Travel	mm (inch)	600 ( 23.6" )		
Z-axis Travel	mm (inch)	560 ( 22.0" )		
Distance From Spindle Center to Table Surface	mm (inch)	150-710 ( 5.9"-28.0" )		
<b>Spindle</b>				
Spindle Speed	rpm	8000		
Type		Belt		
Spindle Nose		BT-40		
Spindle Motor ( Con. / 30 min )	Kw	11/15		
<b>Table</b>				
Table Size	mm (inch)	850x600 ( 33.5"x23.6" )	1050x600 ( 41.3"x23.6" )	1250x600 ( 49"x23.6" )
T-slot Size	mm (inch)	18x5x100 ( 0.7"x5x3.9" )		
Max. Table Capacity	Kgs ( lbs )	500 ( 1102 )	600 ( 1322 )	800 ( 1763 )
<b>Rapid Travel</b>				
Rapid Travel ( X/Y/Z )	m/min ( ipm )	36/ 36/ 36 ( 1417/ 1417/ 1417 )		
Acceleration	G	0.8/ 0.5/ 0.5		
Cutting Speed Rate	m/min ( ipm )	20 (787)		
Feed Motor ( X/Y/Z )	Kw	2/ 2/ 3		
<b>Tool Magazine</b>				
Tool Change Type		Arm Type		
Tool Capacity	set	24		
Max. Tool Weight	Kgs ( lbs )	7 ( 15.4 )		
Max. Tool Length	mm (inch)	250 ( 9.8" )		
Max. Tool Diameter	mm (inch)	75/150 ( 3"/5.9" )		
Tool Change Time (T-T)	sec	2		
Tool Change Time (C-C)	sec	3.5		
<b>Others</b>				
Comparessed Air Supply	Kgs/cm*cm(psi)	6 ( 100 )		
Machine Dimension ( L*W*H )	mm (inch)	2200x2768x2839 ( 88.6"x 109"x 111.8" )	2600x2254x2839 ( 102.4"x 88.7"x 111.8" )	3000x2254x2839 ( 118.1"x 88.7"x 111.8" )
Net Weight	Kgs ( lbs )	5320(11728)	5510(12147)	5720(12610)
Gross Weight	Kgs ( lbs )	5540(12213)	5740(12654)	5970(13161)

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### Standard Equipment

- Belt Head 8,000rpm
- Arm Type 24 Tools
- Spindle Tool Change Air Blow

- Drawer Type of Chip Conveyor
- Side Flush System
- Rollers Linear Ways for 3 Axes

### Optional Equipment

- Belt Head 10,000rpm
- Link Type Chip Conveyor
- 4th, 5th Axis ( CNC Rotary Table )
- CE Normative
- Disk Type Oil Skimmer

- Transformer
- Tool Length Measurement System
- Spindle Oil Cooler
- Fanuc 0iMF
- CTS(40 / 70 bar)

# MVP Specification

Item/ Model	Unit	MVP-650	MVP-850	MVP-1050
<b>Control</b>		Mitsubishi M80		
<b>3 Axes Travel</b>				
X-axis Travel	mm (inch)	650 ( 25.6" )	850 ( 33.5" )	1050 ( 41.3" )
Y-axis Travel	mm (inch)	600 ( 23.6" )		
Z-axis Travel	mm (inch)	560 ( 22.0" )		
Distance From Spindle Center to Table Surface	mm(inch)	150-710 ( 5.9"-28.0" )		
<b>Spindle</b>				
Spindle Speed	rpm	10000		
Type		Direct Drive Spindle		
Spindle Nose		BT-40		
Spindle Motor ( Con. / 30 min )	Kw	7.5/ 11		
<b>Table</b>				
Table Size	mm (inch)	850x600 ( 33.5"x23.6" )	1050x600 ( 41.3"x23.6" )	1250x600 ( 49"x23.6" )
T-slot Size	mm (inch)	18x5x100 ( 0.7"x5x3.9" )		
Max. Table Capacity	Kgs ( lbs )	500 ( 1102 )	600 ( 1322 )	800 ( 1763 )
<b>Rapid Travel</b>				
Rapid Travel ( X/Y/Z )	m/mi ( ipm )	48/ 48/ 36 ( 1889/ 1889/ 1417 )		
Acceleration	G	0.8/0.5/0.5		
Cutting Speed Rate	m/min ( ipm )	20 (787)		
Feed Motor ( X/Y/Z )	Kw	2/ 2/ 3		
<b>Tool Magazine</b>				
Tool Change Type		Arm Type		
Tool Capacity	set	24		
Max. Tool Weight	Kgs ( lbs )	7 ( 15.4 )		
Max. Tool Length	mm (inch)	250 ( 9.8" )		
Max. Tool Diameter	mm (inch)	75/150 ( 3" / 5.9" )		
Tool Change Time (T-T)	sec	2		
Tool Change Time (C-C)	sec	3.5		
<b>Others</b>				
Comparessed Air Supply	Kgs/cm*cm(psi)	6 ( 100 )		
Machine Dimension ( L*W*H )	mm (inch)	2200x2768x2839 (88.6"x109"x111.8")	2600x2254x2839 (102.4"x88.7"x111.8")	3000x2254x2839 (118.1"x88.7"x111.8")
Net Weight	Kgs ( lbs )	5370 (11838)	5560 (12257)	5770 (12720)
Gross Weight	Kgs ( lbs )	5380 (11860)	5790 (12764)	5780 (12742)

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| <b>Standard Equipment</b> <ul style="list-style-type: none"> <li>- Direct Drive Spindle 10,000rpm</li> <li>- Arm Type 24 Tools</li> <li>- Spindle Tool Change Air Blow</li> <li>- Screw Type of Chip Conveyor</li> </ul> | <ul style="list-style-type: none"> <li>- Side Flush System</li> <li>- Spindle Oil Cooler ( including oil cooling machine )</li> <li>- Ball Bearing Linear Guide Ways</li> <li>- Grease Lubrication</li> </ul> |
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|---|---|
| <b>Optional Equipment</b> <ul style="list-style-type: none"> <li>- Tool Length Measurement System</li> <li>- Linear Scale ( 3 axis )</li> <li>- CE Normative</li> <li>- Fanuc OiMF</li> </ul> | <ul style="list-style-type: none"> <li>- Transformer</li> <li>- 4th. 5th Axis ( CNC Rotary Table )</li> <li>- CTS ( 40 / 70 bar )</li> <li>- Oil Mist Cooling System</li> </ul> |
|---|---|

# MVD Specification

Item/ Model	Unit	MVD-850	MVD-1050
<b>Control</b>		SIEMENS 828D	
<b>3 Axes Travel</b>			
X-axis Travel	mm (inch)	850 ( 33.5" )	1050 ( 41.3" )
Y-axis Travel	mm (inch)	600 ( 23.6" )	
Z-axis Travel	mm (inch)	560 ( 22.0" )	
Distance From Spindle Center to Table Surface	mm (inch)	150-710 ( 5.9"-28.0" )	
<b>Spindle</b>			
Spindle Speed	rpm	12000	
Type		Direct Drive Spindle	
Spindle Nose		BT-40	
Spindle Motor ( Con. / 30 min )	Kw	9/ 13	
<b>Table</b>			
Table Size	mm (inch)	1050x600 ( 41.3"x23.6" )	1250x600 ( 49"x23.6" )
T-slot Size	mm (inch)	18x5x100 ( 0.7"x5x3.9" )	
Max. Table Capacity	Kgs ( lbs )	600 ( 1322 )	800 ( 1763 )
<b>Rapid Travel</b>			
Rapid Travel ( X/Y/Z )	m/min ( ipm )	30/ 30/ 30 ( 1181/ 1181/ 1181 )	
Acceleration	G	0.6/ 0.6/ 0.6	
Cutting Speed Rate	m/min ( ipm )	20 (787)	
Feed Motor ( X/Y/Z )	Kw	2/ 2/ 3	
<b>Tool Magazine</b>			
Tool Change Type		Arm Type	
Tool Capacity	set	24	
Max. Tool Weight	Kgs ( lbs )	7 ( 15.4 )	
Max. Tool Length	mm (inch)	250 ( 9.8" )	
Max. Tool Diameter	mm (inch)	75/150 ( 3"/5.9" )	
Tool Change Time (T-T)	sec	2	
Tool Change Time (C-C)	sec	3.5	
<b>Others</b>			
Comparessed Air Supply	Kgs/cm*cm ( psi )	6 ( 100 )	
Machine Dimension ( L*W*H )	mm (inch)	2600x2254x2839 ( 102.4"x88.7"x111.8" )	3000x2254x2839 ( 118.1"x88.7"x111.8" )
Net Weight	Kgs ( lbs )	5660 (12478)	5870 (12941)
Gross Weight	Kgs ( lbs )	5980 (13183)	6190 (13646)

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| <b>Standard Equipment</b> <ul style="list-style-type: none"> <li>- Direct Drive Spindle 12,000rpm</li> <li>- Arm Type 24 Tools</li> <li>- Spindle Tool Change Air Blow</li> <li>- Spindle Oil Cooler ( including oil cooling machine )</li> </ul> | <ul style="list-style-type: none"> <li>- Link Type of Chip Conveyor</li> <li>- Side Flush System</li> <li>- Rollers Linear Ways for 3 axes</li> <li>- Linear Scale ( 3 axis )</li> <li>- Tool Length Measurement System</li> </ul> |
|---|--|

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|--|--|
| <b>Optional Equipment</b> <ul style="list-style-type: none"> <li>- Transformer</li> <li>- CE Normative</li> <li>- Disk Type Oil Skimmer</li> <li>- BBT40/ HSK-A63 Tool Holder</li> <li>-CTS ( 40 / 70 bar )</li> </ul> | <ul style="list-style-type: none"> <li>- Built-in Spindle 18,000 rpm</li> <li>- Fanuc OiMF</li> <li>- 4th. 5th Axis (CNC Rotary Table)</li> <li>- Oil Mist Cooling System</li> </ul> |
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