

Avemax Machinery Co., Ltd.

CNC milling machine



The World's Leading Milling Machine Manufacturer



Background

Manford began to produce conventional milling machines in 1987. As sales volume increased, Manford expanded to offer a wider range of machine tools, and soon Manford had developed a complete series of CNC machining centers. Through the decades, Manford milling machines have become one of the world's top brands due to our unparalleled quality and professional service.

Customer first, Quality focus, Sustainable development.

AVEMAX MACHINERY CO., LTD. was once a department of Manford Machinery Co., Ltd. In 2006, with the aim of producing high-quality and high-precision machines, Manford created "Avemax Machinery Co., Ltd." as an offshoot to primarily focus on conventional milling machines. Avemax not only continues in the operation philosophy from Manford that "Customer first, Quality focus, Sustainable development", but will also develop as its own brand to win Taiwan milling machines further acclaim.



History

- 1987 ● Manford Machinery Co. Ltd. was founded by Mr. James Hsieh with capital of USD200,000, specializing in the machining of lathe accessories.
- 1989 ● Capital was increased to USD300,000. Manford brand turret milling machine series were developed and launched into both local and international markets.
- 1996 ● CNC vertical machining center series MCV610 & MCV850 were developed.
- 1998 ● US branch was established in New Jersey to provide better services for North American customers.
- 2004 ● ERP (Enterprise Resource Planning) system was introduced into the company, which dramatically increased management and production efficiency.
- 2006 ● The milling machine department was officially separated from Manford Group and became an individual company.
- 2012 ● The business started to take off with the new name "Avemax" and the spirit inherited from Manford.



AVEMAX

CNC

CNC milling machine

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CNC milling machine

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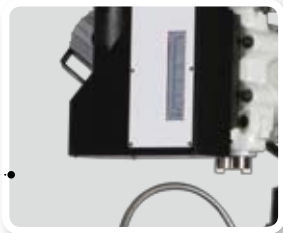
CNC bed type machining center

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CNC MILLING MACHINE

CV-400

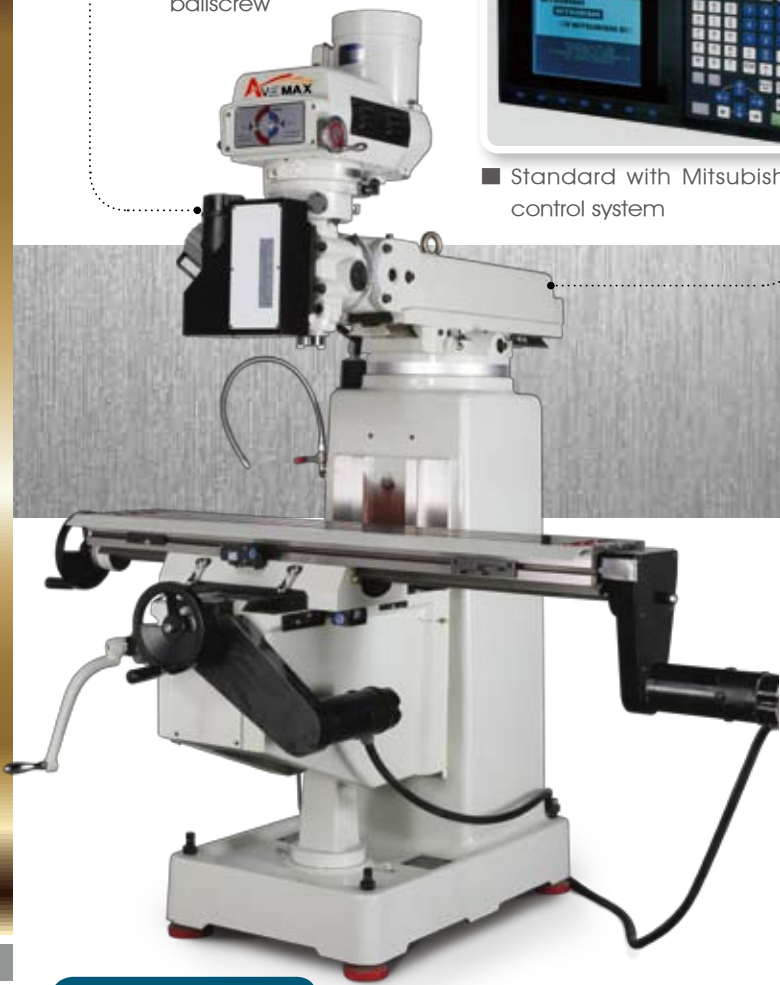
CV



■ Z axis quill drive with ballscrew

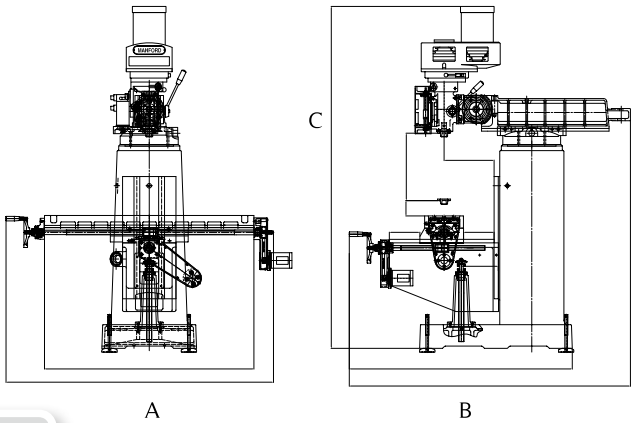


■ Standard with Mitsubishi control system



feature:

- Spindle material is SCM415 full hardened through carbonizing heat treatment.
- NST#30/R8 spindle with 3HP variable speed motor (inverter motor is available for option).
- Spindle quill drive box is transmitted by ballscrew for better precision.
- Essential castings are made of high grade of Meehanite cast iron, which has been stressed and relieved to provide a rigid machine structure.
- Standard with 10" X54" table, hardened and ground.
- Table T-slot is precision ground to exact tolerance.
- Precision ballscrews are used on X&Y axes.
- X&Y slideways and gibs are coated with Turcite-B to provide smooth and wear resistant surface.
- 1:2 ratio timing belt pulleys on XY axes to increase drive torque.



Specifications	CV-400
Travel	
Longitudinal travel	830 mm (32.7")
Cross travel	380 mm (15")
Knee travel	355 mm (14")
Quill travel	127 mm (5")
Ram travel	560 mm (22")
Table	
Table size	1370x250 mm (54"x10")
T-slot (No. x Size)	3x16 mm (3"x5/8")
Max. table load	350 Kgs (771Lbs)
Spindle nose to table surface	150~505 mm (5.9"~20")
Spindle	
Spindle motor	3 HP
Spindle taper	NST#30 (Optional: NST#40)
Over swivel on turret	360°
Head swivel (L&R)	45°
Head tilt (Up&Down)	45°
Spindle center to column surface	159~719 mm (6.2"~28")
Speed	
Quill feed	0.04~0.08~0.14 mm (0.0015"~0.003"~0.006")
Spindle speed	60HZ 60~4500rpm 50HZ 50~3800rpm
XY feed rates	0~3M/min
XY rapid traverse	5M/min
Machine Dimension	
Overall width (A)	1900 mm (75")
Overall depth (B)	1850 mm (73")
Overall height (C)	2120 mm (83.5")
Net weight (Approx.)	1400 Kgs (3080 Lbs)

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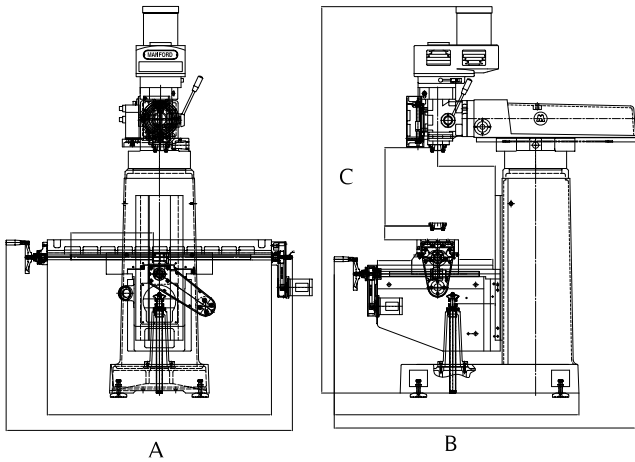
CNC MILLING MACHINE

CV-520

CV



■ Fagor 8055i is available for option



Specifications	CV-520
Travel	
Longitudinal travel	830 mm (32.7")
Cross travel	405 mm (16")
Knee travel	378 mm (15")
Quill travel	127 mm (5")
Ram travel	560 mm (22")
Table	
Table size	1370x250 mm (54"x10")
T-slot (No. x Size)	3x16 mm (3"x5/8")
Max. table load	350 Kgs (771Lbs)
Spindle nose to table surface	150~528 mm (5.9"~20.7")
Spindle	
Spindle motor	5 HP
Spindle taper	NST#40
Over swivel on turret	360°
Head swivel (L&R)	45°
Head tilt (Up&Down)	Nil (Optional: 45°)
Spindle center to column surface	168~730 mm (6.6"~29")
Speed	
Quill feed	0.04~0.08~0.14 mm (0.0015"~0.003"~0.006")
Spindle speed	60HZ 60~4500rpm 50HZ 50~3800rpm
XY feed rates	0~3M/min
XY rapid traverse	5M/min
Machine Dimension	
Overall width (A)	1900 mm (75")
Overall depth (B)	1850 mm (73")
Overall height (C)	2375 mm (93.5")
Net weight (Approx.)	1800 Kgs (3960 Lbs)

feature:

- Spindle material is SCM415 full hardened through carbonizing heat treatment.
- NST#40 spindle with 5HP variable speed motor (inverter motor is available for option).
- Spindle quill drive box is transmitted by ballscrew for better precision.
- Essential castings are made of high grade of Meehanite cast iron, which has been stressed, relieved to provide a rigid machine structure.
- Standard with 10" X54" table, hardened and ground.
- Table T-slot is precision ground to exact tolerance.
- Box way design on Y&Z axes leads to better rigidity.
- Lifting screw diameter 38mm assures the stability while machining.
- Precision ballscrews are used on X&Y axes.
- X&Y slideways and gibs are coated with Turcite-B to provide smooth and wear resistant surface.
- 1:2 ratio timing belt pulleys on XY axes to increase drive torque.



AVEMAX MACHINERY CO., LTD.

CNC BED TYPE MILLING MACHINE

CB-170 / CB-180

CNC BED TYPE MILLING MACHINE

CB-185



■ Standard with Mitsubishi control system



■ Fagor 8055i is available for option

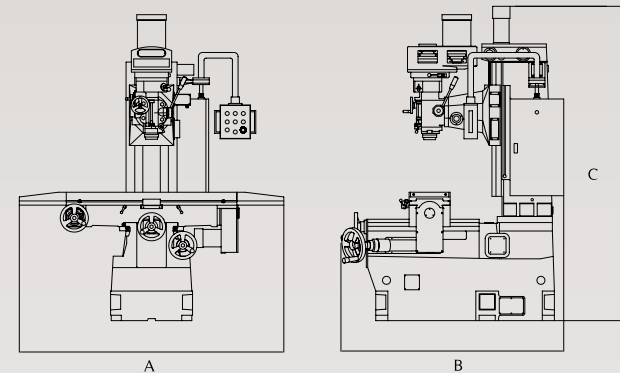
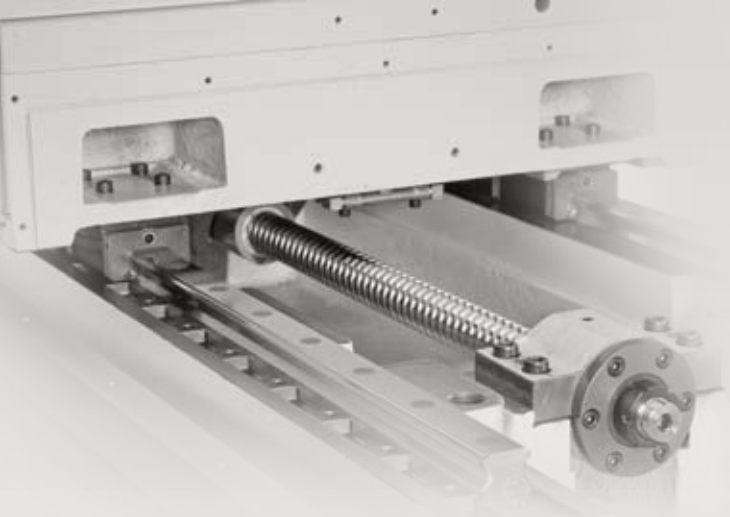


feature:

- CB-170: NST#30/R8 spindle with 3HP variable speed motor (inverter motor is available for option)
- CB-180: NST#40 spindle(material SCM415 full hardened through carbonizing heat treatment) with 5HP variable speed motor (inverter motor is available for option)
- Essential castings are made of high grade of Meehanite cast iron, which has been stressd relieved to provide a rigid machine structure.
- Standard with 10" X54" table, hardened and ground.
- Table T-slot is precision ground to exact tolerance.
- Precision ballscrews are used on X&Y axes.
- X&Y slideways and gibs are coated with Turcite-B to provide smooth and wear resistant surface.
- XYZ slideways are hardened and ground for wear resistance and excellent longevity.

feature:

- NST#40 spindle with 5HP inverter motor.
- Spindle material is SCM415 full hardened through carbonizing heat treatment.
- Essential castings are made of high grade of Meehanite cast iron, which has been stressed, relieved to provide a rigid machine structure.
- Standard with 10" X54" table, hardened and ground.
- Table T-slot is precision ground to exact tolerance.
- Precision ballscrews are used on X&Y axes.
- X&Y slideways and gibs are coated with Turcite-B to provide smooth and wear resistant surface.
- XYZ slideways are hardened and ground for wear resistance and excellent longevity.
- 1:2 ratio timing belt pulleys on XY axes to increase drive torque.



Specification	CB-170	CB-180	CB-185
Travel			
XYZ travel	830/500/450 mm (33"/20"/18")	830/500/450 mm (33"/20"/18")	985/450/450 mm (39"/18"/18")
Spindle nose to table surface	100~550 mm (4"~22")	100~550 mm (4"~22")	100~530 mm (4"~21")
Spindle center to column surface	465 mm (18")	500 mm (20")	500 mm (20")
Table			
Table size	1370x250 mm (54"x10")	1370x250 mm (54"x10")	1470x305 mm (58"x12")
T-slot (No.x Size)	3x16 mm (3"x5/8")	3x16 mm (3"x5/8")	3x16 mm (3"x5/8")
Max. table load	500Kgs (1102Lbs)	500Kgs (1102Lbs)	500Kgs (1102Lbs)
Spindle			
Taper	NST#30 (Opt. NST#40)	NST#40	NST#40
Speed	4500rpm(60HZ)	4500rpm(60HZ)	5000rpm(60HZ)
Quill feed	0.04~0.08~0.14 mm (0.0015"~0.003"~0.006")	0.04~0.08~0.14 mm (0.0015"~0.003"~0.006")	0.04~0.08~0.14 mm (0.0015"~0.003"~0.006")
Transmission	Variable speed (mechanic)		Variable speed (Inverter controlled EVS)
Quill travel	127 mm (5")	127 mm (5")	127 mm (5")
Head swivel (R&L)	45°	45°	45°
Feed rate			
Rapid feed of XYZ	5M/min	5M/min	5M/min
Cutting feed rate	0~3M/min	0~3M/min	0~3M/min
CNC control and motor			
CNC control	Mitsubishi/Fanuc/Fagor		
Spindle motor	3HP	5 HP	5 HP
Axes motor	1Kw	1Kw	1Kw
Coolant			
Coolant pump	1/6HP	1/6HP	1/6HP
Machine size			
Overall width (A)	1900 mm (75")	1900 mm(75")	1900 mm(75")
Overall depth (B)	2200 mm (87")	2200 mm (87")	2200 mm (87")
Overall height (C)	2550 mm (100")	2580 mm (102")	2600 mm (102.4")
Net weight (Approx.)	2000kgs (4400 Lbs)	2100kgs (4600 Lbs)	2300kgs (5000 Lbs)

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CNC BED TYPE MILLING MACHINE

CB-610S



■ Box way design on all slideways



■ Axes motors are direct coupled with ballscrews, featuring high efficient motion control, high response and low noise.



feature:

- Spindle material is SCM415 full hardened through carbonizing heat treatment.
- NST#30/R8 spindle with 3HP inverter motor
- Meehanite licensed castings are annealed & stress relieved to ensure maximum precision & vibration absorption.
- Hardened & ground C5 grade ballscrews pre-tensioned to minimize backlash, providing high precision movement and reducing heat deformation on all axes.
- Positioning accuracy: +/-0.008mm/300mm
- Repeatability accuracy: +/-0.005mm/300mm
- Telescopic steel way covers on three axes to protect ways & ballscrews from chips & coolant.
- High grade Turcite-B is coated and with precision handscrapping, giving maximum wear resistance.

CB

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CNC BED TYPE MILLING MACHINE

CB-850

■ EVS head is standard.



■ Precision ballscrews are used on X&Y axes.



■ Standard



■ 1:2 ratio timing belt pulleys on XYZ axes increase drive torque, and the cost for axes motors.

feature:

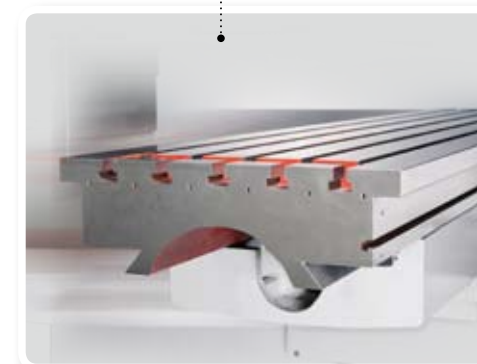
- NST#40 spindle with 5HP inverter motor.
- Spindle material SCM415 full piece by hardened&ground.
- Essential castings are made of high grade of Meehanite cast iron, which has been stressed, relieved to provide a rigid machine structure.
- Dovetail design on X slideway, and box way construction on YZ slideways.
- Precision ballscrews are used on X&Y axes. Besides, X&Y slideways and gibs are coated with Turcite-B to provide smooth and wear resistant surface.
- XYZ slideways, table and T-slot are hardened and ground for wear resistance and excellent longevity.
- 1:2 ratio timing belt pulleys on XYZ axes to increase drive torque, and save the cost for axes motors.
- YZ slideways are protected by high grade of steel covers.

CNC BED TYPE MILLING MACHINE

CB-1000/ 1300/ 1600



■ Strong back gear transmitting instead of timing belt for Hi-Low speed.



■ Dovetail design on X axis

feature:

- NST#40 spindle with 5HP inverter motor.
- Headstock is transmitted by strong back gears instead of timing belt for Hi-Low speeds.
- Spindle material SCM415 (SAE4115) fully hardened & precision ground.
- High grade of Meehanite cast iron is used on column, saddle, base and table, which are stressed relieved to avoid any distortion.
- Dovetail design on X slideway, and box way construction on YZ slideways.
- Precision ballscrews are used on X&Y axes. Besides, X&Y slideways and gibs are coated with Turcite-B to provide smooth and wear resistant surface.
- XYZ slideways, table and T-slot are hardened and ground for wear resistance and excellent longevity.
- 1:2 ratio timing belt pulleys on XYZ axes to increase drive torque.
- YZ slideways are protected by high grade of steel covers.

CB

CB

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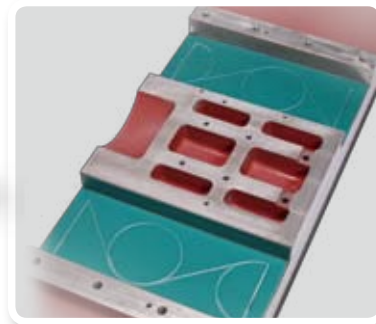
CNC BED TYPE MACHINING CENTER

MCB-850/ 1000/ 1300/ 1600

MCB



■ MCB-850



■ All slideways are coated with Turcite-B and precisely hand scrapped.



■ MCB-1000



■ Dovetail design on X axis



■ MCB-1300



■ MCB-1600

feature:

- VMC rigid headstock moves directly on the column without any extra bracket, which assures the accurate heavy cutting.
- BT40 spindle is 100% balanced, leading low chatter and high performance of machining.
- All essential castings are made of high grade of Meehanite cast iron, which has been stress relieved to provide a rigid machine structure.
- All three axes are driven by high precision ballscrews with double nuts which leads less play and backlash.
- Dovetail design on X, box way construction on YZ. All slideways have been hardened and ground for longer longevity. It also provides high rigidity for heavy and discontinuously cutting.
- All contacting surfaces are precisely hand scrapped.
- YZ slideways are protected by high grade of steel covers.
- 1:2 ratio timing belt pulleys on XYZ axes to increase drive torque, and save the cost for axes motors.



■ MCB-850
(Standard with semi guarding)



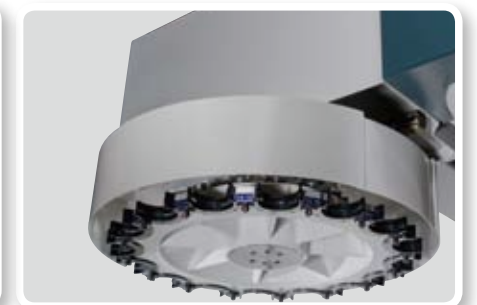
■ MCB-1000
(Standard with semi guarding)



■ Standard with Mitsubishi CNC control system



■ Arm type 24 tools ATC (Option)



■ Umbrella type 16 tools ATC (Option)



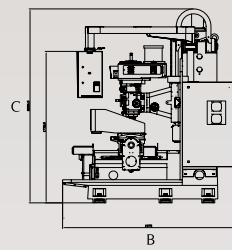
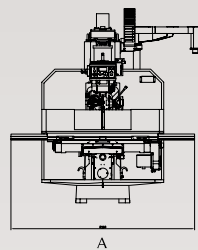
■ MCB-1300
(Full guarding & ATC are available for Option)



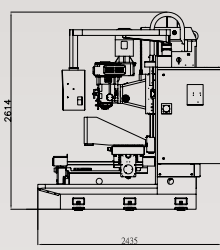
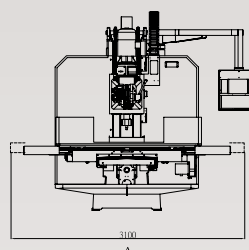
■ MCB-1600
(Full guarding & ATC are available for Option)

MCB

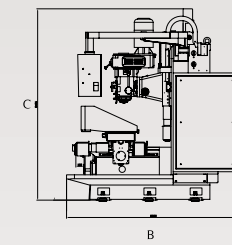
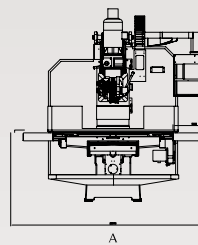
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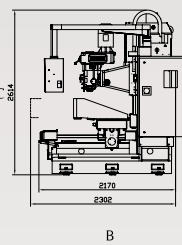
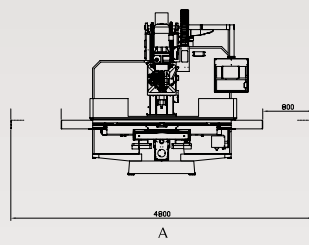
CB-850



CB-1300



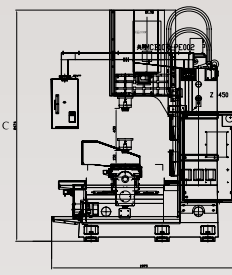
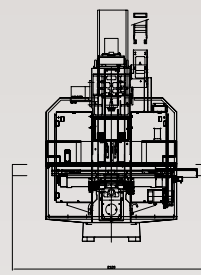
CB-1000



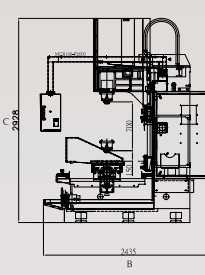
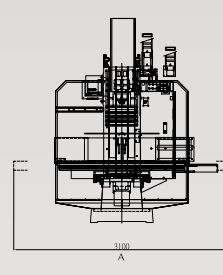
CB-1600

Specification	CB-610S	CB-850	CB-1000	CB-1300	CB-1600
Travel					
XYZ travel	610/350/460 mm (24"/14"/18")	850/450/450 mm (33"/17.7"/17.7")	1070/510/510 mm (42"/20"/20")	1300/600/700 mm (51"/24"/27.6")	1600/700/700 mm (63"/27.6"/27.6")
Spindle nose to table surface	100~560 mm (4"~22")	85~585 mm (3.3"~23")	85~585 mm (3.3"~23")	85~585 mm (3.3"~23")	85~585 mm (3.3"~23")
Spindle center to column surface	430 mm (17")	510 mm (20")	525 mm (21")	580 mm (22.8")	670 mm (26.4")
Table					
Table size	710x350 mm (28"x14")	1270x305 mm (50"x12")	1520x400 mm (60"x16")	1800x450 mm (71"x17.7")	2200x500 mm (86.6"x20")
T-slot(No.x Size)	5x16 mm (0.2"x0.63")	2x16 mm (0.8"x0.63")	3x18 mm (0.12"x0.7")	5x18 mm (0.2"x0.7")	5x18 mm (0.2"x0.7")
Max. table load	350 Kgs (770 Lbs)	400kgs (880lbs)	500kgs (1100lbs)	800kgs (1760lbs)	1000kgs (2200lbs)
Spindle					
Taper	NST#30/R8	NST#40	NST#40	NST#40	NST#40
Speed	5000rpm(60HZ)	5000 rpm(60HZ)	5000 rpm(60HZ)	5000 rpm(60HZ)	5000 rpm(60HZ)
Quill feed	0.04~0.08~0.14 mm (0.0015"~0.003"~0.0055")	0.035~0.07~0.14mm/min (0.0014"~0.003"~0.0055")			
Tronsmission	Variable speed (Inverter controlled)				
Quill travel	127 mm (5")	127mm (5")	140mm (5.5")	140mm (5.5")	140mm (5.5")
Head swivel (R&L)	45°	45°	45°	45°	45°
Feed rate					
Rapid feed of XYZ	12M/min	7.5M/min	12M/min	12M/min	12M/min
Cutting feed rate	0~10M/min	5M/min	10M/min	10M/min	10M/min
CNC control and motor					
CNC control	Mitsubishi/Fanuc/Fagor				
Spindle motor	3HP	5 HP	5 HP	5 HP	5 HP
XYZ motor	1Kw	1Kw	1Kw	2Kw	2Kw
XYZ transmission	Direct coupling	Timing belt pulley 1:2			
Coolant					
Coolant pump	1/6HP	1/6HP	1/6HP	1/6HP	1/6HP
Machine size					
Overall width (A)	2200 mm (87")	2110 mm (83")	2590 mm (102")	3100 mm (122")	4800 mm (189")
Overall depth (B)	1700 mm (67")	1975 mm (78")	2200 mm (67")	2435 mm (96")	2302 mm (91")
Overall height (C)	2050 mm (81")	2230 mm (88")	2420 mm (95")	2615 mm (103")	2614 mm (103")
NET weight	2600KGS (5732 Lbs)	2100kgs (4400 Lbs)	2600kgs (5732 Lbs)	3960kgs (8730 Lbs)	3960kgs (9920 Lbs)

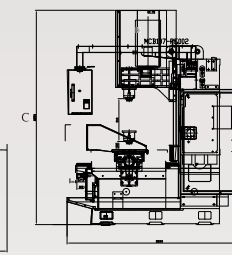
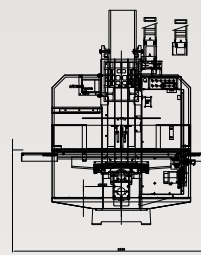
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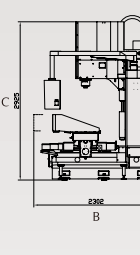
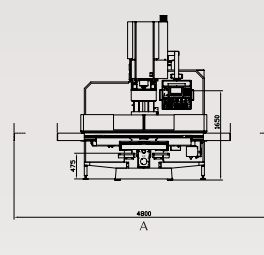
MCB-850



MCB-1300



MCB-1000



MCB-1600

Specification	MCB-850	MCB-1000	MCB-1300	MCB-1600
Travel				
XYZ travel	850/450/450 mm (33"/17.7"/7.7")	1070/510/510 mm (42"/20"/20")	1300/600/700 mm (51"/12.4"/27.6")	1600/700/700 mm (63"/27.6"/27.6")
Spindle nose to table surface	150-600 mm (5.9"~23.6)	100-610 mm (4"~24)	150-850 mm (5.9"~33)	120-820 mm (4.7"~32.3)
Spindle center to column surface	510 mm (20")	525 mm (21")	580 mm (22.8")	670 mm (26.4")
Table				
Table size	1270x305 mm (50"x12")	1520x400 mm (60"x16")	1800x450 mm (71"x17.7")	2200x500 mm (86.6"x20")
T-slot(No.x Size)	2x16 mm (0.8"x0.63")	3x18 mm (0.12"x0.7")	5x18 mm (0.2"x0.7")	5x18 mm (0.2"x0.7")
Max. table load	400kgs (880lbs)	500kgs (1100lbs)	800kgs (1760lbs)	1000kgs (2200lbs)
Spindle				
Speed	8000 rpm	8000 rpm	8000 rpm	8000 rpm
Taper	BT40	BT40	BT40	BT40
Tronsmission	Belt drive	Belt drive	Belt drive	Belt drive
Feed rate				
Rapid feed of XYZ	12M/min	12M/min	12M/min	12M/min
Cutting feed rate	0~10M/min	0~10M/min	0~10M/min	0~10M/min
CNC control and motor				
CNC control	Mitsubishi/Fanuc/Fagor			
Spindle motor	7.5 HP	10 HP	10 HP	10 HP
XYZ motor	1Kw	1Kw	2Kw	2Kw
XYZ transmission	Timing belt pulley 1:2			
Coolant				
Coolant pump	1/6HP	1/6HP	1/4HP	1/4HP
Machine size				
Overall width (A)	2120 mm (83")	2590 mm (102")	3100mm (122")	4800 mm (189")
Overall depth (B)	1975 mm (78")	2200 mm (87")	2435 mm (96")	2302 mm (91")
Overall height (C)	2474 mm (95")	2551 mm (100")	2928 mm (115")	2925 mm (115")
NET weight	2100 Kgs (4400 Lbs)	2600 Kgs (5732 Lbs)	3960 Kgs (8730 Lbs)	4500 Kgs (9920 Lbs)

Standard for MCB series



■ LASER INSPECTION SYSTEM

All 3 axes are checked by a Laser test to ensure positioning and repeating accuracy



■ BALLBAR TEST

Every machine is inspected by a ballbar test to ensure machining accuracy.

Standard accessories:

- RS-232 interface
- Auto lubrication
- Programming light (3 colors)
- Coolant system
- Semi guarding (includes: Base splash guard/Column guard (L&R)/Head guard/Table guard/Electrical box/Swiveling arm operation panel)
- Halogen work light
- Leveling bolts & plate
- Tools & box
- Operational manual

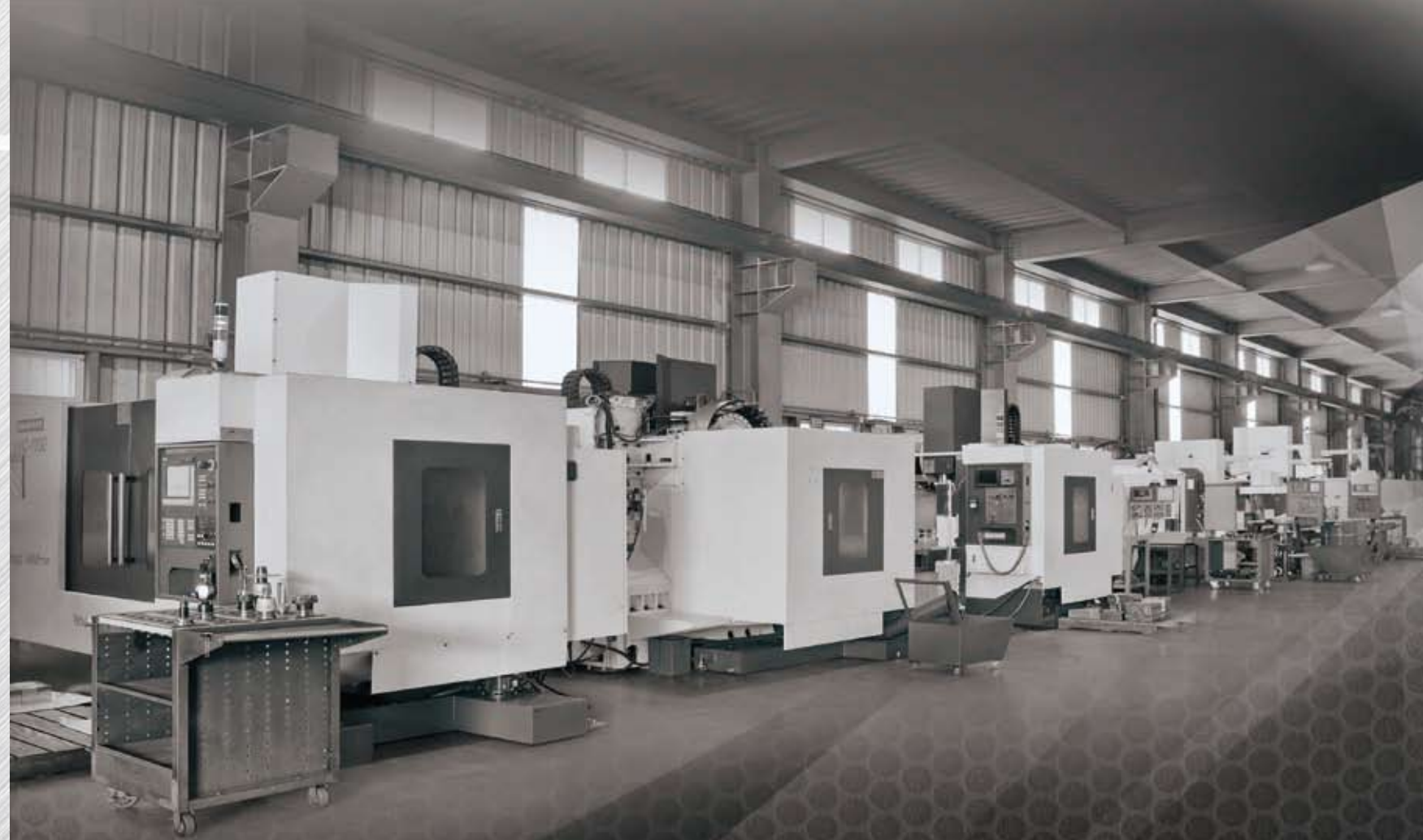


■ SPINDLE NOISE & VIBRATION CHECK

Optional accessories:

- BT40 10000/12000rpm belt type spindle
- Spindle oil cooler
- Air conditioner for electrical box
- Coolant through spindle center close loop 30/70BAR
- Screw type chip conveyor with chip bucket (For full guarding)
- Steelbelt type chip conveyor with chip bucket (For full guarding)
- CE
- 4th axis
- Transformer

We machine the parts for ourselves



" A real view from Manford Machining Shop in Taichung factory"

Improvement, Sincerity, and Quality

Manford continued to focus on producing higher quality products while adhering to the "MIT" principles of production. The chosen parts for Avemax machines are all from local suppliers in Taiwan. Located in Taichung city, the core center of Taiwan machine tool industry, we have the most complete supply chain, which provides the best quality and fastest delivery under the strictest quality controls. We offer high quality machines for fair prices. Aside from our own brand, OEM/ODM cooperation is also one of our major streams of revenue. Our machines can be seen all around the world. We keep satisfying each customer's needs with the concept of "Improvement, Sincerity, and Quality".



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