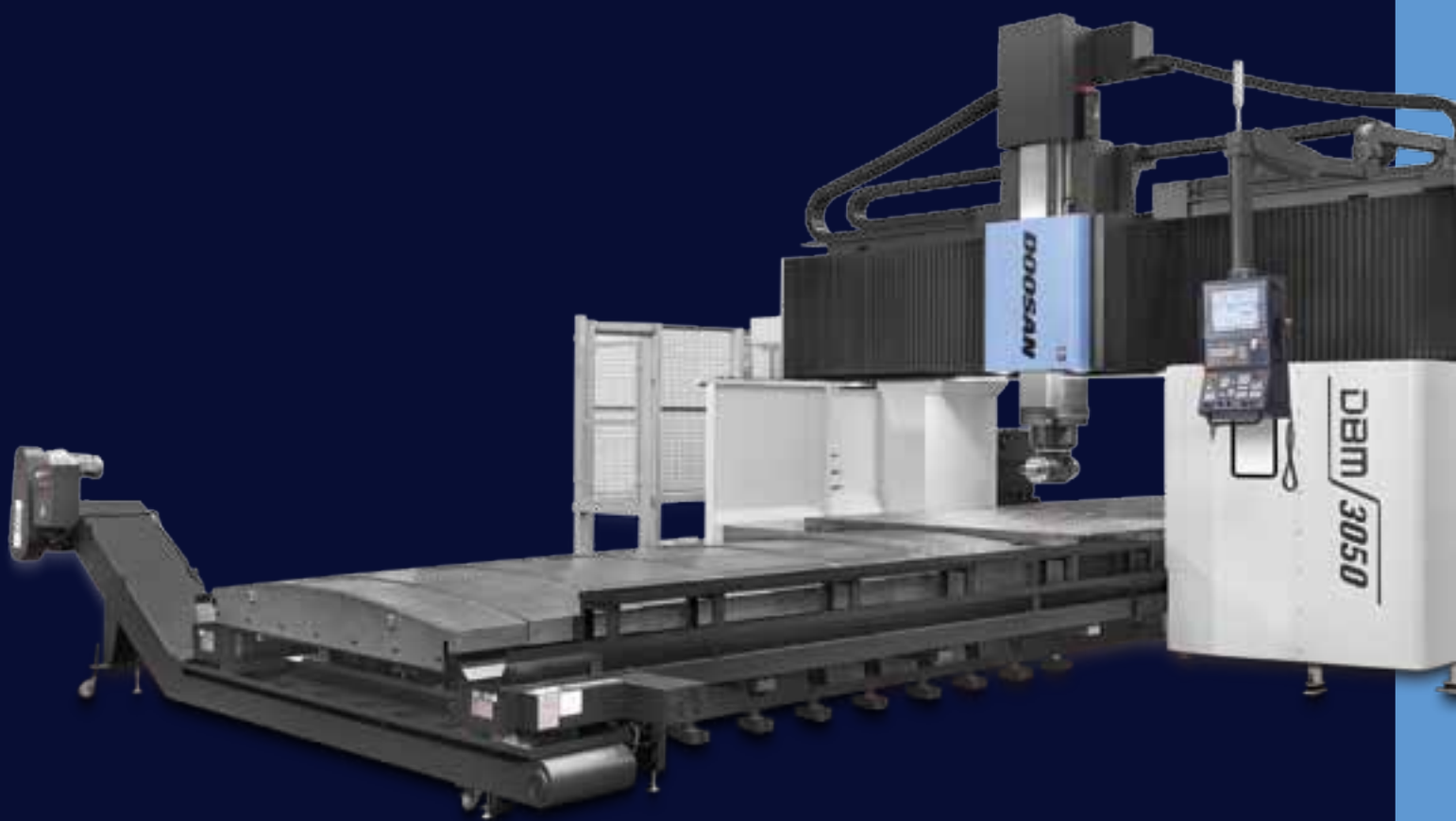


DOOSAN



DBM series

Multi-purpose Double Column
Machining Center



DBM series

DBM 2030/2040

DBM 2540/2550

DBM 3050/3060/3080

**MACHINE
GREATNESS™**

Basic information

Broad Range
of Machining
Capabilities

High-Precision,
High-Speed
Mold Machining
Performance

Convenient
Machining
Functions

Machine Information

Standard/Optional
Specifications

Machine
Specifications

Customer Support



DBM series

The DBM series is a multi-purpose double column machining center without W-axis for applications such as heavy duty machining of large parts and high precision dies and molds. Designed with the highest specifications in its class, the DBM series provides a broad range of machining capabilities and optional equipment, together with many convenient functions for the operator.

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- 04 Broad Range of Machining Capabilities
- 12 High-Precision, High-Speed Mold Machining Performance
- 14 Convenient Machining Functions

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- 16 Standard/Optional Specifications
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- 26 Customer Support



Broad Range of Machining Capabilities

- A variety of different ram spindle specifications and a wide range of auto-change attachments support many types of machining applications such as dies/molds to heavy duty cutting.

High-Precision, High-speed Mold Machining Performance

- Adoption of the DSQ I/II/III functions, high-speed rapid traverse and cutting feedrate, high-load table capacity, high-precision/highspeed head attachments, X/Y/Z axes linear scale, or X/Y/Z axes ball screw shaft cooling as options enables the machining of high-accuracy and high-speed molds and general parts.

Convenient Machining Functions

- The DBM series provides a support system for 5 face machining of large and heavy workpieces, easy pattern cycles, work load counter control, automatic feed control, and process monitoring function.



High-rigidity, High-precision Structure

Basic information

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High-Speed
Mold Machining
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Machining
Functions

Designed for large work pieces, the machine enables long-term, heavy-duty cutting with stable machining accuracy.

Machine Information

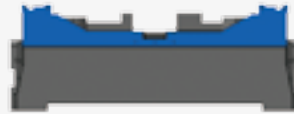
Standard/Optional
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Specifications

Customer Support

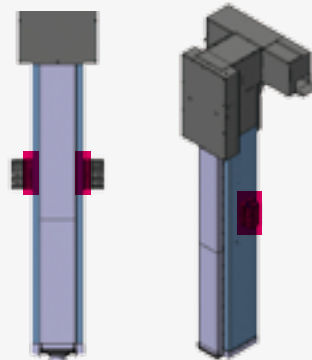
Bed and Column Structure

- The structure of the DCM series minimizes the effects of vibration on workpieces under loads produced by both vertical and horizontal cutting during machining of 5 faces. Symmetrical structure design and the application of effective compensation reduces thermal displacement during machining.
- The bed is made of an M-type cast structure excellent for vibration absorption to ensure a high level of machining accuracy.



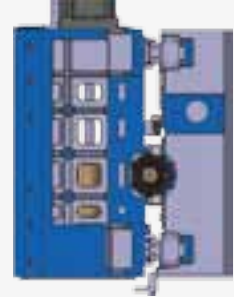
Thermal compensation as standard

- Thermal compensation
Z-axis nut-housing cooling as Standard
Minimized thermal impact to the ram spindle.



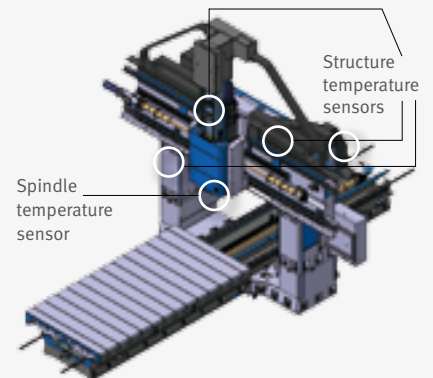
Cross-beam Structure

- The cross beam has a guideway structure of the I-shaped to have high accuracy and rigidity.



- Structure thermal compensation option

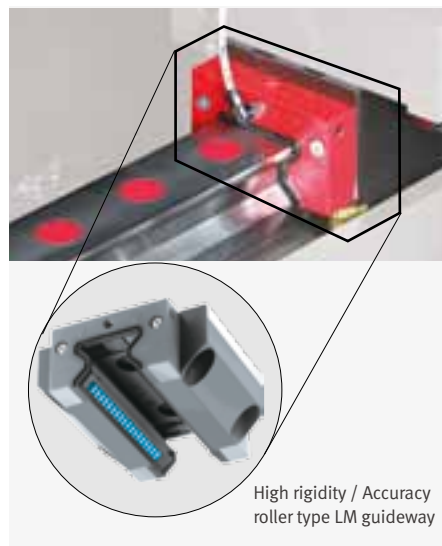
Multiple thermal sensors are attached to minimize and compensate thermal displacement of the spindle and the structure.



Feed Axis

Equipped with roller LM Guideways for increased rigidity and a cooling system as a standard feature to minimize thermal displacement at X/Y axis

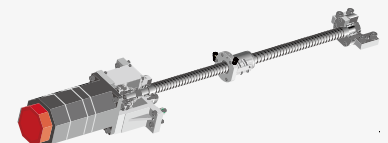
Stable and Fast Feed Shaft Structure



High rigidity / Accuracy
roller type LM guideway

Ball screw bearing housing cooling and Z-axis dual ball screw

- Minimized axes displacement to apply ball screw bearing housing cooling



- High speed,
high accuracy control
with Z-axis dual ball screw





Wide Machining Specifications

X x Y x Z axes Travel

X-axis	3250/4250/5250/6250/8250 mm (128.0/167.3/206.7/246.1/324.8 inch)
Y-axis	2500/3000/3500 mm (98.4/118.1/137.8 inch)
Z-axis	800 {1100 <small>option</small>} mm (31.5 {43.3 <small>option</small> }) inch

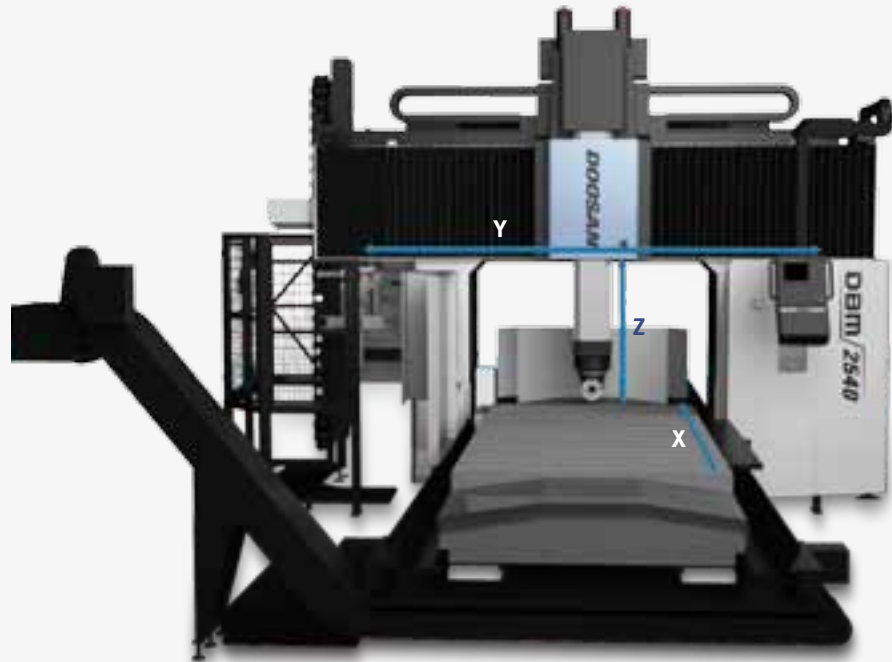


Table Load Capacity

DBM 2030	15000 kg (33068.9 lb)
DBM 2040	17000 kg (37478.0 lb)
DBM 2540	20000 kg (44091.8 lb)
DBM 2550	25000 kg (55114.8 lb)
DBM 3050	28000 kg (61728.5 lb)
DBM 3060	32000 kg (70546.9 lb)
DBM 3080	35000 kg (77160.7 lb)

Rapid Traverse

DBM 2030 / 2040	
X-axis	24 m/min (944.9 ipm)
Y-axis	24 m/min (944.9 ipm)
Z-axis	15 m/min (590.6 ipm)
DBM 2540 / 2550 / 3050 / 3060 / 3080	
X-axis	20 m/min (787.4 ipm)
Y-axis	20 m/min (787.4 ipm)
Z-axis	15 m/min (590.6 ipm)

Cutting Feedrate

X / Y / Z-axis	10000 mm/min (393.7 ipm)
----------------	---------------------------------

※ Specifications and delivery of DBM 2540/2550 should be reviewed in detail before contract.



Basic information

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of Machining
Capabilities

High-Precision,
High-Speed
Mold Machining
Performance

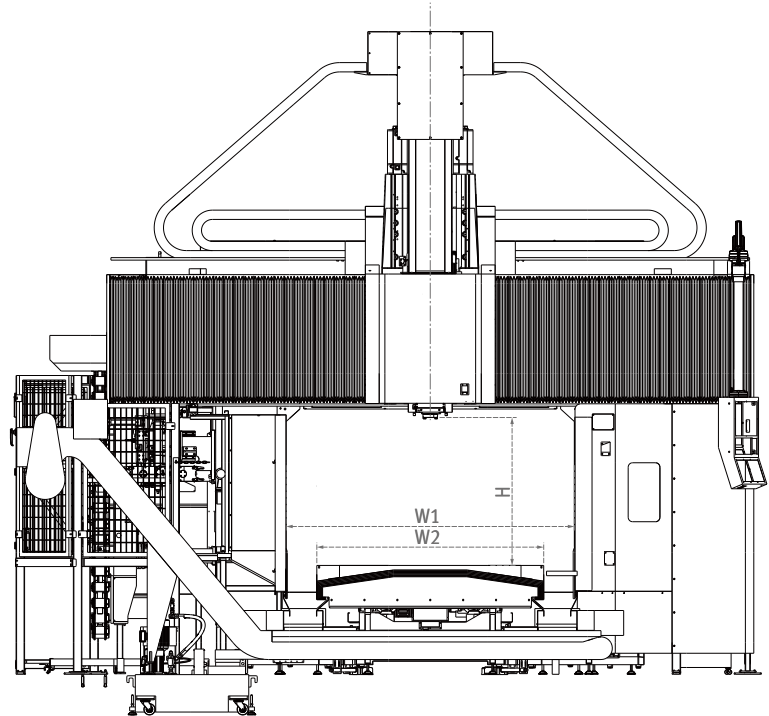
Convenient
Machining
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Effective width between columns W1

2000/2500/3000mm (78.7/98.4/118.1 inch)

Workpiece height H

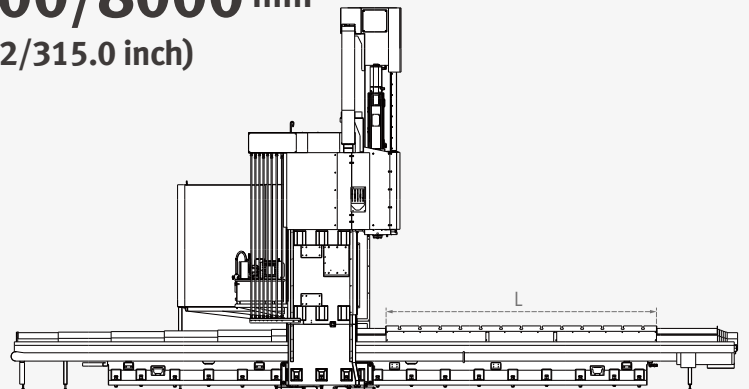
1000 {1300 option} mm (39.4{51.2 option} inch)

Table size in Y and X axis W2 x L

W2 **1500/2000/2500 mm**
(59.1/78.7/98.4 inch)

L **3000/4000/5000 mm**
(118.1/157.5/196.9 inch)

6000/8000 mm
(236.2/315.0 inch)



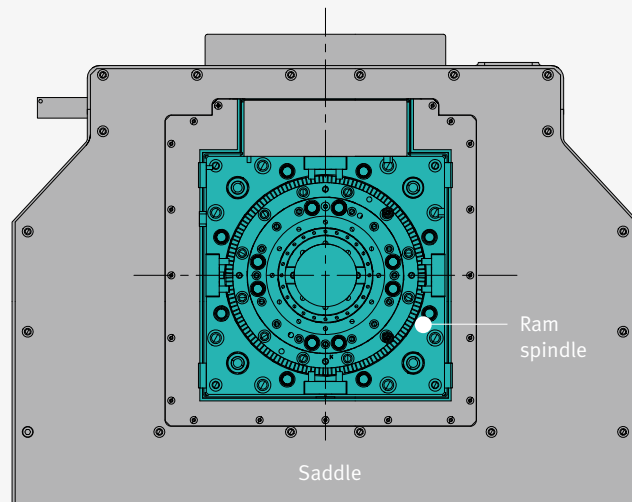


High Power Ram Spindle

High rigidity & speed machining with high power ram spindle.

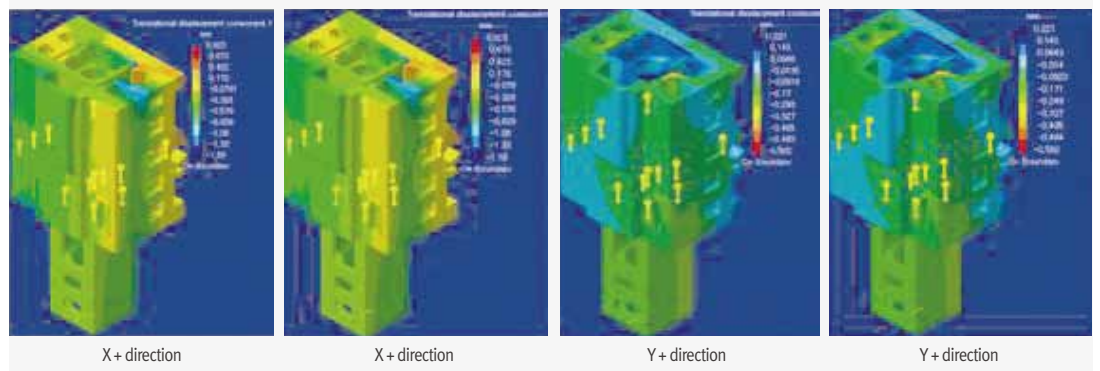
Adoption of ram spindle and saddle structure to support heavy-duty cutting

The highly rigid, square type box guideway ram has a cross section of 380 x 380mm(14.96 x 14.96 inch), which is the biggest in its class. This ensures optimum heavy duty machining capability in both vertical and horizontal applications.



Stress analysis of ram spindle unit

The ram spindle unit is designed to maintain ideal conditions under any load through stress analysis.



Spindle Power – Torque Diagram

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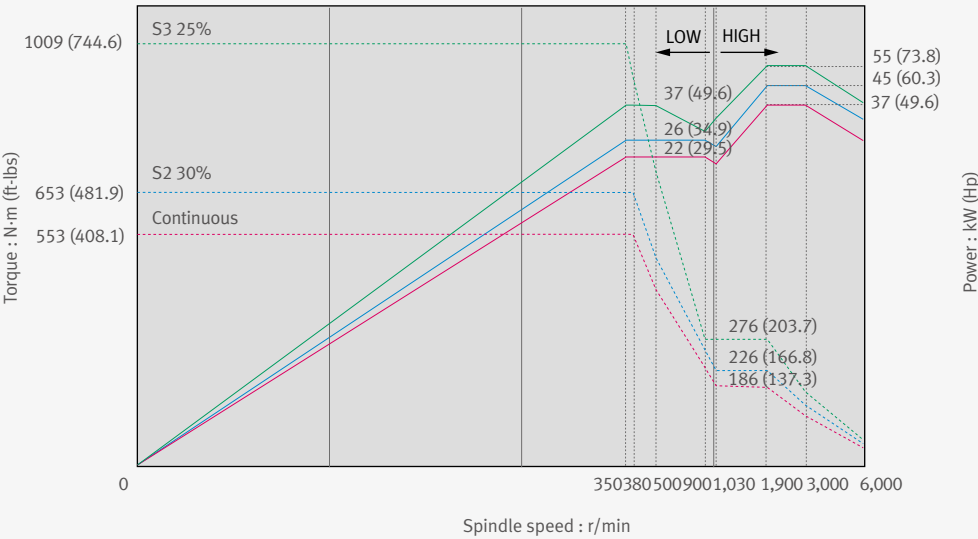
Standard/Optional
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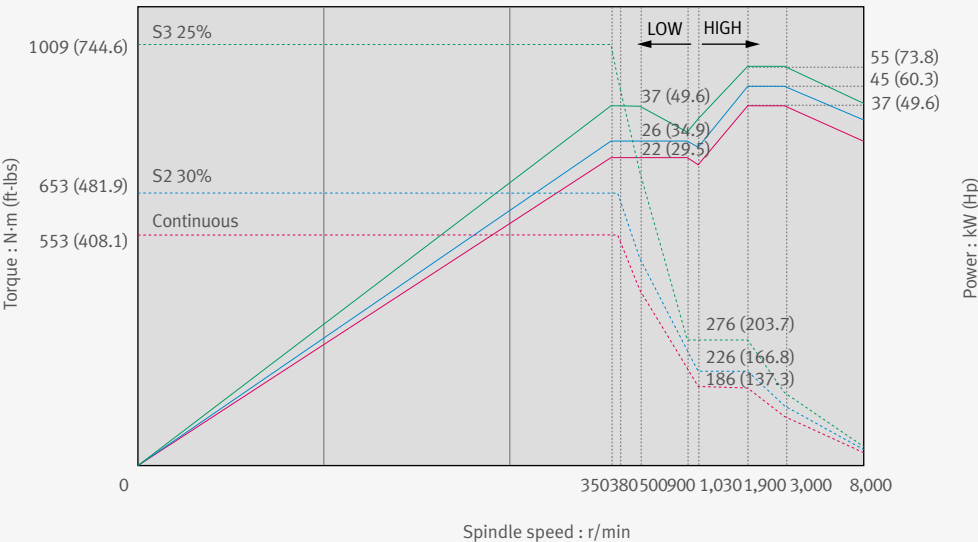
6000 r/min

Spindle speed **6000 r/min** Spindle power **55/37 kW** Spindle torque **1009 N·m**
(73.8 / 49.6 Hp) **(744.6 ft-lbs)**



8000 r/min **option**

Spindle speed **8000 r/min** Spindle power **55/37 kW** Spindle torque **1009 N·m**
(73.8 / 49.6 Hp) **(744.6 ft-lbs)**



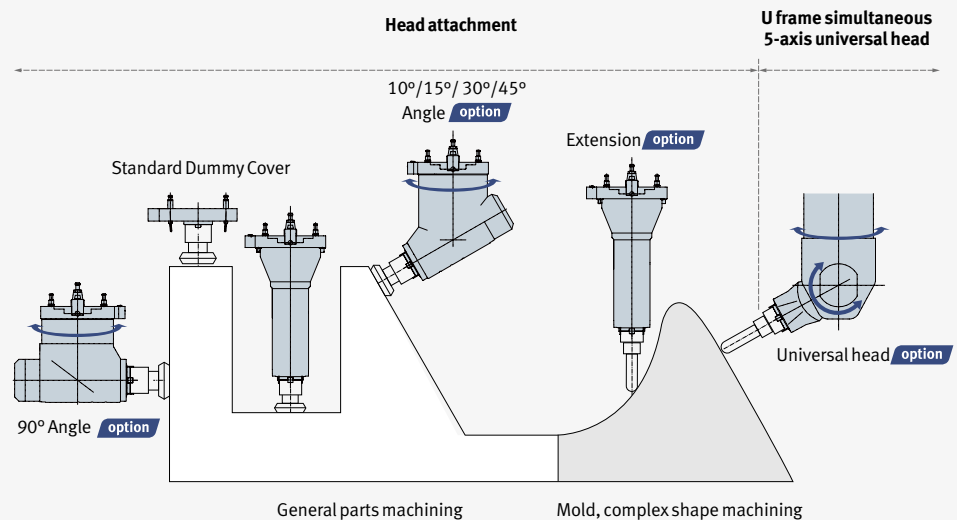


Various Auto-Change Head Attachments

Diverse head attachments for a wider range of machining applications



A diverse range of auto-change head attachments enables the machining of a variety of complex shapes, from 5 axis simultaneous processing of Molds to angled faces using 1 degree indexing, as well as 5 face machining. Head indexing is achieved by C axis control through the ram



Various utilities are available to keep the same level of performance even when the head attachment is changed. Provides numerous utilities to ensure the same performance provided by the original ram spindle even after changing a Head Attachment

Features	Standard Dummy Cover	Extension <small>option</small>	90° Angle <small>option</small>
Spindle Air Curtain	Standard	Standard	—
Flood Coolant / Air Blow	Standard	Standard	Standard
Head Attachment Tool Unclamp	Standard	Standard	Standard
Head Attachment Spindle Air Purge	Standard	Standard	Standard
TSC (Through Spindle Coolant)	<small>option</small>	<small>option</small>	<small>option</small>

※ The provided utility line could be different as choosing the head attachment.

※ When 10/15/30/45 degree angle attachment, or U-frame universal head is considered for purchase, please contact Doosan for detailed specifications.

F Frame Head Attachment

Unit: mm (inch)

Basic information

Broad Range
of Machining
Capabilities

High-Precision,
High-Speed
Mold Machining
Performance

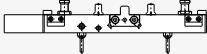
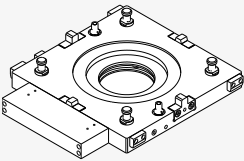
Convenient
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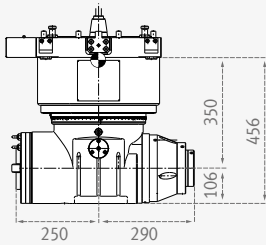
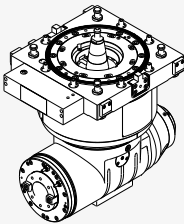
Standard/Optional
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Standard Dummy Cover

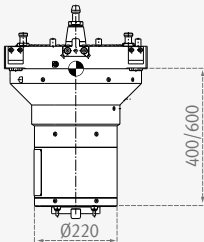
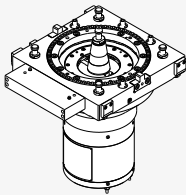


90° angle **option**

- 4000 r/min, 22 kW (29.5 Hp),
min. 5/1° indexing

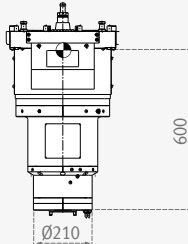
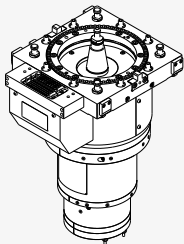
High speed 90° angle **option**

- 6000 r/min, 15 kW (20.1 Hp),
min. 5/1° indexing



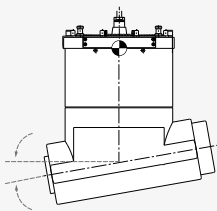
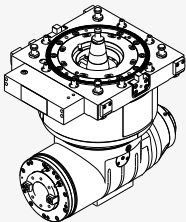
Extension **option**

- 6000 r/min, 22 kW (29.5 Hp)



High-speed extension **option**

- 6000~12000 r/min, 15/11 kW (20.1/14.8 Hp)



10° / 15° / 40° Angle **option**

U Frame Simultaneous 5-Axis Universal Head **option**

High-speed, high-precision built-in driven universal
head 15000 r/min

- B axis 0.001° Continuous
- C axis 0.001° Continuous

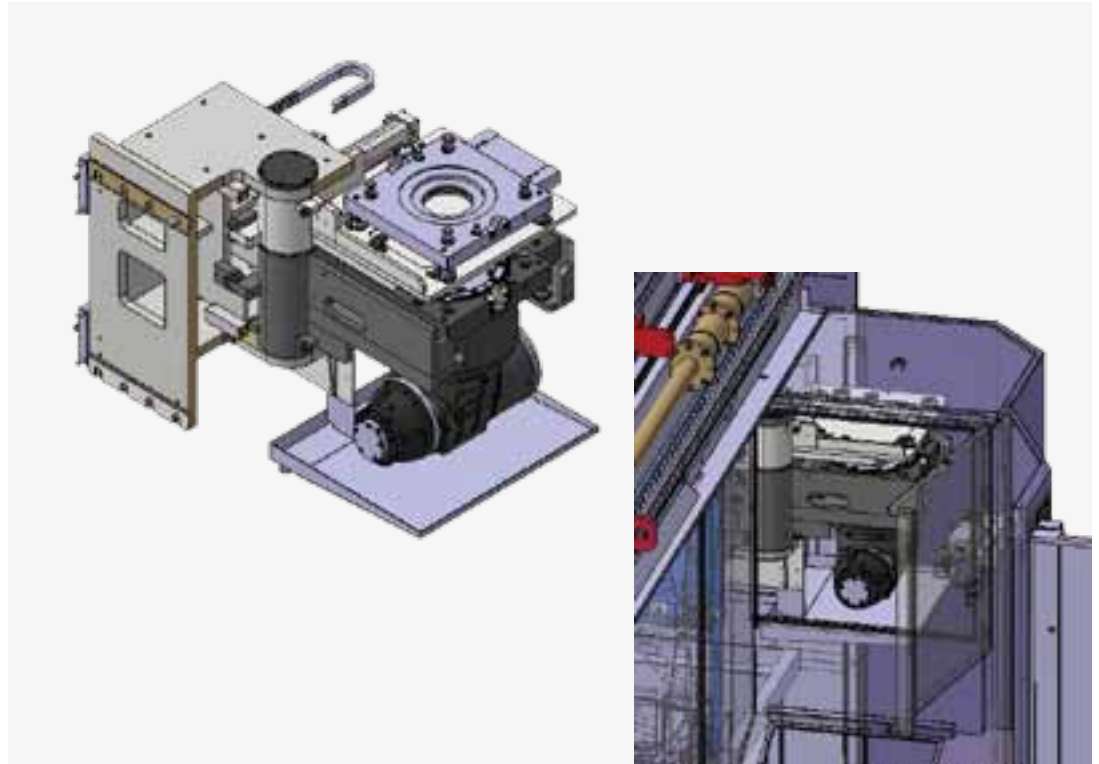




Automatic Head Attachment Changer (AAC)

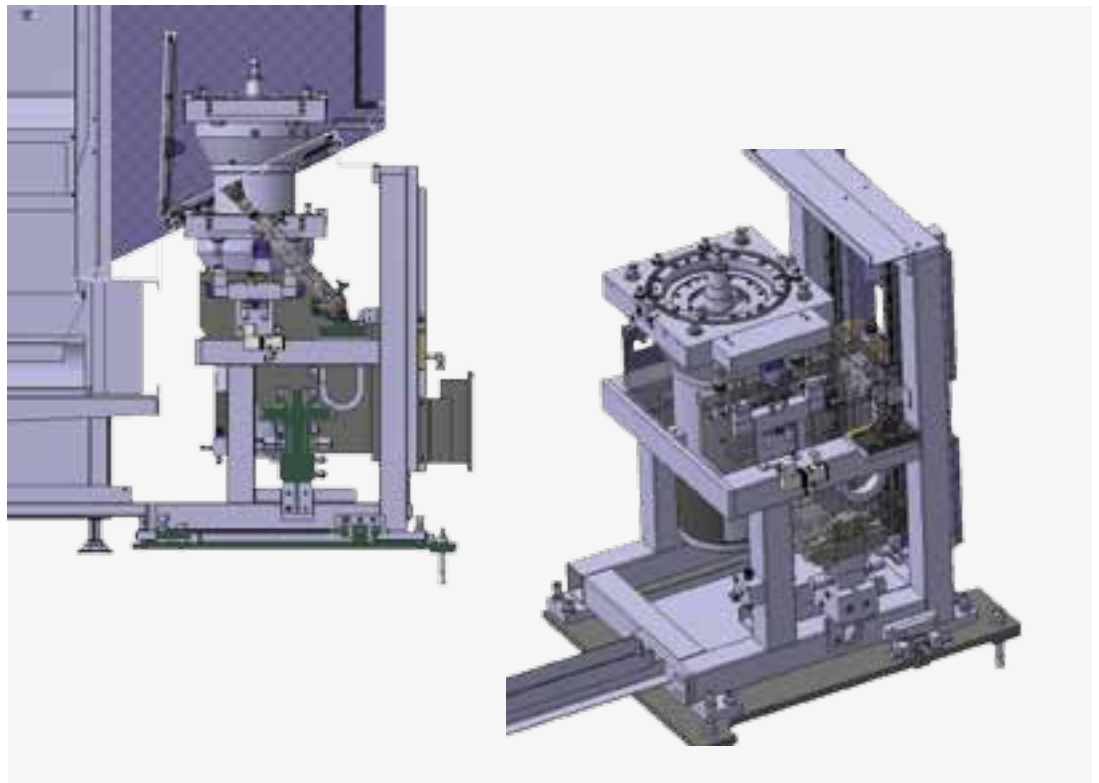
Swing AAC-2 Stations option

Two types of head attachment including dummy cover and 90° angle are equipped as a standard feature to minimize the time required to change a head attachment.



Up-Down AAC-1 Stations option

Ext-head att. available.



High-Precision Mold Machining

Basic information

Broad Range of Machining Capabilities

High-Precision, High-Speed Mold Machining Performance

Convenient Machining Functions

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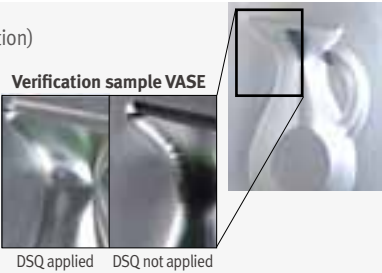
Standard/Optional Specifications

Machine Specifications

Customer Support

High-speed, High-precision Contouring Control

- DSQI(AICCI _ 200 Block + Machining condition selection function)
 - DSQII(DSQI + Data server [1GB]) **option**
 - DSQIII(DSQII + High speed processing _ 600 Block) **option**
- * DSQ : Doosan Super Quality



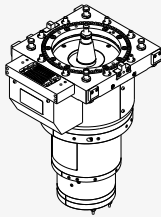
Cutting condition selection function

Cutting condition	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
Quality	Normal									Excellent
Tool life	Long									Normal
Application	High-speed roughing								High-precision finishing	

- Use the R code in the program to change the cutting condition by up to 10 steps.
- Improved productivity (high-speed roughing, high-precision finishing)
- Various servo-related NC parameters such as acceleration and deceleration time constants and maximum cutting feed can be set automatically.

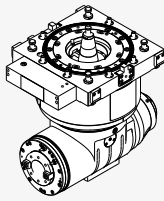
High-precision, High-speed Head Attachments and Universal Head Specialized for Mold Machining

Optimized mold machining can be achieved by selecting various head attachments and ram spindles specialized for diverse mold shapes and high-speed mold machining.



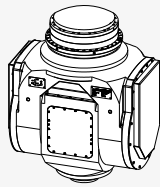
High-speed extension **option**

6000~12000 r/min,
15/11 kW (20.1/14.8 Hp)



High-speed 90° angle **option**

6000 r/min, 15 kW (20.1Hp),
min 5/1° indexing



High-speed, high-precision built-in driven 5-axis simultaneous universal head **option**

15000r/min

B axis 0.001° Continuous
C axis 0.001° Continuous

X/Y/Z-axis Linear Scale Feedback System **option**

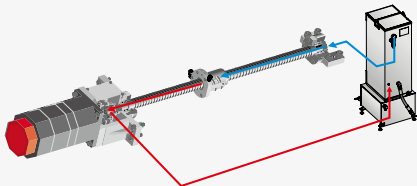
The linear scale feedback system provides high positioning accuracy in the X, Y, Z, and W axes.



X/Y/Z-axis Ball Screw Shaft Cooling **option**

The heat generated in the ball screw is removed by a high-efficiency cooler to minimize thermal deformation of the ball screw.

For faster removal of frictional heat, a hollow ball screw shaft through which the coolant oil flows is equipped.

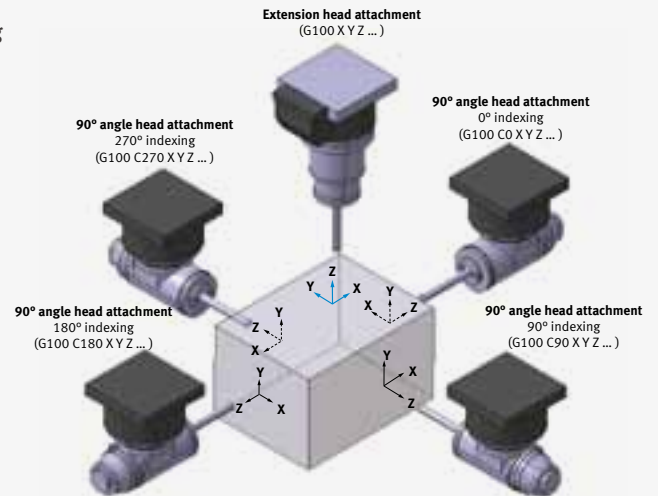




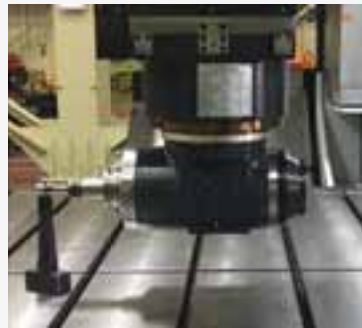
Supporting functions for 5-face machining

- 3-dimensional-work coordinates conversion system
- Tool end point shift within work coordinate system
- AAC control and head attachment position control by M-Code
- ATC is applicable for various head attachments.

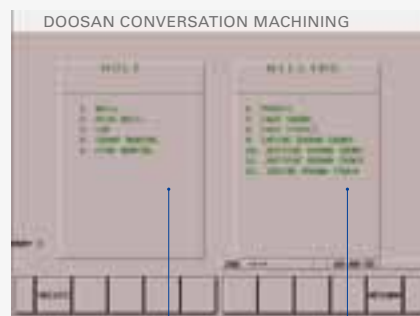
※ These functions are provided as a standard package when the 5 face machining head attachment is supplied.



- Automatic head attachment offset measurement(G120) option

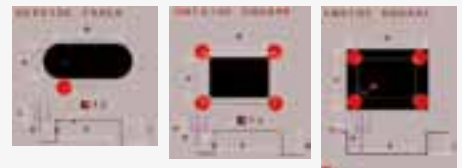


Easy Pattern Cycle



Programming time can be dramatically reduced by creating cutting programs and inputting the major parameters of the cutting pattern cycle required for parts cutting. The function is embedded in the CNC for convenient use in the field. Up to 22 complex pattern cycles including basic 5 patterns are available.

Example) Milling pattern



Example) Hole pattern



Basic information

Broad Range of Machining Capabilities

High-Precision, High-Speed Mold Machining Performance

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Work load counter control

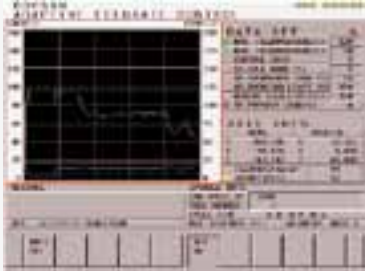
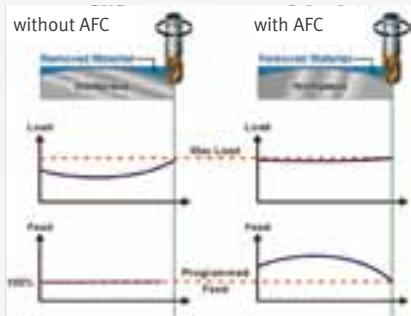
If customer selects proper M-Code according to weight of the work piece, the machine can decide itself the best moving pattern of the table. And machining can progress by this decision.



M-Code	Weight of work piece	DBM2540	DBM2550
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.



Process monitoring function and manual operation screen

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

Tool load monitoring

During cutting operation, abnormal load caused by wear and tear of the tool is detected and an alarm is triggered to prevent further damage.



Tool management option

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



ATC manual operation screen



Enhanced operator's convenience

Left-right-up-down pull type pendant arm operation panel.



- The pulse handle, manual handle (portable MPG) or others enabling easy setup of work pieces for the operator's convenience are provided as a standard feature or option.



Manual handle
Portable MPG



Manual handle **option**
Portable 3 MPG



Manual handle **option**
MPG with LCD
display



Manual operation panel **option**
HMOP(Handy Machine
Operator's Panel)

- In order to increase the brightness around the ram spindle to improve the workability, 2 to 3 work lights at the bottom of the cross rail and 2 work lights at the bottom of the ram saddle are provided as standard according to the model. (■mark)



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Various Optional Equipment

Various options to
satisfy the customers’
requirements can be
selected and applied.

NO	Division	Description		DBM series
1	Electric cabinet light			<input type="radio"/>
2	Electric cabinet air conditioner			<input type="radio"/>
3	High-quality machining (DOOSAN SUPER QUALITY)	DSQ I : AICCII+MACHINING CONDITION SELECTION		<input checked="" type="radio"/>
4		DSQ II : DSQ I+DATA SERVER (1GB)		<input type="radio"/>
5		DSQ III : DSQ II+HIGH SPEED PROCESSING_600 Block)		<input type="radio"/>
6	Tool management			<input type="radio"/>
7	Tool shank	BT50		<input checked="" type="radio"/>
8		CAT50		<input type="radio"/>
9		DIN50		<input type="radio"/>
10	Tool magazine	40 tools		<input checked="" type="radio"/>
11		60 tools		<input type="radio"/>
12		90 tools		<input type="radio"/>
13		120 tools		<input type="radio"/>
14	Work load counter control			<input checked="" type="radio"/>
15	Electric leakage breaker			<input type="radio"/>
16	Electric line filter			<input type="radio"/>
17	Ram spindle	6000 r/min (Built-in)	55/37 kW (FANUC)	<input checked="" type="radio"/>
18		8000 r/min (Built-in)	55/37 kW (FANUC)	<input type="radio"/>
19		Spindle Cooling device		<input checked="" type="radio"/>
20		Bearing Housing Cooling		<input checked="" type="radio"/>
21		Spindle thermal compensation		<input checked="" type="radio"/>
22	Linear scale feedback system	X / Y / Z-axis		<input type="radio"/>
23	Lift-up chip conveyor	HINGED PLATE		<input type="radio"/>
24		MAGNETIC SCRAPER		<input type="radio"/>
25	Components for installation	eveling blocks and anchoring bolts		<input checked="" type="radio"/>
26	Hydraulic power unit			<input checked="" type="radio"/>
27	Bellows cover for axis	Y-axis		<input checked="" type="radio"/>
28	Sliding covers for axes	X-axis		<input checked="" type="radio"/>
29	Easy pattern cycle			<input checked="" type="radio"/>
30	Automatic tool length measurement	TS27R_RENISHAW		<input type="radio"/>
31		NC4_RENISHAW		<input type="radio"/>
32	Automatic workpiece measurement	OMP60_RENISHAW		<input type="radio"/>
33		RMP60_RENISHAW		<input type="radio"/>
34	Master tool for automatic tool length measurement	CALIBRATION BLOCK		<input type="radio"/>
35	Automatic attachment changer (AAC)	LINEAR TYPE (2-ST)	Swing AAC-2 Stations	<input type="radio"/>
			Up-Down AAC-1 Stations	<input type="radio"/>
36	Auto power on			<input type="radio"/>
37	Auto power off			<input checked="" type="radio"/>

● Standard ○ Optional X Not applicable

NO	Division	Description	DBM series
38	Work light	LED lamps : 4EA	●
39	Operator call lamp (Red/Yellow/Green)		●
40	Tool load monitoring		●
41	Coolant tank	500L (118.9 gallon)	●
42		1000L (264.2 gallon)	○
43	Periodical checking function		●
44	Main operation panel (pendent type)	POLE TYPE	●
45	Max. tool weight	30KG(66.1 lb)	●
46	Max. tool length	400mm(15.7 inch)	●
47	Chip & coolant protective cover	CHIP COVER	●
48		SEMI GUARD	○
49	Coolant	FLOOD (1.8kw)	●
50		Coolant gun	○
51		Coolant level switch : Sensing level - Low	●
52	Test bar	BT50	○
53	Table T-slot	24H ₈	●
54		28H ₈	○
55	Chip bucket	Rotary type (380L) (100.4 gallon)	○
56		Lift type (380L) (100.4 gallon)	○
57	High column	+300mm (11.8 inch)	○
58	AIR	AIR BLOWER	●
59		AIR PURGE	●
60		AIR CURTAIN	●
61		AIR GUN	○
62		AIR DRYER	○
63	CS control BZ sensor		●
64	Display unit	10.4" COLOR LCD	○
65		15" COLOR LCD	●
66	Head attachment	DUMMY HEAD	●
67		EXTENSION HEAD (L400/6K R/MIN)	○
69		EXTENSION HEAD (L600/6K R/MIN)	○
70		EXTENSION HEAD (L600/12K R/MIN)	○
71		90D ANGLE HEAD (L350/4K R/MIN)	○
73		90D ANGLE HEAD (L350/6K R/MIN)	○
75	90° head attachment indexing angle	5°	○
76		1°	○

NO	Division	Description	DBM series
77	MPG	PORTABLE TYPE 1-MPG	●
78		MPG WITH LCD DISPLAY	○
79		PORTABLE TYPE 3-MPG	○
80		HMOP(Handy Machine Operator's Panel)	○
81	NC Controller	FANUC 31i	●
82		HEIDENHAIN TNC640	○
83		SIEMENS 840D	○
84	Oil skimmer	BELT TYPE	○
85	Pull stud	MAS 403 P50T-1 (45°)	●
86		MAS 403 P50T-2 (60°)	○
87	TSC	NONE	●
88		1.5 kW_2.0 MPa	○
89	TSA (Through Spindle Air)	0.5 Mpa	○
90	U frame universal head	UNIVERSAL CONTOURING HEAD (15K R/MIN)	○
91	2-side chip conveyor (in machine to tank)	HINGED PLATE	●
92		MAGNETIC SCRAPER	○
93	5-face machining support system		●
94	Rotary Table	PACKAGE #1 : ONLY WIRING	○
95		PACKAGE #2 : HYD. & CONTROL READY	○
96		PACKAGE #3 : FULL OPT.	○
97	Installation Type	UNDER GROUND	FL-960 INSTALL (TABLE TOP_FL0) ●
98		GROUND	FLO INSTALL (TABLE TOP_FL-960) ○

※ Specifications should be reviewed in detail before contract.

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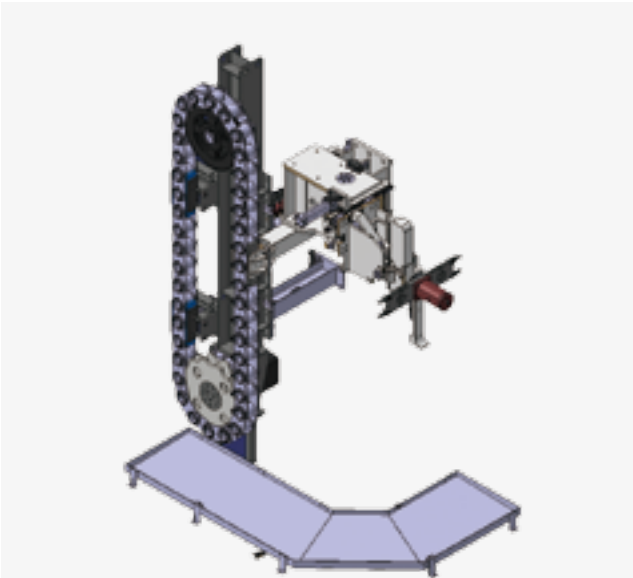
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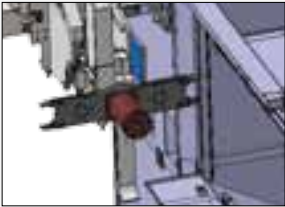
Customer Support

Automatic Tool Changer (ATC)

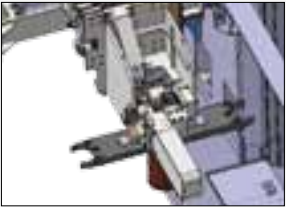
One arm performs the changes for both the horizontal and vertical spindle. The next tool to be used, regardless of the spindle location, is brought to the standby position during cutting. The most reliable ATC and magazine with its servo motor & Hyd minimize downtime.



Horizontal type



Vertical type



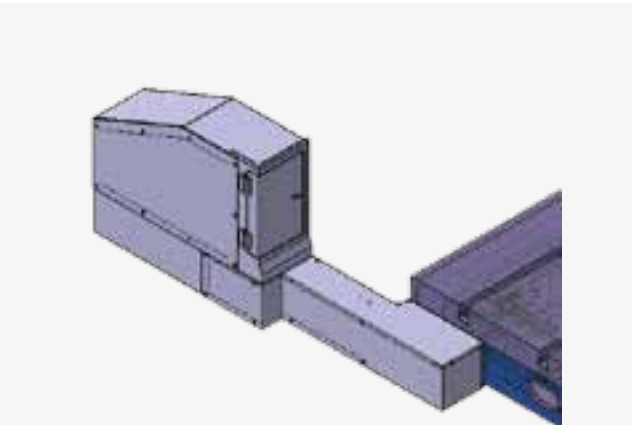
Horizontal ATC
operation with a
90° head attach
mounted.



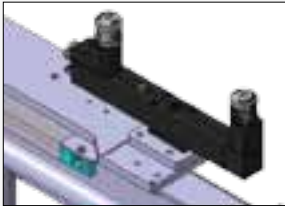
※ Picture-Vertical
ATC in operation

Max. No. of tools	40 [option 60, 90] EA
Max. tool diameter	130 [near pot empty: 250] mm (5.1 [near pot empty: 9.8] inch)
Max. tool length	400mm (15.7 inch)
Max. tool weight	30 kg (66.1 lb)
Tool selection type	Fixed address
Tool changing time (T-T)	5.5 s

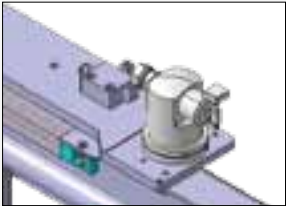
Automatic Tool measurement option



NC4



TS27R

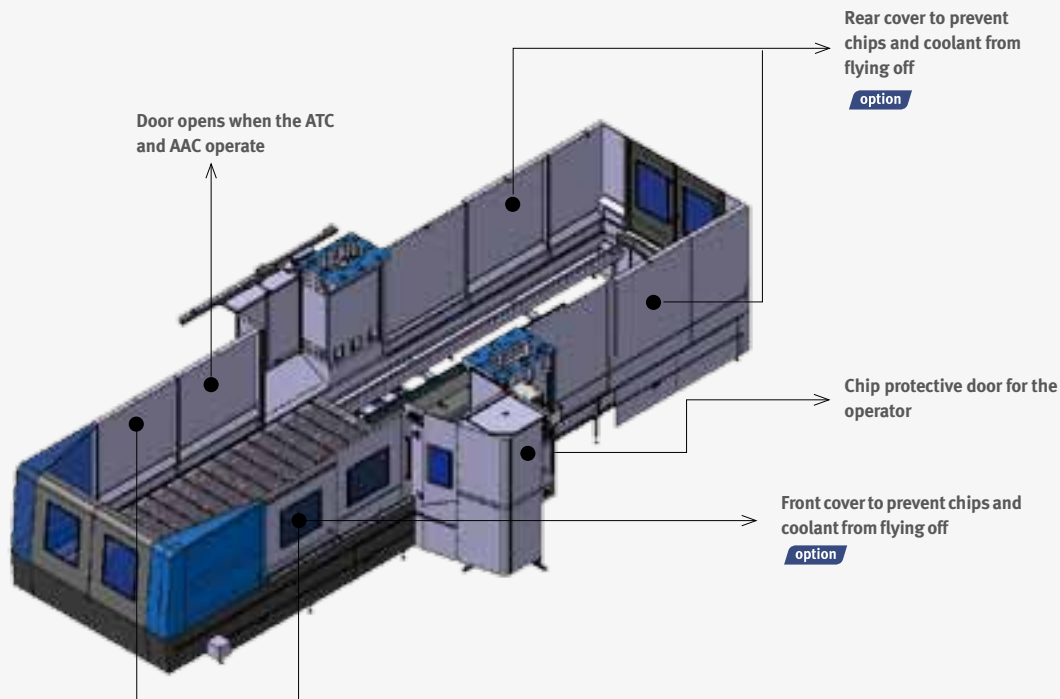


Tool length can be measured in the vertical and horizontal directions. The length of tool set up on the spindle is measured automatically, and the tool offset data of the tool number are entered automatically.



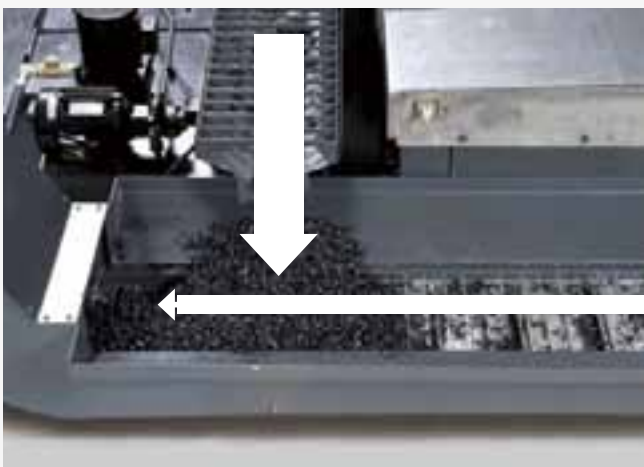
Semi-guard

The semi-guard covers the entire cutting area to prevent chips and coolant from flying off during cutting operation.



Chip Conveyor

Optional chip conveyors are available to discharge chips and improved to prevent chips and coolant from falling on the floor.



Lift-up chip conveyor **option**

- ※ The hinged-plate chip conveyor and the magnetic scraper chip conveyor are optional features.
- ※ The discharge direction can be selected forward or backward. However, DBM 2030 can only be selected from the front.

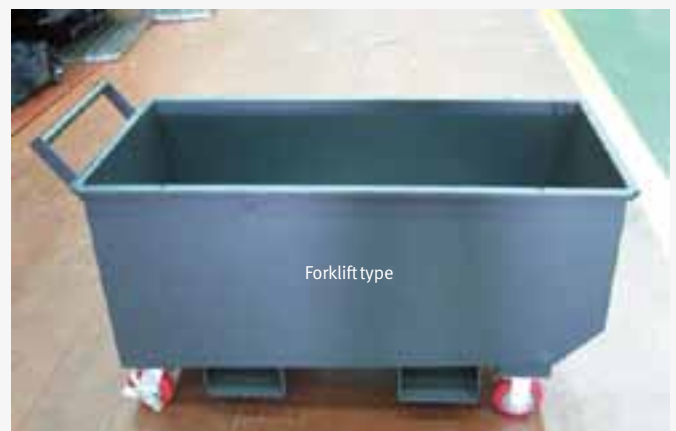
Chip Bucket **option**

Forklift type

The bottom of the chip bucket has a space into which forks can be inserted to allow transportation by a forklift.

Rotation type

The chip bucket is fitted with a rotating joint for tilting and emptying the bucket.



External Dimensions

Basic information

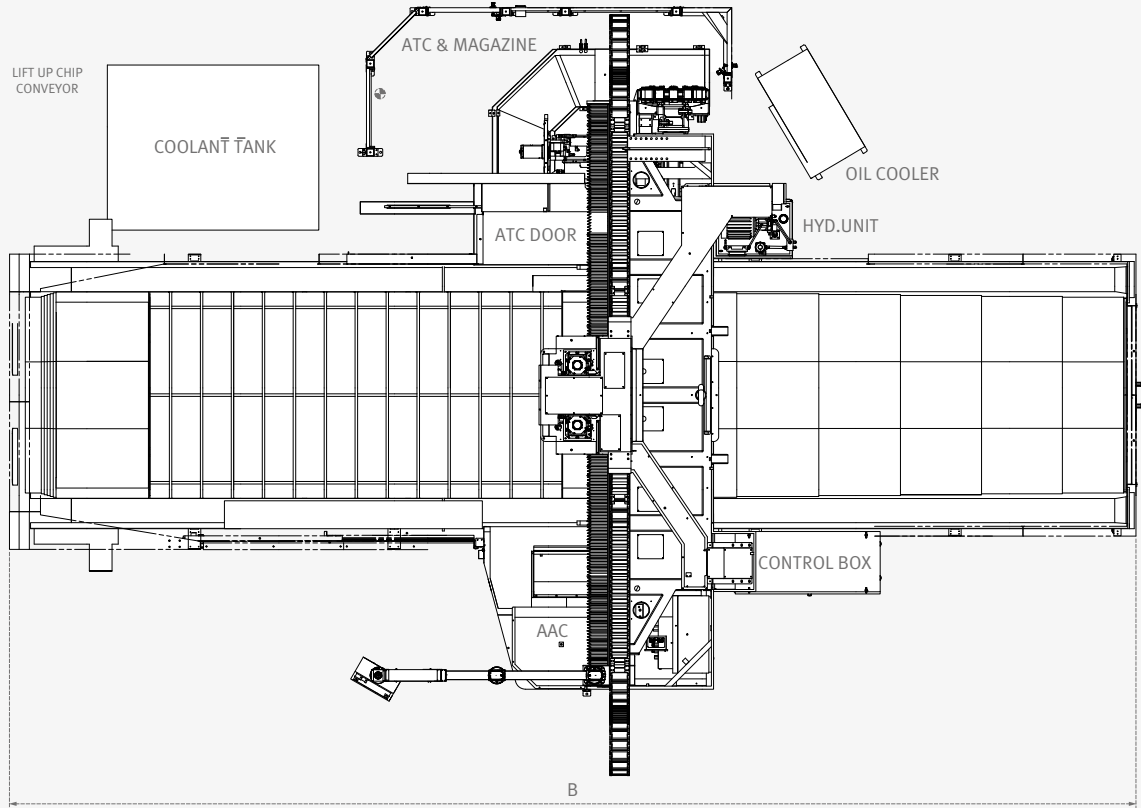
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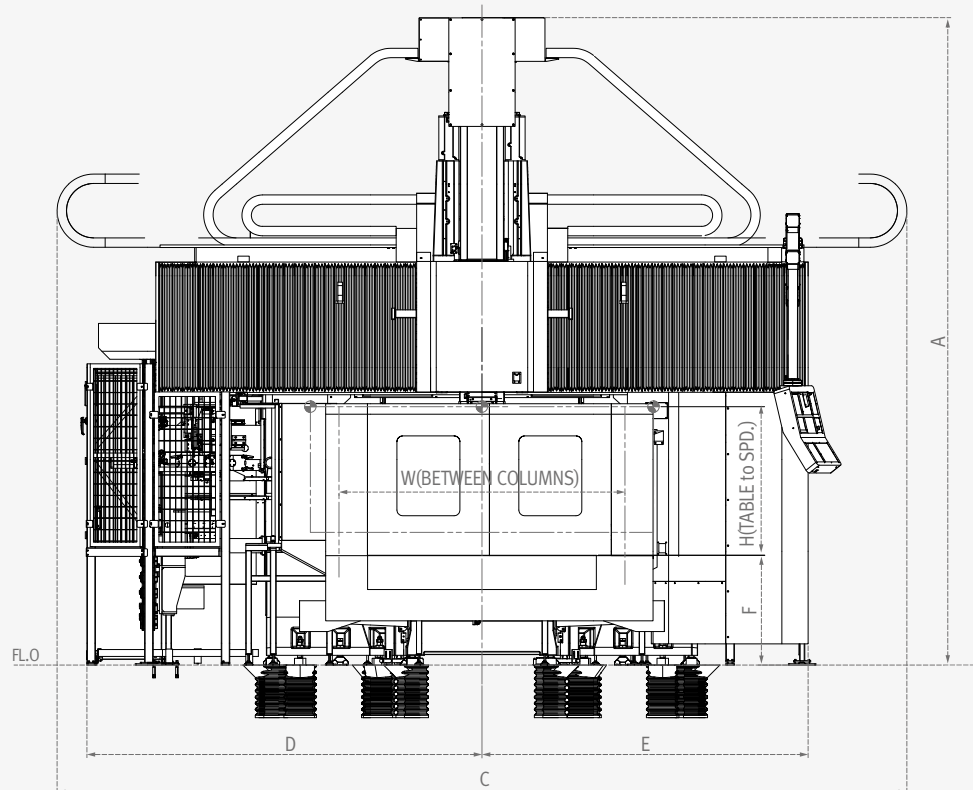
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Top View



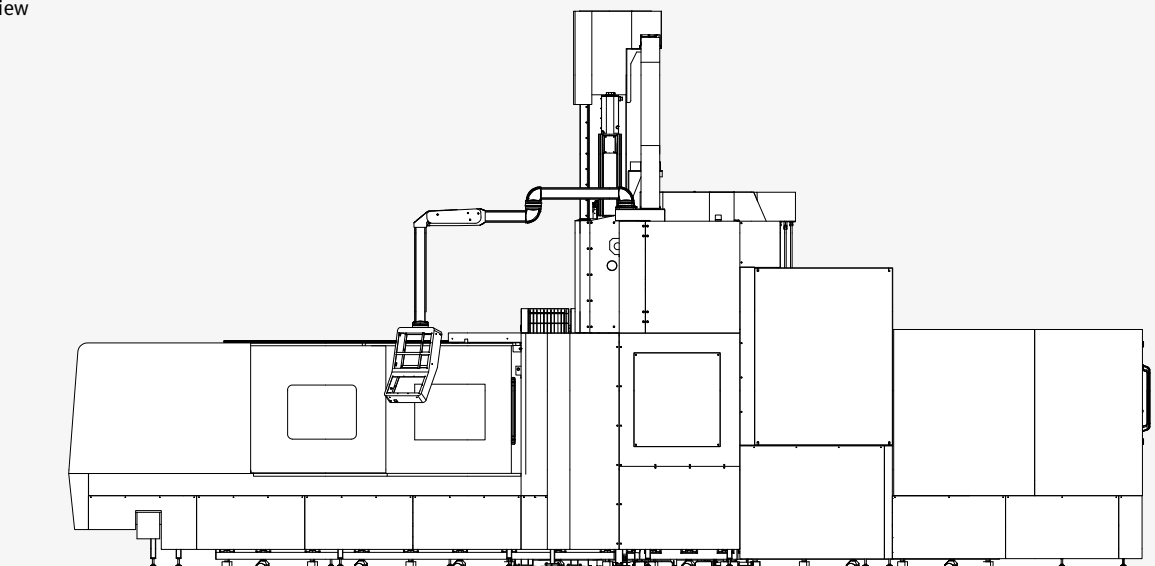
Front View



* Some peripheral equipment can be placed in other places

** Providing anchoring bolts. Foundation work must be done.

Side View



	Model	A	B	C	D	E	F	H	W
DBM 2030	STD	5100 (200.8)	8600 (338.6)	6730 (265.0)	3510 (138.2)	2602 (102.4)	960 (37.8)	1000 (39.4)	2000 (78.7)
	option Z axis 1100 mm (+300 RAISING & Z-axis extend)	5700 (224.4)	8600 (338.6)	6730 (265.0)	3510 (138.2)	2602 (102.4)	960 (37.8)	1300 (51.2)	2000 (78.7)
DBM 2040	STD	5100 (200.8)	11000 (433.1)	6730 (265.0)	3510 (138.2)	2602 (102.4)	960 (37.8)	1000 (39.4)	2000 (78.7)
	option Z axis 1100 mm (+300 RAISING & Z-axis extend)	5700 (224.4)	11000 (433.1)	6730 (265.0)	3510 (138.2)	2602 (102.4)	960 (37.8)	1300 (51.2)	2000 (78.7)
DBM 2540	STD	5100 (200.8)	11000 (433.1)	7430 (292.5)	3760 (148.0)	2852 (112.3)	960 (37.8)	1000 (39.4)	2500 (98.4)
	option Z axis 1100 mm (+300 RAISING & Z-axis extend)	5700 (224.4)	11000 (433.1)	7430 (292.5)	3760 (148.0)	2852 (112.3)	960 (37.8)	1300 (51.2)	2500 (98.4)
DBM 2550	STD	5100 (200.8)	13000 (511.8)	7430 (292.5)	3760 (148.0)	2852 (112.3)	960 (37.8)	1000 (39.4)	2500 (98.4)
	option Z axis 1100 mm (+300 RAISING & Z-axis extend)	5700 (224.4)	13000 (511.8)	7430 (292.5)	3760 (148.0)	2852 (112.3)	960 (37.8)	1000 (39.4)	2500 (98.4)
DBM 3050	STD	5100 (200.8)	13000 (511.8)	8600 (338.6)	4010 (157.9)	3102 (122.1)	960 (37.8)	1000 (39.4)	3000 (118.1)
	option Z axis 1100 mm (+300 RAISING & Z-axis extend)	5700 (224.4)	13000 (511.8)	8600 (338.6)	4010 (157.9)	3102 (122.1)	960 (37.8)	1000 (39.4)	3000 (118.1)
DBM 3060	STD	5100 (200.8)	15000 (590.6)	8600 (338.6)	4010 (157.9)	3102 (122.1)	960 (37.8)	1000 (39.4)	3000 (118.1)
	option Z axis 1100 mm (+300 RAISING & Z-axis extend)	5700 (224.4)	15000 (590.6)	8600 (338.6)	4010 (157.9)	3102 (122.1)	960 (37.8)	1000 (39.4)	3000 (118.1)
DBM 3080	STD	5100 (200.8)	19500 (767.7)	8600 (338.6)	4010 (157.9)	3102 (122.1)	960 (37.8)	1000 (39.4)	3000 (118.1)
	option Z axis 1100 mm (+300 RAISING & Z-axis extend)	5700 (224.4)	19500 (767.7)	8600 (338.6)	4010 (157.9)	3102 (122.1)	960 (37.8)	1000 (39.4)	3000 (118.1)

※ The dimensions above are the standard type for each model.

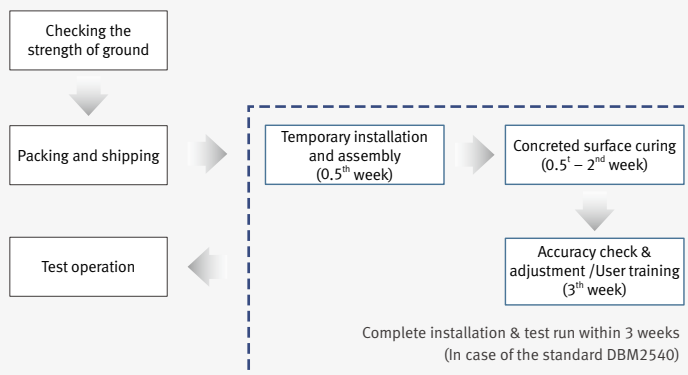
Installation precautions

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 Doosan. (Test for bearing capacity of soil should follow Doosan's standards.)
3. Our engineering team may be available even during the foundation work at customer's request.

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.



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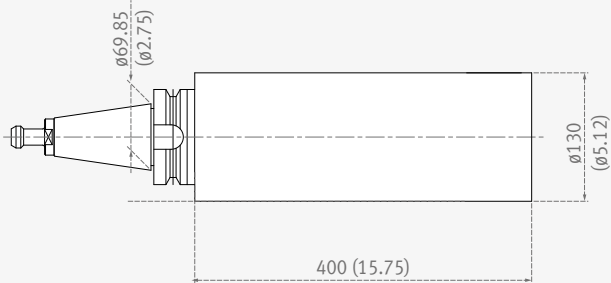
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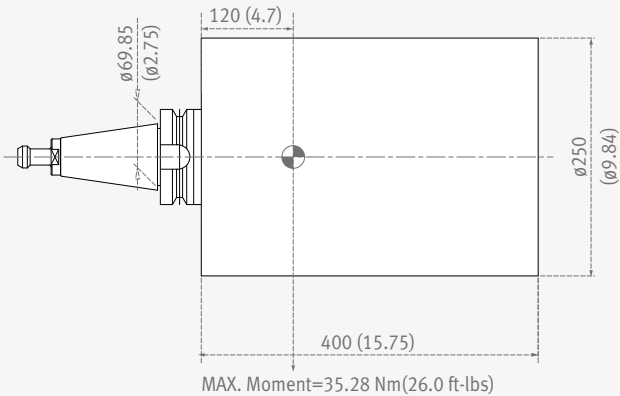
Tool Dimensions

Unit: mm (inch)

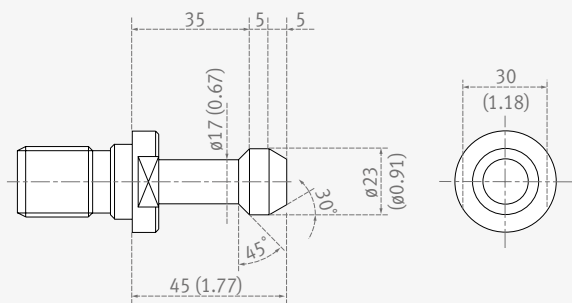
With an adjacent tool



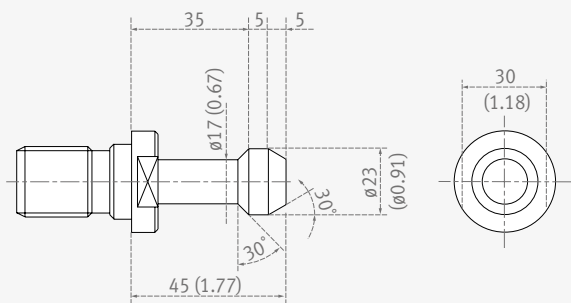
Without adjacent tools



Pull Stud : MAS 403 P50T-I (45°)



Pull Stud : MAS403 P50T-II (60°) **option**



Maximum tool weight

- Standard: 30 kg × 120 mm
- The center of gravity must be within 120 mm from the gauge line.

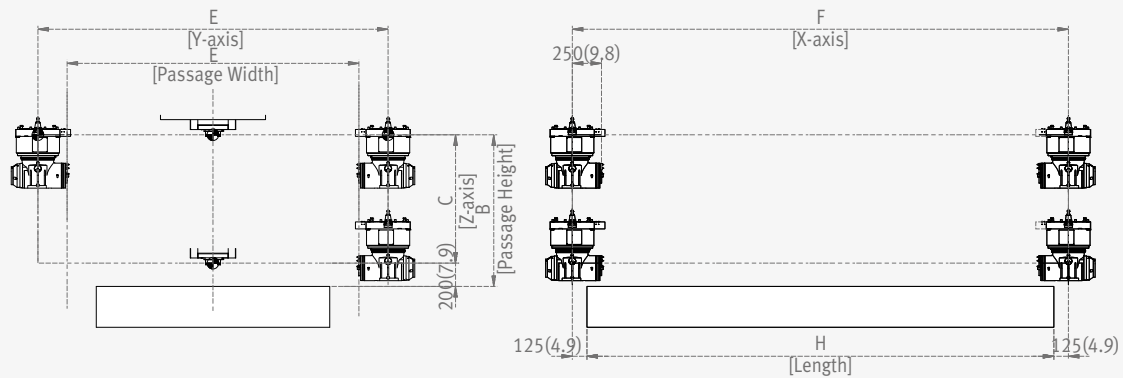
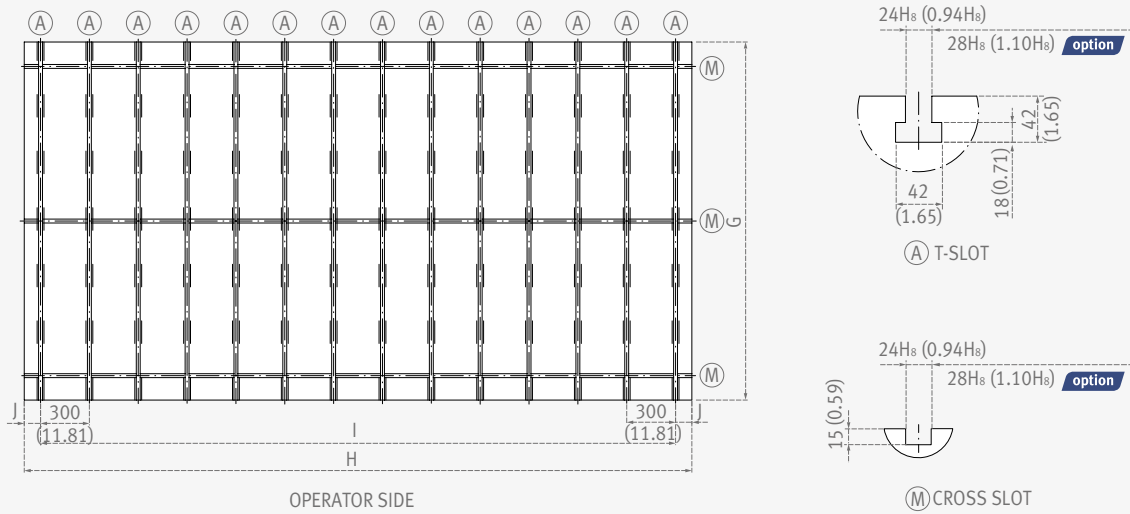
Various tooling applications

- Any type of tooling is applicable.
- Please contact our engineering team if necessary



Work Area and Table Dimensions

Unit: mm (inch)



Model	Table type	A	B	C	D	E	F	G	H	I	J
DBM 2030	15 X 30	2000 (78.7)	1000(1300) (39.4(51.2))	800(1100) (31.5(43.3))	-	2500 (98.4)	3250 (128.0)	1500 (59.1)	3000 (118.1)	2700 (106.3)	150 (5.9)
DBM 2040	15 X 40	2000 (78.7)	1000(1300) (39.4(51.2))	800(1100) (31.5(43.3))	-	2500 (98.4)	4250 (167.3)	1500 (59.1)	4000 (157.5)	3600 (141.7)	200 (7.9)
DBM 2540	20 X 40	2500 (98.4)	1000(1300) (39.4(51.2))	800(1100) (31.5(43.3))	-	3000 (118.1)	4250 (167.3)	2000 (78.7)	4000 (157.5)	3600 (141.7)	200 (7.9)
DBM 2550	20 X 50	2500 (98.4)	1000(1300) (39.4(51.2))	800(1100) (31.5(43.3))	-	3000 (118.1)	5250 (167.3)	2000 (78.7)	5000 (196.9)	4800 (189.0)	100 (3.9)
DBM 3050	25 X 50	3000 (118.1)	1000(1300) (39.4(51.2))	800(1100) (31.5(43.3))	-	3500 (137.8)	5250 (167.3)	2500 (98.4)	5000 (196.9)	4800 (189.0)	100 (3.9)
DBM 3060	25 X 60	3000 (118.1)	1000(1300) (39.4(51.2))	800(1100) (31.5(43.3))	-	3500 (137.8)	6250 (246.1)	2500 (98.4)	6000 (236.2)	5700 (224.4)	150 (5.9)
DBM 3080	25 X 80	3000 (118.1)	1000(1300) (39.4(51.2))	800(1100) (31.5(43.3))	-	3500 (137.8)	8250 (324.8)	2500 (98.4)	8000 (315.0)	7800 (307.1)	100 (3.9)

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Item		Unit	DBM 2030	DBM 2040	DBM 2540	DBM 2550	DBM 3050	DBM 3060	DBM 3080
Travel	X-axis	mm (inch)	3250 (128.0)	4250 (167.3)	4250 (167.3)	5250 (206.7)	5250 (206.7)	6250 (246.1)	8250 (324.8)
	Y-axis [ATC&AAC]	mm (inch)	2500 [+700] (98.4 [+27.6])		3000 [+700] (118.1 [+27.6])		3500 [+700] (137.8 [+27.6])		
	Z-axis	mm (inch)	800 {1100} (31.5 {43.3})						
	Effective width between columns	mm (inch)	2000 (78.7)		2500 (98.4)		3000 (118.1)		
	Table to Spindle Nose	mm (inch)	1000{1300} (39.4{51.2})						
Feedrate	Rapid Traverse (X, Y, Z)	m/min (ipm)	24/24/15 (944.9/944.9/590.6)		20/20/15 (787.4 /787.4/590.6)				
	Max. Cutting Feedrate (X, Y, Z)	mm/min (ipm)	10000/10000/10000 (393.7 / 393.7 / 393.7)						
Table	Table Size (Width x Length)	mm (inch)	1500x3000 (59.1x118.1)	1500x4000 (59.1x157.5)	2000x4000 (78.7x157.5)	2000x5000 (78.7x196.9)	2500x5000 (98.4x196.9)	2500x6000 (98.4x236.2)	2500x8000 (98.4x315.0)
	Load Capacity	kg (lb)	15000 (33068.9)	17000 (37478.0)	20000 (44091.8)	25000 (55114.8)	28000 (61728.5)	32000 (70546.9)	35000 (77160.7)
	T-Slot	mm (inch)	24H ₈ (28H ₉) (0.94H ₈ (1.1H ₉))						
Spindle	Tool Shank	-	BT50						
	Ram Size	mm (inch)	380 x 380 (15.0 x 15.0)						
	Max. Spindle Speed	r/min	6000 {8000}						
	Spindle Drive Moto (S3 25%/Cont.)	kW (Hp)	55/37 (73.8/49.6)						
	Max. spindle torque	N·m (lbf·ft)	1009 (744.6)						
ATC	Tool Storage Capacity	ea	40 {60, 90}						
	Max. Tool Diameter [Continuous]	mm (inch)	130 [250] (5.1 [9.8])						
	Max. Tool Length	mm (inch)	400 (15.7)						
	Max. Tool Weight	kg (lb)	30 (66.1)						
	Max. Tool Moment	N·m (ft·lbs)	29.4 (21.7)						
	Tool Selection Type		Fixed address						
AAC	Type		{2 STATION + 1 STATION}						
Machine Size	Machine Height	mm (inch)	5700 {5100} (224.4 {200.8})						
	Floor Space	mm (inch)	6730X8800 (265.0X346.5)	6730X11000 (265.0X433.1)	7430X11000 (292.5X433.1)	7430X13000 (292.5X511.8)	8600X13000 (338.6X511.8)	8600X15000 (338.6X590.6)	8600X19500 (338.6X767.7)
	Machine Weight	kg (lb)	35000 (77160.7)	38000 (83774.4)	42000 (92592.8)	46000 (101411.1)	50000 (110229.5)	55000 (121252.5)	70000 (154321.3)

{ } : optional * 12K Extension Head Attachment TSC not available

NC Unit Specifications

● Standard ○ Optional X N/A

FANUC

- Axes control
- Interpolation & feed function
- Spindle & M-code function
- Tool function
- Programming and editing function
- Others (operation, setting & display, etc)
- Frame reference function

No.	Classification	Item	Spec.	FANUC i Plus	FANUC 31i
1	Axes control	Controlled axes	3 (X,Y,Z)	●	●
2		Additional controlled axes	6 axes in total	●	○
3		Simultaneously controlled axes	Positioning(G00)/Linear interpolation(G01) : 3 axes Circular interpolation(G02, G03) : 2 axes	●	●
4		Backlash compensation		●	●
5		Emergency stop / overtravel		●	●
6		HRV control		●	●
7		Least command increment	0.001 mm / 0.0001"	●	●
8		Least input increment	0.001 mm / 0.0001"	●	●
9		Machine lock	all axes	●	●
10		Mirror image	Reverse axis movement (setting screen and M - function)	●	●
11		Stored pitch error compensation	Pitch error offset compensation for each axis	●	●
12		Interpolation type pitch error compensation		○	○
13		Stored stroke check1	Overtravel controlled by software	●	●
14		Absolute pulse coder		●	●
15		Position switch		●	○
16	Interpolation & feed function	2nd reference point return	G30	●	●
17		3rd/4th reference return	G30P3/P4	●	●
18		Circular interpolation	G02, G03	●	●
19		Cylindrical interpolation	G07.1	●	○
20		Linear interpolation	G01	●	●
21		Helical interpolation		●	●
22		Bell-type acceleration/deceleration before look ahead interpolation		●	○
23		Polar coordinate interpolation	G12.1 / G13.1	X	○
24		Exponential interpolation		X	○
25		Involute interpolation		X	○
26		Smooth backlash compensation		●	○
27		Dwel	G04	●	●
28		Exact stop check	G09, G61 (mode)	●	●
29		Feed per minute	mm / min	●	●
30		Feedrate override	0 - 200 % (10% unit)	●	●
31		Automatic corner override	G62	●	○
32		Automatic corner deceleration		●	●
33		Cutting feedrate clamp		●	●
34		Rapid traverse bell-shaped acceleration/deceleration		●	●
35		3-dimensional manual feed		●	○
36		Manual handle feed	1 unit	X	●
37		Manual handle feed 2/3 unit	Max. 3unit	1 unit	○
38		Manual handle feed rate	x1, x10, x100 (per pulse)	○	●
39		Manual handle interruption		●	○
40		Manual handle retrace		○	○
41		Override cancel	M48 / M49	○	●
42		Positioning	G00	●	●
43		Rapid traverse override	F0 (fine feed), 25 / 50 / 100 %	●	●
44		Reference point return	G27, G28, G29	●	●
45		Skip function	G31	●	●
46		AICC II	200 BLOCK	X	●
47		High-speed processing	600 BLOCK	X	○
48		Look-ahead blocks expansion	1000 BLOCK	X	○
49		DSQ I	AICC II (200block) + Machining condition selection function	●	●
50		DSQ II	AICC II (200block) + Machining condition selection function + Data server(1GB)	X	○
51		DSQ III	AICC II with high speed processing (600block) + Machining condition selection function + Data server(1GB)	X	○
53	Spindle & M-code function	M - code function		●	●
54		Spindle orientation	M 3 digits	●	●
55		Spindle speed command	S5 digits	●	●
56		Spindle speed override	10 - 150 (10% increments)	●	●
57		Retraction for rigid tapping		●	●
58	Tool function	Rigid tapping	G84, G74	●	●
59		Tool nose radius compensation (Cutter compensation C)	G40, G41, G42	●	●
60		Number of tool offsets	64 ea	X	●
61		Number of tool offsets	200 ea	X	○
62		Number of tool offsets	400 ea	●	○
63		Number of tool offsets	499 / 999 / 2000 ea	X	○
64		Tool length compensation	G43, G44, G49	●	●
65		Tool life management		●	●
66		Addition of tool pairs for tool life management		●	○
67		Tool number command	T3 digits	●	●
68		Tool offset memory C	Geometry / Wear and Length / Radius offset memory	●	●
69		Tool offset	G45 - G48	●	○

NC Unit Specifications

● Standard ○ Optional X N/A

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No.	Classification	Item	Spec.	FANUC i Plus	FANUC 31i
69	Programming and editing function	Absolute / Incremental programming	G90 / G91	●	●
70		Automatic Coordinate system setting		●	●
71		Background editing		●	●
72		Canned cycle	G73, G74, G76, G80 - G89, G99	●	●
73		Circular interpolation by radius programming		●	●
74		Custom macro		●	●
75		Addition of custom macro common variables	#100 - #199, #500 - #999	●	●
76		Macro executor		●	●
77		Decimal point input		●	●
78		Extended part program editing		●	●
79		Part program storage	1MB(2,560m)	●	●
80		Part program storage	2MB(5,120m)	○	○
81		Part program storage	4MB(1,0240m)	○	○
82		Part program storage	8MB(2,0480m)	○	○
83		Inch/metric conversion	G20 / G21	●	●
83		Label skip		●	●
84		Maximum commandable value	±99999.999mm(±9999.9999 inch)	●	●
85		No. of Registered programs	1000 ea	●	●
86		No. of Registered programs	4000 ea	X	○
87		Optional block skip	9 BLOCK	○	○
88		Optional stop	M01	●	●
89		Program file name	32 characters	●	●
90		Program number	O4-digits	X	●
91		Sequence number	N 8-digit	●	●
92		Playback function		●	○
93		Program protect		●	●
94		Program stop / end	M00 / M02, M30	●	●
95		Programmable data input	Tool offset and work offset are entered by G10, G11	●	●
96		Sub program	Up to 10 nesting	●	●
97		Tape code	ISO / EIA Automatic discrimination	●	●
98		Thread cutting		●	●
99		Program restart		●	●
100		Workpiece coordinate system	G52 - G59	●	●
101		Addition of workpiece coordinate system	G54.1 P1 - 48 (48 pairs)	●	●
102		Addition of workpiece coordinate system	G54.1 P1 - 300 (300 pairs)	○	○
103		Coordinate system rotation G68, G69		●	●
104		Extended part program editing		●	●
105		Optional angle chamfering . Corner R		○	●
106	Others (Operation, setting & Display, etc)	Alarm display		●	●
107		Alarm history display		●	●
108		Actual cutting speed display		●	●
109		Clock function		●	●
110		Coordinate system rotation	G68, G69	●	●
111		Cycle start / Feed hold		●	●
112		Display of PMC alarm message	Message display when PMC alarm occurred	●	●
113		Dry run		●	●
114		Embedded Ethernet (Ethernet)		●	●
115		Graphic display	Tool path drawing	●	●
116		Help function		●	●
117		Loadmeter display		●	●
118		MDI / DISPLAY unit	15" Color LCD, Keyboard for data input, soft-keys	●	●
119		Memory card interface		●	●
120		I/O interface	RS - 232C	●	●
121		USB memory interface	Only Data Read & Write	●	●
122		Operation functions	Tape / Memory / MDI / Manual	●	●
123		Operation history display		●	●
124		DNC operation with memory card	only FANUC	●	●
125		Optional angle chamfering / corner R		○	●
126		Run hour and part number display		●	●
127		Search function	Sequence NO. / Program NO.	●	●
128		Self - diagnostic function		●	●
129		Servo setting screen		●	●
130		Single block		●	●
131		External data input		●	●
132		Stored stroke check 2, 3		●	○
133		Multi language display		●	●
134		Cs contouring control		●	●
135		CNC screen display		●	●
136		CNC screen dual display function		●	●
137		Reader/Puncher interface (for 2ch)	Note1)	●	○
138		Multi spindle control	Note2)	X	○
139		Extended Spindle orientation	Note2)	●	○
140		Extended spindle output switching function	Note2)	●	○
141		Chopping function	G81.1	X	○
142		High speed skip function		○	○
143		Polar coordinate command	G15 / G16	○	○
144		Programmable mirror image	G50.1 / G51.1	●	○
145		Scaling	G50, G51	●	○
146		Single direction positioning	G60	●	○
147		Fast Data server with1GB PCMCIA card		○	○
148		Fast Ethernet		○	○
149		3-dimensional tool compensation		X	○
150		Tape format for FS15		○	○
151		Figure copying	G72.1, G72.2	○	○
152		Machining time stamp function		●	○
153		EZ Guide I with 15" Color TFT	- Doosan machine tools Conversational Programming Solution - When the EZ Guide i is used, the Dynamic graphic display cannot application	○	○
154		Dynamic graphic display (with 15" Color TFT LCD)	- Machining profile drawing. - When the EZ Guide i is used, the Dynamic graphic display cannot application	○	○
155		Nano smoothing			○
156		3D Manual handle interruption		X	○

Responding to Customers

Anytime, Anywhere

Doosan Machine Tools' Global Network, Responding to Customer's Needs nearby, Anytime, Anywhere

Doosan machine tools provides a system-based professional support service before and after the machine tool sale by responding quickly and efficiently to customers' demands. By supplying spare parts, product training, field service and technical support, we can provide top class support to our customers around the world.



Customer Support Service

We help customers to achieve success by providing a variety of professional services from pre-sales consultancy to post-sales support.



Supplying Parts

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



Field Services

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



Technical Support

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



Training

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

Major Specifications

DBM series



Description	Effective width between columns mm (inch)	Table size mm (inch)	X / Y [ATC&AAC] / Z axis travel mm (inch)	Spindle speed (r/min)
DBM 2030	2000 (78.7)	1500x3000 (59.1x118.1)	3250 / 2500 [+700] / 800 {1100} (128.0 / 98.4 [+27.6] / 31.5 {43.3})	6000 {8000}
DBM 2040		1500x4000 (59.1x157.5)	4250 / 2500 [+700] / 800 {1100} (167.3 / 98.4 [+27.6] / 31.5 {43.3})	
DBM 2540	2500 (98.4)	2000x4000 (78.7x157.5)	4250 / 3000 [+700] / 800 {1100} (167.3 / 118.1 [+27.6] / 31.5 {43.3})	
DBM 2550		2000x5000 (78.7x196.9)	5250 / 3000 [+700] / 800 {1100} (206.7 / 118.1 [+27.6] / 31.5 {43.3})	
DBM 3050	3000 (118.1)	2500x5000 (98.4x196.9)	5250 / 3500 [+700] / 800 {1100} (206.7 / 137.8 [+27.6] / 31.5 {43.3})	
DBM 3060		2500x6000 (98.4x236.2)	6250 / 3500 [+700] / 800 {1100} (246.1 / 137.8 [+27.6] / 31.5 {43.3})	
DBM 3080		2500x8000 (98.4x315.0)	8250 / 3500 [+700] / 800 {1100} (324.8 / 137.8 [+27.6] / 31.5 {43.3})	

*{ } Option

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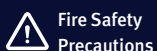
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* For more details, please contact Doosan Machine Tools.

* The specifications and information above-mentioned may be changed without prior notice.

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**Fire Safety
Precautions**

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

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