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ISO 9001



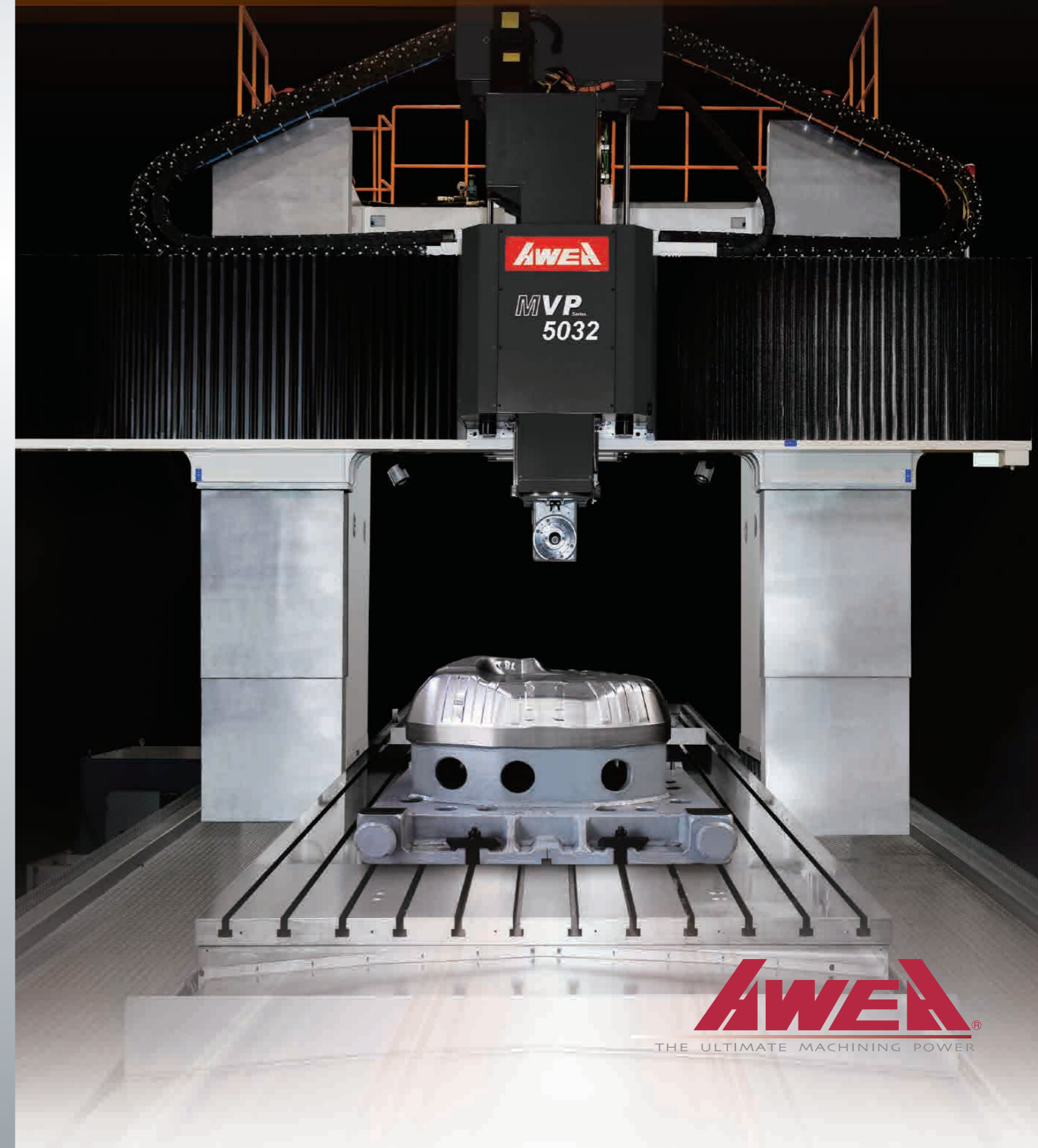
ISO 14001



AGENT

MVP Series

Moving Cross Rail Bridge Type 5-Face Machining Center

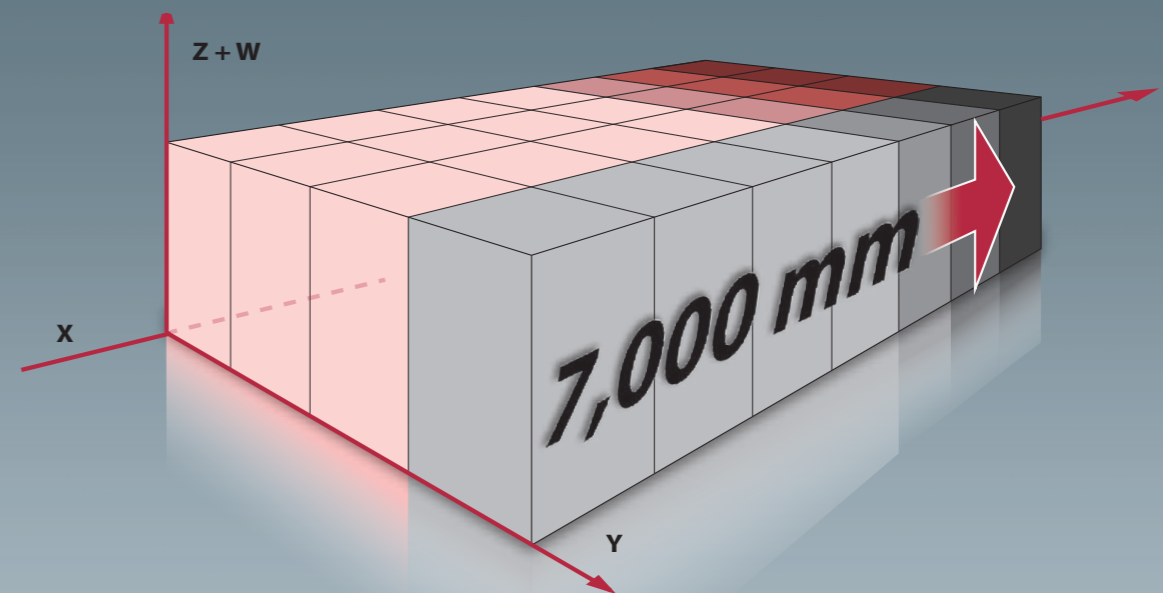




MOVING CROSS RAIL BRIDGE TYPE 5-FACE MACHINING CENTER

Based on AWEA's mature manufacture ability and innovative technology, MVP series moving cross rail bridge type 5-face machining center provides long W-axis travel 1,250 mm, automatic vertical / horizontal tool changing system, complete milling heads and automatic head changing system to promote MVP series as an integration of heavy cutting, high efficiency and high reliability advanced bridge type 5-face machining center, which can easily achieve your various machining needs today and the future.

Max. Travel Range



Model	MVP-4032	MVP-5032	MVP-6032	MVP-7032	MVP-4040	MVP-5040	MVP-6040	MVP-7040
X-axis mm	4,000	5,000	6,000	7,000	4,000	5,000	6,000	7,000
Y-axis mm	3,200				4,000			
Z-axis mm	1,000 (1,200 / 1,400)							
W-axis mm	1,250							

MVP Series

4032 / 5032 / 6032 / 7032
4040 / 5040 / 6040 / 7040

MOVING CROSS RAIL BRIDGE TYPE 5-FACE MACHINING CENTER

Moving cross rail design on W-axis increased working range to ensure enough cutting rigidity in any kinds of machining conditions. The AWEA most advanced 5-face machining center MVP series is specialized on aerospace, engery and large precision dies & molds industries.

- W-axis travel 1,250 mm with Z-axis travel 1,000 mm provides much more flexible machining modes and larger working range.
- MVP series equips with 4,000 rpm high torque 2-step gear drive spindle as standard, or selects optional available direct drive spindle or built-in spindle if required, as well as coolant through vertical / horizontal spindle.
- 60T vertical / horizontal tool changing system and modular automatic head changer provide high efficiency and fulfill various 5-face machining capacity.
- Twin screw type chip augers on both sides featuring side-exit chip conveyor with 1,200 L coolant tank to ensure the best cooling result and chips removal efficiency.
- The standard Five Sided Coordinate Conversion System saves a great deal of programming time.



MVP

Series

4032 / 5032 / 6032 / 7032
4040 / 5040 / 6040 / 7040

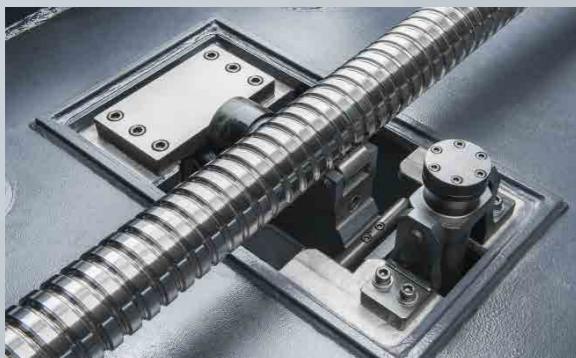
MOVING CROSS RAIL BRIDGE TYPE 5-FACE MACHINING CENTER

High rigidity structure

- Columns and cross rail adopt specially enforced ribs casting box structure, and go through long-term annealing procedures to ensure the foundation of heavy-duty cutting.
- X, Y axes adopt roller type linear guide ways design, which combine the characteristics of heavy cutting from box ways and high accuracy, fast movement from linear guide ways.
- Z-axis adopts Japan THK NR75 linear guide ways, which provide capabilities of high speed, heavy load and long-lasting service life.



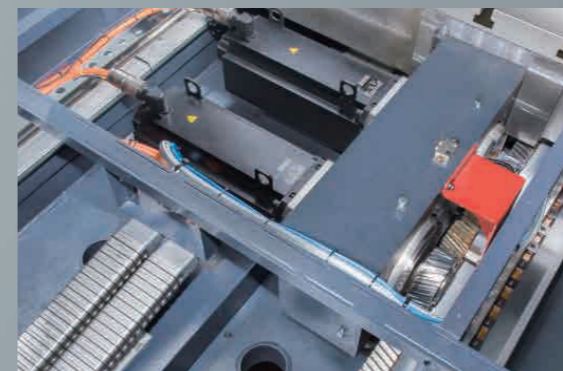
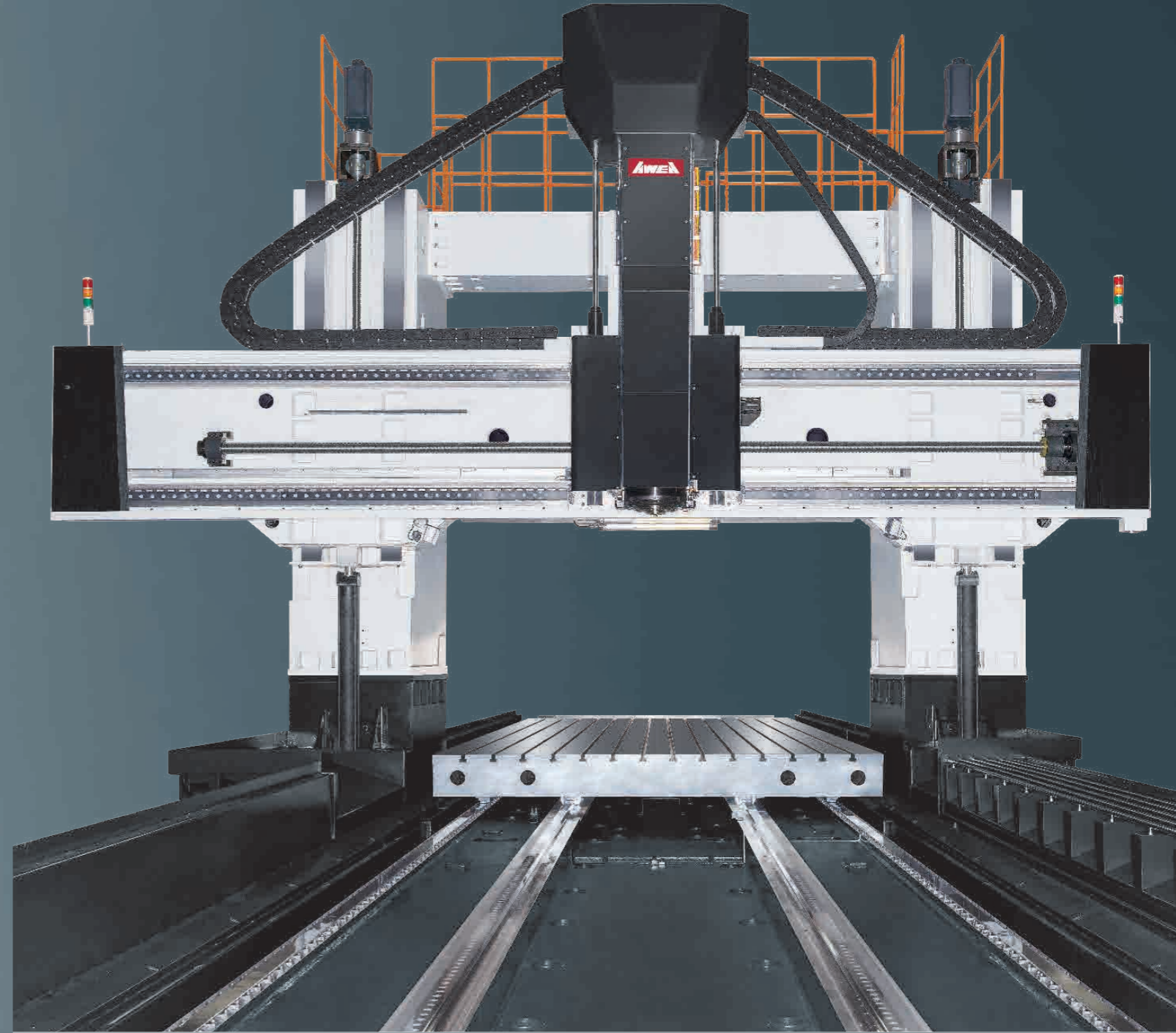
- Center driven with compound 4 linear guide ways bed supports table in full travel, which eliminates overhang problem of table to ensure the best support rigidity.



- X-axis adopts ball screw anti-vibration mechanism (5 m or longer models), which effectively prevent deformation of long ball screw to ensure machining accuracy of full travel.



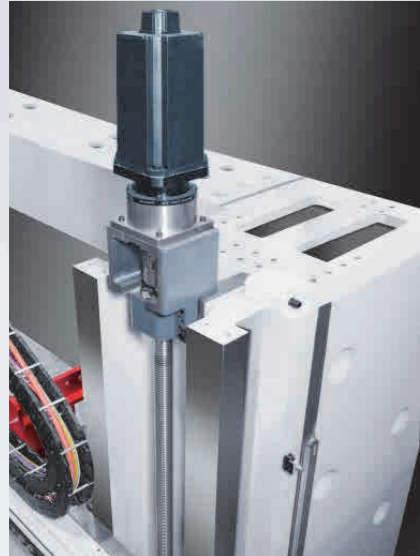
- All contact surface, cross rail and columns are precisely hand scraped to achieve the best assemble accuracy and structure rigidity.



- X-axis can be equipped rack and pinion design with high resolution linear scale, and driven by electronic backlash reduction dual servo motors which can eliminate backlash to provide excellent dynamic accuracy for large machines. (Opt.)

HIGH RIGIDITY W-AXIS STRUCTURE

- Ample W-axis travel 1,250 mm provides the best 5-face machining capacity.
 - ▶ W = 0 mm, provide more working range than general machines.
 - ▶ W = 1,250 mm, reduce overhang of Z-axis to ensure the best cutting rigidity.



- W-axis adopts "simultaneous-controlled technology" effectively reduces following error on both sides of cross rail on W-axis movement to ensure the optimal dynamic accuracy.

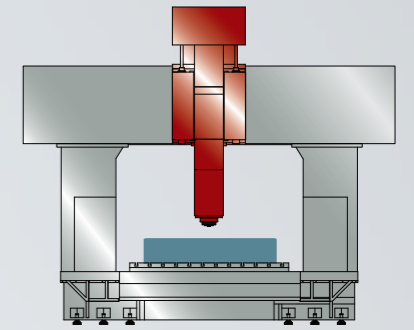


- Enlarged columns and box ways structure with twin hydraulic counter balance design provides solid structure rigidity for movement of cross rail or heavy cutting.



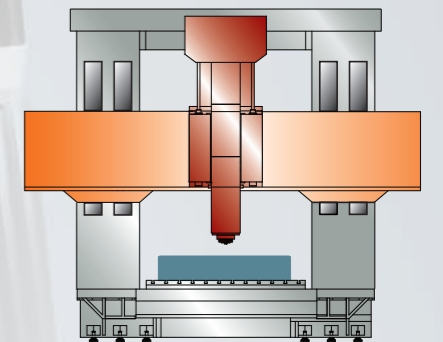
With W-axis v.s Without W-axis

Without W-axis



- Rigidity of head is decreasing while stretching out more on Z-axis.

With W-axis



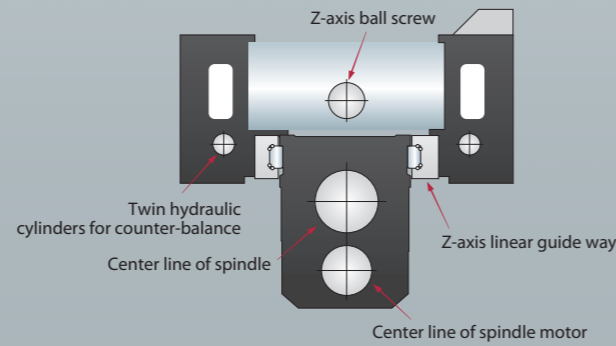
- Using W-axis can reduce overhang on Z-axis to remain the rigidity of head and is suitable for heavy cutting

↑ **40 %**
Cutting Rigidity

↑ **30 %**
Structure Rigidity

Centro-Symmetric Spindle System

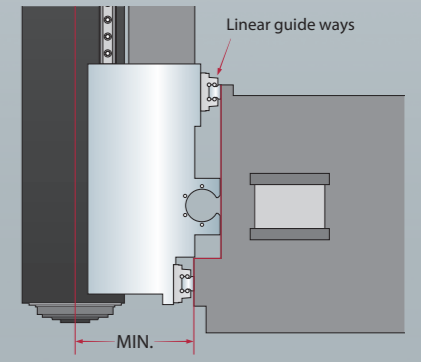
- Unique head design allows the spindle, spindle motor, ball screw and dual hydraulic counter weight cylinders to be symmetrically placed. Hereby preventing thermal distortion and minimizing deflection. Assuring accuracy and heavy-duty cutting capability.



■ Centro-symmetric Main Spindle System

Powerful Cutting Capability

- Inner-rail embraced structure provides high rigidity and good stress flow which minimizes over hang and vibration issues.
- The Y-axis roller type linear guide ways offset from each other, increases structural rigidity and reduces distance between the spindle to cross beam which enhances overall cutting performance.



■ Y-axis sectional roller type guide ways design

Optimum Spindle System

High Torque Gear Drive Spindle

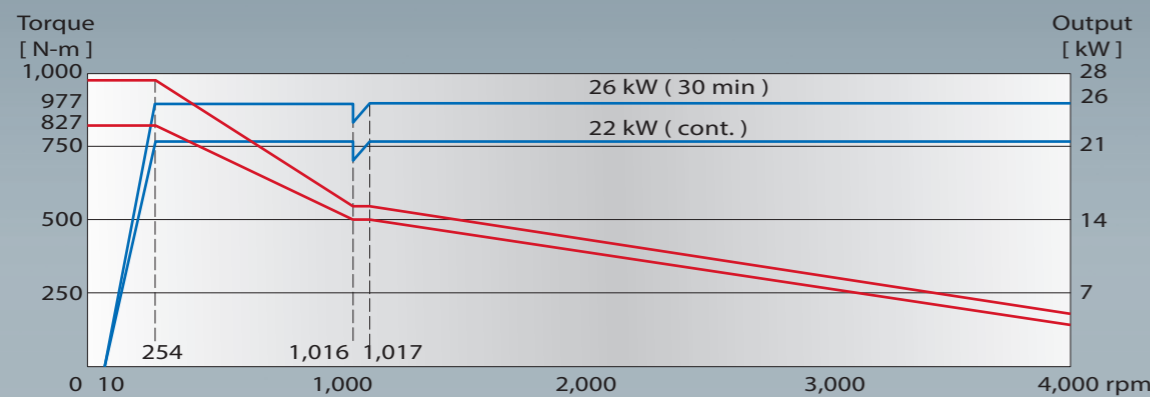
977 N-m

Maximum Torque

- 2-step super heavy-duty gear box
- Floating type hydraulic tool release device eliminates pressure on the spindle bearing when releasing a tool.
- 4,000 rpm high torque spindle is equipped with powerful 26 kW motor, delivering maximum torque output of 977 N-m at 254 rpm which can meet with various heavy-duty cutting conditions.
- 5,000 / 6,000 rpm gear spindle (Opt.)



4,000 rpm Gear Drive Spindle



High Speed, High Torque Built-in Spindle

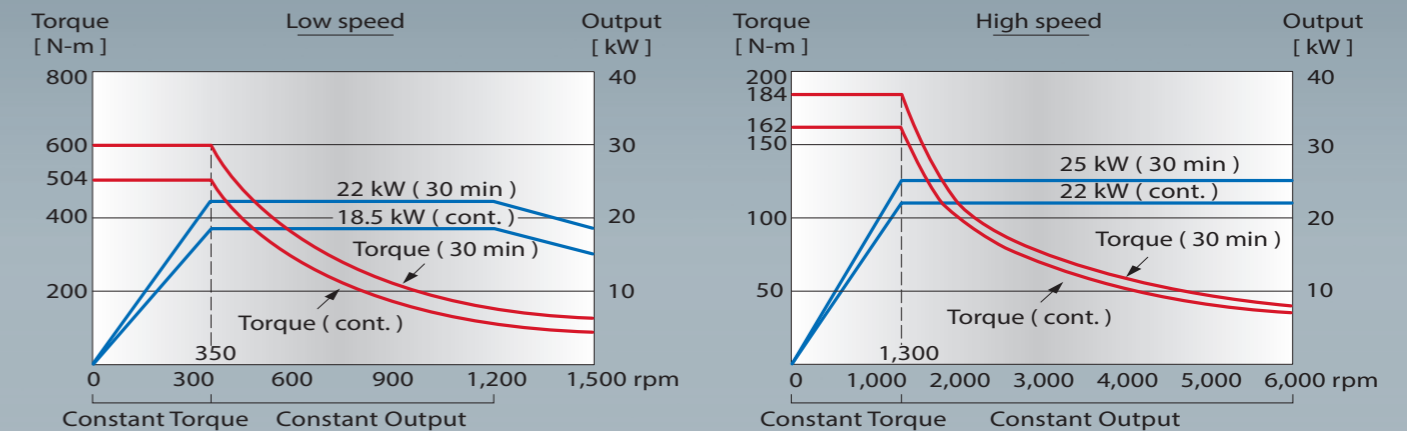
600 N-m

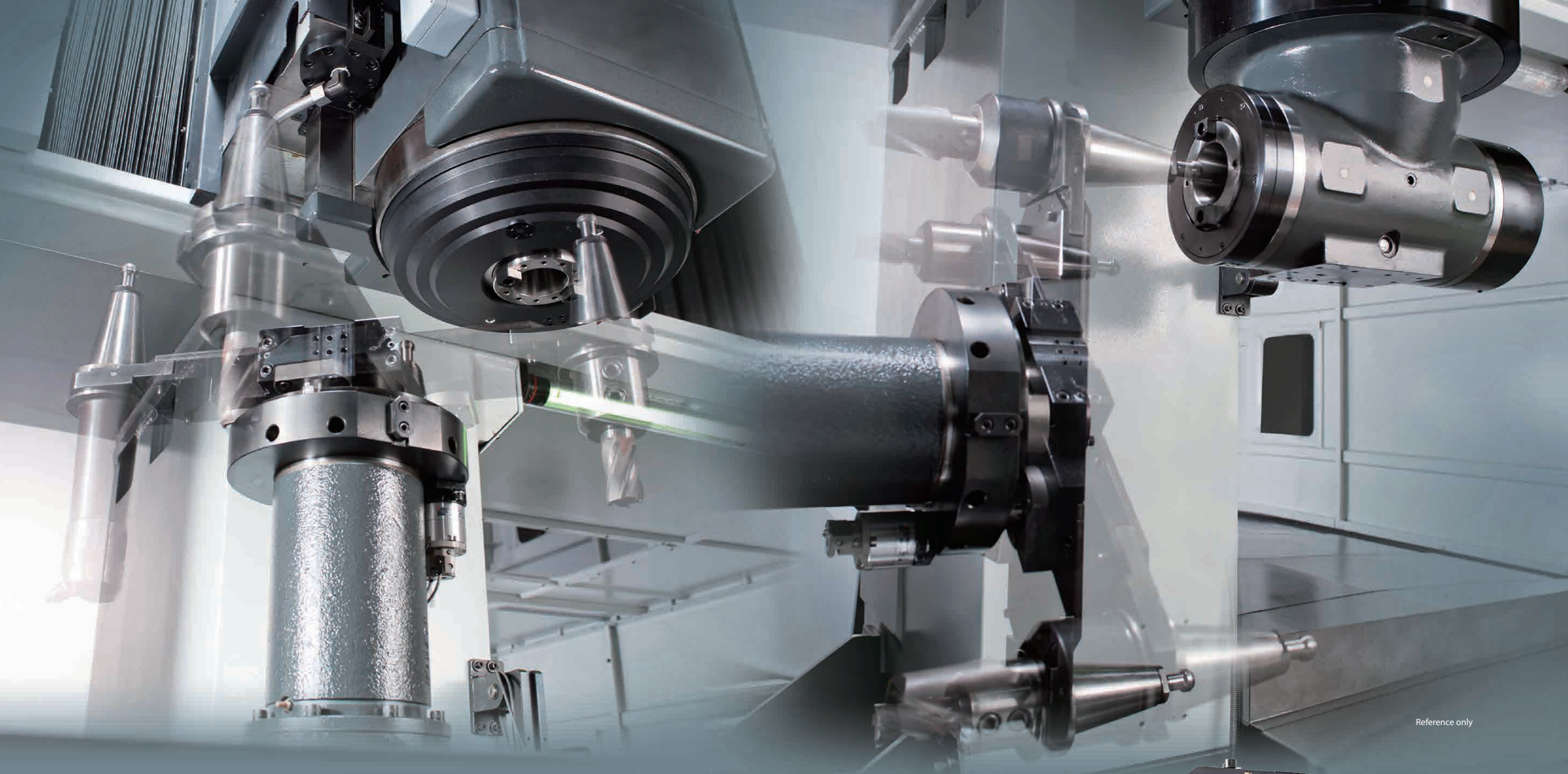
Maximum Torque

- The FANUC built-in motor reduces centrifugal force effect and restrains spindle vibration, which increases the spindle life span and improves long-term machining accuracy.
- Floating type hydraulic tool release device eliminates pressure on the spindle bearing when releasing a tool.
- 6,000 rpm and 8,000 rpm are available, which provides maximum 600 N-m torque output at 350 rpm, to meet with various processing conditions.



6,000 rpm Built-in Spindle





Reference only

HIGHLY RELIABLE ATC SYSTEM

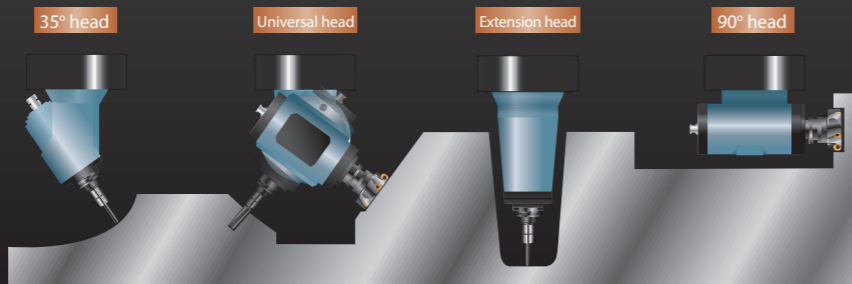
Vertical / Horizontal ATC

- Optional 32 / 40 / 90 / 120T vertical / horizontal ATC system provides quick tool change with sensors and sequence scanning to ensure safety and reliability.
- Max. tool length 400 mm, max. tool weight 25 kg. Tool releasing adopts solenoid valve design, which makes heavy tools can operate smoothly.



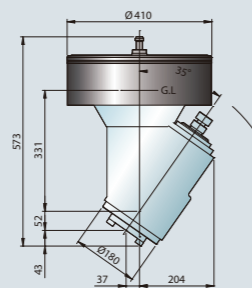
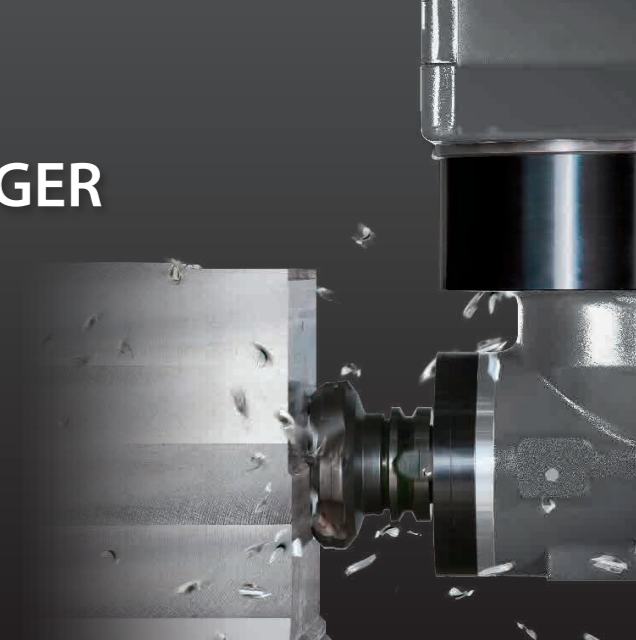
MULTI-PURPOSE MILLING HEAD COMBINATION

- All milling heads include 35°, 90° head, extension head and universal milling head are self-developed and assembled.



HIGH EFFICIENCY HEAD CHANGER

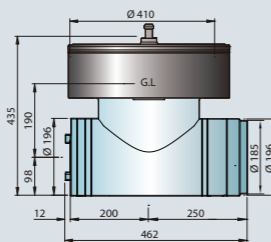
- MVP series can integrate automatic head changer and vertical / horizontal ATC system to provide high efficiency, and multi-function 5-face machining capability.
- Standard equipped 90° head, automatic head storage, and the more heads with larger head storages are optional to fulfill machining needs.



(Unit : mm)

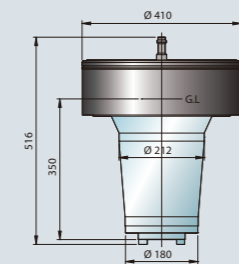
35° Head

- Automatic head lock / manual tool lock
- Cs-axis automatic 5° index
- Max. speed : 2,000 rpm
- Max. output : 22 kW (30 HP)



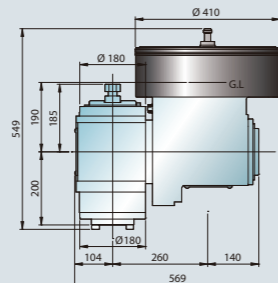
90° Head

- Automatic head lock / automatic tool lock
- Cs-axis automatic 5° index
- Max. speed : 2,000 rpm (3,000 rpm opt.)
- Max. output : 22 kW (30 HP)



Extension Head

- Automatic head lock / hydraulic tool release
- No index function
- Max. speed : 3,000 rpm
- Max. output : 22 kW (30 HP)

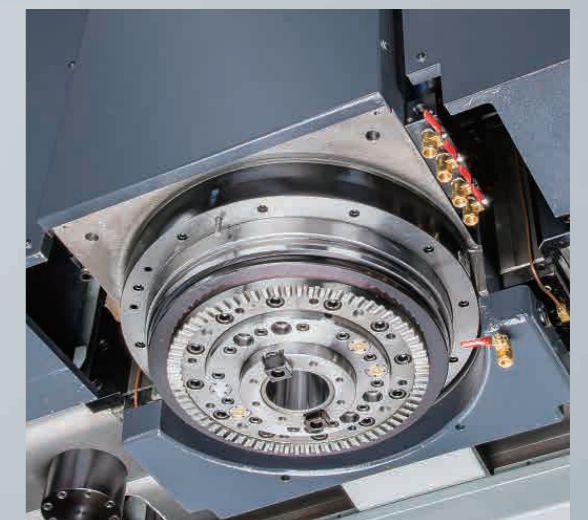


Universal Head

- Automatic head lock / manual tool lock
- Cs-axis automatic 5° index (A-axis manual)
- Max. speed : 2,000 rpm
- Max. output : 22 kW (30 HP)
- (Fully automatic A / C universal head opt.)



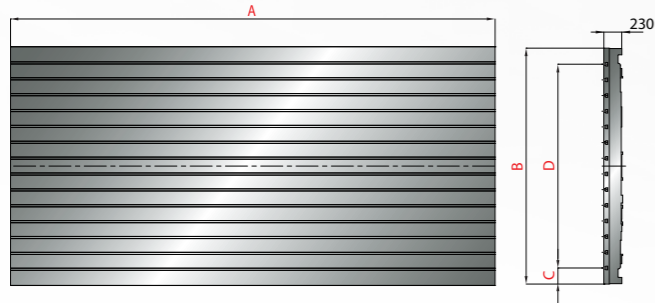
- Hand scraped on contact surface of spindle



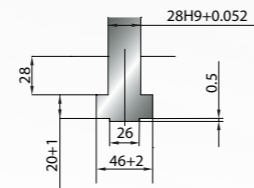
- Precisely positioned milling head through curvic coupling

DIMENSIONS

Table Dimensions



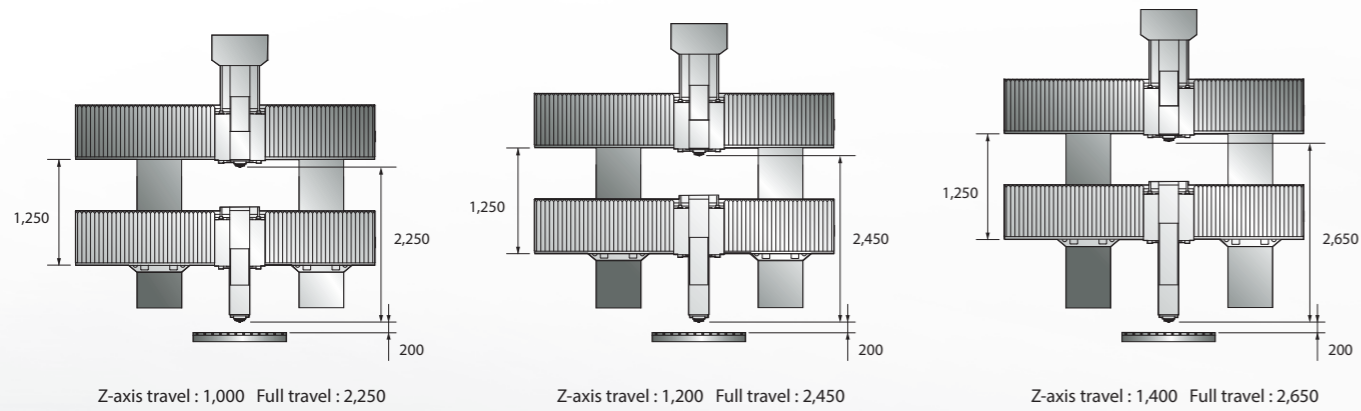
T-slot Dimensions



Model	A	B	C	D
MVP-4032	4,020	2,400	100	11x@200=2,200
MVP-5032	5,020			
MVP-6032	5,020			
MVP-7032	7,020	3,010	205	13x@200=2,600
MVP-4040	4,020			
MVP-5040	5,020			
MVP-6040	5,020			
MVP-7040	7,020			

(Unit: mm)

Z + W axes Travel



Z-axis travel : 1,000 Full travel : 2,250

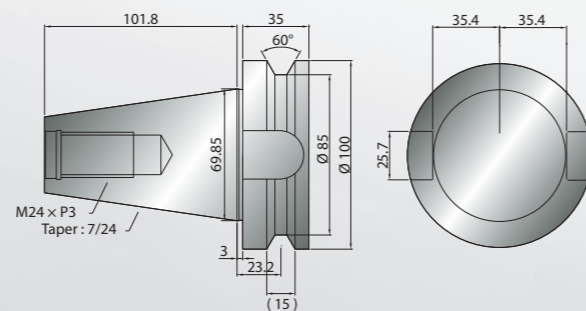
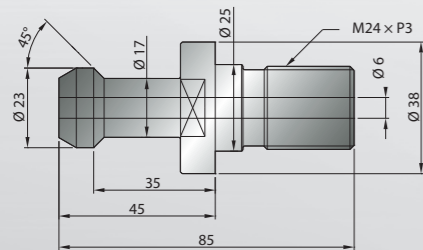
Z-axis travel : 1,200 Full travel : 2,450

Z-axis travel : 1,400 Full travel : 2,650

Tool Shank and Pull Stud Dimensions

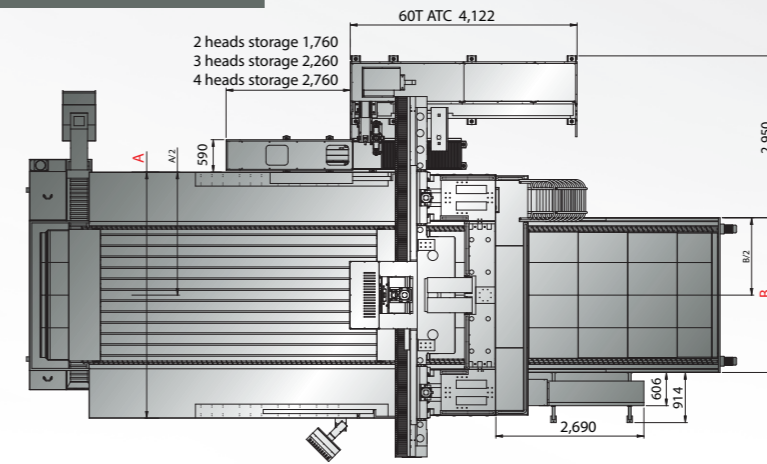
MAS403 P50T (45°)

BT50

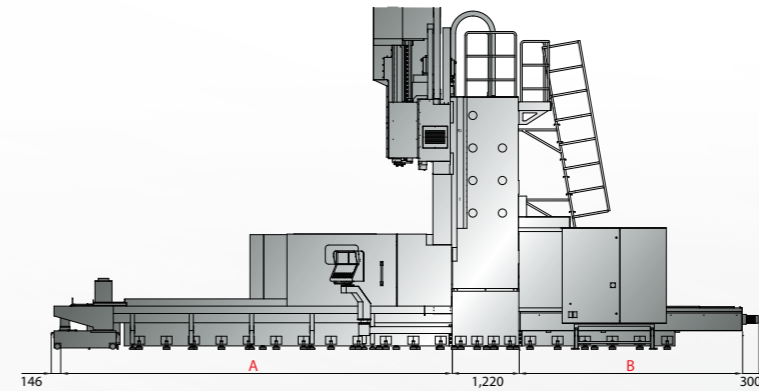


(Unit: mm)

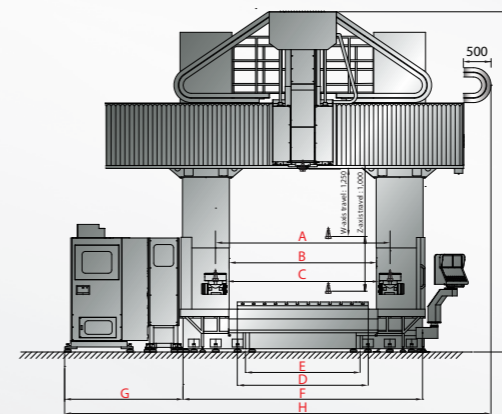
Machine Dimensions



Model	A	B
MVP-XX32	4,500	2,850
MVP-XX40	5,300	3,650



Model	A	B
MVP-40xx	6,260	3,075
MVP-50xx	7,260	4,075
MVP-60xx	8,260	5,075
MVP-70xx	9,260	6,075



Model	A	B	C	D	E	F	G	H	I
MVP-xx32	3,200	2,700	2,800	2,400	2,100	4,400	2,170	7,815	6,260
MVP-xx40	4,000	3,500	3,600	3,010	27,00	5,200	2,170	8,615	6,260

(Unit: mm)

		MVP-4032	MVP-5032	MVP-6032	MVP-7032	MVP-4040	MVP-5040	MVP-6040	MVP-7040
Specifications									
X-axis (right-left)	mm	4,000	5,000	6,000	7,000	4,000	5,000	6,000	7,000
Y-axis (front-back)	mm	3,200				4,000			
Z-axis (up-down)	mm	1,000 (1,200 / 1,400 Opt.)				1,000 (1,200 / 1,400 Opt.)			
W-axis	mm	1,250				1,250			
Dist. between columns	mm	2,700				3,500			
Dist. from spindle nose to table top	mm	200 ~ 2,450				200 ~ 2,450			
Working table									
Table size (X direction)	mm	4,020	5,020	6,020	7,020	4,020	5,020	6,020	7,020
Table size (Y direction)	mm	2,400				3,010			
Table load capacity	kg	15,000	18,000	20,000		15,000	18,000	20,000	
Spindle									
Spindle motor (cont. / 30 min)	kW	22 / 26				22 / 26			
Spindle speed	rpm	10 ~ 4,000 rpm (vertical) / 20 ~ 2,000 rpm (horizontal)				10 ~ 4,000 rpm (vertical) / 20 ~ 2,000 rpm (horizontal)			
Spindle taper		BT 50				BT 50			
Feed rate									
X-axis rapid feed rate	m/min	15	10	10	7.5	15	10	10	7.5
Y-axis rapid feed rate	m/min	12				10			
Z-axis rapid feed rate	m/min	10				10			
W-axis rapid feed rate	m/min	3				3			
Cutting rapid feed rate	m/min	5				5			
Tool Magazine									
Tool magazine capacity	T	60				60			
Max. tool diameter / adj. pocket empty	mm	Ø 127 / Ø 215				Ø 127 / Ø 215			
Max. tool length	mm	400				400			
Max. tool weight	kg	20				20			
Accuracy									
Positioning accuracy (JIS B 6338)	mm	± 0.015 / Full Travel		± 0.010 / Full Travel		± 0.015 / Full Travel		± 0.010 / Full Travel	
Positioning accuracy (VDI 3441)	mm	P = 0.030 / Full Travel	P = 0.040 / Full Travel	P = 0.035 / Full Travel	P = 0.040 / Full Travel	P = 0.030 / Full Travel	P = 0.040 / Full Travel	P = 0.035 / Full Travel	P = 0.040 / Full Travel
Repeatability (JIS B 6338)	mm	± 0.003				± 0.003			
Repeatability (VDI 3441)	mm	Ps = 0.025	Ps = 0.030	Ps = 0.026	Ps = 0.030	Ps = 0.025	Ps = 0.030	Ps = 0.026	Ps = 0.030
General									
Power requirement	kVA	AC 220 + 10% 3 phase / 80 kVA				AC 220 + 10% 3 phase / 80 kVA			
Pneumatic pressure requirement	kg/cm ²	5 ~ 8				5 ~ 8			
Hydraulic unit tank capacity	liter	290				290			
Lubrication oil tank capacity	liter	6				6			
Coolant tank capacity	liter	750				1,200			
Machine weight	kg	70,000	75,000	80,000	85,000	78,500	83,500	88,500	93,500

Specifications are subject to change without notice.

Standard Accessories

- Spindle 2-step gear box
- Spindle cooling system
- Centralized automatic lubricating system
- 4 pcs splash guard
- Twin hydraulic counter weight cylinders
- 60T ATC
- X,Y,Z axes anti-crash mechanism
- W-axis optical linear scale (HEIDENHAIN)
- X,Y,Z axes external codec semiclosed feedback
- Coolant system with pump and tank
- Twin screw type chip augers
- Recycling lubricating oil collector
- Caterpillar type chip conveyor and bucket
- Foundation bolt kit
- Footswitch for tool clamping
- Movable manual pulse wave generator
- RS232 interface
- Rigid tapping

Optional Accessories

- 5,000 / 6,000 rpm gear drive spindle
- 6,000 / 8,000 rpm built-in spindle
- Z-axis extension travel : 1,200 / 1,400 mm
- Milling head automatic 5° index : 35° / universal / extension head
- X-axis gear / racks driven system
- Coolant through the spindle (Form A)
- Spindle thermal compensation
- Automatic tool length measurement
- Automatic work-piece measurement