

# FUTURE READY

# Vajra



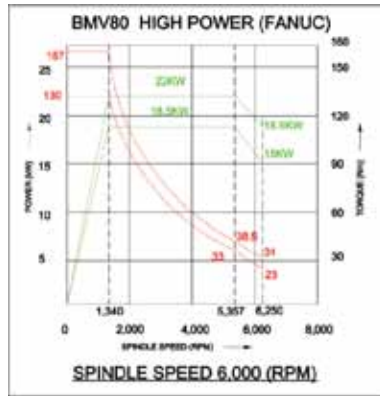
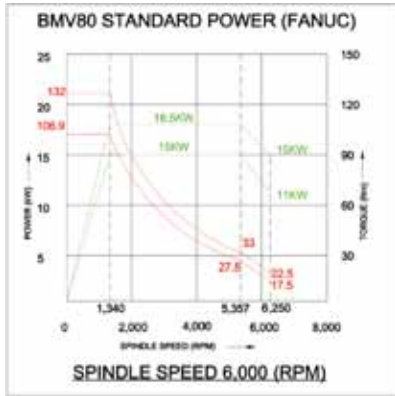
*For precise machining  
of large components!*

# Vajra

## BMV80 Series CNC Vertical Machining Centers

Vajra variants BMV80, BMV80 T20, BMV80 TC24, BMV80 TC20

### Spindle Characteristics

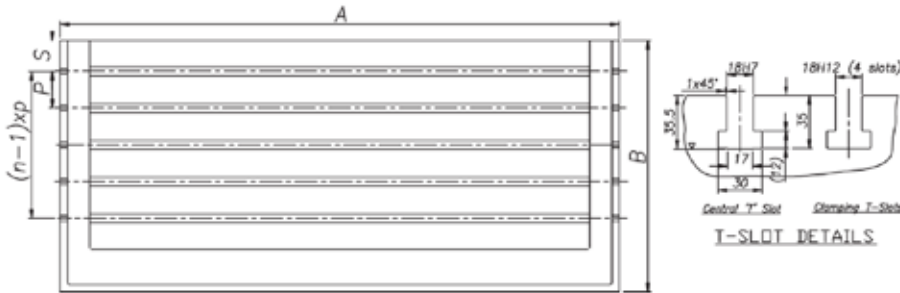


The CE marked Vajra stands true to international standards. The rigid structure of the Vajra has been created specially for your long run with profits. The optimally designed Vajra is your best choice for cost effective machining.

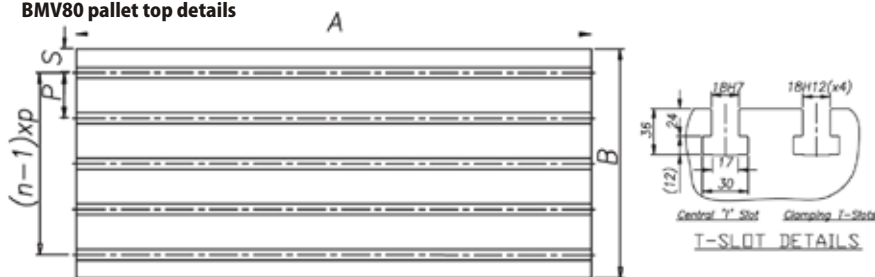
The arm type tool magazine uses variable pocket coding. Linear motion guide-ways, variable speed AC spindle drives, and CNC system with digital drive are some outstanding features of this BMV series vertical machining center.

### Table Top and Pallet Top Details

BMV80 table top details



BMV80 pallet top details



High quality balanced spindle on large precision bearings eliminates vibration and offers accurate machining under heavy load



TC 24 high speed 24-pocket arm type tool magazine reduces non-cutting time

MODEL	CLAMPING AREA		T - SLOTS		
	A	B	S	n	P
TABLE	2,400	810	105	5	150
PALLET	2,000	750	125	5	125

P - CD between T-slots  
n - number of T-slots

Note: Pallet changer not available on model BMV80 T20



## CNC Functions

- Linear interpolation
- Circular interpolation
- Helical interpolation
- Absolute/incremental programming
- Tool radius compensation
- Canned cycles for drilling, milling (fixed on M70)
- 56 pairs work piece co-ordinate system (51 for 828D)
- Cutter compensation
- Background editing (any time edit on 828D)
- Automatic data backup (optional on OiMD/ data backup in CF card on 828 D)
- Cylindrical interpolation (optional on 828D/ M70)
- Backlash compensation
- Pitch error compensation
- Polar co-ordinate command
- Scalling, mirroring
- History of operator alarms and messages
- Look-ahead function
- Custom macro/ parametric programming
- Simple tool life management (optional on 828D)
- Multi-language display
- Programme restart/ block search in CF card
- Programme edit in CF card (optional on OiMD)
- Nano interpolation
- Manual pulse generator

### Options

- 4<sup>th</sup> axis
- 4<sup>th</sup> and 5<sup>th</sup> axis

## CNC Features

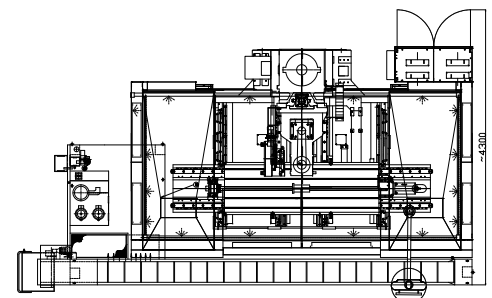
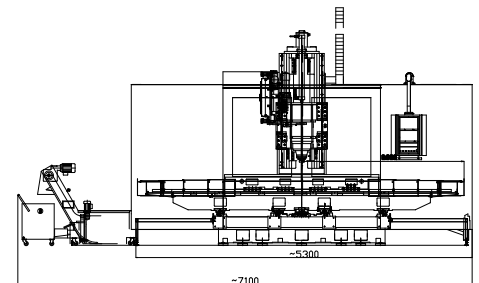
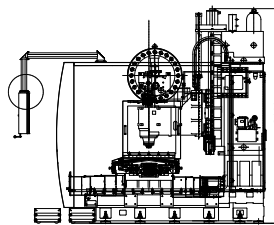
FEATURE\ SYSTEM	FANUC OI MD	SIEMENS 828D	MITSUBISHI 70
Display	8.4" colour LCD	8.4" colour TFT	8.4" colour LCD
Maximum number of feed axes	4 (7)		3 (5)
Simultaneously controllable axes	4		
Minimum input increment	0.001 mm, 0.001"		
Spindle speed function	5-digit S code		
Spindle speed override	50 % ~ 120 % (in steps of 10%)		
Feed override	200 % (in steps of 10%)	0 % ~ 120 %	200 % (in steps of 10%)
Feed rate command	4-digit F code		
Inch to mm conversion	S		
Part programme storage length	512 kB (2 MB)	1 MB	230 kB
Number of part programmes	400	300	200
Sub-programme call	10 levels	11 levels	8 levels
Number of tool offsets	400	160	200
Programme number/ sequence number search	S	S	S
Single block	S	S	S
O stop	S	S	S
Dry run	S	S	S
DNC operations	RS232C/ PCMCIA		
Run hour and part count	S	S	S
Help function	S	S	S
Graphic display	S	S	S
Embedded ethernet	S	S	S
Front USB interface	O	S	NA
Fast Ethernet/ data server	O	S	S
Machining condition selection	O	S	S
High speed skip (probe function)	S	S	S
Dynamic graphic display	O	O	NA

## Standard and Optional Features

	BMV80	BMV80 T20	BMV80 TC24	BMV80 TC20
AC servo drives	S	S	S	S
AC variable speed spindle motor	S	S	S	S
Hardened and ground linear motion guide-ways	S	S	S	S
Hardened and ground ball-screws	S	S	S	S
Feedback through absolute encoder	S	S	S	S
Automatic tool clamping-unclamping	S	S	S	S
Centralised automatic lubrication	S	S	S	S
Spindle taper air blow	S	S	S	S
Rigid tapping	O	S	S	S
Basic coolant system with chip tray	S	S	S	S
Telescopic covers with wipers	S	S	S	S
Full machine guard	S	S	S	S
Hydraulic counterbalance	S	S	S	S
Manual pulse generator	S	S	S	S
RS 232 serial interface	S	S	S	S
Levelling pads	S	S	S	S
Maintenance tool kit	S	S	S	S
Machine lamp	S	S	S	S
Operation and maintenance manual	S	S	S	S
AC for electrical cabinet	O	O	O	O
8,000/ 10,000 rpm spindle with chiller unit	O	O	O	O
18.5/ 22 kW spindle	O	O	O	O
Chip conveyor in lieu of coolant tank with chip tray	O	O	O	O
Linear glass scale feedback (for 2/ 3 axes)	O	O	O	O
High pressure coolant through spindle	O	O	O	O
4 <sup>th</sup> axis provision	O	O	O	O
CNC rotary axis as 4 <sup>th</sup> axis	O	O	O	O
Automatic pallet changer with twin pallets	O	NA	O	O
Edge finder	O	O	O	O
High column	O	O	O	O
Voltage stabiliser	O	O	O	O
Oil skimmer	O	O	O	O
3-tier lamp	O	O	O	O
Coolant gun	O	O	O	O
Air gun	O	O	O	O
Ring coolant around spindle	O	NA	O	O
40-tool changer with BT 50	NA	NA	NA	O
24-tool changer with BT 50	NA	NA	O	O

S: Standard, O: Optional, NA: Not applicable

## Machine Dimensions



Note: Siemens' model 840D SL and Mitsubishi's model M720 available as option. Data within parentheses indicates option available

S: Standard,  
O: Optional,  
NA: Not applicable

Specifications	Unit	BMV80	BMV80 T20	BMV80 TC24	BMV80 TC20
<b>Table</b>					
Clamping area	mm x mm	810 x 2,400			
Number/ width/ CD of T-slots	Nos/ mm/ mm	5/ 18/ 150			
Maximum safe load on table	kg	2,500			
Table top - spindle face distance	mm	100 - 910 (480 - 1,290)			
<b>Traverse</b>					
X-axis	mm	2,000			
Y-axis	mm	810			
Z-axis	mm	810			
<b>Axis Drive</b>					
Feed rate	mm/min	1-10,000			
Rapid traverse X/ Y/ Z	m/min	15/ 15/ 15			
<b>Spindle</b>					
Fanuc, cont./ 30 min. rating	kW	15/ 18.5 (18.5/ 22)			
Mitsubishi, cont./ 30 min. rating		15/ 18.5 (18.5/ 22)			
Siemens, cont./ S6/ 40 %		15/ 22.5 (18.5/ 27.7)			
Taper	rpm	BT 40 (BT 50)	BT 40	BT 40	BT 50
Speed	rpm	6, 000 (8,000/ 10,000)			6, 000
<b>Automatic Tool Changer</b>					
Number of tools	Nos	-	20	24	20 (24, 40)
Maximum tool diameter with adjacent pocket full/ empty	mm	-	80/ 125	75/ 140	130/ 220 110/ 200, 127/ 250
Maximum tool length	mm	-	250		
Maximum tool weight	kg	-	8	8	15
Type of tool selection		-	Umbrella	Arm	
Tool changing time (tool to tool)	s	-	9	2.5	4.8
<b>Automatic Pallet Changer</b>					
Number of pallets	Nos.	2	-	2	2
Pallet size	mm x mm	750 x 2,000	-	750 x 2,000	
Maximum safe load per pallet	kg	1,250	-	1,250	
<b>Accuracy (as per VDI/ DGQ 3441 standard)</b>					
Positioning	mm	0.020			
Repeatability	mm	0.012			
<b>Machine Weight and Size</b>					
Machine weight	kg	15,000	15,500	16,300	16,000
Width	mm	5,300			
Depth	mm	3,700			
Height	mm	3,600			
<b>Installation Data</b>					
Pneumatic supply	bar	6			
Total connected load	kVA	35	40		
Power supply		415 V, 50 Hz, 3 Phase			
<b>CNC System</b>		Fanuc/ Siemens/ Mitsubishi			

Note: Figures within parentheses are optional

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