



BM Series

Ultra-precision moving beam double column machining center

VISION WIDE
widen your cutting vision



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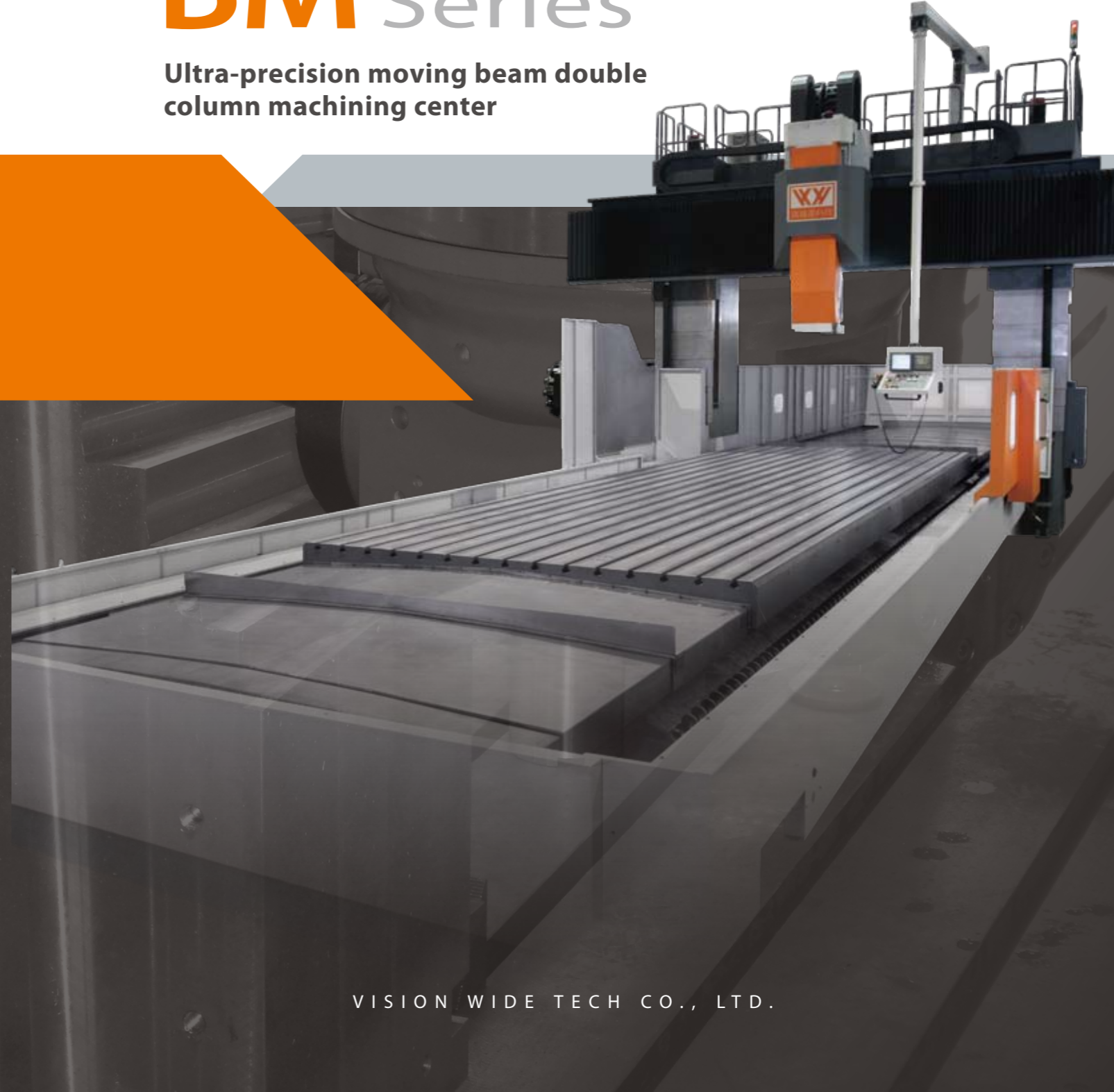
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VISION WIDE TECH CO., LTD.



BM Series

Ultra-precision moving beam double column machining center

With Vision Wide tradition, BM series is unique by the features of moveable cross rail and synchronous cutting in W-axis.

BM series can be opted with various types of heads to achieve a wide range of multi-faced machining function.

- Cutting feed rate: XYZ-axis 7m/min, W-axis 1m/min
- High torque gear type spindle: 3,000/4,000/5,500/6,000rpm
- Direct-driven type spindle: 8,000/10,000rpm
- X-axis travel: 4.2~10.2m
- Y-axis travel: 3.0(3.7)/3.5(4.2)m
- Z-axis travel: 1,000/ 1,200/ 1,400mm
- W-axis travel: 1,000/ 1,200mm
- Port width: 3,000/3,500mm
- Linear way for XZ-axis
- Box and linear way for Y-axis
- Box way for W-axis



- a. Industrial lifting machinery machining
- b. LCD vacuum chamber machining (stainless steel)
- c. 2.5GB wind generator body machining

BM Series

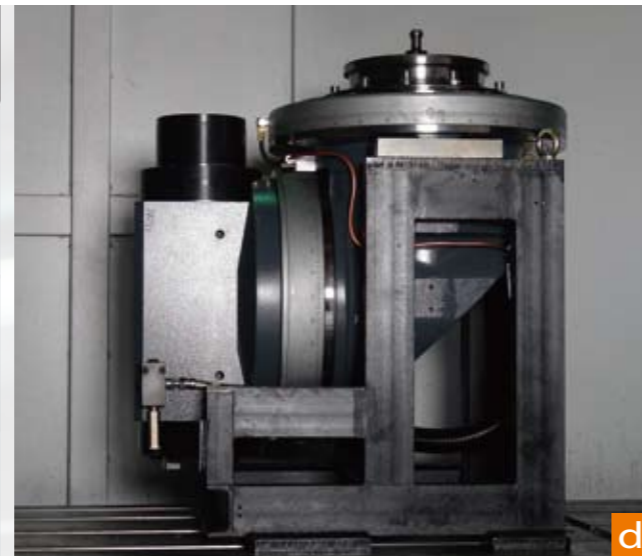
Auto large-scale multi-angle machining center

BM series is designed for providing large-scale machining. With the firm structure, the max. height for workpiece is 2,450mm, W-axis is provided with random point positioning and sync machining. BM series is also offered the features of heavy workpiece loading capacity, large spindle output torque, auto multi-angle head attachments, and auto head attachments tool changing to achieve auto application of heavy-duty workpiece.



BM Series

Diversity machining modules and functions can be equipped



Optional function

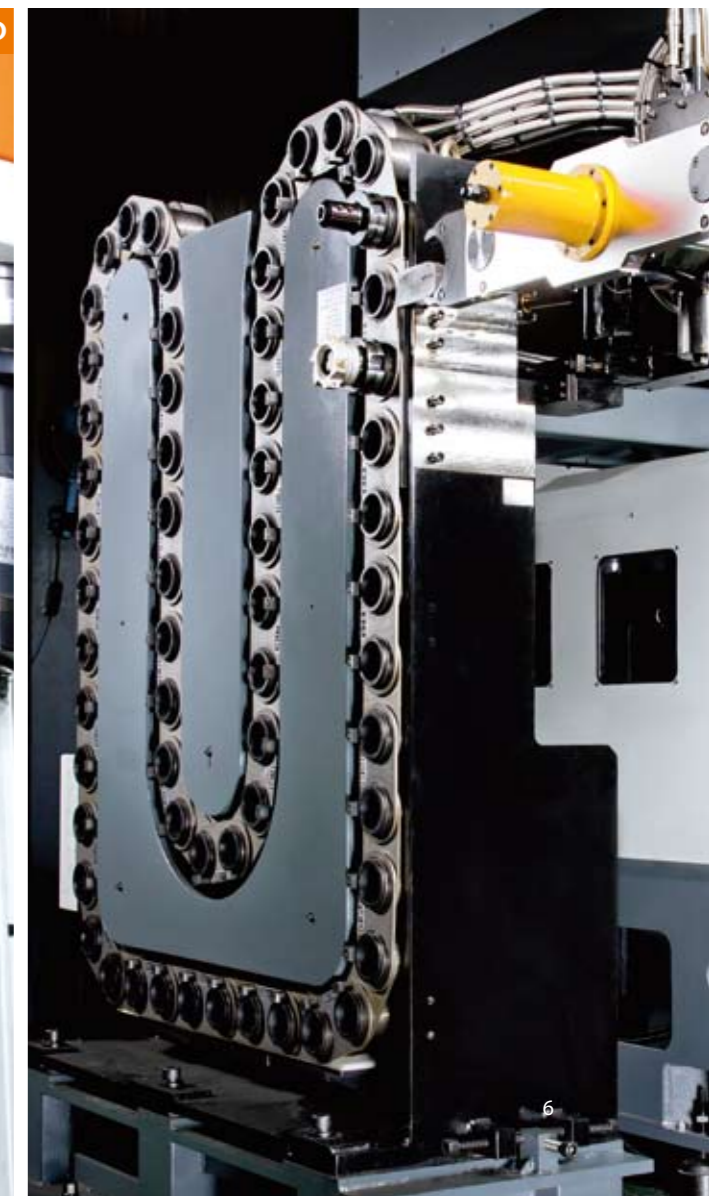
- a. Various types of heads
- b. One head magazine (on ATC side)
- c. Multi-heads magazine (on ATC side)
- d. Table type head bracket



Tool exchanging for head attachment

- a. Tool changing by Auto vertical-horizontal type tool changer for AC 90 degree angular head
- b. Tool changing by Auto vertical-horizontal type tool changer for vertical spindle

Note: AC 2-axis head/ extended head only for vertical type tool changing

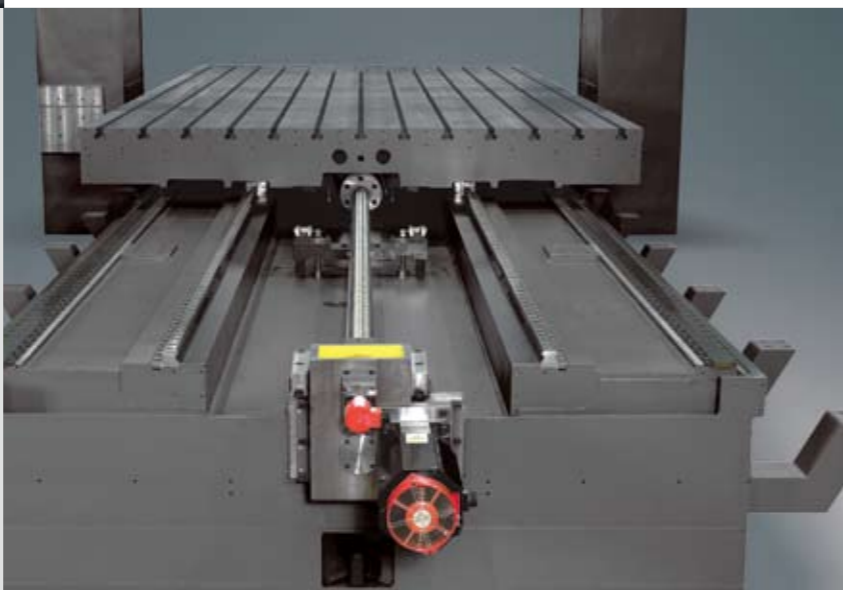




BM Series

High rigid structure design

- Y-axis thick beam with box and linear guide way design ensures high rigidity.
- Roller type linear guide way design enhances dynamic acceleration performance and low friction (high feed speed), and achieves the best rigidity and precision.
- Full stroke supported design, thick and extra-wide design size of bed structure with highly rigid structure, increases table loading capacity and workpiece movement dynamic level, reaches the cutting stability and enhances anti-vibration.
- 4 supported guide way design in X-axis, the middle 2 are roller type linear way, rest 2 are ultra-high loading guide way, provides optimal table loading capacity and workpiece movement dynamic level.
- 4 symmetric guide ways configuration reaches full stroke straightness and enhances ball screw transmission and positioning accuracy.
- Gear reducer in X-axis improves high table loading ability in acceleration/ deceleration movement. Precision gears effectively transmit servo motor motion accuracy, provides low backlash and high positioning accuracy.



Large size column provides the beam the strongest support



- Large size column (705x1500mm) provides the beam the strongest support and achieves the best rigidity and precision.

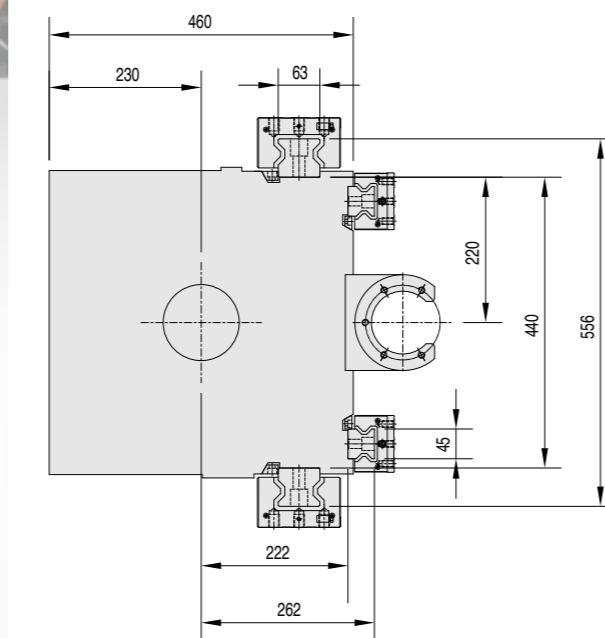
BM Series

High accuracy and high performance mechanism



One-piece casting structure

- One-piece casting design in Z-axis and spindle gear box for symmetrical heat conduction and high rigidity ensuring.
- 2-step gear type spindle with high rigid configuration (bearing dimension 100x150mm) enhances cutting rigidity and lifetime.
- Low speed and high torque to meet the requirements of heavy cutting, high speed to meet the requirements of finish cutting.



W-axis servo positioning and high accuracy mechanism

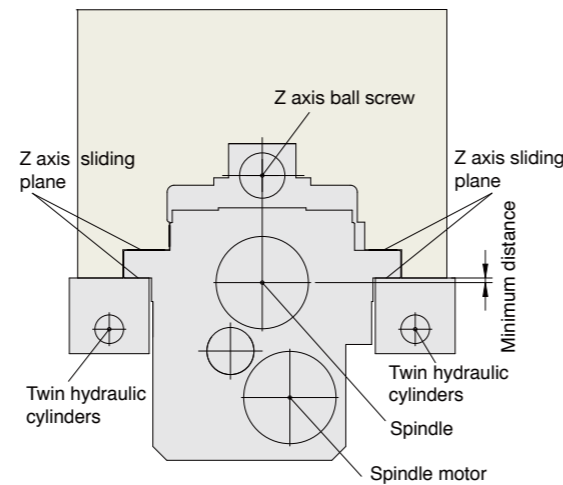


- W-axis with two self-aligned hydraulic cylinders, base on Y-axis moving position provides the appropriate hydraulic pressure compensation, ensures the accuracy of equalizing load of W-axis screw, and improves the straightness of Y-axis movement.
- Fixed point cutting at any point in W-axis stroke.
- Auto auxiliary braking mechanism enhances the capacity of heavy cutting when W-axis doing fixed point cutting.
- W-axis ball screw with dual independent linear scale position feedback provides the best movement positioning accuracy of W-axis.

BM Series

Optimal central symmetric spindle system design offers high cutting performance

- Minimum distance between spindle center and Z-axis roller way not only shortens cutting lever arm but also significantly improves cutting rigidity.
- Symmetric spindle gravity configuration, Z-axis ball screw, spindle center and spindle motor configure at gravity point of Z-axis box structure centerline provide the best feed precision and thermal balance.
- Gear spindles made of Japan-made JIS-0 grade precision gears are with high precision, low noise and high efficiency transmission performance.
- 2-step gear type spindle provides high torque and high speed characteristics to ensure heavy cutting ability on surface finish of high speed cutting.
- High speed belt-driven spindle can be chose
- 3,000/ 4,000/ 5,500/ 6,000/ 8,000/ 10,000 spindle speed can be chose according different kind of machining.



Heavy cutting ability

Face milling:
 tool dia.: 125 mm
 cutting feed: 1,000 mm/min
 cutting width: 100 mm
 cutting depth: 7.5 mm
 removal rate: 750 cc/min

End milling:
 tool dia.: 63mmx9 inserts
 cutting speed: 800 rpm
 cutting feed: 400 mm/min
 cutting depth: 40 mm
 cutting width: 20 mm
 removal rate: 320 cc/min

Gun drilling:
 tool dia.: 32 mm
 cutting speed: 1500 rpm
 cutting feed: 500 mm/min
 cutting depth: 30 mm
 removal rate: 480 cc/min
 coolant through spindle

High cutting performance

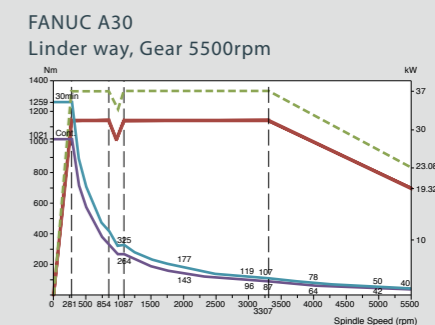
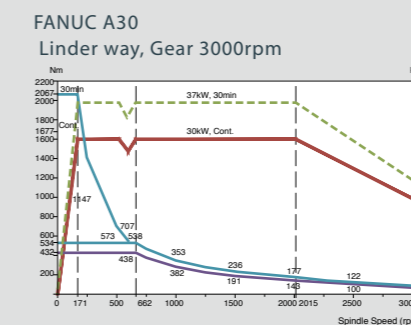
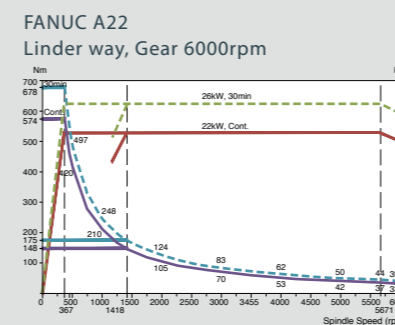
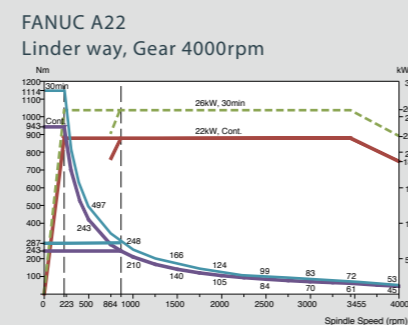
Face milling:
 tool dia.: 40 mm
 cutting feed: 10,000 mm/min
 cutting depth: 2 mm
 removal rate: 800 cc/min

Test specification: 22/26kW/ 4,000rpm spindle



Spindle power and torque chart

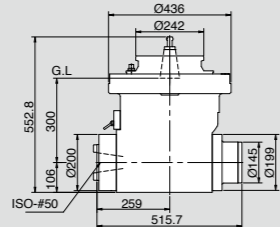
- High torque gear type spindle
 Industry-leading output torque, 15% more than competitors, providing excellent heavy cutting performance
- Spindle speed 4000rpm ' max. torque 1114Nm(22/26kW)
 6000rpm ' max. torque 678Nm(22/26kW)
 3000rpm ' max. torque 2067Nm(30/37kW)
 5500rpm ' max. torque 1259Nm(30/37kW)



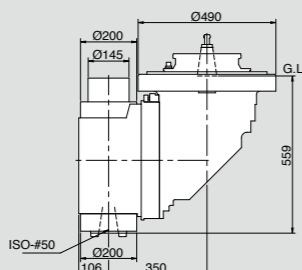
BM Series

Auto multi-angle head attachment

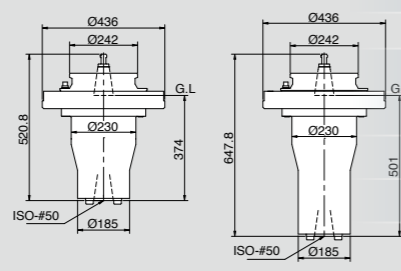
- B/C-axis auto 5° indexing
- C-axis auto 1° indexing
- Large diameter indexing mechanism
- Auto tool clamping device
- Flood coolant function
- AC 90° angular head with coolant through spindle



Tool clamping	Auto hydraulic clamping
Head clamping	Auto hydraulic clamping
C-axis indexing	Auto 1° /5°
Machining coolant	External nozzle/ coolant(Opt.)
Max. power	26 kW
Max. speed	3000rpm

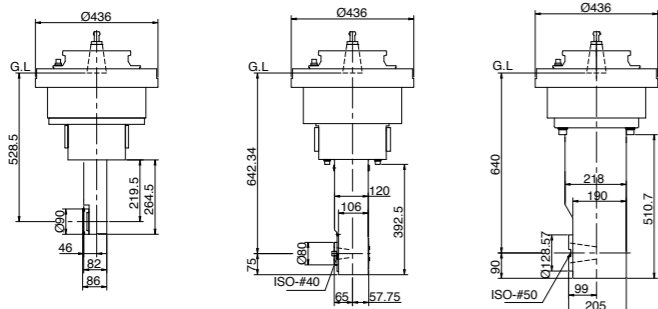


Tool clamping	Auto hydraulic clamping
Head clamping	Auto hydraulic clamping
C-axis indexing	Auto 1° /5°
B-axis indexing	Auto 5° (manual 1°)
Machining coolant	External nozzle
Max. power	26 kW
Max. speed	3000rpm



Tool clamping	Auto hydraulic clamping
Head clamping	Auto hydraulic clamping
Max. power	26 kW
Max. speed	4000rpm

Various types of milling head



Tool clamping	Manual
Head clamping	Auto hydraulic clamping
C-axis indexing	Auto 1° /5°
Max. power	26 kW
Max. speed	Over 800rpm

Intelligent multi-faced machining

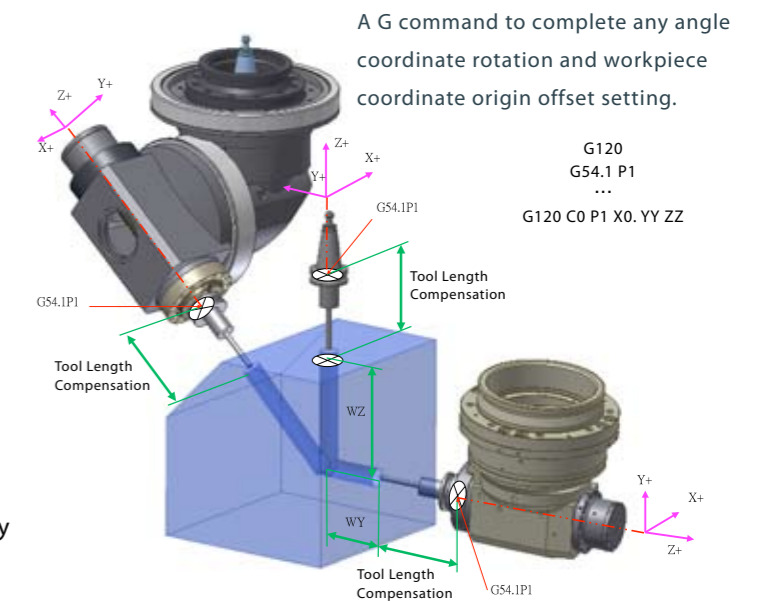
(For AC head attachments)

Tool center point management (TCPM)

Each type of head attachment with tool center point management, takes vertical workpiece as origin benchmark, and converts the workpiece coordinates to any new specified plane of workpiece coordinates automatically.

Head attachment dimensions correction

Intelligent compensation on each type of head attachments dimensions, rotation center, tool size, workpiece coordinates system correction management, and greatly simplifies the complexity of programming and operation to achieve perfect auto multi-angle machining.



FX500 5-face machining function

- V/H tool diameter correction
- V/H spindle origin correction
- V/H working coordinate affine transformation
- V/H 3D rigid tapping
- V/H manual interrupting

Auto coordinates tool axis 3D conversion

3-axis mechanical coordinates system can be automatically converted to machining coordinates system, easily achieving face milling, end milling, drilling and rigid tapping machining operations.

Heavy cutting ability

Through cutting depth test to show excellent heavy cutting rigidity

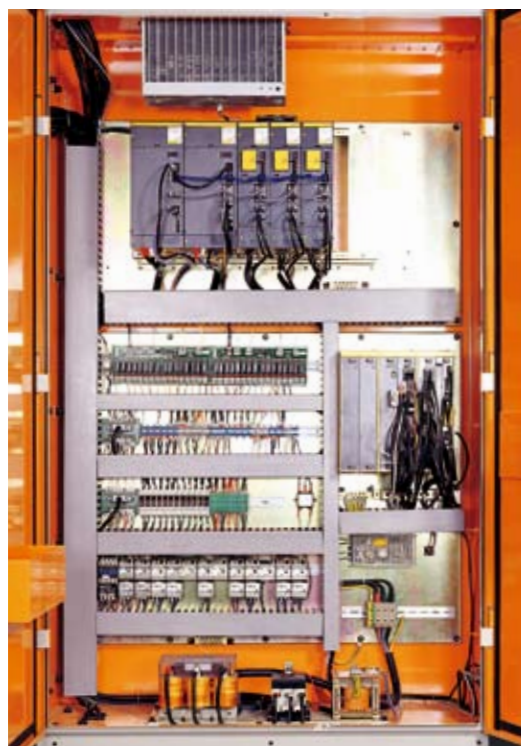


Head attachment	Extended head	90 degree angular head	2-axis head
Tool type	BT50 face milling tool-diameter Ø125/5 edge		
Cutting material	S45C		
Spindle speed(rpm)	600		
Machining width(mm)	100		
Feed rate(mm/min)	1000		
Machining depth(mm)	5	7	6
Removal rate(cc/min)	500	700	600

test specification22/26kW/4,500 rpm spindle

BM Series

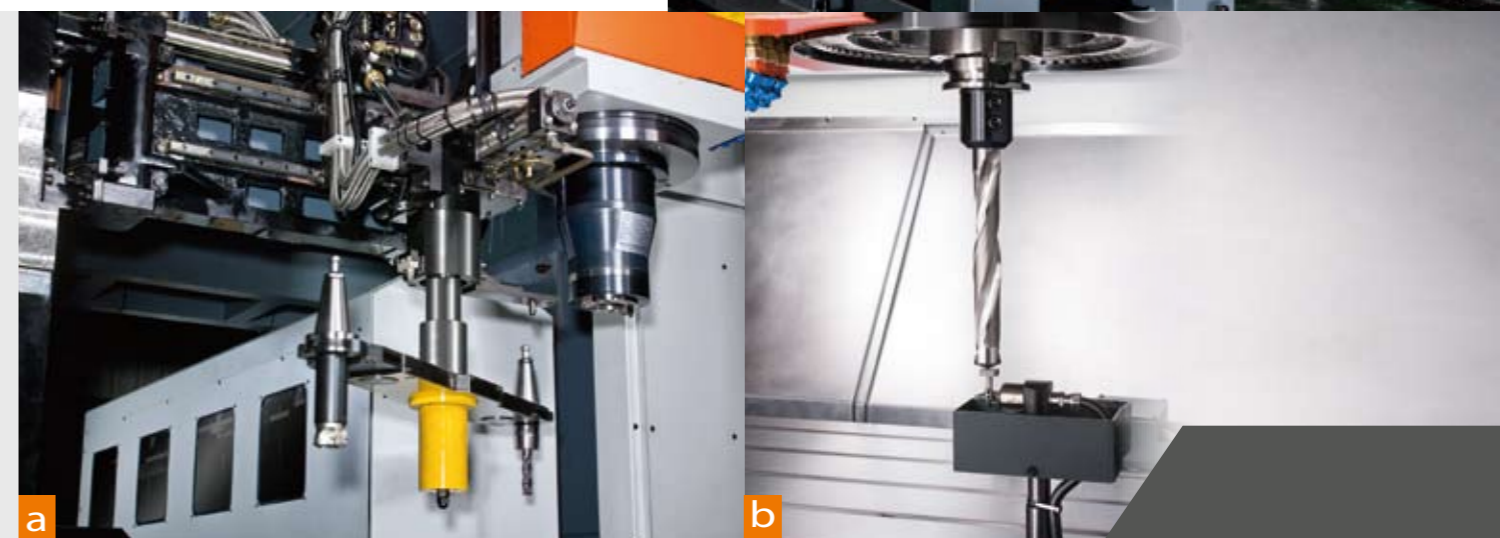
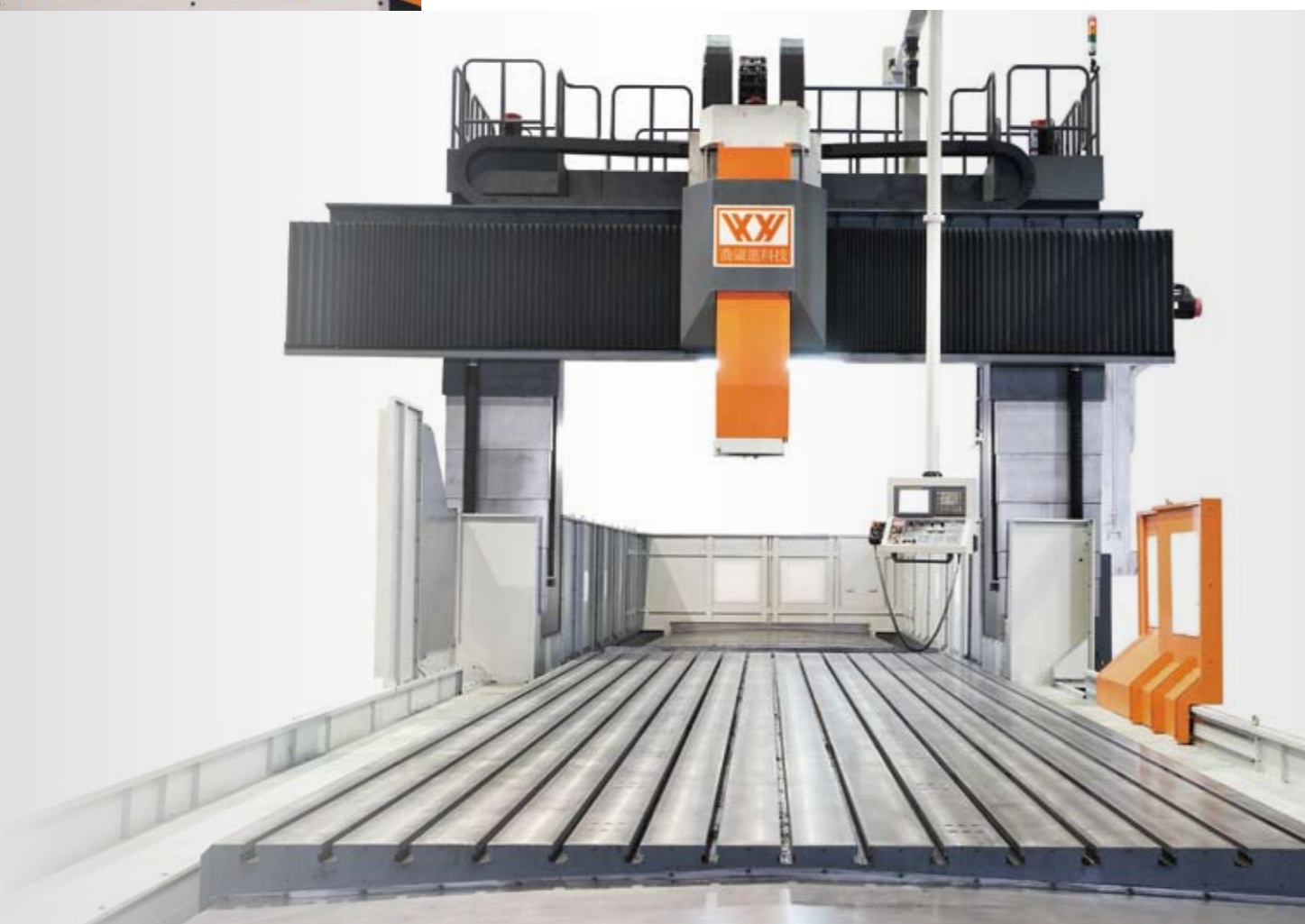
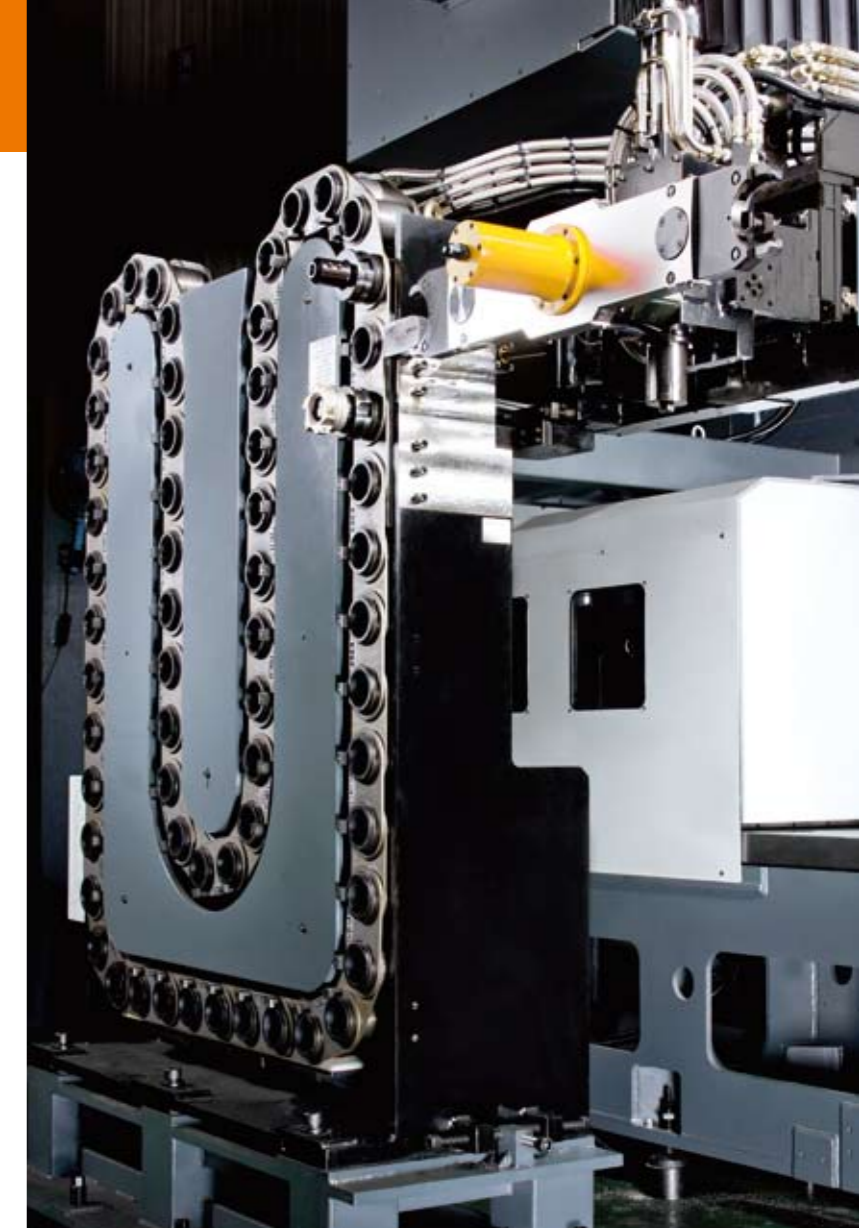
Safe, friendly and reliable operation interface



- Safe and reliable electrical circuit design
- CE compliant safety circuit design
- CE compliant EU regulation electrical parts for whole machine
- Auto locking operation door protection switch
- Z-axis retract function at power failure
- Anti-interference design on motor power cables
- Overload and phase protecting device on servo motors
- 3-axis over travel and hardware limit protection
- Heat exchanger for electrical cabinet
- Main power protecting device
- EU regulation softkey operation panel
- Ethernet and RS232 interface
- USB port

Vertical-horizontal type tool changing

- 32/40/60 tools magazine can be opted
 - Fixed tool changing and special tool management for vertical/horizontal type tool changing. Random tool changing and special tool management for vertical type tool changing.
- a. 2-axis head and extended head for vertical type tool changing
- b. Fast tool length measurement device for mold cutting

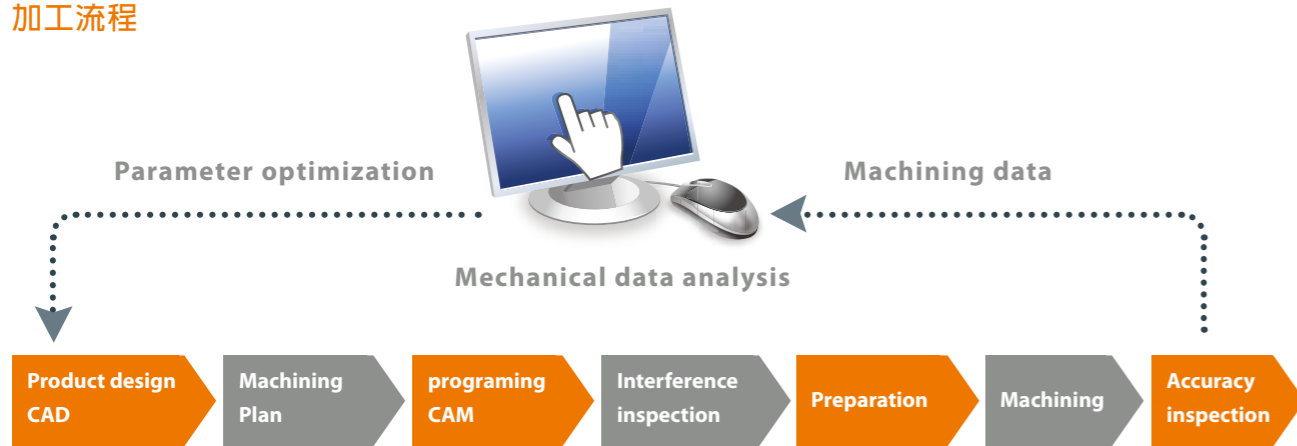


- Sectional type design of sliding door type at operator's side extends the space for workpiece loading.
- Open-outward doors at both ends of the machine.
- Overhead pendulum type operation panel for users offers an easy-measuring, easy-programming, and safe working environment.

BM Series

Intelligent Application Product

加工流程



Intelligent Efficiency Management

- Feedrate optimization
- Spindle loading monitoring
- Table loading setting (opt.)

Intelligent Accuracy Management

- TCPM
- Path optimization
- Thermal compensation (opt.)

VW-FX intelligent software
VW-FX100/VW-FX500

Intelligent Factory Management

- Machine utilization rate
- Remote real-time monitoring
- Multi-controller connection
- Factory capacity management (opt.)
- Immediate notification alert (opt.)
- Maintenance notification (opt.)

Intelligent Operation Management

- Tool/ workpiece measurement
- Parameter/ program management
- Trouble diagnosis
- Simulation before machining (opt.)
- Path interference inspection (opt.)
- Tool life management (opt.)

Remote monitoring software
VW-Cloud/VW-Mobile

Anti-collision & machining simulation software
VW-Anti collision

Intelligent Software

VW-FX for Fanuc controller



TOOL LIST



- Tool table data
- Tools status refer to ATC

CALCULATOR



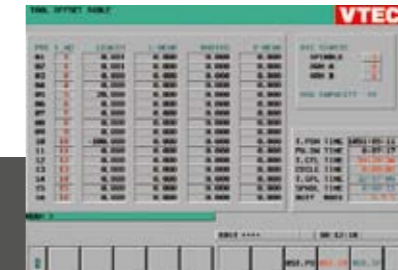
- +, -, ×, ÷ arithmetic operations
- Sine, cosine and tangent function
- 10 sets memory function

TOOL LOAD MANAGER



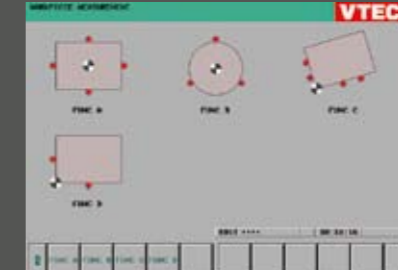
- 1 min. spindle loading status can be recorded
- Each tool spindle loading value can be set
- Machine stops when spindle overloading

TOOL COMPENSATION



- Tool compensation data
- Tool position
- Utilization rate information

WORKPIECE MEASUREMENT



- Rectangle center measurement
- Rectangle corner center & angle measurement between workpiece
- Circle center/ circle radius measurement
- Angle corner center measurement

AFO FEEDRATE OPTIMIZATION



- Max. & min. spindle cutting overloading setting for each tool
- Auto acceleration when spindle lower than the min. overloading value

MACHINE STATUS



- Fast mappings of I/O and program comment

MANUAL TOOL LENGTH MEASUREMENT



- Fast Z-axis workpiece coordinate/ tool length measurement

APO AUTO PARAMETER OPTIMIZATION



- Optimal parameters can be obtained through entering machine accuracy and workpiece weight
- Parameters backup and restore function
- Linear, angular acceleration/ deceleration function, effectively improve angular error



BM Series

Intelligent Application Product

Intelligent Application Product/ Remote monitoring software VW-Cloud/VW-Mobile

not available for Siemens controller

Factory production line



Machine Status



- * +, -, X, ÷ arithmetic operations
- * Machine coordinate/ absolute coordinate/ incremental coordinate
- * Running program showing
- * G/S/T/M code status
- * Spindle speed/ axial feedrate
- * Machine boot time
- * Machine total machining time
- * Single program machining time

Program Transfer



- * Program network transfer function (upload/ download)

Alarm Record



- * Controller Alarm Record
- * Operation record

Compensation Data Transfer



- * Tool compensation value
- * Workpiece coordinate
- * Macro variable
- * edit function (opt.)

Server and Spindle Loading Record (opt.)



- * Record spindle and server overloading status

Tool Management (opt.)



- * Maintenance items/ time can be set
- * Alarm notification when overtime

Tool Management (opt.)



- * Tool data and lifetime setting
- * Alarm notification when overtime

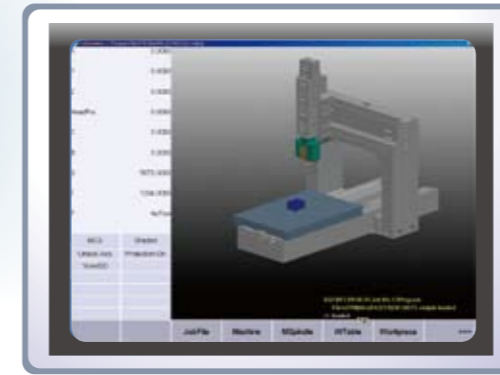
APP VW-Mobile



- * Machine status
- * Program transfer
- * Production status
- * Alarm signal
- * Compensation data transfer

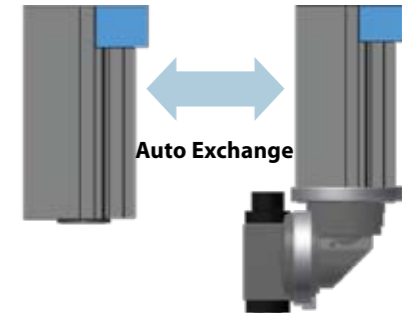
Intelligent Application Product/ Anti-collision and machining simulation software VW-Anti collision(opt.)

not available for Mitsubishi controller

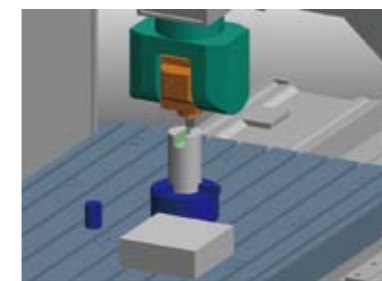


Safety
Efficiency

Head Attachment Auto Exchange

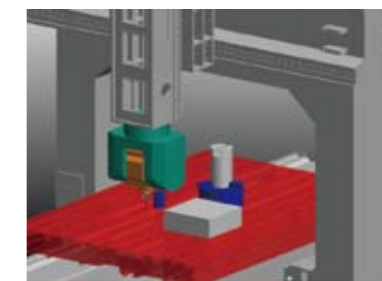


Machine head attachment graphic auto switch



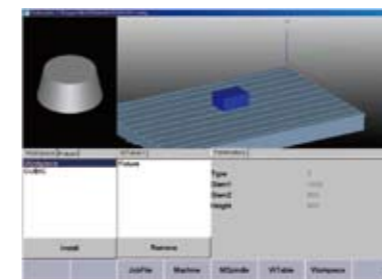
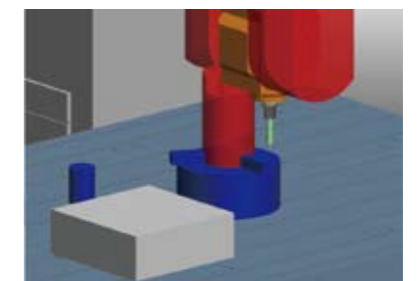
Online cutting simulation and monitoring

- * Sync 3D cutting simulation
- * Material removal operation
- * Wide angle monitoring and surveillance



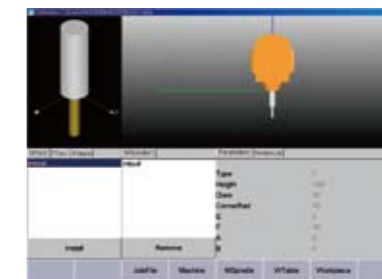
Online Anti-collision Detection and Protection

- * Tool, tool shank, workpiece, fixture anti-collision detection
- * Hand wheel/ manual/ auto mode anti-collision protection
- * Dynamic anti-collision protection zone

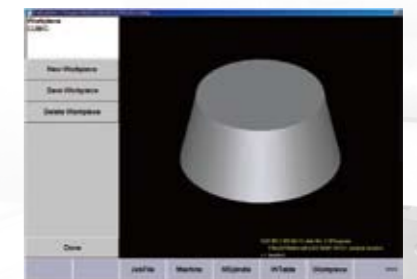


Easy and Fast Process

- * Built-in machine data



- * Complete tool, billet, fixtures geometry editing and installation setting
- * Controller origin data synchronization



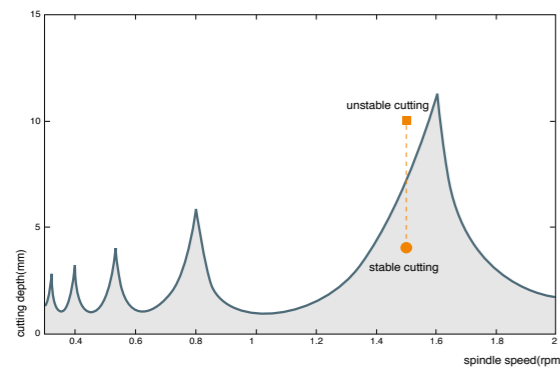
Continuous Machining process Validation

- * Machining program simulation (online dry run)
- * End product and semi-product import and access

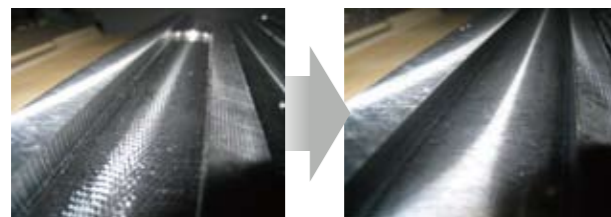
BM Series

Optimal cutting application from the analyzation of the combination between CAD/CAM and LOBE analysis

To provide best cutting conditions and recommendations on combination between tool and machine



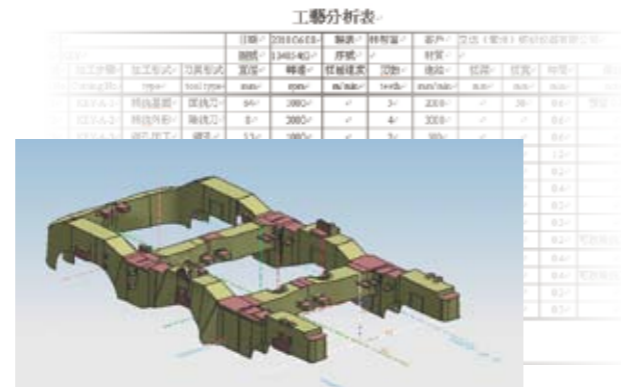
Optimization of cutting accuracy



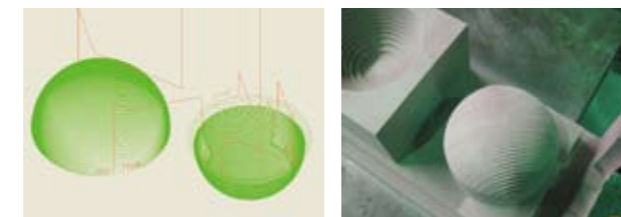
Spindle speed:2500rpm
Cutting depth:4mm

Spindle speed:3500rpm
Cutting depth:5mm

Providing estimate cutting time



2D/3D cutting path optimization analysis

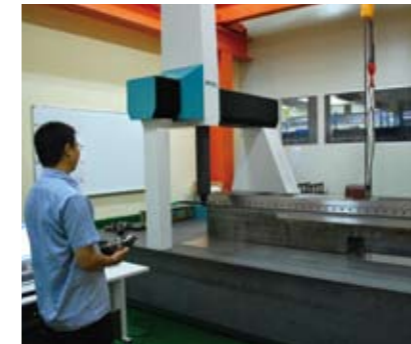
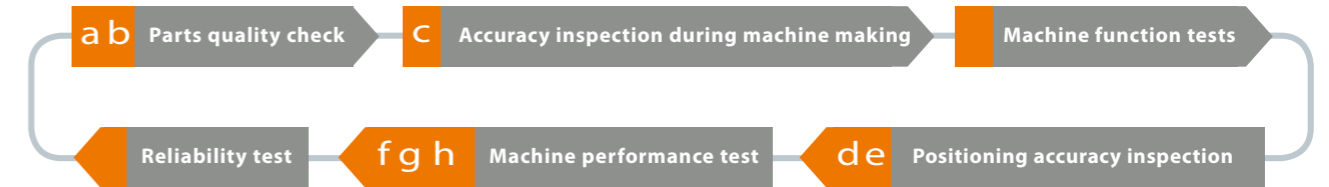


Cutting path optimization analysis

Cutting path optimization

Complete quality check procedures to create high machine quality

We commit for "Quality First" by following P-D-C-A process in every production segment, using the advanced instruments and strict quality standards.



a. CMM inspection



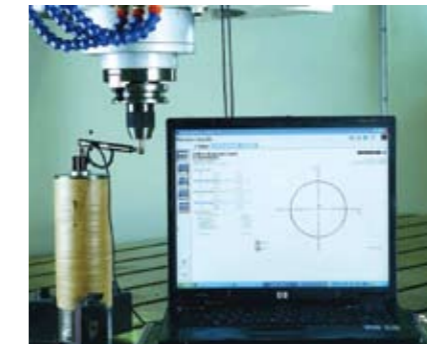
b. Laser Alignment inspection



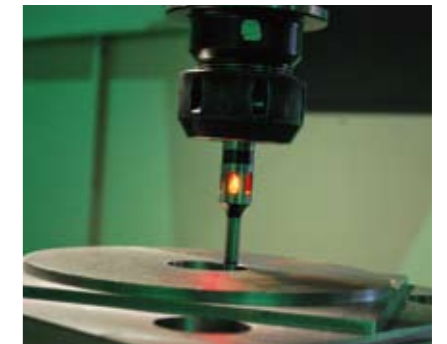
c. Geometric accuracy inspection ISO 10791-2



d. Positioning accuracy inspection ISO 10791-4



e. 2-axis accuracy inspection ISO 10791-6



f. Dynamic accuracy cutting test ISO 10791-7



g. 3-D Mold cutting test



h. Heavy cutting test



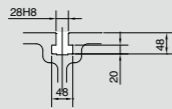
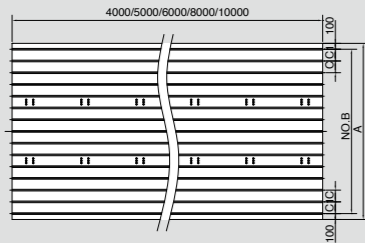
i. Noise and vibration test ISO-230

Modularized Production-After components assembled and tested.

After assembling & testing, these parts will be assembled in the main production line



Table Dimension



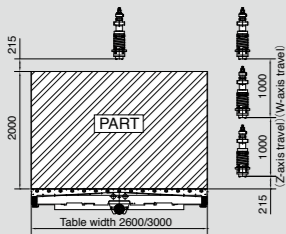
Unit : mm

Model	A	B	C	D
BM-xx30/37	2,600	13 (pcs)	200	200
BM-xx35/42	3,000	15 (pcs)		

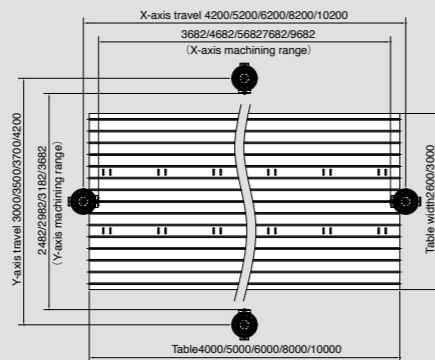
Working Range

Unit : mm

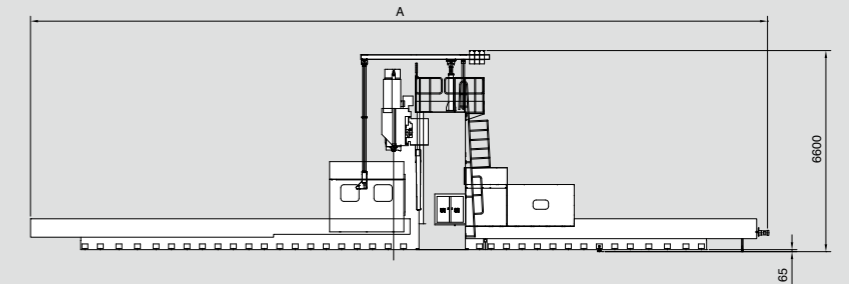
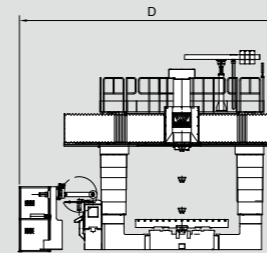
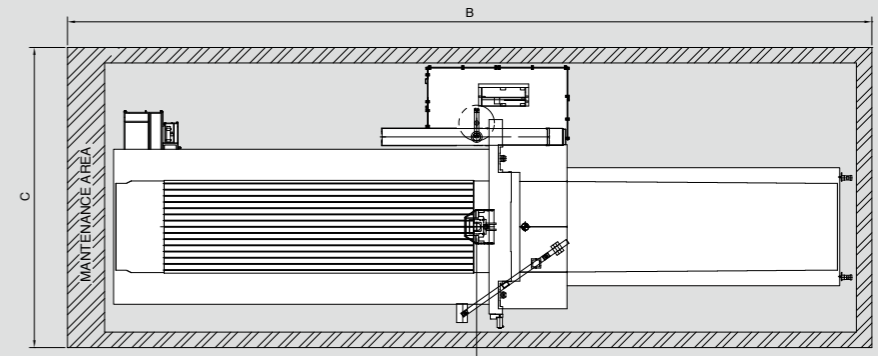
Vertical machining zone (Lateral view)



Horizontal machining zone (Top view)



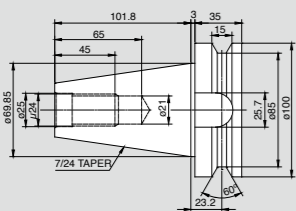
Machine Dimension



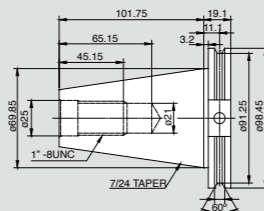
Tool Shank & Pull Stud Dimension

Unit : mm

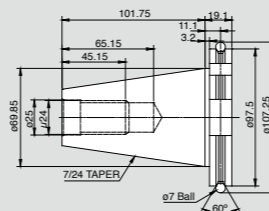
Tool shank BT-50, MAS403



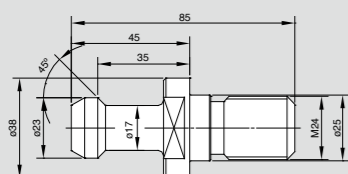
Tool shank BT-50, ANSI B5.50



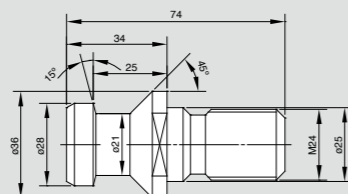
Tool shank DIN-50, DIN 69871/ISO 7388/1



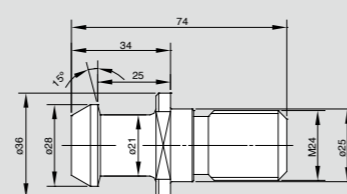
Pull stud bolt MAS403 P50T-1



Pull stud bolt DIN-50, DIN 69872



Pull stud bolt DIN-50, ISO 7388/2/A



Technical Specification

Model	A	B	C	D
BM-4230	12,000	14,000	8,700	7,500
BM-5230	14,000	16,000		
BM-6230	16,000	18,000		
BM-8230	20,000	22,000	9,200	8,000
BM-10230	24,000	26,000		
BM-4237	12,000	14,000		
BM-5237	14,000	16,000		
BM-6237	16,000	18,000		
BM-8237	20,000	22,000	9,200	8,000
BM-10237	24,000	26,000		
BM-4235	12,000	14,000		
BM-5235	14,000	16,000	9,200	8,000
BM-6235	16,000	18,000		
BM-8235	20,000	22,000		
BM-10235	24,000	26,000		
BM-4242	12,000	14,000		
BM-5242	14,000	16,000	9,700	8,500
BM-6242	16,000	18,000		
BM-8242	20,000	22,000		
BM-10242	24,000	26,000		

BM Mechanical Specifications

MODEL	Unit	BM-4230/4237	BM-5230/5237	BM-6230/6237	BM-8230/8237	BM-10230/10237	BM-4235/4242	BM-5235/5242	BM-6235/6242	BM-8235/8242	BM-10235/10242	
TRAVEL												
X axis	mm	4,200	5,200	6,200	8,200	10,200	4,200	5,200	6,200	8,200	10,200	
Y axis	mm	3,000/ 3,700					3,500/ 4,200					
Z axis	Linear way	1,000/ 1,200(Opt.)/1,400(Opt.)					1,000/ 1,200(Opt.)/1,400(Opt.)					
W axis	mm	1,000/ 1,200(Opt.)					1,000/ 1,200(Opt.)					
Distance from spindle nose to table	2-step gear	Z axis=1,000	215~2,215					215~2,215				
		Z axis=1,200	15~2,415(column+200mm)					15~2,415(column+200mm)				
	Direct-driven	Z axis=1,400	15~2,615(column+400mm)					15~2,615(column+400mm)				
		Z axis=1,000	250~2,250					250~2,250				
	Z axis=1,200	50~2,450(column+200mm)					50~2,450(column+200mm)					
Distance from spindle center to column	mm	760					760					
Distance between columns (port width)	mm	3,000					3,500					
TABLE												
Dimension	mm	4,000 × 2,600	5,000 × 2,600	6,000 × 2,600	8,000 × 2,600	10,000 × 2,600	4,000 × 3,000	5,000 × 3,000	6,000 × 3,000	8,000 × 3,000	10,000 × 3,000	
T-slot(Width x Number x Pitch)	mm	28 x 13 x 200										
Max. table load	kg	20,000	24,000	28,000	32,000	36,000	20,000	24,000	28,000	32,000	36,000	
SPINDLE												
Spindle motor(cont./30 min. rated)	kW	22/26 (30/37Opt.)					22/26 (30/37Opt.)					
Spindle speed	2-step gear	22/26kW: 4,000/6,000(Opt.) ; 30/37kW: 3,000(Opt.)/5,500(Opt.)					22/26kW: 4,000/6,000(Opt.) ; 30/37kW: 3,000(Opt.)/5,500(Opt.)					
	Direct-driven	8,000(Opt.)/ 10,000(Opt.)					8,000(Opt.)/ 10,000(Opt.)					
Spindle taper		ISO NO. 50					ISO NO. 50					
FEED												
Cutting feed rate	mm/min	XYZ:1-7,000 W:1,000					XYZ:1-7,000 W:1,000					
Rapid traverse	m/min	XY:10, Z:12, W:2	X:8, Y:10, Z:12, W:2			XY:10, Z:12, W:2	X:8, Y:10, Z:12, W:2					
3 axis motor power (FANUC)	kW	X:9, Y:9, Z:4, W:9 x 2					X:9, Y:9, Z:4, W:9 x 2					
ACCURACY(X, Y, Z) (Measured by laser instrument)												
Positioning accuracy	Refer to JIS B6333	± 0.01/300, ± 0.015 Full travel					± 0.01/300, ± 0.015 Full travel					
	Refer to ISO 10791-2	P0.045					P0.045					
Repeatability	Refer to JIS B6333	± 0.003					± 0.003					
	Refer to ISO 10791-2	Ps0.035					Ps0.035					
ATC												
ATC type/capacity	Vertical type tool change	60/90(Opt.)					60/90 (Opt.)					
	Floor-standing type vertical-horizontal tool change(fixed)	32(Opt.)/40(Opt.)/60(Opt.)					32(Opt.)/40(Opt.)/60(Opt.)					
	Floor-standing type vertical-horizontal tool change(random)	60(Opt.)/90(Opt.)					60(Opt.)/90(Opt.)					
Max. tool weight	kg	18					18					
Tool shank	-	BT 50/ CAT 50					BT 50/ CAT 50					
Pull stud	-	P50T-1					P50T-1					
OTHERS												
Power requirement	KVA	85					85					
Pneumatic requirement	kg/cm ²	6					6					
Machine net weight	kg	64,000/66,000	68,000/70,000	74,000/76,000	86,000/88,000	94,000/96,000	66,000/68,000	70,000/72,000	76,000/78,000	90,000/92,000	98,000/100,000	
Machine gross weight	kg	68,000/70,000	73,000/75,000	80,000/82,000	94,000/96,000	102,000/104,000	70,000/72,000	75,000/77,000	82,000/84,000	98,000/100,000	106,000/108,000	
Max. space (LxWxH)	Vertical type tool change	14x8.7x6.6	16x8.7x6.6	18x8.7x6.6	22x8.7x6.6	26x8.7x6.6	14x9.2x6.6	16x9.2x6.6	18x9.2x6.6	22x9.2x6.6	26x9.2x6.6	
	Floor-standing type vertical-horizontal tool change	14x9.2x6.6	16x9.2x6.6	18x9.2x6.6	22x9.2x6.6	26x9.2x6.6	14x9.7x6.6	16x9.7x6.6	18x9.7x6.6	22x9.7x6.6	26x9.7x6.6	

All specifications can be modified without any notice.

Standard Accessory

- FANUC 0iMD controller
- 4,000rpm 2-step gear type spindle
- Z-axis travel 1,000mm
- Spindle oil cooling device
- Twin hydraulic cylinders with pressured air assistance balancing system for Z-axis
- Twin hydraulic cylinders with automatic pressure tuning for W-axis
- Hydraulic braking system for W-axis
- Absolute pulse coder, dual linear scales for W-axis
- Ball screws supporting devices for XY-axis
- Overhead pendulum type operation panel
- 60T tool magazine (vertical) (BM-xx30/35)
- Centralized auto lubrication system
- Independent lubrication system for four axis
- Four piece splash guard
- Working lamp & 3-color signal lamp
- Air blast through spindle
- Movable manual pulse generator (MPG)
- Wash gun and pneumatic interface
- RS232 and RJ45 interface
- Vision Wide FX graphical user interface
- Flood coolant system
- Heat exchanger for electrical cabinet
- Twin chip screws on table sides
- Caterpillar chup conveyor
- Adjustment tool and tool kits
- Technical manuals (operation, maintenance manual and circuit diagram)

Optional Accessory & Function

- 3,000/5,500/6,000rpm 2-step gear type spindle
- 8,000/ 10,000rpm direct driven spindle
- 90T tool magazine (vertical) (BM-xx30/35)
- Coolant through tool holder interface (vertical spindle)
- Coolant through spindle system (vertical spindle)
- Interface preparation for coolant through spindle system (vertical spindle)
- Enclosed splash guard (without roof)
- Heidenhain linear scale feedback (X, Y, Z)
- Z-axis travel 1,200/1,400mm (VT2030/TS27R/NC4)
- 200/300/400/500mm higher column (W-axis travel 1,200mm)
- Overhead pendulum type auto lifting operation panel
- Air conditioner for electrical cabinet
- Sub table
- Oil skimmer
- Oil mist cooling device
- Rotary table
- Interface preparation for rotary table
- Automatic tool length measurement
- Automatic workpiece measurement (RMP60)
- Transformer
- 3-axis independent manual pulse generator
- Interface preparation for fourth axis
- Z-axis retract function at power failure