



JOHNFORD

Vertical Machining Centers



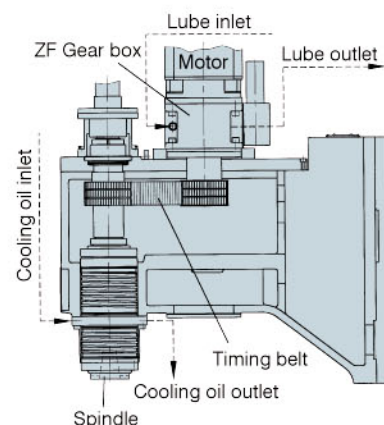
VMC-1300/1300HD/1300-2H
VMC-1600/1600HD/1600S/1600SHD
VMC-2000S/2000SHD/3000S/3000SHD

Vertical Machining Center

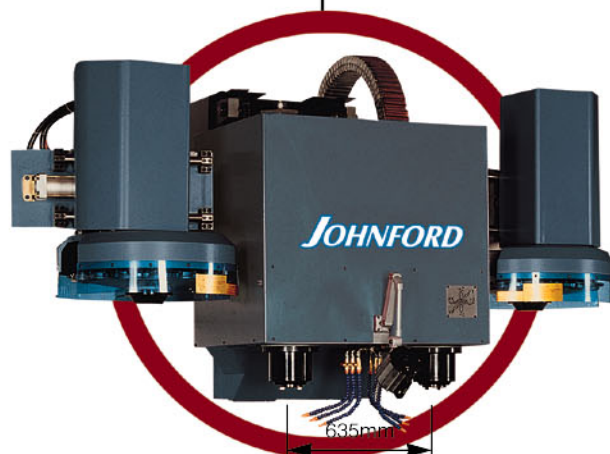


VMC-1300 / 1300HD / 1300-2H

Item	Model	VMC-1300	VMC-1300HD	VMC-1300-2H
Table working surface		1500 x 750 mm (59.1" x 29.5")		
X-axis travel		1300 mm (51")		
Y-axis travel		850 mm (33.5")		
Z-axis travel		800 mm (31.5")	710 mm (28")	
Spindle motor		11 / 7.5 kW	18.5 / 15 kW	15 / 11 kW
Table load capacity		3270 kg (7100 lb)		
Machine dimensions (LxWxH)		3800 x 4525 x 3480 mm (149.6" x 178.1" x 137")		3800 x 4525 x 3200 mm (149.6" x 178.1" x 126")
Machine weight		13500 kg (29700 lb)		14000 kg (30800 lb)

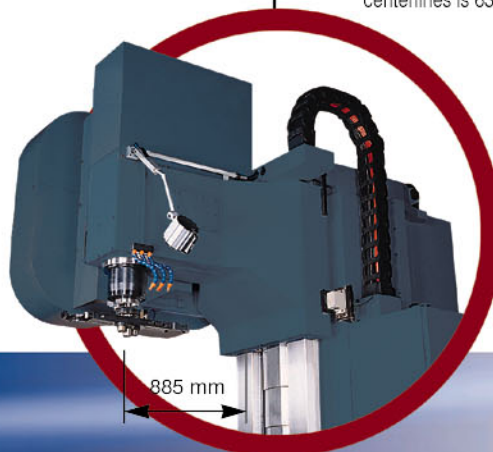


HD Type With ZF Gear Box



↑ Twin Spindle Head-2H

- The distance between two spindle centerlines is 635 mm.

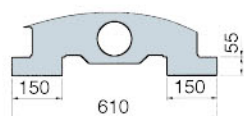


↑ Heavy-Duty Head-HD

- The distance between spindle center and column is 885 mm.

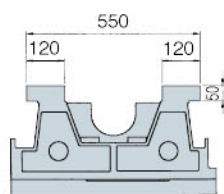
Symmetrical and High-rigid Structure

- High rigidity and mass Meehanite cast iron construction.
- One piece base with four guide ways.
- Turcite-B on 3 axes, best damping and strength

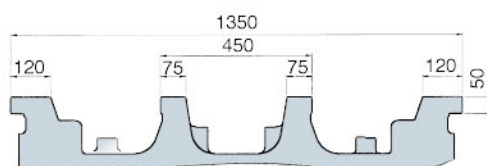


Column

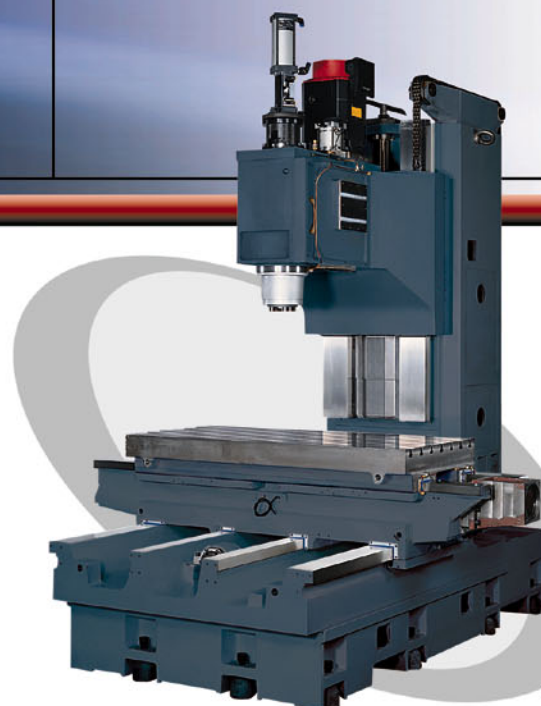
- ➔ High-Quality
- ➔ High-Reliability
- ➔ High-Stability



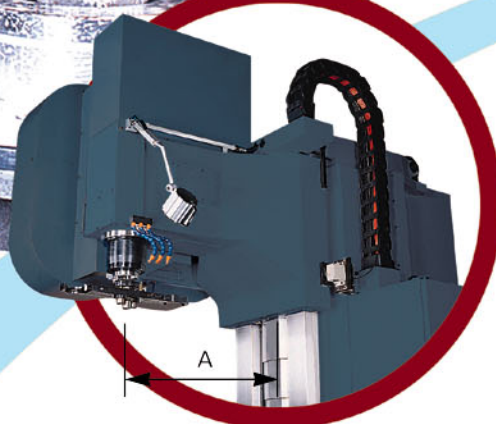
Saddle



Four guide ways on base



Vertical Machining Center



Heavy-Duty Head-HD

- Distance Between Spindle Center and Column

Model	A
VMC-1600 (No.40)	885 mm (34.8")
VMC-1600HD (No.50)	885 mm (34.8")
VMC-1600S (No.40)	1150 mm (45.3")
VMC-1600SHD (No.50)	1150 mm (45.3")

Highly Cost-Effective Machines

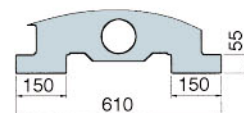
- Large capacity, high accuracy and rigid structure.
- Wide-machining area provides a wide range of operation.
- Maximum 4600kg (10000lb) table loading capacity ensures reliable machining of heavy workpieces.

Zero Table Overhang

- Overhang has been eliminated on all axes to ensure excellent rigidity and high machining accuracy.
- The thick-walled, well-ribbed and box-shaped casting structure.
- Hand scraped turcite-B on 3 axes ensures long term, static and dynamic accuracy.

VMC-1600 / 1600HD / 1600S / 1600

Item	Model	VMC-1600	VMC-1600HD	VMC-1600S	VMC-1600S
Table working surface		1800 x 750 mm (70.9" x 29.5")		1800 x 1000 mm (70.9" x 39.4")	
X-axis Travel		1600 mm (63")			
Y-axis Travel		850 mm (33.5")		1100 mm (43.3")	
Z-axis Travel		800 mm (31.5")	710 mm (28")	800 mm (31.5")	
Spindle motor		11 / 7.5 kW Auto Hi-Lo	18.5 / 15 kW Auto Hi-Lo	11 / 7.5 kW Auto Hi-Lo	18.5 / 15 kW Auto Hi-Lo
Table load capacity		4600 kg (10000 lb)			
Machine dimensions (LxWxH)		4500 x 4525 x 3480 mm (177.2" x 178.1" x 137")		4500 x 5330 x 3250 mm (177.2" x 209.8" x 128")	
Machine weight		17500 kg (38500 lb)		18600 kg (40920 lb)	

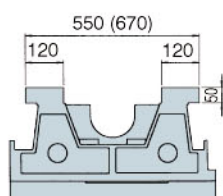


Column

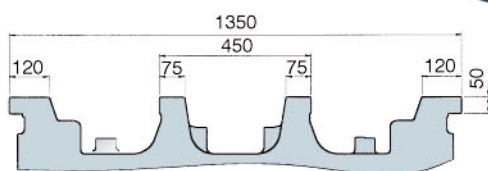


SHD

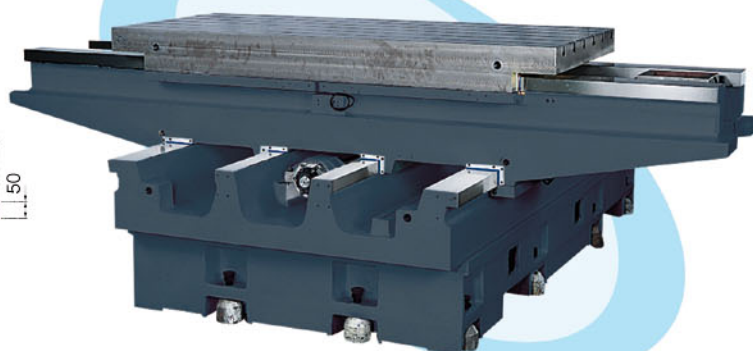
() For 1600S / 1600SHD



Saddle



Four guide ways on base

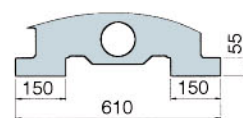


Vertical Machining Center

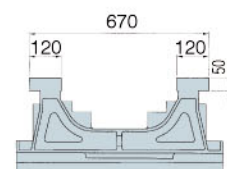


VMC-2000S / 2000SHD / 3000S / 3000SHD

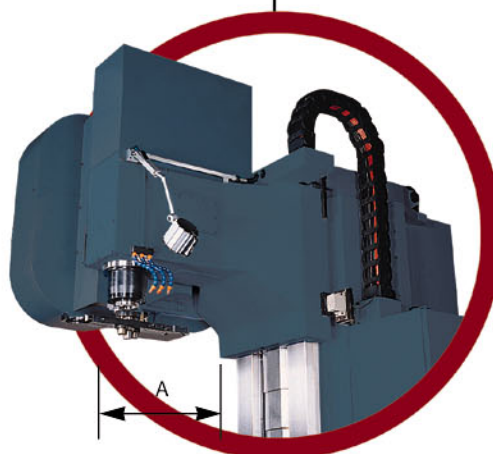
Item	Model	VMC-2000S	VMC-2000SHD	VMC-3000S	VMC-3000SHD
Table working surface		2200 x 1000 mm (86.6" x 39.4")		3200 x 1000 mm (126" x 39.4")	
X-axis Travel		2050 mm (80.7")		3050 mm (120")	
Y-axis Travel		1100 mm (43.3")			
Z-axis Travel		800 mm (31.5")			
Spindle motor		11 / 7.5 kW Auto Hi-Lo	18.5 / 15 kW Auto Hi-Lo	11 / 7.5 kW Auto Hi-Lo	18.5 / 15 kW Auto Hi-Lo
Table load capacity		4800 kg (10500 lb)			
Machine dimensions (LxWxH)		5500 x 5330 x 3250 mm (216.5" x 209.8" x 128")		7600 x 5330 x 3250 mm (299.2" x 209.8" x 128")	
Machine weight		20000 kg (44000 lb)		23000 kg (50600 lb)	



Column



Saddle



↑ Heavy-Duty Head-HD

■ Distance Between Spindle Center and Column

Model	A
VMC- 2000S 3000S (No.40)	1150 mm (45.3")
VMC- 2000SHD 3000SHD (No.50)	1150 mm (45.3")

High Total Accuracy

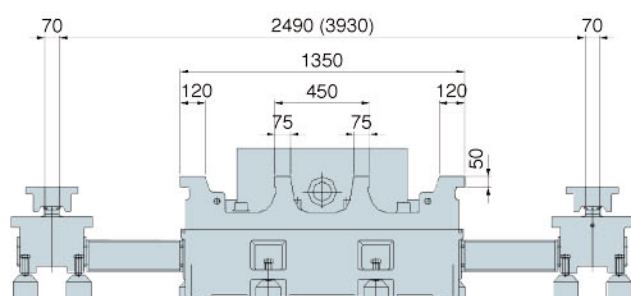
- The big box ways are on all 3 axes.
- The base is built with a wide distance between the guides.
- Extra wide saddle allows for full movement of the table without an overhang condition occurring.

Big Capacity for Jobs

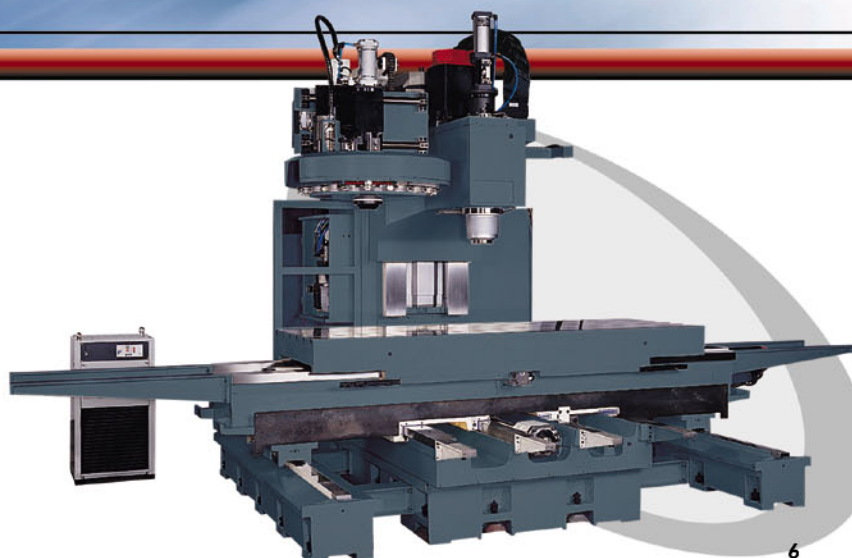
- These machines can take a workpiece up the weight of 4800kg.
- With ZF 2-step gearbox, the high torque spindle performs a heavy cutting.

000SHD

() For VMC-3000S / 3000SHD



High rigid guide ways on base



Automatic Pallet Changer

Chain Type (Patented)

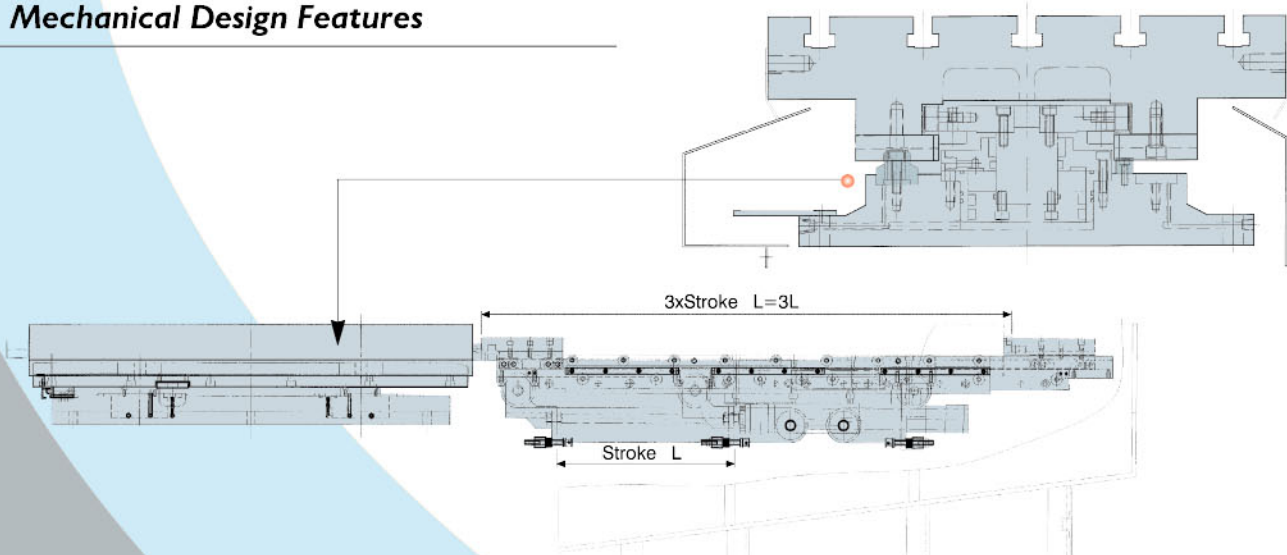
JOHNFORD designed, built and integrated APC is the best you will find. Our side load twin Pallet system is fast, yet heavy duty. A complete pallet exchange takes only 15 seconds, yet our heavy mechanism provides plenty of beef for fixtures and a load of parts. Our pallets are made of cast iron and are available T-slotted or drilled and tapped. Our hydraulic clamping mechanism provides twin large diameter cylinders for clamping. The pallets locate on precision ground hardened steel pins and bushings. Repeatability is excellent at .0001" !

APC Specifications	Model	VMC-1300+APC	VMC-1600+APC	VMC-1600S+APC
Pallet size (L x W)		1400 x 710 mm (55.1" x 28")	1700 x 750 mm (67" x 30")	1700 x 1000 mm (67" x 39.4")
Max. pallet load		800 kg (1762 lb)	900 kg (1982 lb)	1200 kg (2643 lb)
T-slot		18 mm (0.7")	18 mm (0.7")	18 mm (0.7")
Hydraulic clamping force		6000 kg (13216 lb)	9000 kg (19824 lb)	9000 kg (19824 lb)
Pallet change time		15 sec	15 sec	17 sec

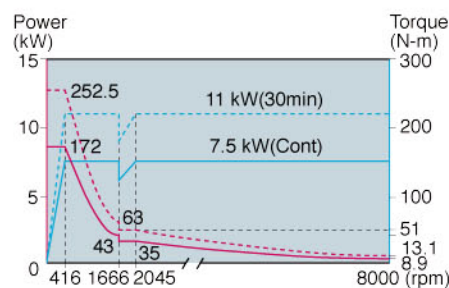
➔ VMC-1600HD+APC



Mechanical Design Features

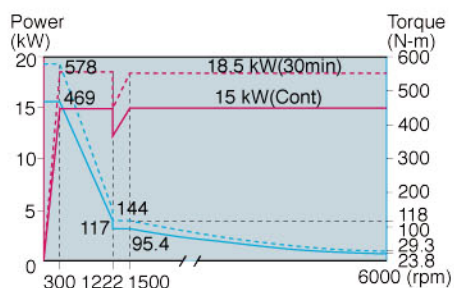


Spindle Power & Torque Chart



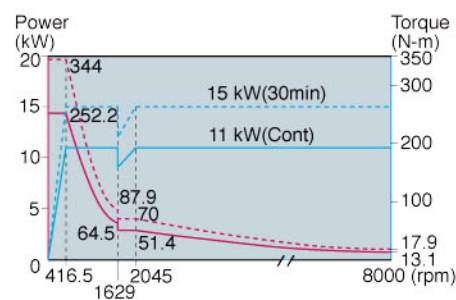
VMC-I300

■ (No.40) 8000 rpm ZF 2-step gear box



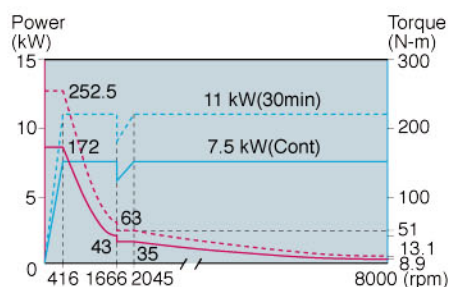
VMC-I300HD

■ (No.50) 6000 rpm ZF 2-step gear box (Opt.)
■ (No.50) 4500 rpm (Std.)



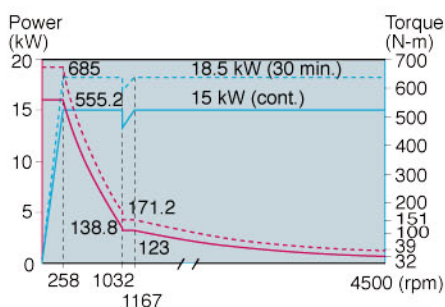
VMC-I300-2H

■ (No.40) 8000 rpm ZF 2-step gear box



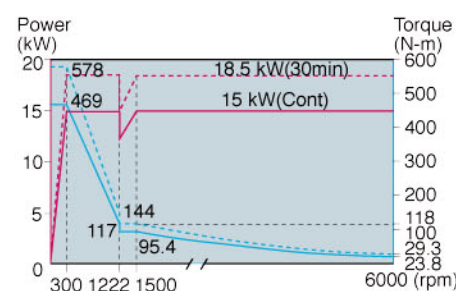
VMC-I600/I600S: (No. 40)

■ 8000 rpm ZF 2-step gear box



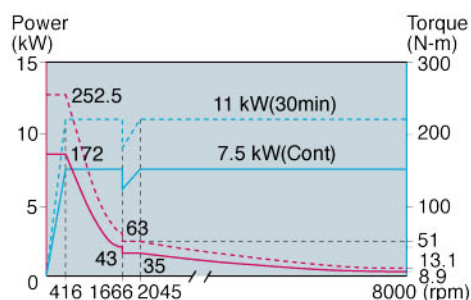
VMC-I600HD/I600SHD: (No. 50)

■ 4500 rpm 2-step gear box (Std.)



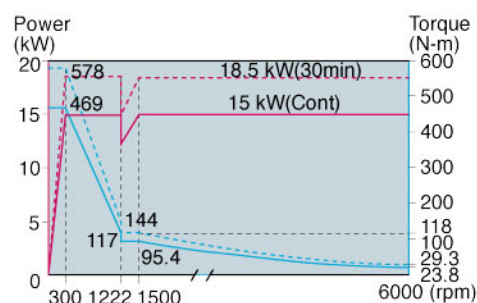
VMC-I600HD/I600SHD: (No.50)

■ 6000 rpm ZF 2-step gear box (Opt.)



VMC-2000S/3000S: (No. 40)

■ 8000 rpm ZF 2-step gear box

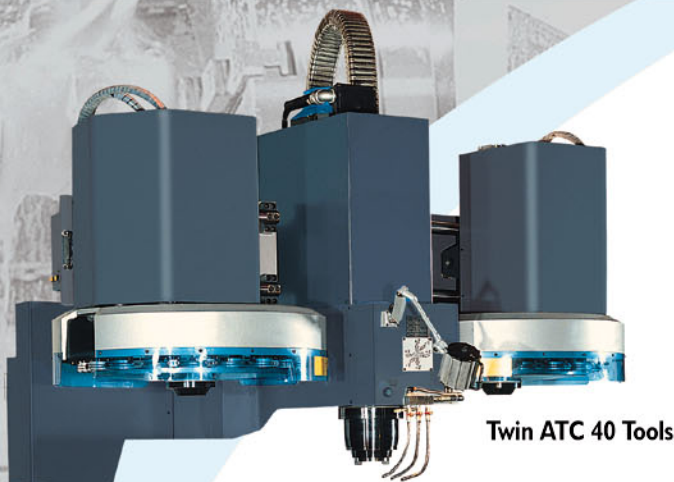


VMC-2000SHD/3000SHD: (No. 50)

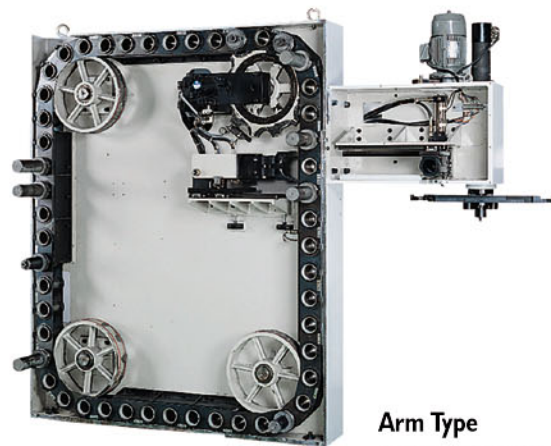
■ 6000 rpm ZF 2-step gear box

Different Accessories for Your C

ATC Units



Twin ATC 40 Tools



Arm Type

■ 50 tools or more for
BT/CAT 40, BT/CAT 50



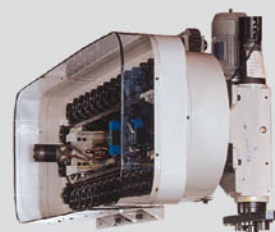
Armless Type

■ 24 tools for BT/CAT-40
■ 20 tools for BT/CAT-50



Arm Type

■ 24 tools for BT/CAT-40
■ 24 tools for BT/CAT-50

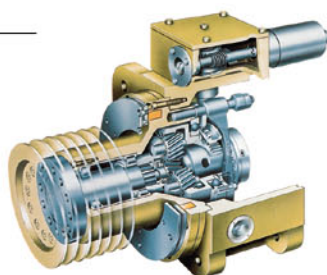


Arm Type

■ 32 tools for
BT/CAT-40, BT/CAT-50

Gear Box

- Delivers high torque.
- ZF 2 speed automatic gear box,
- No noise generated,
- No heat transmitted,
- No gear vibration,
- High efficiency (over 95%)

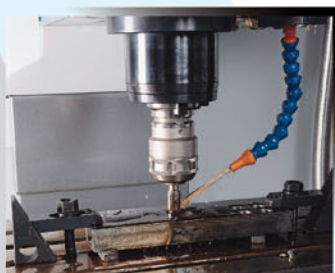


Cooler

- High efficiency.
- Powerful cooling performance.



Standard Features-Great Equipment



Rigid tapping



High pressure coolant
(P:3.5 kg/cm², Q:100 l/min)

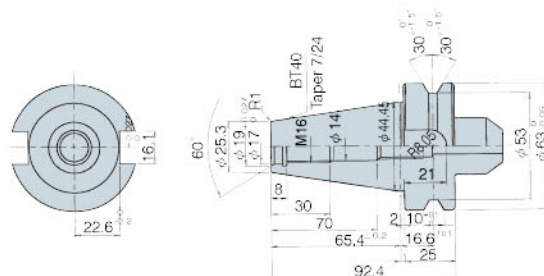
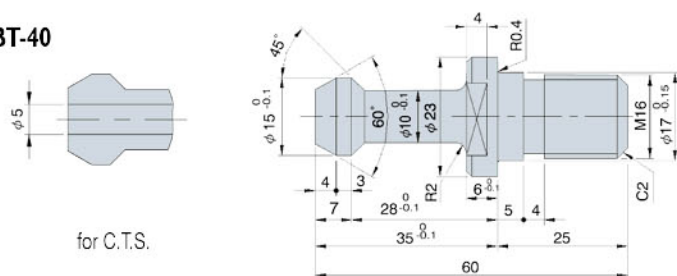


Automatic chip removal
(Screw type chip conveyor)

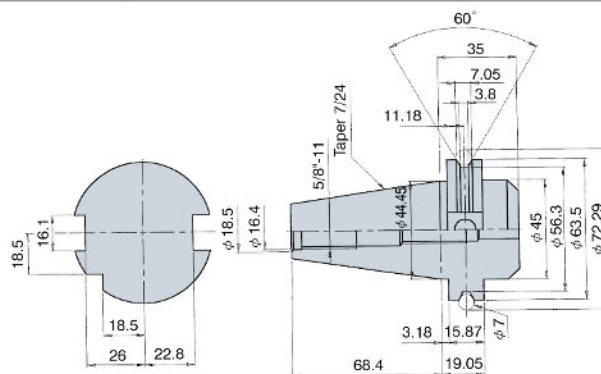
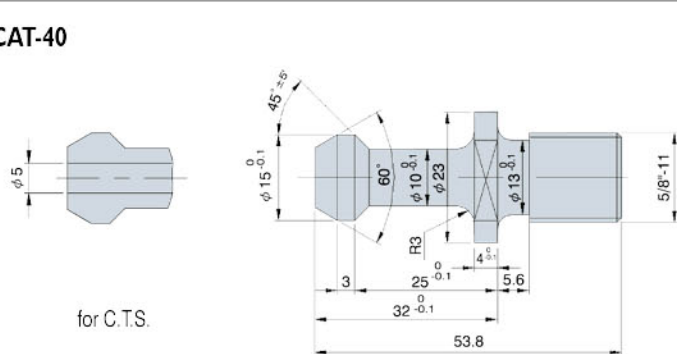


Remote handwheel

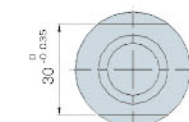
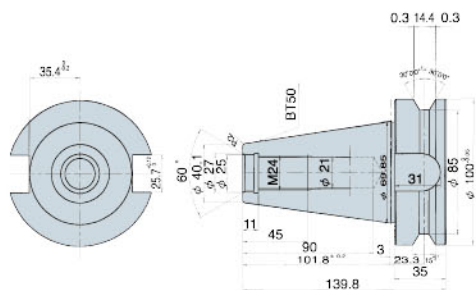
for C.T.S.



for C.T.S.

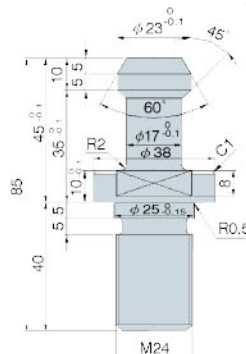
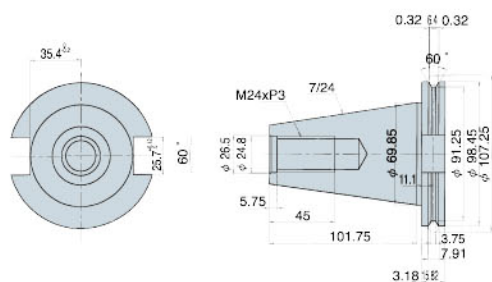


For BT-50/CAT-50
Tool shank (Std.)

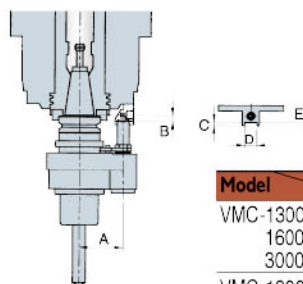
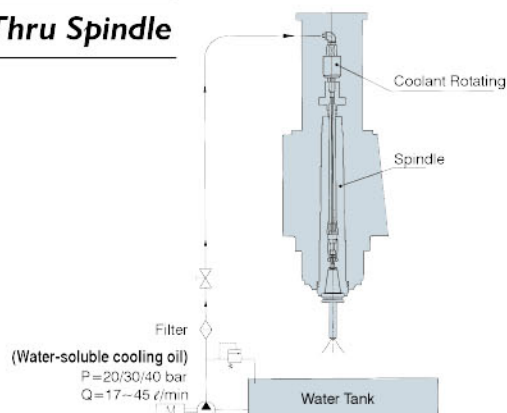


for C.T.S.

Coolant Thru Tool Tip



Coolant Thru Spindle

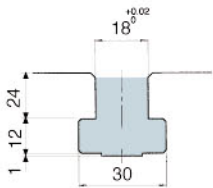


Model \ Item	Taper No.	A	B	C	D	E
VMC-1300/1300-2H 1600/2000S 3000S	No.40	65	9	5	18	25.5
VMC-1300HD/1600HD 2000SHD/ 3000SHD	No.50	80	23.5	5	18	36.5

Dimensions

VMC-1300/1300HD/1600/1600HD

() for VMC-1300/1300HD



T-Slot

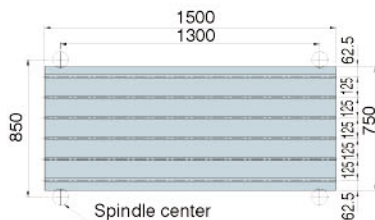
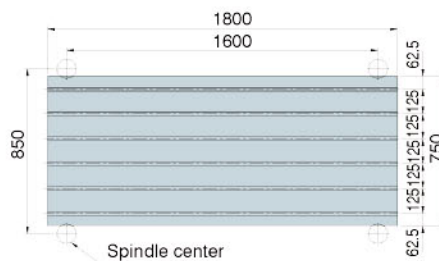
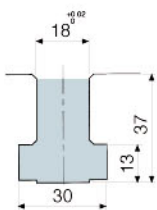
**Table (VMC-1300/1300HD)**

Table (VMC-1600/1600HD)

VMC-1600S/1600SHD/2000S/2000SHD/3000S/3000SHD

() for VMC-2000S/2000SHD [] for VMC-3000S/3000SHD



T-Slot

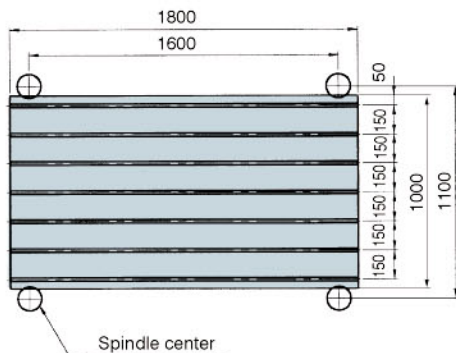
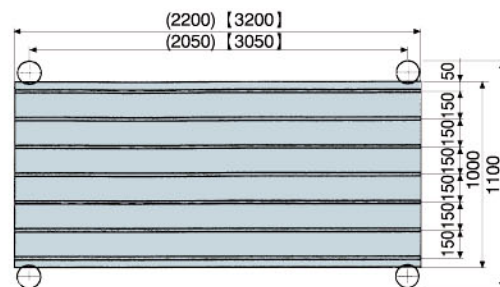


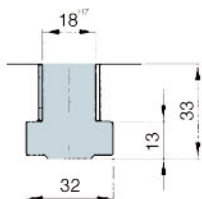
Table (VMC-1600S/1600SHD)

**Table (VMC-2000S/3000SHD)**

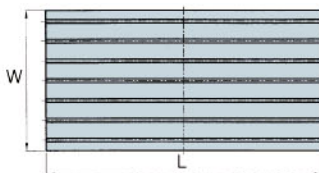
VMC-1300/1600+APC

Unit: mm

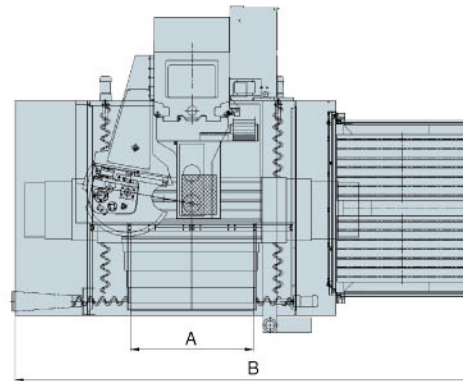
Model \ Item	A	B	C	D	E	F	G	H	I	J	K	L	W
VMC-1300+APC	1320	5132	850	3445	1690	1305	1910	1275	3065	480	3180-3890	1400	710
VMC-1600+APC	1720	6100	850	4185	1915	1276	1880	1250	3065	480	2955-3665	1700	750



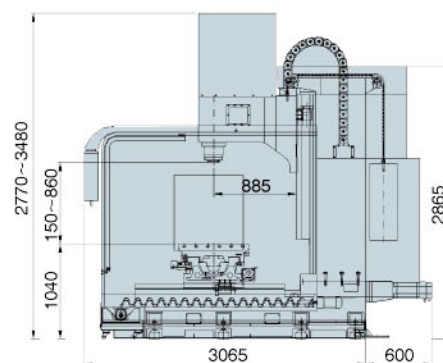
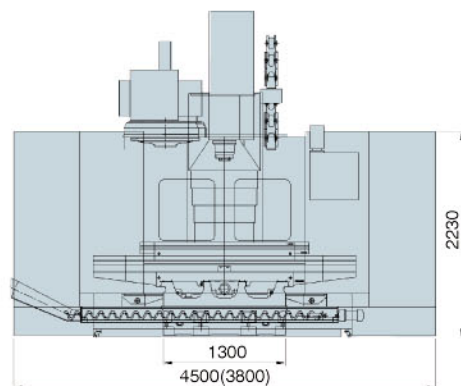
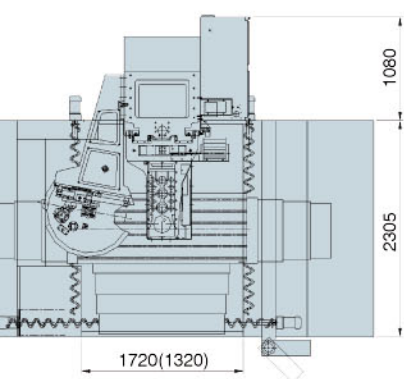
T-Slot



Table



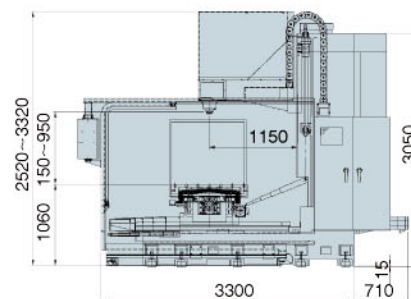
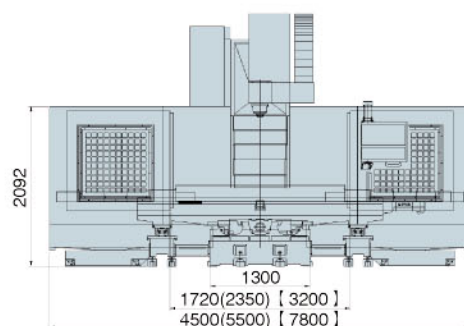
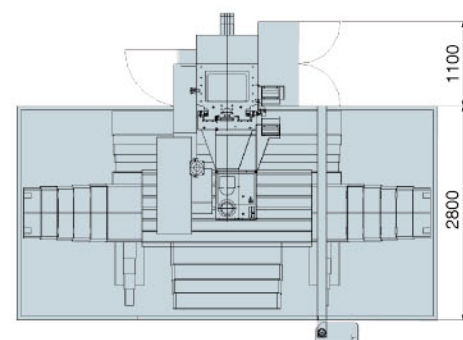
Top View (floor space required)



Top View (floor space required)

Front View

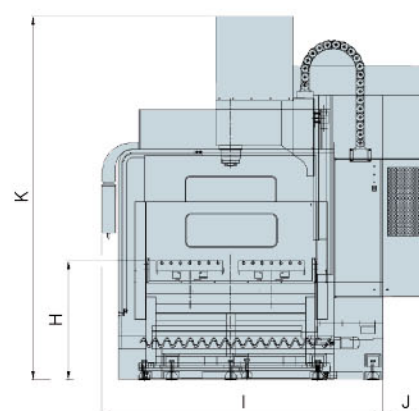
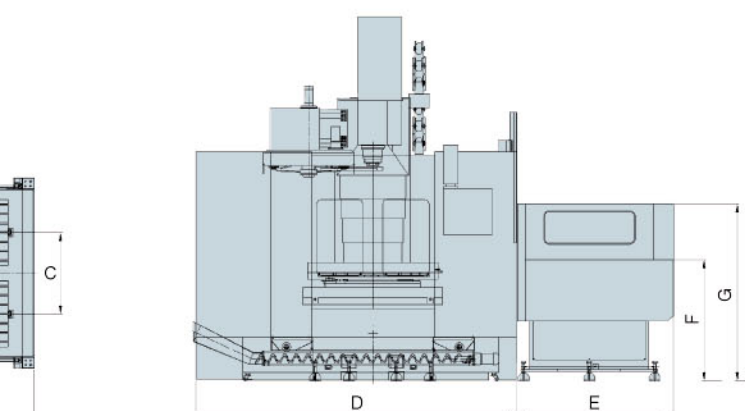
Side View



Top View (floor space required)

Front View

Side View



Front View

Side View

Specifications

Model Item	No.40	VMC-1300-2H	VMC-1300	VMC-1600	VMC-1600S	VMC-2000S	VMC-3000S
	No.50		I300HD	I600HD	I600SHD	2000SHD	3000SHD
Table working surface		1500x750 mm (59.1" x 29.5")		1800 x 750 mm (70.9" x 29.5")	1800 x 1000 mm (70.9" x 39.4")	2200 x 1000 mm (86.6" x 39.4")	3200 x 1000 mm (126" x 39.4")
Longitudinal travel (X)		1300 mm (51.2")		1600 mm (63")		2050 mm (80.7")	3050 mm (120")
Cross travel (Y)		850 mm (33.5")			1100 mm (43.3")		
Vertical travel (Z)	No.40	710 mm (28")	800 mm (31.5")				
	No.50		710 mm (28")		800 mm (31.5")		
Spindle nose to table	No.40	160-870 mm(6.3" -34.3")	150~950 mm (5.9" -37.4")		150~950 mm (5.9"~37.4")		
	No.50		150~860 mm (5.9" -33.9")				
Spindle center to column		885 mm (34.8")	885 mm (34.8")		1150 mm (45.3")		
Distance between two spindles		635 mm (25")					
Spindle taper		BT-40 / CAT-40		For VMC- 1300 1600 1600S 2000S 3000S	BT-50 / CAT-50		1300HD 1600HD For VMC- 1600SHD 2000SHD 3000SHD
Spindle diameter		70 mm (2.8")			100 mm (3.9")		
Spindle speed		Auto. Hi-Lo Gear 80-8000 rpm			Auto. Hi-Lo Gear 10-4500 rpm		
Spindle motor		11 / 15 kW	7.5 / 11 kW		15 / 18.5 kW		
X-Y-Z Rapid traverse		18-18-12 m/min				15-15-12 m/min	12-12-12 m/min
Cutting feed		1-12000 mm/min				1-8000 mm/min	
No.of tools		Armless 24x2	BT-40 / CAT-40: Armless 24, Arm type 24 / 32 (Opt.) BT-50 / CAT-50: Armless 20, Arm type 24 / 32 (Opt.)				
Adjacent pockets Max. tool dia.		BT-40 / CAT-40, 75 mm (3")			BT-50 / CAT-50, 125 mm (5")		
Max. tool diameter		100 mm (3.9")	BT-40 / CAT-40 For VMC- 1300 1300-2H 1600 1600S 2000S 3000S		250 mm (9.8")	BT-50 / CAT-50 For VMC- 1300HD 1600HD 1600SHD 2000SHD 3000SHD	
Max. tool length		320 mm (12.6")			400 mm (15.7")		
Max. tool weight		10 kg (22 lb)			15 kg (33 lb)		
Table load capacity		3270 kg (7194 lb)		4600 kg (10120 lb)		4800 kg (10560 lb)	
Machine weight		14000 kg (30800 lb)	13500 kg (29700 lb)	17500 kg (38500 lb)	18600 kg (40920 lb)	20000 kg (44000 lb)	23000 kg (50600 lb)
Machine dimensions (LxWxH)		3800x4525x3200 mm (149.6"x178.1"x126")	3800x4525x3480 mm (149.6"x178.1"x137")	4500x4525x3480 mm (177.2"x178.1"x137")	4500x5330x3250 mm (177.2"x209.8"x128")	5500x5330x3250 mm (216.5"x209.8"x128")	7600x5330x3250 mm (299.2"x209.8"x128")
X-Y-Z Ball screw dia.		φ 50, φ 50, φ 50			φ 50, φ 63, φ 50	φ 63, φ 63, φ 50	
Cutting capacity (S45C)	milling	160 cc/min	180 cc/min	For VMC- 1300 1600 1600S 2000S 3000S	320 cc/min	For VMC- 1300HD 1600HD 1600SHD 2000SHD 3000SHD	
	drilling	φ 30 mm	φ 40 mm		φ 52 mm		
	tapping	M24 x P3.0	M30 x P3.5		M50 x P4.5		

■ All data subject to change without notice.

■ All the specifications are listed with the FANUC CNC system.

Standard Accessories:

1. Coolant system
2. Spindle air blast
3. Auto lubrication with alarm
4. Halogen working lamp
5. Tools, tool box and various manuals
6. Twin spindle/ Twin ATC (VMC-1300-2H)
7. Screw type chip conveyor
8. Full enclosure splash guard
9. Spindle cooler unit (for VMC-HD,SHD series)
10. FANUC Oi-MC Controller

Optional Accessories:

1. Contact / non-contact tool setting system
2. CNC Rotary table
3. Automatic pallet changer (for VMC-1300/HD, 1600/HD)
4. Twin ATC (for VMC-1300)
5. High pressure coolant thru tool tip
6. High pressure coolant thru spindle (20 bar/30 bar)
7. Chain type chip conveyor

CNC Control Specs

O: Std. △: Opt. -: Nil

Item	Function	Specifications	HEIDENHAIN		FANUC			SIEMENS	
			TNC410	iTNC530	18iMB	21iMB	0iMC	810D	840D
Control axes	Standard number of control axes	axes	4	3	3	3	3	4	4
	No. of simultaneously controlled axes	axes	3	3	3	3	3	4	4
Input commands	Least detection increment	1μ	1μ	0.1μ	1μ	1μ	1μ	1μ	1μ
	Least programmable increment	1μ	1μ	0.1μ	1μ	1μ	1μ	1μ	1μ
	Inch/metric conversion	1	0	0	0	0	0	0	0
	Absolute/incremental command	G90/G91	0	0	0	0	0	0	0
	Input buffer	word/characters	1024	unlimited	6	6	1	unlimited	unlimited
	Pre-read buffer (No-of block)	block	30	256	180	80	20	100	300
	ISO/EIA automatic identification		0	0	0	0	0	0	0
Interpolation	RS232-C interface		0	0	0	0	0	0	0
	Positioning (interpolation)	G00	0	0	0	0	0	0	0
	Linear interpolation	G01	0	0	0	0	0	0	0
	Circular interpolation	G02/G03	0	0	0	0	0	0	0
	Helical interpolation		0	0	0	0	0	0	0
Program	Rigid Tapping		0	0	0	0	0	0	0
	Memory capacity		256 KB	6 GB	640M	640M	640M	1.5MB	2.5MB
	No. of programs stored		100	unlimited	200	200	200	unlimited	unlimited
	Background editing		0	0	0	0	0	0	0
Spindle functions	S code output 4-digit BCD-binary	S4BCD	0	0	0	0	0	0	0
	Spindle rate	%	0-150		50-150			50-200	50-200
Feed	Per-minute		0	0	0	0	0	0	0
	Rapid traverse rate	low25%,50%,100%	-	-	0	0	0	0	0
	Cutting feed rate	0%-150%	0	0	0-200			0	0
	Handle feed rate	x1.x10.x100	-	-	0	0	0	0	0
Miscellaneous function	M-code	M2(BCD)	0	0	0	0	0	0	0
Coordinate system	Automatic coordinate system setting		-	-	0	0	0	0	0
	Machine coordinate system		0	0	0	0	0	0	0
	Work coordinate system	G54-G59	0	0	0	0	0	0	0
	Coordinate system setting	G92	0	0	0	0	0	0	0
	Manual reference point return		0	0	0	0	0	0	0
	Automatic reference point return	G28/G29	-	-	0	0	0	0	0
	2nd reference point return	G30	-	-	0	0	0	0	0
Tool function	Reference point return verify	G27	-	-	0	0	0	0	0
	Tool command	T2 BCD	0	0	0	0	0	0	0
	Tool length offset	G43/G44/G49	-	-	0	0	0	0	0
	Cutter compensation C	G40/G41/G42	0	0	0	0	0	0	0
Operation	Number of offset sets		999	999	400	400	400	unlimited	unlimited
	Single block		0	0	0	0	0	0	0
	Block skip		0	0	0	0	0	0	0
	Dry run		0	0	0	0	0	0	0
	Machine lock		△	△	0	0	0	△	△
	Option stop	M01	0	0	0	0	0	0	0
	Miscellaneous function lock	M.S.T.lock	0	0	0	0	0	0	0
	Manual/Absolute ON/OFF		0	0	0	0	0	0	0
Programming support function	PLC switch		0	0	0	0	0	0	0
	Sub-program control	M98, M99	0	0	0	0	0	0	0
	Corner chamfering/corner rounding		0	0	△	△	0	0	0
	Canned cycle for drilling	G80-G89	0	0	0	0	0	0	0
	Automatic corner override		0	0	△	△	0	0	0
	User macro		0	0	0	0	0	0	0
	No. of variable command sets		unlimited	unlimited	500	500	500	unlimited	unlimited
	Backlash compensation		0	0	0	0	0	0	0
	Memory-type pitch error compensation		0	0	0	0	0	0	0
	Coordinate system rotation	G68/G69	0	0	△	△	0	0	0
Measurement function	Scaling	G50/G51	0	0	△	△	0	0	0
	Polar coordinate command	G15/G16	0	0	△	△	0	0	0
	Skip function		0	0	0	0	0	0	0
Safe protect	Tool length automatic measurement		0	0	△	△	△	0	0
	Emergency stop		0	0	0	0	0	0	0
	Travel protected		0	0	0	0	0	0	0
Other	Program protected		0	0	0	0	0	0	0
	CRT		10.4" LCD	15" LCD	10.4"LCD	10.4"LCD	7.2"MON LCD	10.4"LCD	10.4"LCD
	MDI	Full key	0	0	0	0	0	0	0
	Languages	English/Japaness	10	10	7	7	7	7	7
	Parts count		0	0	0	0	0	-	-
	Run hour display and parts count		0	0	0	0	0	-	-
	Graphic display		0	0	0	0	0	0	0
	4th axis interface		0	△	0	0	0	0	0
	Menu programming		0	0	0	0	0	0	0
	Conversational programming with graphic function	Manual guide	0	0	△	△	△	△	△
	Mirror function		0	0	0	0	0	0	0
	Chinese, French, German, Italian, Spanish		0	0	0	0	0	0	0
	High-precision contour control	64 bit RISC	-	△	△	-	-	△	△
	Data server (HD)		-	0	△	△	△	△	△
	ETHERNET		-	0	0	0	△	△	△

■ All data subject to change without notice.



***Whatever You Need
for Milling and Turning
We Offer the Best.***



ROUNDTOP MACHINERY INDUSTRIES CO., LTD.

No.1056, Zhongshan Rd., Shengang Shiang,

Taichung County 429, Taiwan (R.O.C.)

Tel : 886-4-2562-4721

Fax: 886-4-2561-3886

<http://www.johnford.com.tw>

E-mail: johnford@johnford.com.tw

USA AGENT

ABSOLUTE MACHINE TOOLS, INC.

7420 Industrial Parkway Lorain, Ohio 44053

Phone: 440/960-6911 or 1-800-852-7825

Fax: 440/960-6918

Website: www.absolutemachine.com

E-mail: www.amtsales@absolutemachine.com