

MEGA5 Series

Bridge Type 5-Axis Machining Centers



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ISO 9001



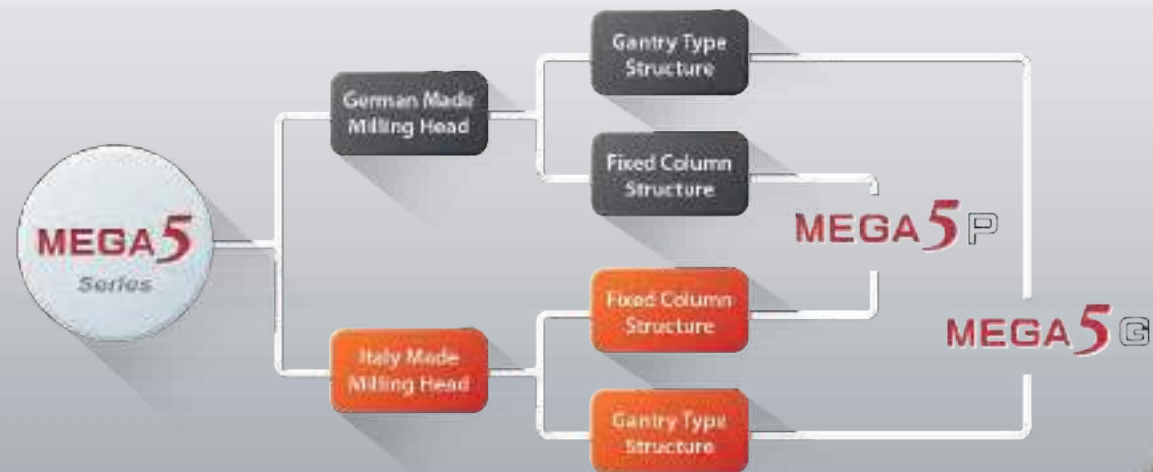
ISO 14001

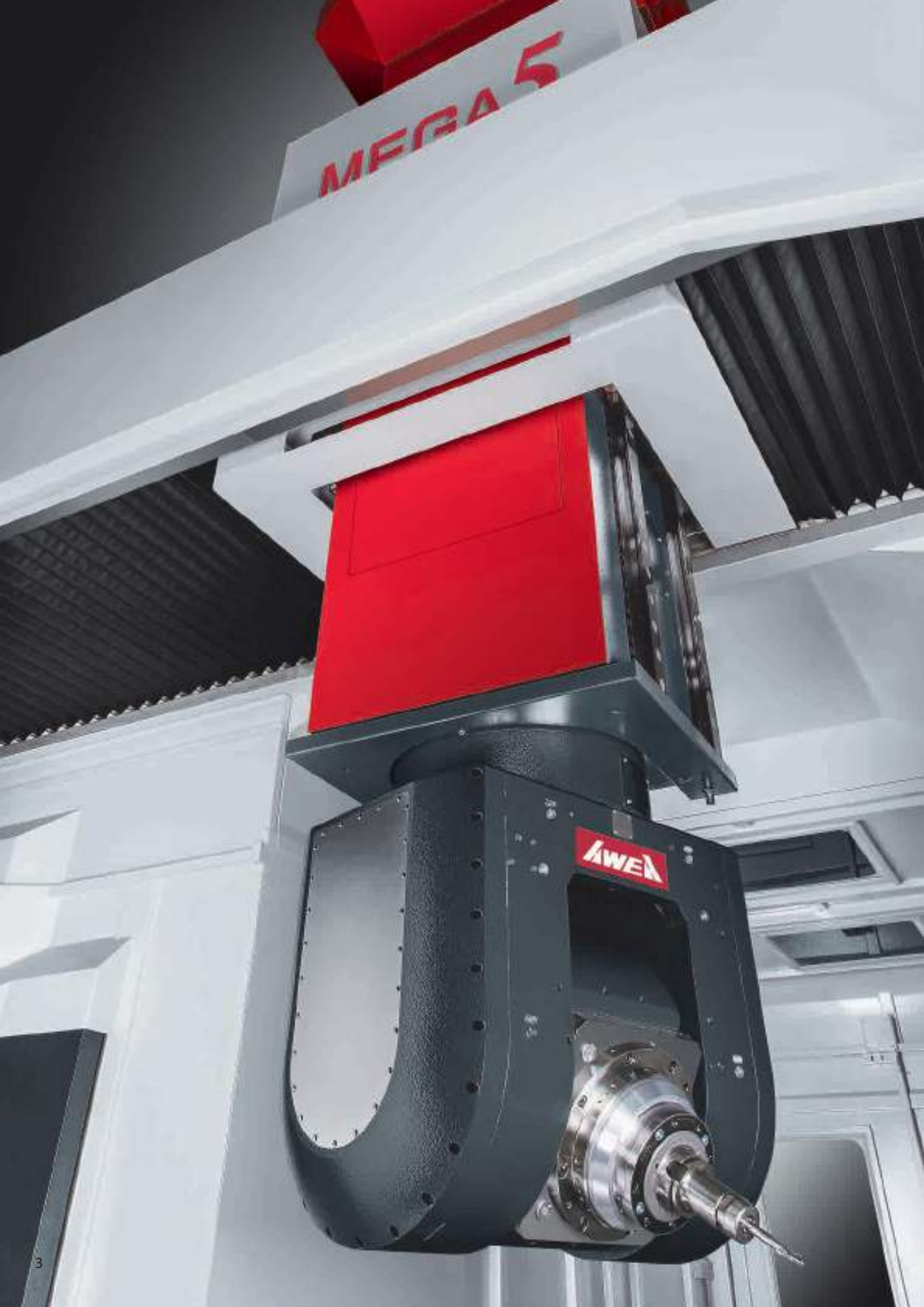


MEGA5 Series

Maximum Performance Bridge Type 5-Axis Machining Centers

Depend on the outstanding integration of electromechanics and high quality important components, AWEA MEGA5 5-axis machining center series adopts fixed column type (MEGA5 P series) and gantry type (MEGA5 G series), which are based on high rigidity bridge type structure. Featuring German made or Italy made high performance dual axes universal milling head provides X、Y、Z、B、C 5-axis simultaneous machining to fulfill large work-piece of compound angular machining needs. It's the best choice to promote to the advanced machining fields.





MEGA5 Series

German Made
High Performance Head

600° / Sec.

Rotating speed

- B-axis high strength aluminum alloy structure adopts one-piece modular symmetric fork design can maintain long term machine accuracy.
- Compact light-weight head design can effectively lower the load of Z-axis and decrease interference.
- Ultimate machining efficiency. Rotating speed is up to 600°/sec.
- Specialized mechanism design can adjust B-axis accuracy directly at client.
- Brake modular system adopts pneumatic driven to provide energy saving and eliminate oil leaking problem.
- 70 bar high pressure coolant through spindle (Opt.)



	B-axis	C-axis
Max. spindle speed	100 rpm	100 rpm
Max. accel. speed	30 rad/sec ²	30 rad/sec ²
Continuous torque	764 N-m	810 N-m
Max. torque	1,150 N-m	1,100 N-m
Clamping torque	2,160 N-m	3,024 N-m
Positioning accuracy	± 5 arc.sec	± 3 arc.sec
Rotary range	± 105°	± 360°



MEGA5 P5025

MEGA5 Series

Italy Made
High Performance Head

1 Sec.

Instantaneous positioning and clamping

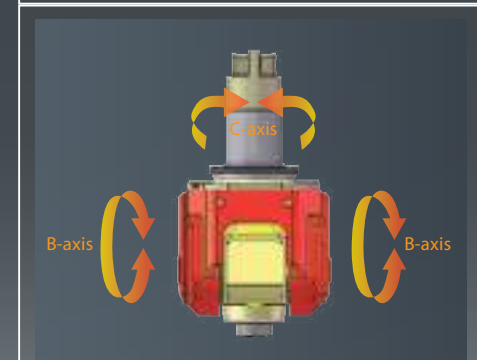
10,000 N-m

Hydraulic clamping force

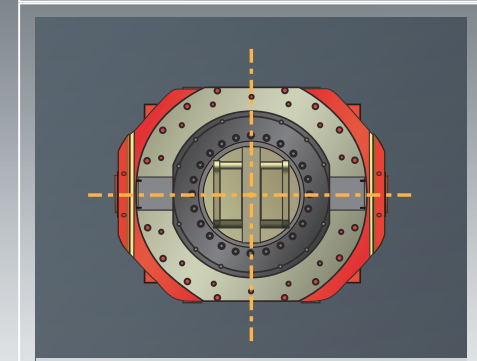
- B-axis adopts high rigidity symmetric fork design in GGG40 modular graphite cast iron.
- B, C axes driven by 3 direct drive motors (DD Motor) that provides high speed, high torque and zero backlash.
- Hydraulic clamping system provides ample locking force on B-axis and support heavy cutting at fixed angle.
- High rigidity cross roller bearings (diameter B-axis : 150 mm / C-axis : 320 mm)^{*1} greatly improve cutting ability.
- Standardly equipped high resolution absolute encoders to ensure optimal machining accuracy.
- Integrated water cooling circuit design provides stable accuracy under long-term machining condition.
- 20 bar coolant through spindle (Opt.)

*1 Inner diameter

	B-axis	C-axis
Max. spindle speed	50 rpm	50 rpm
Max. accel. speed	30 rad/sec ²	30 rad/sec ²
Continuous torque	1,400 N-m	1,450 N-m
Max. torque	2,200 N-m	2,400 N-m
Clamping torque	10,000 N-m	10,000 N-m
Positioning accuracy	± 3 arc.sec	± 3 arc.sec
Rotary range	± 100°	± 240°



Optimized symmetric FORK structure provides best rigidity.



Cutting force stress flow is evenly distributed in symmetric structure.

MEGA5 Series

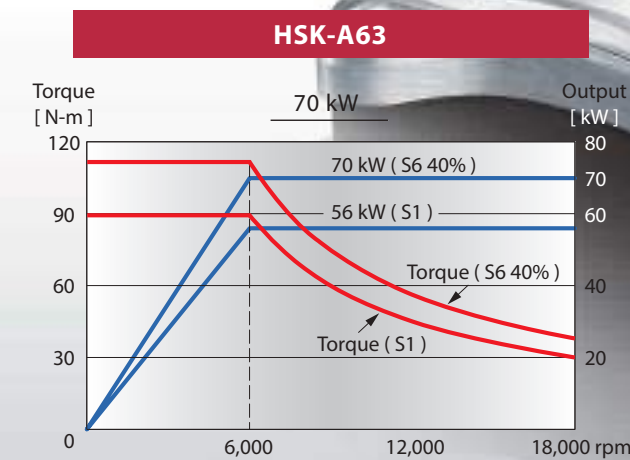
Ultimate Machining Capability

- MEGA5 series adopts built-in spindle design that can effectively lower vibration of spindle rotating to expand tool life and improve long-term machining accuracy.

German made dual axes universal milling head

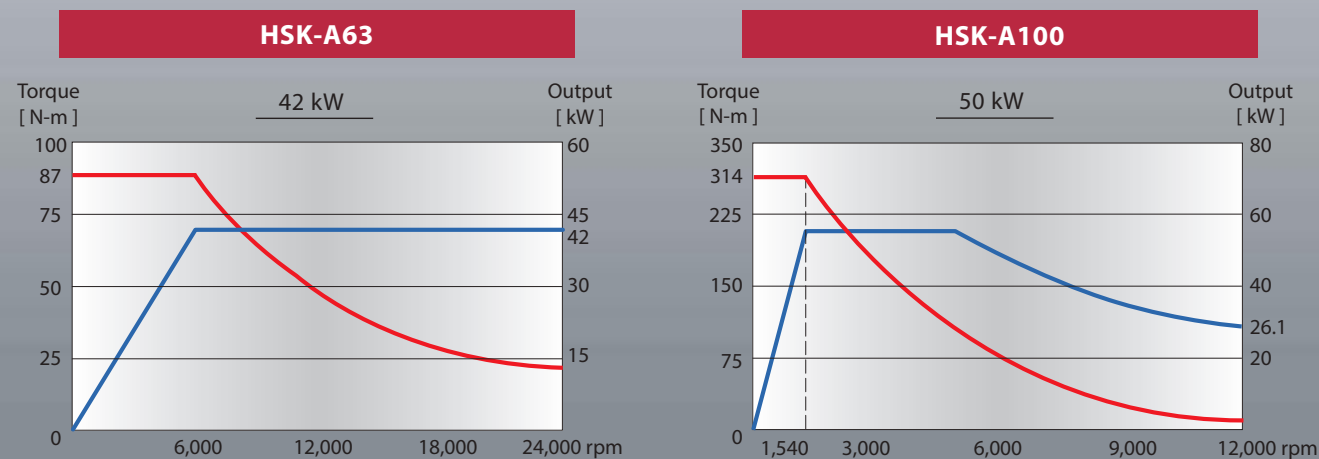
- German made 18,000 rpm dual axes milling head can provide optimized high torque, high power output at 70 kW to perform high precision molds/dies and parts machining.
- Complete product range fulfills customer various machining needs.

		HSK-A100	HSK-A63	HSK-A63	HSK-A63	HSK-A63
Max. spindle speed	rpm	12,000	15,000	18,000	20,000	24,000
Max. torque	N-m	144	111	111	75	73
Spindle motor	kW	30	70	70	75	46

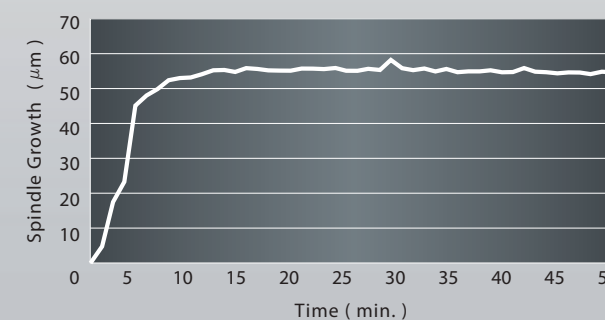


Italy made dual axes universal milling head

- Italy made dual axes milling head provides maximum torque up to 314 N-m spindle or 24,000 rpm high speed spindle, and both provide high chips removal rate and high speed, heavy cutting capability.



Spindle overhang figure of Italy made universal milling head



- Spindle reaches stable state within 10 minutes from machine cold start. Even under long-term continuous machining, the spindle thermal expansion variation would be within 0.01 mm range.

MEGA5 P Series

Maximum Performance Bridge Type 5-Axis Machining Centers

Complete product line, fixed column bridge type machining center structure along with MEGA5 high performance dual axis milling head can easily overcome any tough machining tasks.

- Movable table design with very high machine stability, cutting rigidity and machining capability is suitable for heavy cutting requirement in different material.
- High rigidity roller type linear guide ways on the X, Y axes combine benefits of both box ways and linear guide ways which offer heavy duty cutting, fast movement and low abrasion capabilities. Rigidity and movement control are significantly improved.
- Z-axis adopts extra large linear guide ways along with larger saddle and high rigidity box structure headstock, which provides the best cutting rigidity.
- One-piece bed utilizes compound four guide ways support is enlarged proportional to the length of travel range, which can eliminate table overhang problem while ensuring the best support rigidity.*1
- Wide span symmetrical center-driven design with X-axis ball screw placed in the center of axial movement provides high precision and heavy load feed driven, avoids uneven wear out on guide ways caused by yawing problem.

*1 Differentiate from models.

- Equipped with ball screw vibration absorber for machines (5 m or longer models) to reduce vibration and the overhang problem of ball screw to increase machining accuracy.
- 40 tools chain type tool magazine effectively raises machining efficiency. Tool exchange procedure is done outside of machining area to avoid cutting chips contamination on tools.

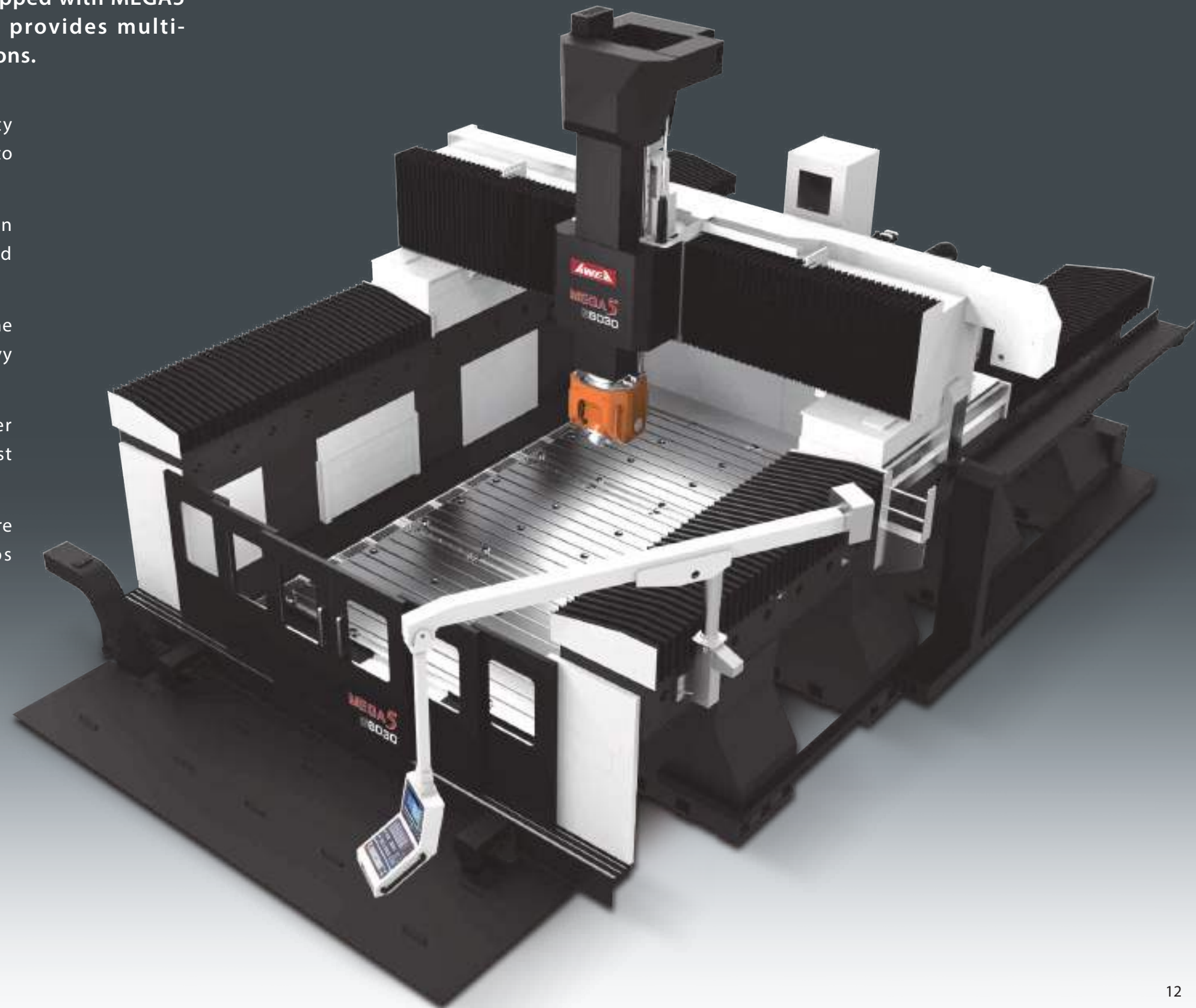


MEGA5 G Series

Maximum Performance Bridge Type 5-Axis Machining Centers

Gantry type structure with high usage of space and equipped with MEGA5 high performance dual axes universal milling head provides multi-function, heavy load and extra large range cutting solutions.

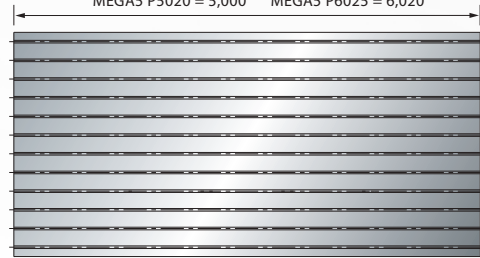
- Gantry type structure provides the highest structural rigidity and dynamic performance. X-axis travel can expand according to customer requirements.
- X-axis adopts AWEA "simultaneous-controlled technology" driven by rack and pinion system with no backlash, twin servo motors and twin linear scales to ensure optimal dynamic accuracy.
- Extra high rigidity roller type linear guide ways on Y-axis combine benefits of both box way and linear guide ways which offer heavy cutting, fast movement and low abrasion capabilities.
- Z-axis adopts extra large linear guide ways along with larger saddle and high rigidity box structure headstock provides best cutting rigidity.
- 20T (40T opt.) drum type tool magazine. Tool exchange procedure is done outside of machining area to avoid cutting chips contamination on tools.



Dimensions

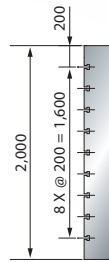
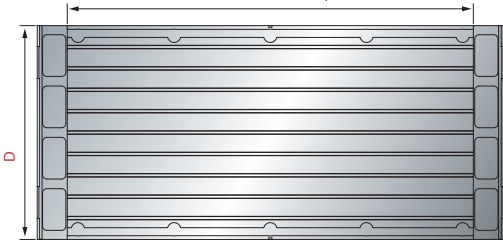
Table Dimensions

MEGA5 P MEGA5 P2520 = 2,310 MEGA5 P3025 = 3,020
 MEGA5 P3020 = 3,260 MEGA5 P4025 = 4,020
 MEGA5 P4020 = 4,200 MEGA5 P5025 = 5,020
 MEGA5 P5020 = 5,000 MEGA5 P6025 = 6,020



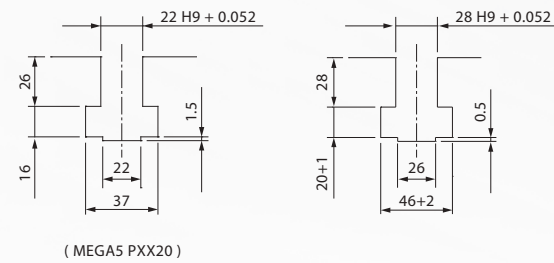
Models	MEGA5 PXX20	MEGA5 PXX25
A	1,500	2,400
B	7x@170=1,190	11x@200=2,200
C	155	100

MEGA5 G MEGA5 GXX30 = 3,800
 MEGA5 GXX40 = 4,800

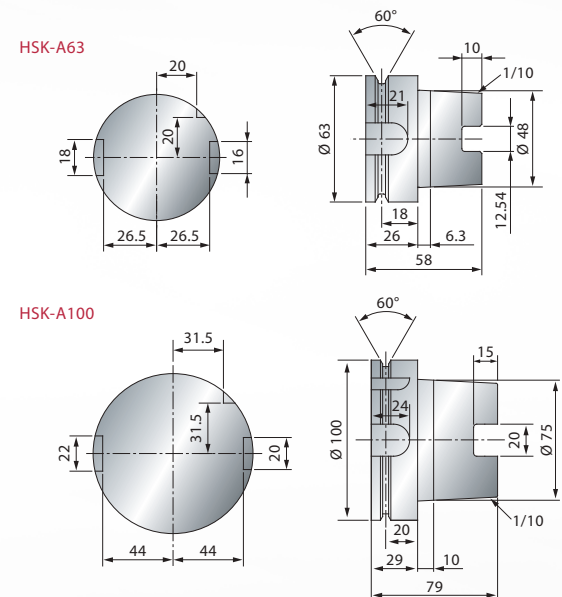


Models	MEGA5 G40XX	MEGA5 G60XX	MEGA5 G80XX	MEGA5 G100XX
D	4,000	6,000	8,000	10,000

T-slot Dimensions

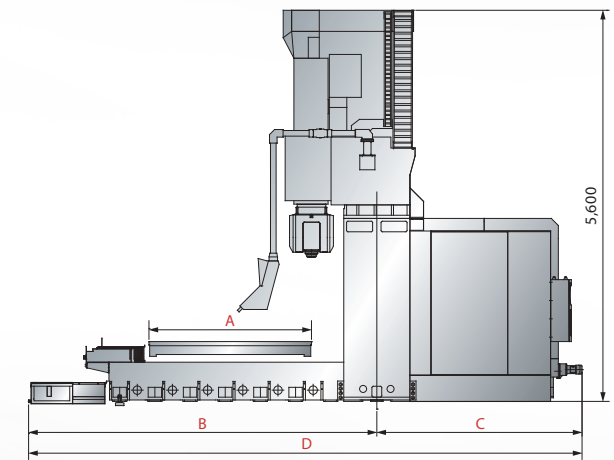
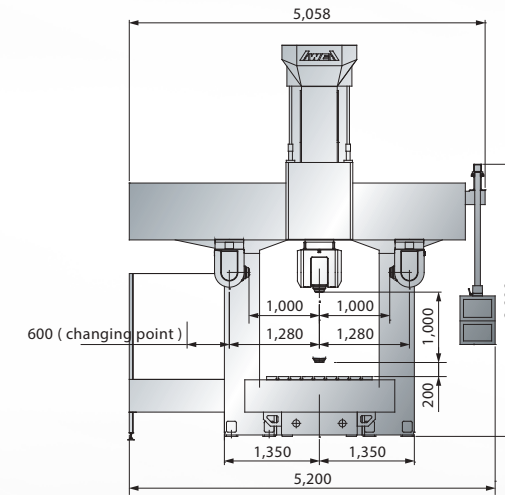
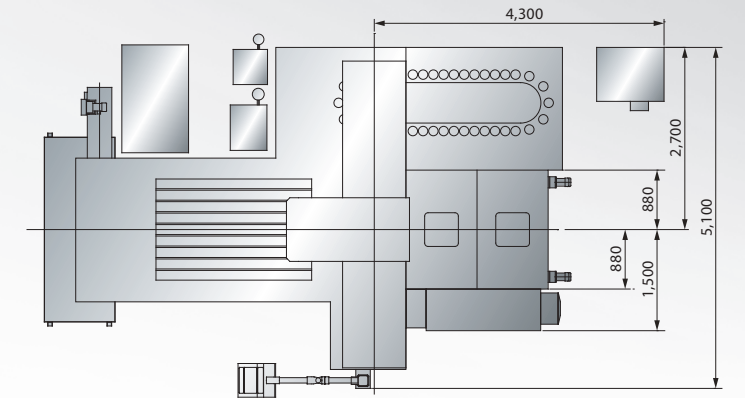


Tool Shank and Pull Stud Dimensions



MEGA5 PXX20 Machine Dimensions

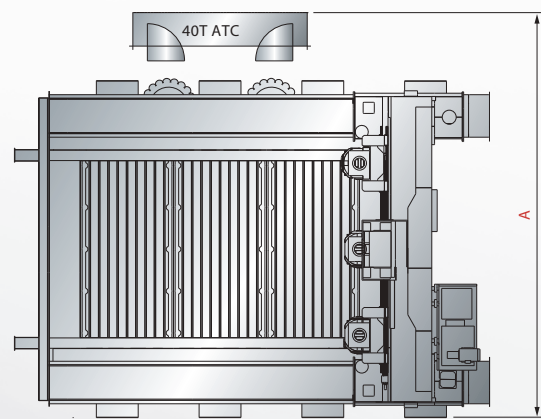
Models	MEGA5 P2520	MEGA5 P3020	MEGA5 P4020	MEGA5 P5020
A	2,310	3,260	4,200	5,000
B	4,950	5,450	6,450	7,450
C	2,920	3,420	4,420	5,420
D	7,870	8,870	10,870	12,870



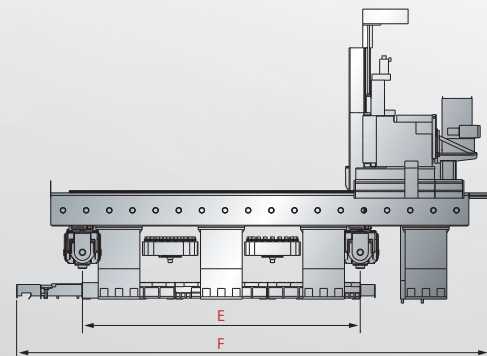
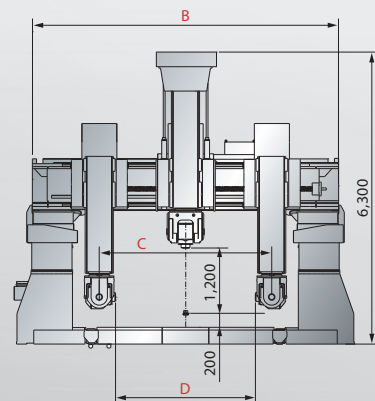
MEGA5 G Machine Dimensions

Models	MEGA5 GXX30	MEGA5 GXX40
A	9,455	10,465
B	6,563	7,563
C	3,700	4,700
D	3,000	4,000

Models	MEGA5 G40XX	MEGA5 G60XX	MEGA5 G80XX	MEGA5 G100XX
E	4,000	6,000	8,000	10,000
F	7,800	9,800	11,800	13,800

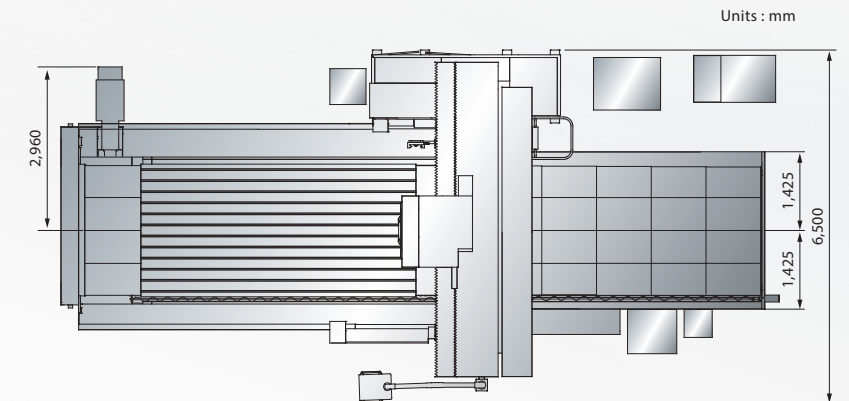


Units : mm

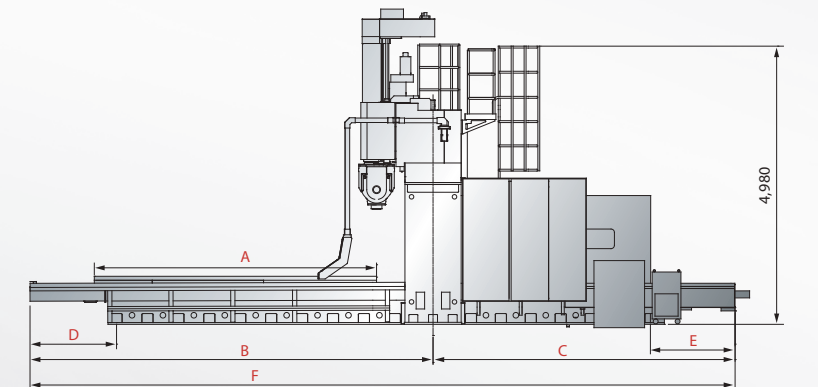
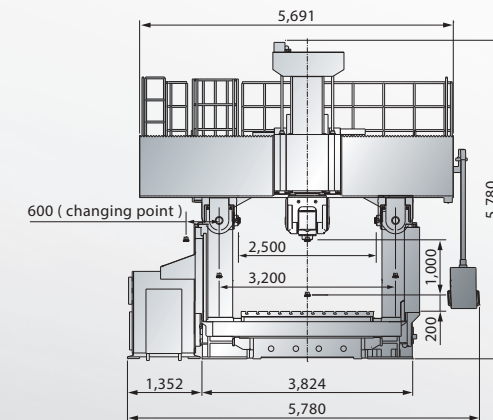


MEGA5 P Machine Dimensions

Models	MEGA5 P30XX	MEGA5 P40XX	MEGA5 P50XX	MEGA5 P60XX
A	3,020	4,020	5,020	6,020
B	4,840	5,965	7,125	8,145
C	3,075	4,115	5,270	6,260
D	1,115	1,205	1,540	1,530
E	1,130	1,210	1,405	1,380
F	8,580	10,580	12,680	14,680



Units : mm



MEGA5P Specifications

		MEGA5 P2520	MEGA5 P3020	MEGA5 P4020	MEGA5 P5020	
SPECIFICATIONS						
X-axis travel	mm	2,500	3,000	4,000	5,000	
Y-axis travel	mm	2,560 (vertical) / 2,000 (horizontal)				
Z-axis travel	mm	1,000				
Distance between columns	mm	1,700				
Distance from spindle nose to table top	mm	200 ~ 1,200				
Distance from 90° spindle center line to table	mm	480 ~ 1,480				
WORKING TABLE						
Table size (X x Y)	mm	2,310 x 1,500	3,260 x 1,500	4,200 x 1,500	5,000 x 1,500	
T slot (Width x Distance)	mm	22 x 170				
Table load capacity	kg	8,000	10,000	12,000	14,000	
SPINDLE						
Spindle taper		HSK-A63				
Spindle motor (cont. / 30 min)	kW	56 / 70				
Spindle speed	rpm	18,000				
FEED RATE						
X-axis rapid feedrate	m/min.	20	20	15	10	
Y-axis rapid feedrate	m/min.	20				
Z-axis rapid feedrate	m/min.	15				
Cutting feedrate	m/min.	1 ~ 10				
TOOL MAGAZINE						
Tool magazine capacity	T	40				
Max. tool length	mm	350				
Max. tool weight	kg	8				
Max. tool diameter / adj. pocket empty	mm	Ø140 / Ø180				
ACCURACY						
Positioning accuracy (JIS B 6338)	mm	± 0.015 / Full Travel				
Positioning accuracy (VDI 3441)	mm	P ≤ 0.020 / Full Travel	P ≤ 0.025 / Full Travel	P ≤ 0.030 / Full Travel	P ≤ 0.040 / Full Travel	
Repeatability (JIS B 6338)	mm	± 0.003				
Repeatability (VDI 3441)	mm	Ps ≤ 0.015	Ps ≤ 0.020	Ps ≤ 0.025	Ps ≤ 0.030	
GENERAL						
Coolant tank capacity	liter	420				
Lubrication oil tank capacity	liter	6				
Hydraulic unit tank capacity	liter	100				
Pneumatic pressure requirement (min.)	kg/cm ²	6 ~ 8 (6)				
Machine weight	kg	30,000	32,000	34,000	38,000	
Max. work-piece dimension	Length (X-axis)	mm	2,310	3,000	4,000	5,000
	Width (Y-axis)	mm	1,500			
	Height (Z-axis)	mm	850			

Standard Accessories

- Spindle cooling system
- X / Y / Z axes optical linear scale
- Centralized automatic lubricating system
- 4 pcs splash guard
- Coolant system with pump and tank
- Twin screw type chip augers
- Caterpillar type chip conveyor and bucket
- Electric cabinet with air conditioner
- Mobile handwheel
- Foot switch for tool release

		MEGA5 P3025	MEGA5 P4025	MEGA5 P5025	MEGA5 P6025	
SPECIFICATIONS						
X-axis travel	mm	3,000	4,000	5,000	6,000	
Y-axis travel	mm	3,200 (vertical) / 2,500 (horizontal)				
Z-axis travel	mm	1,000 (1,200 opt.)				
Distance between columns	mm	2,700				
Distance from spindle nose to table top	mm	200 ~ 1,200 (200 ~ 1,400 opt.)				
Distance from 90° spindle center line to table	mm	550 ~ 1,550 (550 ~ 1,750 opt.)				
WORKING TABLE						
Table size (X x Y)	mm	3,020 x 2,400	4,020 x 2,400	5,020 x 2,400	6,020 x 2,400	
T slot (Width x Distance)	mm	28 x 200				
Table load capacity	kg	12,000	15,000	18,000	20,000	
SPINDLE						
Spindle taper		HSK-A100				
Spindle motor (cont. / 30 min)	kW	50 / 40				
Spindle speed	rpm	10 ~ 12,000				
FEED RATE						
X-axis rapid feedrate	m/min.	20	15	15	12	
Y-axis rapid feedrate	m/min.	15				
Z-axis rapid feedrate	m/min.	10				
Cutting feedrate	m/min.	1 ~ 10		1 ~ 5		
TOOL MAGAZINE						
Tool magazine capacity	T	40				
Max. tool length	mm	350				
Max. tool weight	kg	15				
Max. tool diameter / adj. pocket empty	mm	Ø140 / Ø180				
ACCURACY						
Positioning accuracy (JIS B 6338)	mm	± 0.010 / Full Travel				
Positioning accuracy (VDI 3441)	mm	P = 0.020 / Full Travel	P = 0.025 / Full Travel	P = 0.030 / Full Travel	P = 0.035 / Full Travel	
Repeatability (JIS B 6338)	mm	± 0.003				
Repeatability (VDI 3441)	mm	Ps = 0.015	Ps = 0.018	Ps = 0.022	Ps = 0.026	
GENERAL						
Coolant tank capacity	liter	750				
Lubrication oil tank capacity	liter	6				
Hydraulic unit tank capacity	liter	150				
Pneumatic pressure requirement (min.)	kg/cm ²	5 ~ 8 (5)				
Machine weight	kg	46,500	51,500	56,500	60,500	
Max. work-piece dimension	Length (X-axis)	mm	3,000	4,000	5,000	6,000
	Width (Y-axis)	mm	2,500			
	Height (Z-axis)	mm	850			

Specifications are subject to change without notice.

Optional Accessories

- 20 / 70 bar Coolant through spindle
- Automatic tool length measurement
- Automatic work piece measurement
- Fully enclosed splash guard w/o roof
- Suspensory control panel
- Swingable control panel

MEGA5G Specifications

		MEGA5 G4030	MEGA5 G6030	MEGA5 G8030	MEGA5 G10030	
SPECIFICATIONS						
X-axis travel	mm	4,000	6,000	8,000	10,000	
Y-axis travel	mm	3,700 (vertical) / 3,000 (horizontal)				
Z-axis travel	mm	1,200 (1,400 opt.)				
Distance between columns	mm	4,800				
Distance from spindle nose to table top	mm	200 ~ 1,400 (200 ~ 1,600 opt.)				
Distance from 90° spindle center line to table	mm	550 ~ 1,750 (550 ~ 1,950 opt.)				
WORKING TABLE						
Table size (X x Y)	mm	4,000 x 3,800	6,000 x 3,800	8,000 x 3,800	10,000 x 3,800	
T slot (Width x Distance)	mm	28 x 200				
Table load capacity	kg/m ²	2,500				
SPINDLE						
Spindle taper		HSK-A100				
Spindle motor (cont. / 30 min)	kW	50 / 40				
Spindle speed	rpm	10 ~ 12,000				
FEED RATE						
X-axis rapid feedrate	m/min.	20				
Y-axis rapid feedrate	m/min.	15				
Z-axis rapid feedrate	m/min.	10				
Cutting feedrate	m/min.	1 ~ 10				
TOOL MAGAZINE						
Tool magazine capacity	T	20				
Max. tool length	mm	350				
Max. tool weight	kg	15				
Max. tool diameter / adj. pocket empty	mm	Ø160 / Ø230				
ACCURACY						
Positioning accuracy (JIS B 6338)	mm	± 0.010 / Full Travel				
Positioning accuracy (VDI 3441)	mm	P=0.025 / Full Travel	P=0.035 / Full Travel	P=0.040 / Full Travel	P=0.050 / Full Travel	
Repeatability (JIS B 6338)	mm	± 0.003				
Repeatability (VDI 3441)	mm	Ps = 0.018	Ps = 0.026	Ps = 0.030	Ps = 0.038	
GENERAL						
Coolant tank capacity	liter	1,600				
Lubrication oil tank capacity	liter	6				
Hydraulic unit tank capacity	liter	150				
Pneumatic pressure requirement (min.)	kg/cm ²	6 ~ 8 (6)				
Machine weight	kg	72,000	84,500	104,500	132,000	
Max. work-piece dimension	Length (X-axis)	mm	4,000	6,000	8,000	10,000
	Width (Y-axis)	mm	3,700			
	Height (Z-axis)	mm	1,050			

Standard Accessories

- Spindle cooling system
- X / Y / Z axes optical linear scale
- Centralized automatic lubricating system
- Coolant system with pump and tank
- Twin screw type chip augers
- Caterpillar type chip conveyor and bucket
- Electric cabinet with air conditioner
- Swingable control panel
- Mobile handwheel
- Foot switch for tool release

		MEGA5 G6040	MEGA5 G8040	MEGA5 G10040	
SPECIFICATIONS					
X-axis travel	mm	6,000	8,000	10,000	
Y-axis travel	mm	4,700 (vertical) / 4,000 (horizontal)			
Z-axis travel	mm	1,200 (1,400 opt.)			
Distance between columns	mm	5,800			
Distance from spindle nose to table top	mm	200 ~ 1,400 (200 ~ 1,600 opt.)			
Distance from 90° spindle center line to table	mm	550 ~ 1750 (550 ~ 1,950 opt.)			
WORKING TABLE					
Table size (X x Y)	mm	6,000 x 4,800	8,000 x 4,800	10,000 x 4,800	
T slot (Width x Distance)	mm	28 x 200			
Table load capacity	kg/m ²	2,500			
SPINDLE					
Spindle taper		HSK-A100			
Spindle motor (cont. / 30 min)	kW	50 / 40			
Spindle speed	rpm	10 ~ 12,000			
FEED RATE					
X-axis rapid feedrate	m/min.	20			
Y-axis rapid feedrate	m/min.	15			
Z-axis rapid feedrate	m/min.	10			
Cutting feedrate	m/min.	1 ~ 10			
TOOL MAGAZINE					
Tool magazine capacity	T	20			
Max. tool length	mm	350			
Max. tool weight	kg	15			
Max. tool diameter / adj. pocket empty	mm	Ø160 / Ø230			
ACCURACY					
Positioning accuracy (JIS B 6338)	mm	± 0.010 / Full Travel			
Positioning accuracy (VDI 3441)	mm	P=0.035 / Full Travel	P=0.040 / Full Travel	P=0.050 / Full Travel	
Repeatability (JIS B 6338)	mm	± 0.003			
Repeatability (VDI 3441)	mm	Ps = 0.026	Ps = 0.030	Ps = 0.038	
GENERAL					
Coolant tank capacity	liter	1,900			
Lubrication oil tank capacity	liter	6			
Hydraulic unit tank capacity	liter	150			
Pneumatic pressure requirement (min.)	kg/cm ²	6 ~ 8 (6)			
Machine weight	kg	119,500	139,500	167,000	
Max. work-piece dimension	Length (X-axis)	mm	6,000	8,000	10,000
	Width (Y-axis)	mm	4,700		
	Height (Z-axis)	mm	1,050		

Specifications are subject to change without notice.

Optional Accessories

- 20 / 70 bar coolant through spindle
- 40T ATC system
- Automatic tool length measurement
- Automatic work piece measurement