



DOUBLE COLUMN MACHINING CENTER WITH UNIVERSAL HEAD

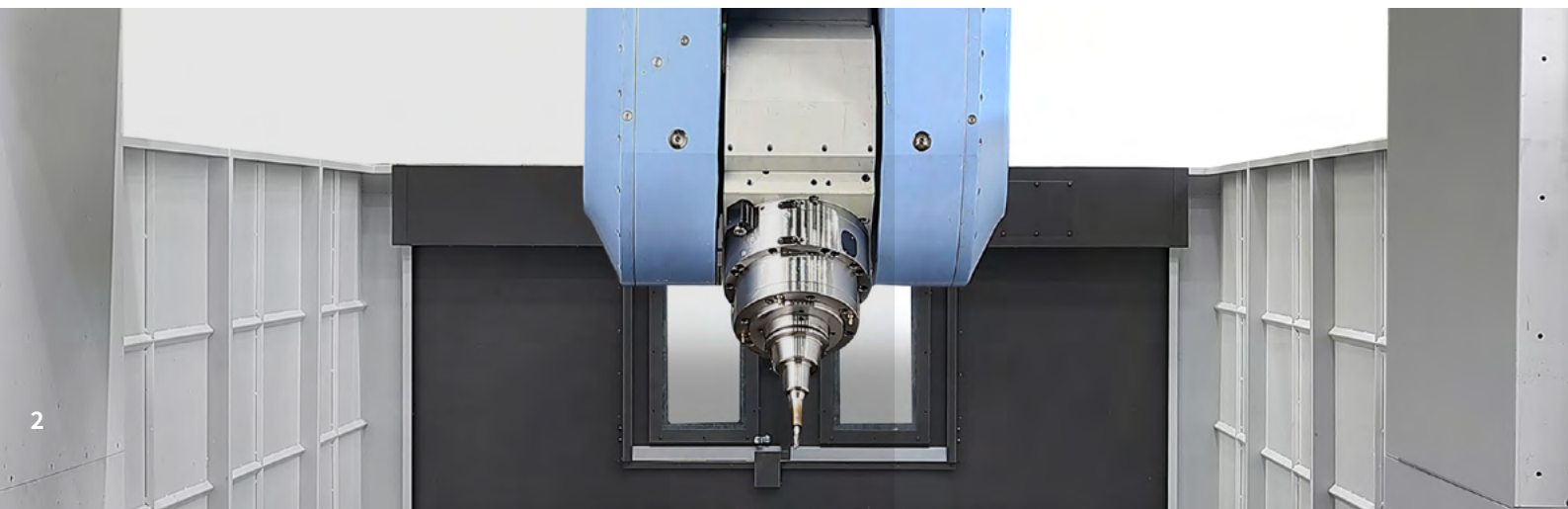
BM

2035U • 2740U



BM 2035U · 2740U

BM machines are multi-purpose, double-column machining centers designed for applications that include the heavy-duty machining of large parts and high precision molds and dies.





5-AXIS MACHINE WITH A UNIVERSAL HEAD

- 15000 r/min (HSK-A100) and 30000 r/min (HSK-A63) spindle
- Powerful torque - 146N · m (107.7 ft-lbs)
- Dual contact nature of the HSK tool shank is suitable for high-speed/ high-precision machining

STANDARD FEED AXIS EQUIPMENT FOR HIGHER PRECISION

- All axes feature a linear scale as standard
- Ball screw bearings and a nut cooling system

THERMALLY-STABLE STRUCTURE AND ADDITIONAL CONTROL FUNCTIONS ENSURE HIGH-QUALITY MOLD MACHINING

- Covers are provided to minimize the impact of ambient temperature fluctuations
- Thermal compensation for the spindle and machine structure are included as a standard.

BASIC STRUCTURE

Double-column structure for stability and precise machining.

Travel

X-axis **3500/4000** mm
137.8/157.5 inch

Y-axis **2050/2500** mm
80.7/98.4 inch

Z-axis **800** mm
31.5 inch

Rapid traverse (X/Y/Z axis)

BM 2035U

16/16/12 m/min
629.9/629.9/472.4 ipm

BM 2740U

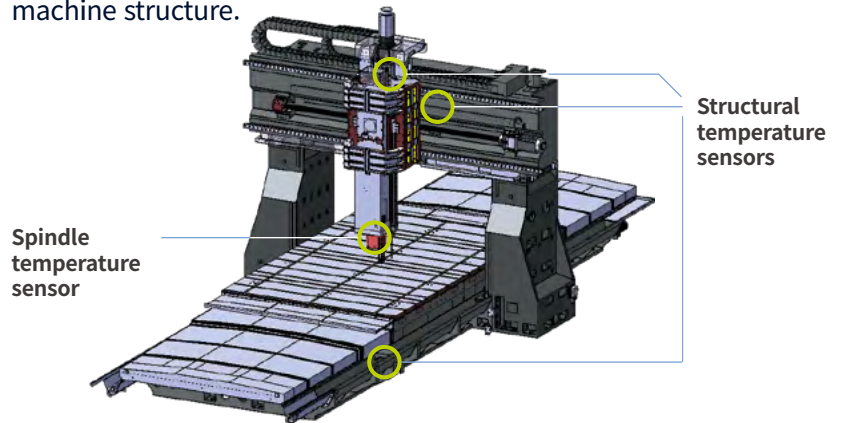
12/16/12 m/min
472.4/629.9/472.4 ipm

Cutting feedrate (X/Y/Z axis)

8/8/6 m/min
315.0/315.0/236.2 m/min

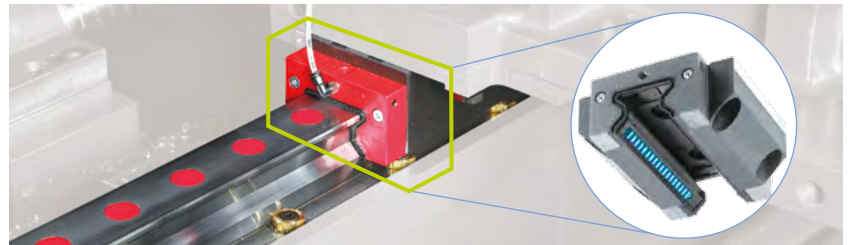
Thermal displacement compensation for the spindle and the structure are included as standard

Multiple thermal sensors are attached and positioned to minimize and compensate for thermal displacement of the spindle and the machine structure.

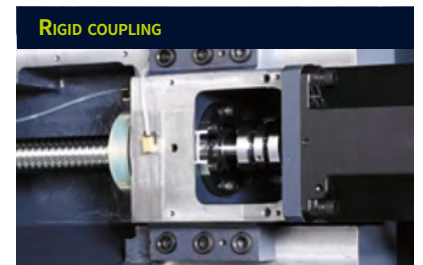


Feed axis construction

Equipped with roller LM guideways for increased rigidity, and a cooling system supplied as standard to minimize thermal displacement of X/Y/Z axes.



High-rigidity feed system structure



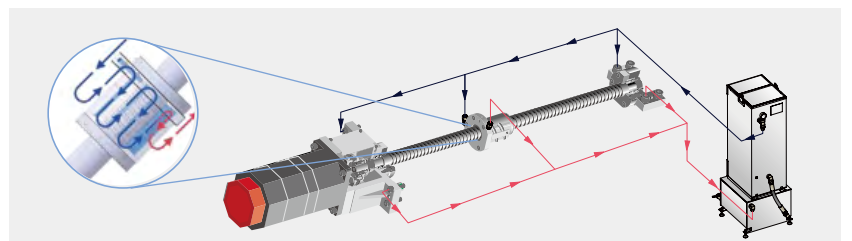
Linear scales supplied as standard for all axes

All axes are equipped with linear scales as standard to maintain high accuracy over long periods of operation.



Ball screw nut cooling

Significantly reduced thermal displacement of feed system maintains process reliability.



SPINDLE

High speed, high accuracy built-in type universal head

Max. spindle speed

15000 r/min

30000 r/min OPTION

Max. spindle power

45.9/34 kW

61.6/45.6 Hp

90/78.5 kW OPTION

120.7/105.3 Hp

Max. spindle torque

146 N·m

107.7 ft-lbs

49.9 N·m OPTION

36.8 ft-lbs

• B axis 0.001° Continuous

• C axis 0.001° Continuous



Dual contact nature of HSK-type spindles suitable for high-speed, high-precision machining

Chain-type ATC

Tool type	HSK-A100 / HSK-A63
No. of tools	60 ea
Max. tool weight	18(39.7) kg(lb) HSK-A100 / 8(17.6) kg(lb) HSK-A63
Max. tool diameter (without adjacent tools)	70(2.8) {120(4.7)} mm(inch) HSK-A63 / 125(4.9) {220(8.7)} mm(inch) HSK-A110
Max. tool length	300(11.8) mm
Tool change time	5 sec



STANDARD | OPTIONAL SPECIFICATIONS

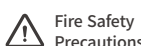
A range of options is available to suit individual requirements.

Division	Description		BM 2035U / 2740U
Spindle	Universal head 15000r/min	45.9/34 kW (61.6/45.6 Hp)	●
	Universal head 30000r/min	90/78.5 kW (120.7/105.3 Hp)	○
ATC	Tool magazine	60 tools	●
Rotary table	Package #1 : Only wiring		○
	Package #2 : HYD. & Control ready		○
	Package #3 : FULL OPT.		○
Coolant	Coolant Tank	1200L+500 660L (Shower coolant : 2690L)	●
	Flood Coolant	1.1kW	●
	Coolant gun		●
	Oil skimmer	Belt type	○
	TSC / Cyclone filter	1.5 kW_2.0 MPa 4.0 kW_2.0 MPa	● ○
Chip disposal	Lift-up chip conveyer	Hinged plate	●
		Magnetic scraper	○
		Scraper type with Drum filter (Required recommendation for Aluminum parts)	○
	2 side chip conveyer	Hinged plate(BM 2035U)	●
		Screw coil (BM 2740U)	●
		Magnetic scraper	○
	Belows cover	Multicover for Y axis U (BM 2035U)	●
	Slide cover	X-axis	●
	Chip bucket	Rotating (500L)	○
		Lift type (380L)	○
	Air purge		●
	Air curtain		●
	Air gun		○
Air dryer		○	
TSA(Through Spindle Air)	0.5 Mpa	○	
Measurement & automation	Automatic tool length measurement	TS27R_RENISHAW	○
		NC4_RENISHAW	○
	Automatic workpiece measurement	RMP60_RENISHAW	○
		RMP600_RENISHAW	●
	Automatic workpiece measuring Master tool	CALIBRATION BLOCK	●
	Auto power on		○
Auto power off		●	
Accessories	Electric cabinet extra light		○
	Air conditioner for electric box		○
	Installation goods	Leveling block and anchoring bolt	●
	Work light	LED lamps : 4ea	●
	Operator call lamp		●
Easy convenient functions	Tool management		○
	Work load balance active control		●
	Easy pattern cycle		●
	Cutting load monitoring		●
	Periodic check function		●
	Control box (PENDANT TYPE)	Pole type	●
		Portable type 1-MPG	●
MPG	MPG with LCD display	○	
	Portable type 3-MPG	○	
	HMOP(Handy Machine Operator's Panel)	○	
Installation type	Under ground		○
	Ground		●
Customized special option	Mist collector	5kW	○
	Coolant Chiller		○
	High pressure TSC	70bar	○

* Please contact your DN Solutions representative for detailed machine information.

● Standard ● Optional X Not applicable

* When using a semi-synthetic type or synthetic type, contact our sales representative or service center in advance.

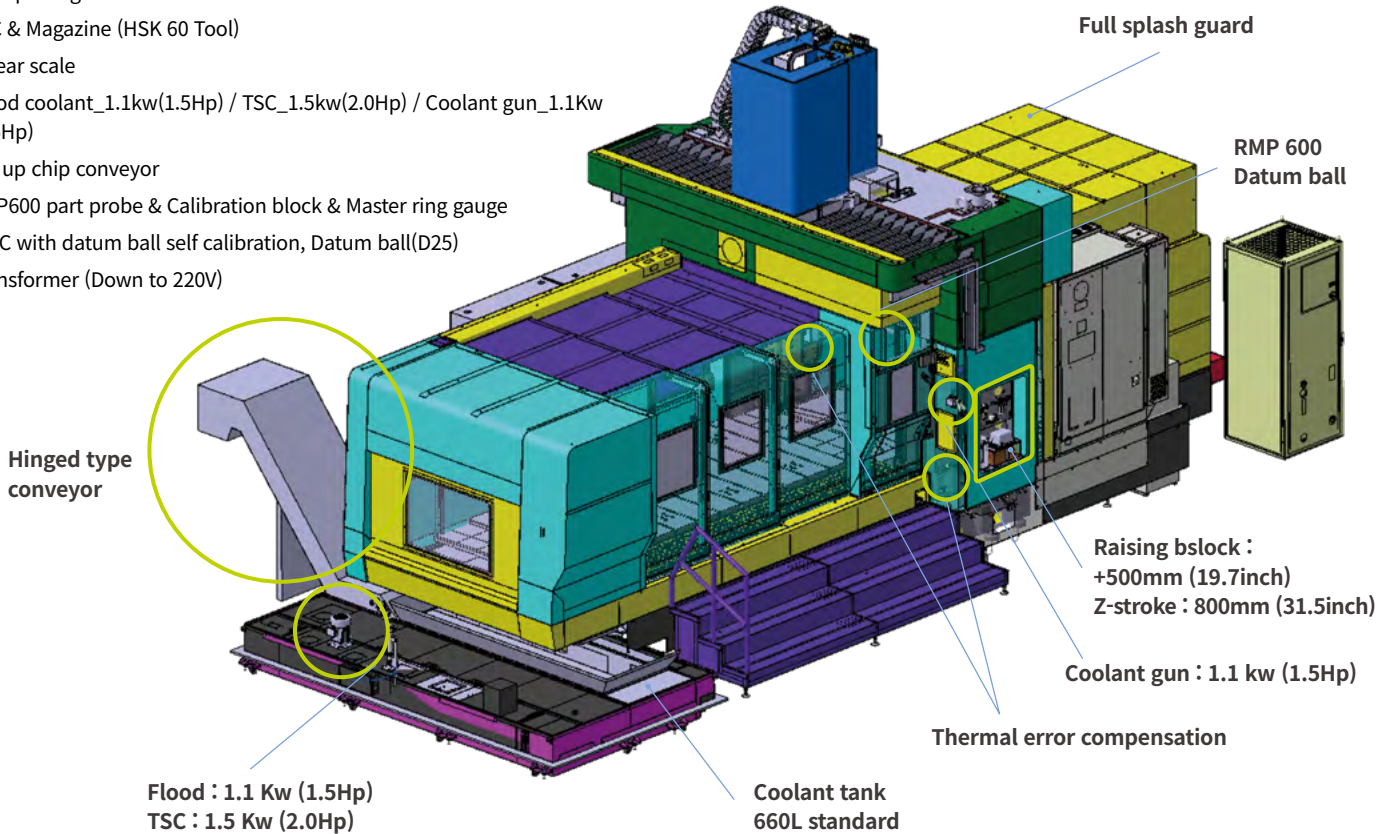


There is a high risk of fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting the controlled and careful use of coolants and modifying the machine without the consent of the manufacturer. Always check the SAFETY GUIDELINES carefully before using the machine.

PERIPHERAL EQUIPMENT

The following items are supplied as standard to enhance precision, improve chip disposal and ensure a better environment

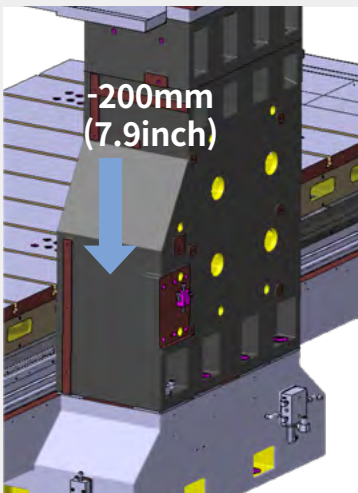
- 1 U-head water chiller & Air+Oil unit
- 2 Full splash guard
- 3 ATC & Magazine (HSK 60 Tool)
- 4 Linear scale
- 5 Flood coolant_1.1kw(1.5Hp) / TSC_1.5kw(2.0Hp) / Coolant gun_1.1Kw (1.5Hp)
- 6 Lift up chip conveyor
- 7 RMP600 part probe & Calibration block & Master ring gauge
- 8 DIKC with datum ball self calibration, Datum ball(D25)
- 9 Transformer (Down to 220V)



Customized special options

Column : -200mm (7.9inch)

- Z-axis Stroke 800 → 200(7.9)mm(inch) Reduction
- Z direction Work Area 200(7.9) mm(inch) Reduction
- Additional rigidity achieved by reducing RAM protrusion compared to the standard machine models. (Suitable for thin plate processing)



Mist collection

- Power : 5.5kw (7.4Hp)
- Maker : YHB



Automatic tool length measurement system

- Renishaw → TS27R
- Blum → A7, Renishaw → NC4 (Contactless)



Automatic workpiece measurement system

- Renishaw → RMP600 (Standard)
- Heidenhain → TS460 / SE660 **OPTION**



PERIPHERAL EQUIPMENT

Customized special options

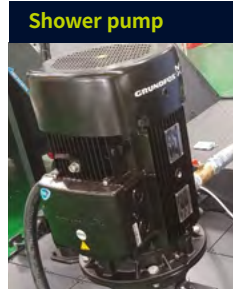
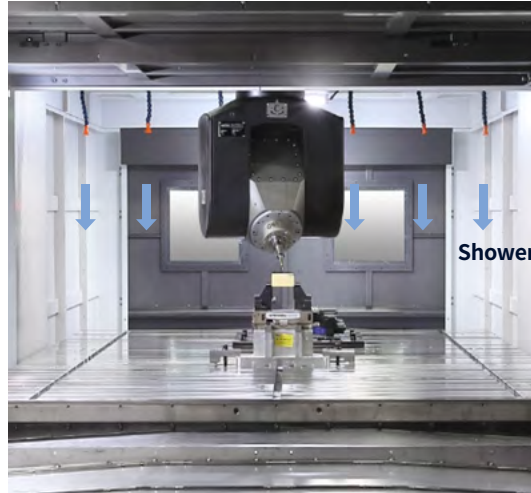
Datum ball

- Heidenhain → KKH250 **OPTION**
- Renishaw / ILWON TMG (Standard)



Shower coolant system and large capacity coolant tank

- Pump : 11 Kw(50Hz), 408L/min, 10bar



Paper filter & Sub-tank (Clean coolant tank)

- Capacity : 700L
- TSC & Flood



Sub-tank

TSC

- 1.5kW_20bar_cyclone filter (standard)
- 4.0kW_20bar_cyclone filter **OPTION**
- 5.5kW_70bar_dual backfilter **OPTION**



Air dryer

- Maker : SMC
- Specification : IDF6E
- Air volume(m³/min) : 0.75(50Hz), 0.82(60Hz)



Coolant chiller

- Separate installation
- Attached at sub-tank if paper filter option is working



FANUC 31i PLUS

Fanuc 31i Plus maximizes customer productivity and convenience.

15" Touch screen + New OP

DN Solutions Fanuc 31iB/B5 Plus' operation panel enhances operating convenience by incorporating common-design buttons and layout. It features a Qwerty keyboard for fast and easy data input and operation.



iHMI touchscreen

iHMI provides an intuitive interface that uses a touchscreen for quick and easy operation.

Range of applications

Providing various applications related to planning, machining, improvement and utility, for customer convenience.

Fanuc 31i Plus

- 15-inch color display
- Intuitive and user-friendly design

USB and PCMCIA card QWERTY keyboard

- EZ-Guide i standard
- Ergonomic operator panel
- 4MB Memory
- Hot keys
- Enhance AICC BLOCK
- Touch pen provided as standard



NUMERIC CONTROL SPECIFICATIONS

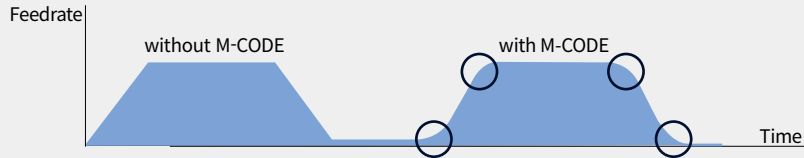
FANUC

Division	Item	Specifications	BM-U series F31iB5 PLUS
Controlled axis	Controlled axes		5 (X,Y,Z,B,C)
	Simultaneously controlled axes		5 axes
Data input/output	Additional controlled Axis	Add 1 Axis (5th Axis)	
	Fast data server		● (1GB)
	Memory card input/output		●
	USB memory input/output		●
Interface function	Large capacity memory(2GB)*2	Available Option only with 15" Touch LCD (iHMI Only) *2)	○
	Embedded Ethernet		●
	Fast Ethernet		○
Operation	Enhanced Embedded Ethernet function		○
	DNC operation	Included in RS232C interface.	●
Program input	DNC operation with memory card		●
	Workpiece coordinate system	G52 - G59	●
	Addition of workpiece coordinate system	G54.1 P1 X 48 (48 pairs)	●
	Tool number command		T4 digits
Feed function	Tilted working plane indexing command	G68.2 TWP	●
	AI contour control I	G5.1 Q , 40 Blocks	X
	AI contour control II	G5.1 Q , 200 Blocks	X
	AI contour control II	G5.1 Q , 600 Blocks	X
	AI contour control II	G5.1 Q , 1000 Blocks *1)	●
Operation Guidance Function	High smooth TCP		●
	EZ Guidei (Conversational Programming Solution)		●
	iHMI with Machining Cycle	Only with 15" Touch LCD standard *2)	●
Setting and display	EZ Operation package		●
	CNC screen dual display function		●
Network	FANUC MTConnect		⊕
	FANUC OPC UA		⊕
Others	Display unit	15" color LCD	X
		15" color LCD with Touch Panel	●
		640M(256KB) _500 programs	X
		1280M(512KB) _1000 programs	X
		2560M(1MB) _1000 programs	X
		5120M(2MB) _1000 programs	X
		10240M(4MB) _1000 programs	●
		20480M(8MB) _1000 programs	○
		2560M(1MB) _2000 programs	○
		5120M(2MB) _4000 programs	○
		10240M(4MB) _4000 programs	○
20480M(8MB) _4000 programs	○		

CONVENIENT MACHINING

Work load counter control

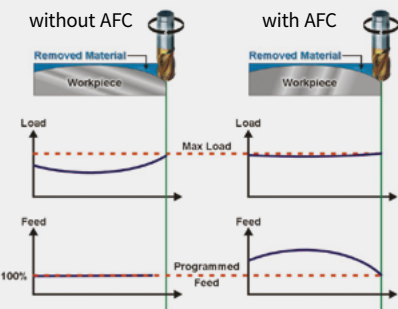
By selecting the appropriate M-Code according to the weight of the workpiece, the machine automatically decides the most effective and efficient moving pattern of the table.



M-Code	Weight of work piece	BM 2035U	BM 2740U
M380	5 tons(11023.0 lb) or less	●	●
M381	10 tons(22045.9 lb) or less	●	●
M382	15 tons(33068.9 lb) or less	●	●
M383	20 tons(44091.8 lb) or less	●	●

Adaptive feedrate control (AFC)

If tool overload is detected during operation, the feed rate is controlled to prevent the tool from being damaged.



High Speed / High Precision Contour Control

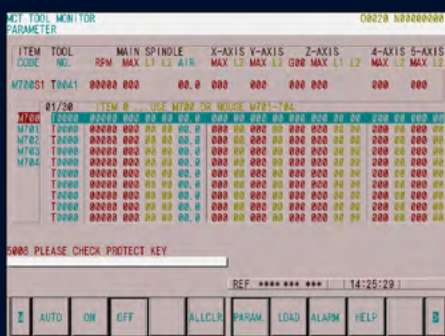
- AICC2_1000 BLOCK + Machining condition selection function (Standard)
- Data server 1GB or 2GB **OPTION**

Process monitoring function and manual operation screen

In-process monitoring minimizes the risk of damage to the workpiece during cutting operations.

Tool Load Monitoring

During cutting operations, abnormal loads caused by wear and tear of the tool are detected, and an alarm is triggered to prevent further damage from occurring.



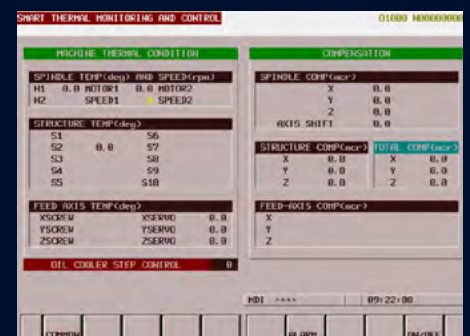
Tool Management **OPTION**

This function controls information on the tools in the tool magazine pots.



Thermal Compensation

Improve the machining precision through temperature sensor detection and deflection compensation of the structure in real-time.



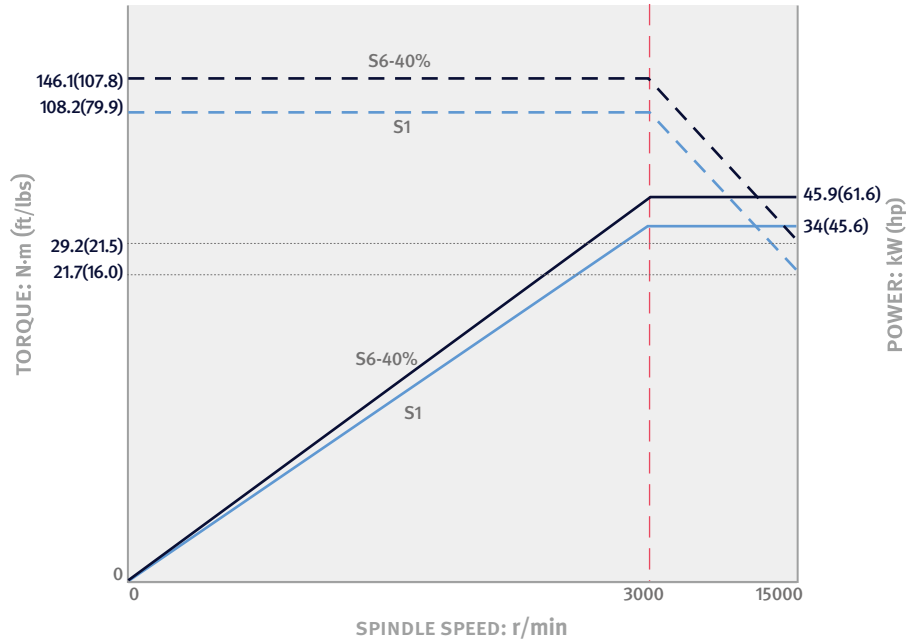
POWER | TORQUE

15000 r/min

Max. speed **15000** r/min

Max power **45.9/34** kW
61.6/45.6 Hp

Max power **146** N·m
107.7 ft-lbs

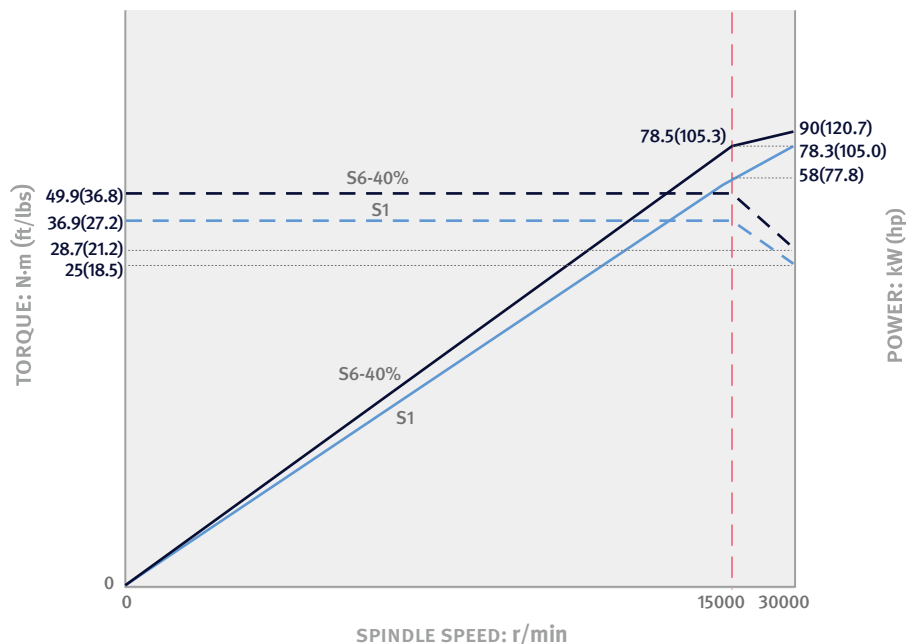


30000 r/min OPTION

Max. speed **30000** r/min

Max power **90/78.5** kW
120.7/105.3 Hp

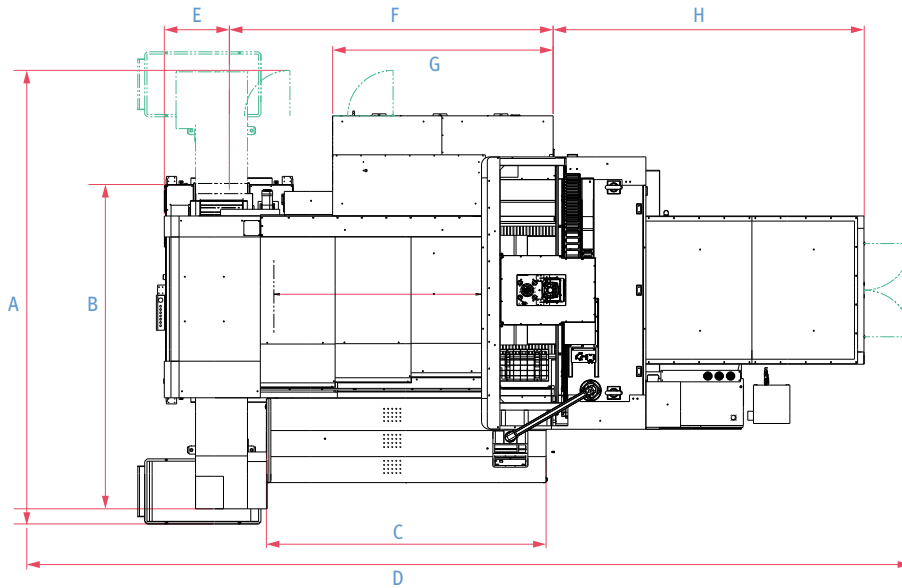
Max power **49.9** N·m
36.8 ft-lbs



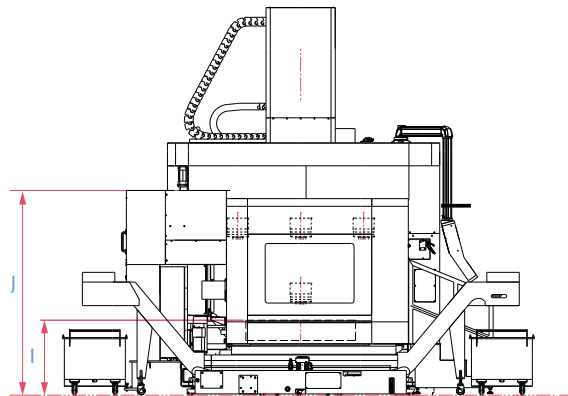
EXTERNAL DIMENSIONS

Unit : mm(inch)

TOP



FRONT



**Please comply with our company's installation guideline, such as ground condition and anchoring, in order to achieve the maximum precision and performance of the machine.*

Model	A	B	C	D	E	F	G	H	I	J
BM 2035U	5943 (234.0)	4682 (184.3)	3000(118.1)	11963 (471.0)	1036 (40.8)	3985 (156.9)	2715 (106.9)	4246 (167.2)	2520 (99.2)	923 (36.3)
BM 2740U	6636 (261.3)	5042 (198.5)	3500 (137.8)	13459 (529.9)	1772 (69.8)	3983 (156.8)	2712 (106.8)	4733 (186.3)	2550 (100.4)	953 (37.5)

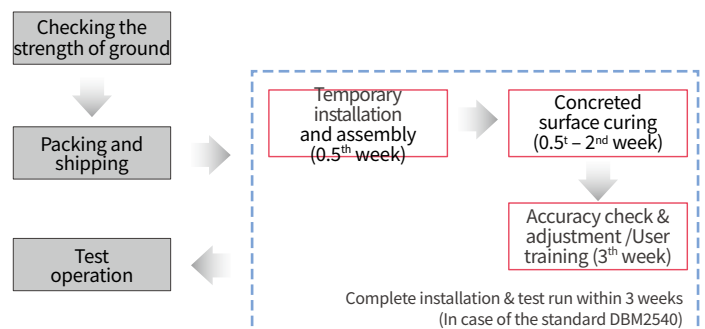
* Providing anchoring bolts. Foundation work must be done.

Installation precautions

1. Test for bearing capacity of soil should be taken more than four areas. (In particular, places for bed and column where the loads are concentrated must be tested.)
2. Basically, the bearing capacity of soil should exceed the values determined by DN Solutions. (Test for bearing capacity of soil should follow DN Solutions's standards.)
3. Our engineering team may be available even during the foundation work at customer's request.
4. Please comply with our company's installation guideline, such as ground condition and anchoring, in order to achieve the maximum precision and performance of the machine.

Installation & test run

On-site installation and commissioning will be conducted according to a '5-week' schedule. [Excluding the concreted surface curing period (3rd week)]

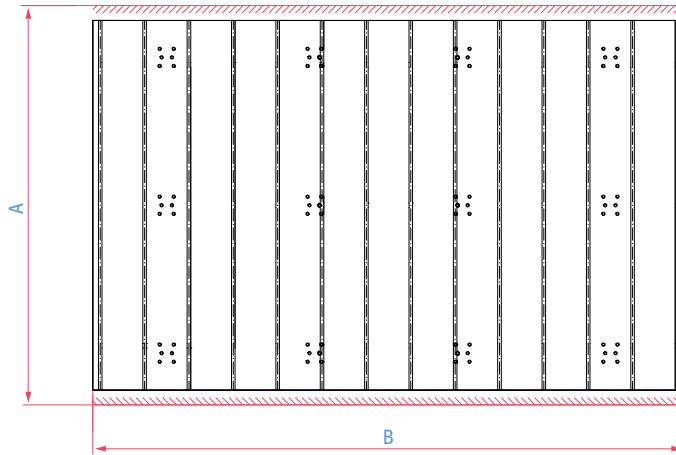


* The installation plan may vary according to the size of the machine, optional devices, and the conditions and environment of the site.

TABLE DIMENSIONS | WORKING RANGE

TABLE DIMENSIONS

Unit : mm(inch)

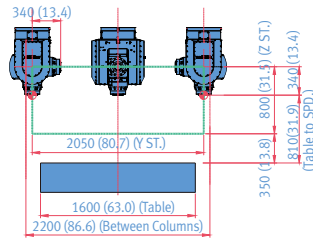


Model	A	B	C	T-SLOT distance	Quantity
BM 2035U	1600 (63.0)	3500 (137.8)	210 (8.3)	300 (11.8)	11 ea
BM 2740U	2500 (98.4)	4000 (157.5)	210 (8.3)	300 (11.8)	14 ea

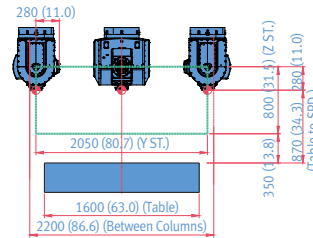
WORKING RANGE

BM 2035U(Z800)

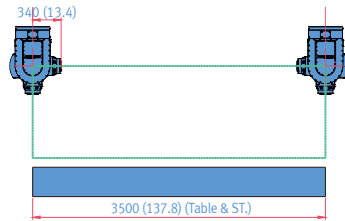
15K HEAD



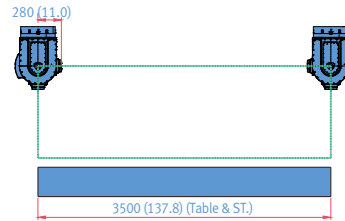
30K HEAD



X 3500mm (137.8inch)

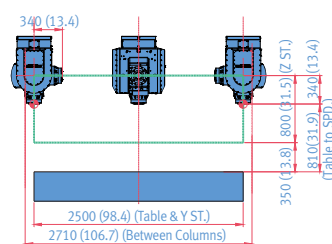


X 3500mm (137.8inch)

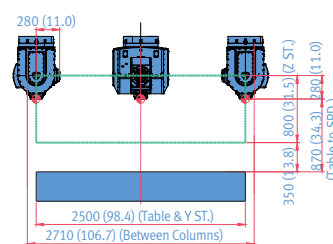


BM 2740U(Z800)

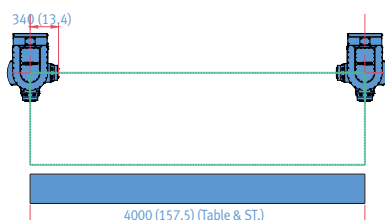
15K HEAD



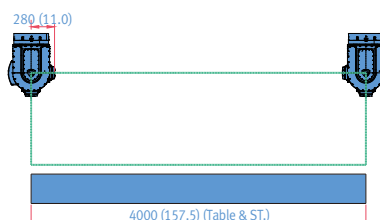
30K HEAD



X4000mm (157.5inch)



X4000mm (157.5inch)



MACHINE SPECIFICATIONS

Item		Unit	BM 2035U	BM 2740U
Travel	X-axis	mm (inch)	3500 (137.8)	4000 (157.5)
	Y-axis	mm (inch)	2050 (80.7)	2500 (98.4)
	Z-axis	mm (inch)	800 (31.5)	800 (31.5)
Table	Spindle to table surface	mm (inch)	810 (31.9) (HSK-A100) 870 (34.3) (HSK-A63)	810 (31.9) (HSK-A100) 870 (34.3) (HSK-A63)
	Distance between columns	mm (inch)	2200 (86.6)	2700 (106.3)
	Table size	mm (inch)	3500 x 1600 (137.8 x 63.0)	4000 x 2500 (157.5 x 98.4)
	Loading capacity	kg (lb)	10000 (22045.9)	15000 (33068.9)
Spindle	Speed	r/min	15000 {30000}*	
	Taper	-	HSK-A100/ HSK-A63	
	Max. torque	N·m (ft-lbs)	146 (107.7) {49.9(36.8)}	
	Spindle power	kW (Hp)	45.9 / 34 (61.6 / 45.6) {90 / 78.3 (120.7/105.0)}	
Feed rate	Feed rate (X / Y / Z)	m/min (ipm)	16 / 16 / 12 (629.9 / 629.9 / 472.4)	12 / 16 / 12 (472.4 / 629.9 / 472.4)
	Cutting feedrate	m/min (ipm)	8 / 8 / 6 (315.0 / 315.0 / 236.2)	
ATC	Tool storage capacity	ea	60	
	Max. tool diameter [w/o adjacent tool]	mm (inch)	70(2.8) {120(4.7)} HSK-A63 / 125(4.9) {220(8.7)} HSK-A110	
	Max. tool length	mm (inch)	300 (11.8)	
	Max. tool weight	kg (lb)	18 (39.7)	
	Max. tool moment	N·m (ft-lbs)	12.74 (9.4)	
	Tool selection type	-	MEMORY RANDOM	
	Tool change time (T-T-T) (60Hz/50Hz)	sec	5.0 / 6.0	
Machine Size	Height	mm (inch)	5150 (202.8)	4995 (196.7)
	Dimension (L x W)	mm (inch)	11350 x 5150 (446.9 x 202.8)	10984 x 6011 (432.4 x 236.7)
	Weight	kg (lb)	40000 (88183.6)	48700 (107363.5)

*{ } : Option

RESPONDING TO CUSTOMERS ANYTIME, ANYWHERE

DN Solutions Global Network

DN Solutions provides systems-based professional support services, before and after the machine tool sale, by responding quickly and efficiently to customers. By supplying spare parts, product training, field service and technical support, we provide the expert care, attention and assistance our customers expect from a market leader.

Global sales and service support network		51	Technical centers Technical center, Sales support, Service support, Parts support
4	Corporations	200	Service posts
155	Dealer networks	3	Factories



CUSTOMER SUPPORT AND SERVICES

We're there for you whenever you need us.

We help our customers operate at maximum efficiency by providing them with a range of tried, tested and trusted services - from pre-sales consultancy to post-sales support.



Field services

- On-site service
- Machine installation and testing
- Scheduled preventive maintenance
- Machine repair service



Parts supply

- Supplying a wide range of original DN Solutions spare parts
- Parts repair service



Training

- Programming, machine setup and operation
- Electrical and mechanical maintenance
- Applications engineering



Technical support

- Supports machining methods and technology
- Responds to technical queries
- Provides technical consultancy



dn-solutions.com

Head Office

22F T Tower, 30, Sowol-ro 2-gil
Jung-gu, Seoul, Korea, 04637

Tel: +82-2-6972-0370/0350
Fax: +82-2-6972-0400

DN Solutions America

19A Chapin Road, Pine Brook
New Jersey 07058, United States

Tel: +1-973-618-2500
Fax: +1-973-618-2501

DN Solutions Europe

Emdener Strasse 24, D-41540
Dormagen, Germany

Tel: +49-2133-5067-100
Fax: +49-2133-5067-111

DN Solutions India

No.82, Jakkuar Village
Yelahanka Hobli, Bangalore-560064

Tel: + 91-80-2205-6900
E-mail: india@dncompany.com

DN Solutions China

Room 101,201,301, Building 39 Xinzhuan
Highway No.258 Songjiang District
China Shanghai (201612)

Tel: +86 21-5445-1155
Fax: +86 21-6405-1472

Sales inquiry

sales@dncompany.com

* For more details, please contact DN Solutions.

* Specifications and information contained within this catalogue may be changed without prior notice.