

BMV 60+

Vertical Machining Center - Chakra+

End-to-end Range of Machining Centers



Sustained Quality Performance Over the Years

Rigidity | Modularity | Productivity

www.bfwindia.com
Toll Free: 18004253332

BFW
Bharat Fritz Werner

BMV 60+

Vertical Machining Center BMV 60+ or Chakra +

Series: BMV 60+ | BMV 60+ TC 24 | BMV 60+ TC20

The word Chakra+ comes from an ancient Indian language known as Sanskrit, chakra means vortex, spinning wheel or circle. The BMV60+ series vertical machining center chakra redefines precision machining standards! The rigid structure, small foot print, and precise spindle ensure sustained high quality performance. The high speed and feed rate fulfils the criteria necessary for cost effective machining.

The arm type tool magazine uses variable pocket coding. LM guide ways, variable speed AC spindle drives, CNC system with digital drive are some outstanding features of this BMV 60 series machining center.

It has fixed (non-moving) column structure, rectangular table, no indexing rotation function, suitable for chatter free precision machining under extreme working conditions.

BMV60+ offers some of optional features for unmatched performance high-end CNC system, automatic pallet changer with twin pallets, 2/3 axis linear glass feedback, higher spindle speed with chiller unit 8000/ 10000 rpm etc.



◀ Structure

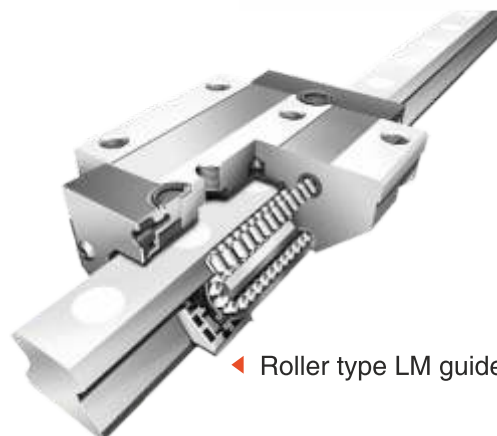
Rigid structure of high quality, stress relieved casting and thermo symmetrically arranged LM guide-ways for chatter free precision machining under extreme working conditions.

Tool Magazine



◀ Spindle

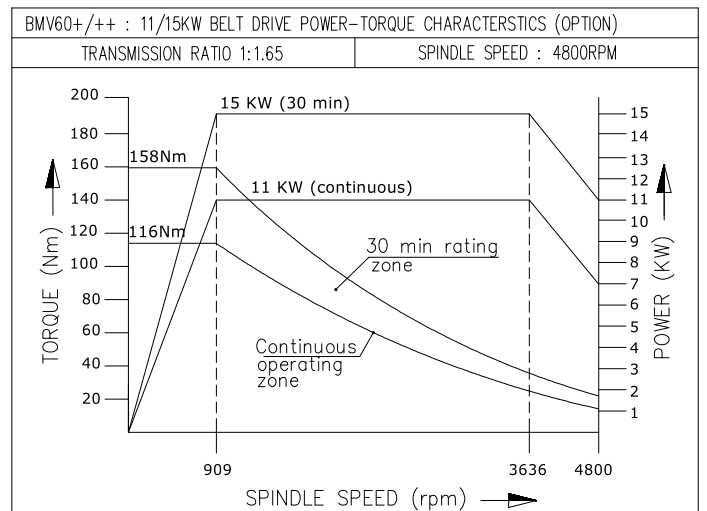
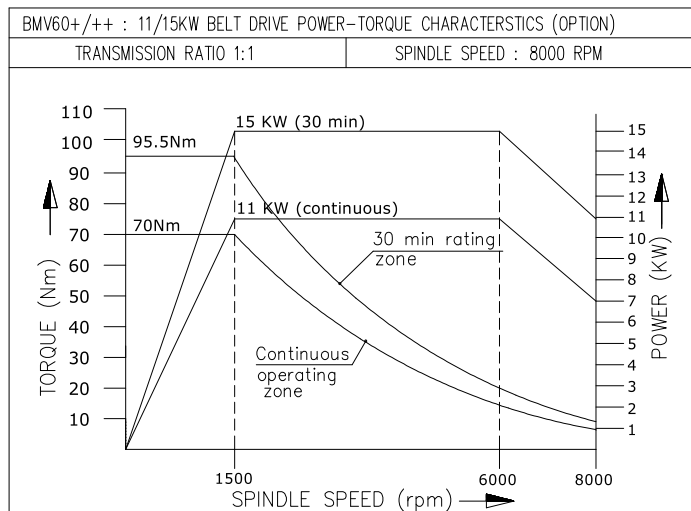
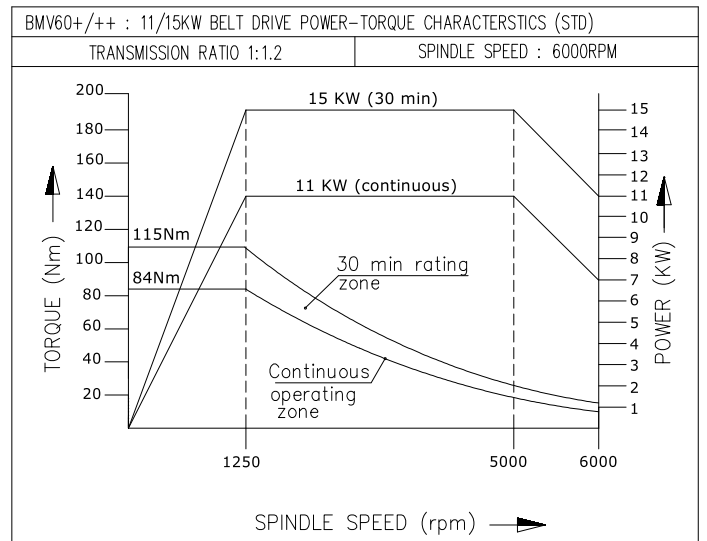
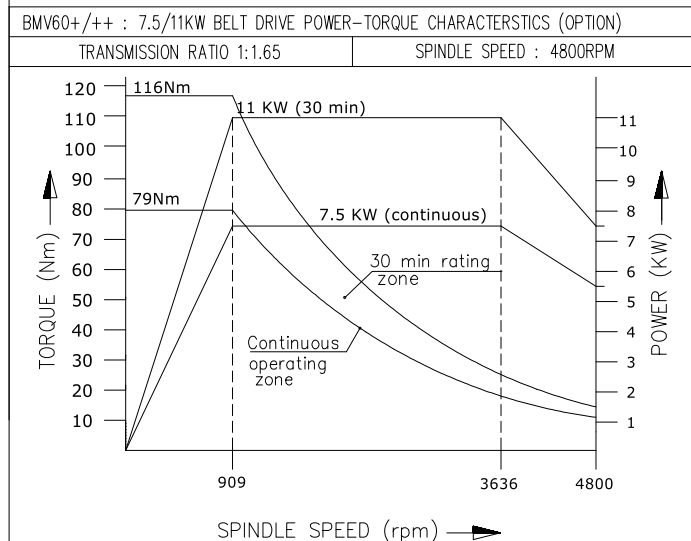
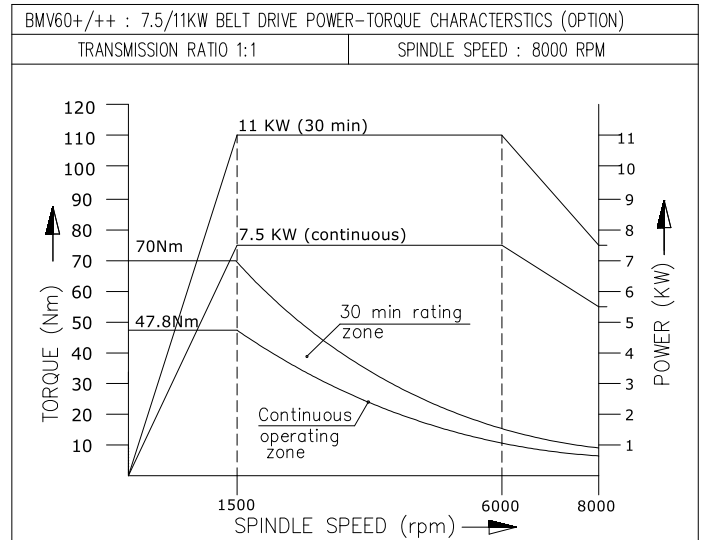
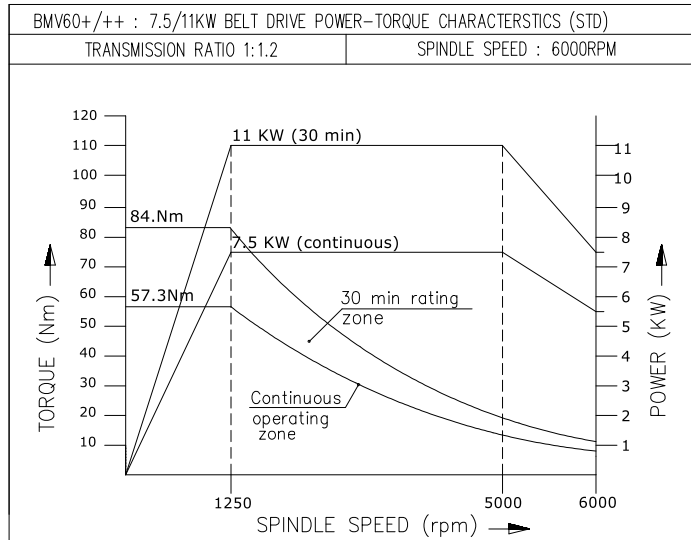
High power spindle provides high torque for cutting & higher material removal rate



◀ Roller type LM guide ways as optional

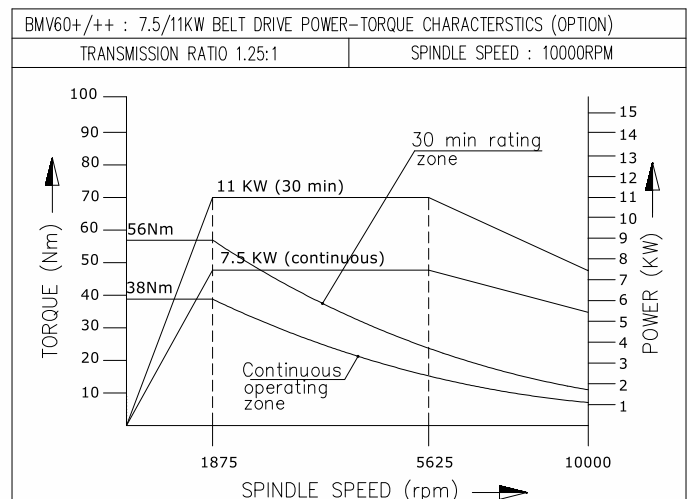
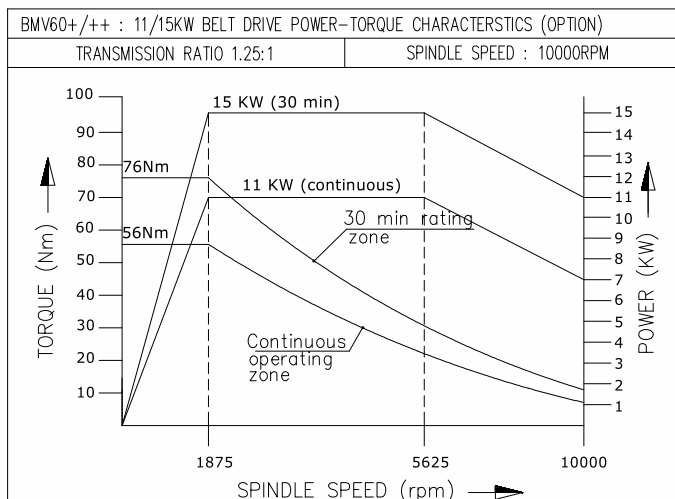
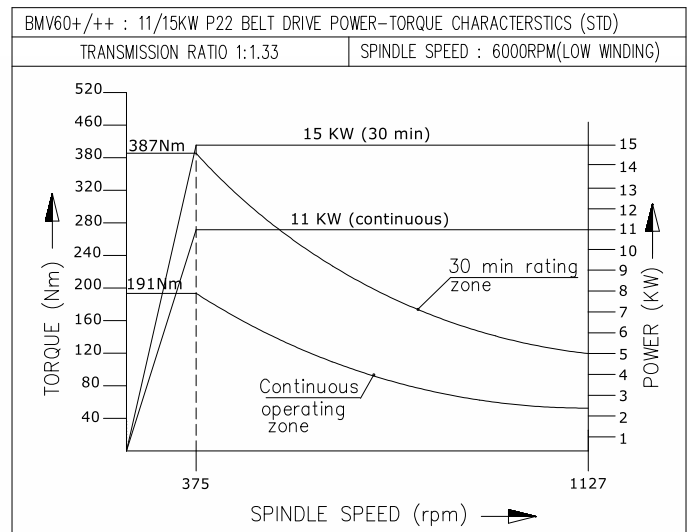
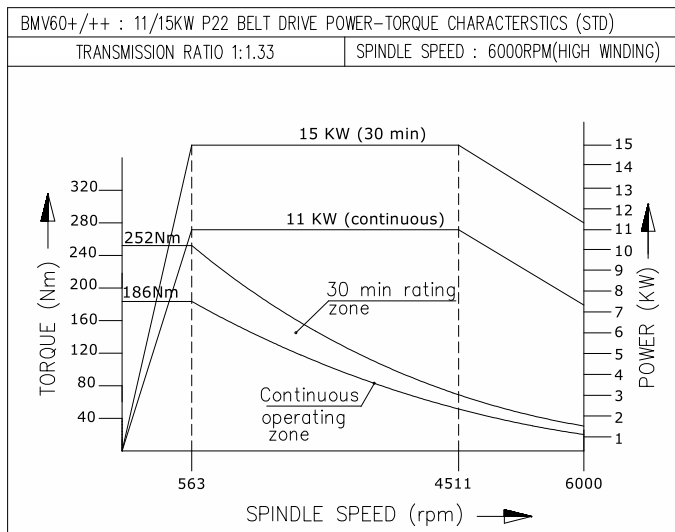
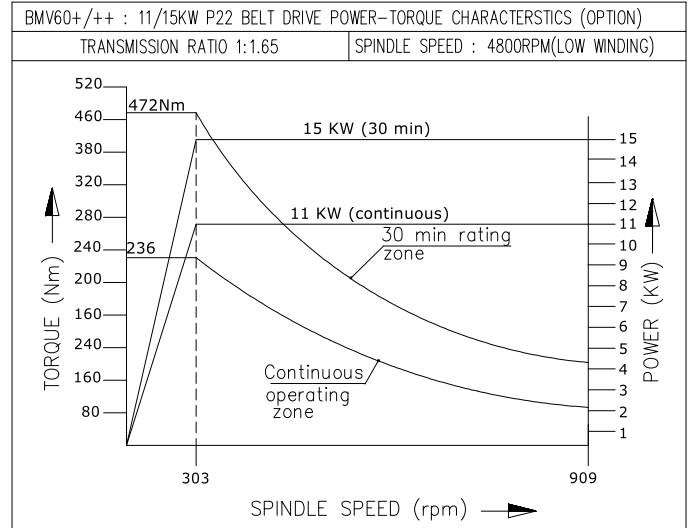
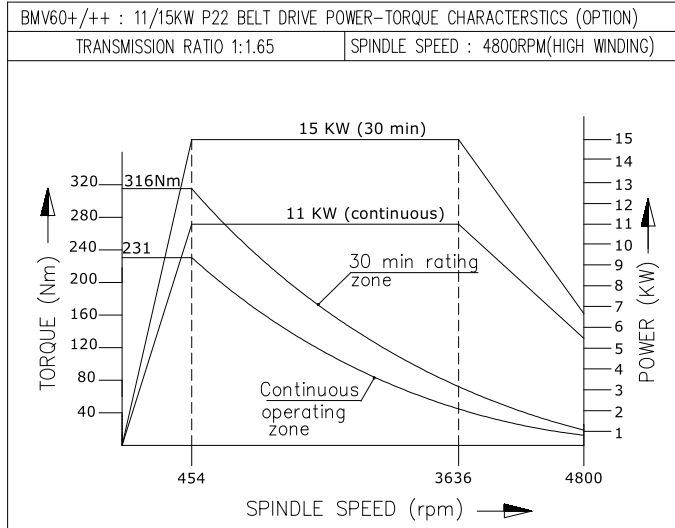
BMV 60+

Spindle Characteristics



BMV 60+

Spindle Characteristics



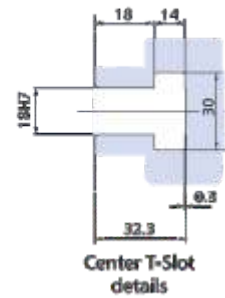
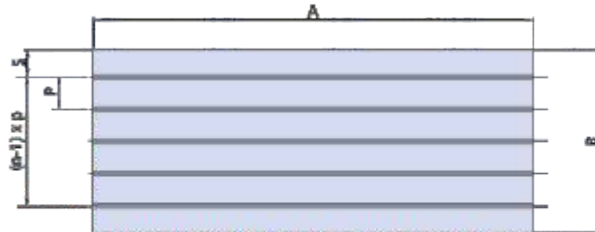
CNC Features

CNC FUNCTIONS	FANUC Oi MF	Siemens 828D PPU24X	Mitsubishi M80A
Display	8.4" colour LCD	8.4" colour TFT	8.4" colour LCD
Maximum feed axes	5(7)	5	8
Number of simultaneously controllable axis	4	4	4
Minimum input increment	0.001 mm, 0.001°	0.001 mm, 0.001°	0.001 mm, 0.001°
Spindle speed function	5-digit S code	5-digit S code	5-digit S code
Spindle speed override	50 % - 120 % (in steps of 10 %)		
Feed override	200 % (in steps of 10 %)		
Feed rate command	4-digit F code	4-digit F code	4-digit F code
Inch- mm conversion	S	S	S
Part program storage length	512 KB (2 MB)	1 MB (3 MB with PPU 26X)	500 KB (2 MB)
Number of part programs	400 (1000)	750	1000
Number of sub-program call levels	10	11	10
Number of tool off sets	400	160	400
Program number/ sequence number search	S	S	S
Number of look-ahead function blocks	40 (200 with AICC-II) (400 with spl hardware)	150 (300 with PPU 26X) (450 with *PPU28X)	1350
Single block, Exact stop, Dry run	S	S	S
DNC operations	RS232C/ PCMCIA/ Embedded Ethernet	Ethernet/ CF/Pendrive	RS232C/ SD
Run hour and part count	S	S	S
Help function	S	S	S
Graphic display	S	S	S
Nurbs	NA	S	NA
Embedded ethernet, Front USB interface	S	S	S
Fast ethernet/ data server	O	S	S
Machining condition selection system	O	S	S
Remote diagnosis	S	O	NA
High speed skip or probe function	S	S	S
Dynamic graphic display	O	O	NA
CNC FEATURES			
Linear interpolation	S	S	S
Circular interpolation	S	S	S
Helical interpolation	S	S	S
Absolute/ incremental programming	S	S	S
Tool radius compensation	S	S	S
Canned cycles for drilling and milling	S	S	S
Work piece co-ordinate system	54 (306) pairs	51 pairs	54 pairs
Background editing	S	Any time edit	S
Backlash compensation	S	S	S
Pitch error compensation	S	S	S
Bi-directional pitch error compensation	O	O	S
Polar co-ordinate, Scaling, mirroring	S	S	S
History of operator alarms and messages	S	S	S
Look-ahead function	S	S	S
Custom macro B/ parameter programming	S	S	S
Simple tool life management	S	S	S
Multi language display	S	S	S
Program restart/ block search in CF card	S	S	S
Program edit in CF card, Nano interpolation	S	S	S
Manual pulse generator	S	S	S
Automatic data backup	S	in CF card	S
Cylindrical interpolation	O	O	S
Spline interpolation	O	O	S
Cutter compensation	S	S	S
4 th axis	O	O	O
4 th & 5 th axis	O	Not possible with PPU 24x (possible with PPU 26x)	O

S: Standard, O: optional, NA: Not applicational

BMV 60+

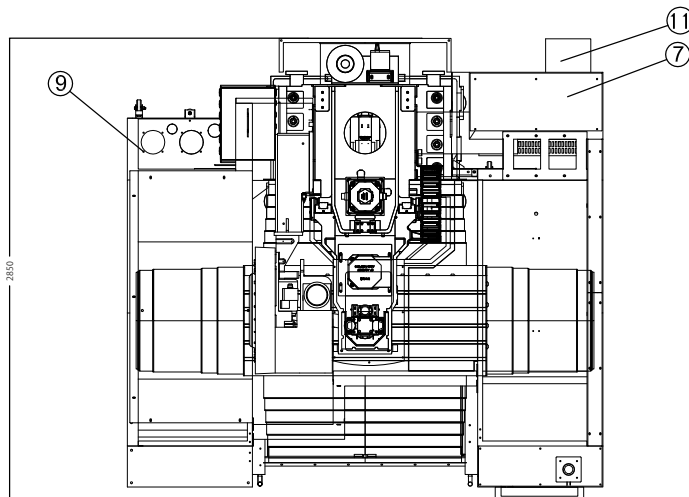
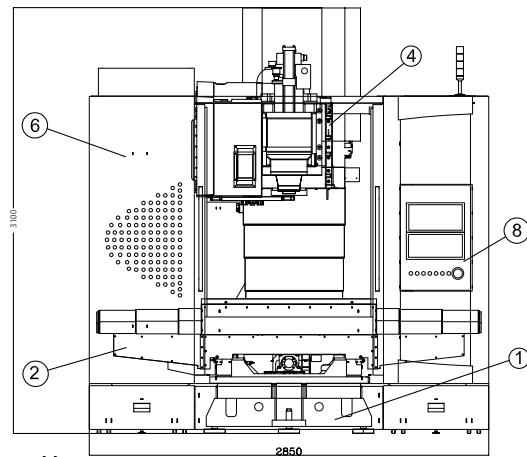
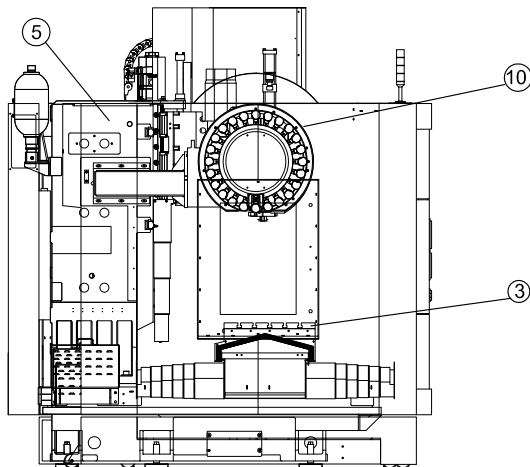
Table Top & Pallet Top Details



MODEL	CLAMPING AREA		T-SLOTS		
	A	B	S	n	P
TABLE					
BMV60* (all models)	1,250	600	100	5	100
PALLET					
BMV60* TC20/ 24	1,050	510	55	5	100
P - CD between T-Slots			n - number of T-Slots		

	SERVO DRIVEN
Pallet size (mm x mm)	510 x 1,050
Load capacity per pallet (kg)	600
Hydraulic pressure for pallet clamping (bar)	30
Pallet clamping force (kgf)	5,000
Pallet change time (s)	22
Pallet surface flatness (mm)	0.04
Positioning repeatability	0.02
Parallelism between pallets (mm)	0.025

Machine Dimensions



Sl No	Description
01	Base
02	Cross slide
03	Table
04	Milling Head
05	Column
06	Machine Guard
07	Electrical Cabinet
08	Operator Panel
09	Coolant Tank
10	Tool Magazine
11	AC Unit

BMV 60+

Standard Features

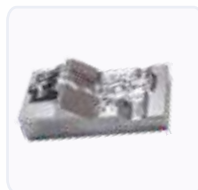
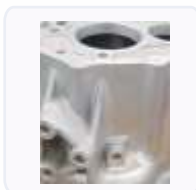
- AC servo drives
- AC variable speed spindle motor
- Hardened and ground ball screws
- Feedback through absolute encoder
- Automatic tool clamping-unclamping
- Centralised automatic lubrication
- Spindle taper air blow
- Rigid tapping
- Front chip disposal
- Telescopic covers with wipers
- Full machine guard
- Manual pulse generator
- RS 232 serial/ USB interface
- Levelling pads
- Maintenance tool kit
- Simple tool life management
- 3-tier signal tower lamp
- Machine lamp
- Coolant gun
- Mobile MPG

Optional Features

- Rear chip disposal
- Higher spindle RPM with chiller unit
- Higher spindle power
- Chip conveyor in lieu of coolant tank with chip tray
- 2/ 3 axis linear glass feedback
- 16/ 25/ 40 bar coolant through spindle
- 40 tools automatic tool changer
- AC for electrical cabinet
- Rigid tapping
- Front chip disposal
- Provision for 4th and 5th axis rotary table
- Ball screw type auto pallet changer with twin pallets
- Voltage stabiliser
- Ultra isolation transformer
- Ezy monitoring system with Fanuc controller
- Increased daylight area through column raiser block
- Air nozzle, 3 tier lamp, air gun, coolant gun
- Ring coolant around spindle
- Automatic front door
- Edge finder
- Table mounted probe
- 30 tools automatic tool changer
- Spindle RPM - 4800
- Hard part probing (Fanuc, Siemens, Mitsubishi)

Applications

It has a fixed (non-moving) column structure, rectangular table, no indexing rotation function, suitable for pressing plate, cover, plate-type parts, general engineering and die-mould components.



Many more...



Technical Specifications

Specifications	Unit	BMV60	BMV60+ TC 24	BMV60+ TC 20
Capacity:				
Table longitudinal travel (X-axis)	mm	1050	1050	1050
Table cross travel (Y - axis)	mm	610	610	610
Head stock travel (Z - axis)	mm	610	610	610
Spindle nose face to table top	mm	150 - 760	150-760	150-760
Increased daylight area with column height block (opt)	mm	400 - 1010	400 - 1010	400 - 1010
Distance from floor to table	mm	1000	1000	1000
Spindle center - column front distance	mm	630	630	630
Table:				
Table size	mm	1250 x 600	1250 x 600	1250 x 600
T - slot (No./ size/ pitch)	mm	5/18/100	5/18/100	5/18/100
Maximum load on table standard	kg	1200	1200	1200
Spindle & Axes:				
Taper		BT-40 (HSK A 63)	BT-40 (HSK A 63)	BT 50
Speed standard	rpm	6000	6000	6000
Speed optional 1	rpm	8000	8000	NA
Speed option 11	rpm	10000	10000	NA
Spindle power - standard:				
Fanuc/ Mitsubishi. Cont./30 min.rating	kW	7.5/ 11	7.5/ 11	7.5/ 11
Siemens, Cont./S6-40% ratng	kW	9/ 13.5	9/ 13.5	9/ 13.5
Spindle power - optional (high power):				
Fanuc / Mitsubishi, Cont./30 min.rating	kW	11/ 15	11/ 15	11/ 15
Siemens, Cont./ S6-40 % rating	kW	11/ 16.5	11/ 16.5	11/ 16.5
Rapid traverse - X/ Y/ Z standard	m/ min	32	32	32
Feed rate	mm/ min	1-10,000	1-10,000	1-10,000
Guide ways	type	LM	LM	LM
Accuracy ISO (ISO 230 - 2):				
Positioning accuracy (full stroke)	mm	0.016	0.016	0.016
Repeatability accuracy (full stroke)	mm	0.012	0.012	0.012
Automatic Tool Changer:				
Tool change system	mm	NA	Twin arm	Twin arm
Tool storage capacity - std (opt)	Nos.	NA	24	20
Pull stud		MAS 403-P40T-1	MAS 403-P40T-1	MAS 403-P50T-1
Maximum tool dia with all pockets full	mm	NA	75	130
Max tool dia adjacent pocket empty	mm	NA	140	220
Max tool length	mm	NA	250	250
Max tool weight	kgs	NA	8	15
Tool to tool time	sec	NA	2.5	4.5
Automatic Pallet Changer (optional):				
Number of Pallets	Nos	NA	2	2
Pallet size	mm x mm	NA	1050 x 510	1050 x 510
Maximum safe load per pallet	kg	NA	600	600
Installation Data:				
Floor space (L x B)	mm x mm	2850 x 2850	2850 x 2850	2850 x 2850
Machine height (H)	mm	3100	3100	3100
Basic machine weight	kg	7500	8000	8500
Total connected load (std machine)	kg	25	28	27
Total connected load (basic std machine with high power spindle)	kVA	30	33	32

Data within parenthesis are optional



Bharat Fritz Werner
Off Tumkur Road, Bangalore 560022, India
Ph 080-39821100/ 28395745
Fax: 080-28394816, e-mail: bfwmarketing@bfw.co.in | URL: www.bfwindia.com

Belgaum : Block 4, Plot 737, Khanapur Road, Near Railway Gate 3, Udyambag, Belgaum 590008.
Chennai : D22, First Floor, First Street, Sector 3, Ambattur Industrial Estate (South), Chennai - 600058. Ph: (044)26251505. E-mail: bfwchennai@bfw.co.in
Coimbatore : 7, Karayampalayam Road, Mylapatti (PO) Coimbatore - 641 062. Ph (0422) 262669. E-mail: bfwcoimbatore@bfw.co.in
Gurgaon : Spaze tech park; office no 769, 7th floor, tower B2, Sector 49, Sohna road, Gurgaon 0- 122018
Hyderabad : Flat No 204, 1-11-229, Ramaveda Srisampada Apt. Near Shyamalal Bldgs, Begumpet, Hyderabad - 500016. Ph: (040) 27762035. E-mail: bfwhyderabad@bfw.co.in
Kolkata : D - 4/ 4, Gillander House, 8, Netaji Subhash Road, Kolkata 700001. Ph (033) 40102140 - 42, 22623387, Fax (033) 4005691, E-mail: bfwkolkata@bfw.co.in
Mumbai : 206, Runwal Commercial Complex, LBS Marg, Mulund West, Mumbai 400080. Ph: (022) 25653362/ 58. Fax: (033) 40056911. E-mail: bfwmumbai@bfw.co.in
New Delhi : 510, Mahatta Towers, B - Block, Community Center, Janakpuri, New Delhi 110058. Ph: (011) 25522210. Fax: (011) 4 5629699. E-mail: bfwdelhi@bfw.co.in
Pune : BFW House, 124 A, H block, MIDC, Pimpri, Pune 411018. Ph: (020) 32524638. E-mail: bfwpune@bfw.co.in
Pune Chakan MIDC: No 3, Vedant Plaza, Plot No PAP 40 & 41, Phase 1, Chakan MIDC, Near Suzlon Generators Ltd. Pune 410501
Punjab : Suite No 205, 2nd floor, E-195, Industrial Area, Phase - VIII B, S A S Nagar, Mohali (Punjab) - 160071
Rajkot : 85-86, 4th Floor, Samruddhi Bhavan, Opp. Bombay Garage petrol pump, Gondal Road, Rajkot 360002. Email: bfwrajkot@bfw.co.in

Representatives at Jamshedpur(Jharkhand) - 938030800, Kolhapur (Maharastra)- 9370958107, Hosur (Tamilnadu) 9342336169

We are continuously working on the development of our products, the information contained in this brochure is subject to modification.
While all efforts have been made to ensure that this publication carries information, the reader is advised to consult an authorised representative of Bharat Fritz Werner to ascertain latest details.

