GLOBAL STANDARD
VERTICAL MACHINING CENTER

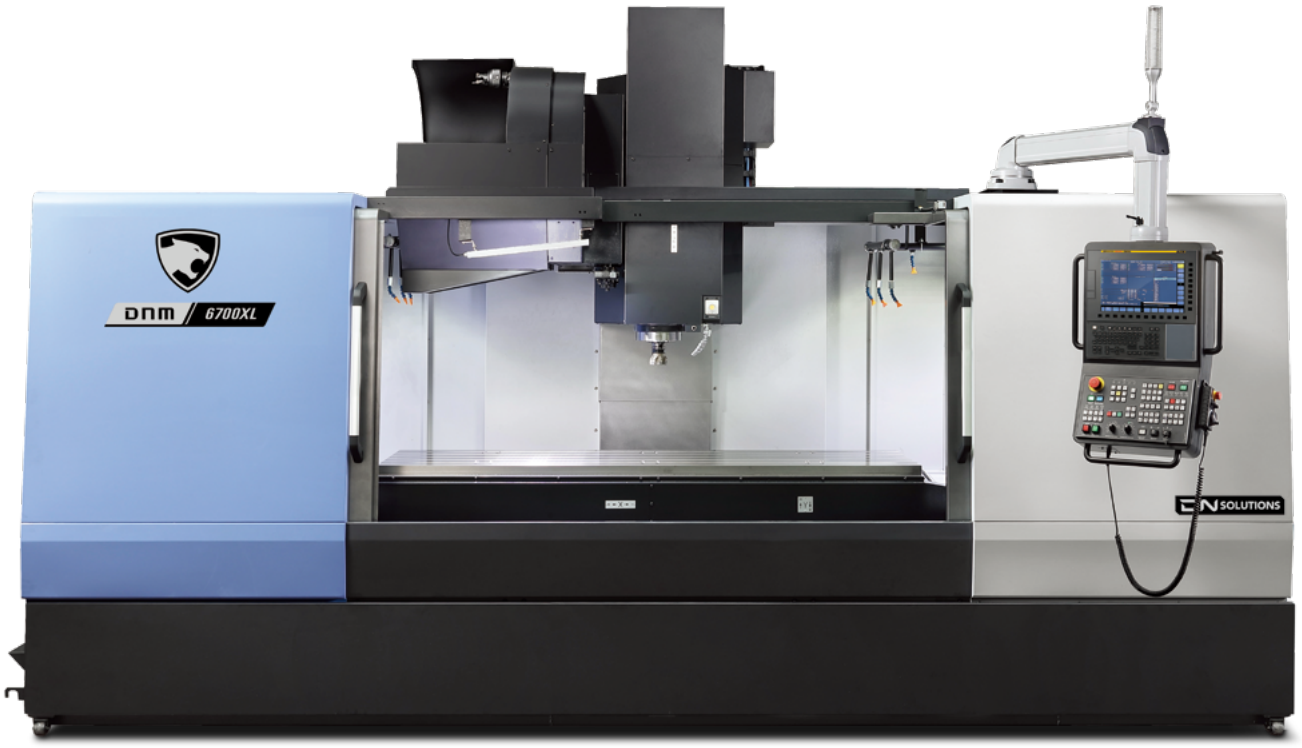
DNM

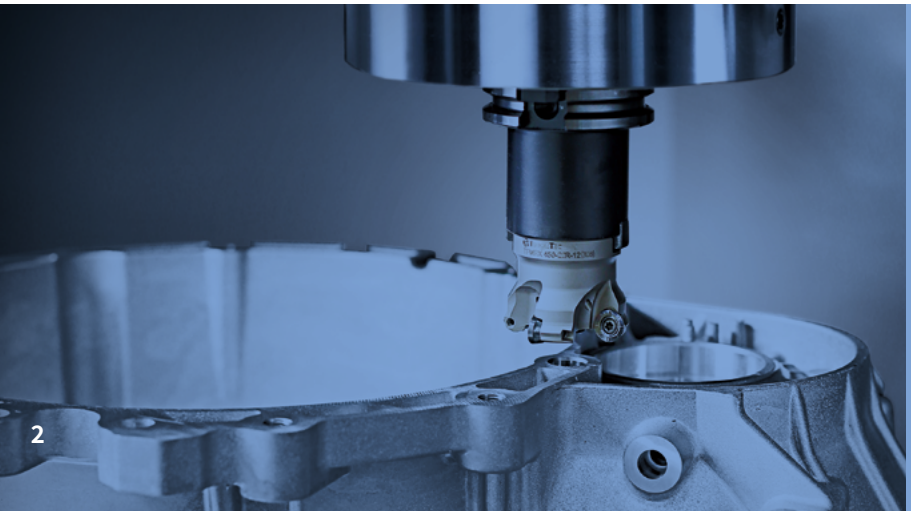
4500/L • **5700**/L • **6700**/L/XL

DN SOLUTIONS

DNM SERIES
4500/L • **5700**/L • **6700**/L/XL

Building on the legacy of the proven and successful DNM and DNM ll series, the new version DNM series boasts even greater reliability and improved performance. In addition, the new series includes grease lubrication to the roller guideways which is more environmentally-friendly. The design concepts underpinning the DNM 4500/5700/6700 series are high speed, high rigidity and suitability for all applications.





Standard features include the largest machining envelope in its class, direct coupled spindles, roller guideways and thermal compensation to deliver high precision.

A HIGHLY VERSATILE VERTICAL MACHINING CENTER WITH THE LARGEST MACHINING ENVELOPE IN ITS CLASS

- DNM series machines have larger tables with increased Y-axis travels and increased maximum table loads.
- DNM machines with longer X-axes (i.e.,DNM 4500L, 5700L, 6700L/XL), are available.

STANDARD DIRECT-COUPLED SPINDLE FOR HIGHER PRODUCTIVITY

- Directly coupled spindles reduce vibration and noise, thereby improving the machines' performance and making them more environmentally-friendly compared to belt driven machines.
- High-torque and high speed spindles are available for the machining of different materials.
- Higher productivity is achieved by reducing tool change times and by improving acceleration and deceleration rates.

AN ENVIRONMENTALLY-FRIENDLY MACHINE DESIGNED FOR STABLE AND EASY OPERATION

- Thermal error compensation system supplied as standard optimizes machine accuracy by reducing the effects of heat build-up during extended periods of operation.
- The EZ work function can be checked in the pop-up window on the NC main screen for convenience.
- Grease lubrication for the axis roller guideways is a standard feature and helps reduce contamination.

BASIC STRUCTURE

Designed with a highly stable and rigid structure, the new DNM series provides customers with machines with different Y-axis capabilities (from 450mm to 670mm), enabling the machining of a wider range of workpieces.

Travel distance (X / Y / Z axis)

DNM 4500/L

800{910} / 450 / 510 mm

31.5{35.8} / 17.7 / 20.1 inch

DNM 5700/L

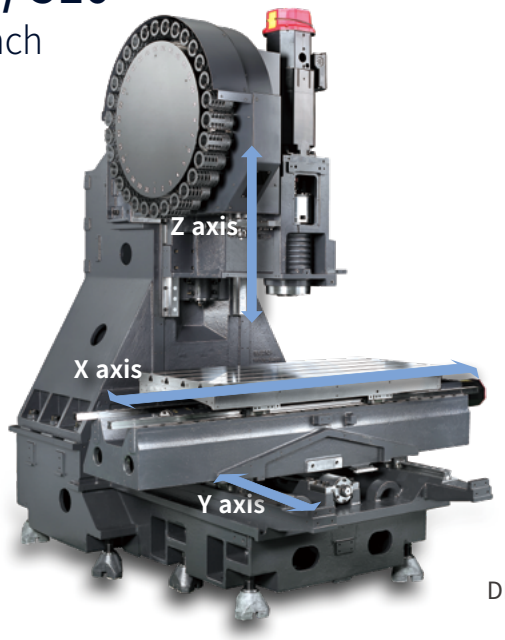
1050{1300} / 570 / 510 mm

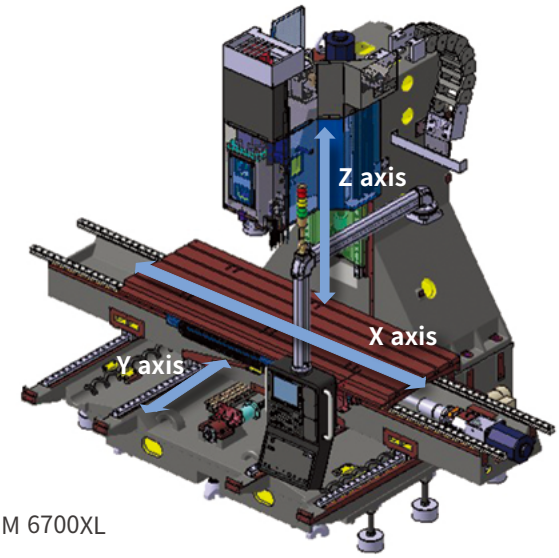
41.3{51.2} / 22.4 / 20.1 inch

DNM 6700/L/XL

1300{1500/2100} / 670 / 625 mm

51.2{59.1/82.7} / 26.4 / 24.6 inch





DNM 6700XL

Axis system

Environmentally-friendly grease lubrication is adopted as standard for all the axis feed systems, and roller-type LM guides are used to enhance rigidity.

Rapid traverse rate (X / Y / Z axis)

DNM 4500 / 5700 / 6700 / 6700L

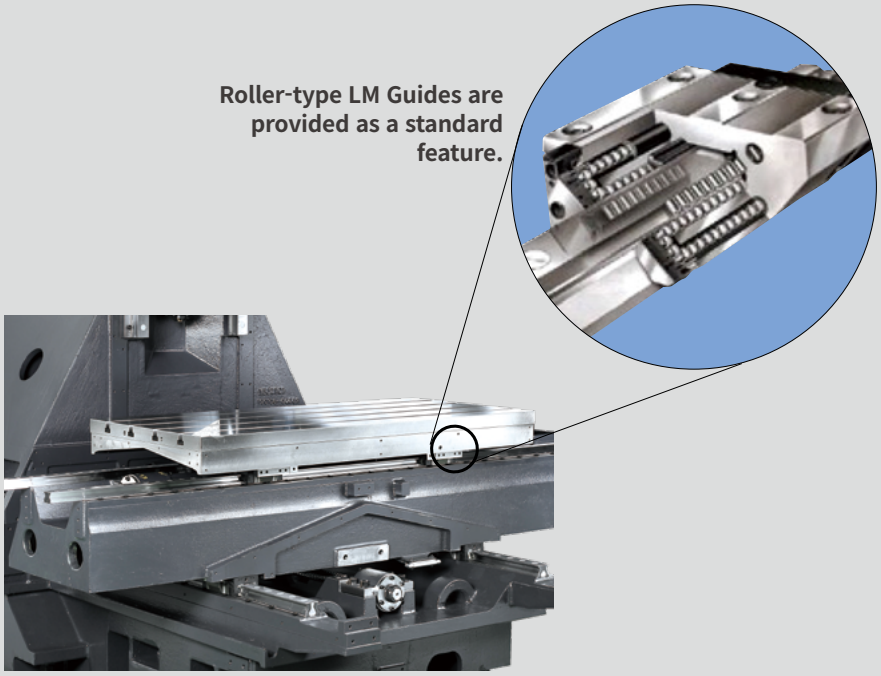
36 / 36 / 30 m/min

(1417.3 / 1417.3 / 1181.1 ipm)

DNM 6700XL

30 / 30 / 30 m/min

(1181.1 / 1181.1 / 1181.1 ipm)



Roller-type LM Guides are provided as a standard feature.

Grease lubrication for all axes is a standard feature.

SPINDLE | TABLE

Directly-coupled spindles have been adopted as a standard feature to further reduce vibration and noise and enhance productivity, increase accuracy and improve the working environment. High- torque and high speed spindle options for machining different materials are available.

Max. spindle speed

8000 r/min

12000 r/min option

15000 r/min option

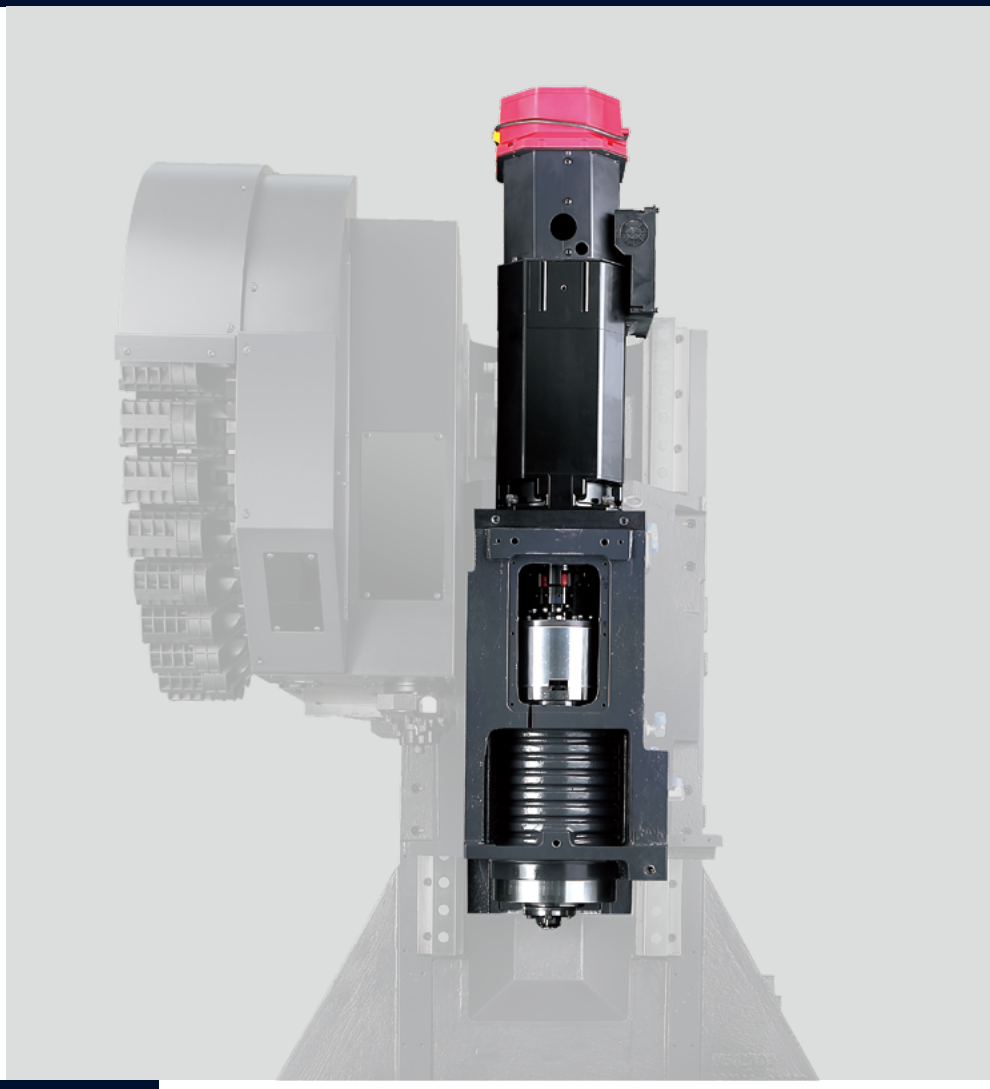
Max. spindle motor power

18.5 kW 24.8 Hp

Max. spindle motor torque

117.8 N·m 86.9 lbf-ft
(8000 r/min, 12000 r/min, 15000 r/min)

286 N·m 211.1 lbf-ft option
(8000 r/min high torque version)



TABLE

Increased table sizes and table load capacities are provided within the same floor space of the previous models.

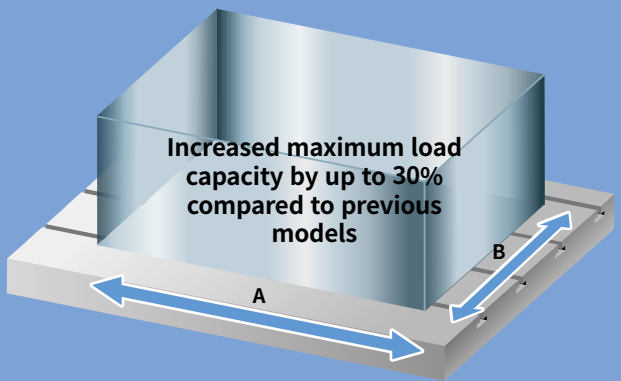


Table size (A x B)

DNM 4500/L
1000/1050 x **450** mm
39.4{41.3} x 17.7 inch

DNM 5700/L
1300/1500 x **570** mm
51.2{59.1} x 21.3 inch

DNM 6700/L/XL
1500/1600/2200 x **670** mm
59.1{63.0/86.6} x 26.4 inch

Max weight on Table

DNM 4500/4500L
600 kg 1322.8 lb

DNM 5700/5700L
1000 kg 2204.6 lb

DNM 6700/6700L/6700XL
1300 kg 2866.0 lb

MACHINING PERFORMANCE

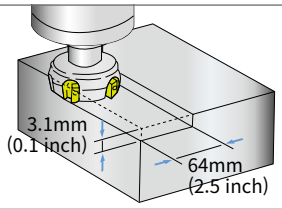
The DNM series delivers the best cutting performance in its class and ensures highest levels of productivity.

Cutting performance

High-rigidity machining can be undertaken with speed and precision.

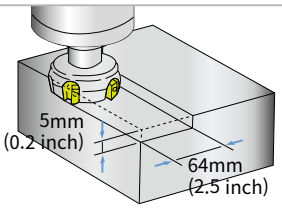
Face mill (ø80mm (3.15 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
527 (32.2)	1500	2700 (106.3)



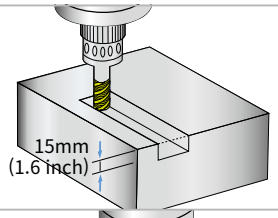
Face mill (ø80mm (3.15 inch)) Aluminium(AL6061)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
1901 (116.0)	1500	5940 (233.9)



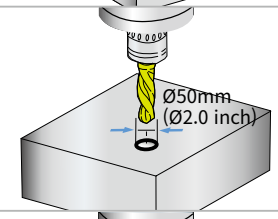
End mill (ø30mm (i.2 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
48 (2.9)	222	107 (4.2)



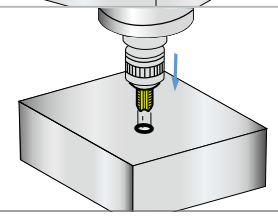
U-Drill (ø50mm (2.0 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
501 (30.6)	1500	255 (10.0)



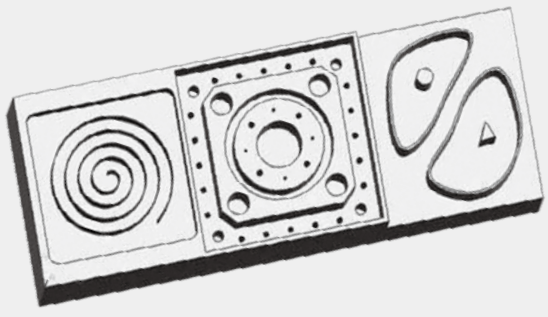
Tap Carbon steel (SM45C)

Tap size mm	Spindle speed r/min	Feedrate mm/min (ipm)
M 36 x P 4.0	221	884 (34.8)



*The results, indicated in this catalogue, are provided as examples only. They may not always be achieved owing to different cutting and environmental conditions.

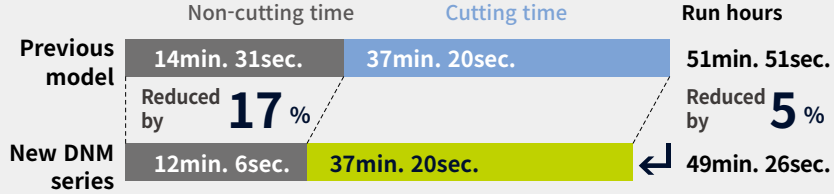
High Productivity



*The results, indicated in this catalogue, are provided as examples only. They may not always be achieved owing to different cutting and environmental conditions.

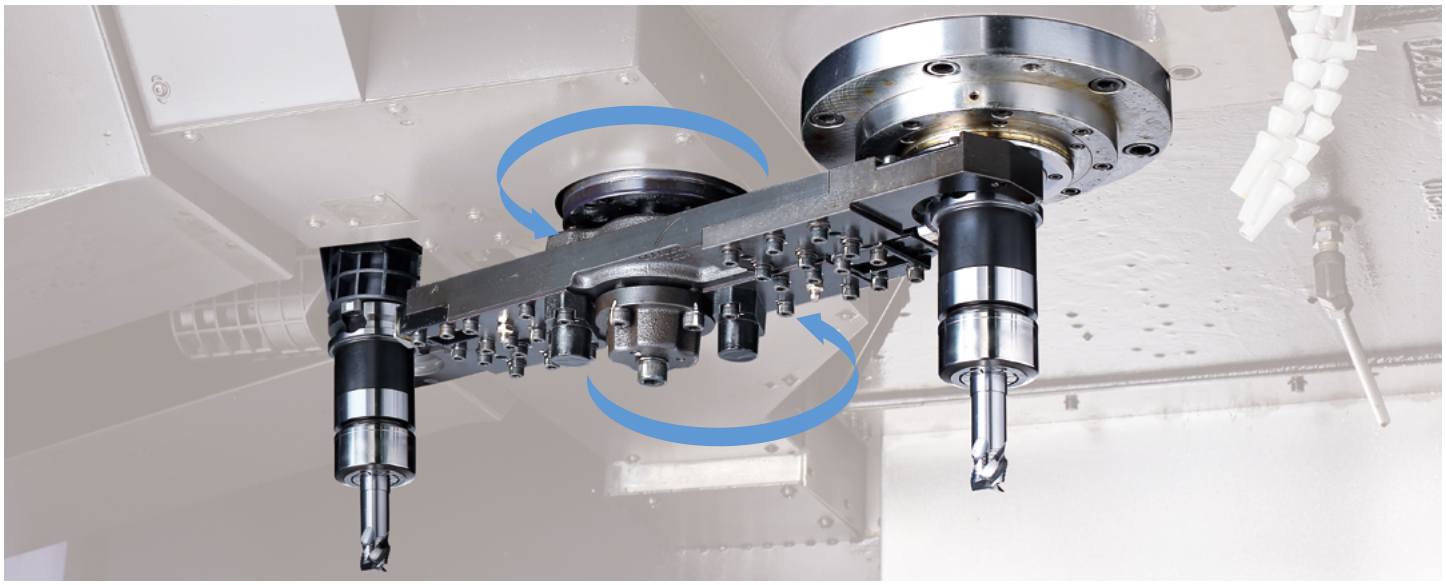
Sample work

Material	Aluminium (AL6061)
Material size	561 x 210 x 30 mm (22.1 x 8.3 x 1.2 inch)
Using tools	18 ea



TOOL CHANGE SYSTEM

Tool changers have been optimized to reduce non cutting times. The highly-reliable tool magazine can accommodate up to 30 tools as standard.



30, 40 ea

60 ea

Tool to Tool time

1.2 S

Chip to Chip* time

3.2 S

* The Chip-to-Chip time has been tested in accordance with DN Solutions's strict testing procedures, but may vary depending on the user's operating conditions.

Tool storage capacity

30 ea

40 ea option

60 ea option

STANDARD | OPTIONAL SPECIFICATIONS

Various optional features are available to meet customers' specific machining requirements and applications.

Description	Features		DNM 4500/L	DNM 5700/L	DNM 6700/ 6700L/XL
Spindle	8000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	●	●	X
		18.5/15 (24.8/20.1), 117.8(86.9)_FANUC	X	X	●
		15/11 (20.1/14.8), 286(211.1)_FANUC	○	○	○
	12000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	○	○	○
		17/10 (22.8/13.4), 108.6(80.1)_HEIDENHAIN	○	○	X
		32/15 (42.9/20.1), 203.7(150.3)_HEIDENHAIN	X	X	○
		16.5/11 (22.1/14.8), 141(104.1)_SIEMENS	○	○	X
		21.8/16.3 (29.2/21.9),150.1(110.8)_SIEMENS	X	X	○
	15000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	○	○	○
		17/10 (22.8/13.4), 108.2 (79.9)_HEIDENHAIN	○	○	○
		16.5/11 (22.1/14.8), 141.3 (104.3)_SIEMENS	○	○	○
Magazine	Tool storage capacity	30 ea	●	●	●
		40 ea	○	○	○
		60 ea	○	○	○
Tool shank type	BIG PLUS BT40		●	●	●
	BIG PLUS CAT40		○	○	○
	BIG PLUS DIN40		○	○	○
Raised column	150 mm (5.9 inch)		○	○	○
	200 mm (7.9 inch)		○	○	○
	300 mm (11.8 inch)		○	○	○
Coolant	FLOOD	0.19 MPa(27.6 psi), 0.4 kW(0.5 Hp)	●	●	●
		0.69 MPa(100.1 psi), 1.8 kW(2.4 Hp)	○	○	○
	TSC**	None	●	●	●
		2 MPa(290.1 psi), 1.5kW(2.0 Hp)	○	○	○
		2 MPa(290.1 psi), 4 kW(5.4 Hp)	○	○	○
		7 MPa(1015.3 psi), 5.5 kW(7.4 Hp)	○	○	○
	FLUSHING		○	○	○
	SHOWER (200 L/min (52.8 gal/min))		○	○	○
Chip disposal	Chip conveyor	Chip pan	●	●	●
		Hinged type (Left/Right/Rear)	○	○	○
		Magnetic scraper type (Left/Right/Rear)	○	○	○
		Screw(AUGER) type (Left/Right)	○	○	○
	Chip bucket		○	○	○
Precision machining option	Linear scale	X / Y / Z axis	○	○	○
	AICC II (200 block)		●	●	●
	SSP (Smooth Surface Package)		○	○	○
Measurement & Automation	Automatic tool measurement	TS27R_RENISHAW	○	○	○
		OTS_RENISHAW	○	○	○
	Automatic tool breakage detection		○	○	○
	Automatic workpiece measurement	OMP60_RENISHAW	○	○	○
	Automatic front door with safety device		○	○	○
Accessories	WORK LIGHT	LED LAMP	●	●	●
	OPERATOR CALL LAMP	3-COLOR SIGNAL TOWER(LED)	●	●	●
	LEVELING BLOCK & BOLT	-	●	●	●
	SMART THERMAL CONTROL	SENSORLESS TYPE(ONLY SPINDLE)	●	●	●
	ASSEMBLY & OPERATION TOOLS KIT	-	●	●	●
	4TH AXIS PREPARATION CABLING FOR SERVO/1-PNEUMATIC PIPING	FACTORY READY MADE	○	○	○
	AIR GUN		○	○	○
	Air blower		○	○	○
	Coolant gun		○	○	○
	Mist collector		○	○	○
Customized Special Option	ANCHORING (1)	SLIDE CLAMP & CHEMINCAL ANCHOR BOLT	○	○	○
	TSA (2)	0.54	○	○	○
	TOOL TYPE	HSK63A	○	○	○
	ATC AUTO SHUTTER	30TOOL / 40TOOL	○	○	○
	ATC FULL COVER	30TOOL / 40TOOL	○	○	○
	Drum chipconveyor	HINGE TYPE	○	○	○
		SCRAPER TYPE	○	○	○
	Oil lubrication	X, Y, Z AXIS	○	○	○
	20 Bar TSC with inverter	50Hz → 60Hz	○	○	○
	FINE DUST PROTECTING PACKAGE (WET MACHINING)	BELLOWS COVER(X/Y/Z)	○	○	○
		PROTECT COVER(X-AXIS)	○	○	○
		BALL SCREW BELLOWS COVER(X/Y)	○	○	○
		GUIDE WAY DOUBLE WIPER	○	○	○
	FINE DUST PROTECTING PACKAGE (DRY MACHINING)	PROTECT COVER(X-AXIS)	○	○	○
		BALL SCREW BELLOWS COVER(X/Y)	○	○	○
		GUIDE WAY DOUBLE WIPER	○	○	○
		AIR OIL SUCTION(ONLY 15k SPINDLE)	○	○	○
		ATC FULL CLOSED COVER	○	○	○
	AUTO TOOL LENGTH MEASUREMEMT	RENISHAW / LTS	○	○	○
	AUTO TOOL BREAKAGE DETECTION	MSC/BK9(NEEDLE TYPE ON MAGAZINE)	○	○	○

※ *Please contact DN Solutions for detailed specification information.*

** *If this option is selected, the TSA(Through Spindle Air) Max.pressure is 0.54MP*

(1) Please refer to foundation drawing in relation to anchoring. If more detailed information is required consult with DN Solutions service

(2) If TSC is not required - TSA can be selected as an option.

● *Standard* ○ *Optional* X *Not applicable*

⚠ Fire Safety Precautions | 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

Grease lubrication system

The standard grease lubrication system eliminates the need for an oil skimmer and reduces lubrication costs by about 60% compared to oil lubrication.

Yearly maintenance cost

Reduced by

Max. 60%

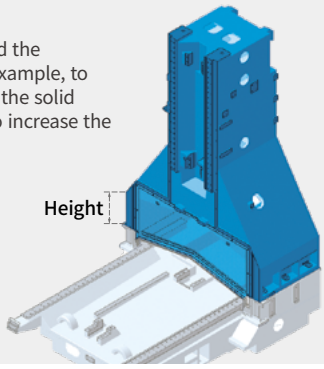
Raised column option

When the distance between the table and the spindle nose needs to be extended, for example, to accommodate a fixture or a rotary table, the solid one-piece raised column can be raised to increase the distance required.

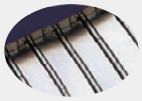
Height

150/200/300 mm

5.9/7.9/11.8 inch

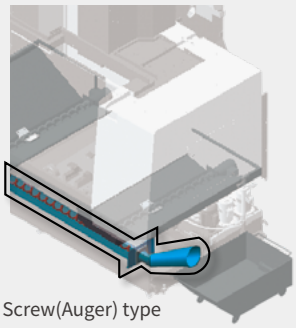


Chip conveyor option



Hinged belt

Magnetic scraper



Screw(Auger) type

Chip conveyor type	Material	Description
Hinged belt	Steel	Hinged belt chip conveyor, which is most commonly used for steel work [for cleaning chips longer than 30mm(1.2inch)], is available as an option.
Magnetic scraper	Cast Iron	Magnetic scraper type chip conveyor, which is ideal for die-casting work [for cleaning small chips], is available as an option.
Screw(Auger) type	Steel	Screw(Auger) type chip conveyor is suitable for minimizing installation space. About 85% floor space is required to install Screw(Auger) type chip conveyor compared to Hinged belt type.

Chip bucket option

Capacity 300 L (79.3 gal)

Hydraulic / Pneumatic fixture line option

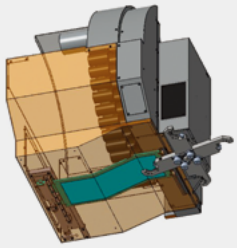
The user should prepare pipelines for hydraulic/pneumatic fixtures whose detailed specifications should be determined through discussions with DN Solutions.

4 axis rotary table option

The high-precision split system with its compact and highly rigid design, and double piston structure enables vertical and horizontal use and delivers a strong clamping force.

ATC shutter door option

An ATC shutter door can be applied instead of the brush mechanism to provide a higher level of protection from potential chip ingress.



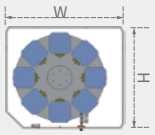
AWC system option

A compact automatic workpiece change system

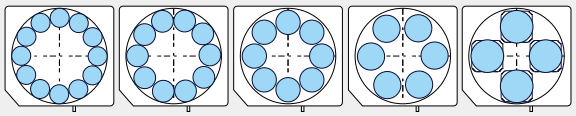
Max. workpiece dimensions	Unit	Count	Max. loading	Max. construction height on the pallet
250 x 250 (9.8x9.8) or ø 300 (11.8)	mm (inch)	12	130kg (286.6lb)	350mm (13.8inch)
320 x 320 (12.6x12.6) or ø 360 (14.2)	mm (inch)	10	250kg (551.1lb)	
350 x 350 (13.8x13.8) or ø 400 (15.7)	mm (inch)	8		
400 x 400 (15.7x15.7) or ø 450 (17.7)	mm (inch)	6		
500 x 500 (19.7x19.7) or ø 550 (21.7)	mm (inch)	4		

Pallet Storage-Table Configuration

Unit : mm (inch)



W X H = 1,900 X 1,700



250 X 250 (9.8 X 9.8) | 320 X 320 (12.6 X 12.6) | 350 X 350 (13.8 X 13.8) | 400 X 400 (15.7 X 15.7) | 500 X 500 (19.7 X 19.7)

DN SOLUTIONS FANUC i PLUS

DN Solutions Fanuc i Plus is optimized for maximizing customer productivity and convenience.

15 inch screen + new operation panel

DN Solutions Fanuc i Plus' operation panel enhances operating convenience by incorporating common-design buttons and layout, and features the Qwerty keyboard for fast and easy operation.

DN Solutions Fanuc i Plus

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

USB & PCMCIA card

QWERTY keyboard

- EZ-guide i standard
- Ergonimic operator panel
- 2MB Memory
- Hot key

iHMI touchscreen option

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.

NUMERIC CONTROL SPECIFICATIONS

FANUC

Item		Specifications	DN Solutions Fanuc i (0i Plus) DNM 4digit
Controlled axis	Controlled axes		3 (X,Y,Z)
	Simultaneously controlled axes		4 axes
	Additional controlled Axis	Add 1 Axis (5th Axis)	●
Data input/output	Fast data server		○
	Memory card input/output		●
	USB memory input/output		●
	Large capacity memory(2GB)*2	Available Option only with 15” Touch LCD (iHMI Only) *2)	○
Interface function	Embedded Ethernet		●
	Fast Ethernet		○
	Enhanced Embedded Ethernet function		●
Operation	DNC operation	Included in RS232C interface.	●
	DNC operation with memory card		●
Program input	Workpiece coordinate system	G52 - G59	●
	Addition of workpiece coordinate system	G54.1 P1 X 48 (48 pairs)	●
	Tool number command		T4 digits
	Tilted working plane indexing command	G68.2 TWP	○
Feed function	AI contour control I	G5.1 Q_, 40 Blocks	X
	AI contour control II	G5.1 Q_, 200 Blocks	●
	AI contour control II	G5.1 Q_, 600 Blocks	X
	AI contour control II	G5.1 Q_, 1000 Blocks *1)	X
	High smooth TCP		X
Operation guidance function	EZ Guidei (Conversational Programming Solution)		●
	iHMI with Machining Cycle	Only with 15” Touch LCD standard *2)	X
	EZ Operation package		●
Setting and display	CNC screen dual display function		●
Network	FANUC MTConnect		✪
	FANUC OPC UA		✪
Others	Display unit	10.4" color LCD	X
		15" color LCD	X
		15" color LCD with Touch Panel	●
	Part program storage size & Number of registerable programs	640M(256KB)_500 programs	X
		1280M(512KB)_1000 programs	X
		2560M(1MB)_1000 programs	X
		5120M(2MB)_1000 programs	●
		10240M(4MB)_1000 programs	X
		20480M(8MB)_1000 programs	X
		2560M(1MB)_2000 programs	X
		5120M(2MB)_4000 programs	X
		10240M(4MB)_4000 programs	X
		20480M(8MB)_4000 programs	X

*1) The number of look-ahead blocks may be changed or limited depending on the peripheral device or the configuration of the internal NC system.
*2) Available Option only with Fanuc i plus iHMI

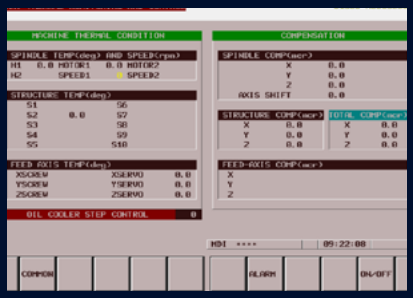
● Standard ○ Optional X N/A ✪ Available
Network: FANUC MT Connect and FANUC OPC UA available.

EZ WORK

The software developed by DN Solutions provides a range of different functions designed for fast, efficient and convenient operation.

EZ work

The EZ work package delivers speed and efficiency. This menu-driven innovation not only helps customers reduce setup times, but also simplifies common tasks and procedures, reducing the potential for errors. EZ work reduces operating time, protects machinery, enhances quality and speeds up maintenance interventions.



Thermal Compensation

A function to maintain high-precision machining quality by analyzing and correcting the amount of thermal displacement of a structure through a temperature sensor

M/G-Code List

Functional description of M code and G code

Tool Management

Function to manage tool information [Tool information / Tool No. / Tool condition (normal, large diameter, worn / damaged, used for the rst time, manual) / Tool name]

Operation Rate

Machine operation history management function by date based on load

Adaptive Feed Control

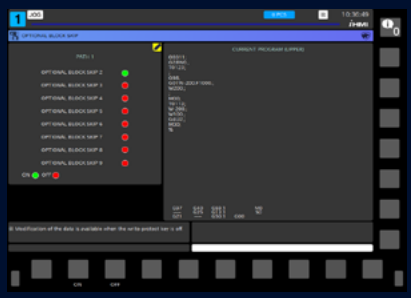
Function to control feedrate so that the cutting can be carried out at a constant load (To adapt to the spindle load set up with constant load feedrate control function)

Spindle Warm Up

A function that assists spindle warm-up for spindle life when the spindle has not been used for a certain period of time

ATC Recovery

Function to view detailed info with recommended actions and to perform step-by-step operation manually (when an alarm is triggered during an ATC operation)



Addition of Optional Block Skip

In addition to the OPTIONAL BLOCK SKIP of the operation panel, the function to skip a specific block selected in the machining program

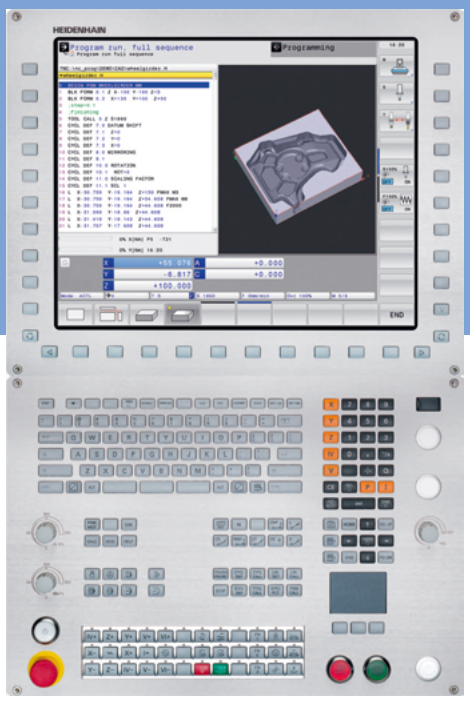
CONVENIENT OPERATION

HEIDENHAIN TNC620

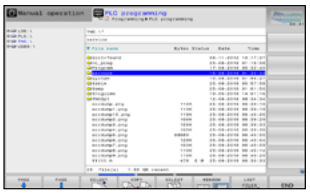
Superior hardware specifications

The TNC 620 features optimized motion control, short block processing times and special control strategies. Together with its uniform digital design and its integrated digital drive control (including inverters), it enables you to achieve high machining speeds and the best possible contour accuracy.

- 15.6" display
- 21GB Storage memory
- 1024 look ahead blocks
- High user convenience with folder structure data management

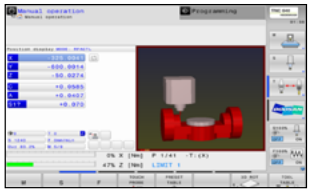


Conversational convenient function



Data are controlled in the folder structure; convenient communication via USB devices

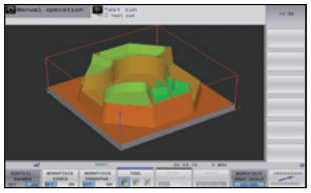
KinematicOpt & KinematicComp option (Touch probe cycle for automatic measurement)



Collision protection system option

Adaptive feed control option

Various built-in pattern cycles for a wider scope of application (Software standard)



Graphic simulation

NUMERIC CONTROL SPECIFICATIONS

HEIDENHAIN

Item		Specifications	TNC620 DNM
Controlled axis	Controlled axis		3 (X,Y,Z)
	Simultaneously controlled axis		4 axis
Data input/output	USB memory input/output		●
Interface function	Embedded ethernet		●
Feed function	Look-ahead	5000 blocks	●
Axis compensation	KinematicsOpt	Automatic measurement and optimization of machine kinematics	○
Collision monitoring	Dynamic collision monitoring (DCM)		X
Network	MTConnect		✪
Others	Display unit	15" color LCD	●
		15" color LCD with touch panel	○
	Part program storage size & number of registerable programs	1.8GB	●

● *Standard* ○ *Optional* X *Not Available* ✪ *Available*

CONVENIENT OPERATION

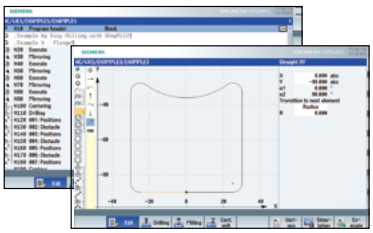
SIEMENS 828D

15.6” screen + new operation panel

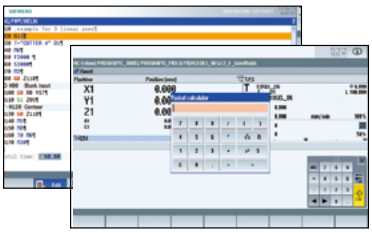
The newly-designed operation panel improves the customer convenience by incorporating and using common-design buttons and layouts, and includes the familiar QWERTY keyboard for fast and easy operation.

- 15.6" display
- 10MB high capacity user memory
- USB & ethernet (standard)
- QWERTY keyboard (standard)
- High-speed calculation and simulation can be fulfilled by improved processor functionality

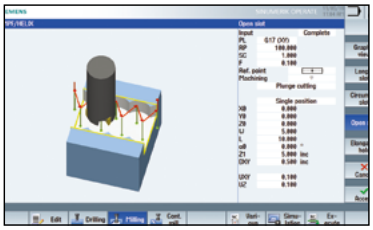
Conversational convenient function



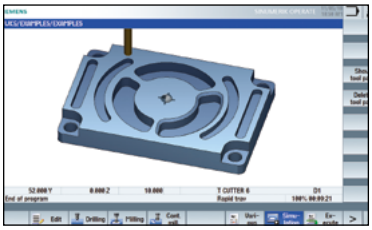
Shop Mill Part Programming



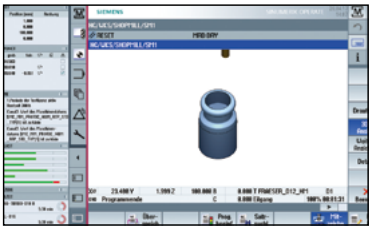
Smart function



Advanced program language programGUIDE



Simulation and machining contour monitoring



Side screen widget

NUMERIC CONTROL SPECIFICATIONS

SIEMENS

	Item	Specifications	S828D DNM
Controlled axis	Controlled axes (제어축수)	-	3축
	Simultaneously controlled axes (동시 제어축수)	-	3축
Data input/output	Memory card input/output	(Local drive)	X
	USB memory input/output		●
Interface function	Ethernet	(X130)	●
Operation	On network drive	(without EES option, Extcall)	○
	On USB storage medium, e.g. memory stick	(without EES option, Extcall)	●
Program input	Workpiece coordinate system	G54 - G57	●
	Addition of workpiece coordinate system	G505 - G599	●
Interpolation & Feed function	Advanced surface		●
	Top surface		○
	Look ahead number of block	S/W version 4.8	450
Programming & Editing function	3D simulation, finished part		●
	Simultaneous recording		●
	Measure kinematics		X
	DXF Reader for PC integrated in SINUMERIK Operate		○
Operation Guidance Function	ShopMill		●
	EZ Work		●
Setting and display	Operation via a VNC viewer		●
Network	MTConnect		✪
	OPCUA		○
Etc. function	15.6" color display with touch screen		●
	19" color display without touch screen		X
	21.5" color display with touch screen		X
	CNC user memory	10 MB	●
	Expansion by increments	2 ~ 12 MB	○
	Collision avoidance		X
	Collision avoidance ECO (machine, working area)		X

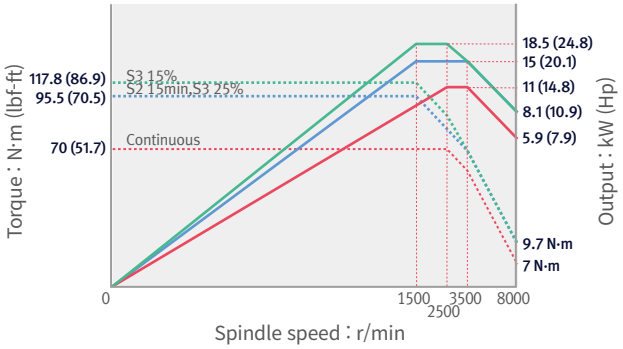
● *Standard* ○ *Optional* X *Not Available* ✪ *Available*

POWER | TORQUE

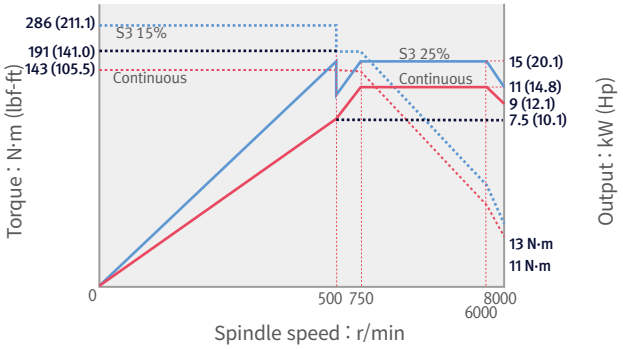
FANUC

DNM 4500/L, DNM 5700/L

8000 r/min
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

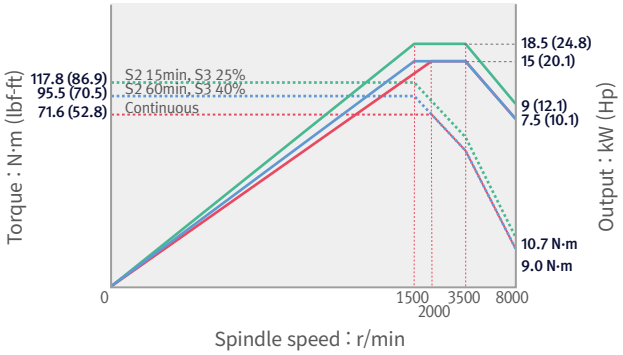


8000 r/min option
Max. spindle power: 15 kW (20.1 Hp)
Max. spindle torque: 286 N·m (211.1 lbf-ft)

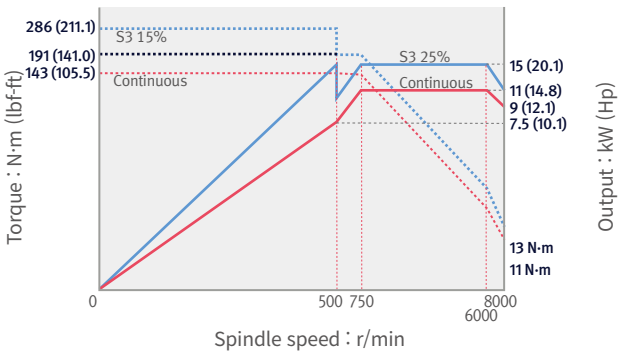


DNM 6700/L/XL

8000 r/min
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

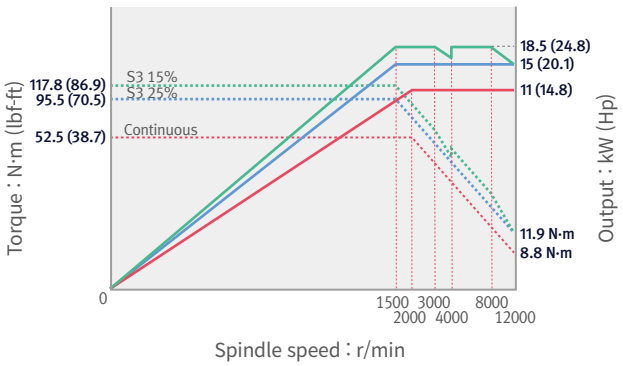


8000 r/min option
Max. spindle power: 15 kW (20.1 Hp)
Max. spindle torque: 286 N·m (211.1 lbf-ft)

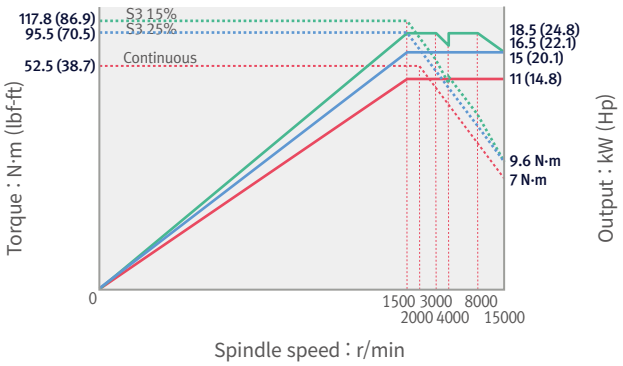


DNM 4500/L, 5700/L, 6700/L/XL

12000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)



15000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)



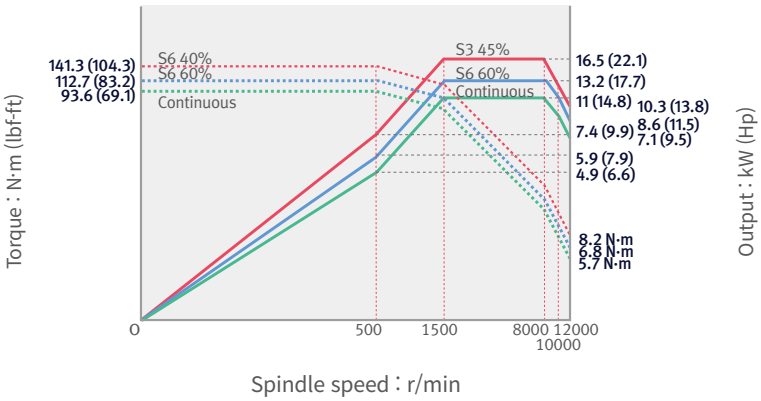
POWER | TORQUE

SIEMENS

DNM 4500/L, DNM 5700/L

12000 r/min

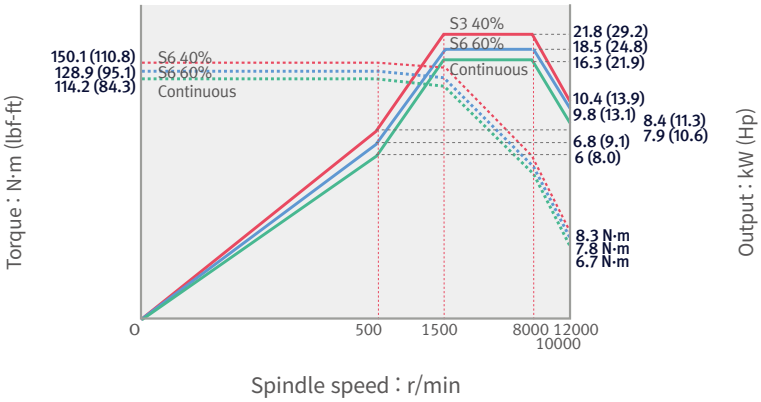
Max. spindle power: 16.5 kW (22.1 Hp)
Max. spindle torque: 141.3 N·m (104.3 lbf-ft)



DNM 6700/L/XL

12000 r/min

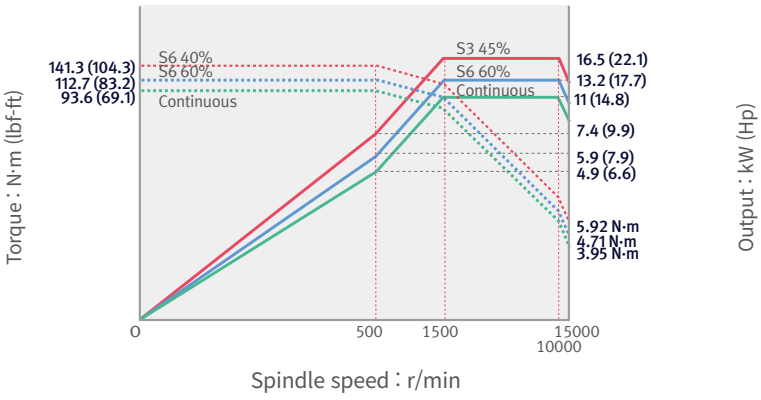
Max. spindle power: 21.8 kW (29.2 Hp)
Max. spindle torque: 150.1 N·m(110.8 lbf-ft)



DNM 4500/L, 5700/L, 6700/L/XL

15000 r/min

Max. spindle power: 16.5 kW (22.1 Hp)
Max. spindle torque: 141.3 N·m (104.3 lbf-ft)

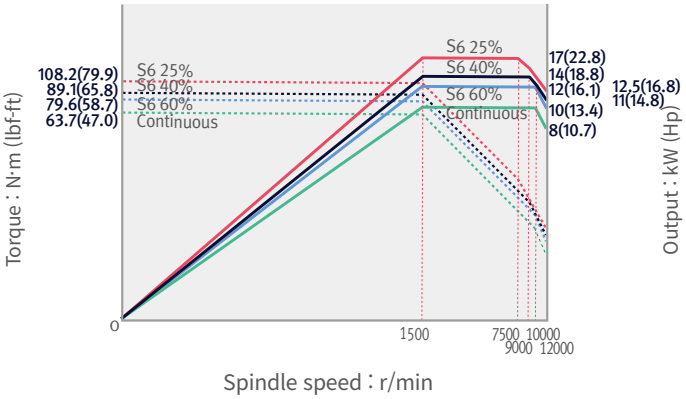


POWER | TORQUE

HEIDENHAIN | MITSUBISHI

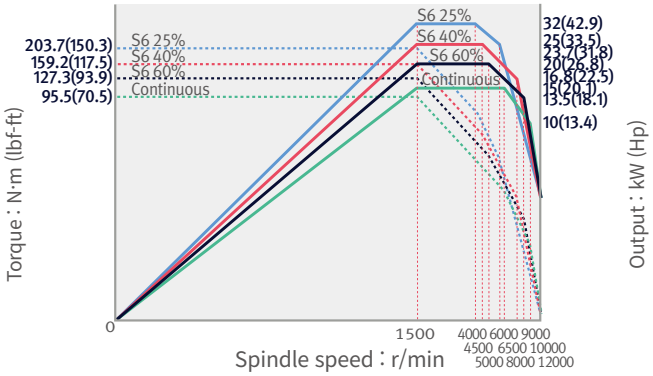
HEIDENHAIN
DNM 4500/L, DNM 5700/L

12000 r/min
Max. spindle power: 17 kW (22.8 Hp)
Max. spindle torque: 108.2 N·m (79.9 lbf-ft)

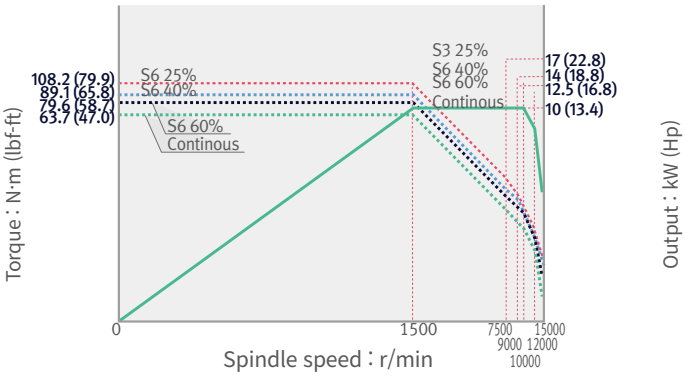


HEIDENHAIN
DNM 6700/L/XL

12000 r/min
Max. spindle power: 32 kW (42.9 Hp)
Max. spindle torque: 203.7 N·m (150.2 lbf-ft)

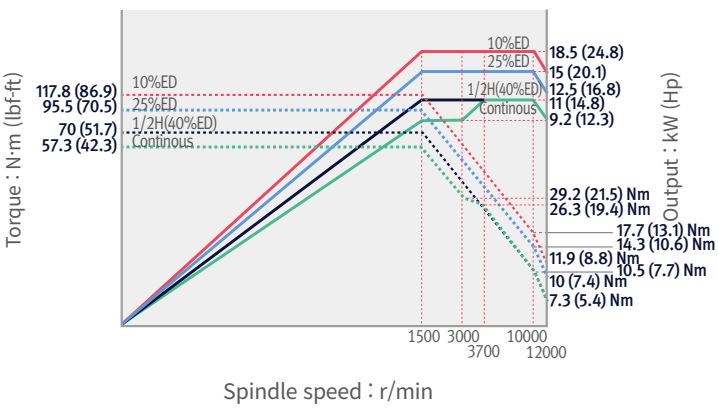


15000 r/min option
Max. spindle power: 17 kW (22.8 Hp)
Max. spindle torque: 108.2 N·m (79.9 lbf-ft)



MITSUBISHI
DNM 4500/L, 5700/L, 6700/L/XL

12000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

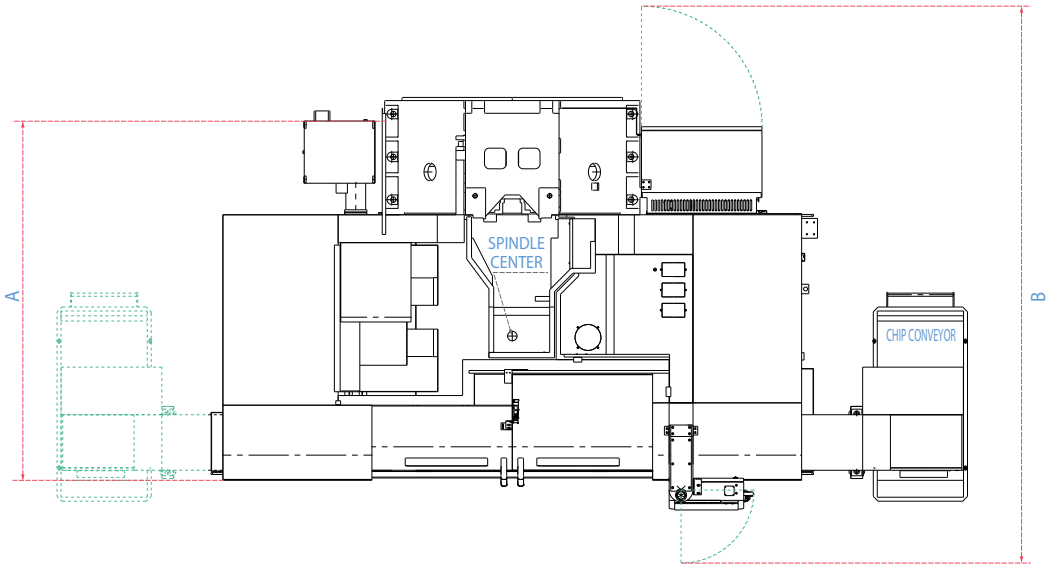


DIMENSIONS

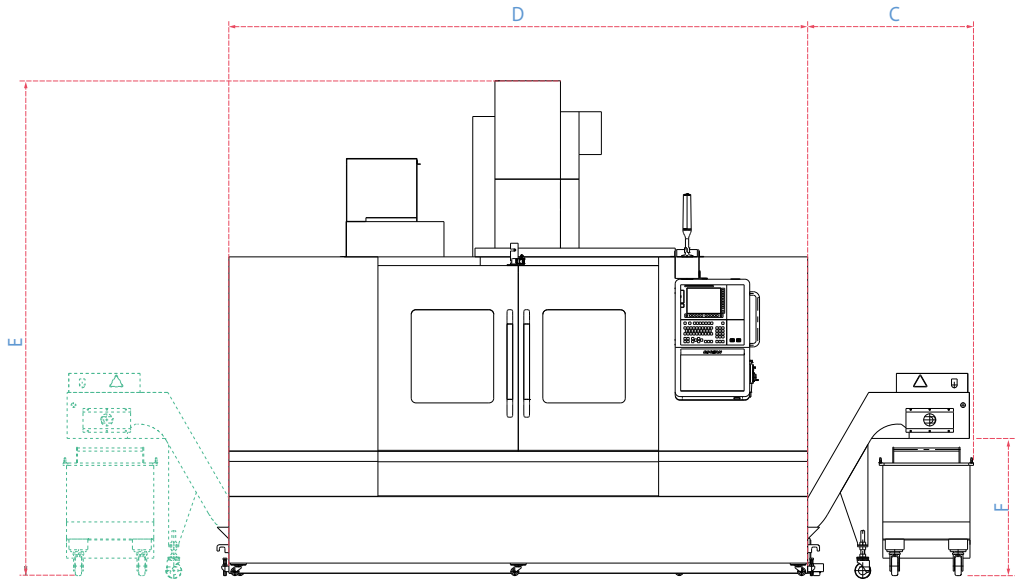
DNM 4500/5700/6700 series

Units : mm (inch)

TOP



FRONT



Model	A (Length)	B[1]	C[2]	D (Width)	E (Height)	F		
						SCRAPER	HINGED	SCREW
DNM 4500	1970 (77.6)	3200 (126.0)	1040 (415) [40.9(16.3)]	2465 (97.0)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 4500L	1970 (77.6)	3200 (126.0)	1040 (415) [40.9(16.3)]	2550(100.4)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 5700	2225 (87.6)	3365 (132.5)	1040 (415) [40.9(16.3)]	2960 (116.5)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 5700L	2225 (87.6)	3365 (132.5)	1040 (415) [40.9(16.3)]	3200 (126.0)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 6700	2415 (95.1)	3510 (138.2)	1040 (415) [40.9(16.3)]	3200 (126.0)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 6700L	2415 (95.1)	3510 (138.2)	1040 (415) [40.9(16.3)]	3650 (143.7)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)

1 Max. machine length (including electric cabinet door and operation panel swiveling)
2 Additional width to accommodate the side chip conveyor. [ ] indicates the additional width required to accommodate a screw(auger)type chip conveyor.

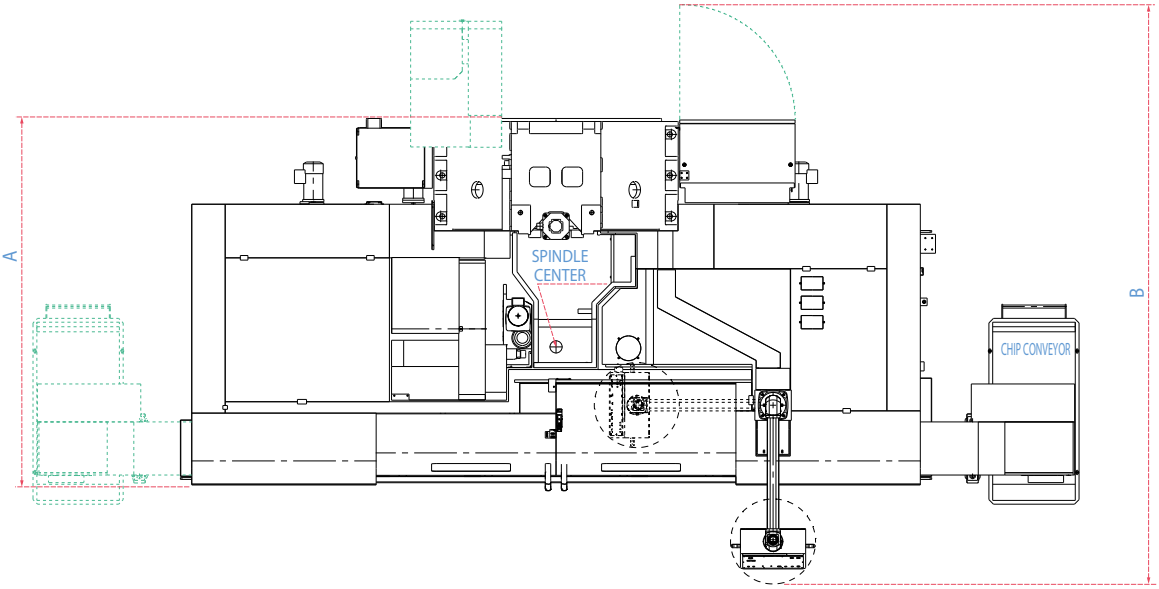
** Some peripheral equipment can be placed in other places *Rear chipconveyor need discuss with sales person*

DIMENSIONS

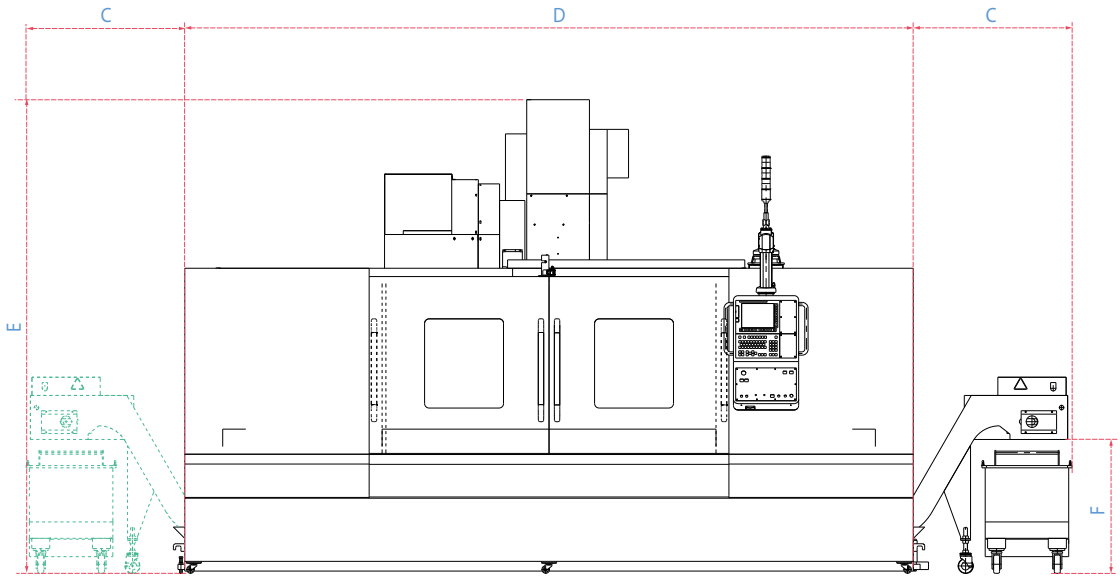
DNM 6700XL

Units : mm (inch)

TOP



FRONT



Model	A (Length)	B[1]	C[2]	D (Width)	E (Height)	F		
						SCRAPER	HINGED	SCREW
DNM 6700XL	2415 (95.1)	3820 (150.4)	1045 (41.1)	4800 (189.0)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)

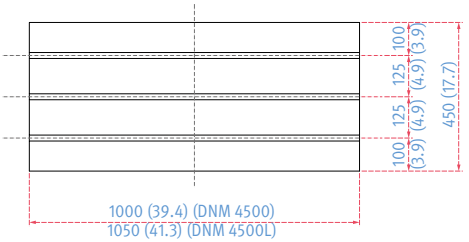
1 Max. machine length (including electric cabinet door and operation panel swiveling)
2 Additional width to accommodate the side chip conveyor. [ ] indicates the additional width required to accommodate a screw(auger)type chip conveyor.

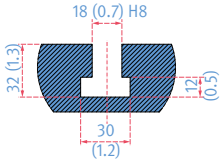
** Some peripheral equipment can be placed in other places *Rear chipconveyor need discuss with sales person*

TABLE

DNM 4500/L

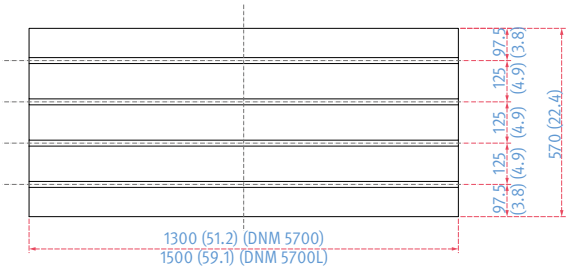
Units : mm (inch)

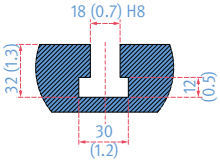




DNM 5700/L

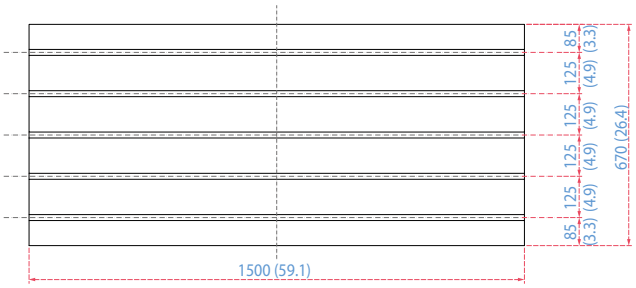
Units : mm (inch)

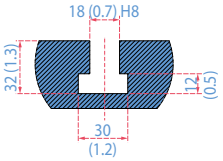




DNM 6700

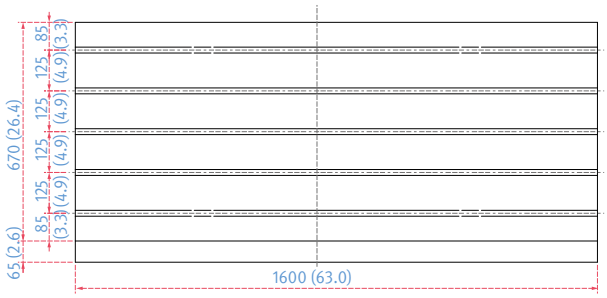
Units : mm (inch)

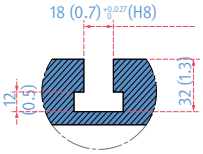




DNM 6700L

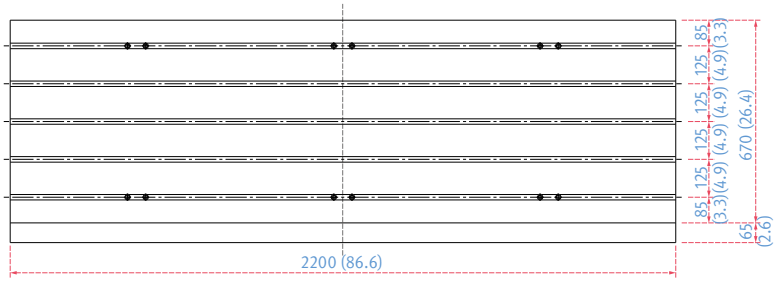
Units : mm (inch)

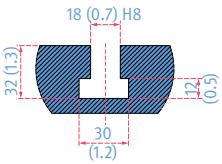




DNM 6700XL

Units : mm (inch)





MACHINE SPECIFICATIONS

Description			Unit	DNM 4500	DNM 4500L	DNM 5700	DNM 5700L	DNM 6700	DNM 6700L	DNM 6700XL
Travels	Travel distance	X axis	mm (inch)	800 (31.5)	910 (35.8)	1050 (41.3)	1300 (51.2)	1300 (51.2)	1500 (59.1)	2100 (82.7)
		Y axis	mm (inch)	450 (17.7)		570 (22.4)		670 (26.4)		
		Z axis	mm (inch)	510 (20.1)				625 (24.6)		
	Distance from spindle nose to table top		mm (inch)	150~660 (5.9~26.0)				150~775 (5.9~30.5)		
Table	Table size		mm (inch)	1000 x 450 (39.4 x 17.7)	1050 x 450 (41.3 x 17.7)	1300 x 570 (51.2 x 22.4)	1500 x 570 (59.1 x 22.4)	1500 x 670 (59.1 x 26.4)	1600 x 670 (63.0 x 26.4)	2200 x 670 (86.6 x 26.4)
	Table loading capacity		kg (lb)	600 (1322.8)		1000 (2204.6)		1300 (2866.0)		
	Table surface type		mm (inch)	T-SLOT (3-125(4.9) x 18(0.7) H8)		T-SLOT (4-125(4.9) x 18(0.7) H8)		T-SLOT (5-125(4.9) x 18(0.7)H8)		
Spindle	Taper		-	ISO #40						
	Max. spindle speed	Fanuc	r/min	8000 {8000*, 12000, 15000}						
		Siemens	r/min	12000 {15000}						
		Heidenhain	r/min	12000 {15000}						
		Mitsubishi	r/min	12000 {15000}						
	Max. Spindle power	Fanuc	kW (Hp)	18.5/11 (24.8/14.8) {15/11 (20.1/14.8)*, 18.5/11 (24.8/14.8), 18.5/11 (24.8/14.8)}				18.5/15 (24.8/20.1) {15/11 (20.1/14.8)*, 18.5/11 (24.8/14.8), 18.5/11 (24.8/14.8)}		
		Siemens	kW (Hp)	16.5/11 (22.1/14.8) {16.5/11 (22.1/14.8)}				21.8/16.3 (29.2/21.9) {16.5/11 (22.1/14.8)}		
		Heidenhain	kW (Hp)	17/10 (22.8/13.4) {17/10 (22.8/13.4)}				32/15 (42.9/20.1) {17/10 (22.8/13.4)}		
		Mitsubishi	kW (Hp)	18.5/11 (24.8/14.8)						
	Max. spindle torque	Fanuc	N·m (lbf-ft)	117.8 (86.9) {286 (211.1)*, 117.8 (86.9), 117.8 (86.9)}						
		Siemens	N·m (lbf-ft)	141.3 (104.3) {141.3 (104.3)}				150.1 (110.7) {141.3 (104.3)}		
		Heidenhain	N·m (lbf-ft)	108.2 (79.9) {108.2 (79.9)}				203.7 (150.2) {108.2 (79.9)}		
		Mitsubishi	N·m (lbf-ft)	117.8 (86.9)						
Feedrates	Rapid traverse rate	X axis	m/min (ipm)	36 (1417.3)						30 (1181.1)
		Y axis	m/min (ipm)	36 (1417.3)						30 (1181.1)
		Z axis	m/min (ipm)	30 (1181.1)						
Automatic Tool Changer	Type of tool shank	Tool shank	-	BT 40 {CAT 40 / DIN 40}						
		Pull stud	-	PS806 {Modified DIN / DIN 69872 #40}						
	Tool storage capa.		ea	30 {40, 60}						
	Max. tool diameter	Continous	mm (inch)	80 (3.1) {76 (3.0)}						
		Without Adjacent Tools	mm (inch)	125 (4.9)						
	Max. tool length		mm (inch)	300 (11.8)						
	Max. tool weight		kg (lb)	8 (17.6)						
	Max. tool moment		N·m (ft-lbs)	5.88 (4.3)						
	Tool selection			MEMORY RANDOM						
	Tool change time (Tool-to-tool)		sec	1.2						
	Tool change time (Chip-to-chip)		sec	3.2					3.5	
Power source	Electric power supply (rated capacity)		kVA	29.5				38.1 {33.0**}	40 {35}*	
	Compressed air supply		MPa (psi)	0.54 (78.3)						
Tank capacity	Coolant tank capacity		L (gal)	260 (68.7)	285 (75.3)	310 (81.9)	350 (92.5)	325 (85.9)	430 (113.6)	440 (116.2)
Machine Dimensions	Height		mm (inch)	2985 (117.5)				3120 (122.8)		
	Length		mm (inch)	2158 (85.0)		2413 (95.0)		2597 (102.2)		2970 (116.9)
	Width		mm (inch)	2615 (103.0)	2701 (106.3)	3110 (122.4)	3350 (131.9)	3350 (131.9)	3650 (143.7)	4800 (189.0)
	Weight		kg (lb)	5000 (11023.0)	5500 (12125.2)	6500 (14329.8)	7000 (15432.1)	8500 (18739.0)	9000 (19841.3)	10000 (22045.9)
Contrel	NC system		-	DN Solutions Fanuc i Plus / SIEMENS S828D / HEIDENHAIN TNC620 / MITSUBISHI M80A						

*{ } : Optional * 8000 r/min High torque version(FANUC only) ** Power capacity of 8000 r/min high torque and 12000 r/min spindle

WHY DN SOLUTIONS

The DN Solutions promise, MACHINE GREATNESS, has two important meanings. The first is simple: DN Solutions makes great machines. The second is a challenge to our end-users. With a product line that is this comprehensive, accurate and reliable, we equip our customers to machine greatness. The big question: **Why should you choose DN Solutions over other options?**

Here's why···

WHAT YOU MAKE AND HOW YOU MAKE IT MATTERS—SO MAKE IT GREAT WITH DN SOLUTIONS.

UNBEATABLE MACHINES

You won't find a more comprehensive range or a better combination of value, performance and reliability anywhere else.

READILY AVAILABLE - ANYWHERE IN THE WORLD

Machining centres (including 5-axis machines), lathes, multi-tasking turning centres and mill-turn machines, and horizontal borers with best-in-class specifications are all available···ready to install.

ROBUST PRODUCT LINE

We offer an impressive range of machine models and hundreds of configurations. Whatever your machining needs and requirements, there's a DN Solutions for you.

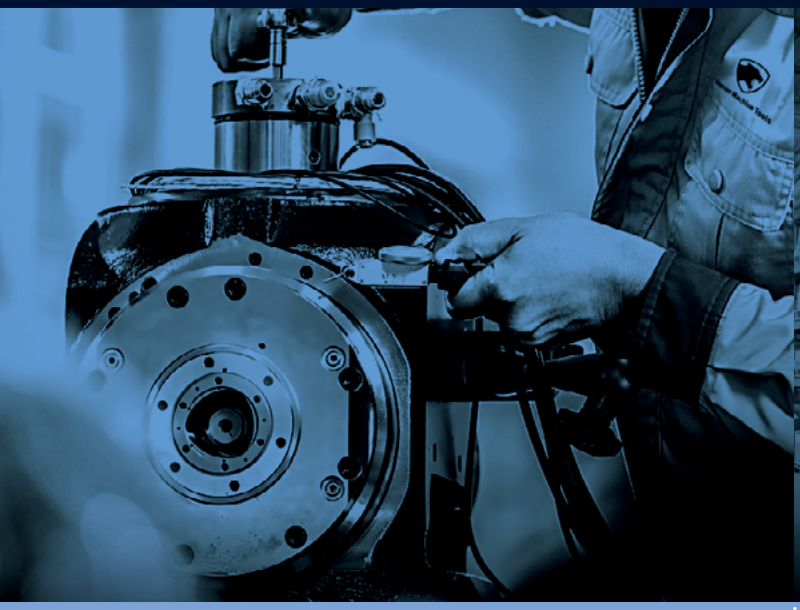
EXPERT SERVICE

Our dedicated, experienced and knowledgeable team is totally committed to improving your productivity, growth and success.

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

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

4	Corporations
156	Dealer networks
51	Technical centers Technical Center, Sales Support, Service Support, Parts Support
200	Service posts
3	Factories

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* For more details, please contact DN Solutions.

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

DN SOLUTIONS

ver. EN 220518 SU

VTC Series

200C | 200G | 300C | 250D/50 | 800/30 SR | 805E | 805G

Mazak

TABLE OF CONTENTS

VTC SERIES

SIZE, SPEED AND POWER

Built in Kentucky, the VTC Series of vertical machining centers bring high versatility and productivity to the machining of extremely long and heavy workpieces. A full traveling column design, fixed tables, increased spindle speeds and torque, along with new Smooth CNC controls on some models, make machines in the VTC series perfect for long aerospace parts, conveyor sections, castings for construction machinery and more.

To further enhance part processing versatility, an optional table center partition creates two separate work areas and large-capacity tool magazines deliver uninterrupted, continuous machine operation. VTC Series machines can also be outfitted with rotary tables.

MAZATROL SmoothG CNC

- VTC-805E
- VTC-805G

MAZATROL MATRIX NEXUS 2 CNC

- VTC-200C
- VTC-200G
- VTC-300C
- VTC-250D/50

MAZATROL MATRIX 2 CNC

- VTC-800/30 SR

VTC-200C

VTC-300C

VTC-805G

OPTIMUM PLUS SERVICE AND SUPPORT

MAZAK OPTIMUM PLUS

To maximize machine tool investments, the Mazak Optimum Plus program represents a company-wide commitment to provide the best possible, most comprehensive support.

The Optimum Plus program encompasses Five Pillars — distinct, yet interrelated areas:

- Single-source service
- Technical support — machine and CNC
- Parts support
- Progressive Learning
- Spindle and unit rebuild

Single-source service

Mazak is a single point of contact for any Mazak-related service need, whether it involves a machine, control, accessory or automation solution. This effective service approach helps customers maintain the highest possible level of productivity.

Benefits of Mazak's single-source approach include:

- Free technical phone support and software upgrades for the life of a Mazak machine
- Software support that provides instantaneous diagnostic services via remote real-time systems
- Guaranteed phone response to any technical question within one hour via a 24/7 technical phone support system
- More than 350 factory-trained Mazak service representatives and certified distributor personnel that can be at a customer's site within 24 hours under most circumstances
- Wide variety of services, including laser calibration to ISO, ANSI and JIS standards; ball bar qualification and analysis; preventive maintenance plans and programs; and vibration analysis and benchmarking

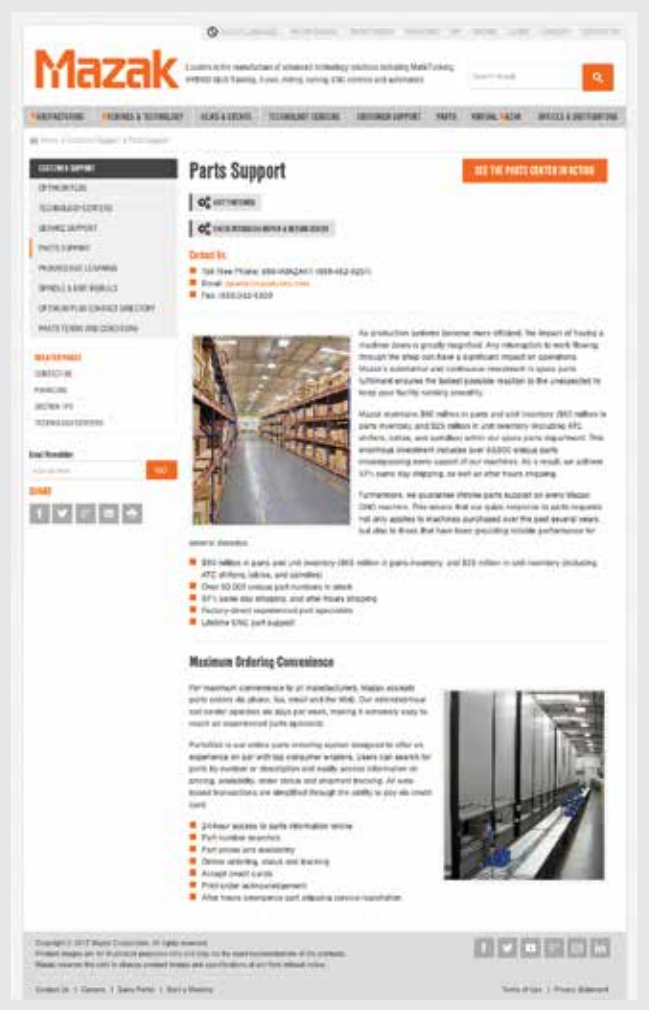
Technical support — machine and CNC

Comprehensive warranties on every Mazak machine tool component, including a two-year part warranty on CNC control components.

Technical support for machines and CNCs also includes:

- Additional warranty coverage (available upon request)

Mazak OPTIMUMplus
TOTAL SUPPORT FOR MAZAK CUSTOMERS



THE MAZAK OPTIMUM PLUS PROGRAM ENABLES CUSTOMERS TO MAXIMIZE THE VALUE OF THEIR MAZAK PURCHASE.

Parts support

Mazak's spare parts fulfillment ensures the fastest possible reaction time. The state-of-the-art Mazak North American Parts Center uses the latest AS/RS fully automated warehouse storage system technology and maintains a $65 million parts inventory.

Benefits of the North American Parts Center include:

- Average 97% same day parts shipment and after hours shipping
- 52,000 part numbers in stock
- Call center open Monday-Saturday
- Convenient web-based parts ordering
- Experienced part specialists
- Lifetime CNC parts support

Click here for more information on parts support.

FULLY AUTOMATED WAREHOUSE STORAGE SYSTEMS ENSURE THE FASTEST DELIVERY OF MAZAK SPARE PARTS.

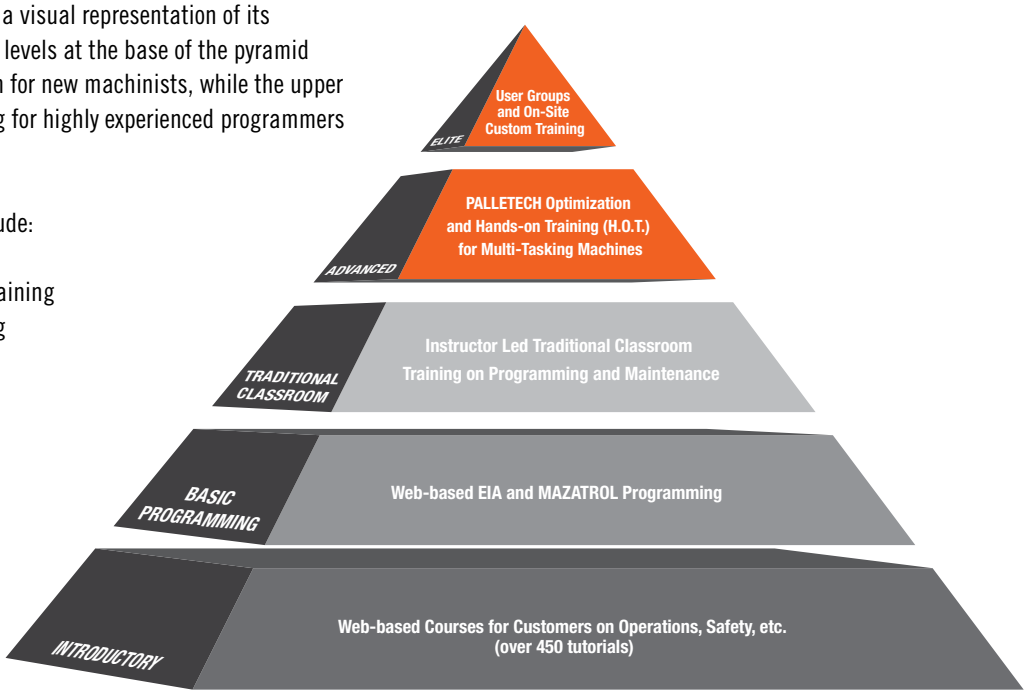
Progressive Learning

Mazak's Progressive Learning represents a unique, phased approach to education and training for customers, combining hands-on training, web-based instruction and real-world examples. The program's tiers of offerings — Pyramid of Learning — range from self-paced coursework to highly advanced classes. Every Mazak machine includes three years of programming training at no charge to customers.

Mazak's Pyramid of Learning is a visual representation of its approach to training. The lower levels at the base of the pyramid represent basic skills education for new machinists, while the upper levels signify advanced training for highly experienced programmers and operators.

Pyramid of Learning levels include:

- Simple online training
- Introductory programming training
- Traditional hands-on training
- Advanced training
- Customized training



TOP 10 ADVANTAGES OF THE VTC SERIES

VTC Series machines feature several new and innovative technologies to help job shops boost speed, performance and precision in a wide variety of metalworking applications. The series brings advanced technology, value and productivity to part-processing operations.

1. **Full traveling column design and fixed tables** for machining extremely long and heavy workpieces.

2. **Increased Y-axis stroke** for cost-effective alternative to bridge-style machines.

3. **Optional table partition** transforms table into two separate work areas.

4. **Base casting design** allows excellent chip flow and reduces thermal distortion.

5. **Robust high-performance spindles** offered in various maximum speeds/torque.

6. **Mazak MAZATROL Smooth Controls** offer fast and easy EIA/ISO and conversational programming.

7. **Large-capacity tool magazines with automatic tool changers** extend uninterrupted, continuous machine operation.

8. **Mazak MX Hybrid Roller Guide System** delivers durability, reliability and long-term accuracy.

9. **Optional seamless automation integration** increases uptime and lights-out production.

10. **Green, energy efficient and ergonomic features** make for ease of use, environmentally friendly, low-maintenance operation.

VTC-805E

MACHINE DESIGN

Machines in the VTC Series bring together the perfect blend of features to deliver the speed, power and rigidity required for the machining of large and/or heavy components. Plus, an optional center partition transforms the machine into two work areas for efficient processing of smaller parts.

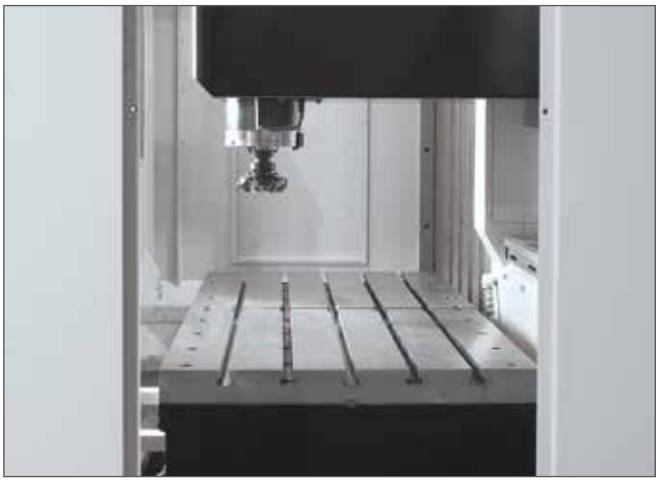
BASE
VTC machine base casting designs provide enhanced rigidity to handle heavy loads, excellent chip flow and reduced thermal distortion.

FIXED TABLE
Long fixed tables securely hold parts and support heavy workpieces not suited for machines with moving tables.

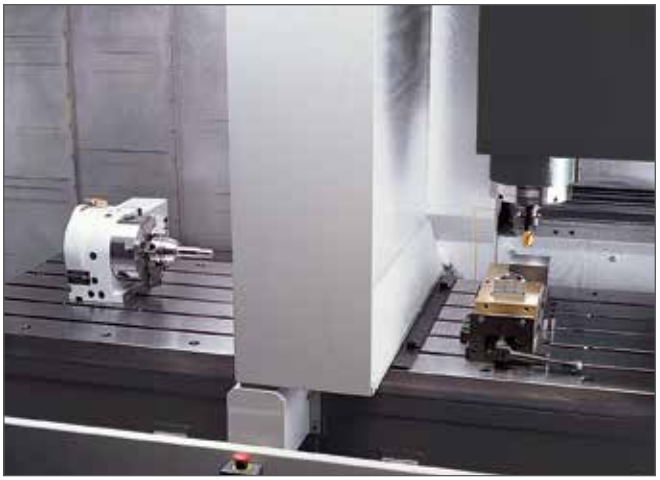
TRAVELING COLUMN
Full traveling columns house both the spindles and large capacity tool magazines of VTC machines to enable highly productive, accurate and interference-free part processing. Because tool magazines travel along with spindles, tool changes are extremely fast and non-cut time is significantly reduced.

CENTER PARTITION
For even greater flexibility, optional table center partitions divide the machine work envelopes into two separate work areas. This allows the machine to be in cycle in one work area, while a part is being unloaded/loaded or a new set up is occurring in the other work area.

AMPLE Y AXIS
VTC Series machines offer the industry's largest Y-axis stroke up to 32.0" to give shops a cost-effective alternative to bridge-style machines for the production of large, heavy parts.



FIXED TABLE



CENTER PARTITION

SPINDLES

VTC Series machines feature powerful, rigid spindles positioned on full traveling columns to give shops what they need to achieve high productivity and maintain exceptional accuracy. Standard machine spindles deliver unbeatable metal removal capabilities for all common materials, including steels, aluminums and cast irons. Mazak also offers other maximum spindle speeds/torques so that shops can effectively match spindle performance to specific part machining needs.

On the VTC-800/30 SR, a swivel spindle head tilts +/- 110 degrees in the B axis to deliver improved accuracy and repeatability. The addition of the B-axis allows the machining of complex features and contours to significantly reduce machining processes and increase productivity.

40 TAPER

40-taper spindles provide an effective and productive balance of speed and torque for heavy-duty and high-speed cutting of aluminum and other non-ferrous materials.

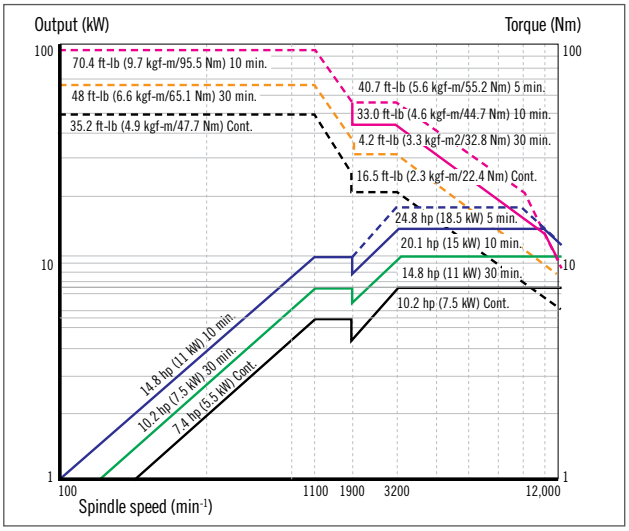
- 12,000 rpm – VTC-200C, 200G, 300C
- 18,000 rpm – VTC-800/30 SR

50 TAPER

High-torque 50-taper spindles with maximum torque ratings ranging from 122 ft-lb to over 665 ft-lb provide the strength and power for aggressive metal removal in tough-to-machine materials.

- 6,000 rpm – VTC-250D/50, 805E, 805G
- 10,000 rpm (optional) – VTC-805E, 805G

VTC-200C, VTC-200G AND VTC-300C
POWER-TORQUE 40–12,000 MIN^{-1} (RPM)



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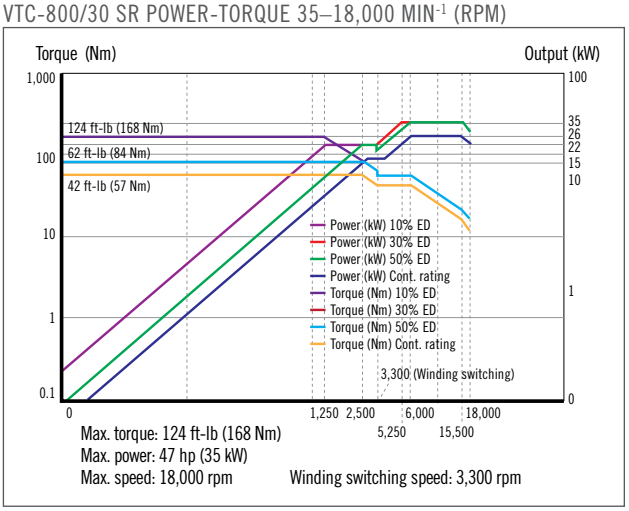
VTC-800/30 SR POWER-TORQUE 35–18,000 MIN^{-1} (RPM)



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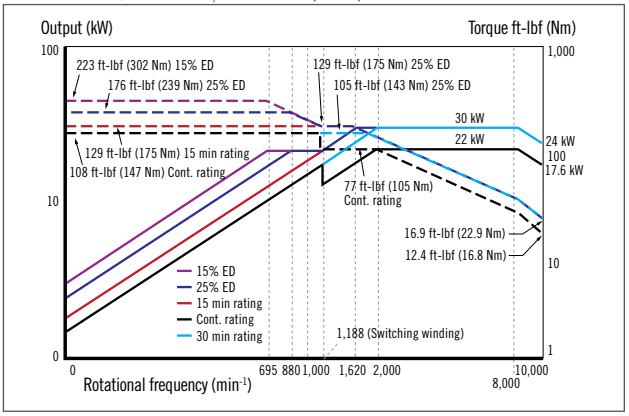
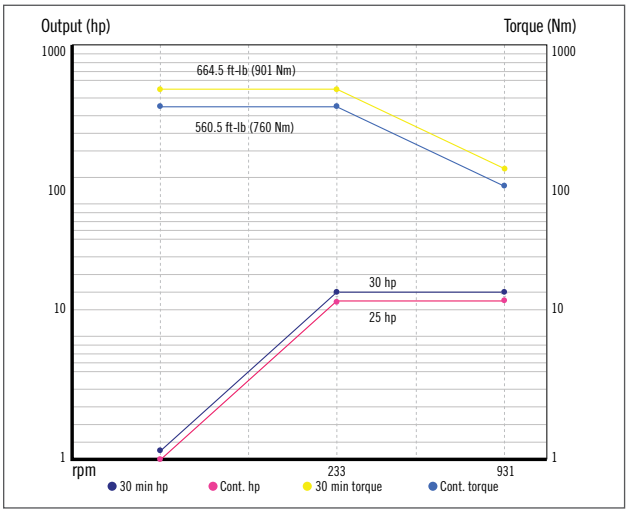
VTC-805E AND VTC-805G
POWER-TORQUE 35–10,000 MIN^{-1} (RPM) – OPTIONAL



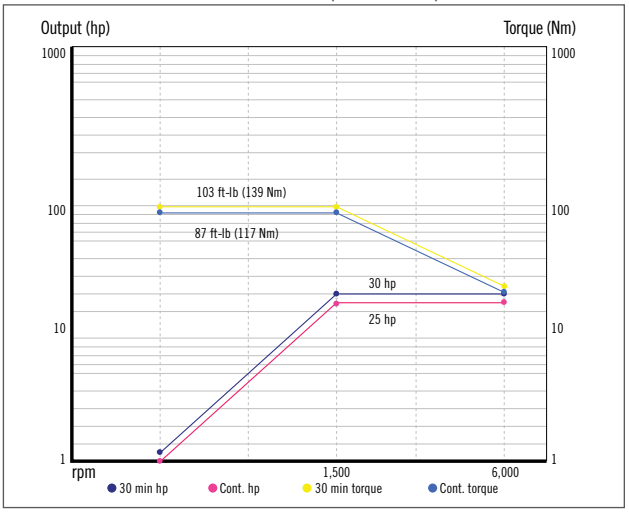
(FOR REFERENCE ONLY)

VTC-250D/50, VTC-805E AND VTC-805G
POWER-TORQUE 26–6,000 MIN^{-1} (RPM) – STANDARD
50 TAPER AC SPINDLE MOTOR 30HP (LOW GEAR)



(FOR REFERENCE ONLY)

VTC-250D/50, VTC-805E AND VTC-805G
POWER-TORQUE 26–6,000 MIN^{-1} (RPM) – STANDARD
50 TAPER AC SPINDLE MOTOR 30HP (HIGH GEAR)



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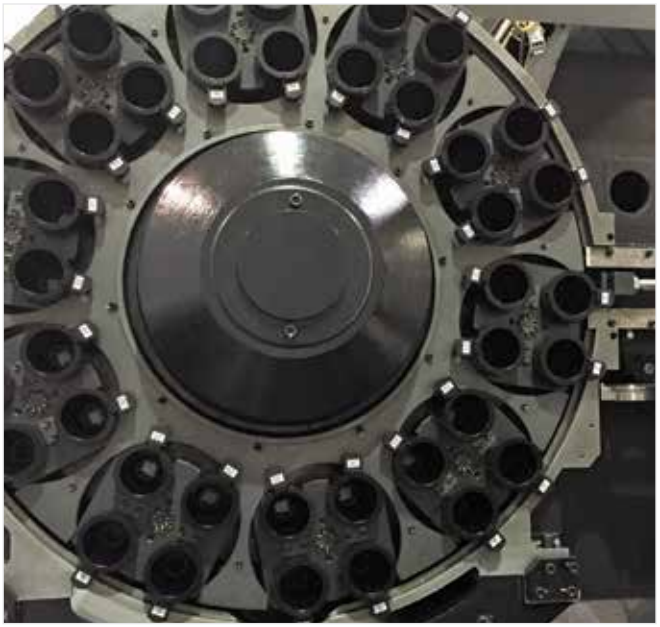
AUTOMATIC TOOL CHANGERS AND TOOL STORAGE

For part production versatility, each VTC Series machine features an automatic tool changer and large capacity tool storage. The tool magazine travels with the machine's column to reduce non-cut time by quickly exchanging tools and getting the machine back in the cut in the shortest times possible.

- 24-, 30- or 40-tools standard (depending on model)
- 48-tool only on 200C/200G/300C



FAST, EASY AND EFFICIENT PROGRAMMING

The continuously innovative Mazak MAZATROL SMOOTH CNC controls make programing VTC Series machines easy, fast and efficient. The highly versatile controls allow for both EIA/ISO and conversational programming, while other features and capabilities boost power and functionality.

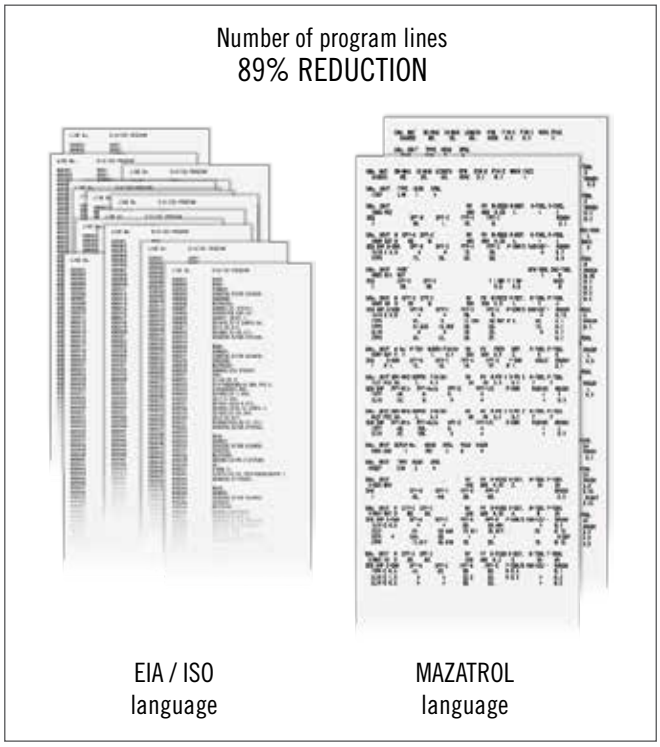
EIA/ISO COMPATIBILITY STANDARD

MAZATROL G-codes are the same as those used in conventional EIA CNC machines. This allows VTC Series machine users to run programs made for other machine brands by simply editing M codes and confirming axis strokes along with cutting conditions.

CONVERSATIONAL PROGRAMMING

The industry standard MAZATROL conversational programming makes it possible for inexperienced operators to quickly and easily develop machining programs for VTC Series machines. Operators answer conversationally displayed questions concerning the intended workpiece. These queries include type of material, OD/ID dimensions, part lengths and several others. Then, according to the input data, the MAZATROL control automatically calculates intersection coordinates and tool index positioning in addition to optimized cutting conditions and machining processes.

SMOOTHG CONTROL SCREEN



PROCESS HOME SCREENS

Innovative touch operation of the MAZATROL SMOOTH controls streamlines data entry and minimizes the number of displays to reduce programming times for VTC Series machines. Five different home process screens each display their appropriate data in an easy to understand manner. Operators can touch icons to quickly navigate to additional screen displays.

Process home screens include:
- Programming
- Tool data
- Setup
- Machining
- Maintenance

SMOOTHG PROGRAMMING SCREEN

SMOOTHG TOOL DATA SCREEN

SMOOTHG MACHINING SCREEN

SMOOTHG MAINTENANCE SCREEN

MAZATROL SmoothG CONTROL

The MAZATROL SmoothG CNC makes it easy to generate programs for processing complex parts through off-centerline machining as well as angled drilling, milling and tapping. The control incorporates a wide variety of advanced programming functions that allow it to offer complete ease of use and ensure high-speed, high-accuracy machining performance.

Machine models:

- VTC-805E
- VTC-805G

FEATURES AND FUNCTIONS OF THE MAZATROL SmoothG CONTROL INCLUDE:

- **Virtual Machining** allows operators to perfect part programs prior to initiating cutting
- **High Gain Feed Forward Control** boosts machining speed and accuracy
- **Fast Rotary Axis Speeds** optimize gear skiving and rotary axis threading
- **Variable Acceleration Control** calculates optimal acceleration for a combination of axes
- **Position-Controlled Hobbing** provides fast, convenient hobbing and skiving operations
- **Real Time Tuning** ensures optimal machining balance as workpiece weight changes
- **Quick MAZATROL** makes it possible to directly import 3D CAD models into the control and automatically extract coordinates from it to simply machine programming
- **Quick EIA** plots toolpaths prior to running programs and checks for any interferences in those paths
- **EIA/ISO and Conversational Programming Capabilities**

MAZATROL SmoothG SPECIFICATIONS

	MAZATROL	EIA
Number of controlled axes	Simultaneous 2 ~ 4 axes	
Least input increment	0.00001 inch, 0.0001 mm, 0.0001º	
High speed, high-precision control	Shape error designation, Smooth corner control, Rapid traverse overlap, Rotary axis shape compensation	Shape error designation, Smooth corner control, Rapid traverse overlap, Rotary axis shape compensation, High-speed machining mode, High-speed smoothing control function
Interpolation	Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Cylindrical coordinate interpolation, Polar coordinate interpolation, Synchronized milling spindle tapping*	Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Spiral interpolation, Helical interpolation, Cylindrical coordinate interpolation*, Fine spline interpolation*, NURBS interpolation*, Polar coordinate interpolation*, Synchronized milling spindle tapping*
Feed rate	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution),Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp, Variable acceleration/deceleration control, Constant control for G0 tilting*	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Inverse time feed, Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp,Time constant changing for G1, Variable acceleration/deceleration control, Constant control for G0 tilting*
Program registration	Max. number of programs: 960, Program storage: 2 MB, Program storage expansion: 8 MB*, Program storage expansion: 32 MB*	
Control display	Display: 19" touch panel, Resolution: SXGA	
Spindle functions	S code output, Spindle speed clamp, Spindle speed override, Spindle speed reaching detection, Multiple position orient, Constant surface speed, Spindle speed command with decimal digits, Synchronized spindle control, Max. speed control for spindle	
Tool functions	Tool offset pairs: 4000, T code output for tool number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)	Tool offset pairs : 4000, T code output for tool number, T code output for group number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)
Miscellaneous functions	M code output, Simultaneous output of multiple M codes	
Tool offset functions	Tool position offset, Tool length offset, Tool diameter/tool nose R offset, Tool wear offset	
Coordinate system	Machine coordinate system, Work coordinate system, Local coordinate system, Additional work coordinates (300 set)	
Machine functions	—	Hobbing*, Shaping function*, Dynamic compensation II*
Machine compensation	G0/G1 independent backlash compensation, Pitch error compensation, Volumetric compensation*	
Protection functions	Emergency stop, Interlock, Stroke check before travelling, Retraction function for the vertical axis, INTELLIGENT SAFETY SHIELD (manual mode), INTELLIGENT SAFETY SHIELD (automatic mode)*, MAZAK VOICE ADVISER	
Automatic operation mode	Memory operation	Memory operation, Tape operation, MDI operation, EtherNet operation*
Automatic operation control	Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Machine lock	Optional block skip, Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Restart 2, Collation stop, Machine lock
Manual measuring functions	Tool length and tip teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine	Tool length and tip teach, Tool offset teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine
Automatic measuring functions	WPC coordinate measurement, Auto tool length measurement, Sensor calibration, Tool eye auto tool measurement, Tool breakage detection, External tool breakage detection*	Auto tool length measurement, Sensor calibration, Tool breakage detection, External tool breakage detection*
MDI measurement	Partial auto tool length measurement, Auto tool length measurement, Coordinate measurement	
Interface	PROFIBUS-DP*, EtherNet I/P*, CC-Link*	
Card interface	SD card interface, USB	
EtherNet	10 M / 100 M / 1 G bps	

* Option

MAZATROL MATRIX NEXUS 2 CONTROL

The MATRIX NEXUS 2 CNC simplifies operations for parts requiring angled drilling, milling or tapping. With unequaled innovation for conversational programming, the control incorporates a wide variety of advanced features for high-speed, high-accuracy machining and an overall increase in productivity.

Machine models:

- VTC-200C
- VTC-200G
- VTC-300C
- VTC-250D/50

FEATURES AND FUNCTIONS OF THE MAZATROL MATRIX NEXUS 2 INCLUDE:

- Simultaneous control of up to 4 axes
- 20GB hard disk offers increased program storage capacity
- High-speed CPU and large 12.1" CNC display sports multiple functions
- EIA/ISO and conversational programming offers versatility and user-friendly operation
- Sub-micron input delivers high-accuracy machining
- SMART functions streamline data entry and reduce programming time
- Virtual machining provides convenient program and interference checks

MAZATROL MATRIX NEXUS 2 SPECIFICATIONS

	MAZATROL	EIA
Number of controlled axes	Max. 4 axes (simultaneous 4 axes)	
Least input increment	0.00001 inch, 0.0001 mm, 0.0001º	
Max. programmable value	±9999.99999 inch, ±99999.9999 mm, ±99999.9999°	
High-precision control	Smooth high gain control, Scale feedback*, Absolute position detection	
Interpolation	Positioning (independent axes control, linear interpolation), Linear interpolation, Synchronized milling spindle tapping*	Positioning (independent axes control, linear interpolation), Linear interpolation, Synchronized milling spindle tapping*, Polar coordinate interpolation, Cylindrical coordinate interpolation*, Thread cutting (equal pitch, variable pitch), Polygon cutting*
Feed rate	Rapid traverse, Cutting feed (per revolution, per minute), Feedrate clamp, Override (rapid traverse, cutting feed, external override , 2nd override, override cancel), Automatic acceleration/deceleration feedrate (linear acc./dec., time constant), Constant tangential speed control, Dry run	
Program registration	256, 512*, 960* 2 MB (5,300 m), 8 MB (user area 7.7 MB, 20,000 m)	
Control display	12 inch color TFT	
NC display languages	English, German, French, Italian, Spanish, Dutch, Norwegian, Swedish, Finnish, Danish, Portuguese, Turkish, Polish, Czech, Romanian, Chinese simplified form, Chinese traditional form, Korean, Slovakian, Russian, Hungarian, Bulgarian, Japanese (one touch language switching) Note: Chinese (simplified/traditional), Korean, Russian and Japanese require same Windows language	
Windows languages	English, Chinese (simplified/traditional), Korean, Russian, Japanese (selection)	
Data input/output	USB, CF card*	
Protocol	MAZAK protocol*, Network protocol	
Interface	Card BUS*, Ethernet (1000 BASE-TX), PROFIBUS-DP*, EtherNet/IP*	
Spindle function	S code output (8-digit binary output, analog output, actual revolution speed binary output), Spindle revolution control (RPM clamping, high speed RPM confirm/speed change detection, rotary speed display), Spindle override (0–150%)	
Tool function	T code output (8-digit binary data, next tool, used tool), Tool life monitoring, Spare tool exchange, Tool management (Group No.)	
Tool compensation	Tool tip R compensation, Tool tip shape compensation, Tool position compensation, Tool wear compensation, Tool radius compensation	
Number of registered tools	Max. 4,000 (depends on machine specifications)	
Tool offset pairs	4,000 (depends on machine specifications)	
Miscellaneous functions	M code output (M3 - digit), Simultaneous output of four 3-digit M codes, Second miscellaneous function (B 3-digit output), High-speed MSTB interface	
Coordinate system control	MAZATROL coordinate system	Machine coordinate system (machine coordinate system, machine coordinate system shift, zero point shift), Work coordinate system(work coordinate system, work coordinate system shift)
Manual operation	Rapid traverse, Cutting feed, Handle feed, Zero point return, Manual control (machine lock, gear shift, barrier cancel), Manual spindle control (spindle start, stop, reverse, jogging)	
Automatic operation	Memory operation, MDI operation, Cycle start, NC reset, Single block, Feed hold, Single process, Optional block skip, Optional stop, Machine lock, Feed override, Spindle control, Dry run, Manual handle control, Tool path storage (TPS)	
Background functions	During automatic operation (programming, data input/output, tool path check)	
Machine compensation	Backlash compensation, Pitch error compensation, Rotational axis pitch error compensation, Thermal displacement compensation	
Protection functions	Emergency stop, Over travel, Barrier (stored stroke limit, tool barrier), Interlock (cutting start, axis interlock), Alarm, Intelligent Safety Shield[1], Virtual Machining, Mazak Voice Adviser	
Measuring functions	Manual measurement (tool set measurement, Z-offset measurement), Automatic measurement (work offset measurement, Z-offset measurement, tool tip point measurement, external measurement), Measurement data printout	

*Option [1] N/A in background

MAZATROL MATRIX 2 CONTROL

The MATRIX 2 CNC provides extremely fast processing speed, excellent cornering, superior part surface finishes and reduced cycle times. Through advanced hardware and software functionality, these controls bring high accuracy and increased productivity to highly complex applications requiring Multi-Tasking operations, full simultaneous 5-axis machining, and the incorporation of automation.

Machine model:

- VTC-800/30 SR

FEATURES AND FUNCTIONS OF THE MAZATROL MATRIX 2 INCLUDE:

- Large 19" color LCD display standard
- 9-axis (5-axis simultaneous capability)
- Faster processing through enhanced NC and PC hardware
- Customizable position screen
- 3D trace screen that offers less interruption
- Field network capability for flexible integration and minimal remote I/D
- High-speed continuous measurement functionality
- EIA/ISO and conversational programming offers versatility and user-friendly operation

MAZATROL MATRIX 2 SPECIFICATIONS

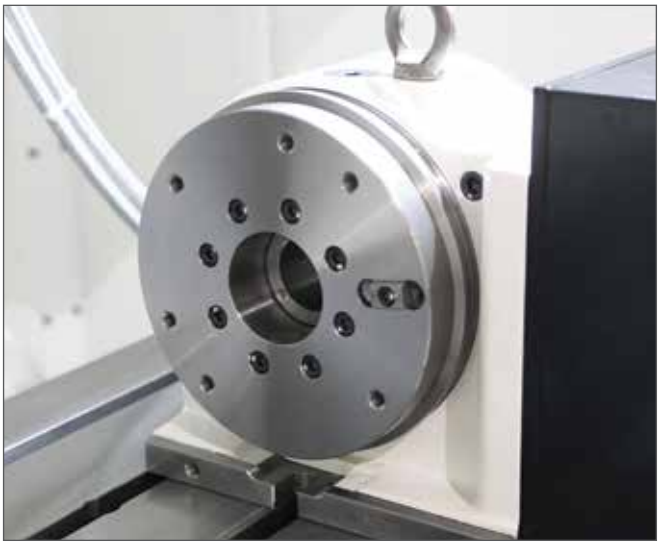
	MAZATROL	EIA/ISO
Number of controlled axes	Max. 8 axes (simultaneous 5 axes)	Max. 8 axes (simultaneous 5 axes)*
Least input increment	0.00001 inch, 0.00001 mm, 0.0001º	
Max. programmable value	±9999.99999 inch, ±99999.9999 mm, ±99999.9999°	
High-precision control	Smooth high gain control, Scale feedback*, Absolute position detection	
Interpolation	Positioning (independent axes control, linear interpolation), Linear interpolation, Synchronized milling spindle tapping*	Positioning (independent axes control, linear interpolation), Linear interpolation, Synchronized milling spindle tapping*, Polar coordinate interpolation, Cylindrical coordinate interpolation*, Helical interpolation, Polygon cutting*, Hobbing*, Thread cutting (equal pitch, variable pitch)
Feed rate	Rapid traverse, Cutting feed (per revolution, per minute), Feedrate clamp, Override (rapid traverse, cutting feed, external override , 2nd override, override cancel), Automatic acceleration/deceleration feedrate (linear acc./dec., time constant), Constant tangential speed control, Dry run	
Multi-Tasking machine control	Continuous control of second spindle, Phase matching, Axes torque control	
Program registration	256, 512*, 960* 2 MB (5,300 m), 8 MB (user area 7.7 MB, 20,000 m)	
Control display	15 inch color TFT	
NC display languages	English, German, French, Italian, Spanish, Dutch, Norwegian, Swedish, Finnish, Danish, Portuguese, Turkish, Polish, Czech, Romanian, Chinese (simplified), Chinese (traditional), Korean, Slovakian, Russian, Hungarian, Bulgarian, Japanese, (simplified language switching)	
Windows languages	English, Chinese (simplified/traditional), Korean, Russian, Japanese (selection)	
Data input/output	USB, CF card	
Protocol	MAZAK protocol*, Network protocol	
Interface	Card BUS, Ethernet (1000 BASE-TX), PROFIBUS-DP*, EtherNet/IP*, SPRINT I/F*, CC-Link*	
Spindle function S code	S code output (8-digit binary output, analog output, actual revolution speed binary output), Spindle revolution control (RPM clamping, high speed RPM confirm/speed change detection, rotary speed display), Spindle override (0–150%)	
Tool function	T code output (8-digit binary data, next tool, used tool), Tool life monitoring, Spare tool exchange, Tool management (Group No.)	
Tool compensation	Tool length compensation, Tool diameter compensation, Tool tip R compensation, Tool wear compensation	
Number of registered tools	Max. 4,000	
Tool offset pairs	4,000	
Miscellaneous functions	M code output (M3 - digit), Simultaneous output of four 3-digit M codes, Second miscellaneous function (B 3-digit output), High-speed MSTB interface	
Coordinate system control	MAZATROL coordinate system	Machine coordinate system (machine coordinate system, machine coordinate system shift, zero point shift), Work coordinate system(work coordinate system, work coordinate system shift)
Manual operation	Rapid traverse, Cutting feed, Handle feed, Zero point return, Manual control (machine lock, gear shift, barrier cancel), Manual spindle control (spindle start, stop, reverse, jogging)	
Automatic operation	Memory operation, MDI operation, Cycle start, NC reset, Single block, Feed hold, Single process, Optional block skip, Optional stop, Machine lock, Barrier cancel, Feed override, Spindle control, Dry run, Manual handle control, Tool path storage (TPS)	Memory operation, MDI operation, Cycle start, NC reset, Single block, Feed hold, Single process, Optional block skip, Optional stop, Machine lock, Barrier cancel, Feed override, Spindle control, Dry run, Manual handle control, Tool path storage (TPS), Hard disc memory operation, Ethernet operation*, IC memory card operation*
Background functions	During automatic operation (programming, data input/output, tool path check)	
Machine compensation	Backlash compensation, Pitch error compensation, Rotational axis pitch error compensation, Thermal displacement compensation	
Protection functions	Emergency stop, Over travel, Barrier (stored stroke limit, chuck barrier, 2nd spindle chuck barrier, tailstock barrier, tool barrier), Interlock (cutting start, axis interlock), Alarm, Mazak Voice Adviser	
Measuring functions	Manual measurement (tool set measurement, workpiece offset measurement), Automatic measurement (workpiece measurement, tool measurement, external measurement), Measurement data printout	

*Option

OPTIONAL EQUIPMENT

Mazak offers a wide array of options from which to choose for the VTC Series that further enhance machine performance, increase uptime and boost overall operational efficiency.

- **Center table partition** that transforms the machine into two separate work areas to operate like a two-pallet changer
- **Rotary table units** add part accessibility and process flexibility
- **Part and tool probe packages** provide in-process workpiece measurement and automatically measure tool tip positions as well as detect wear/damage
- **High-power coolant** maximizes chip evacuation and contributes to longer cutting tool life
- **Mist collector** helps reduce maintenance costs and ensure a clean, safe work environment
- **Chip conveyor** designs for a wide variety of material types/ chip shapes



FOURTH-AXIS ROTARY TABLE

WORKPIECE PROBE

CHIP CONVEYOR

MIST COLLECTOR

HIGH-POWER COOLANT

MAZAK AUTOMATION SYSTEMS

Mazak automation further increases the productivity, throughput and part quality of the VTC Series machines. Standard and customized Mazak automation solutions paired with extensive and ongoing support ensure the best fit for individual production needs and that output goals are achieved.

Mazak AUTOMATION SYSTEMS
Automation Solutions by Mazak

ENGINEERED SOLUTIONS

CELLS AND SYSTEMS


ARTICULATED ROBOT

ENGINEERED SOLUTIONS

Engineered Solutions encompass a variety of custom automation solutions tailored specifically to individual customer needs. Mazak's expert applications engineers design and implement systems and software that will boost productivity and ensure maximum return on customer automation investments.

Custom engineered solutions provide the capability to:

- Boost machine throughput and part quality
- Ensure production reliability and repeatability
- Service one or more machines with minimal operator intervention
- Perform multiple tasks and eliminate the number of necessary components in a system
- Keep machines running 24/7 without additional night or weekend shifts
- Reduce in-process inventory and accomplish just-in-time production

ARTICULATED ROBOTS

Articulated robots automate part transfers and peripheral operations. They also eliminate the challenges associated with handling large, heavy or cumbersome parts. Robot configurations range from two jointed to seven jointed to meet the needs of various applications.

MAZAK DIGITAL SOLUTIONS

For the VTC Series and all its machines, Mazak offers digital solutions for fully integrated, data-driven smart manufacturing. These progressive solutions include SMOOTH TECHNOLOGY, MTConnect®, Mazak SMOOTH Link and the Mazak SmartBox.

SMOOTH TECHNOLOGY

Spanning the entire part-production landscape, Mazak's SMOOTH TECHNOLOGY platform significantly boosts productivity at every stage of the metal cutting process — from programming and setup to actual metal removal operations to automation to monitoring/ data collection and transfer.

Features and benefits of SMOOTH TECHNOLOGY:

- All-encompassing continuously evolving process-performance technology platform
- Combines advanced capabilities of machine tools and leading-edge CNC processing and software technologies
- Makes machine tools easy to use
- Boosts machining speed and performance accuracy

MTCONNECT

As an open-source, royalty-free manufacturing protocol, MTConnect easily connects devices and systems from different suppliers to capture and share information in a common format such as XML. It then gives manufacturers the means to gather valuable data from machines and automated systems for use in process improvement and increased equipment utilization.

With MTConnect, manufacturers can:

- Gain real-time data sharing throughout a manufacturing facility
- Calculate overall equipment efficiency
- Monitor all equipment from one system
- Reduce production losses
- Identify lean manufacturing strategies

Mazak builds all its machines, including those in the VTC Series, to be MTConnect compliant and offers affordable adapters for existing Mazak machines in the field.

MAZAK SMOOTH LINK

Perfect for both large and small shops, Mazak SMOOTH Link makes it possible to sync machine tools with mobile devices to monitor and manage status at any time from a smartphone, tablet or laptop computer. This digital tool captures real-time information from the control and securely transfers the information to a mobile device via Wi-Fi.

Mazak SMOOTH Link

Features and benefits of Mazak SMOOTH Link:

- Machine monitoring gives instant operational status of a machine and the workpiece in production
- Displays tool layouts and data of each tool changer pocket/ position for effective tool management
- Programming application screen quickly shows all saved EIA programs and machine's remaining storage capacity
- Simple to set up and does not require Internet access, a server PC or server license

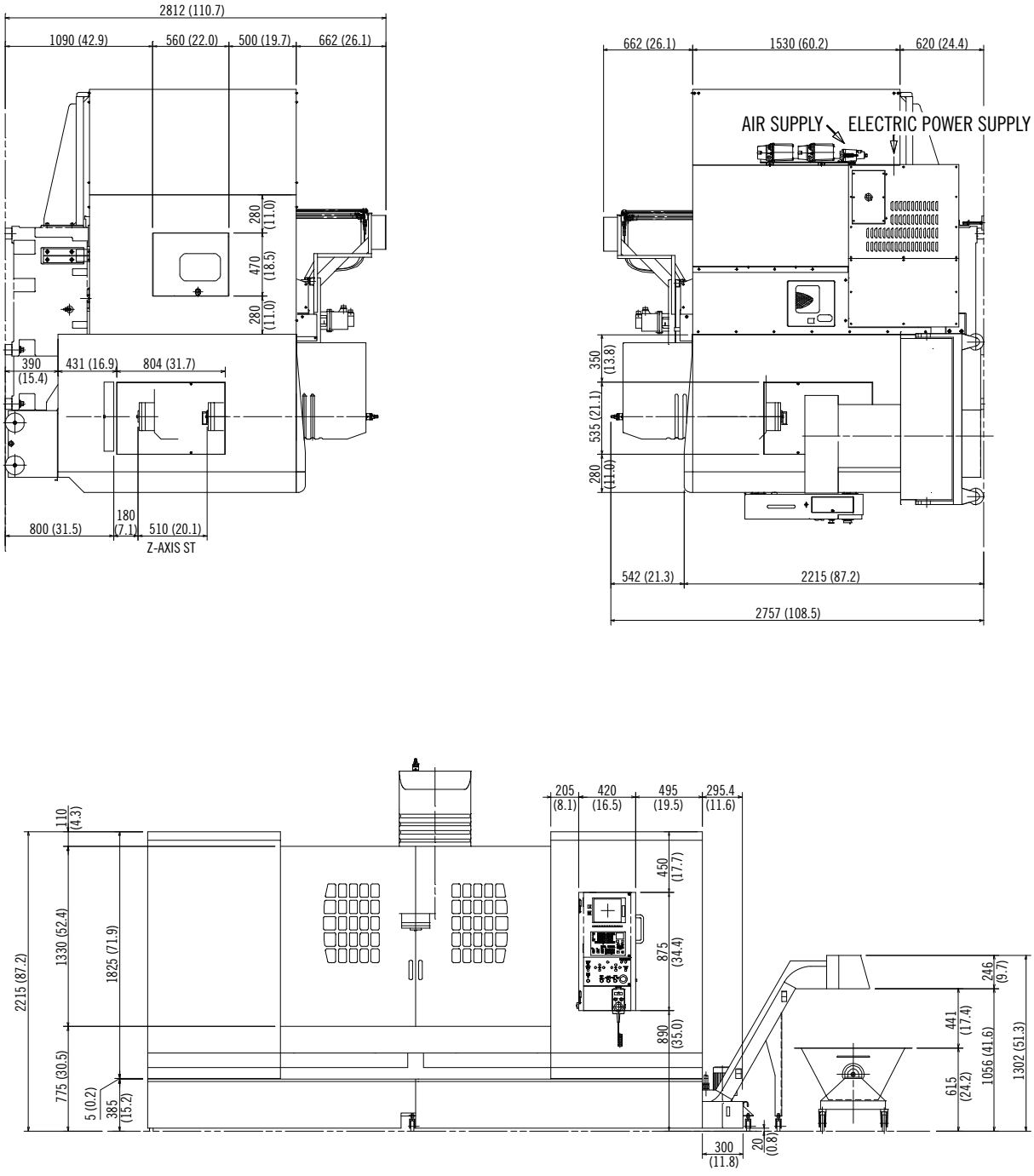
MAZAK SMARTBOX

Secure the "big data" that comes from connecting machines to the Industrial Internet of Things (IIoT). Mazak SmartBox is a launch platform for easy and highly secure entrance into the IIoT. As a scalable, end-to-end solution, SmartBox connects manufacturing equipment, including machines, software and other devices, to a factory's network and allows the free flow of information to management systems via MTConnect.

Features and benefits of Mazak SmartBox:

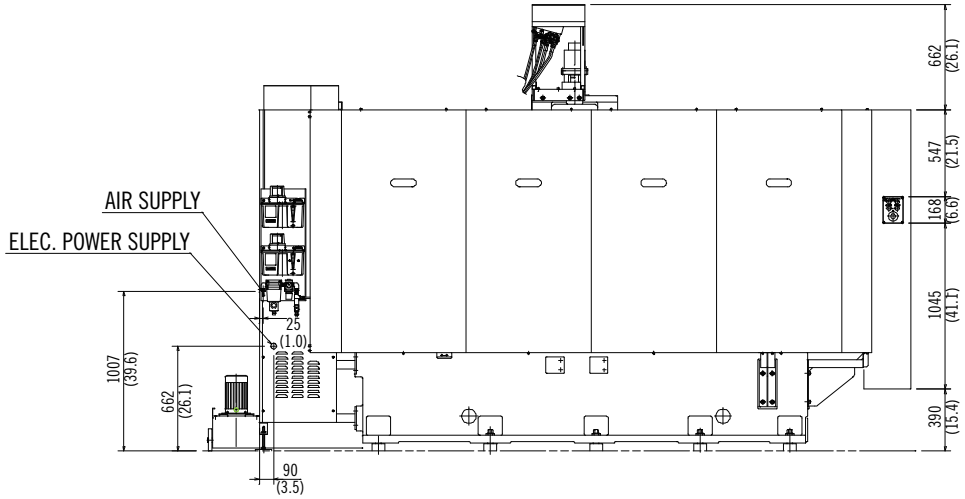
- Advanced cyber security protection gives IT departments confidence to digitally integrate manufacturing operations
- Completely open architecture and works with all popular third-party analytical software platforms
- Monitor any machine regardless of make, model or age

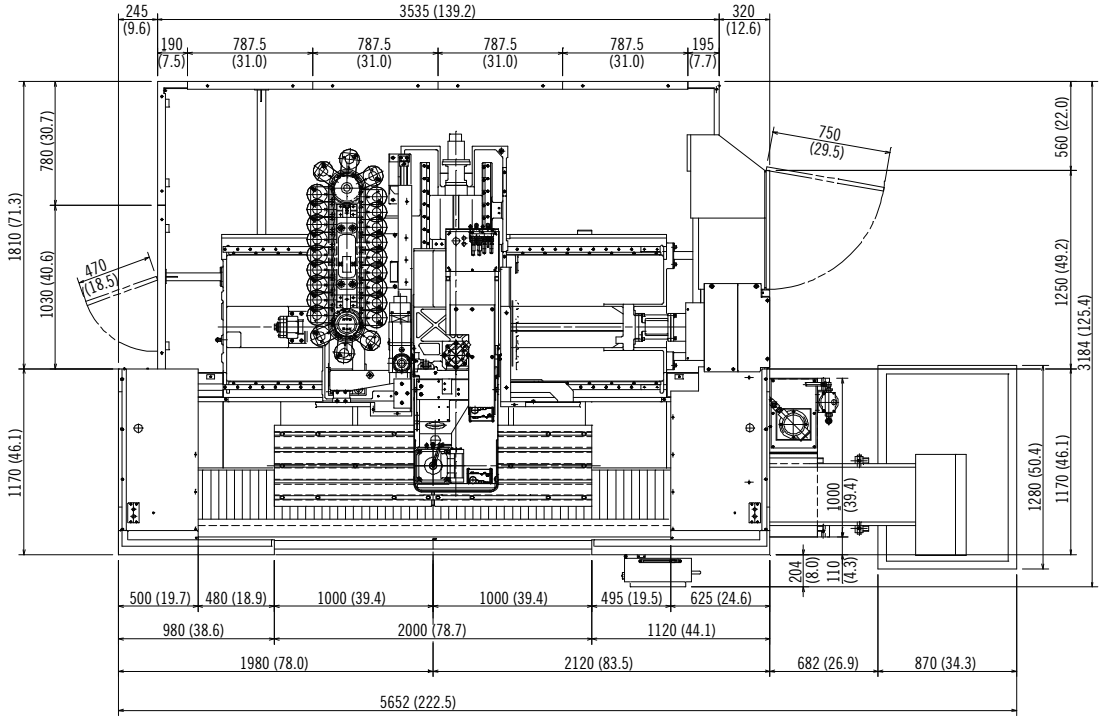
EXTERNAL DIMENSIONS – VTC-200C (FOR REFERENCE ONLY)



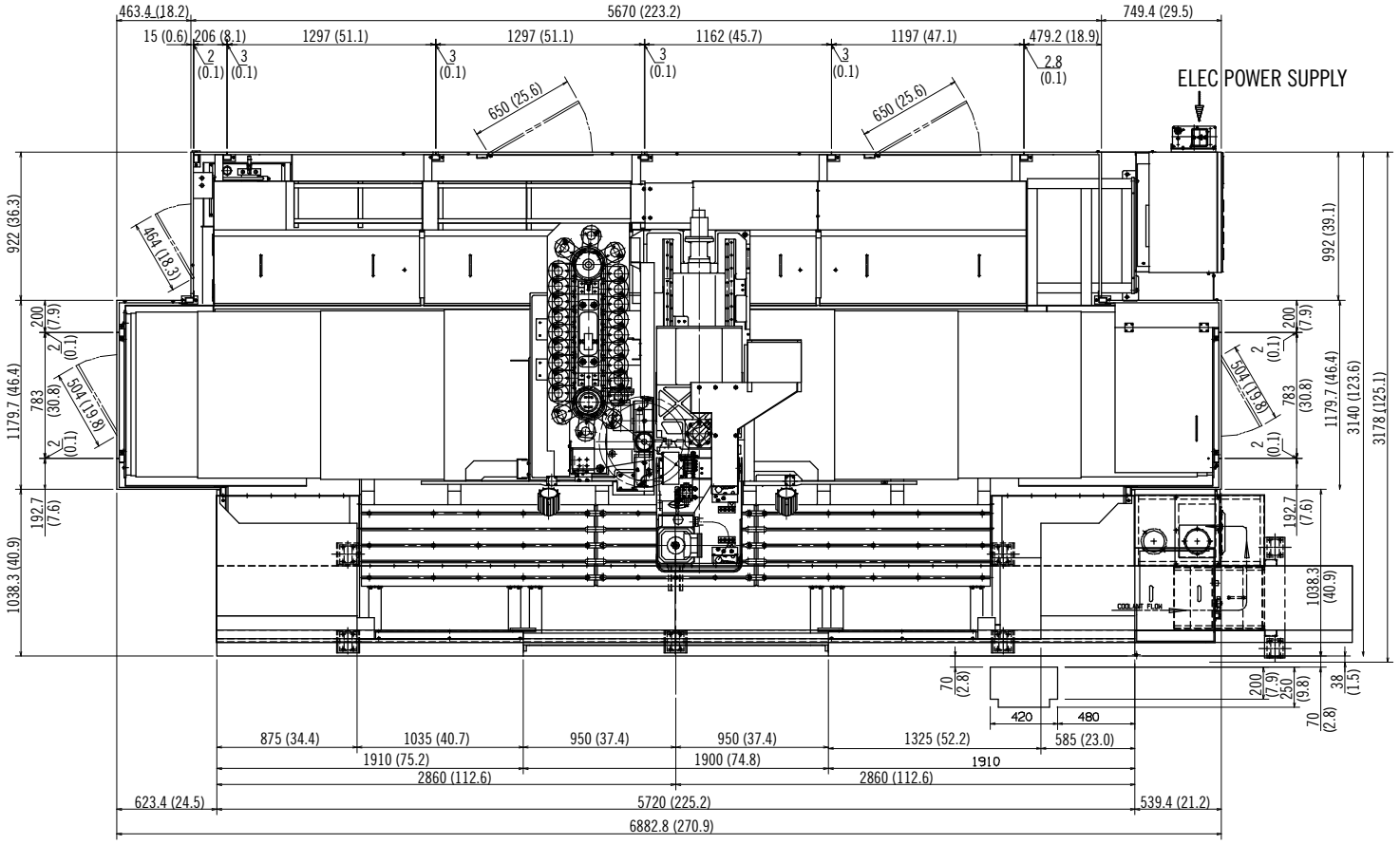
All measurements mm (in).

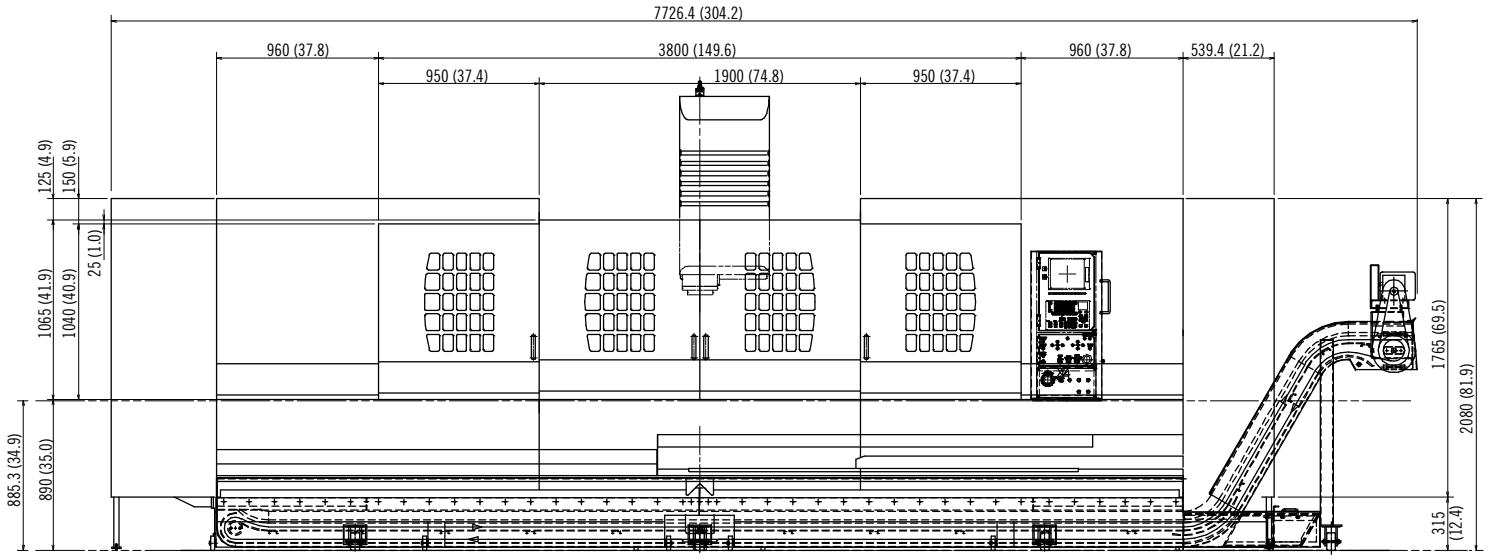
EXTERNAL DIMENSIONS – VTC-200C (FOR REFERENCE ONLY)





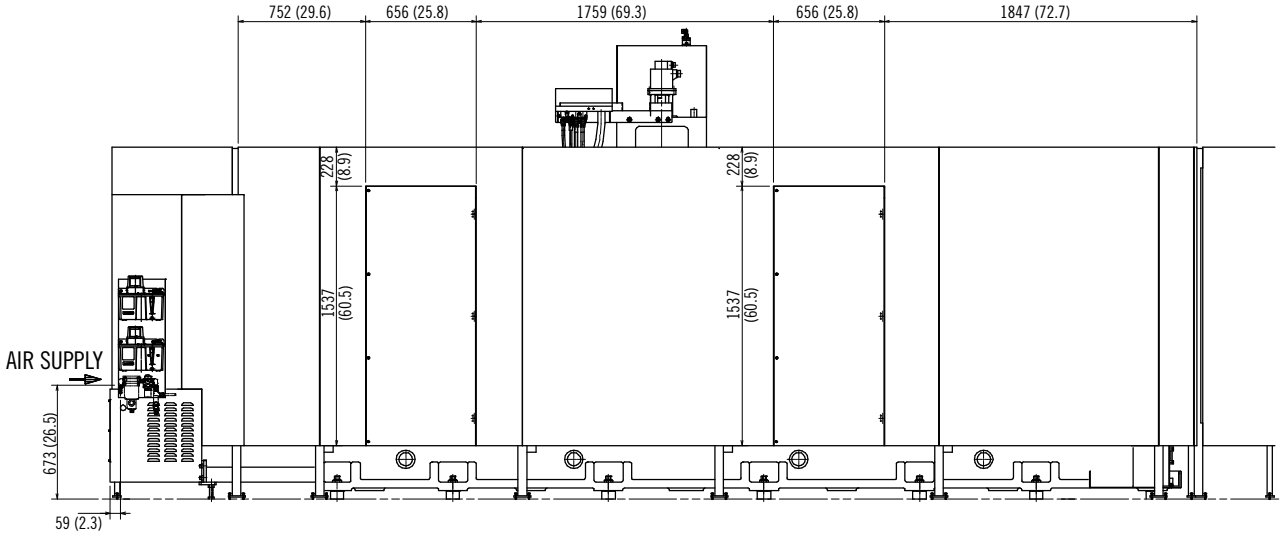
EXTERNAL DIMENSIONS – VTC-200G (FOR REFERENCE ONLY)

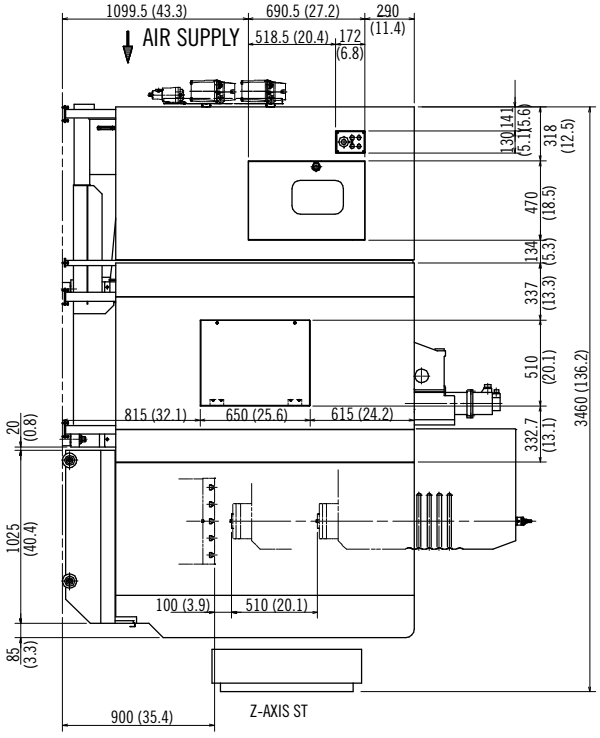


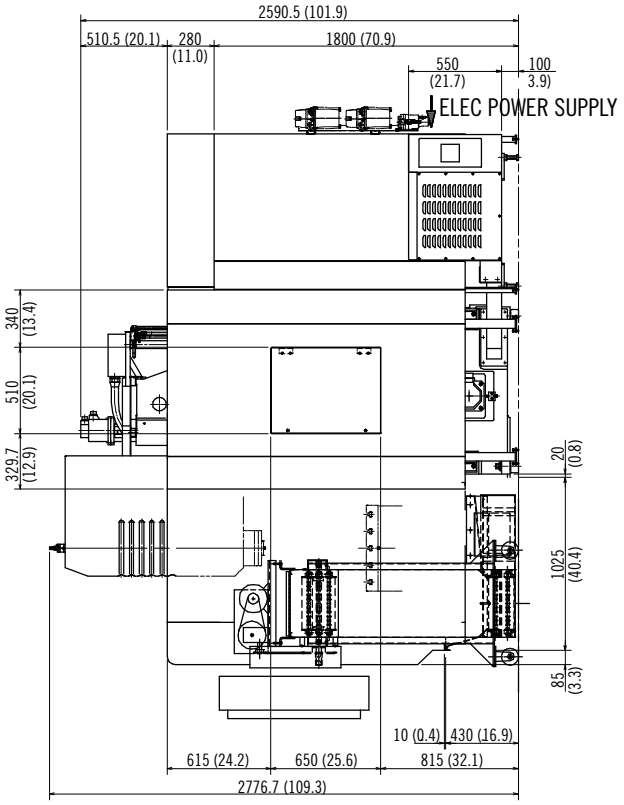


All measurements mm (in).

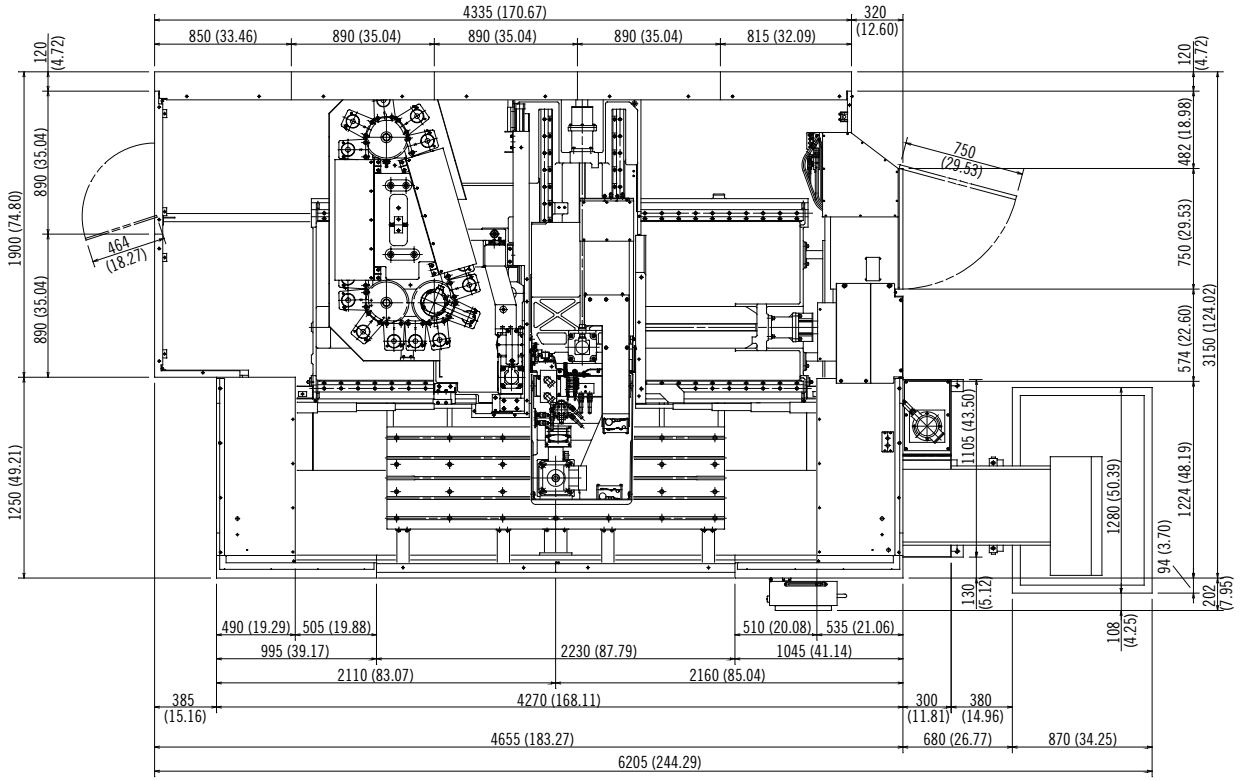
EXTERNAL DIMENSIONS – VTC-200G (FOR REFERENCE ONLY)

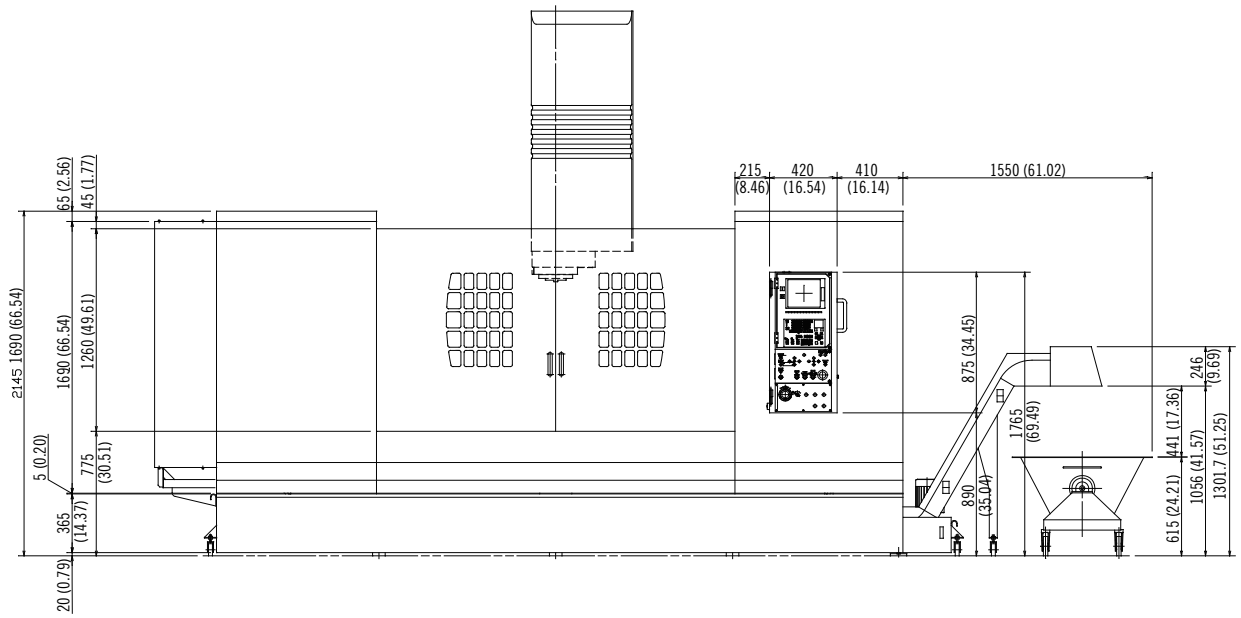






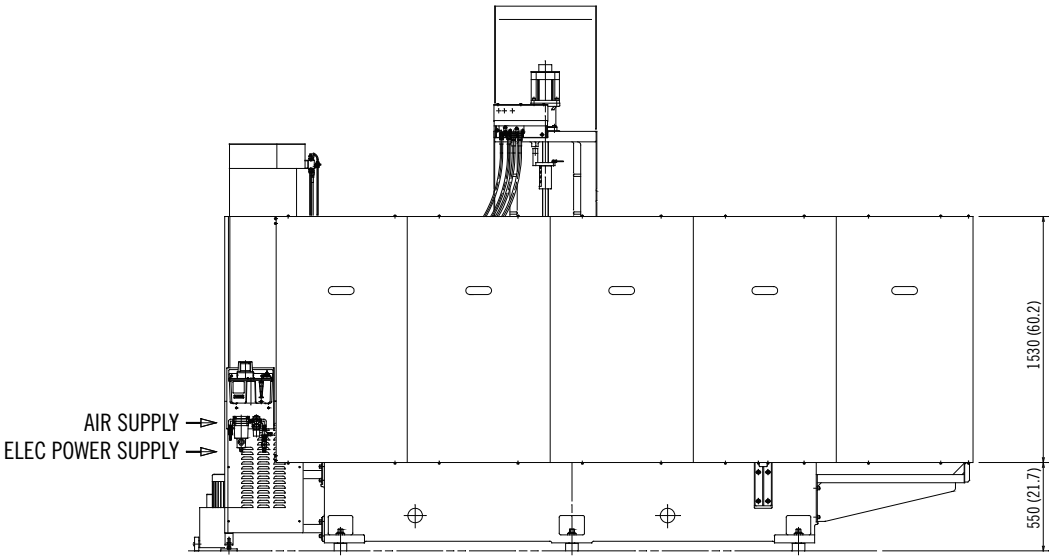
EXTERNAL DIMENSIONS – VTC-250D/50 (FOR REFERENCE ONLY)

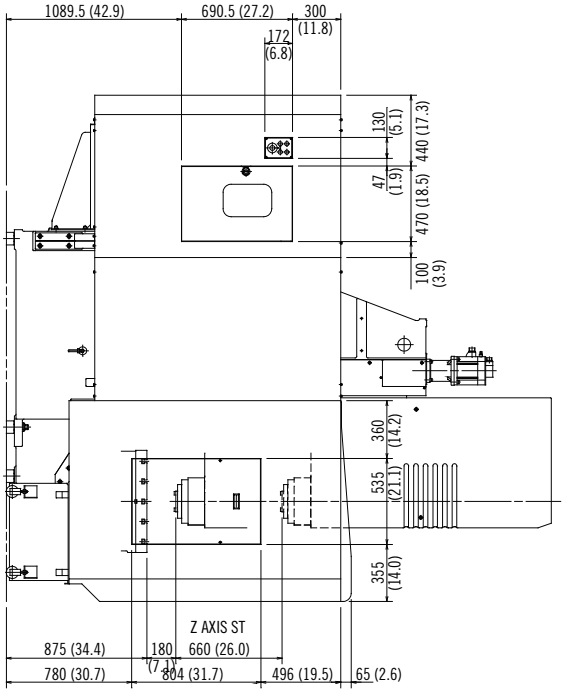


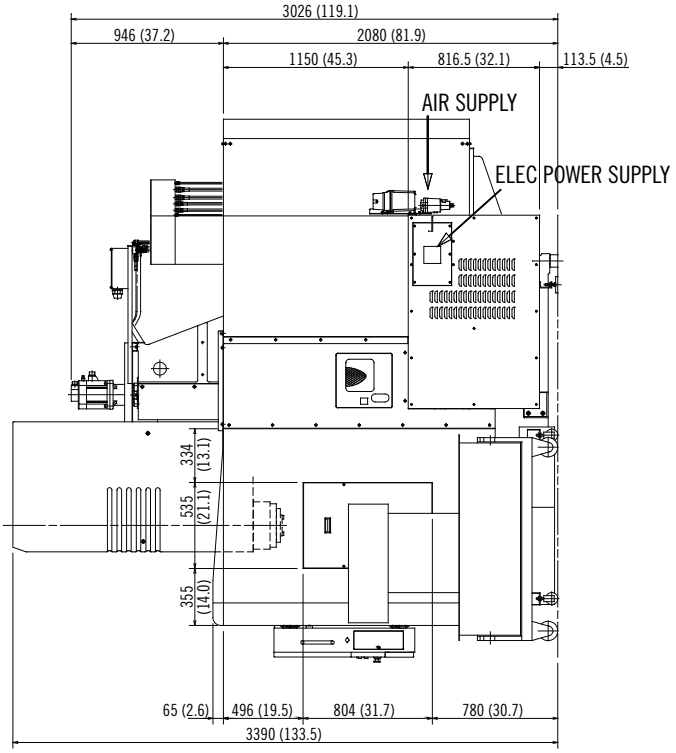


All measurements mm (in).

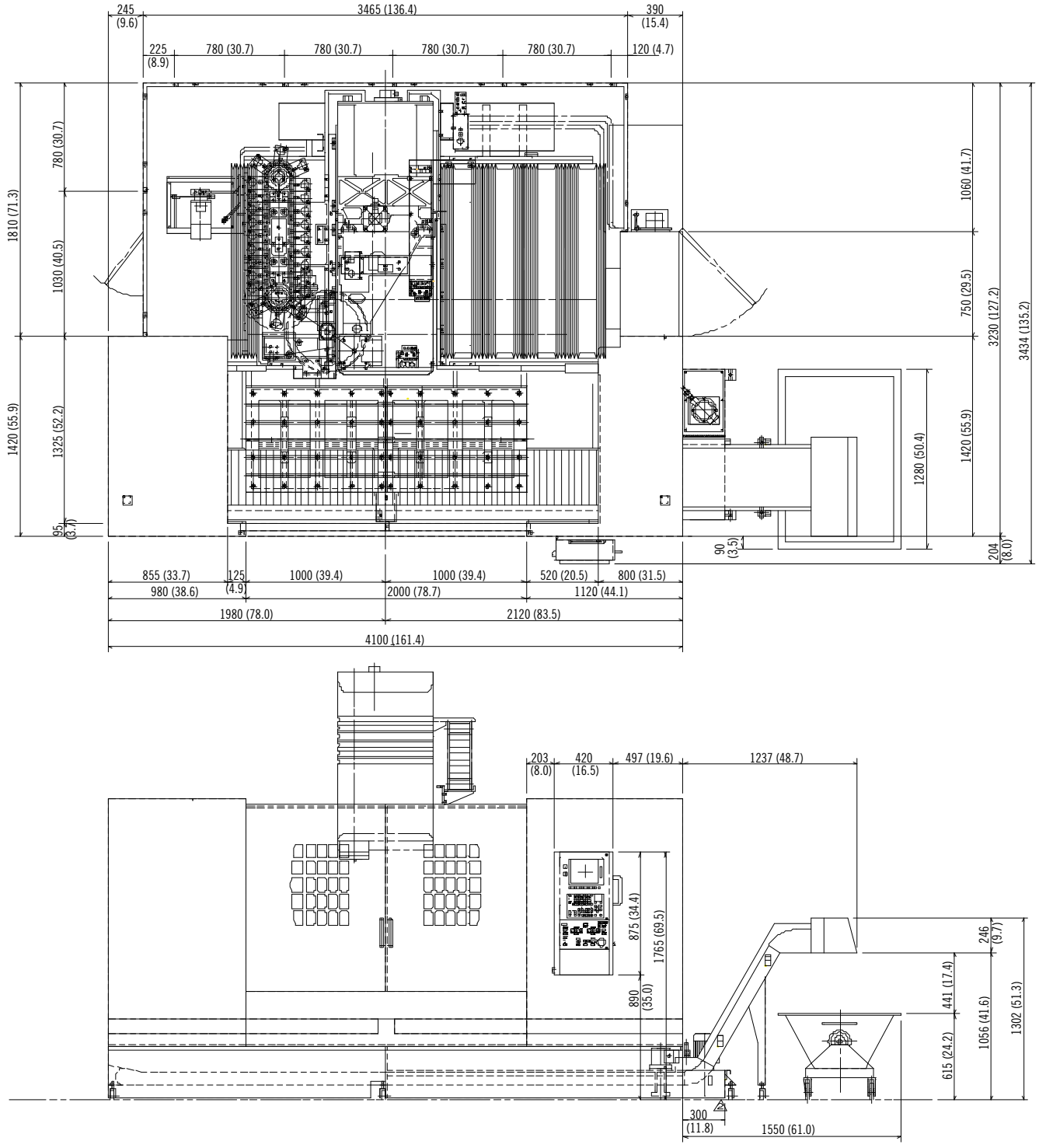
EXTERNAL DIMENSIONS – VTC-250D/50 (FOR REFERENCE ONLY)





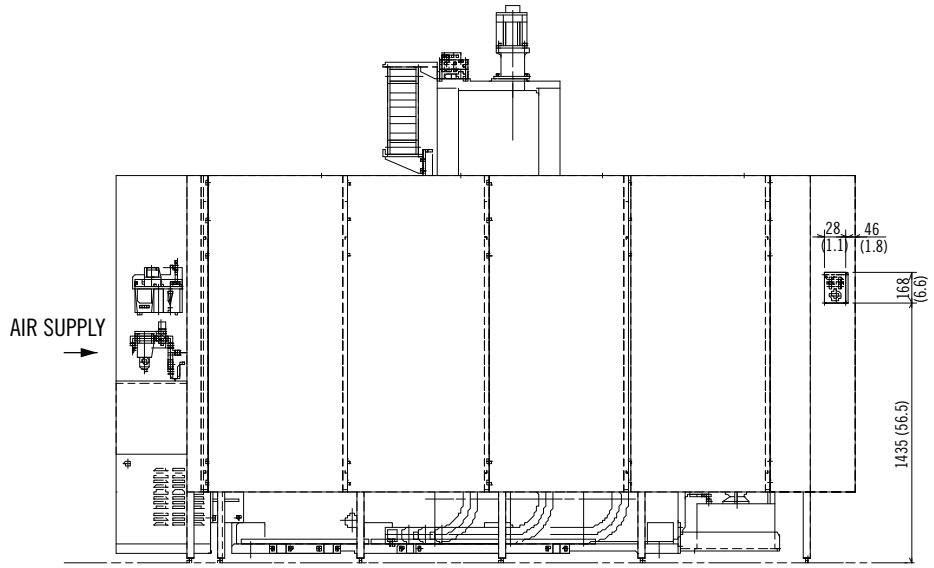


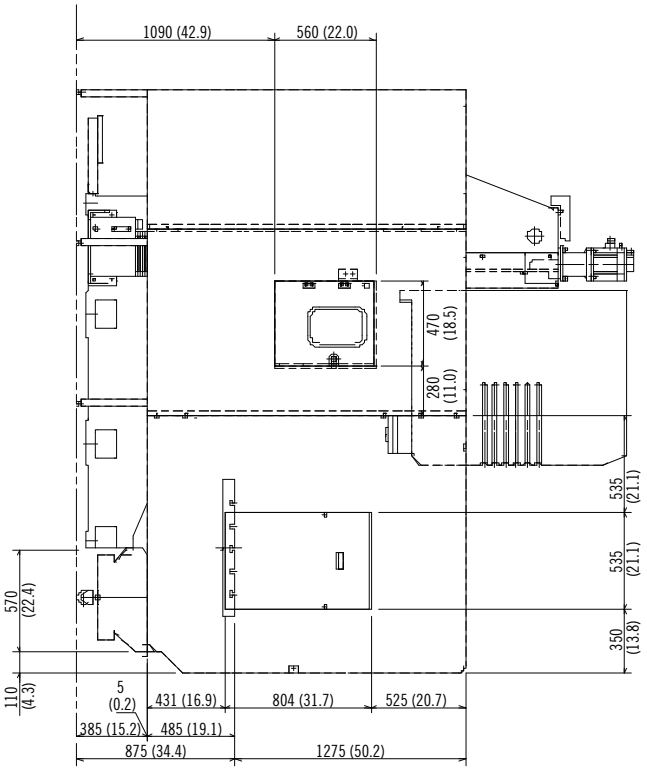
EXTERNAL DIMENSIONS – VTC-300C (FOR REFERENCE ONLY)

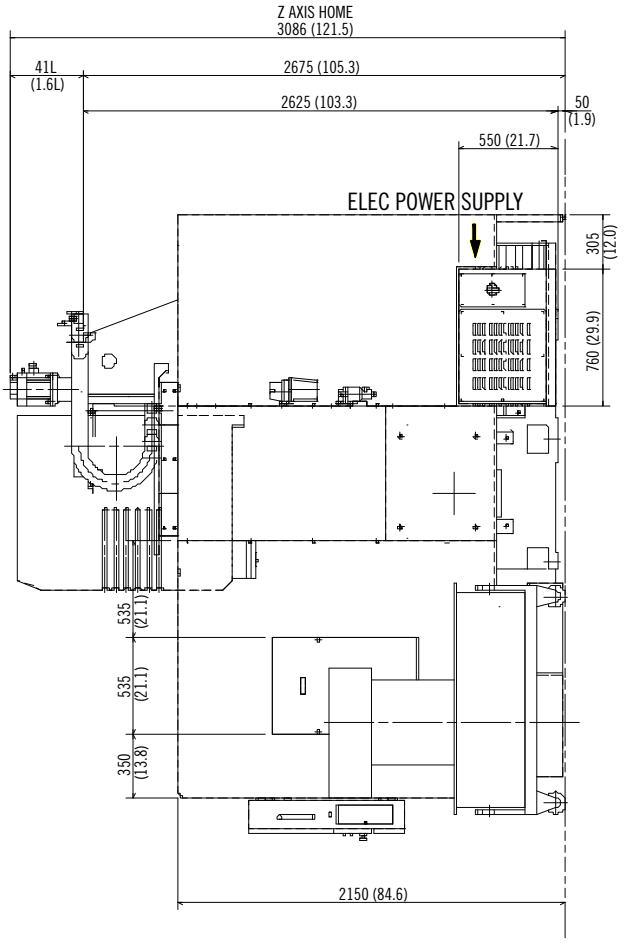


All measurements mm (in).

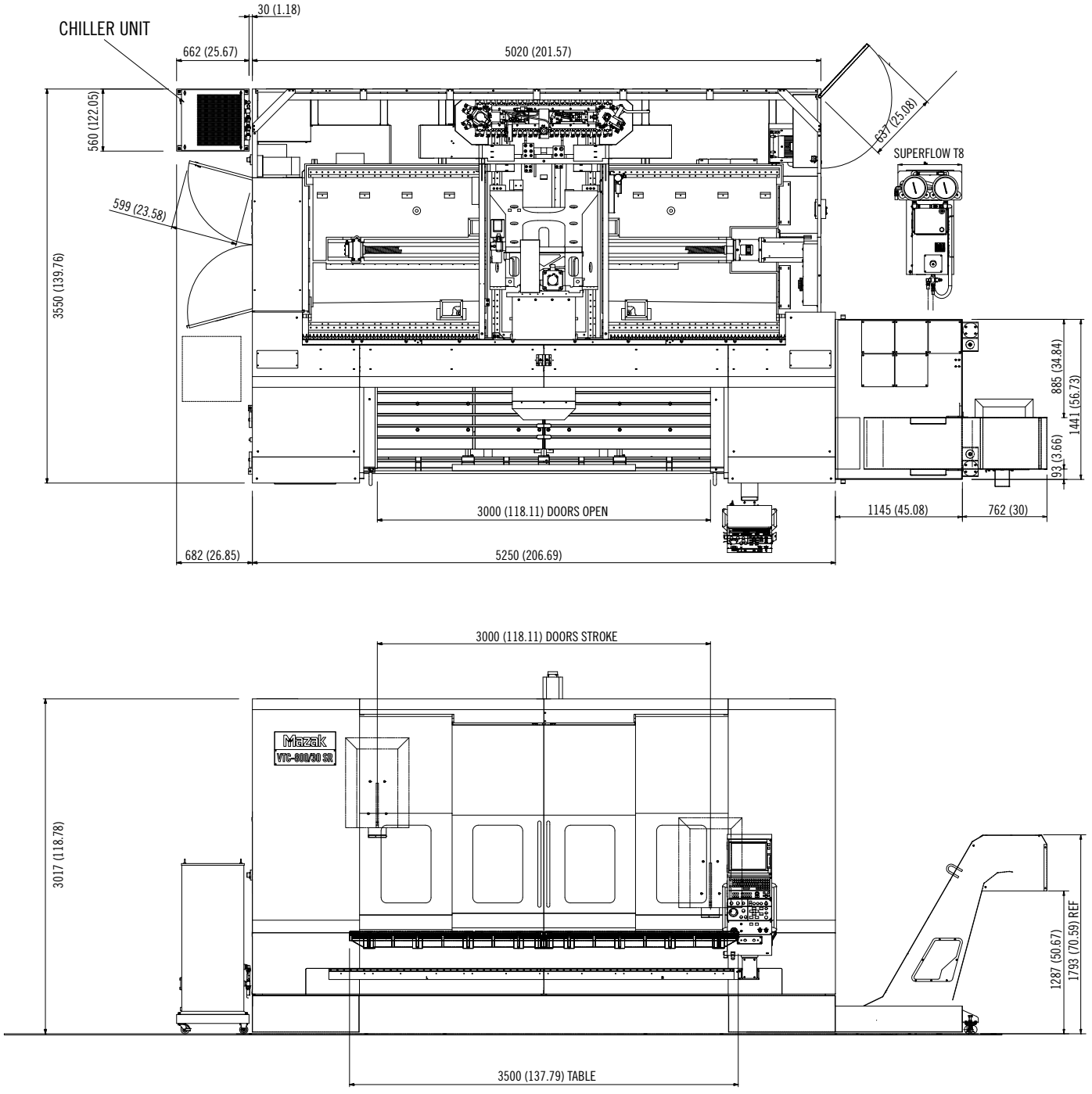
EXTERNAL DIMENSIONS – VTC-300C (FOR REFERENCE ONLY)





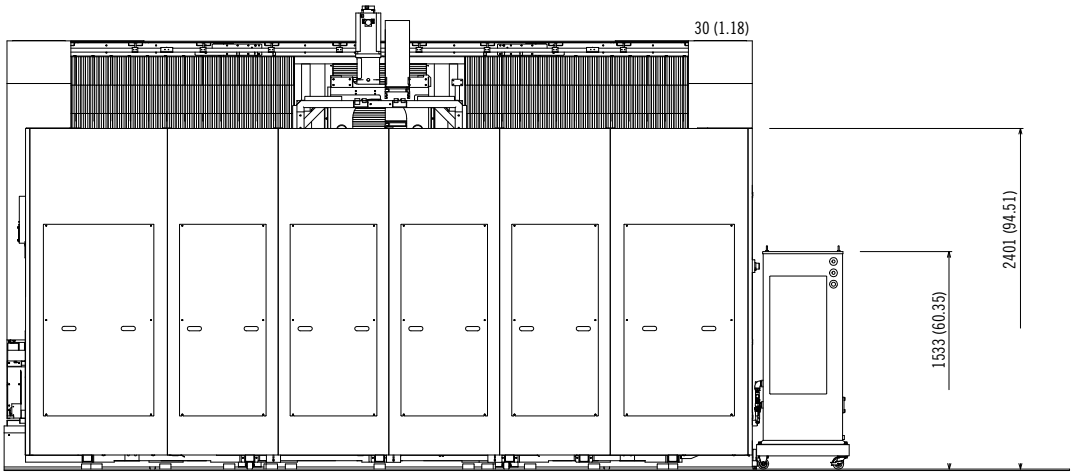


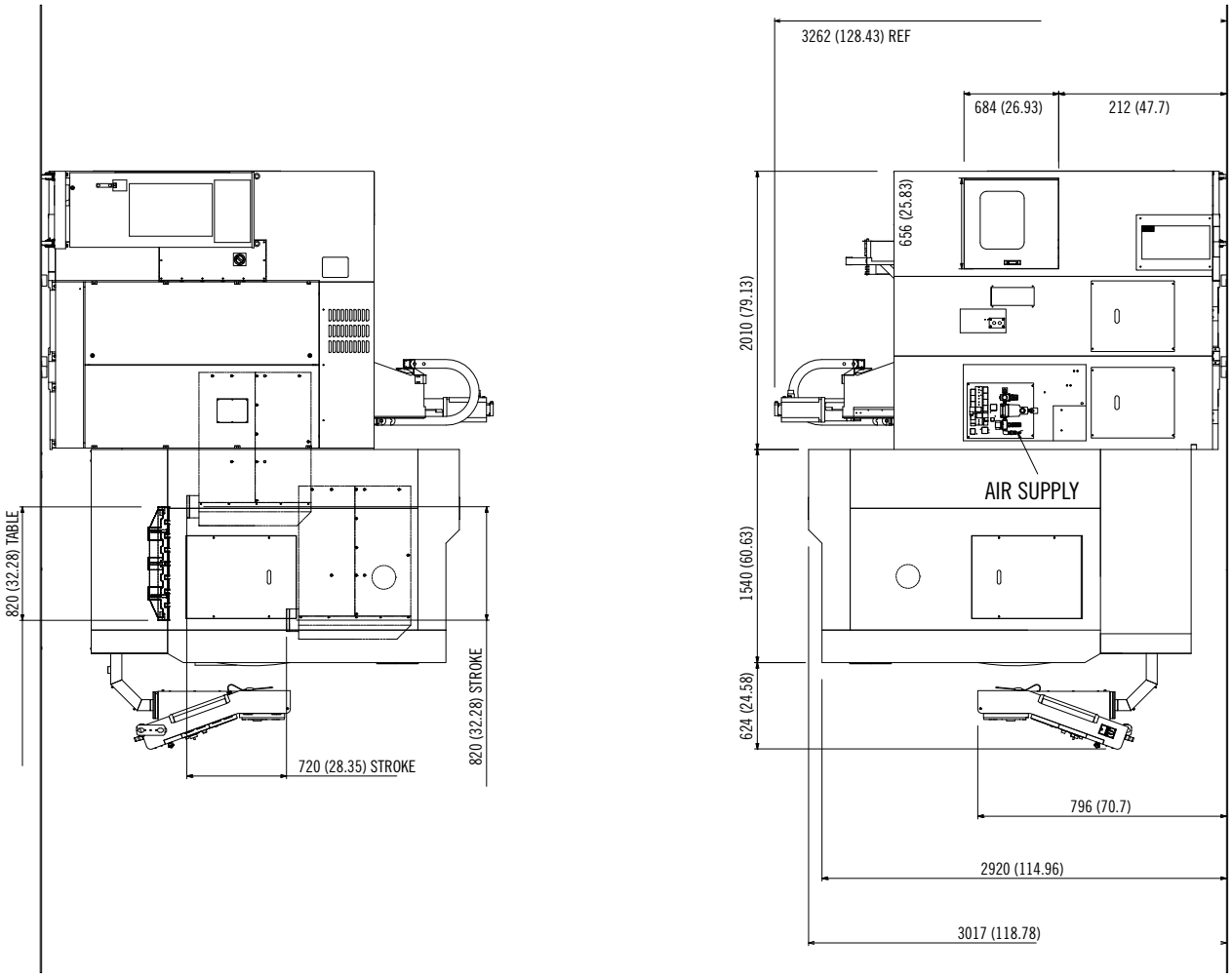
EXTERNAL DIMENSIONS – VTC-800/30 SR (FOR REFERENCE ONLY)



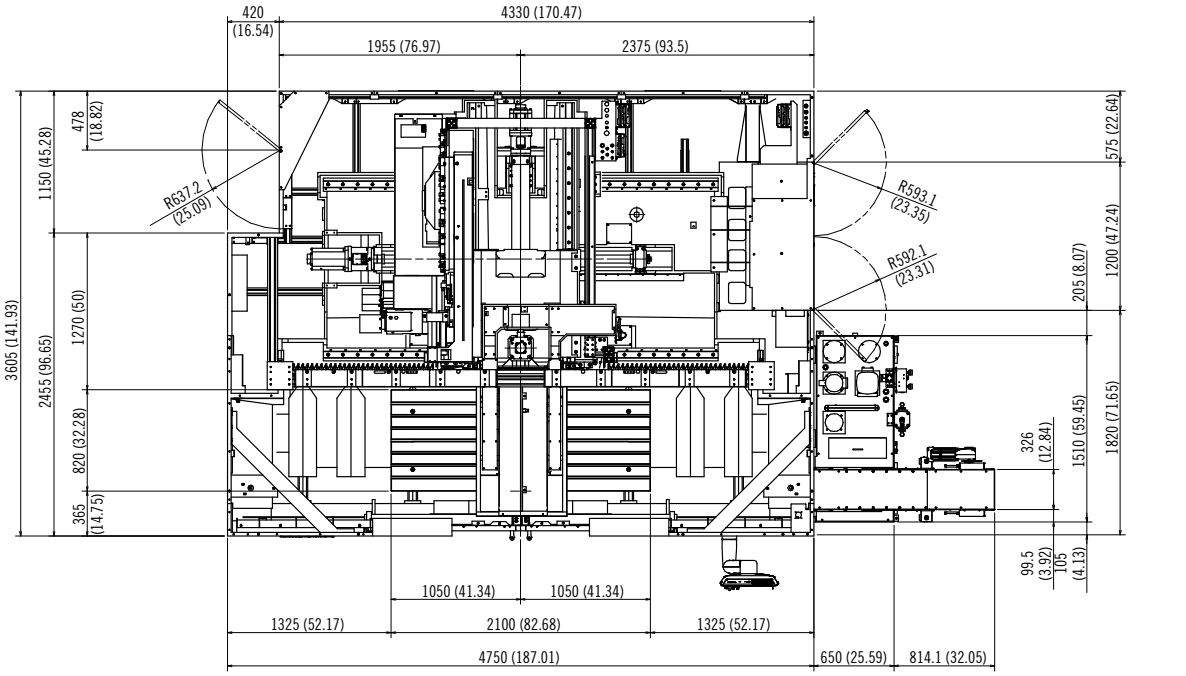
All measurements mm (in).

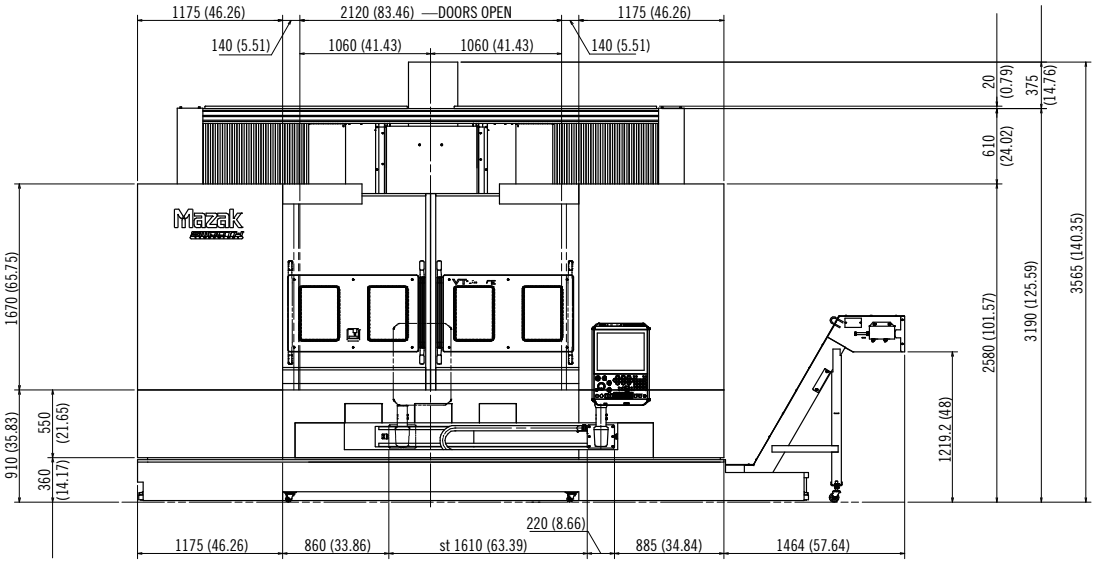
EXTERNAL DIMENSIONS – VTC-800/30 SR (FOR REFERENCE ONLY)





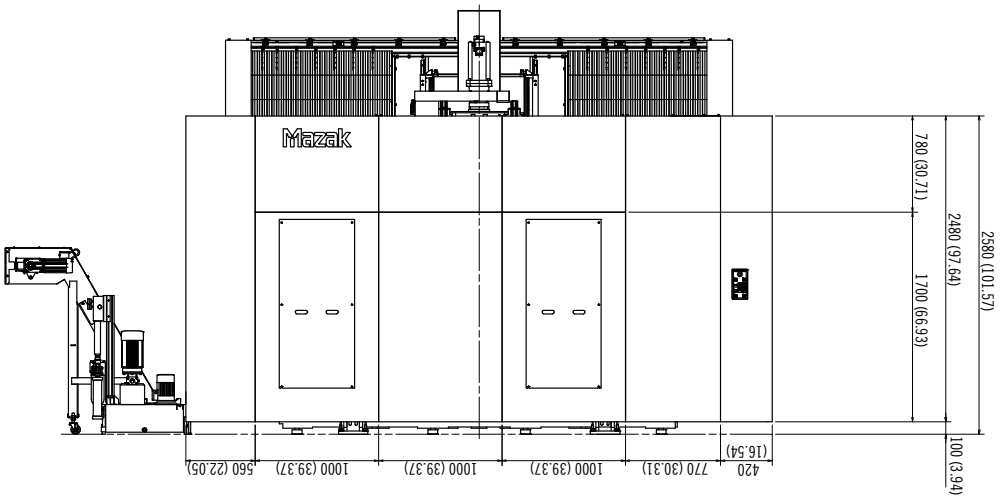
EXTERNAL DIMENSIONS – VTC-805E (FOR REFERENCE ONLY)

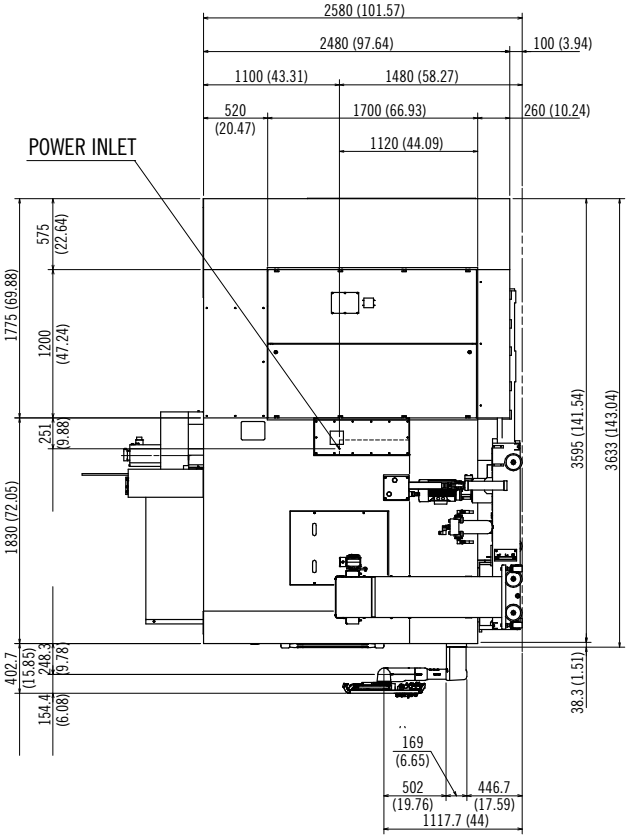


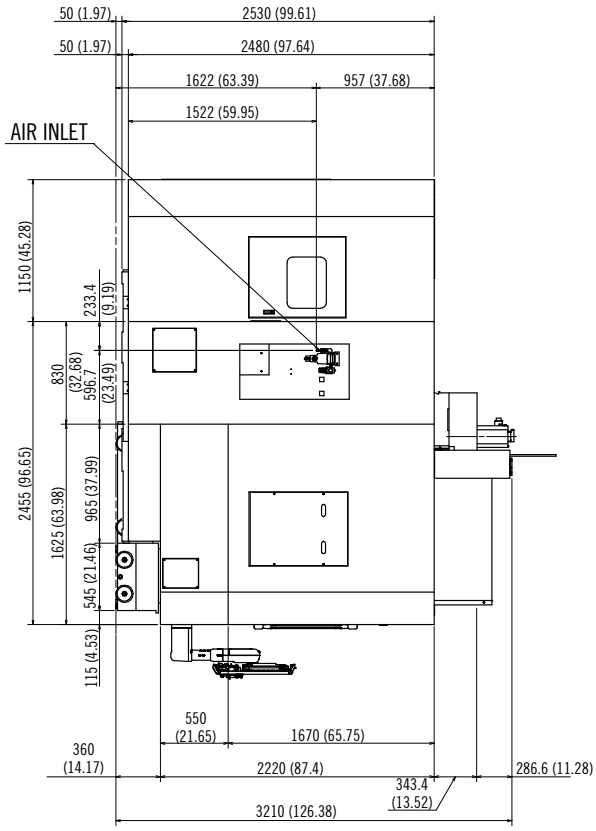


All measurements mm (in).

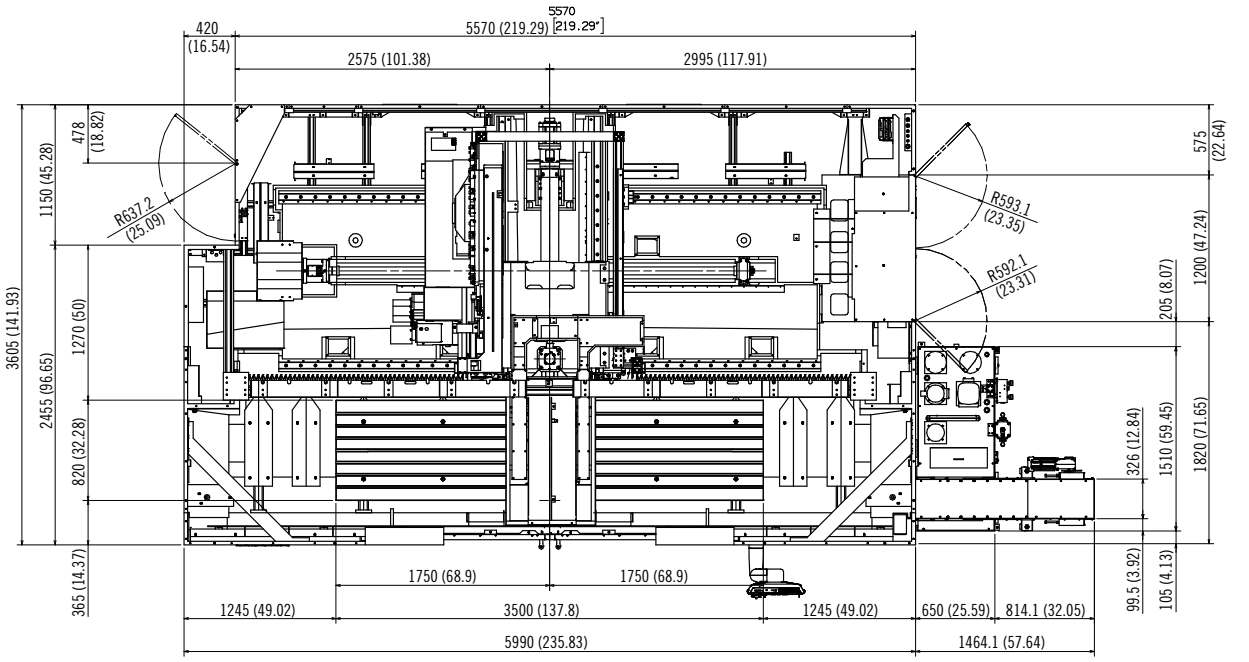
EXTERNAL DIMENSIONS – VTC-805E (FOR REFERENCE ONLY)

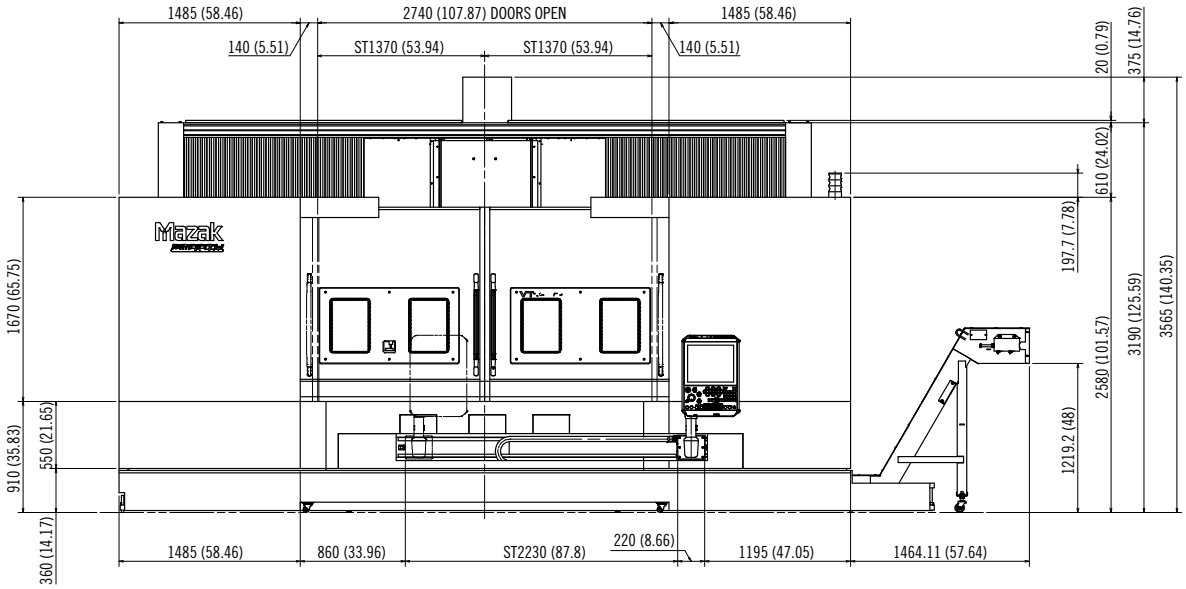






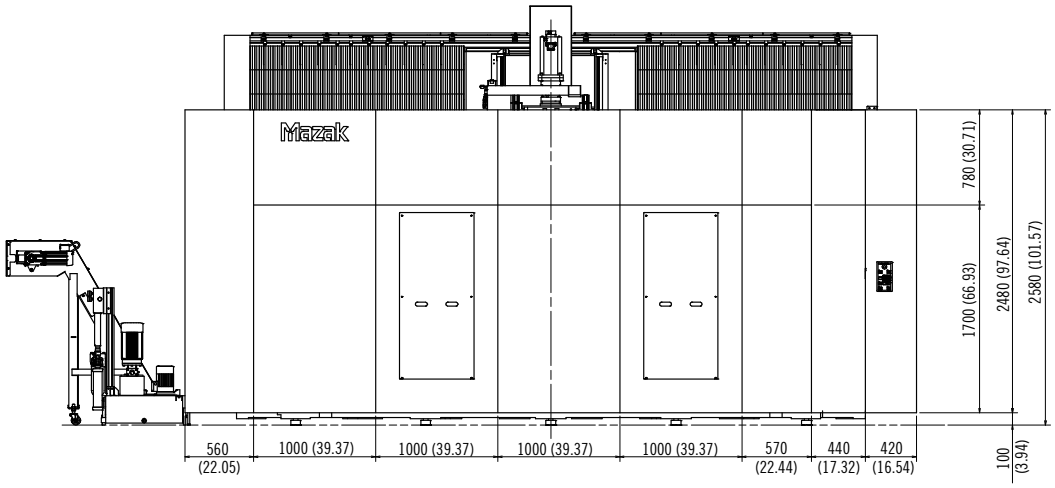
EXTERNAL DIMENSIONS – VTC-805G (FOR REFERENCE ONLY)

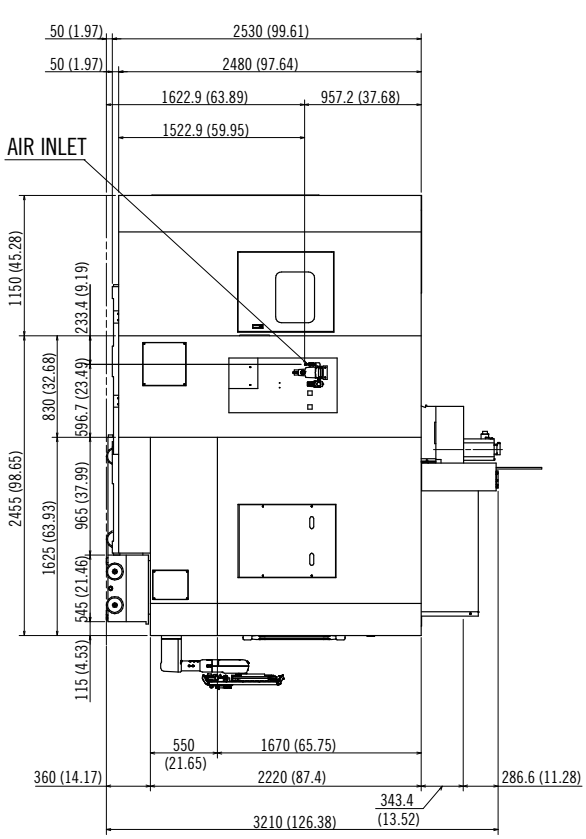


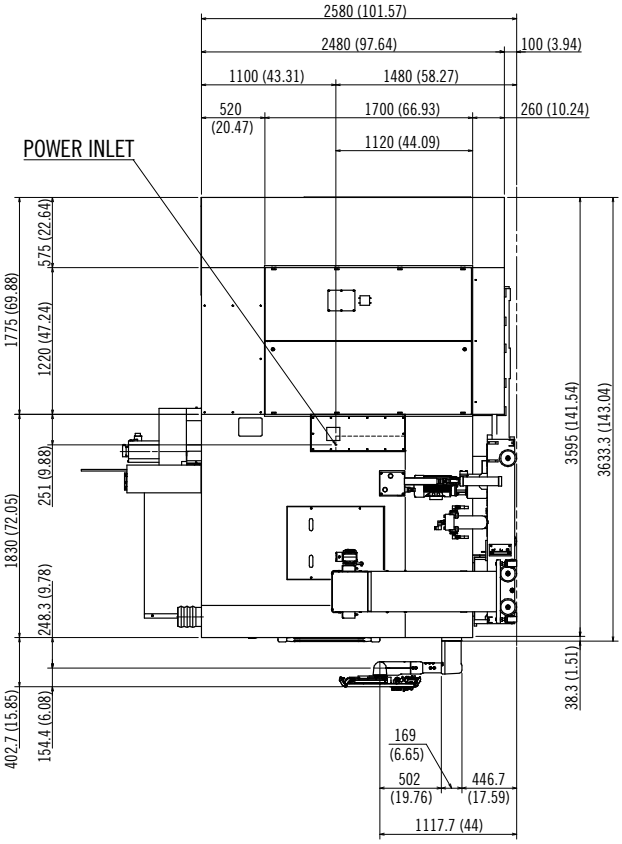


All measurements mm (in).

EXTERNAL DIMENSIONS – VTC-805G (FOR REFERENCE ONLY)







MACHINE SPECIFICATIONS – VTC SERIES

			VTC-200C	VTC-200G	VTC-300C	VTC-800/30 SR
Table	Table size	in (mm)	78.74 x 20.08 (2,000 x 510)	154.33 x 20.08 (3,920 x 510)	78.74 X 30 (2,000 x 760)	137.8 x 32.3 (3,500 x 820)
Spindle	Spindle taper		40	40	40	40
	Maximum speed	rpm	12,000	12,000	12,000	18,000
	Motor output – 5 minutes	hp (kW)	25 (18.5)	25 (18.5)	25 (18.5)	—
	Motor output – 30 minutes	hp (kW)	15 (11)	15 (11)	15 (11)	47 (35)
	Motor output – continuous	hp (kW)	10 (7.5)	10 (7.5)	10 (7.5)	35 (26)
Magazine	Number of tools		24 std, 48 opt	24 std, 48 opt	24 std, 48 opt	30 std, 48 opt
Feed axes	X-axis travel	in (mm)	65.35 (1,660)	144.09 3,660)	65.35 (1,660)	118 (3,000)
	Y-axis travel	in (mm)	20.08 (510)	20.08 (510)	30.00 (760)	31.5 (800)
	Z-axis travel	in (mm)	20.08 (510)	20.08 (510)	25.6 (660)	28.3 (720)

			VTC-250D/50	VTC-805E	VTC-805G
Table	Pallet size	in (mm)	87.7 x 25 (2,100 x 635)	82.7 x 32.3 (2,100 x 820)	137.8 x 32.3 (3,500 x 820)
Spindle	Spindle taper		50	50	50
	Maximum speed	rpm	6,000 (10,000 option)	6,000 (10,000 option)	6,000 (10,000 option)
	Motor output – 30 minutes	hp (kW)	30 (22)	30 (22)	30 (22)
	Motor output – continuous	hp (kW)	25 (18.5)	25 (18.5)	25 (18.5)
Magazine	Number of tools		24	40	40
Feed axes	X-axis travel	in (mm)	69.3 (1,760)	69.3 (1,760)	118 (3,000)
	Y-axis travel	in (mm)	25 (635)	32.3 (820)	32.3 (820)
	Z-axis travel	in (mm)	25.6 (660)	28.3 (720)	28.3 (720)

HIGH ACCURACY

Mazak's rigid machine base structure, advanced spindle/motor design and MAZATROL CNC submicron machine movement give VTC Series machines extremely high part accuracy and surface finish capabilities. And, as with all the machines built at the Mazak iSMART Factory in Florence, Kentucky, Mazak closely monitors the manufacture and assembly of each and every VTC Series machine to guarantee their consistent precision and performance.

To further ensure the highest precision possible over extended hours of operation, Active Vibration Control and Thermal Shield intelligent machine functions minimize detrimental vibration and heat when machining.

ACTIVE VIBRATION CONTROL

Axis acceleration/deceleration can cause machine vibration. Mazak's Active Vibration Control function effectively reduces vibration for high accuracy positioning in all axes and shorter machining cycle times. It also curbs the effects such vibration has on the cutting tool for longer tool life and exceptional part surface finishes.

INTELLIGENT THERMAL SHIELD

Mazak designs its machine units to generate the least amount of heat possible during operation to minimize displacement. But when ambient shop temperatures fluctuate, the Thermal Shield function automatically compensates via exhaust ducts that channel generated heat out and away from the machine and any machines adjacent to it.

MAZAK iSMART FACTORY

The Mazak iSMART Factory encompasses the complete digital integration of the factory with state-of-the-art manufacturing equipment, automation and advanced manufacturing practices. It hinges on the free flow and sharing of data in terms of process control and operation monitoring to ensure the highest quality standards and the utmost production consistency from one machine to the next.

SPINDLE AND UNIT REBUILD

Spindle rebuild

Mazak's spindle exchange and rebuild program provides the option to purchase a brand new spindle, have an existing spindle repaired or acquire a Mazak rebuilt spindle.

Benefits of Mazak's spindle and unit rebuild service include:

- More than 900 different spindle variations for all types of turning centers, vertical and horizontal machining centers as well as Multi-Tasking machines.
- Over 300 available rebuilt spindles for a cost-effective spindle solution delivered in as little as two or three days.
- Spindle repairs are processed in a clean room environment and overseen by quality control teams with ISO: 9001:2008 certification.
- Spindle repairs/rebuilds occur within five days of receipt and include 12 hours of test stand runoff.
- A seven-month parts and labor warranty on rebuilt spindles with Mazak installation.
- Free technical support regarding replacement options and processes.

SPINDLE REPAIR

BEFORE

AFTER

ENVIRONMENTALLY FRIENDLY

ENVIRONMENTAL CONSIDERATIONS

The environment and our impact on our natural surroundings have always been important concerns of Mazak. This is shown by the fact that all factories where Mazak machine tools are produced are ISO 14001 certified, an international standard confirming that the operation of our production facilities do not adversely affect air, water or land.

The VTC Series utilizes a high efficiency lubrication system that has reduced oil consumption more than 90% when compared to comparable systems. High efficiency LED work lights are used for illumination of the machining area. These lights and the optional chip conveyor are automatically shut off after a predetermined period for lower power consumption when the machine is in the stand-by state.

VTC-800/30 SR

eco-friendly

Power Consumption Display (Optional)

The electrical power meter displays the machine's accumulated electrical power consumption.

Personnel Sensor

The work lights and CNC display are automatically shut off after a predetermined time period for lower power consumption when the operator is not near the machine. When the personnel sensor has detected that the operator has returned to the machine, these lights are automatically turned on.

Chip Conveyor/Automatic Power Off (Optional)

The chip conveyor is automatically shut off after a predetermined time period for lower power consumption when the machine is in the stand-by state.

MAZAK TECHNOLOGY + TECHNICAL CENTERS

MAZAK TECHNOLOGY AND TECHNICAL CENTERS

As a key component of Mazak's comprehensive customer support, its network of eight Technology Centers and a Technical Center strategically located across North America put component machining demonstrations, experienced applications engineers and training in close proximity to customers. These centers also provide a channel for customer input to Mazak manufacturing for the development of new machine tool technology.

Technology and Technical Centers offer advanced application support, education and training, new technology and manufacturing systems along with on-site training and technology seminars.

Click here for more information on Mazak Technology Centers.

Advanced application support

- Expert applications engineers help customers optimize part-production processes and create effective manufacturing solutions
- Mazak-certified cutting tool, workholding and automation partners collaborate to develop optimized turnkey manufacturing solutions
- Test cuts of customer parts run on the latest, most advanced machine tools
- Secure applications development and complete design privacy of each customer's individual manufacturing system

Education and training

- Education, training and seminar events in cooperation with Mazak technology partners
- Free access to the most advanced machine tools
- Industry-focused education

New technology and manufacturing systems

- The latest, most advanced manufacturing systems that can optimize the processing of industry-specific components
- Productivity experts help customers select the best new machine tool technology for their particular businesses

On-Site Training and Technology Seminars

- Hands-on applications and operator development courses
- Technical seminars held in conjunction with our Value Inspired Partners (VIPs)
- Regularly scheduled market-focused events that provide valuable industry insight

NATIONAL TECHNOLOGY CENTER
8025 Production Drive
Florence, Kentucky 41042
(800) 331-9151

MIDWEST TECHNOLOGY CENTER
300 East Commerce Drive
Schaumburg, Illinois 60173
(847) 885-8311

SOUTHWEST TECHNOLOGY CENTER
10950 Greenbend Blvd.
Houston, Texas 77067
(281) 931-7770

SOUTHEAST TECHNOLOGY CENTER
1075 Northbrook Parkway
Suwanee, Georgia 30024
(678) 985-4800

WESTERN TECHNOLOGY CENTER
1333 West 190th Street
Gardena, California 90248
(310) 327-7172

NORTHEAST TECHNOLOGY CENTER
700 Old County Circle
Windsor Locks, Connecticut 06096
(860) 292-4400

DALLAS TECHNICAL CENTER
935 South Kimball, Suite 151,
Southlake, Texas 76092
(817) 329-6290

CANADA TECHNOLOGY CENTRE
50 Commerce Court
Cambridge, Ontario N3C 4P7
(519) 658-2021

MEXICO TECHNOLOGY CENTER
Spectrum 100 Parque Industrial Finsa
Apodaca Nuevo León 66600
+52-818-221-0910

Click here for more information on Mazak Technology Centers.

FINANCING

MAZAK CREDIT GROUP

As a wholly owned subsidiary of Mazak Corporation, MCC Credit Group is the preferred one-stop choice for manufacturers throughout the United States and Canada who want fast, hassle-free, low-cost financing on a VTC Series machine or any other piece of Mazak equipment. With a complete knowledge of Mazak's product portfolio, MCC Credit Group provides factory terms that can work to customer advantages. Plus, its direct access to machine specifications, delivery schedules and installation dates eliminates any additional paperwork or a delay in the approval or shipment process.

MCC Credit Group

Advantages of working with MCC Credit Group:

- Approval of up to $350,000 with a simple online credit application (subject to credit approval)
- Quick turnarounds on highly competitive leases and loans with no blanket liens
- Waive security deposits
- Apply machine deposits directly toward advanced rents, fees or monthly rental payments
- Offer three to five years financing on all Mazak equipment
- Preserve bank credit lines for working capital and your company's growth
- Structure true leases for off-balance sheet accounting treatment and maximum cash flow

Click here for more information on financing options.

RESOURCES AND LINKS

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North American Parts Manager
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Parts Order Entry
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csantos@mazakcorp.com

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519-230-3233
800-668-5449
mcummings@mazakcorp.com

Mexico
Gustavo Alarcon
011 52 818 221 0910
galarcon@mazakcorp.com

AFTER HOURS SERVICE

800-231-1456

AFTER HOURS PART SUPPORT

Click here to register for after hours parts support.

VTC SERIES

Mazak

www.MazakUSA.com

MAZAK CORPORATION
NORTH AMERICAN MANUFACTURING HEADQUARTERS
8025 Production Drive, Florence, KY 41042
Tel: (859) 342-1700 Fax: (859) 342-1865

06_17_SER_VTC_B

Centri di lavoro *NEXUS* – Avanzata tecnologia, Grandi prestazioni ed Eccezionale valore

La serie *NEXUS* è prodotta nelle Fabbriche Cibernetiche Mazak del Giappone, degli Stati Uniti, del Regno Unito e di Singapore

- Lavorazioni ad alta efficienza grazie all'elevata velocità di avanzamento e di rotazione del mandrino
- Ampio campo di lavoro ed elevata capacità di carico della tavola per una vasta gamma di particolari
- Facile accesso al pezzo ed al mandrino per semplificare la messa a punto della macchina
- Progettato per risparmiare energia – consumi elettrici e pneumatici ridotti al minimo

CENTRO VERTICALE NEXUS 510C

Motore mandrino da 18.5 kW per lavorazioni generiche

Il mandrino da 18.5 kW (5 minuti) del CENTRO VERTICALE NEXUS 510C, riduce drasticamente i tempi ciclo.

CENTRO VERTICALE NEXUS 510C-HS

Mandrino da 15000 giri/min – 30 kW per lavorazioni ad alta velocità di alluminio ed altri materiali non ferrosi

Il centro verticale NEXUS 510C-HS può lavorare alluminio ed altri materiali utilizzando il mandrino ad alta velocità con utensili di piccolo diametro per ottenere superfici ad elevato grado di finitura minimizzando i tempi ciclo.

Digital Manuf@cturing Solutions

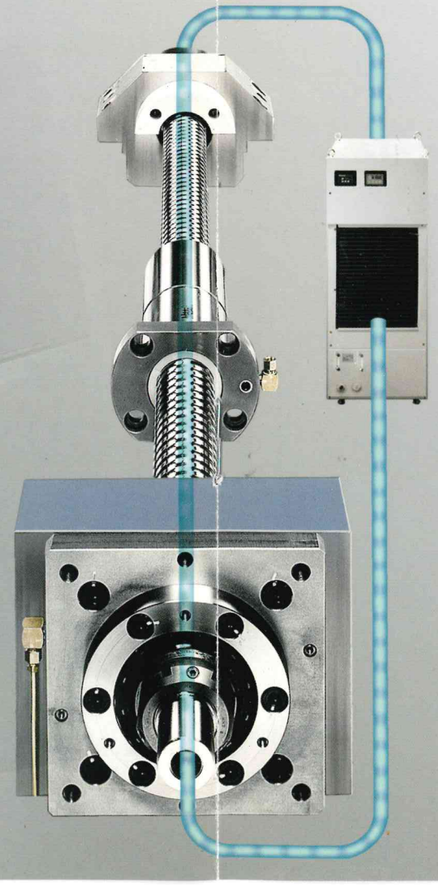
Straordinaria capacità di lavorazione ad alta efficienza

Magazzino da 30 utensili per soddisfare le esigenze di lavorazione di una grande varietà di particolari

Il magazzino può alloggiare fino a 30 utensili con lunghezza max di 350 mm dalla linea di riferimento, diametro max di 80 mm (1250 mm con tasche adiacenti vuote) e peso max di 8 kg, per consentire lavorazioni di diverse tipologie di particolari senza necessità di modificare il piazzamento degli utensili.

Cambio utensile progettato per la massima affidabilità

Il meccanismo di cambio automatico con azionamento a camma garantisce cicli di cambio utensile semplici, affidabili e ad alta velocità.



MAZATROL FUSION 640M NEXUS

- La programmazione viene eseguita utilizzando il formato conversazionale Matazatrol, caratterizzato da un'insuperabile semplicità d'utilizzo.
- I programmi possono essere facilmente modificati tramite la funzione di editing. Il tempo di programmazione e la lunghezza del programma per pezzi complessi sono considerevolmente ridotti.
- Le condizioni di taglio sono determinate automaticamente dalla Funzione di Calcolo Automatico delle Condizioni di Taglio.
- Le condizioni di taglio modificate vengono salvate nella memoria CN e sono utilizzabili in un momento successivo per lo stesso materiale/utensile di taglio.
- Disponibile in 18 diverse lingue.

Sistema di refrigerazione interna delle viti a ricircolo di sfere (assi X, Y e Z)

solo per i modelli NEXUS 510C-HS

- La temperatura dell'olio refrigerante, inviato a tutte le viti a ricircolo di sfere (assi X, Y, Z), è costantemente controllata.
- Sono così eliminati gli errori provocati dalle distorsioni termiche anche durante lunghi periodi di funzionamento ad alta velocità.

■ Controllo visivo dell'utensile/Gestione dati identificativo utensile Disponibile esclusivamente con Mazak (opzionale)

Dopo aver memorizzato i dati relativi agli utensili nel controllo MAZATROL FUSION 640M NEXUS, la gestione degli utensili avviene in modo semplice ed immediato grazie alle videate del CN e dell'unità di visualizzazione dati utensili. I dati relativi ad ogni singolo utensile sono gestiti anche in caso di rimozione e successivo riutilizzo dello stesso.

Sistema automatico di misurazione utensile

Il sistema automatico di misurazione dell'utensile semplifica l'impostazione degli utensili. Portando semplicemente la punta dell'utensile a contatto con la sonda del sistema di misurazione, i dati dell'utensile vengono automaticamente memorizzati nel sistema CN. Utilizzando questo sistema automatico, il tempo richiesto per la misurazione utensile è considerevolmente ridotto rispetto ai sistemi convenzionali che utilizzano blocchetti di riferimento e/o altre procedure per misurare il diametro utensile.

L'unità di visualizzazione dati utensili dispone delle seguenti funzioni:

- Visualizza il nome e la vita degli utensili a magazzino
- Visualizza l'elenco degli utensili necessari per la lavorazione del pezzo
- Selezione random di una tasca del magazzino in posizione di carico utensile
- I dati degli utensili caricati e/o scaricati dal magazzino vengono automaticamente gestiti sulla videata dati utensili del controllo mediante la lettura dell'identificativo utensile
  (Identificativo utensile integrato nel codolo: Opzionale)

■ CENTRO DI PRODUZIONE CYBER (opzionale)

Utilizzando una rete, questo software è in grado di gestire la vostra fabbrica fornendo in tempo reale l'accesso ai dati della macchina, delle attrezzature e degli utensili, ai programmi in lavorazione, ai programmi di produzione e ad altri dati ancora.

MAZAK CAMWARE: Crea velocemente i programmi di lavorazione importando i dati CAD

CYBER SCHEDULATORE: Indica il carico di lavoro attuale di ciascuna macchina e stima i tempi di completamento lavorazione quando viene aggiunta una nuova lavorazione

CYBER GESTIONE UTENSILI: Il controllo completo di tutti i dati utensili tramite rete minimizza il tempo improduttivo dovuto all'impostazione degli utensili

CYBER MONITORAGGIO: Controlla in tempo reale il funzionamento della macchina e lo stato di avanzamento del lavoro dall'ufficio o da altro accesso remoto

Specifiche standard della macchina

		CENTRO VERTICALE NEXUS 510C		CENTRO VERTICALE NEXUS 510C-HS
Corsa asse X (tavola destra/sinistra)	●	1050 mm		
Corsa asse Y (slitta avanti/indietro)	●	510 mm		
Corsa asse Z (mandrino su/giù)	●	510 mm		
Distanza fra la parte superiore della tavola ed il naso mandrino	●	150 mm ~ 660 mm		
Distanza fra la superficie del montante ed il centro mandrino	●	576 mm		
Dimensioni tavola	●	1300 x 550 mm		
Max capacità di carico della tavola (distribuito uniformemente)	●	1200 kg		
Configurazione tavola	●	Cave a T 5 x 18 mm - passo 100 mm		
Max velocità mandrino	●	12000 giri/min	●	15000 giri/min
Gamma velocità mandrino	●	Continuo		
Cono mandrino	●	No.40		
Diametro interno cuscinetto mandrino	●	Ø 70 mm	●	Ø 80 mm
Accelerazione mandrino	●	2.04 s	●	2.4 s
Spostamento rapido (assi X, Y, Z)	●	36 m/min	●	50 m/min
Velocità di taglio (assi X, Y, Z) [con MAZACC 2D/3D] *1	●	1 ~ 8.000 mm (1 ~ 36.000 mm)	●	1 ~ 50.000 mm
Accelerazione/Decelerazione assi	●	0.5 G		
Cono utensile	●	CAT40		
Capacità magazzino utensili	●	30		
Max diametro/lunghezza (dalla linea di riferimento)/peso utensile	●	Ø 80 mm / 350 mm / 8 kg		
Max diametro utensile con tasche adiacenti vuote	●	Ø 125 mm		
Metodo di selezione dell'utensile	●	Selezione random/Percorso più breve		
Tempo cambio utensile (truciolo-truciolo)	●	2,9 s	●	2,6 s
Motore mandrino (5/10/30 minuti-continuo)	●	AC 18.5/15/11/7.5 kW (25/20/15/10 HP)	●	AC 30/22 kW (40/30 HP) <15 minuti/continuo>
Assorbimento elettrico (30 minuti-continuo)	●	31.29/26.31kVA	●	53.84/65.51 kVA
Assorbimento aria (pressione/volume)	●	0.5 MPa / 200 l		
Altezza (dal suolo)	●	2783 (2812 mm) *2	●	2783 mm (2812 mm) *2
Ingombro al suolo	●	2880 x 2835 mm	●	2880 x 2835 mm
Peso macchina	●	6900 kg	●	7200 kg

*1) Velocità limitata con movimento continuo degli assi

*2) Con refrigerante opzionale attraverso il mandrino

Equipaggiamento standard

- Magazzino 30 utensili
- Mandrino da 12000 giri/min 25 HP (NEXUS 510C)
- Mandrino da 15000 giri/min 40 HP (NEXUS 510C-HS)
- Sistema refrigerante
- Controllo adattativo dell'avanzamento
- Gestione vita utensile
- MAZACC-2D (NEXUS 510C-HS)
- 1 Set di manuali
- 1 Set di utensili di regolazione

Accessori opzionali

- Mandrino da 25000 giri/min 40 HP (NEXUS 510C-HS)
- Magazzino 60 utensili (NEXUS 510C-HS)
- Cambio pallet a 2 posizioni
- Sistema a scale lineari (assi X, Y, Z)
- Spegnimento automatico
- Accensione/Spegnimento automatico tramite timer
- Accensione/spegnimento automatico con funzione di riscaldamento tramite timer
- Asse addizionale
- Lampada di fine ciclo
- Lampada indicazione stato macchina a 3 colori
- Funzione di stampa record misurazione pezzo
- Refrigerante attraverso il mandrino (0,5 Mpa, 1,5 Mpa)
- Disoleatore a disco
- Soffio d'aria
- Convogliatore trucioli
- Vasca raccogli trucioli
- Sistema di monitoraggio tipo B (MP3, MP10)
- Funzione rilevamento rottura utensile (con misurazione automatica della lunghezza utensile)
- Luce di lavoro
- Luce di lavoro addizionale

SMOOTH TECHNOLOGY

HCN-5000/50

AW MILLER
TECHNICAL SALES, INC.
7661 SENECA STREET, EAST AURORA, NY 14052
OFFICE: 716.652.8282 | FAX: 716.655.4915
AWMILLER.COM

Advanced features of the Mazak MAZATROL SmoothG CNC

Touchscreen operation
— Operates similar to your smartphone/tablet

PC with Windows® 8 embedded OS

Fastest CNC in the world
— Latest hardware and software for unprecedented speed and precision

Easy conversational programming of multiple surface machining

Smooth graphical user interface and support functions for unsurpassed ease of operation

Easily configure machine parameters for different workpiece materials and applications requirements

MTConnect® ready
— Convenient networking

MAZATROL SmoothG

The MAZATROL SmoothC is standard equipment

Compact #50 spindle Horizontal Machining Center

High-speed, high-accuracy Horizontal Machining Center

HCN-5000/50

- Designed for large-volume production
- 50-taper spindle for large-diameter and long tools
- Can be integrated into production lines composed of HCN-5000 (#40 taper) machines thanks to same pallet height

Shown with optional machine status light and MAZATROL SmoothG

Standard machine specifications

Stroke	X-axis stroke (column right/left)	730 mm (28.74")
	Y-axis stroke (spindle up/down)	730 mm (28.74")
	Z-axis stroke (table back/forth)	800 mm (31.50")
	Distance from table top to spindle nose	100 mm ~ 830 mm (3.94" ~ 32.68")
	Distance from pallet to spindle center	70 mm ~ 870 mm (2.76" ~ 34.25")
Table	Table size	500 mm x 500 mm (19.69" x 19.69")
	Max. workpiece dimensions	Φ 800 mm x 1000 mm (Φ 31.50" x 39.37")
	Pallet load capacity (evenly distributed)	500 kg (1102.31 lbs)
	Pallet top surface	M16 x P2.0 (5/8-11 UNC) 25 places 100mm (3.94") pitch
	Minimum indexing angle increment	1°
	Indexing time	1.4 sec/90°
Spindle	Max. spindle speed	10000 rpm
	Spindle speed range	2-step (Electric)
	Spindle taper	No.50
	Spindle bearing ID	Φ 90 mm (3.54")
	Spindle acceleration	1.20 sec (0→10000 rpm)
Feed rate	Rapid traverse rate (X-, Y-, Z-axes)*1	60000 mm/min (2362.20 IPM)
	Max. cutting feed rate (X-, Y-, Z-axes)*1	60000 mm/min (2362.20 IPM)
	Axis acceleration/deceleration	X-, Y-axis: 0.9 G/Z-axis: 1.0 G
Automatic tool changer	Tool shank	No.50
	Tool storage capacity	43
	Max. tool diameter/length (from gauge line)/weight	Φ 125 mm/510 mm/30 kg (Φ 4.92"/20.08"/66.14 lbs)
	Max. tool diameter with adjacent pockets empty	Φ 250 mm (Φ 9.84")
	Tool selection method	Random selection/shortest path
	Tool change time (chip to chip)	3.5 sec
Automatic pallet changer	Number of pallets	2
	Changing system	Rotary type
	Pallet change time	8.0 sec
Motors	Spindle motor (40% ED/Cont. rating)	30 kW/22 kW (40 HP/30 HP)
Electrical and air requirements	Electrical power supply (40% ED/Cont. rating)	65.7 kVA/54.4 kVA (50Hz)
	Air supply (pressure/flow rate)	0.5 MPa ~ 0.9 MPa (70 psi ~ 130 psi)/210 L/min (7.42 ft³/min")
Machine size	Machine height (from floor)	2813 mm (110.75")
	Floor space requirement*2	2544 mm x 5804 mm (100.16" x 228.39") (with ConSep 2000)
	Machine weight*3	12830 kg (28285.02 lbs)
CNC		MAZATROL SmoothC

*1 Limited feed rate with continuous axis movement
*2 Including rear coolant tank and chip conveyor
*3 Including rear coolant tank

Standard and optional equipment

●: Standard ○: Option

Spindle	10000 rpm No.50	●
	10000 rpm BBT-50	○
	10000 rpm HSK-A100	○
Table	1°× 360 indexing table	●
	0.0001°× 3600000 NC rotary table	○
	0.0001°× 3600000 DDM rotary table	○
Pallet Changer	2-pallet changer [max. load: 500kg (1102.31 lbs)]	●
	2-pallet changer [max. load: 700kg (1543.24 lbs)]	○
	6-pallet changer	○
	2-pallet changer for PALLETECH	○
Tool magazine	43-tool magazine	●
	80-,120-,160-tool magazine	○
	180-, 240-, 348-tool hive	○
CNC	MAZATROL SmoothC	●
	MAZATROL SmoothG	○

Setup assisting function	Automatic tool measurement & tool breakage detection	●
	External tool breakage detection	○
	Mazak monitoring system B	○
	Visual tool ID/preparation for data management	○
Factory automation	Hydraulic fixture preparation A (hydraulic power supplied from the top of the machine)	○
	Hydraulic fixture preparation B (hydraulic power supplied through pallet/2 P/C)	○
	Automatic door (with area sensor)	○
	Automatic door (with double hand switch)	○
	ROBOT interface	○
Coolant/ Chip disposal	Chip conveyor (rear disposal-ConSep 2000)	○
	Chip conveyor (rear disposal-Hinge-MT10)	○
	Secondary process filter for aluminum coolant	○
High accuracy	Scale feedback (X-, Y-, Z-axis)	○
	Coolant temperature control	○
	Tool runout detection (due to chip contamination between spindle & tool holder)	○

Mazak

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HCN-5000/50

HEAVY DUTY VERTICAL MACHINING CENTER

Mynx

5400Ⅱ · 6500Ⅱ · 7500Ⅱ · 9500

DN SOLUTIONS

Mynx Ⅱ series

5400Ⅱ · 6500Ⅱ · 7500Ⅱ · 9500

Mynx Ⅱ series offers a wide line-up from 550 mm (21.7 inch) to 950 mm (37.4 inch) and various spindle enabling to meet the user to handle a wider range of workpieces. In addition, Mynx series offers high durability, high performance to designed high rigidity. The Ez work functions for the user-friendliness has improved the convenience of customers.

Mynx 7500 II

Mynx 6500 II

Mynx 5400 II

USERS CAN BE SELECTED ACCORDING TO MATERIAL AND SIZE OF WORKPIECE

- Wide line-up from 550mm (21.7 inch) to 950mm (37.4 inch) and various spindle are available to meet material and size of workpiece.

HIGH PRODUCTIVITY AND STABLE PRECISION, POWERFUL CUTTING PERFORMANCE

- High-rigidity machine structure provides high durability and stable accuracy during heavy duty cutting.
- Higher productivity can be achieved with the CAM-type tool changer that supports faster tool changing.

EASY OPERATION FOR IMPROVING CONVINIENCE TO USE NC SYSTEM

- Easy operation for user's convenient machine operation.
- The Ez work functions for the user-friendliness has improved the convenience of customers.

BASIC STRUCTURE

The Mynx Ⅱ series offers a wide line-up. High-rigidity machine structure provides high durability and stable accuracy during heavy duty cutting.

Travel distance (X / Y / Z axis)

Mynx 5400Ⅱ, Mynx 5400/50Ⅱ

1020 / 550 / 530 mm
40.2 / 21.7 / 20.9 inch

Mynx 6500Ⅱ, Mynx 6500/50Ⅱ

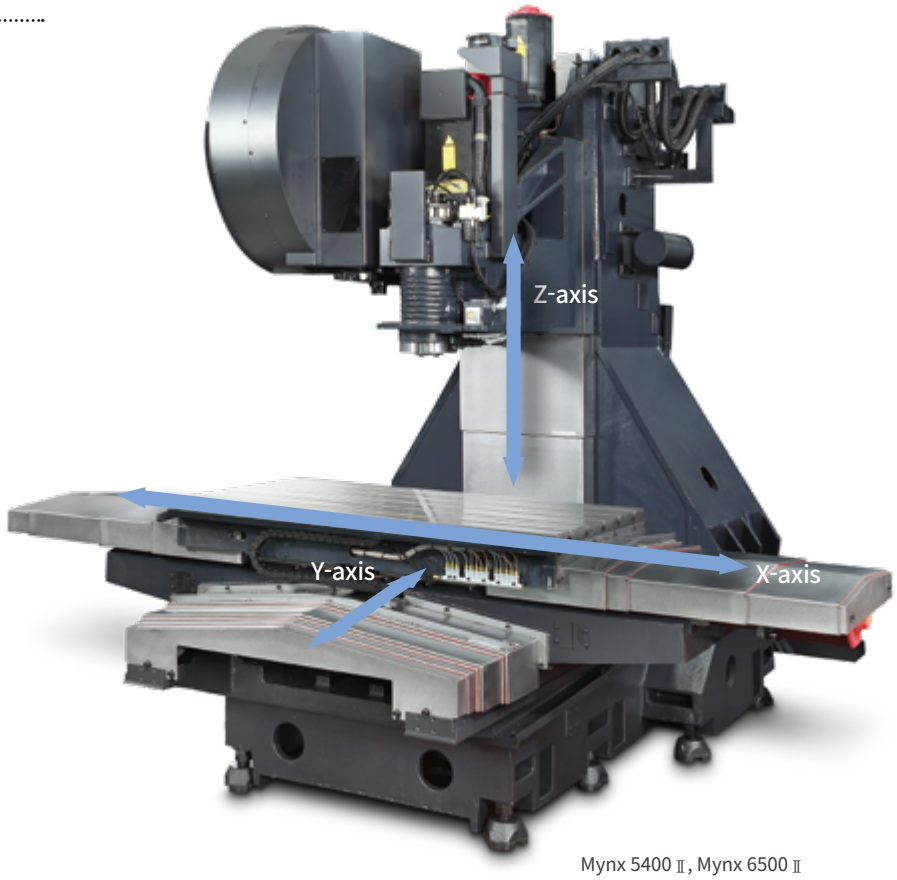
1270 / 670 / 625 mm
50.0 / 26.4 / 24.6 inch

Mynx 7500Ⅱ, Mynx 7500/50Ⅱ

1525 / 770 / 625 mm
60.0 / 30.3 / 24.6 inch

Mynx 9500

2500 / 950 / 850 mm
98.4 / 37.4 / 33.5 inch



Mynx 5400 Ⅱ, Mynx 6500 Ⅱ

AXIS SYSTEM

Applied a highly rigid box guideway structure suitable for heavy cutting.
The extended box-type guideways improve the machine durability as well as rigidity and stability.

Rapid traverser rate (X / Y / Z axis)

Mynx 5400Ⅱ, Mynx 5400/50Ⅱ
Mynx 6500Ⅱ, Mynx 6500/50Ⅱ
Mynx 7500Ⅱ, Mynx 7500/50Ⅱ

30 / 30 / 24 m/min
1181.1 / 1181.1 / 944.9 ipm

Mynx 9500

16 / 16 / 16 m/min
629.9 / 629.9 / 629.9 ipm

Surface Finish

The surface of moving elements are coated with Rulon 142 material to reduce friction and stick-slip. This material is carefully hand-scraped to achieve optimum accuracy.

SPINDLE

Users can select spindles of various driving systems and specifications according to the workpiece material.

Drive Systems

The Mynx Ⅱ series spindles support Direct-driven, Belt-driven, Gear-driven, Built in-driven systems. Dual contact tool system support as standard.

Models	Taper	Standard	Optional
Mynx 5400 Ⅱ *** **Mynx 6500 Ⅱ** *** **Mynx 7500 Ⅱ** ***	ISO #40	8000r/min (15/11 kW (20.1/14.8 Hp), 286.5 N·m (211.4 ft-lbs))	12000r/min (15.6 kW (20.9 Hp), 165.5 N·m (122.1 ft-lbs))
Mynx 5400/50 Ⅱ **Mynx 6500/50 Ⅱ**	ISO #50	6000r/min (15/11 kW (20.1/14.8 Hp), 286.4 N·m (211.4 ft-lbs))	6000r/min (18.5/15 kW (24.8/20.1 Hp), 307.2 N·m (226.7 ft-lbs))
			6000r/min* (30/18.5 kW (40.2/24.8 Hp), 617.4 N·m (455.6 ft-lbs))
			8000r/min (15/11 kW (20.1/14.8 Hp), 286.4 N·m (211.4 ft-lbs))
Mynx 7500/50 Ⅱ	ISO #50	6000r/min (18.5/15 kW (24.8/20.1 Hp), 307.2 N·m (226.7 ft-lbs))	6000r/min (22/18.5 kW (29.5/24.8 Hp), 365.5 N·m (269.7 ft-lbs))
			6000r/min* (30/18.5 kW (40.2/24.8 Hp), 617.4 N·m (455.6 ft-lbs))
			8000r/min (15/11 kW (20.1/14.8 Hp), 286.4 N·m (211.4 ft-lbs))
Mynx 9500	ISO #50	6000r/min* (30/18.5 kW (40.2/24.8 Hp), 617.4 N·m (455.6 ft-lbs))	10000r/min** (30/25 kW (40.2/33.5 Hp), 420 N·m (310.0 ft-lbs))

None : Belt-driven * :Gear-driven ** : Built in-driven *** : Direct-driven

Mynx 9500 Gear-driven spindles

Dual Contact Spindle

The system enables simultaneous dual-contact of tapered side using elastic deformation of the spindle and perfect gauge control.

TABLE

Mynx Ⅱ series offers an optimized table for machine line up enabling to meet the user to handle a wider range of workpieces.

Max weight on Table

Mynx 5400Ⅱ, Mynx 5400/50Ⅱ

1000 kg 2204.6 lb

Mynx 6500Ⅱ, Mynx 6500/50Ⅱ

1300 kg 2866.0 lb

Mynx 7500Ⅱ, Mynx 7500/50Ⅱ

1500 kg 3306.9 lb

Mynx 9500

3500 kg 7716.1 lb

Table size (A x B)

Mynx 5400Ⅱ, Mynx 5400/50Ⅱ

1200 x 540 mm 47.2 x 21.3 inch

Mynx 6500Ⅱ, Mynx 6500/50Ⅱ

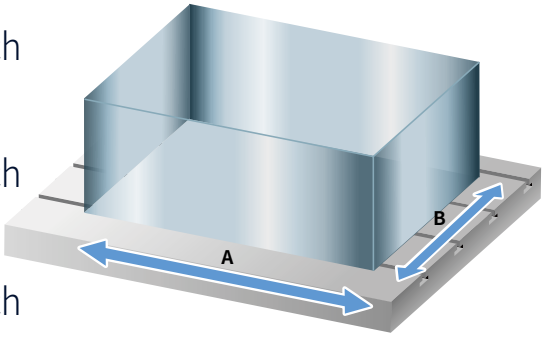
1400 x 670 mm 55.1 x 26.4 inch

Mynx 7500Ⅱ, Mynx 7500/50Ⅱ

1600 x 750 mm 63.0 x 29.5 inch

Mynx 9500

2500 x 950 mm 98.4 x 37.4 inch



MACHINING PERFORMANCE

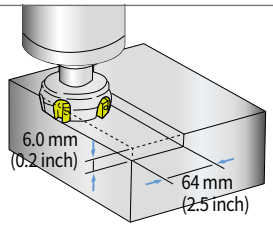
The heavy-duty machining performance of the Mynx Ⅱ series spindles is the best in its class.

ISO #40

Result of cutting test on Mynx 5400 Ⅱ (8000r/min, Direct, 15/11kW (20.1/14.8 Hp))

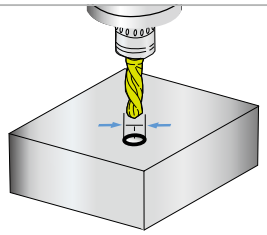
Face mill (ø80 mm, Cut edge count :6) Carbon steel (SM45C)

Machining rate (cm^3/min(in^3/min))	Spindle speed (r/min)	Feedrate (mm/min (ipm))
374.4 (22.8)	500	1950 (76.8)



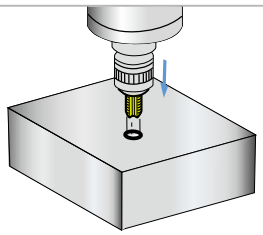
Drill (ø50 mm) Carbon steel (SM45C)

Machining rate (cm^3/min(in^3/min))	Spindle speed (r/min)	Feedrate (mm/min (ipm))
265.07 (16.2)	500	135 (5.3)



Tap Carbon steel (SM45C)

Tap size (mm (inch))	Spindle speed (r/min)	Feedrate (mm/min (ipm))
M36 x P4.0 (M1.4 x P0.2)	265	1060 (41.7)



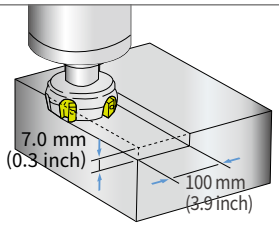
** The results, indicated in this catalogue are provides as example. They may not be obtained due to differences in cutting conditions and environmental conditions during measurement.*

ISO #50

Result of cutting test on Mynx 9500 (6000r/min, Gear, 30/18.5kW (40.2/24.8 Hp))

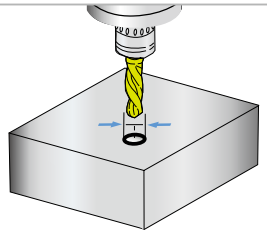
Face mill (ø125 mm,Cut edge count :8) Carbon steel (SM45C)

Machining rate (cm^3/min(in^3/min))	Spindle speed (r/min)	Feedrate (mm/min (ipm))
756 (46.1)	464	1080 (42.5)



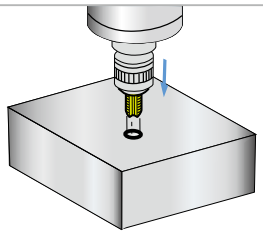
Drill (ø85 mm) Carbon steel (SM45C)

Machining rate (cm^3/min(in^3/min))	Spindle speed (r/min)	Feedrate (mm/min (ipm))
510 (31.1)	562	90 (3.5)



Tap Carbon steel (SM45C)

Tap size (mm (inch))	Spindle speed (r/min)	Feedrate (mm/min (ipm))
M42 x P4.5 (M1.7 x P0.2)	100	450 (17.7)



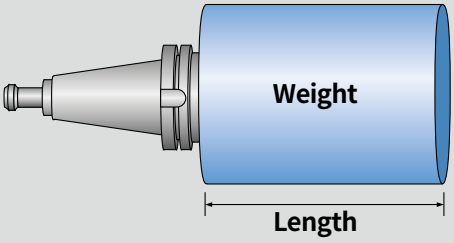
** The results, indicated in this catalogue are provides as example. They may not be obtained due to differences in cutting conditions and environmental conditions during measurement.*

TOOL CHANGER

Higher productivity can be achieved with the CAM-type tool changer that supports faster tool changing.

Chain type CAM magazine

Drum-type CAM magazine



Automatic tool changer

Tool storage capacity

Mynx 5400Ⅱ, Mynx 6500Ⅱ, Mynx 7500Ⅱ

30 ea

40 ea option

Mynx 5400/50Ⅱ

24 ea

Mynx 6500/50Ⅱ

24 ea

30 ea* option

Mynx 7500/50Ⅱ

24 ea

40 ea* option

Mynx 9500

30 ea*

40 ea* option

None : Drum-type CAM magazine * : Chain type CAM magazine (Servo type)

Taper

Mynx 5400Ⅱ, Mynx 6500Ⅱ, Mynx 7500Ⅱ

ISO #40

Mynx 5400/50Ⅱ, Mynx 6500/50Ⅱ
Mynx 8500/50Ⅱ, Mynx 9500

ISO #50

Automatic tool changer

Models	Taper	Tool Change Time		Max. Tool Size	
		T-T-T	C-T-C	Length	Weight
Mynx 5400Ⅱ	ISO #40	1.3 s	3.7 s	300mm (11.8 inch)	8kg (17.6 lb)
Mynx 6500Ⅱ					
Mynx 7500Ⅱ					
Mynx 5400/50Ⅱ	ISO #50	2.5 s	5.5 s	350mm (13.8 inch)	20kg (33.1 lb)
Mynx 6500/50Ⅱ					
Mynx 7500/50Ⅱ					
Mynx 9500					

STANDARD | OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

Description	Features			Mynx 5400 Ⅱ Mynx 5400 Ⅱ SIEMENS	Mynx 5400/50 Ⅱ Mynx 5400/50 Ⅱ SIEMENS	Mynx 6500 Ⅱ Mynx 6500 Ⅱ SIEMENS	Mynx 6500/50 Ⅱ Mynx 6500/50 Ⅱ SIEMENS	Mynx 7500 Ⅱ Mynx 7500 Ⅱ SIEMENS	Mynx 7500/50 Ⅱ Mynx 7500/50 Ⅱ SIEMENS	Mynx 9500 Mynx 9500 SIEMENS
Spindle	6000 r/min	Belt**	15/11 kW	X	●	X	●	X	X	X
			18.5/15 kW	X	○	X	○	X	●	X
			22/18.5 kW	X	X	X	X	X	○	X
		Gear*	30/18.5 kW	X	○	X	○	X	○	●
	8000 r/min	Direct	15/11 kW	●	X	●	X	●	X	X
		Belt*	15/11 kW	X	○	X	○	X	○	X
	10000 r/min	Built in*	15.6 kW	X	X	X	X	X	X	○
	12000 r/min	Direct*	15.6/15.6 kW	○	X	○	X	○	X	X
Spindle cooling system(Oil cooler)	6000 r/min	Belt*		X	○	X	○	X	○	X
		Gear*		X	●	X	●	X	●	●
	8000 r/min	Direct*		○	X	○	X	○	X	X
		Belt*		X	●	X	●	X	●	X
	10000 r/min	Built in*		X	X	X	X	X	X	●
	12000 r/min	Direct*		●	X	●	X	●	X	X
Magazine	Tool storage capacity	24ea		X	●	X	●	X	●	X
		30ea		●	X	●	○	●	X	●
		40ea		○	X	○	X	○	○	○
Tool shank type	ISO #40	BIG PLUS BT40		●	X	●	X	●	X	X
		BIG PLUS CAT40		○	X	○	X	○	X	X
		BIG PLUS DIN40		○	X	○	X	○	X	X
	ISO #50	BIG PLUS BT50		X	●	X	●	X	●	●
		BIG PLUS CAT50		X	○	X	○	X	○	○
		BIG PLUS DIN50		X	○	X	○	X	○	○
Coolant	FLOOD	0.15 MPa (0.4 kW)		●	●	●	●	●	●	●
		0.7 MPa (1.8 kW)		○	○	○	○	○	○	○
	TSC	None		●	●	●	●	●	●	●
		2 MPa (1.5kW)		○	○	○	○	○	○	○
		2 MPa (4.0 kW)		○	○	○	○	○	○	○
		7 MPa (5.5 kW)		○	○	○	○	○	○	○
	SHOWER	0.1 MPa (1.1 kW)		○	○	○	○	○	○	○
	Oil Skimmer	Belt type		○	○	○	○	○	○	○
	MQL			○	○	○	○	○	○	○
Chip disposal	Chip pan			●	●	●	●	●	●	●
	Chip conveyor	TYPE	HINGED PLATE	○	○	○	○	○	○	○
			MAGNETIC SCRAPER	○	○	○	○	○	○	○
		OUTLET DIRECTION	RIGHT SIDE/LEFT SIDE	○	○	○	○	○	○	○
	Chip bucket	CAPACITY	220 / 300 / 380	○	○	○	○	○	○	○
		TYPE	ROTATION / FORKLIFT	○	○	○	○	○	○	○
Precision machining option	Smart Thermal Compensation		Sensorless type***	●	●	●	●	●	●	●
	Linear scale	X / Y / Zaxis		○	○	○	○	○	○	○
	AICC II (200 block)			●	●	●	●	●	●	●
Measurement & Automation	Automatic tool measurement	TS27R		○	○	○	○	○	○	○
		OTS		○	○	○	○	○	○	○
	Automatic tool breakage detection			○	○	○	○	○	○	○
	Automatic workpiece measurement	OMP60		○	○	○	○	○	○	○
	Automatic front door with safety device			○	○	○	○	○	○	○
Accessories	WORK LIGHT	LED LAMP		●	●	●	●	●	●	●
	OPERATOR CALL LAMP	3-COLOR SIGNAL TOWER(LED)		●	●	●	●	●	●	●
	SMART THERMAL CONTROL	SENSORLESS TYPE (ONLY SPINDLE)		●	●	●	●	●	●	●
	ASSEMBLY & OPERATION TOOLS KIT			●	●	●	●	●	●	●
	AIR BLOWER			○	○	○	○	○	○	○
	4TH AXIS PREPARATION CABLING FOR SERVO/1-PNEUMATIC PIPING	FACTORY READY MADE		○	○	○	○	○	○	○
	AIR GUN			○	○	○	○	○	○	○
	Coolant gun			○	○	○	○	○	○	○
	Mist collector			○	○	○	○	○	○	○
Customized special option	ANCHORING(1)			○	○	○	○	○	○	○
	COOLANT CHILLER(2)			○	○	○	○	○	○	○
	TSA(3)	0.54 MPa		○	○	○	○	○	○	○
	FEEDBACK SYSTEM	HEIDENHAIN		○	○	○	○	○	○	○
	RAISING BLOCK	150 / 200 / 300 mm		○	○	○	○	○	○	○
	SIDE AUTO DOOR	680 X 1000 (W X H) SET		○	○	○	○	○	○	○
	AWC	8PALLET		○	○	○	○	○	○	○
	AUTO TOOL LENGTH MEASUREMEMT	RENISHAW / LTS		○	○	○	○	○	○	○
	AUTO TOOL BREAKAGE DETECTION	MSC/BK9(NEEDLE TYPE ON MAGAZINE)		○	○	○	○	○	○	○

*Spindle cooling system (Oil cooler) is standard **Spindle cooling system (Oil cooler) is option ***Sensorless type (only Spindle) (Mynx 5400~7500II)

● Standard ○ Optional x Not applicable

※ Please contact DN Solutions to select detail specifications.

(1) Please refer to foundation drawing in relation to anchoring. If more detail information want, consult with DN Solutions service

(2) In case of using neat cutting oil, this device is highly recommended in order to reduce the change of accuracy by rising the coolant temperatures.

(3) In case of TSC is not required and only TSA is needed, this option can be selected.

⚠ Fire Safety Precautions | 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

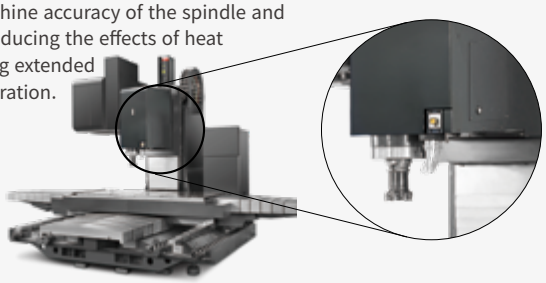
Linear Scale option

Using the linear scale feedback system, accuracy of the machine can be further improved since the X, Y and Z axes can be controlled to correct positions.

Resolution : 0.001 mm

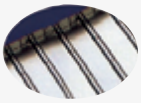
Smart thermal compensation (Mynx 9500 only)

Smart thermal compensation function fitted as stadard optimizes machine accuracy of the spindle and structure by reducing the effects of heat build-up during extended periods of operation.

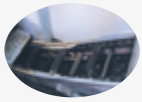


Chip conveyor option

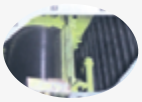
Hinged type



Magnetic scraper type



Drum filter type



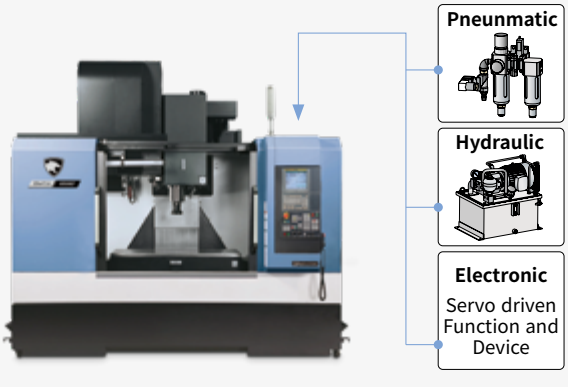
Chip conveyor type	Material	Description
Hinged type	Steel	Hinged belt chip conveyor, which is most commonly used for steel work [for cleaning chips longer than 30mm(1.2inch)], is available as an option.
Magnetic scraper type	Cast Iron	Magnetic scraper type chip conveyor, which is ideal for die-casting work [for cleaning small chips], is available as an option.
Drum filter type	Aluminium	Drum filter type chip conveyor, which is ideal for aluminium work [for filtering small chips], is available as an option.

Oil Cooler option

An oil cooler correlated to room temperature can be equipped for a long-term operation at high speed. Cooling oil circulates around the spindle bearings to prevent thermal error of the spindle and maintain machining accuracy.

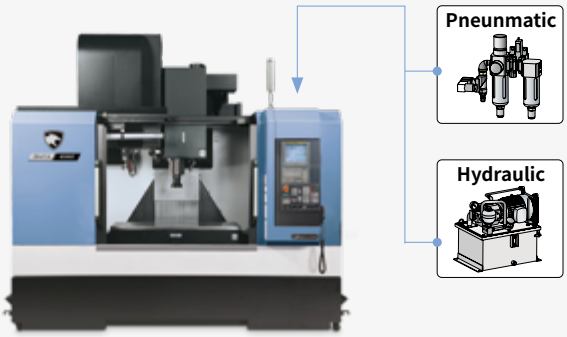
4th axis auxiliary device interface option

Users who wish to set up a rotary axis on the table to increase application flexibility are encouraged to contact DN Solutions in advance.



Hydraulic / Pneumatic fixture line option

The user should prepare pipelines for hydraulic / pneumatic fixtures whose detailed specifications should be determined by discussion with DN Solutions.



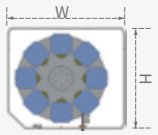
AWC system option

The optimized solution to realize compact automation system through automatic work-piece change system.

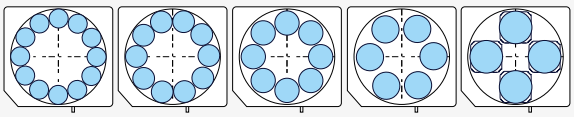
Max. workpiece dimensions	Unit	Count	Max. loading	Max. construction height on the pallet
250 x 250 (9.8x9.8) or ø 300 (11.8)	mm (inch)	12	130kg (286.6lb)	350mm (13.8inch)
320 x 320 (12.6x12.6) or ø 360 (14.2)	mm (inch)	10	250kg (551.1lb)	
350 x 350 (13.8x13.8) or ø 400 (15.7)	mm (inch)	8		
400 x 400 (15.7x15.7) or ø 450 (17.7)	mm (inch)	6		
500 x 500 (19.7x19.7) or ø 550 (21.7)	mm (inch)	4		

Pallet Storage-Table Configuration

Unit : mm (inch)



W X H = 1,900 X 1,700



250 X 250 (9.8 X 9.8) | 320 X 320 (12.6 X 12.6) | 350 X 350 (13.8 X 13.8) | 400 X 400 (15.7 X 15.7) | 500 X 500 (19.7 X 19.7)

DN SOLUTIONS FANUC i PLUS

DN Solutions Fanuc i Plus is optimized for maximizing customer productivity and convenience.

15 inch screen + new operation panel

DN Solutions Fanuc i Plus' operation panel enhances operating convenience by incorporating common-design buttons and layout, and features the Qwerty keyboard for fast and easy operation.

DN Solutions Fanuc i Plus

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

USB & PCMCIA card

QWERTY keyboard

- EZ-guide i standard
- Ergonimic operator panel
- 2MB Memory
- Hot key

iHMI touchscreen option

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.

NUMERIC CONTROL SPECIFICATIONS

FANUC

Item		Specifications	DN Solutions Fanuc i (0i Plus) Mynx 4digit
Controlled axis	Controlled axes		3 (X,Y,Z)
	Simultaneously controlled axes		4 axes
	Additional controlled Axis	Add 1 Axis (5th Axis)	●
Data input/output	Fast data server		○
	Memory card input/output		●
	USB memory input/output		●
	Large capacity memory(2GB)*2	Available Option only with 15” Touch LCD (iHMI Only) *2)	○
Interface function	Embedded Ethernet		●
	Fast Ethernet		○
	Enhanced Embedded Ethernet function		●
Operation	DNC operation	Included in RS232C interface.	●
	DNC operation with memory card		●
Program input	Workpiece coordinate system	G52 - G59	●
	Addition of workpiece coordinate system	G54.1 P1 X 48 (48 pairs)	●
	Tool number command		T4 digits
	Tilted working plane indexing command	G68.2 TWP	○
Feed function	AI contour control I	G5.1 Q_, 40 Blocks	X
	AI contour control II	G5.1 Q_, 200 Blocks	●
	AI contour control II	G5.1 Q_, 600 Blocks	X
	AI contour control II	G5.1 Q_, 1000 Blocks *1)	X
	High smooth TCP		X
Operation guidance function	EZ Guidei (Conversational Programming Solution)		●
	iHMI with Machining Cycle	Only with 15” Touch LCD standard *2)	X
	EZ Operation package		●
Setting and display	CNC screen dual display function		●
Network	FANUC MTConnect		✪
	FANUC OPC UA		✪
Others	Display unit	10.4" color LCD	X
		15" color LCD	X
		15" color LCD with Touch Panel	●
	Part program storage size & Number of registerable programs	640M(256KB)_500 programs	X
		1280M(512KB)_1000 programs	X
		2560M(1MB)_1000 programs	X
		5120M(2MB)_1000 programs	●
		10240M(4MB)_1000 programs	X
		20480M(8MB)_1000 programs	X
		2560M(1MB)_2000 programs	X
		5120M(2MB)_4000 programs	X
		10240M(4MB)_4000 programs	X
		20480M(8MB)_4000 programs	X

*1) The number of look-ahead blocks may be changed or limited depending on the peripheral device or the configuration of the internal NC system.
*2) Available Option only with Fanuc i plus iHMI

● Standard ○ Optional X N/A ✪ Available
Network: FANUC MT Connect and FANUC OPC UA available.

EZ WORK

The software developed by DN Solutions provides a range of different functions designed for fast, efficient and convenient operation.

EZ work

The EZ work package delivers speed and efficiency. This menu-driven innovation not only helps customers reduce setup times, but also simplifies common tasks and procedures, reducing the potential for errors. EZ work reduces operating time, protects machinery, enhances quality and speeds up maintenance interventions.

Thermal Compensation

A function to maintain high-precision machining quality by analyzing and correcting the amount of thermal displacement of a structure through a temperature sensor

M/G-Code List

Functional description of M code and G code

Tool Management

Function to manage tool information [Tool information / Tool No. / Tool condition (normal, large diameter, worn / damaged, used for the rst time, manual) / Tool name]

Operation Rate

Machine operation history management function by date based on load

Adaptive Feed Control

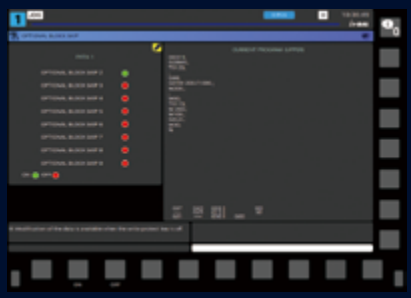
Function to control feedrate so that the cutting can be carried out at a constant load (To adapt to the spindle load set up with constant load feedrate control function)

Spindle Warm Up

A function that assists spindle warm-up for spindle life when the spindle has not been used for a certain period of time

ATC Recovery

Function to view detailed info with recommended actions and to perform step-by-step operation manually (when an alarm is triggered during an ATC operation)



Addition of Optional Block Skip

In addition to the OPTIONAL BLOCK SKIP of the operation panel, the function to skip a specific block selected in the machining program

CONVENIENT OPERATION

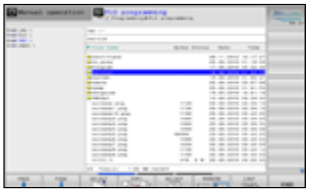
HEIDENHAIN TNC620

Superior hardware specifications

The TNC 620 features optimized motion control, short block processing times and special control strategies. Together with its uniform digital design and its integrated digital drive control (including inverters), it enables you to achieve high machining speeds and the best possible contour accuracy.

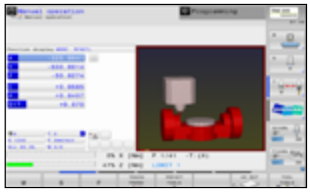
- 15.6" display
- 21GB Storage memory
- 1024 look ahead blocks
- High user convenience with folder structure data management

Conversational convenient function



Data are controlled in the folder structure; convenient communication via USB devices

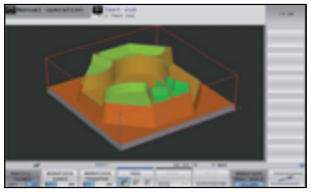
KinematicOpt & KinematicComp option (Touch probe cycle for automatic measurement)



Collision protection system option

Adaptive feed control option

Various built-in pattern cycles for a wider scope of application (Software standard)



Graphic simulation

NUMERIC CONTROL SPECIFICATIONS

HEIDENHAIN

Item		Specifications	TNC620 Mynx series
Controlled axis	Controlled axis		3 (X,Y,Z)
	Simultaneously controlled axis		4 axis
Data input/output	USB memory input/output		●
Interface function	Embedded ethernet		●
Feed function	Look-ahead	5000 blocks	●
Axis compensation	KinematicsOpt	Automatic measurement and optimization of machine kinematics	○
Collision monitoring	Dynamic collision monitoring (DCM)		X
Network	MTConnect		✪
Others	Display unit	15.1 inch TFT color flat panel	●
		15.1 inch TFT color with Touch Panel	○
		19 inch TFT color flat panel	○
		19 inch TFT color with Touch Panel	○
	Part program storage size & number of registerable programs	21GB	X
		1.8GB	●

● *Standard* ○ *Optional* X *Not Available* ✪ *Available*

CONVENIENT OPERATION

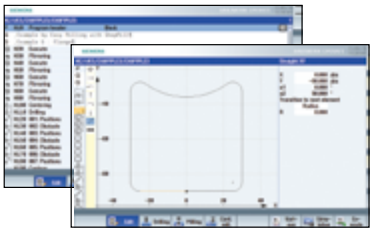
SIEMENS 828D

15.6” screen + new operation panel

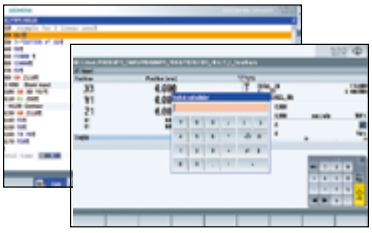
The newly-designed operation panel improves the customer convenience by incorporating and using common-design buttons and layouts, and includes the familiar QWERTY keyboard for fast and easy operation.

- 15.6" display
- 10MB high capacity user memory
- USB & ethernet (standard)
- QWERTY keyboard (standard)
- High-speed calculation and simulation can be fulfilled by improved processor functionality

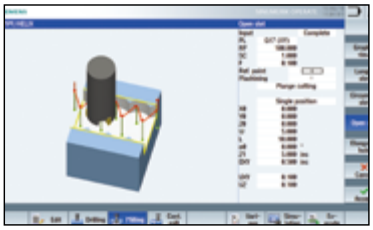
Conversational convenient function



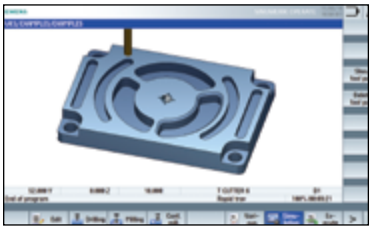
Shop Mill Part Programming



Smart function



Advanced program language programGUIDE



Simulation and machining contour monitoring

Side screen widget

NUMERIC CONTROL SPECIFICATIONS

SIEMENS

	Item	Specifications	S840D Mynx	S828D Mynx
Controlled axis	Controlled axes	-	3 axis	3 axis
	Simultaneously controlled axes	-	3 axis	3 axis
Data input/output	Memory card input/output	(Local drive)	●	X
	USB memory input/output		●	X
Interface function	Ethernet	(X130)	●	●
Operation	On network drive	(without EES option, Extcall)	●	○
	On USB storage medium, e.g. memory stick	(without EES option, Extcall)	●	●
Program input	Workpiece coordinate system	G54 - G57	●	●
	Addition of workpiece coordinate system	G505 - G599	●	●
Interpolation & Feed function	Advanced surface		●	●
	Top surface		○	○
	Look ahead number of block	S/W version 4.8	1000	450
Programming & Editing function	3D simulation, finished part		●	●
	Simultaneous recording		●	●
	Measure kinematics		X	X
	DXF Reader for PC integrated in SINUMERIK Operate		○	○
Operation Guidance Function	ShopMill		●	●
	EZ Work		●	●
Setting and display	Operation via a VNC viewer		●	●
Network	MTConnect		✪	✪
	OPCUA		○	○
Etc. function	15.6" color display with touch screen		●	●
	19" color display without touch screen		○	X
	21.5" color display with touch screen		○	X
	CNC user memory	10 MB	●	●
	Expansion by increments	2 ~ 12 MB	○	○
	Collision avoidance		○	X
	Collision avoidance ECO (machine, working area)		○	X

● *Standard* ○ *Optional* X *Not Available* ✪ *Available*

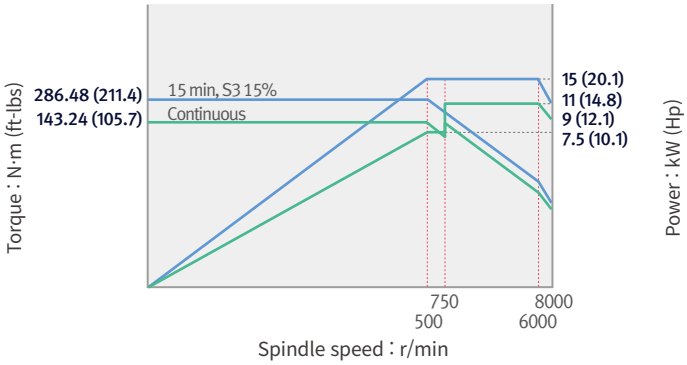
POWER | TORQUE

FANUC

Mynx 5400 Ⅱ , Mynx 6500 Ⅱ , Mynx 7500 Ⅱ

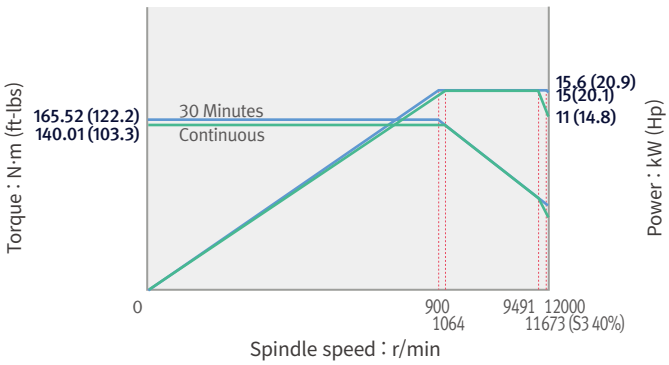
8000 r/min, Direct

Motor power : 15/11 kW (20.1/14.8 Hp)
Torque : 286.5 N·m (211.4 ft-lbs)



12000 r/min, Direct option

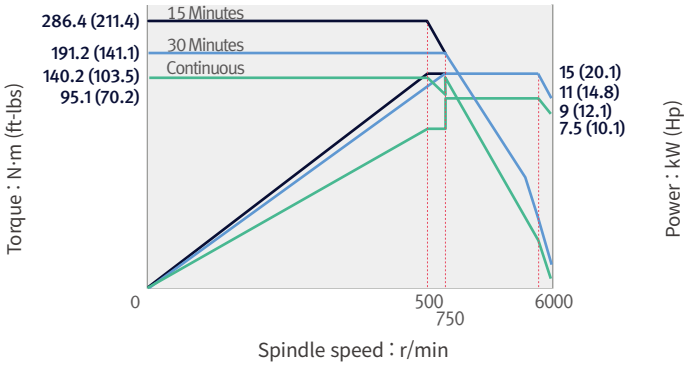
Motor power : 15.6 kW (20.9 Hp)
Torque : 165.5 N·m (122.1 ft-lbs)



Mynx 5400/50 Ⅱ , Mynx 6500/50 Ⅱ

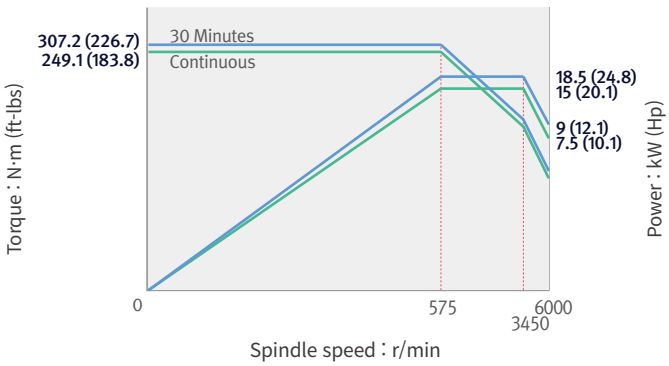
6000 r/min, Belt

Motor power : 15/11 kW (20.1/14.8 Hp)
Torque : 286.4 N·m (211.4 ft-lbs)



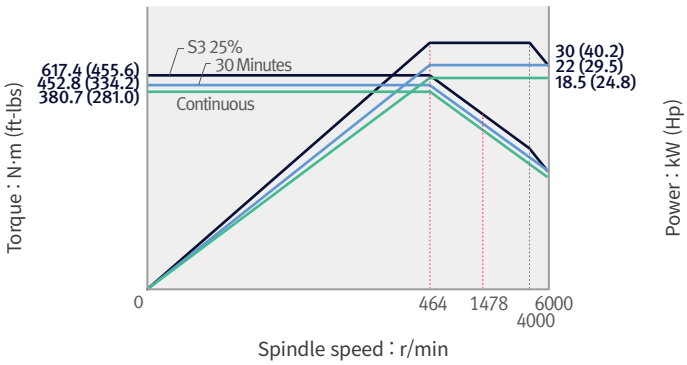
6000 r/min, Belt option

Motor power : 18.5/15 kW (24.8/20.1 Hp)
Torque : 307.2 N·m (226.7 ft-lbs)



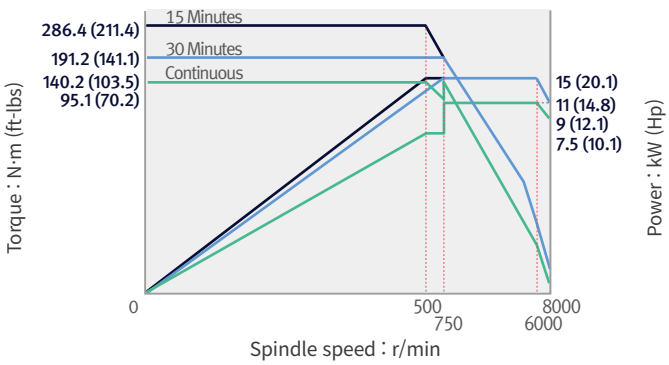
6000 r/min, Gear option

Motor power : 30/18.5 kW (40.2/24.8 Hp)
Torque : 617.4 N·m (455.6 ft-lbs)



8000 r/min, Belt option

Motor power : 15/11 kW (20.1/14.8 Hp)
Torque : 286.4 N·m (211.4 ft-lbs)



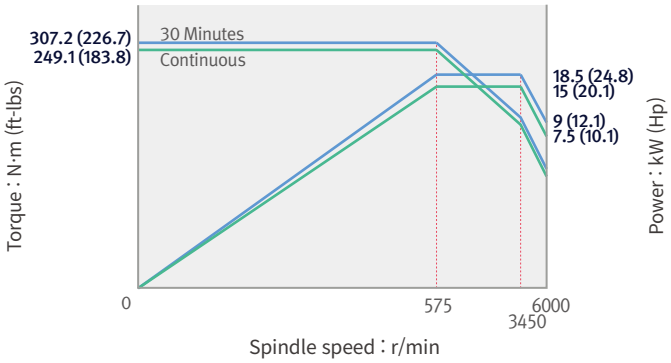
POWER | TORQUE

FANUC

Mynx 7500/50 II

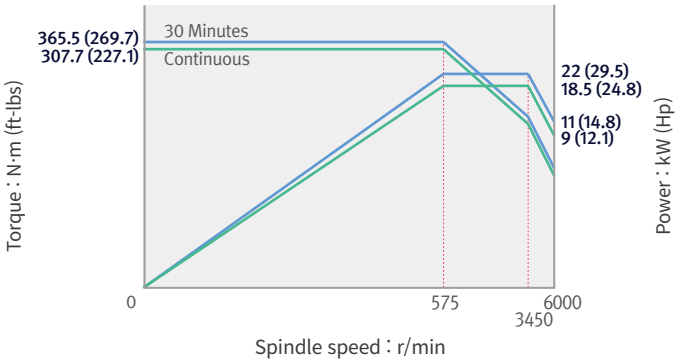
6000 r/min, Belt

Motor power : 18.5/15 kW (24.8/20.1 Hp)
Torque : 307.2 N·m (226.7 ft-lbs)



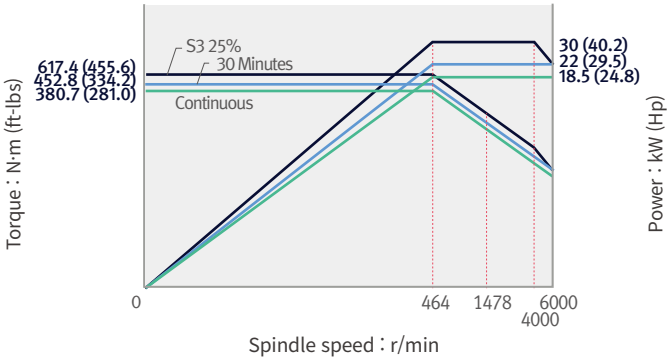
6000 r/min, Belt option

Motor power : 22/18.5 kW (29.5/24.8 Hp)
Torque : 365.5 N·m (269.7 ft-lbs)



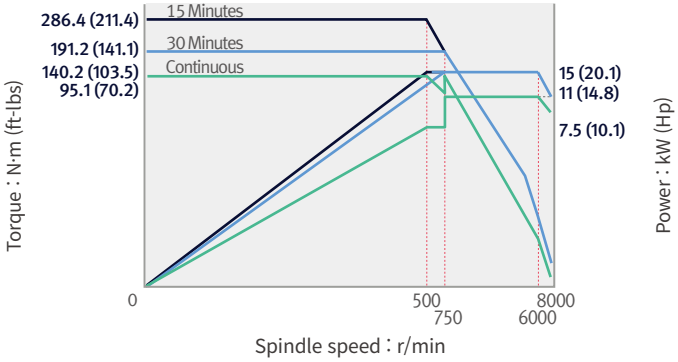
6000 r/min, Gear option

Motor power : 30/18.5 kW (40.2/24.8 Hp)
Torque : 617.4 N·m (455.6 ft-lbs)



8000 r/min, Belt option

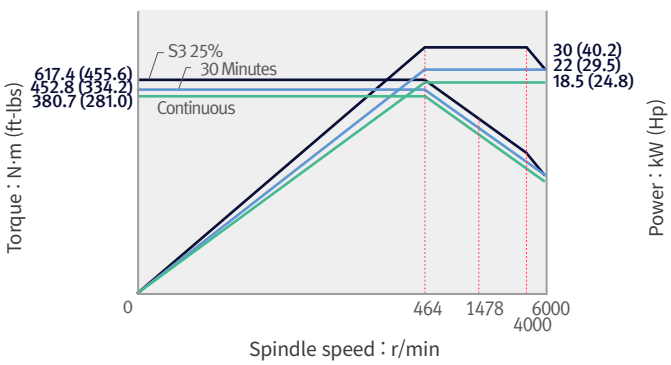
Motor power : 15/11 kW (20.1/14.8 Hp)
Torque : 286.4 N·m (211.4 ft-lbs)



Mynx 9500

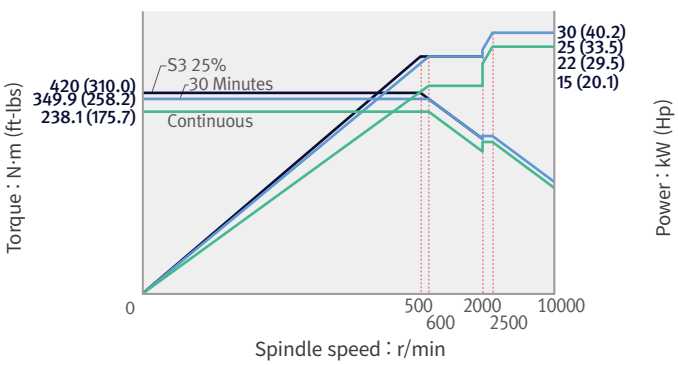
6000 r/min, Gear

Motor power : 30/18.5 kW (40.2/24.8 Hp)
Torque : 617.4 N·m (455.6 ft-lbs)



10000 r/min, Built in option

Motor power : 30/25 kW (40.2/33.5 Hp)
Torque : 420 N·m (310.0 ft-lbs)

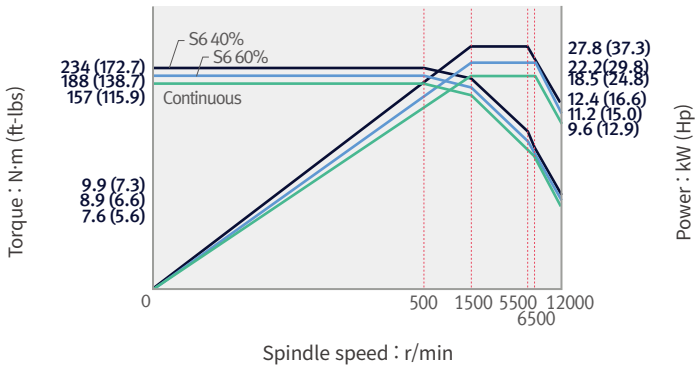


POWER | TORQUE

SIEMENS

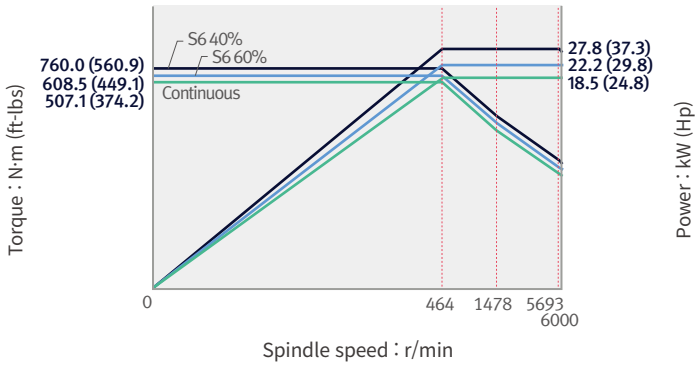
12000 r/min, Direct

Motor power : 27.8 /18.5 kW (37.3/24.8 Hp)
Torque : 234.0 N·m (172.7 ft-lbs)



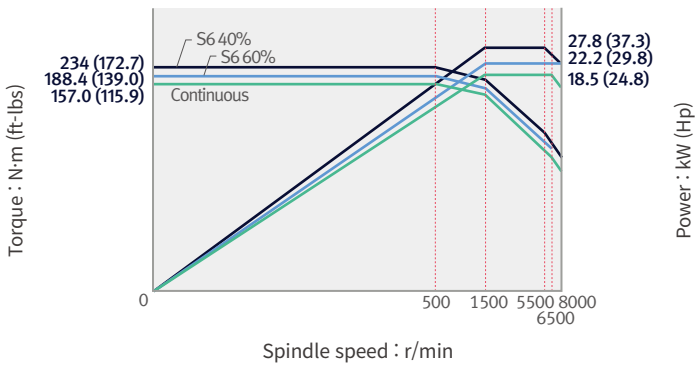
6000 r/min, Gear

Motor power : 27.8 /18.5 kW (37.3/24.8 Hp)
Torque : 760.0 N·m (560.9 ft-lbs)



8000 r/min, Belt

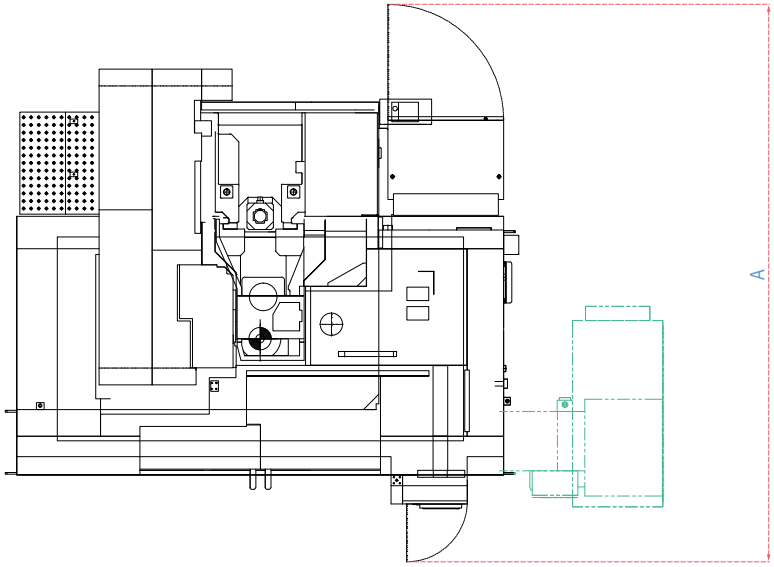
Motor power : 27.8 /18.5 kW (37.3/24.8 Hp)
Torque : 234.0 N·m (172.7 ft-lbs)



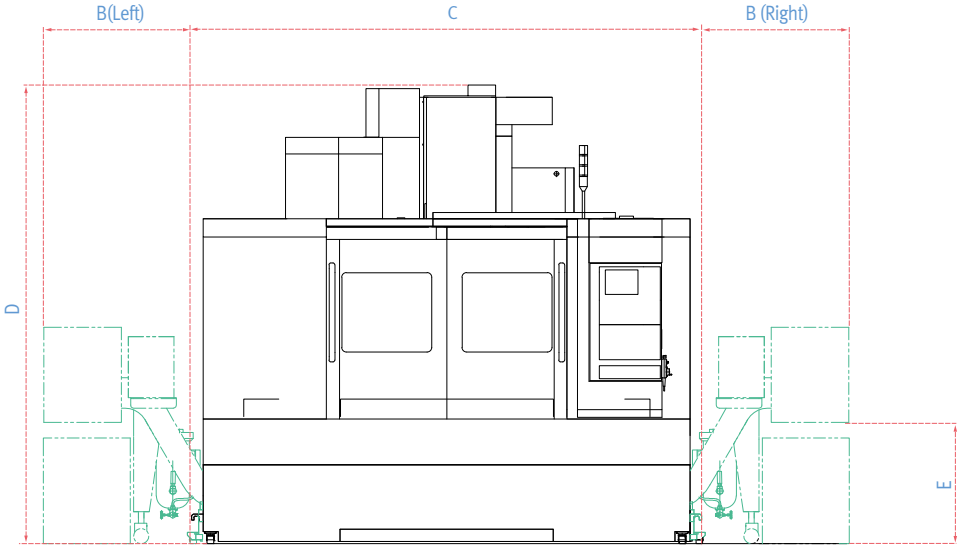
DIMENSIONS

Units : mm (inch)

TOP



FRONT



	A (Max. machine length)	B* (Additional width to accommodate the side chip conveyor)	C (Max. machine width)	D (Max. machine height)	E (Height from the floor to the chip outlet)
Mynx 5400 Ⅱ	3450 (135.8)	Left & Right : 930 (36.6)	3350 (131.9)	3020 (118.9)	830 (32.7)
Mynx 5400/50 Ⅱ	3450 (135.8)	Left & Right : 930 (36.6)	3350 (131.9)	2920 (115.0)	830 (32.7)
Mynx 6500 Ⅱ	3670 (144.5)	Left & Right : 930 (36.6)	3350 (131.9)	3110 (122.4)	830 (32.7)
Mynx 6500/50 Ⅱ	3670 (144.5)	Left & Right : 930 (36.6)	3350 (131.9)	3020 (118.9)	830 (32.7)
Mynx 7500 Ⅱ	4410 (173.6)	Left & Right : 1060 (41.7)	3900 (153.5)	3230 (127.2)	980 (38.6)
Mynx 7500/50 Ⅱ	4680 (184.3)	Left & Right : 1060 (41.7)	4050 (159.4)	3300 (129.9)	980 (38.6)
Mynx 9500	5350 (210.6)	Left & Right : 1170 (46.1)	6560 (258.3)	3600 (141.7)	770 (30.3)

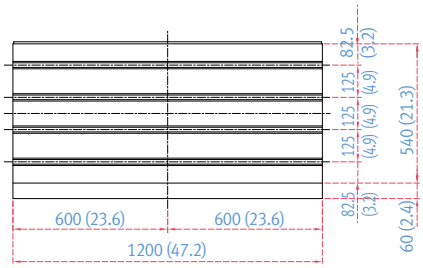
** Contact DN Solutions for more information to rear chip conveyor.*

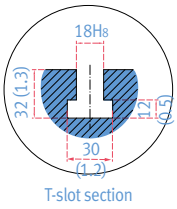
** Some peripheral equipment can be placed in other places*

TABLE DIMENSIONS

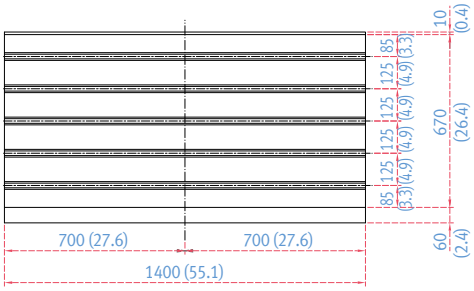
Mynx 5400 Ⅱ , Mynx 5400/50 Ⅱ

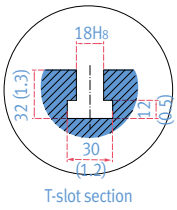
Units : mm (inch)



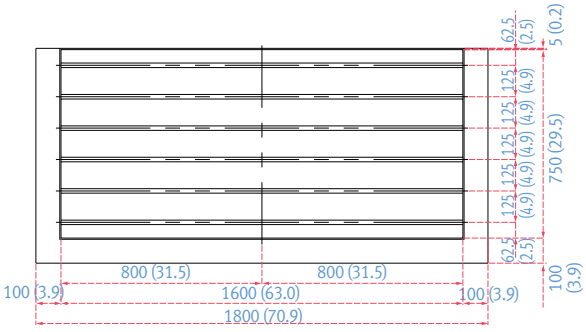


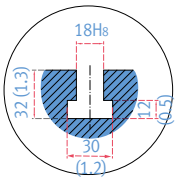
Mynx 6500 Ⅱ , Mynx 6500/50 Ⅱ



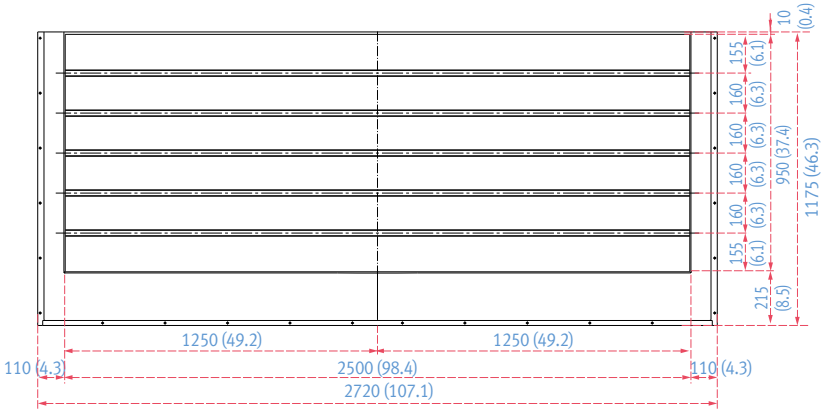


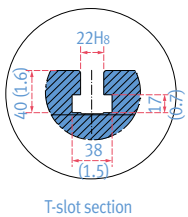
Mynx 7500 Ⅱ Mynx 7500/50 Ⅱ





Mynx 9500





MACHINE SPECIFICATIONS

Description			Unit	Mynx 5400 Ⅱ	Mynx 5400/50 Ⅱ	Mynx 6500 Ⅱ	Mynx 6500/50 Ⅱ	Mynx 7500 Ⅱ	Mynx 7500/50 Ⅱ	Mynx 9500
Travels	Travel distance	X axis	mm (inch)	1020 (40.2)		1270 (50.0)		1525 (60.0)		2500 (98.4)
		Y axis	mm (inch)	550 (21.7)		670 (26.4)		770 (30.3)		950 (37.4)
		Z axis	mm (inch)	530 (20.9)		625 (24.6)		625 (24.6)		850 (33.5)
	Distance from spindle nose to table top		mm (inch)	150 ~ 680 (5.9~26.8)	200 ~ 730 (7.9~28.7)	150 ~ 775 (5.9~30.5)	200 ~ 825 (7.9~32.4)	150 ~ 775 (5.9~30.5)	200 ~ 825 (7.9~32.4)	200 ~ 1000 (7.9~39.4)
Table	Table size		mm (inch)	1200 x 540 (47.2 x 21.3)		1400 x 670 (55.1 x 26.4)		1600 x 750 (63.0 x 29.5)		2500 x 950 (98.4 x 37.4)
	Table loading capacity		kW (Hp)	1000 (1341.0)		1300 (1743.3)		1500 (2011.5)		3500 (4693.5)
	Table surface type		mm	T-SLOT (4-125 x 18H8)		T-SLOT (5-125 x 18H8)		T-SLOT (6-125 x 18H8)		T-SLOT (5-160 x 22H8)
Spindle	Max. spindle speed	Direct	r/min	8000 {12000}	-	8000 {12000}	-	8000 {12000}	-	-
		Belt	r/min	-	6000 {6000} {8000}	-	6000 {6000} {8000}	-	6000 {6000} {8000}	-
		Gear	r/min	-	{6000}	-	{6000}	-	{6000}	6000
		Built in	r/min	-	-	-	-	-	-	{10000}
	Taper		-	ISO #40	ISO #50	ISO #40	ISO #50	ISO #40	ISO #50	ISO #50
	Spindle power	Direct	kW (Hp)	15/11 {15.6} (20.1/14.8 {20.9})	-	15/11 {15.6} (20.1/14.8 {20.9})	-	15/11 {15.6} (20.1/14.8 {20.9})	-	-
		Belt	kW (Hp)	-	15/11 {18.5/15} {15/11} (20.1/14.8 {24.8/20.1} {20.1/14.8})	-	20/18.5 {18.5/18.5}{15/11} (26.8/24.8 {24.8/24.8} {20.1/14.8})	-	18.5/15 {22/18.5}{15/11} (24.8/18.5 {29.5/24.8} {20.1/14.8})	-
		Gear	kW (Hp)	-	{30/18.5} ({40.2/24.8})	-	{30/18.5} ({40.2/24.8})	-	{30/18.5} ({40.2/24.8})	30/18.5 (40.2/24.8)
		Built in	kW (Hp)	-	-	-	-	-	-	{30/25} ({40.2/33.5})
	Max. spindle torque	Direct	N·m (ft-lbs)	286.5 {165.5} (211.4 {122.1})	-	286.5 {165.5} (211.4 {122.1})	-	286.5 {165.5} (211.4 {122.1})	-	-
		Belt	N·m (ft-lbs)	-	286.4 {307.2}{286.4} (211.4 {226.7}{211.4})	-	286.4 {307.2}{286.4} (211.4 {226.7}{211.4})	-	307.2 {365.5} {286.4} (226.7 {269.7} {211.4})	-
		Gear	N·m (ft-lbs)	-	{617.4} ({455.6})	-	{617.4} ({455.6})	-	{617.4} ({455.6})	617.4 (455.6)
		Built in	N·m (ft-lbs)	-	-	-	-	-	-	{420} ({310.0})
Feedrates	Rapid traverse rate	X axis	N·m (ft-lbs)	30 (22.1)						16 (11.8)
		Y axis	N·m (ft-lbs)	30 (22.1)						16 (11.8)
		Z axis	N·m (ft-lbs)	24 (17.7)						16 (11.8)
Automatic Tool Changer	Rapid traverse rate	Tool shank	-	BT 40 {CAT40 /DIN40}	BT 50 {CAT50 /DIN50}	BT 40 {CAT40 /DIN40}	BT 50 {CAT50 /DIN50}	BT 40 {CAT40 /DIN40}	BT 50 {CAT50 /DIN50}	BT 50 {CAT50 /DIN50}
		Pull stud	-	PS806	P50T-1 45deg	PS806	P50T-1 45deg	PS806	P50T-1 45deg	P50T-1 45deg
	Tool storage capa.		ea	30 {40}	24	30 {40}	24 {30}	30 {40}	24 {40}	30 {40}
	Max. tool diameter	Continous	mm (inch)	80 {76} (3.1 {3.0})	125 (4.9)	80 {76} (3.1 {3.0})	125 (4.9)	80 {76} (3.1 {3.0})	125 (4.9)	125 (4.9)
		Without Adjacent Tools	mm (inch)	125 (4.9)	220 (8.7)	125 (4.9)	220 (8.7)	125 (4.9)	220 (8.7)	220 (8.7)
	Max. tool length		mm (inch)	300 (11.8)	350 (13.8)	300 (11.8)	350 (13.8)	300 (11.8)	350 (13.8)	350 (13.8)
	Max. tool weight		kg (lb)	8 (17.6)	20 (44.1)	8 (17.6)	20 (44.1)	8 (17.6)	20 (44.1)	20 (44.1)
	Max. tool moment		N·m (ft-lbs)	5.88 (4.3)	22 (16.2)	5.88 (4.3)	22 (16.2)	5.88 (4.3)	22 (16.2)	22 (16.2)
	Tool seletion			MEMORY RANDOM						
	Tool change time (Tool-to-tool)		sec	1.3	2.5	1.3	2.5	1.3	2.5	2.5
	Tool change time (Chip-to-chip)		sec	3.7	5.5	3.7	5.5	3.7	5.5	6.67
Power source	Electric power supply (rated capacity)	Direct	kVA	32.2 {44.4}	-	35.1 {47.3}	-	38.5 {50.7}	-	-
		Belt	kVA	-	36.1 {36.1} {40}	-	39.4 {44.6} {48.4}	-	47.3 {51.8} {42.9}	-
		Gear	kVA	-	{47.7}	-	{48.4}	-	{51.8}	47.0
		Built in	kVA	-	-	-	-	-	-	{54.2}
	Compressed air supply		Mpa	0.54						
Tank capacity	Coolant tank capacity		L	420				470		500
Machine Dimensions	Height		mm (inch)	F_3012 (118.6) H/S_3117 (122.7)	2920 (115.0)	F_3107 (122.3) H/S_3216 (126.6)	3016 (118.7)	F_3227 (127.0) H/S_3337 (131.4)	3292 (129.6)	3598 (141.7)
	Length		mm (inch)	2467 (97.1)	2467 (97.1)	2692 (106.0)	2692 (106.0)	3900 (153.5)	3900 (153.5)	4315 (169.9)
	Width		mm (inch)	3350 (131.9)	3350 (131.9)	3350 (131.9)	3350 (131.9)	4050 (159.4)	4050 (159.4)	6480 (255.1)
	Weight		kg (lb)	7000 (15432.1)	7500 (16534.4)	9000 (19841.3)	9500 (20943.6)	13500 (29762.0)	13500 (29762.0)	23000 (50705.6)
Control	NC system		-	DN Solutions Fanuc i Plus, Fanuc 32i {SIEMENS S828D / HEIDENHAIN TNC 620}						

{ } : Option

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* For more details, please contact DN Solutions.

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

DN SOLUTIONS

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GLOBAL STANDARD
VERTICAL MACHINING CENTER

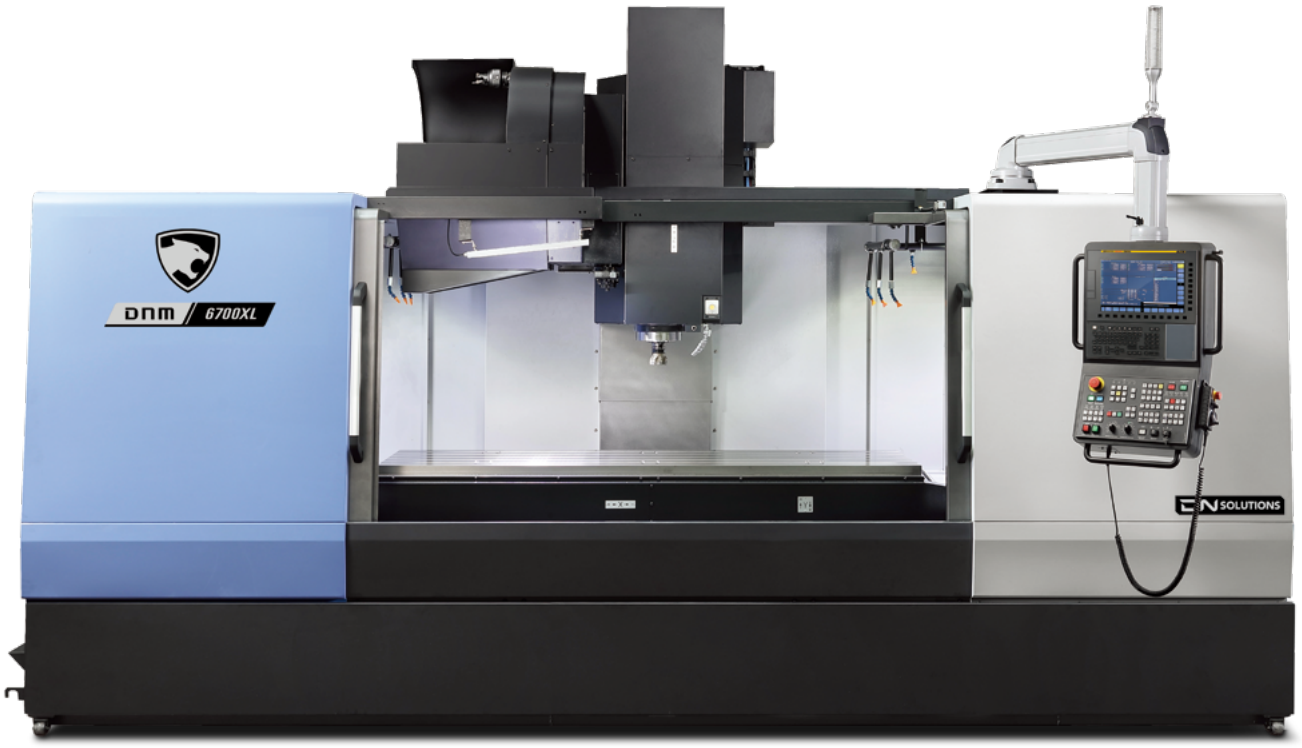
DNM

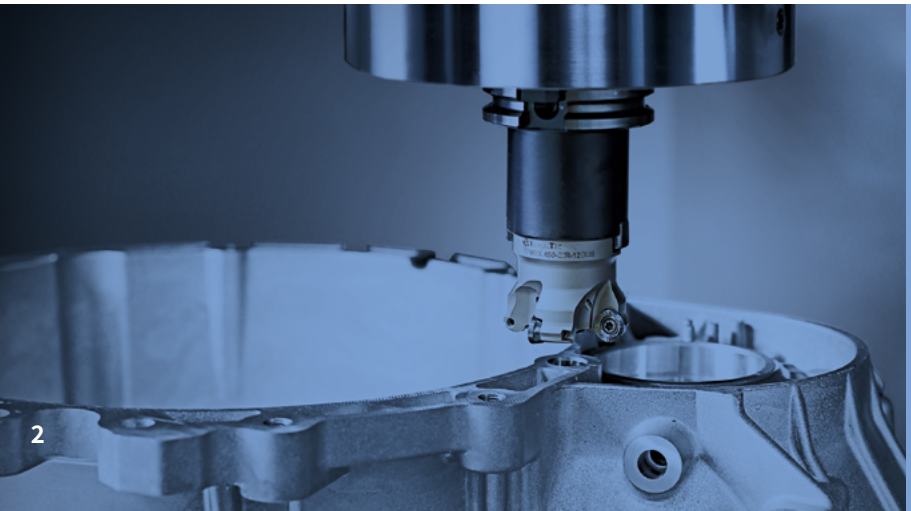
4500/L • **5700**/L • **6700**/L/XL

DN SOLUTIONS

DNM SERIES
4500/L • **5700**/L • **6700**/L/XL

Building on the legacy of the proven and successful DNM and DNM ll series, the new version DNM series boasts even greater reliability and improved performance. In addition, the new series includes grease lubrication to the roller guideways which is more environmentally-friendly. The design concepts underpinning the DNM 4500/5700/6700 series are high speed, high rigidity and suitability for all applications.





Standard features include the largest machining envelope in its class, direct coupled spindles, roller guideways and thermal compensation to deliver high precision.

A HIGHLY VERSATILE VERTICAL MACHINING CENTER WITH THE LARGEST MACHINING ENVELOPE IN ITS CLASS

- DNM series machines have larger tables with increased Y-axis travels and increased maximum table loads.
- DNM machines with longer X-axes (i.e.,DNM 4500L, 5700L, 6700L/XL), are available.

STANDARD DIRECT-COUPLED SPINDLE FOR HIGHER PRODUCTIVITY

- Directly coupled spindles reduce vibration and noise, thereby improving the machines' performance and making them more environmentally-friendly compared to belt driven machines.
- High-torque and high speed spindles are available for the machining of different materials.
- Higher productivity is achieved by reducing tool change times and by improving acceleration and deceleration rates.

AN ENVIRONMENTALLY-FRIENDLY MACHINE DESIGNED FOR STABLE AND EASY OPERATION

- Thermal error compensation system supplied as standard optimizes machine accuracy by reducing the effects of heat build-up during extended periods of operation.
- The EZ work function can be checked in the pop-up window on the NC main screen for convenience.
- Grease lubrication for the axis roller guideways is a standard feature and helps reduce contamination.

BASIC STRUCTURE

Designed with a highly stable and rigid structure, the new DNM series provides customers with machines with different Y-axis capabilities (from 450mm to 670mm), enabling the machining of a wider range of workpieces.

Travel distance (X / Y / Z axis)

DNM 4500/L

800{910} / 450 / 510 mm

31.5{35.8} / 17.7 / 20.1 inch

DNM 5700/L

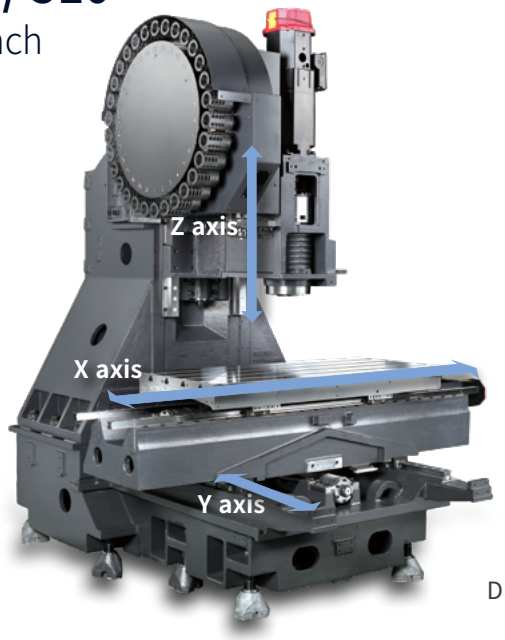
1050{1300} / 570 / 510 mm

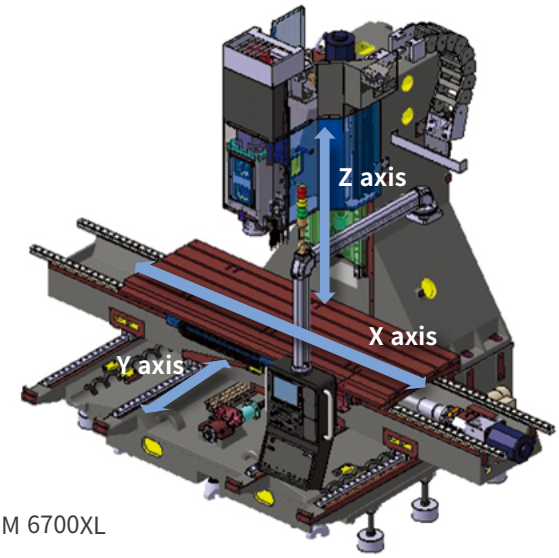
41.3{51.2} / 22.4 / 20.1 inch

DNM 6700/L/XL

1300{1500/2100} / 670 / 625 mm

51.2{59.1/82.7} / 26.4 / 24.6 inch





DNM 6700XL

Axis system

Environmentally-friendly grease lubrication is adopted as standard for all the axis feed systems, and roller-type LM guides are used to enhance rigidity.

Rapid traverse rate (X / Y / Z axis)

DNM 4500 / 5700 / 6700 / 6700L

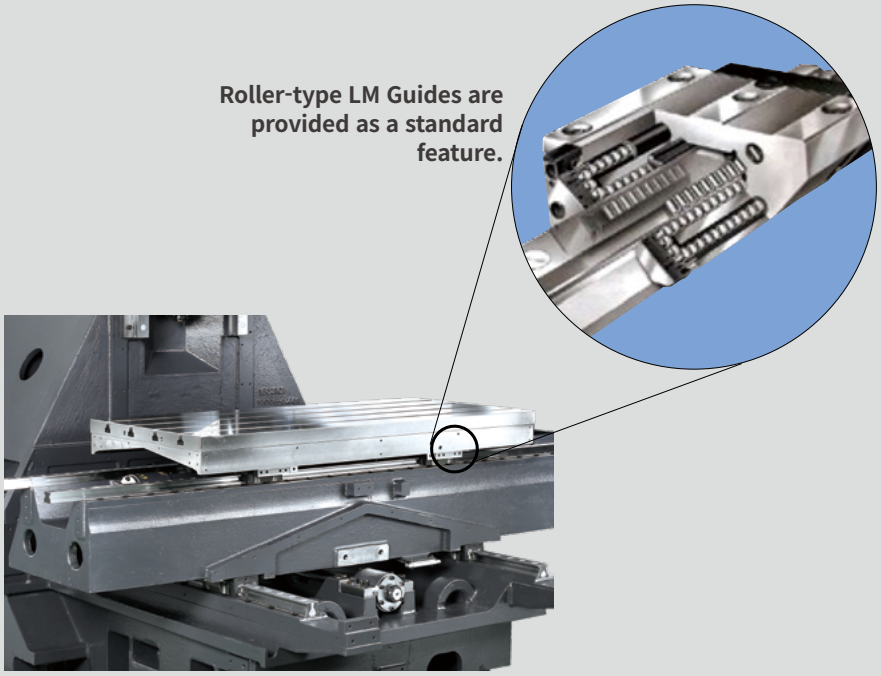
36 / 36 / 30 m/min

(1417.3 / 1417.3 / 1181.1 ipm)

DNM 6700XL

30 / 30 / 30 m/min

(1181.1 / 1181.1 / 1181.1 ipm)



Roller-type LM Guides are provided as a standard feature.

Grease lubrication for all axes is a standard feature.

SPINDLE | TABLE

Directly-coupled spindles have been adopted as a standard feature to further reduce vibration and noise and enhance productivity, increase accuracy and improve the working environment. High- torque and high speed spindle options for machining different materials are available.

Max. spindle speed

8000 r/min

12000 r/min option

15000 r/min option

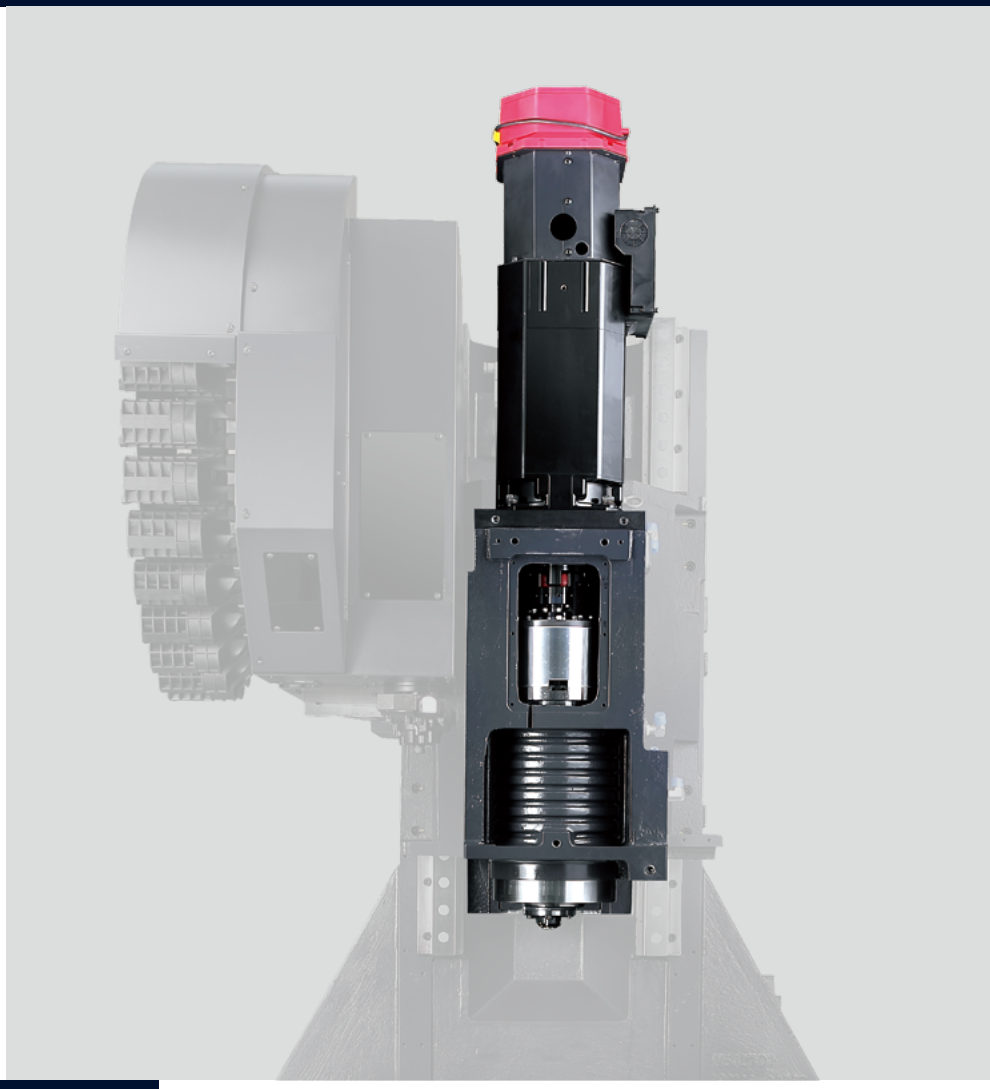
Max. spindle motor power

18.5 kW 24.8 Hp

Max. spindle motor torque

117.8 N·m 86.9 lbf-ft
(8000 r/min, 12000 r/min, 15000 r/min)

286 N·m 211.1 lbf-ft option
(8000 r/min high torque version)



TABLE

Increased table sizes and table load capacities are provided within the same floor space of the previous models.

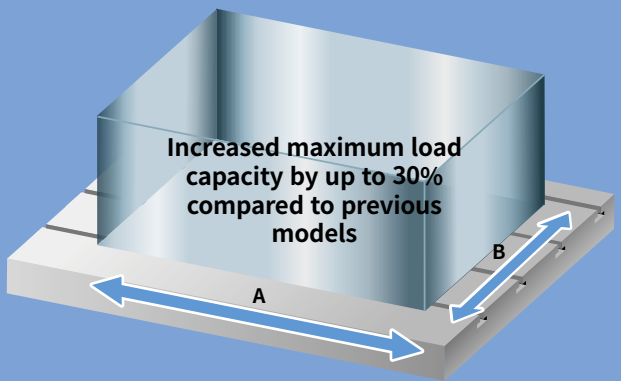


Table size (A x B)

DNM 4500/L
1000/1050 x **450** mm
39.4{41.3} x 17.7 inch

DNM 5700/L
1300/1500 x **570** mm
51.2{59.1} x 21.3 inch

DNM 6700/L/XL
1500/1600/2200 x **670** mm
59.1{63.0/86.6} x 26.4 inch

Max weight on Table

DNM 4500/4500L
600 kg 1322.8 lb

DNM 5700/5700L
1000 kg 2204.6 lb

DNM 6700/6700L/6700XL
1300 kg 2866.0 lb

MACHINING PERFORMANCE

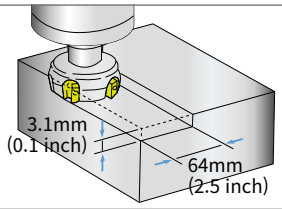
The DNM series delivers the best cutting performance in its class and ensures highest levels of productivity.

Cutting performance

High-rigidity machining can be undertaken with speed and precision.

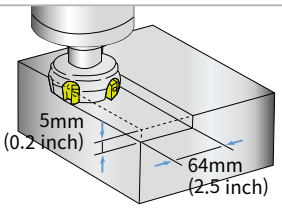
Face mill (ø80mm (3.15 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
527 (32.2)	1500	2700 (106.3)



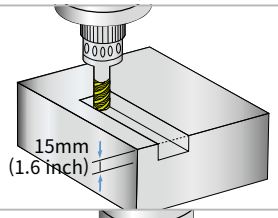
Face mill (ø80mm (3.15 inch)) Aluminium(AL6061)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
1901 (116.0)	1500	5940 (233.9)



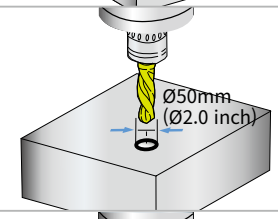
End mill (ø30mm (i.2 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
48 (2.9)	222	107 (4.2)



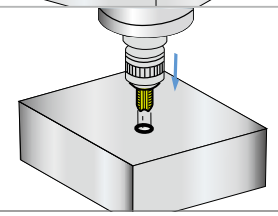
U-Drill (ø50mm (2.0 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
501 (30.6)	1500	255 (10.0)



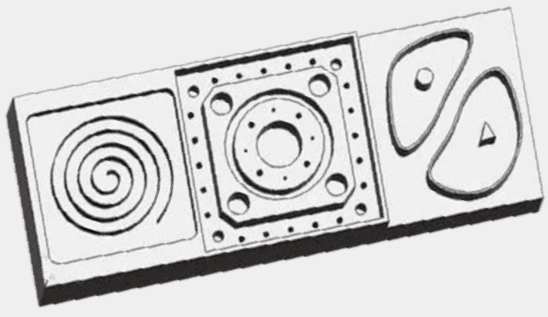
Tap Carbon steel (SM45C)

Tap size mm	Spindle speed r/min	Feedrate mm/min (ipm)
M 36 x P 4.0	221	884 (34.8)



*The results, indicated in this catalogue, are provided as examples only. They may not always be achieved owing to different cutting and environmental conditions.

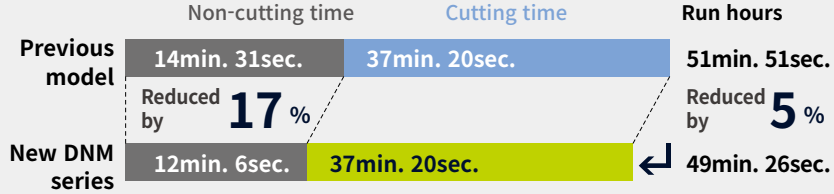
High Productivity



*The results, indicated in this catalogue, are provided as examples only. They may not always be achieved owing to different cutting and environmental conditions.

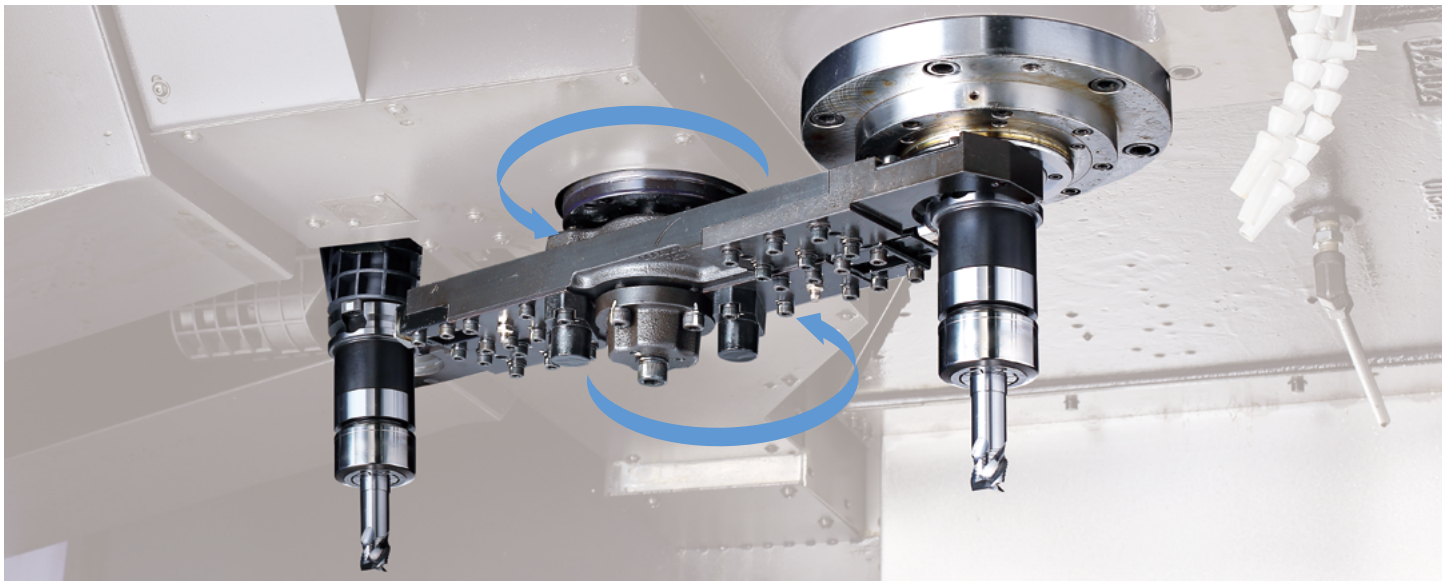
Sample work

Material	Aluminium (AL6061)
Material size	561 x 210 x 30 mm (22.1 x 8.3 x 1.2 inch)
Using tools	18 ea



TOOL CHANGE SYSTEM

Tool changers have been optimized to reduce non cutting times. The highly-reliable tool magazine can accommodate up to 30 tools as standard.



30, 40 ea

60 ea

Tool to Tool time

1.2 S

Chip to Chip* time

3.2 S

* The Chip-to-Chip time has been tested in accordance with DN Solutions's strict testing procedures, but may vary depending on the user's operating conditions.

Tool storage capacity

30 ea

40 ea option

60 ea option

STANDARD | OPTIONAL SPECIFICATIONS

Various optional features are available to meet customers' specific machining requirements and applications.

Description	Features		DNM 4500/L	DNM 5700/L	DNM 6700/ 6700L/XL
Spindle	8000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	●	●	X
		18.5/15 (24.8/20.1), 117.8(86.9)_FANUC	X	X	●
		15/11 (20.1/14.8), 286(211.1)_FANUC	○	○	○
	12000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	○	○	○
		17/10 (22.8/13.4), 108.6(80.1)_HEIDENHAIN	○	○	X
		32/15 (42.9/20.1), 203.7(150.3)_HEIDENHAIN	X	X	○
		16.5/11 (22.1/14.8), 141(104.1)_SIEMENS	○	○	X
		21.8/16.3 (29.2/21.9),150.1(110.8)_SIEMENS	X	X	○
	15000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	○	○	○
		17/10 (22.8/13.4), 108.2 (79.9)_HEIDENHAIN	○	○	○
		16.5/11 (22.1/14.8), 141.3 (104.3)_SIEMENS	○	○	○
Magazine	Tool storage capacity	30 ea	●	●	●
		40 ea	○	○	○
		60 ea	○	○	○
Tool shank type	BIG PLUS BT40		●	●	●
	BIG PLUS CAT40		○	○	○
	BIG PLUS DIN40		○	○	○
Raised column	150 mm (5.9 inch)		○	○	○
	200 mm (7.9 inch)		○	○	○
	300 mm (11.8 inch)		○	○	○
Coolant	FLOOD	0.19 MPa(27.6 psi), 0.4 kW(0.5 Hp)	●	●	●
		0.69 MPa(100.1 psi), 1.8 kW(2.4 Hp)	○	○	○
	TSC**	None	●	●	●
		2 MPa(290.1 psi), 1.5kW(2.0 Hp)	○	○	○
		2 MPa(290.1 psi), 4 kW(5.4 Hp)	○	○	○
		7 MPa(1015.3 psi), 5.5 kW(7.4 Hp)	○	○	○
	FLUSHING		○	○	○
	SHOWER (200 L/min (52.8 gal/min))		○	○	○
Chip disposal	Chip conveyor	Chip pan	●	●	●
		Hinged type (Left/Right/Rear)	○	○	○
		Magnetic scraper type (Left/Right/Rear)	○	○	○
		Screw(AUGER) type (Left/Right)	○	○	○
	Chip bucket		○	○	○
Precision machining option	Linear scale	X / Y / Z axis	○	○	○
	AICC II (200 block)		●	●	●
	SSP (Smooth Surface Package)		○	○	○
Measurement & Automation	Automatic tool measurement	TS27R_RENISHAW	○	○	○
		OTS_RENISHAW	○	○	○
	Automatic tool breakage detection		○	○	○
	Automatic workpiece measurement	OMP60_RENISHAW	○	○	○
	Automatic front door with safety device		○	○	○
Accessories	WORK LIGHT	LED LAMP	●	●	●
	OPERATOR CALL LAMP	3-COLOR SIGNAL TOWER(LED)	●	●	●
	LEVELING BLOCK & BOLT	-	●	●	●
	SMART THERMAL CONTROL	SENSORLESS TYPE(ONLY SPINDLE)	●	●	●
	ASSEMBLY & OPERATION TOOLS KIT	-	●	●	●
	4TH AXIS PREPARATION CABLING FOR SERVO/1-PNEUMATIC PIPING	FACTORY READY MADE	○	○	○
	AIR GUN		○	○	○
	Air blower		○	○	○
	Coolant gun		○	○	○
	Mist collector		○	○	○
Customized Special Option	ANCHORING (1)	SLIDE CLAMP & CHEMINCAL ANCHOR BOLT	○	○	○
	TSA (2)	0.54	○	○	○
	TOOL TYPE	HSK63A	○	○	○
	ATC AUTO SHUTTER	30TOOL / 40TOOL	○	○	○
	ATC FULL COVER	30TOOL / 40TOOL	○	○	○
	Drum chipconveyor	HINGE TYPE	○	○	○
		SCRAPER TYPE	○	○	○
	Oil lubrication	X, Y, Z AXIS	○	○	○
	20 Bar TSC with inverter	50Hz → 60Hz	○	○	○
	FINE DUST PROTECTING PACKAGE (WET MACHINING)	BELLOWS COVER(X/Y/Z)	○	○	○
		PROTECT COVER(X-AXIS)	○	○	○
		BALL SCREW BELLOWS COVER(X/Y)	○	○	○
		GUIDE WAY DOUBLE WIPER	○	○	○
	FINE DUST PROTECTING PACKAGE (DRY MACHINING)	PROTECT COVER(X-AXIS)	○	○	○
		BALL SCREW BELLOWS COVER(X/Y)	○	○	○
		GUIDE WAY DOUBLE WIPER	○	○	○
		AIR OIL SUCTION(ONLY 15k SPINDLE)	○	○	○
		ATC FULL CLOSED COVER	○	○	○
	AUTO TOOL LENGTH MEASUREMEMT	RENISHAW / LTS	○	○	○
	AUTO TOOL BREAKAGE DETECTION	MSC/BK9(NEEDLE TYPE ON MAGAZINE)	○	○	○

※ *Please contact DN Solutions for detailed specification information.*

** *If this option is selected, the TSA(Through Spindle Air) Max.pressure is 0.54MP*

(1) Please refer to foundation drawing in relation to anchoring. If more detailed information is required consult with DN Solutions service

(2) If TSC is not required - TSA can be selected as an option.

● *Standard* ○ *Optional* X *Not applicable*

⚠ Fire Safety Precautions | 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

Grease lubrication system

The standard grease lubrication system eliminates the need for an oil skimmer and reduces lubrication costs by about 60% compared to oil lubrication.

Yearly maintenance cost

Reduced by

Max. 60%

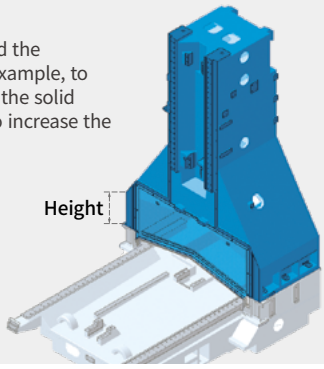
Raised column option

When the distance between the table and the spindle nose needs to be extended, for example, to accommodate a fixture or a rotary table, the solid one-piece raised column can be raised to increase the distance required.

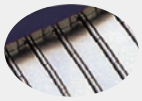
Height

150/200/300 mm

5.9/7.9/11.8 inch

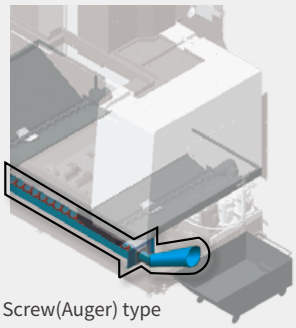


Chip conveyor option



Hinged belt

Magnetic scraper



Screw(Auger) type

Chip conveyor type	Material	Description
Hinged belt	Steel	Hinged belt chip conveyor, which is most commonly used for steel work [for cleaning chips longer than 30mm(1.2inch)], is available as an option.
Magnetic scraper	Cast Iron	Magnetic scraper type chip conveyor, which is ideal for die-casting work [for cleaning small chips], is available as an option.
Screw(Auger) type	Steel	Screw(Auger) type chip conveyor is suitable for minimizing installation space. About 85% floor space is required to install Screw(Auger) type chip conveyor compared to Hinged belt type.

Chip bucket option

Capacity 300 L (79.3 gal)

Hydraulic / Pneumatic fixture line option

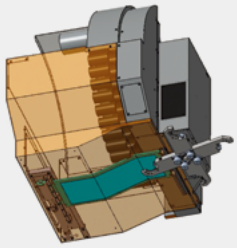
The user should prepare pipelines for hydraulic/pneumatic fixtures whose detailed specifications should be determined through discussions with DN Solutions.

4 axis rotary table option

The high-precision split system with its compact and highly rigid design, and double piston structure enables vertical and horizontal use and delivers a strong clamping force.

ATC shutter door option

An ATC shutter door can be applied instead of the brush mechanism to provide a higher level of protection from potential chip ingress.



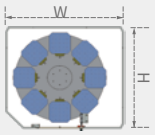
AWC system option

A compact automatic workpiece change system

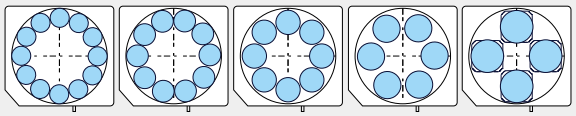
Max. workpiece dimensions	Unit	Count	Max. loading	Max. construction height on the pallet
250 x 250 (9.8x9.8) or ø 300 (11.8)	mm (inch)	12	130kg (286.6lb)	350mm (13.8inch)
320 x 320 (12.6x12.6) or ø 360 (14.2)	mm (inch)	10	250kg (551.1lb)	
350 x 350 (13.8x13.8) or ø 400 (15.7)	mm (inch)	8		
400 x 400 (15.7x15.7) or ø 450 (17.7)	mm (inch)	6		
500 x 500 (19.7x19.7) or ø 550 (21.7)	mm (inch)	4		

Pallet Storage-Table Configuration

Unit : mm (inch)



W X H = 1,900 X 1,700



250 X 250 (9.8 X 9.8) | 320 X 320 (12.6 X 12.6) | 350 X 350 (13.8 X 13.8) | 400 X 400 (15.7 X 15.7) | 500 X 500 (19.7 X 19.7)

DN SOLUTIONS FANUC i PLUS

DN Solutions Fanuc i Plus is optimized for maximizing customer productivity and convenience.

15 inch screen + new operation panel

DN Solutions Fanuc i Plus' operation panel enhances operating convenience by incorporating common-design buttons and layout, and features the Qwerty keyboard for fast and easy operation.

DN Solutions Fanuc i Plus

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

USB & PCMCIA card

QWERTY keyboard

- EZ-guide i standard
- Ergonimic operator panel
- 2MB Memory
- Hot key

iHMI touchscreen option

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.

NUMERIC CONTROL SPECIFICATIONS

FANUC

Item		Specifications	DN Solutions Fanuc i (0i Plus) DNM 4digit
Controlled axis	Controlled axes		3 (X,Y,Z)
	Simultaneously controlled axes		4 axes
	Additional controlled Axis	Add 1 Axis (5th Axis)	●
Data input/output	Fast data server		○
	Memory card input/output		●
	USB memory input/output		●
	Large capacity memory(2GB)*2	Available Option only with 15” Touch LCD (iHMI Only) *2)	○
Interface function	Embedded Ethernet		●
	Fast Ethernet		○
	Enhanced Embedded Ethernet function		●
Operation	DNC operation	Included in RS232C interface.	●
	DNC operation with memory card		●
Program input	Workpiece coordinate system	G52 - G59	●
	Addition of workpiece coordinate system	G54.1 P1 X 48 (48 pairs)	●
	Tool number command		T4 digits
	Tilted working plane indexing command	G68.2 TWP	○
Feed function	AI contour control I	G5.1 Q_, 40 Blocks	X
	AI contour control II	G5.1 Q_, 200 Blocks	●
	AI contour control II	G5.1 Q_, 600 Blocks	X
	AI contour control II	G5.1 Q_, 1000 Blocks *1)	X
	High smooth TCP		X
Operation guidance function	EZ Guidei (Conversational Programming Solution)		●
	iHMI with Machining Cycle	Only with 15” Touch LCD standard *2)	X
	EZ Operation package		●
Setting and display	CNC screen dual display function		●
Network	FANUC MTConnect		✪
	FANUC OPC UA		✪
Others	Display unit	10.4" color LCD	X
		15" color LCD	X
		15" color LCD with Touch Panel	●
	Part program storage size & Number of registerable programs	640M(256KB)_500 programs	X
		1280M(512KB)_1000 programs	X
		2560M(1MB)_1000 programs	X
		5120M(2MB)_1000 programs	●
		10240M(4MB)_1000 programs	X
		20480M(8MB)_1000 programs	X
		2560M(1MB)_2000 programs	X
		5120M(2MB)_4000 programs	X
		10240M(4MB)_4000 programs	X
		20480M(8MB)_4000 programs	X

*1) The number of look-ahead blocks may be changed or limited depending on the peripheral device or the configuration of the internal NC system.
*2) Available Option only with Fanuc i plus iHMI

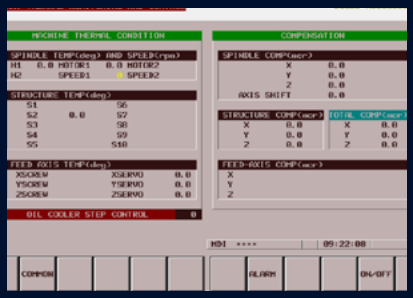
● Standard ○ Optional X N/A ✪ Available
Network: FANUC MT Connect and FANUC OPC UA available.

EZ WORK

The software developed by DN Solutions provides a range of different functions designed for fast, efficient and convenient operation.

EZ work

The EZ work package delivers speed and efficiency. This menu-driven innovation not only helps customers reduce setup times, but also simplifies common tasks and procedures, reducing the potential for errors. EZ work reduces operating time, protects machinery, enhances quality and speeds up maintenance interventions.



Thermal Compensation

A function to maintain high-precision machining quality by analyzing and correcting the amount of thermal displacement of a structure through a temperature sensor

M/G-Code List

Functional description of M code and G code

Tool Management

Function to manage tool information [Tool information / Tool No. / Tool condition (normal, large diameter, worn / damaged, used for the rst time, manual) / Tool name]

Operation Rate

Machine operation history management function by date based on load

Adaptive Feed Control

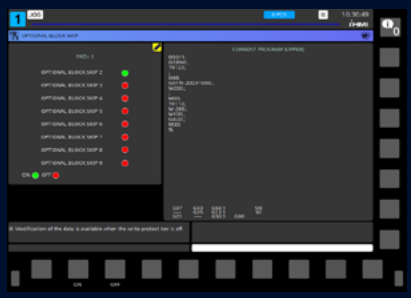
Function to control feedrate so that the cutting can be carried out at a constant load (To adapt to the spindle load set up with constant load feedrate control function)

Spindle Warm Up

A function that assists spindle warm-up for spindle life when the spindle has not been used for a certain period of time

ATC Recovery

Function to view detailed info with recommended actions and to perform step-by-step operation manually (when an alarm is triggered during an ATC operation)



Addition of Optional Block Skip

In addition to the OPTIONAL BLOCK SKIP of the operation panel, the function to skip a specific block selected in the machining program

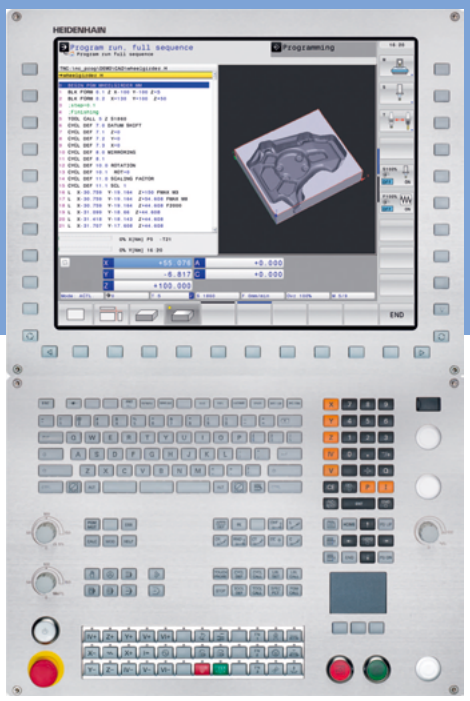
CONVENIENT OPERATION

HEIDENHAIN TNC620

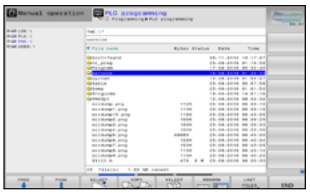
Superior hardware specifications

The TNC 620 features optimized motion control, short block processing times and special control strategies. Together with its uniform digital design and its integrated digital drive control (including inverters), it enables you to achieve high machining speeds and the best possible contour accuracy.

- 15.6" display
- 21GB Storage memory
- 1024 look ahead blocks
- High user convenience with folder structure data management

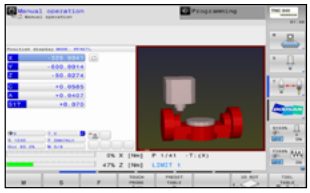


Conversational convenient function



Data are controlled in the folder structure; convenient communication via USB devices

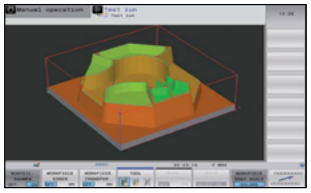
KinematicOpt & KinematicComp option (Touch probe cycle for automatic measurement)



Collision protection system option

Adaptive feed control option

Various built-in pattern cycles for a wider scope of application (Software standard)



Graphic simulation

NUMERIC CONTROL SPECIFICATIONS

HEIDENHAIN

Item		Specifications	TNC620 DNM
Controlled axis	Controlled axis		3 (X,Y,Z)
	Simultaneously controlled axis		4 axis
Data input/output	USB memory input/output		●
Interface function	Embedded ethernet		●
Feed function	Look-ahead	5000 blocks	●
Axis compensation	KinematicsOpt	Automatic measurement and optimization of machine kinematics	○
Collision monitoring	Dynamic collision monitoring (DCM)		X
Network	MTConnect		✪
Others	Display unit	15" color LCD	●
		15" color LCD with touch panel	○
	Part program storage size & number of registerable programs	1.8GB	●

● *Standard* ○ *Optional* X *Not Available* ✪ *Available*

CONVENIENT OPERATION

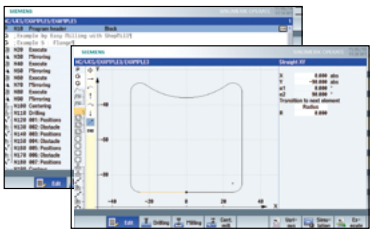
SIEMENS 828D

15.6” screen + new operation panel

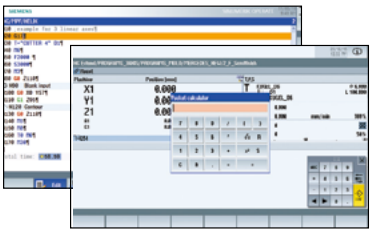
The newly-designed operation panel improves the customer convenience by incorporating and using common-design buttons and layouts, and includes the familiar QWERTY keyboard for fast and easy operation.

- 15.6" display
- 10MB high capacity user memory
- USB & ethernet (standard)
- QWERTY keyboard (standard)
- High-speed calculation and simulation can be fulfilled by improved processor functionality

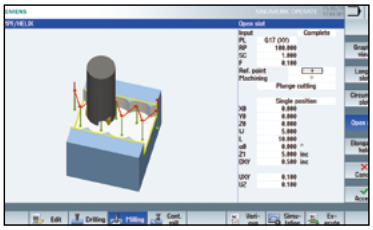
Conversational convenient function



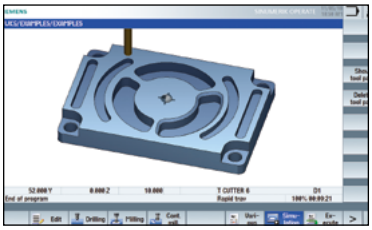
Shop Mill Part Programming



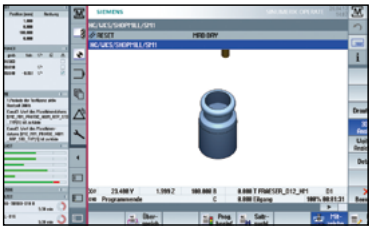
Smart function



Advanced program language programGUIDE



Simulation and machining contour monitoring



Side screen widget

NUMERIC CONTROL SPECIFICATIONS

SIEMENS

	Item	Specifications	S828D DNM
Controlled axis	Controlled axes (제어축수)	-	3축
	Simultaneously controlled axes (동시 제어축수)	-	3축
Data input/output	Memory card input/output	(Local drive)	X
	USB memory input/output		●
Interface function	Ethernet	(X130)	●
Operation	On network drive	(without EES option, Extcall)	○
	On USB storage medium, e.g. memory stick	(without EES option, Extcall)	●
Program input	Workpiece coordinate system	G54 - G57	●
	Addition of workpiece coordinate system	G505 - G599	●
Interpolation & Feed function	Advanced surface		●
	Top surface		○
	Look ahead number of block	S/W version 4.8	450
Programming & Editing function	3D simulation, finished part		●
	Simultaneous recording		●
	Measure kinematics		X
	DXF Reader for PC integrated in SINUMERIK Operate		○
Operation Guidance Function	ShopMill		●
	EZ Work		●
Setting and display	Operation via a VNC viewer		●
Network	MTConnect		✪
	OPCUA		○
Etc. function	15.6" color display with touch screen		●
	19" color display without touch screen		X
	21.5" color display with touch screen		X
	CNC user memory	10 MB	●
	Expansion by increments	2 ~ 12 MB	○
	Collision avoidance		X
	Collision avoidance ECO (machine, working area)		X

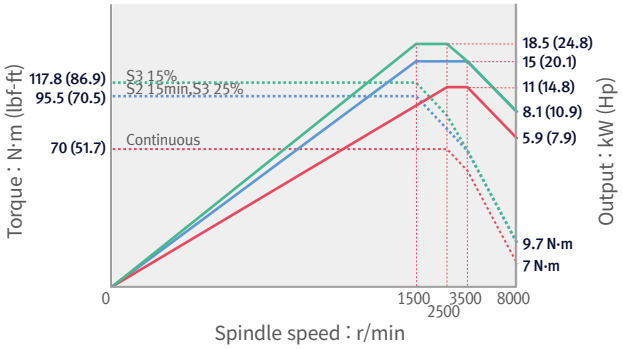
● *Standard* ○ *Optional* X *Not Available* ✪ *Available*

POWER | TORQUE

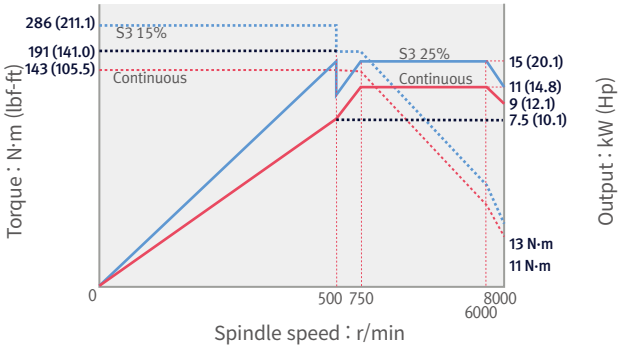
FANUC

DNM 4500/L, DNM 5700/L

8000 r/min
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

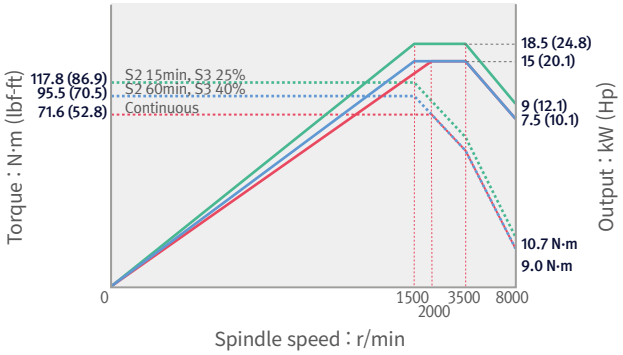


8000 r/min option
Max. spindle power: 15 kW (20.1 Hp)
Max. spindle torque: 286 N·m (211.1 lbf-ft)

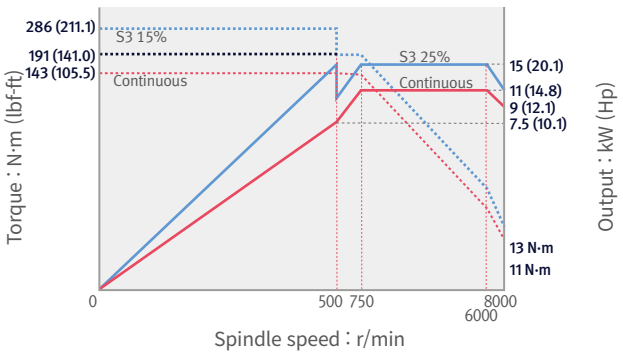


DNM 6700/L/XL

8000 r/min
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

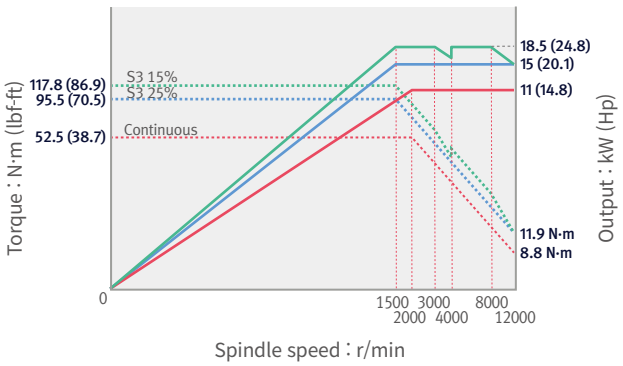


8000 r/min option
Max. spindle power: 15 kW (20.1 Hp)
Max. spindle torque: 286 N·m (211.1 lbf-ft)

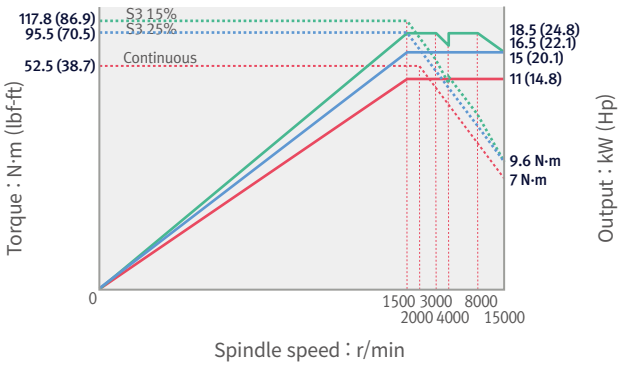


DNM 4500/L, 5700/L, 6700/L/XL

12000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)



15000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)



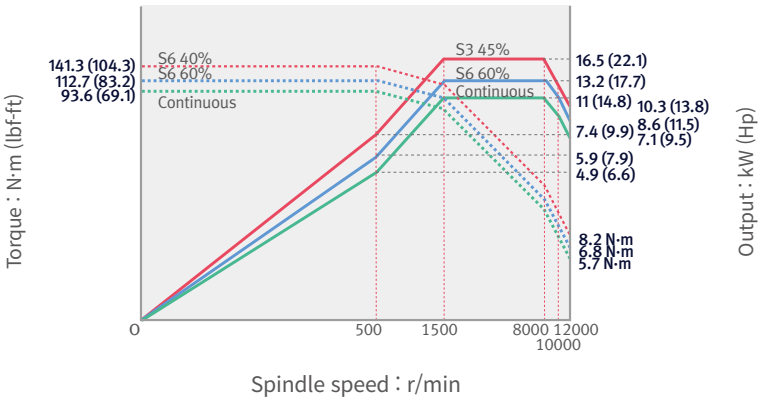
POWER | TORQUE

SIEMENS

DNM 4500/L, DNM 5700/L

12000 r/min

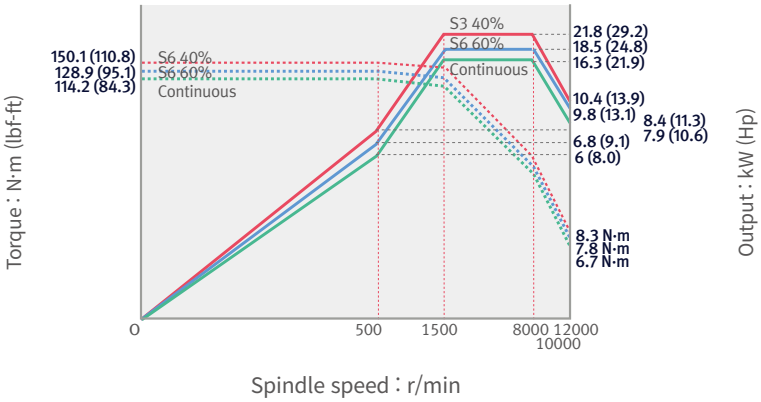
Max. spindle power: 16.5 kW (22.1 Hp)
Max. spindle torque: 141.3 N·m (104.3 lbf-ft)



DNM 6700/L/XL

12000 r/min

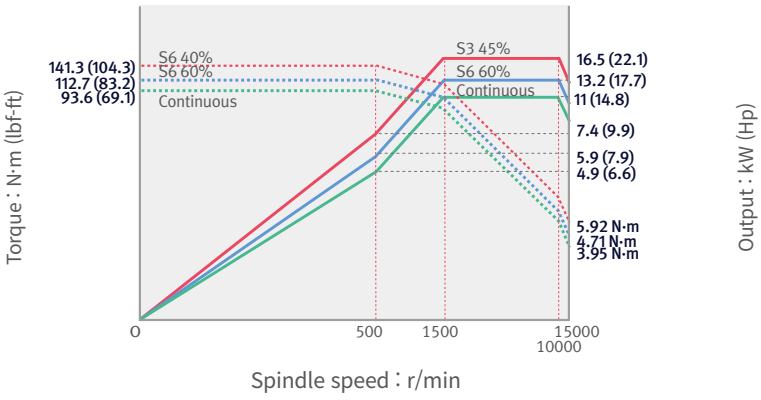
Max. spindle power: 21.8 kW (29.2 Hp)
Max. spindle torque: 150.1 N·m(110.8 lbf-ft)



DNM 4500/L, 5700/L, 6700/L/XL

15000 r/min

Max. spindle power: 16.5 kW (22.1 Hp)
Max. spindle torque: 141.3 N·m (104.3 lbf-ft)

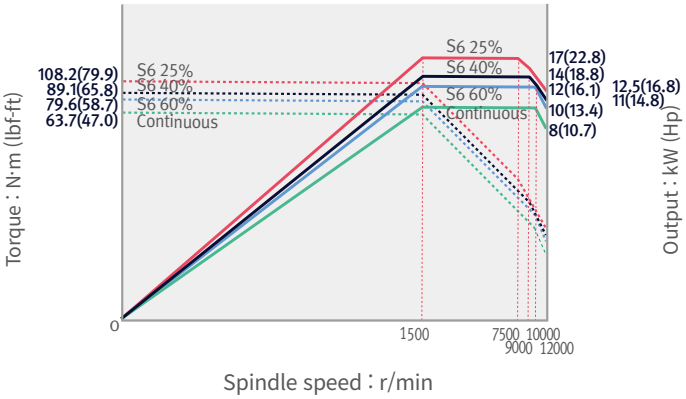


POWER | TORQUE

HEIDENHAIN | MITSUBISHI

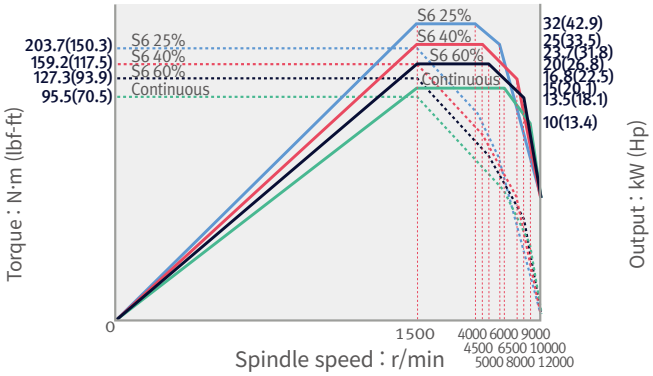
HEIDENHAIN
DNM 4500/L, DNM 5700/L

12000 r/min
Max. spindle power: 17 kW (22.8 Hp)
Max. spindle torque: 108.2 N·m (79.9 lbf-ft)

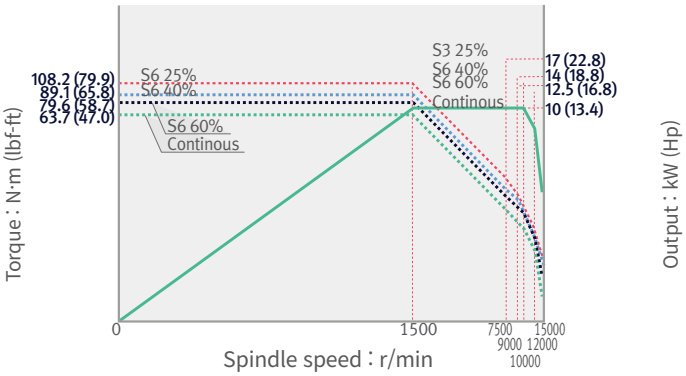


HEIDENHAIN
DNM 6700/L/XL

12000 r/min
Max. spindle power: 32 kW (42.9 Hp)
Max. spindle torque: 203.7 N·m (150.2 lbf-ft)

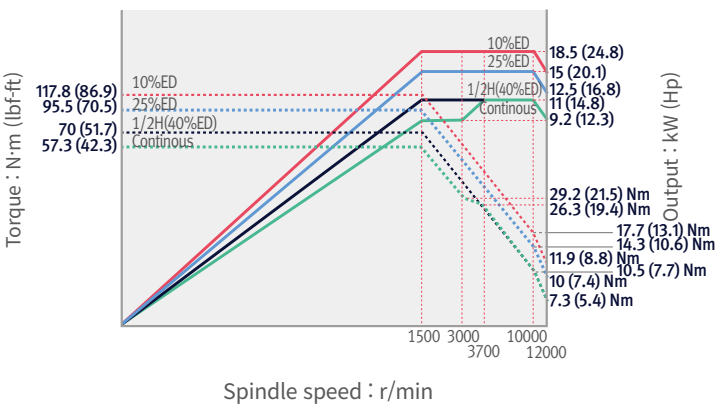


15000 r/min option
Max. spindle power: 17 kW (22.8 Hp)
Max. spindle torque: 108.2 N·m (79.9 lbf-ft)



MITSUBISHI
DNM 4500/L, 5700/L, 6700/L/XL

12000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

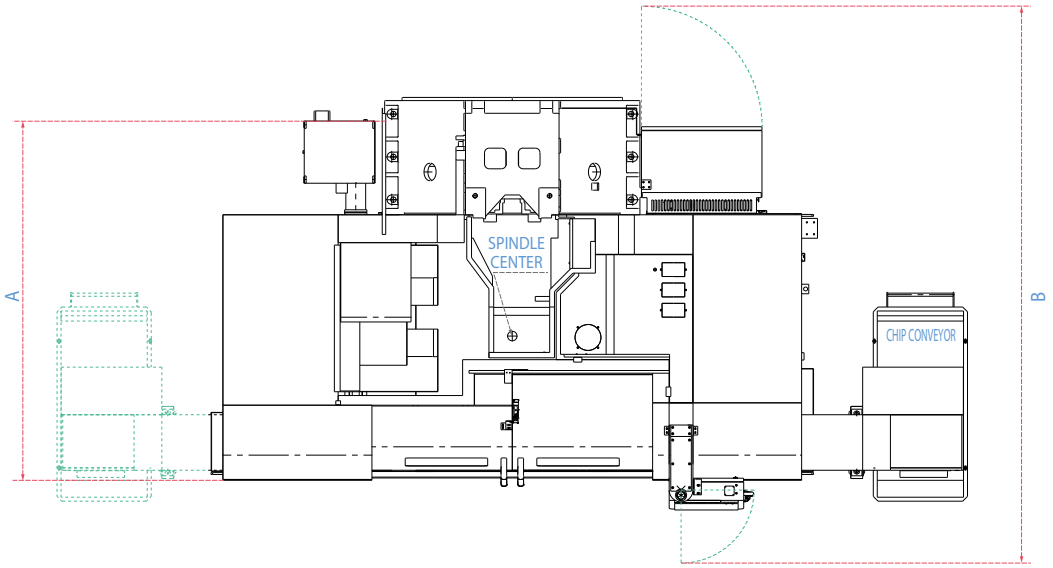


DIMENSIONS

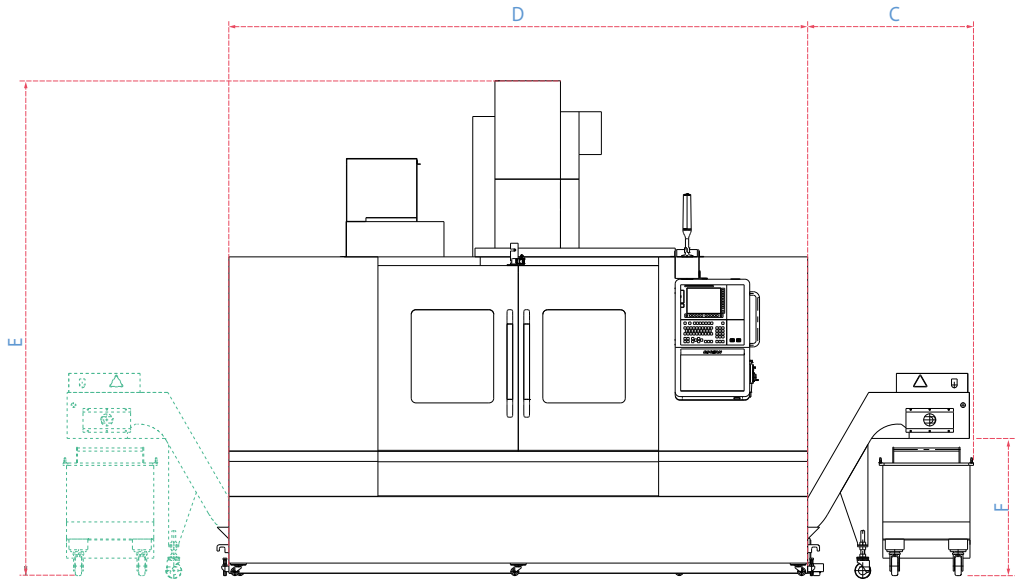
DNM 4500/5700/6700 series

Units : mm (inch)

TOP



FRONT



Model	A (Length)	B[1]	C[2]	D (Width)	E (Height)	F		
						SCRAPER	HINGED	SCREW
DNM 4500	1970 (77.6)	3200 (126.0)	1040 (415) [40.9(16.3)]	2465 (97.0)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 4500L	1970 (77.6)	3200 (126.0)	1040 (415) [40.9(16.3)]	2550(100.4)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 5700	2225 (87.6)	3365 (132.5)	1040 (415) [40.9(16.3)]	2960 (116.5)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 5700L	2225 (87.6)	3365 (132.5)	1040 (415) [40.9(16.3)]	3200 (126.0)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 6700	2415 (95.1)	3510 (138.2)	1040 (415) [40.9(16.3)]	3200 (126.0)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 6700L	2415 (95.1)	3510 (138.2)	1040 (415) [40.9(16.3)]	3650 (143.7)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)

1 Max. machine length (including electric cabinet door and operation panel swiveling)
2 Additional width to accommodate the side chip conveyor. [ ] indicates the additional width required to accommodate a screw(auger)type chip conveyor.

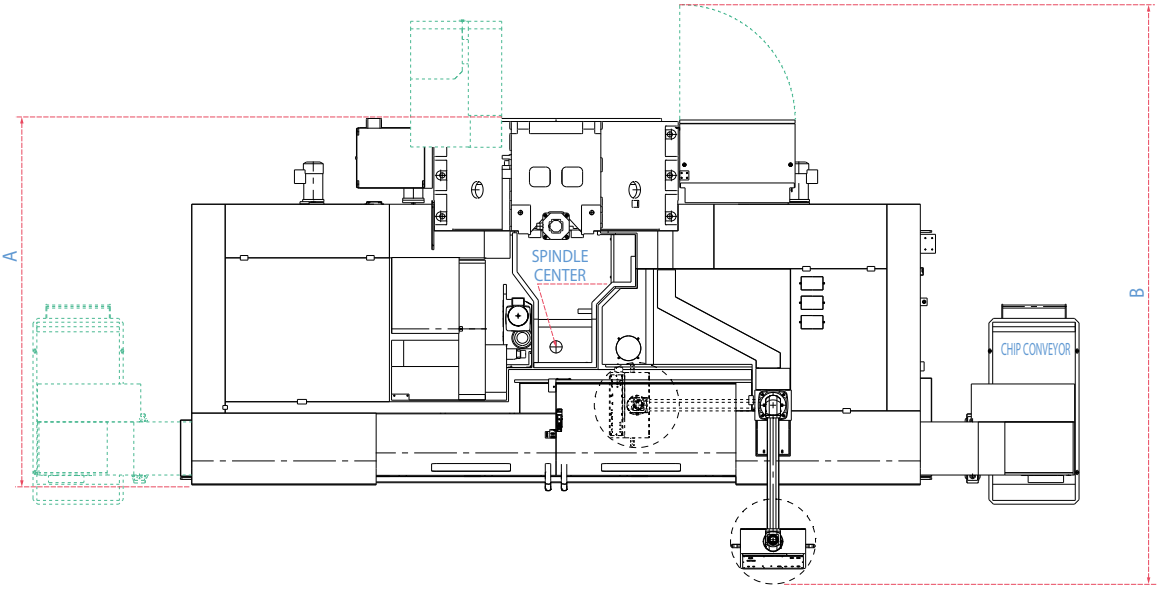
** Some peripheral equipment can be placed in other places *Rear chipconveyor need discuss with sales person*

DIMENSIONS

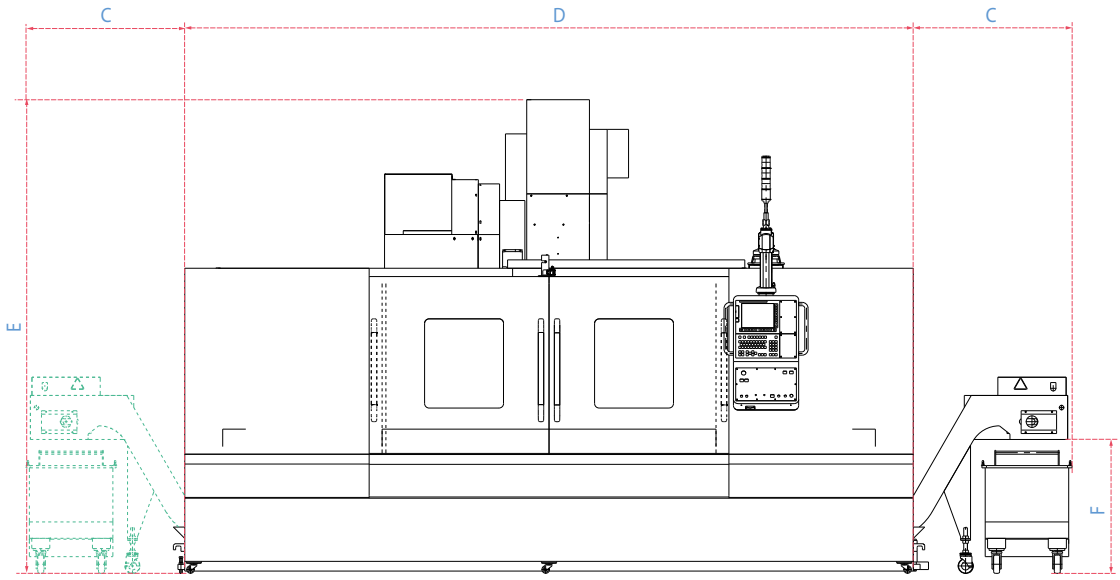
DNM 6700XL

Units : mm (inch)

TOP



FRONT



Model	A (Length)	B[1]	C[2]	D (Width)	E (Height)	F		
						SCRAPER	HINGED	SCREW
DNM 6700XL	2415 (95.1)	3820 (150.4)	1045 (41.1)	4800 (189.0)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)

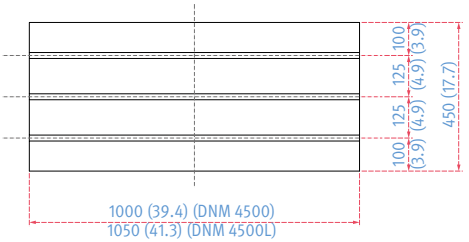
1 Max. machine length (including electric cabinet door and operation panel swiveling)
2 Additional width to accommodate the side chip conveyor. [ ] indicates the additional width required to accommodate a screw(auger)type chip conveyor.

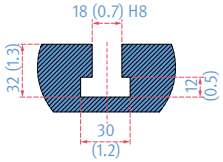
** Some peripheral equipment can be placed in other places *Rear chipconveyor need discuss with sales person*

TABLE

DNM 4500/L

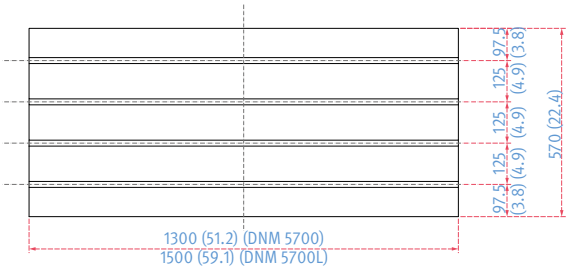
Units : mm (inch)

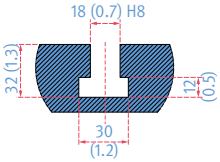




DNM 5700/L

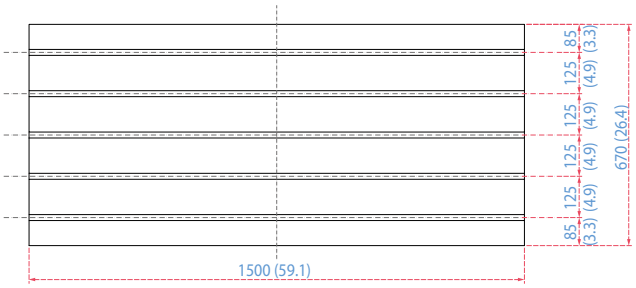
Units : mm (inch)

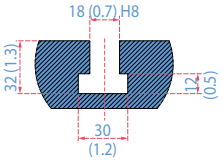




DNM 6700

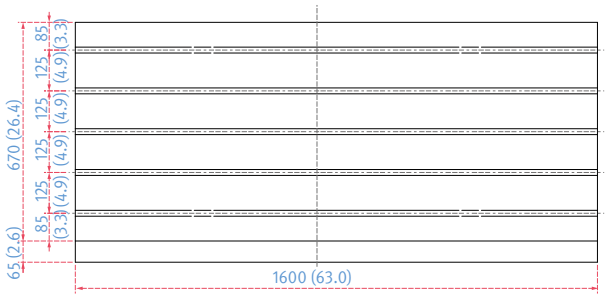
Units : mm (inch)

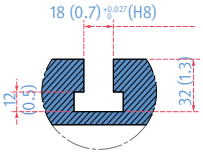




DNM 6700L

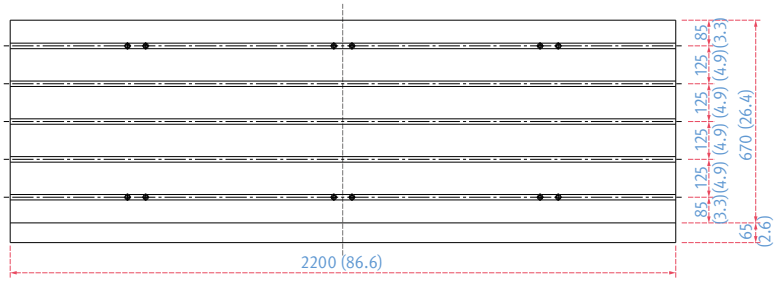
Units : mm (inch)

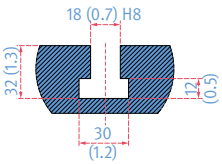




DNM 6700XL

Units : mm (inch)





MACHINE SPECIFICATIONS

Description			Unit	DNM 4500	DNM 4500L	DNM 5700	DNM 5700L	DNM 6700	DNM 6700L	DNM 6700XL
Travels	Travel distance	X axis	mm (inch)	800 (31.5)	910 (35.8)	1050 (41.3)	1300 (51.2)	1300 (51.2)	1500 (59.1)	2100 (82.7)
		Y axis	mm (inch)	450 (17.7)		570 (22.4)		670 (26.4)		
		Z axis	mm (inch)	510 (20.1)				625 (24.6)		
	Distance from spindle nose to table top		mm (inch)	150~660 (5.9~26.0)				150~775 (5.9~30.5)		
Table	Table size		mm (inch)	1000 x 450 (39.4 x 17.7)	1050 x 450 (41.3 x 17.7)	1300 x 570 (51.2 x 22.4)	1500 x 570 (59.1 x 22.4)	1500 x 670 (59.1 x 26.4)	1600 x 670 (63.0 x 26.4)	2200 x 670 (86.6 x 26.4)
	Table loading capacity		kg (lb)	600 (1322.8)		1000 (2204.6)		1300 (2866.0)		
	Table surface type		mm (inch)	T-SLOT (3-125(4.9) x 18(0.7) H8)		T-SLOT (4-125(4.9) x 18(0.7) H8)		T-SLOT (5-125(4.9) x 18(0.7)H8)		
Spindle	Taper		-	ISO #40						
	Max. spindle speed	Fanuc	r/min	8000 {8000*, 12000, 15000}						
		Siemens	r/min	12000 {15000}						
		Heidenhain	r/min	12000 {15000}						
		Mitsubishi	r/min	12000 {15000}						
	Max. Spindle power	Fanuc	kW (Hp)	18.5/11 (24.8/14.8) {15/11 (20.1/14.8)*, 18.5/11 (24.8/14.8), 18.5/11 (24.8/14.8)}				18.5/15 (24.8/20.1) {15/11 (20.1/14.8)*, 18.5/11 (24.8/14.8), 18.5/11 (24.8/14.8)}		
		Siemens	kW (Hp)	16.5/11 (22.1/14.8) {16.5/11 (22.1/14.8)}				21.8/16.3 (29.2/21.9) {16.5/11 (22.1/14.8)}		
		Heidenhain	kW (Hp)	17/10 (22.8/13.4) {17/10 (22.8/13.4)}				32/15 (42.9/20.1) {17/10 (22.8/13.4)}		
		Mitsubishi	kW (Hp)	18.5/11 (24.8/14.8)						
	Max. spindle torque	Fanuc	N·m (lbf-ft)	117.8 (86.9) {286 (211.1)*, 117.8 (86.9), 117.8 (86.9)}						
		Siemens	N·m (lbf-ft)	141.3 (104.3) {141.3 (104.3)}				150.1 (110.7) {141.3 (104.3)}		
		Heidenhain	N·m (lbf-ft)	108.2 (79.9) {108.2 (79.9)}				203.7 (150.2) {108.2 (79.9)}		
		Mitsubishi	N·m (lbf-ft)	117.8 (86.9)						
Feedrates	Rapid traverse rate	X axis	m/min (ipm)	36 (1417.3)						30 (1181.1)
		Y axis	m/min (ipm)	36 (1417.3)						30 (1181.1)
		Z axis	m/min (ipm)	30 (1181.1)						
Automatic Tool Changer	Type of tool shank	Tool shank	-	BT 40 {CAT 40 / DIN 40}						
		Pull stud	-	PS806 {Modified DIN / DIN 69872 #40}						
	Tool storage capa.		ea	30 {40, 60}						
	Max. tool diameter	Continous	mm (inch)	80 (3.1) {76 (3.0)}						
		Without Adjacent Tools	mm (inch)	125 (4.9)						
	Max. tool length		mm (inch)	300 (11.8)						
	Max. tool weight		kg (lb)	8 (17.6)						
	Max. tool moment		N·m (ft-lbs)	5.88 (4.3)						
	Tool selection			MEMORY RANDOM						
	Tool change time (Tool-to-tool)		sec	1.2						
	Tool change time (Chip-to-chip)		sec	3.2					3.5	
Power source	Electric power supply (rated capacity)		kVA	29.5				38.1 {33.0**}	40 {35}*	
	Compressed air supply		MPa (psi)	0.54 (78.3)						
Tank capacity	Coolant tank capacity		L (gal)	260 (68.7)	285 (75.3)	310 (81.9)	350 (92.5)	325 (85.9)	430 (113.6)	440 (116.2)
Machine Dimensions	Height		mm (inch)	2985 (117.5)				3120 (122.8)		
	Length		mm (inch)	2158 (85.0)		2413 (95.0)		2597 (102.2)		2970 (116.9)
	Width		mm (inch)	2615 (103.0)	2701 (106.3)	3110 (122.4)	3350 (131.9)	3350 (131.9)	3650 (143.7)	4800 (189.0)
	Weight		kg (lb)	5000 (11023.0)	5500 (12125.2)	6500 (14329.8)	7000 (15432.1)	8500 (18739.0)	9000 (19841.3)	10000 (22045.9)
Contrel	NC system		-	DN Solutions Fanuc i Plus / SIEMENS S828D / HEIDENHAIN TNC620 / MITSUBISHI M80A						

*{ } : Optional * 8000 r/min High torque version(FANUC only) ** Power capacity of 8000 r/min high torque and 12000 r/min spindle

WHY DN SOLUTIONS

The DN Solutions promise, MACHINE GREATNESS, has two important meanings. The first is simple: DN Solutions makes great machines. The second is a challenge to our end-users. With a product line that is this comprehensive, accurate and reliable, we equip our customers to machine greatness. The big question: **Why should you choose DN Solutions over other options?**

Here's why···

WHAT YOU MAKE AND HOW YOU MAKE IT MATTERS—SO MAKE IT GREAT WITH DN SOLUTIONS.

UNBEATABLE MACHINES

You won't find a more comprehensive range or a better combination of value, performance and reliability anywhere else.

READILY AVAILABLE - ANYWHERE IN THE WORLD

Machining centres (including 5-axis machines), lathes, multi-tasking turning centres and mill-turn machines, and horizontal borers with best-in-class specifications are all available···ready to install.

ROBUST PRODUCT LINE

We offer an impressive range of machine models and hundreds of configurations. Whatever your machining needs and requirements, there's a DN Solutions for you.

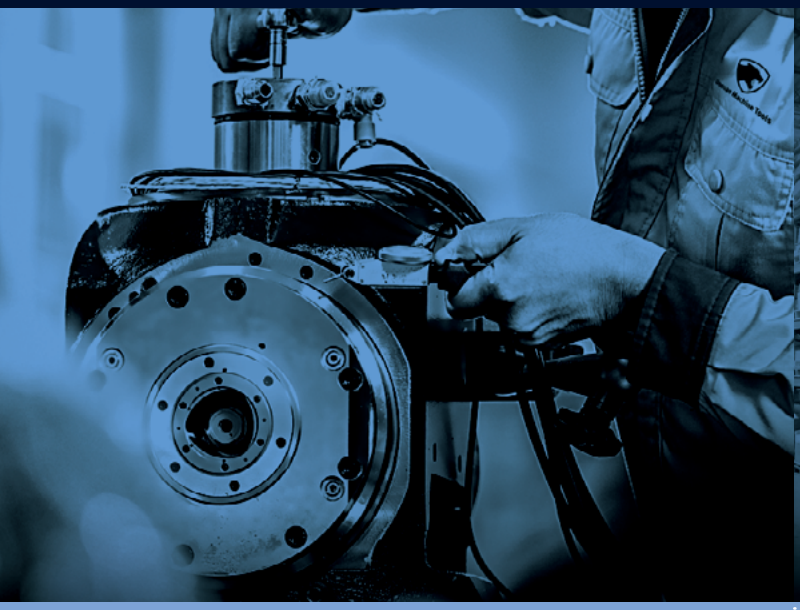
EXPERT SERVICE

Our dedicated, experienced and knowledgeable team is totally committed to improving your productivity, growth and success.

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

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

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51	Technical centers Technical Center, Sales Support, Service Support, Parts Support
200	Service posts
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sales@dncompany.com

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

DN SOLUTIONS

ver. EN 220518 SU

GLOBAL STANDARD
VERTICAL MACHINING CENTER

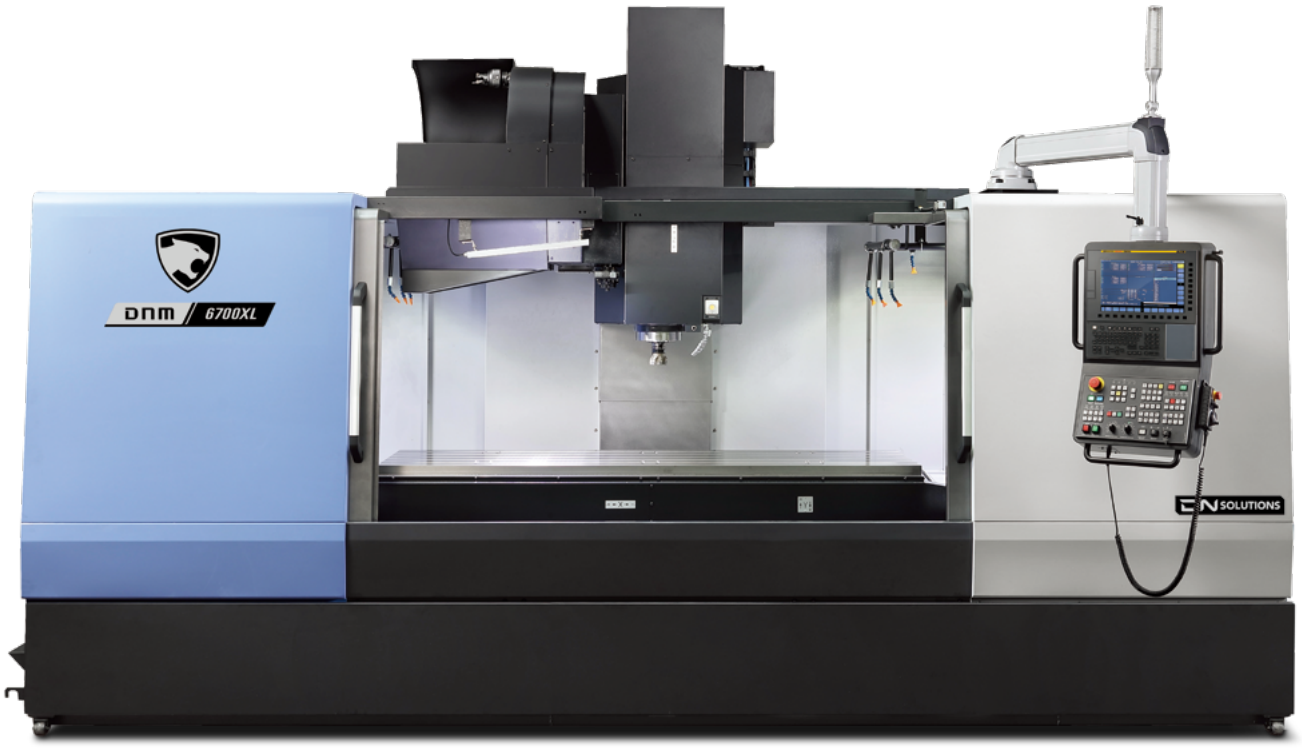
DNM

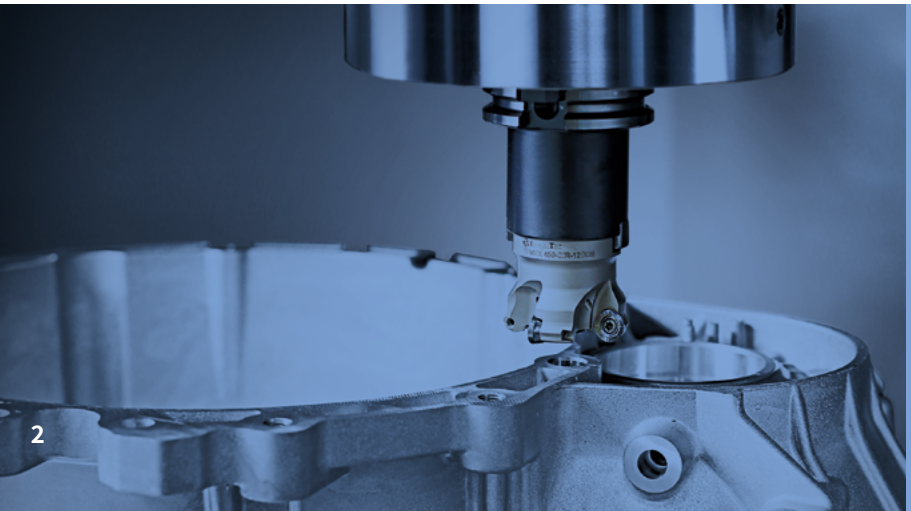
4500/L • **5700**/L • **6700**/L/XL

DN SOLUTIONS

DNM SERIES
4500/L • **5700**/L • **6700**/L/XL

Building on the legacy of the proven and successful DNM and DNM ll series, the new version DNM series boasts even greater reliability and improved performance. In addition, the new series includes grease lubrication to the roller guideways which is more environmentally-friendly. The design concepts underpinning the DNM 4500/5700/6700 series are high speed, high rigidity and suitability for all applications.





Standard features include the largest machining envelope in its class, direct coupled spindles, roller guideways and thermal compensation to deliver high precision.

A HIGHLY VERSATILE VERTICAL MACHINING CENTER WITH THE LARGEST MACHINING ENVELOPE IN ITS CLASS

- DNM series machines have larger tables with increased Y-axis travels and increased maximum table loads.
- DNM machines with longer X-axes (i.e.,DNM 4500L, 5700L, 6700L/XL), are available.

STANDARD DIRECT-COUPLED SPINDLE FOR HIGHER PRODUCTIVITY

- Directly coupled spindles reduce vibration and noise, thereby improving the machines' performance and making them more environmentally-friendly compared to belt driven machines.
- High-torque and high speed spindles are available for the machining of different materials.
- Higher productivity is achieved by reducing tool change times and by improving acceleration and deceleration rates.

AN ENVIRONMENTALLY-FRIENDLY MACHINE DESIGNED FOR STABLE AND EASY OPERATION

- Thermal error compensation system supplied as standard optimizes machine accuracy by reducing the effects of heat build-up during extended periods of operation.
- The EZ work function can be checked in the pop-up window on the NC main screen for convenience.
- Grease lubrication for the axis roller guideways is a standard feature and helps reduce contamination.

BASIC STRUCTURE

Designed with a highly stable and rigid structure, the new DNM series provides customers with machines with different Y-axis capabilities (from 450mm to 670mm), enabling the machining of a wider range of workpieces.

Travel distance (X / Y / Z axis)

DNM 4500/L

800{910} / 450 / 510 mm

31.5{35.8} / 17.7 / 20.1 inch

DNM 5700/L

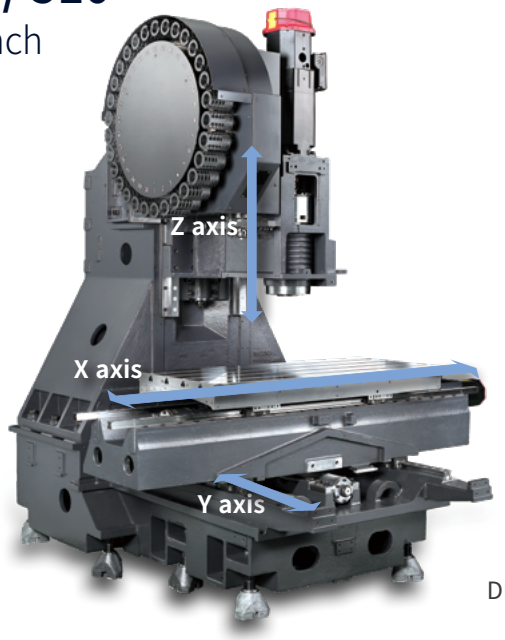
1050{1300} / 570 / 510 mm

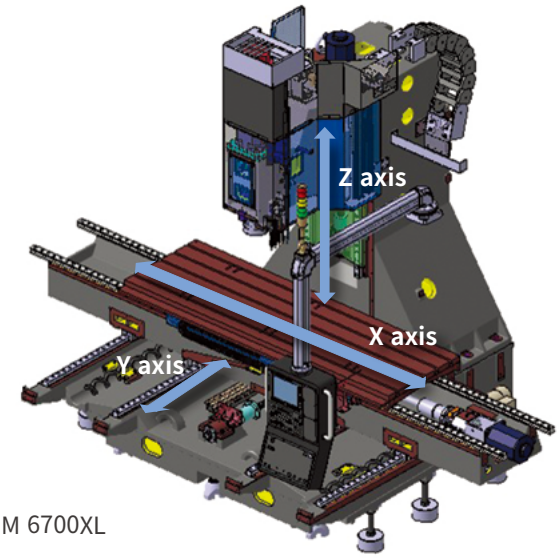
41.3{51.2} / 22.4 / 20.1 inch

DNM 6700/L/XL

1300{1500/2100} / 670 / 625 mm

51.2{59.1/82.7} / 26.4 / 24.6 inch





DNM 6700XL

Axis system

Environmentally-friendly grease lubrication is adopted as standard for all the axis feed systems, and roller-type LM guides are used to enhance rigidity.

Rapid traverse rate (X / Y / Z axis)

DNM 4500 / 5700 / 6700 / 6700L

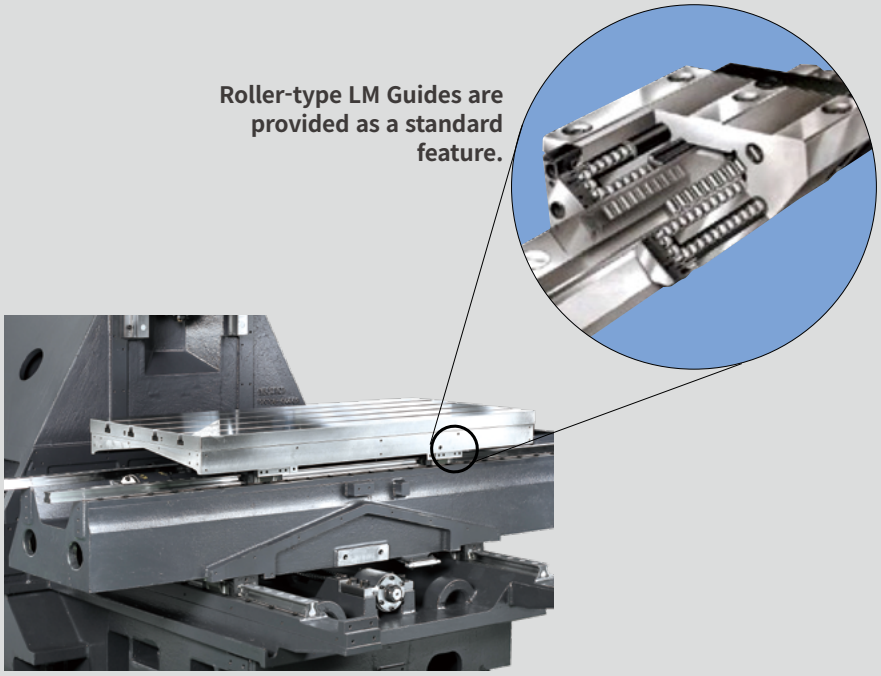
36 / 36 / 30 m/min

(1417.3 / 1417.3 / 1181.1 ipm)

DNM 6700XL

30 / 30 / 30 m/min

(1181.1 / 1181.1 / 1181.1 ipm)



Roller-type LM Guides are provided as a standard feature.

Grease lubrication for all axes is a standard feature.

SPINDLE | TABLE

Directly-coupled spindles have been adopted as a standard feature to further reduce vibration and noise and enhance productivity, increase accuracy and improve the working environment. High- torque and high speed spindle options for machining different materials are available.

Max. spindle speed

8000 r/min

12000 r/min option

15000 r/min option

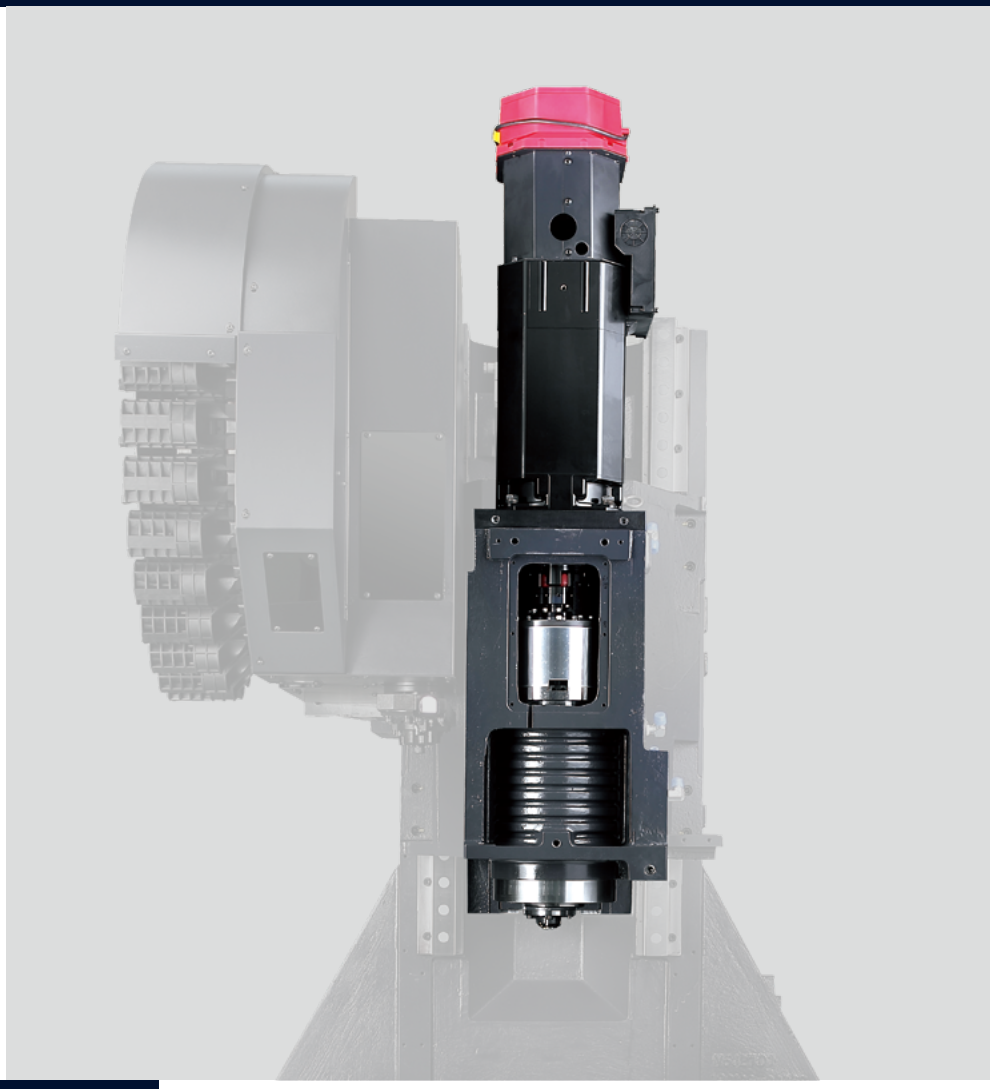
Max. spindle motor power

18.5 kW 24.8 Hp

Max. spindle motor torque

117.8 N·m 86.9 lbf-ft
(8000 r/min, 12000 r/min, 15000 r/min)

286 N·m 211.1 lbf-ft option
(8000 r/min high torque version)



TABLE

Increased table sizes and table load capacities are provided within the same floor space of the previous models.

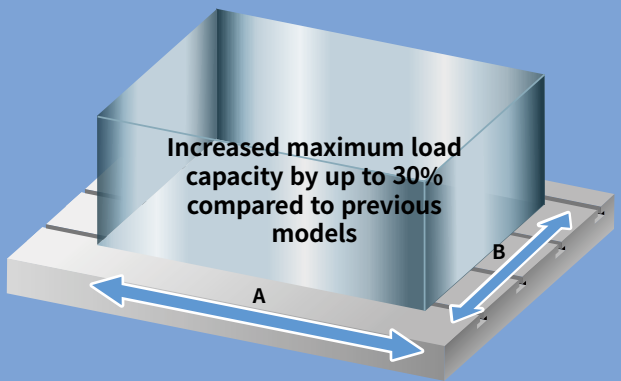


Table size (A x B)

DNM 4500/L
1000/1050 x **450** mm
39.4{41.3} x 17.7 inch

DNM 5700/L
1300/1500 x **570** mm
51.2{59.1} x 21.3 inch

DNM 6700/L/XL
1500/1600/2200 x **670** mm
59.1{63.0/86.6} x 26.4 inch

Max weight on Table

DNM 4500/4500L
600 kg 1322.8 lb

DNM 5700/5700L
1000 kg 2204.6 lb

DNM 6700/6700L/6700XL
1300 kg 2866.0 lb

MACHINING PERFORMANCE

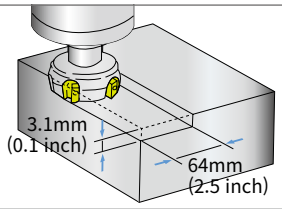
The DNM series delivers the best cutting performance in its class and ensures highest levels of productivity.

Cutting performance

High-rigidity machining can be undertaken with speed and precision.

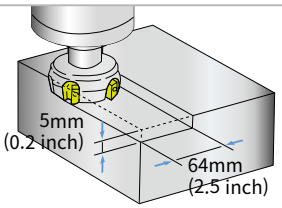
Face mill (ø80mm (3.15 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
527 (32.2)	1500	2700 (106.3)



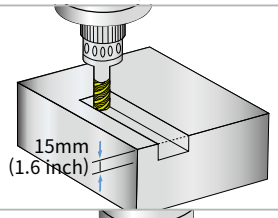
Face mill (ø80mm (3.15 inch)) Aluminium(AL6061)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
1901 (116.0)	1500	5940 (233.9)



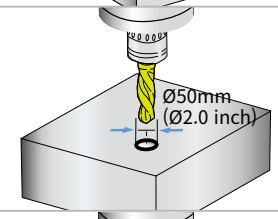
End mill (ø30mm (i.2 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
48 (2.9)	222	107 (4.2)



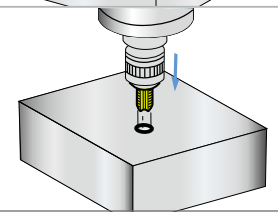
U-Drill (ø50mm (2.0 inch)) Carbon steel (SM45C)

Chip removal rate cm³/min (inch³/min)	Spindle speed r/min	Feedrate mm/min (ipm)
501 (30.6)	1500	255 (10.0)



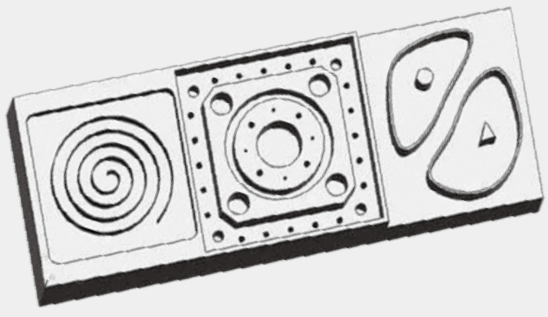
Tap Carbon steel (SM45C)

Tap size mm	Spindle speed r/min	Feedrate mm/min (ipm)
M 36 x P 4.0	221	884 (34.8)



*The results, indicated in this catalogue, are provided as examples only. They may not always be achieved owing to different cutting and environmental conditions.

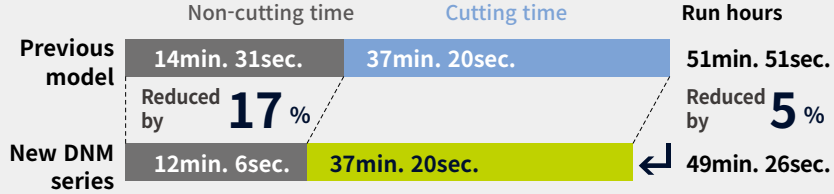
High Productivity



*The results, indicated in this catalogue, are provided as examples only. They may not always be achieved owing to different cutting and environmental conditions.

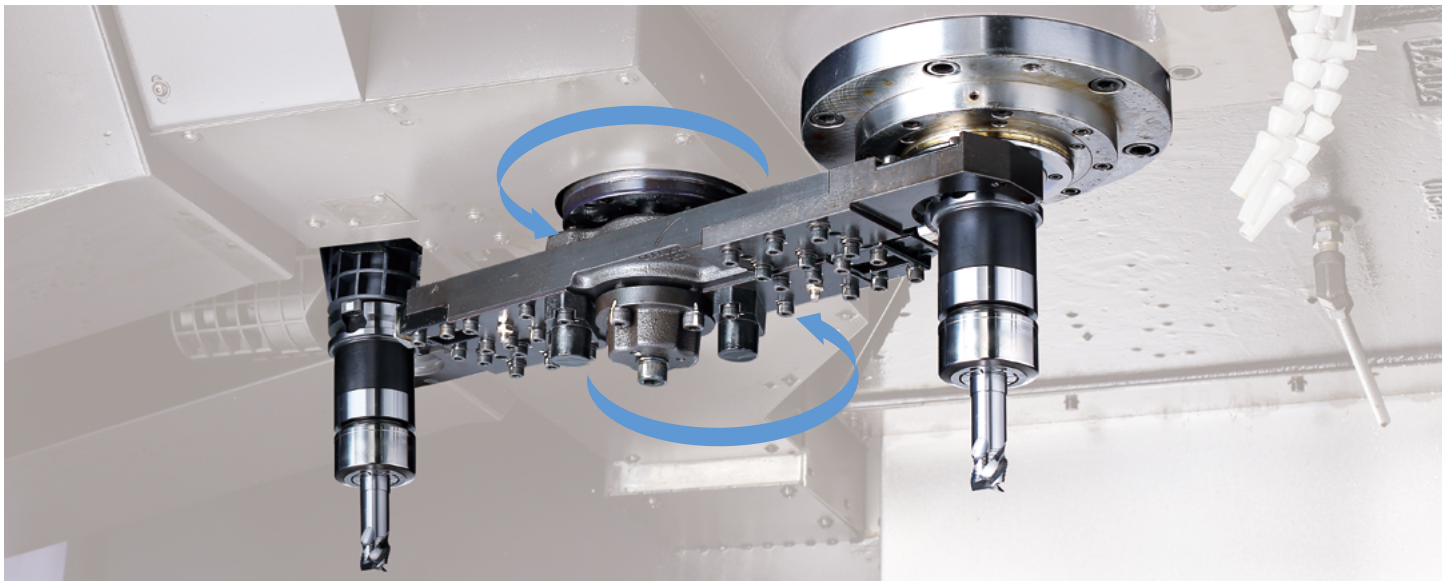
Sample work

Material	Aluminium (AL6061)
Material size	561 x 210 x 30 mm (22.1 x 8.3 x 1.2 inch)
Using tools	18 ea



TOOL CHANGE SYSTEM

Tool changers have been optimized to reduce non cutting times. The highly-reliable tool magazine can accommodate up to 30 tools as standard.



30, 40 ea

60 ea

Tool to Tool time

1.2 S

Chip to Chip* time

3.2 S

* The Chip-to-Chip time has been tested in accordance with DN Solutions's strict testing procedures, but may vary depending on the user's operating conditions.

Tool storage capacity

30 ea

40 ea option

60 ea option

STANDARD | OPTIONAL SPECIFICATIONS

Various optional features are available to meet customers' specific machining requirements and applications.

Description	Features		DNM 4500/L	DNM 5700/L	DNM 6700/ 6700L/XL
Spindle	8000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	●	●	X
		18.5/15 (24.8/20.1), 117.8(86.9)_FANUC	X	X	●
		15/11 (20.1/14.8), 286(211.1)_FANUC	○	○	○
	12000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	○	○	○
		17/10 (22.8/13.4), 108.6(80.1)_HEIDENHAIN	○	○	X
		32/15 (42.9/20.1), 203.7(150.3)_HEIDENHAIN	X	X	○
		16.5/11 (22.1/14.8), 141(104.1)_SIEMENS	○	○	X
		21.8/16.3 (29.2/21.9),150.1(110.8)_SIEMENS	X	X	○
	15000 r/min (Unit: kW(Hp), N·m(lbf-ft)	18.5/11(24.8/14.8), 117.8(86.9)_FANUC	○	○	○
		17/10 (22.8/13.4), 108.2 (79.9)_HEIDENHAIN	○	○	○
		16.5/11 (22.1/14.8), 141.3 (104.3)_SIEMENS	○	○	○
Magazine	Tool storage capacity	30 ea	●	●	●
		40 ea	○	○	○
		60 ea	○	○	○
Tool shank type	BIG PLUS BT40		●	●	●
	BIG PLUS CAT40		○	○	○
	BIG PLUS DIN40		○	○	○
Raised column	150 mm (5.9 inch)		○	○	○
	200 mm (7.9 inch)		○	○	○
	300 mm (11.8 inch)		○	○	○
Coolant	FLOOD	0.19 MPa(27.6 psi), 0.4 kW(0.5 Hp)	●	●	●
		0.69 MPa(100.1 psi), 1.8 kW(2.4 Hp)	○	○	○
	TSC**	None	●	●	●
		2 MPa(290.1 psi), 1.5kW(2.0 Hp)	○	○	○
		2 MPa(290.1 psi), 4 kW(5.4 Hp)	○	○	○
		7 MPa(1015.3 psi), 5.5 kW(7.4 Hp)	○	○	○
	FLUSHING		○	○	○
	SHOWER (200 L/min (52.8 gal/min))		○	○	○
Chip disposal	Chip conveyor	Chip pan	●	●	●
		Hinged type (Left/Right/Rear)	○	○	○
		Magnetic scraper type (Left/Right/Rear)	○	○	○
		Screw(AUGER) type (Left/Right)	○	○	○
	Chip bucket		○	○	○
Precision machining option	Linear scale	X / Y / Z axis	○	○	○
	AICC II (200 block)		●	●	●
	SSP (Smooth Surface Package)		○	○	○
Measurement & Automation	Automatic tool measurement	TS27R_RENISHAW	○	○	○
		OTS_RENISHAW	○	○	○
	Automatic tool breakage detection		○	○	○
	Automatic workpiece measurement	OMP60_RENISHAW	○	○	○
	Automatic front door with safety device		○	○	○
Accessories	WORK LIGHT	LED LAMP	●	●	●
	OPERATOR CALL LAMP	3-COLOR SIGNAL TOWER(LED)	●	●	●
	LEVELING BLOCK & BOLT	-	●	●	●
	SMART THERMAL CONTROL	SENSORLESS TYPE(ONLY SPINDLE)	●	●	●
	ASSEMBLY & OPERATION TOOLS KIT	-	●	●	●
	4TH AXIS PREPARATION CABLING FOR SERVO/1-PNEUMATIC PIPING	FACTORY READY MADE	○	○	○
	AIR GUN		○	○	○
	Air blower		○	○	○
	Coolant gun		○	○	○
	Mist collector		○	○	○
Customized Special Option	ANCHORING (1)	SLIDE CLAMP & CHEMINCAL ANCHOR BOLT	○	○	○
	TSA (2)	0.54	○	○	○
	TOOL TYPE	HSK63A	○	○	○
	ATC AUTO SHUTTER	30TOOL / 40TOOL	○	○	○
	ATC FULL COVER	30TOOL / 40TOOL	○	○	○
	Drum chipconveyor	HINGE TYPE	○	○	○
		SCRAPER TYPE	○	○	○
	Oil lubrication	X, Y, Z AXIS	○	○	○
	20 Bar TSC with inverter	50Hz → 60Hz	○	○	○
	FINE DUST PROTECTING PACKAGE (WET MACHINING)	BELLOWS COVER(X/Y/Z)	○	○	○
		PROTECT COVER(X-AXIS)	○	○	○
		BALL SCREW BELLOWS COVER(X/Y)	○	○	○
		GUIDE WAY DOUBLE WIPER	○	○	○
	FINE DUST PROTECTING PACKAGE (DRY MACHINING)	PROTECT COVER(X-AXIS)	○	○	○
		BALL SCREW BELLOWS COVER(X/Y)	○	○	○
		GUIDE WAY DOUBLE WIPER	○	○	○
		AIR OIL SUCTION(ONLY 15k SPINDLE)	○	○	○
		ATC FULL CLOSED COVER	○	○	○
	AUTO TOOL LENGTH MEASUREMEMT	RENISHAW / LTS	○	○	○
	AUTO TOOL BREAKAGE DETECTION	MSC/BK9(NEEDLE TYPE ON MAGAZINE)	○	○	○

※ *Please contact DN Solutions for detailed specification information.*

** *If this option is selected, the TSA(Through Spindle Air) Max.pressure is 0.54MP*

(1) Please refer to foundation drawing in relation to anchoring. If more detailed information is required consult with DN Solutions service

(2) If TSC is not required - TSA can be selected as an option.

● *Standard* ○ *Optional* X *Not applicable*

⚠ Fire Safety Precautions | 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

Grease lubrication system

The standard grease lubrication system eliminates the need for an oil skimmer and reduces lubrication costs by about 60% compared to oil lubrication.

Yearly maintenance cost

Reduced by

Max. 60%

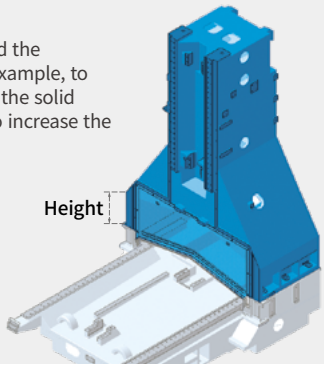
Raised column option

When the distance between the table and the spindle nose needs to be extended, for example, to accommodate a fixture or a rotary table, the solid one-piece raised column can be raised to increase the distance required.

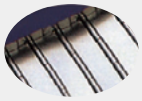
Height

150/200/300 mm

5.9/7.9/11.8 inch

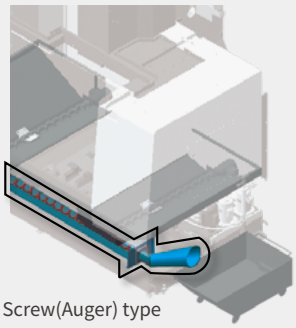


Chip conveyor option



Hinged belt

Magnetic scraper



Screw(Auger) type

Chip conveyor type	Material	Description
Hinged belt	Steel	Hinged belt chip conveyor, which is most commonly used for steel work [for cleaning chips longer than 30mm(1.2inch)], is available as an option.
Magnetic scraper	Cast Iron	Magnetic scraper type chip conveyor, which is ideal for die-casting work [for cleaning small chips], is available as an option.
Screw(Auger) type	Steel	Screw(Auger) type chip conveyor is suitable for minimizing installation space. About 85% floor space is required to install Screw(Auger) type chip conveyor compared to Hinged belt type.

Chip bucket option

Capacity 300 L (79.3 gal)

Hydraulic / Pneumatic fixture line option

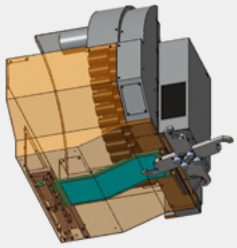
The user should prepare pipelines for hydraulic/pneumatic fixtures whose detailed specifications should be determined through discussions with DN Solutions.

4 axis rotary table option

The high-precision split system with its compact and highly rigid design, and double piston structure enables vertical and horizontal use and delivers a strong clamping force.

ATC shutter door option

An ATC shutter door can be applied instead of the brush mechanism to provide a higher level of protection from potential chip ingress.



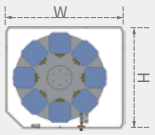
AWC system option

A compact automatic workpiece change system

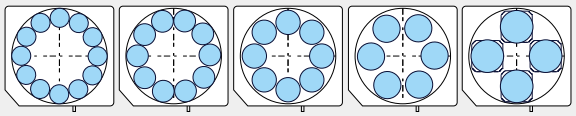
Max. workpiece dimensions	Unit	Count	Max. loading	Max. construction height on the pallet
250 x 250 (9.8x9.8) or ø 300 (11.8)	mm (inch)	12	130kg (286.6lb)	350mm (13.8inch)
320 x 320 (12.6x12.6) or ø 360 (14.2)	mm (inch)	10	250kg (551.1lb)	
350 x 350 (13.8x13.8) or ø 400 (15.7)	mm (inch)	8		
400 x 400 (15.7x15.7) or ø 450 (17.7)	mm (inch)	6		
500 x 500 (19.7x19.7) or ø 550 (21.7)	mm (inch)	4		

Pallet Storage-Table Configuration

Unit : mm (inch)



W X H = 1,900 X 1,700



250 X 250 (9.8 X 9.8) | 320 X 320 (12.6 X 12.6) | 350 X 350 (13.8 X 13.8) | 400 X 400 (15.7 X 15.7) | 500 X 500 (19.7 X 19.7)

DN SOLUTIONS FANUC i PLUS

DN Solutions Fanuc i Plus is optimized for maximizing customer productivity and convenience.

15 inch screen + new operation panel

DN Solutions Fanuc i Plus' operation panel enhances operating convenience by incorporating common-design buttons and layout, and features the Qwerty keyboard for fast and easy operation.

DN Solutions Fanuc i Plus

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

USB & PCMCIA card

QWERTY keyboard

- EZ-guide i standard
- Ergonimic operator panel
- 2MB Memory
- Hot key

iHMI touchscreen option

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.

NUMERIC CONTROL SPECIFICATIONS

FANUC

Item		Specifications	DN Solutions Fanuc i (0i Plus) DNM 4digit
Controlled axis	Controlled axes		3 (X,Y,Z)
	Simultaneously controlled axes		4 axes
	Additional controlled Axis	Add 1 Axis (5th Axis)	●
Data input/output	Fast data server		○
	Memory card input/output		●
	USB memory input/output		●
	Large capacity memory(2GB)*2	Available Option only with 15” Touch LCD (iHMI Only) *2)	○
Interface function	Embedded Ethernet		●
	Fast Ethernet		○
	Enhanced Embedded Ethernet function		●
Operation	DNC operation	Included in RS232C interface.	●
	DNC operation with memory card		●
Program input	Workpiece coordinate system	G52 - G59	●
	Addition of workpiece coordinate system	G54.1 P1 X 48 (48 pairs)	●
	Tool number command		T4 digits
	Tilted working plane indexing command	G68.2 TWP	○
Feed function	AI contour control I	G5.1 Q_, 40 Blocks	X
	AI contour control II	G5.1 Q_, 200 Blocks	●
	AI contour control II	G5.1 Q_, 600 Blocks	X
	AI contour control II	G5.1 Q_, 1000 Blocks *1)	X
	High smooth TCP		X
Operation guidance function	EZ Guidei (Conversational Programming Solution)		●
	iHMI with Machining Cycle	Only with 15” Touch LCD standard *2)	X
	EZ Operation package		●
Setting and display	CNC screen dual display function		●
Network	FANUC MTConnect		✪
	FANUC OPC UA		✪
Others	Display unit	10.4" color LCD	X
		15" color LCD	X
		15" color LCD with Touch Panel	●
	Part program storage size & Number of registerable programs	640M(256KB)_500 programs	X
		1280M(512KB)_1000 programs	X
		2560M(1MB)_1000 programs	X
		5120M(2MB)_1000 programs	●
		10240M(4MB)_1000 programs	X
		20480M(8MB)_1000 programs	X
		2560M(1MB)_2000 programs	X
		5120M(2MB)_4000 programs	X
		10240M(4MB)_4000 programs	X
		20480M(8MB)_4000 programs	X

*1) The number of look-ahead blocks may be changed or limited depending on the peripheral device or the configuration of the internal NC system.
*2) Available Option only with Fanuc i plus iHMI

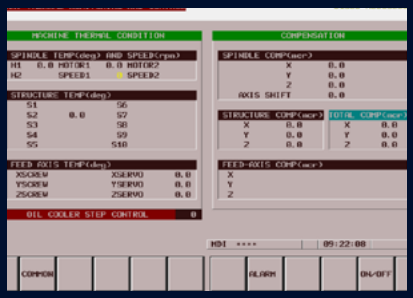
● Standard ○ Optional X N/A ✪ Available
Network: FANUC MT Connect and FANUC OPC UA available.

EZ WORK

The software developed by DN Solutions provides a range of different functions designed for fast, efficient and convenient operation.

EZ work

The EZ work package delivers speed and efficiency. This menu-driven innovation not only helps customers reduce setup times, but also simplifies common tasks and procedures, reducing the potential for errors. EZ work reduces operating time, protects machinery, enhances quality and speeds up maintenance interventions.



Thermal Compensation

A function to maintain high-precision machining quality by analyzing and correcting the amount of thermal displacement of a structure through a temperature sensor

M/G-Code List

Functional description of M code and G code

Tool Management

Function to manage tool information [Tool information / Tool No. / Tool condition (normal, large diameter, worn / damaged, used for the rst time, manual) / Tool name]

Operation Rate

Machine operation history management function by date based on load

Adaptive Feed Control

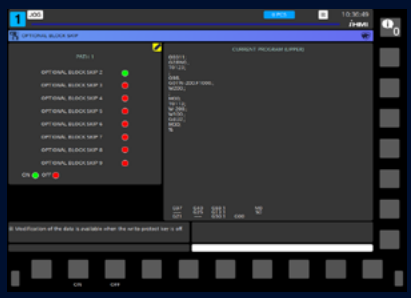
Function to control feedrate so that the cutting can be carried out at a constant load (To adapt to the spindle load set up with constant load feedrate control function)

Spindle Warm Up

A function that assists spindle warm-up for spindle life when the spindle has not been used for a certain period of time

ATC Recovery

Function to view detailed info with recommended actions and to perform step-by-step operation manually (when an alarm is triggered during an ATC operation)



Addition of Optional Block Skip

In addition to the OPTIONAL BLOCK SKIP of the operation panel, the function to skip a specific block selected in the machining program

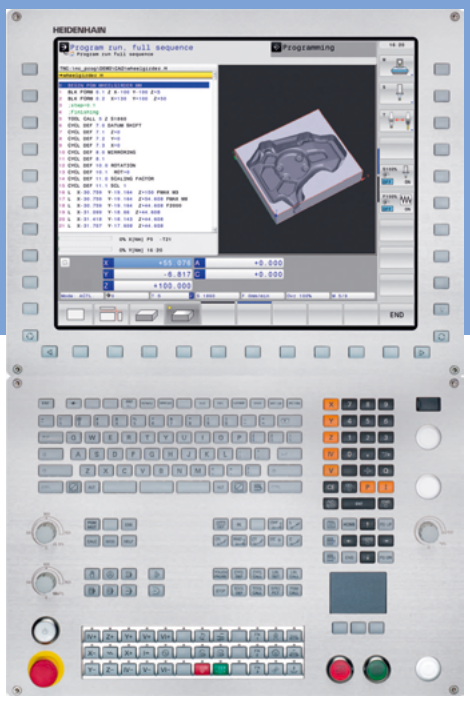
CONVENIENT OPERATION

HEIDENHAIN TNC620

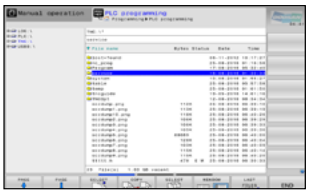
Superior hardware specifications

The TNC 620 features optimized motion control, short block processing times and special control strategies. Together with its uniform digital design and its integrated digital drive control (including inverters), it enables you to achieve high machining speeds and the best possible contour accuracy.

- 15.6" display
- 21GB Storage memory
- 1024 look ahead blocks
- High user convenience with folder structure data management

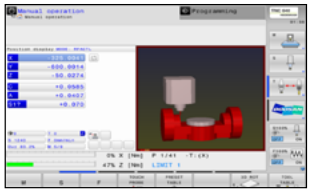


Conversational convenient function



Data are controlled in the folder structure; convenient communication via USB devices

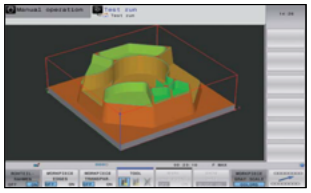
KinematicOpt & KinematicComp option (Touch probe cycle for automatic measurement)



Collision protection system option

Adaptive feed control option

Various built-in pattern cycles for a wider scope of application (Software standard)



Graphic simulation

NUMERIC CONTROL SPECIFICATIONS

HEIDENHAIN

Item		Specifications	TNC620 DNM
Controlled axis	Controlled axis		3 (X,Y,Z)
	Simultaneously controlled axis		4 axis
Data input/output	USB memory input/output		●
Interface function	Embedded ethernet		●
Feed function	Look-ahead	5000 blocks	●
Axis compensation	KinematicsOpt	Automatic measurement and optimization of machine kinematics	○
Collision monitoring	Dynamic collision monitoring (DCM)		X
Network	MTConnect		✪
Others	Display unit	15" color LCD	●
		15" color LCD with touch panel	○
	Part program storage size & number of registerable programs	1.8GB	●

● *Standard* ○ *Optional* X *Not Available* ✪ *Available*

CONVENIENT OPERATION

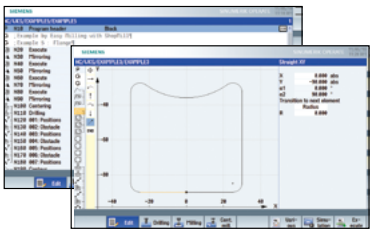
SIEMENS 828D

15.6” screen + new operation panel

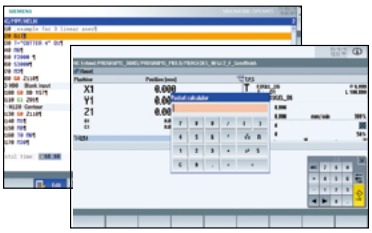
The newly-designed operation panel improves the customer convenience by incorporating and using common-design buttons and layouts, and includes the familiar QWERTY keyboard for fast and easy operation.

- 15.6" display
- 10MB high capacity user memory
- USB & ethernet (standard)
- QWERTY keyboard (standard)
- High-speed calculation and simulation can be fulfilled by improved processor functionality

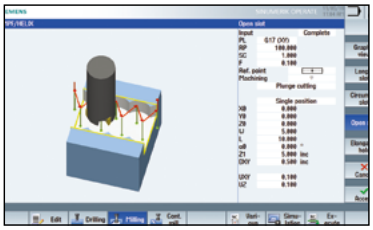
Conversational convenient function



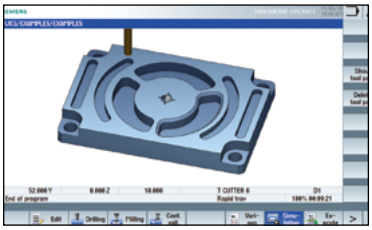
Shop Mill Part Programming



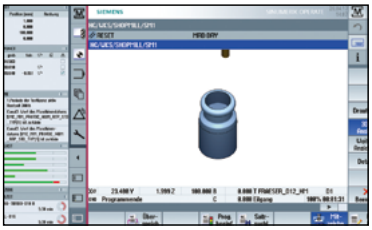
Smart function



Advanced program language programGUIDE



Simulation and machining contour monitoring



Side screen widget

NUMERIC CONTROL SPECIFICATIONS

SIEMENS

	Item	Specifications	S828D DNM
Controlled axis	Controlled axes (제어축수)	-	3축
	Simultaneously controlled axes (동시 제어축수)	-	3축
Data input/output	Memory card input/output	(Local drive)	X
	USB memory input/output		●
Interface function	Ethernet	(X130)	●
Operation	On network drive	(without EES option, Extcall)	○
	On USB storage medium, e.g. memory stick	(without EES option, Extcall)	●
Program input	Workpiece coordinate system	G54 - G57	●
	Addition of workpiece coordinate system	G505 - G599	●
Interpolation & Feed function	Advanced surface		●
	Top surface		○
	Look ahead number of block	S/W version 4.8	450
Programming & Editing function	3D simulation, finished part		●
	Simultaneous recording		●
	Measure kinematics		X
	DXF Reader for PC integrated in SINUMERIK Operate		○
Operation Guidance Function	ShopMill		●
	EZ Work		●
Setting and display	Operation via a VNC viewer		●
Network	MTConnect		✪
	OPCUA		○
Etc. function	15.6" color display with touch screen		●
	19" color display without touch screen		X
	21.5" color display with touch screen		X
	CNC user memory	10 MB	●
	Expansion by increments	2 ~ 12 MB	○
	Collision avoidance		X
	Collision avoidance ECO (machine, working area)		X

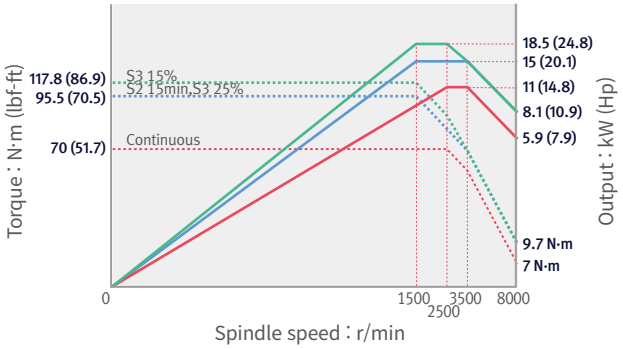
● *Standard* ○ *Optional* X *Not Available* ✪ *Available*

POWER | TORQUE

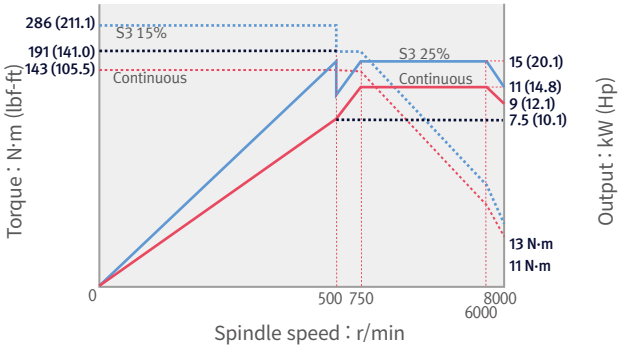
FANUC

DNM 4500/L, DNM 5700/L

8000 r/min
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

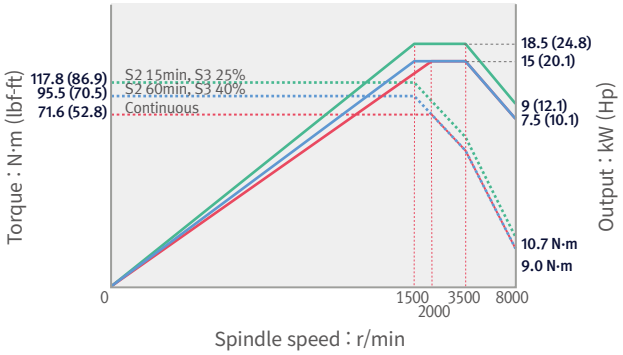


8000 r/min option
Max. spindle power: 15 kW (20.1 Hp)
Max. spindle torque: 286 N·m (211.1 lbf-ft)

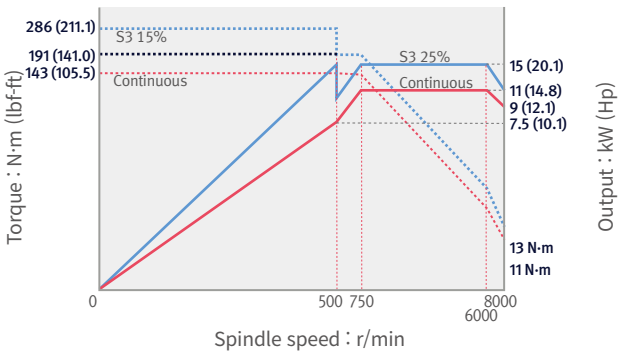


DNM 6700/L/XL

8000 r/min
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

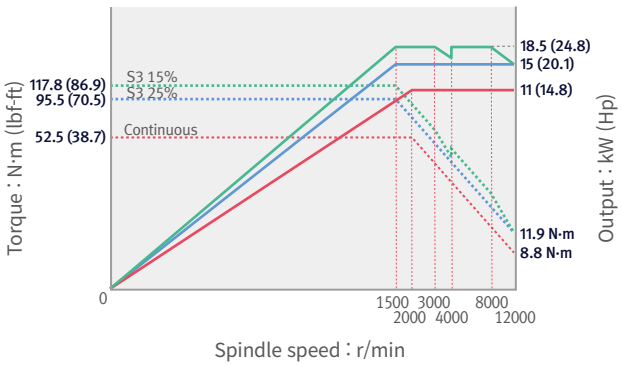


8000 r/min option
Max. spindle power: 15 kW (20.1 Hp)
Max. spindle torque: 286 N·m (211.1 lbf-ft)

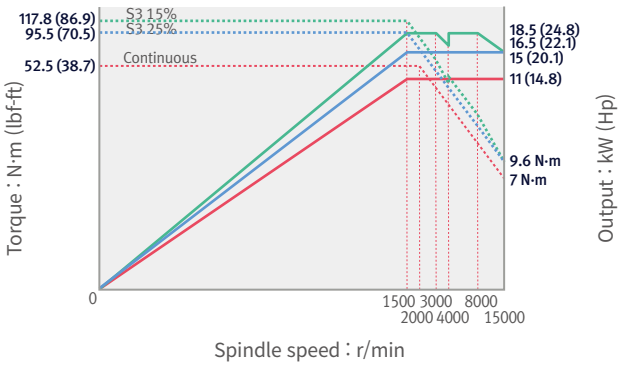


DNM 4500/L, 5700/L, 6700/L/XL

12000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)



15000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)



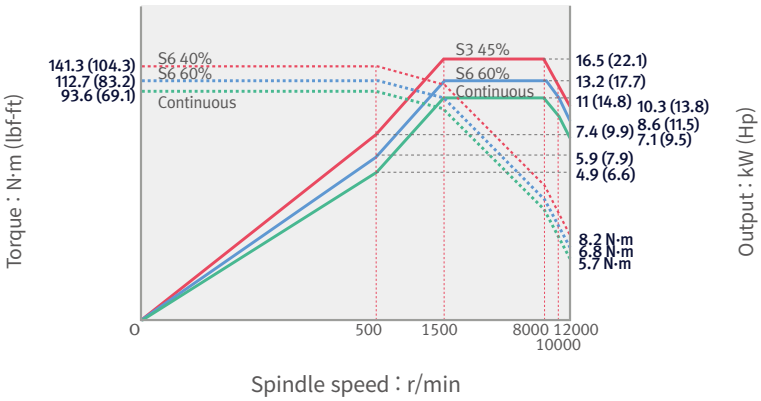
POWER | TORQUE

SIEMENS

DNM 4500/L, DNM 5700/L

12000 r/min

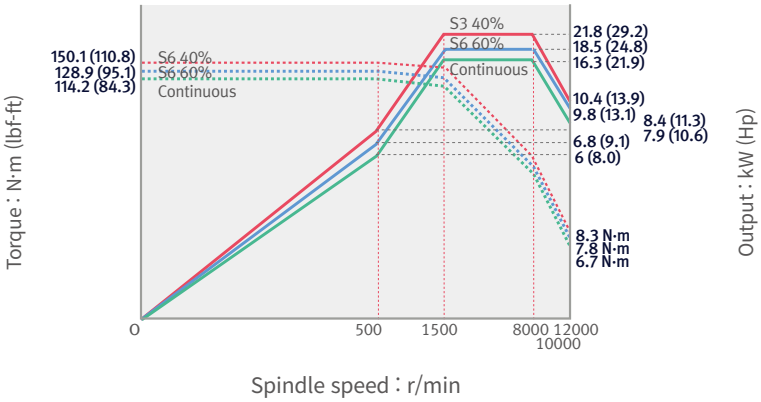
Max. spindle power: 16.5 kW (22.1 Hp)
Max. spindle torque: 141.3 N·m (104.3 lbf-ft)



DNM 6700/L/XL

12000 r/min

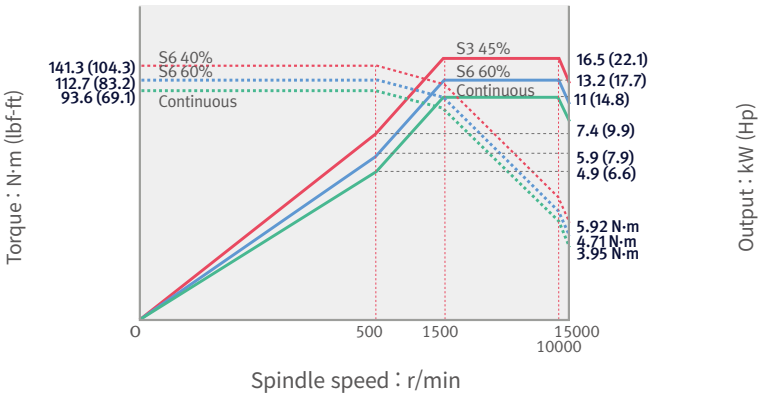
Max. spindle power: 21.8 kW (29.2 Hp)
Max. spindle torque: 150.1 N·m(110.8 lbf-ft)



DNM 4500/L, 5700/L, 6700/L/XL

15000 r/min

Max. spindle power: 16.5 kW (22.1 Hp)
Max. spindle torque: 141.3 N·m (104.3 lbf-ft)

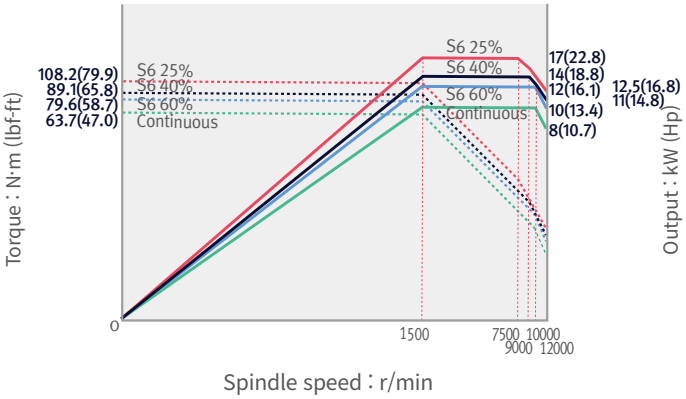


POWER | TORQUE

HEIDENHAIN | MITSUBISHI

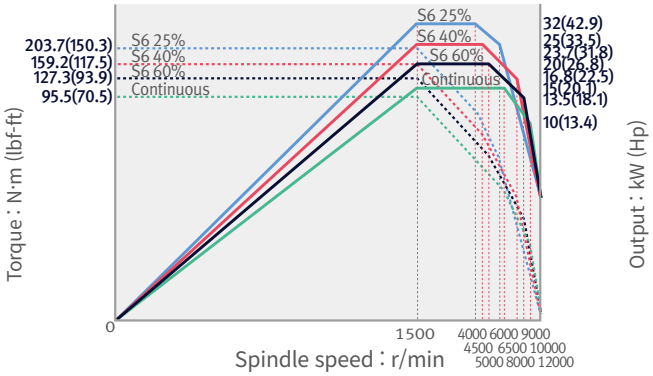
HEIDENHAIN
DNM 4500/L, DNM 5700/L

12000 r/min
Max. spindle power: 17 kW (22.8 Hp)
Max. spindle torque: 108.2 N·m (79.9 lbf-ft)

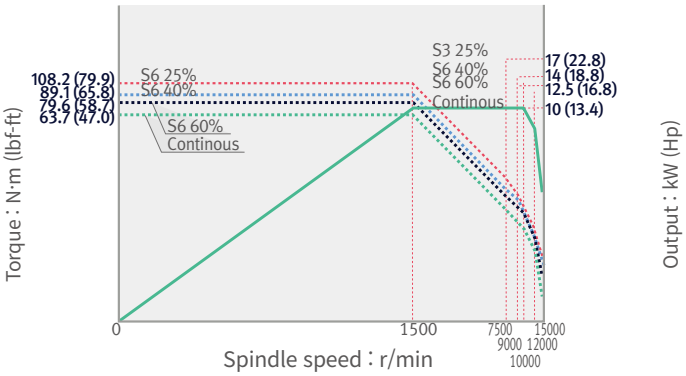


HEIDENHAIN
DNM 6700/L/XL

12000 r/min
Max. spindle power: 32 kW (42.9 Hp)
Max. spindle torque: 203.7 N·m (150.2 lbf-ft)

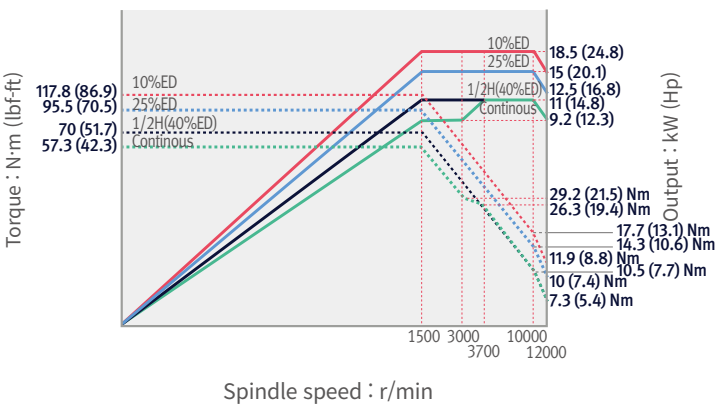


15000 r/min option
Max. spindle power: 17 kW (22.8 Hp)
Max. spindle torque: 108.2 N·m (79.9 lbf-ft)



MITSUBISHI
DNM 4500/L, 5700/L, 6700/L/XL

12000 r/min option
Max. spindle power: 18.5 kW (24.8 Hp)
Max. spindle torque: 117.8 N·m (86.9 lbf-ft)

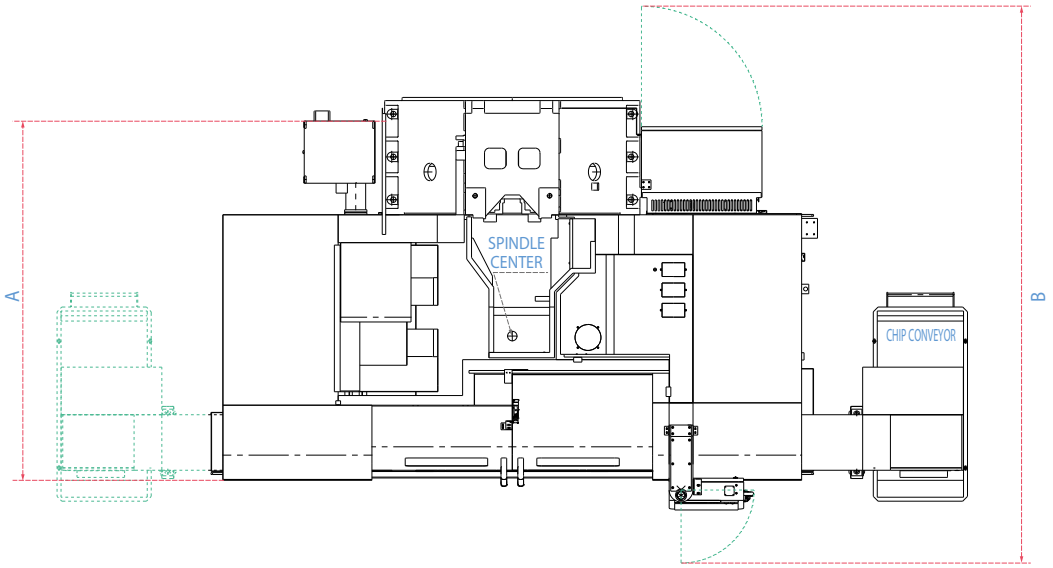


DIMENSIONS

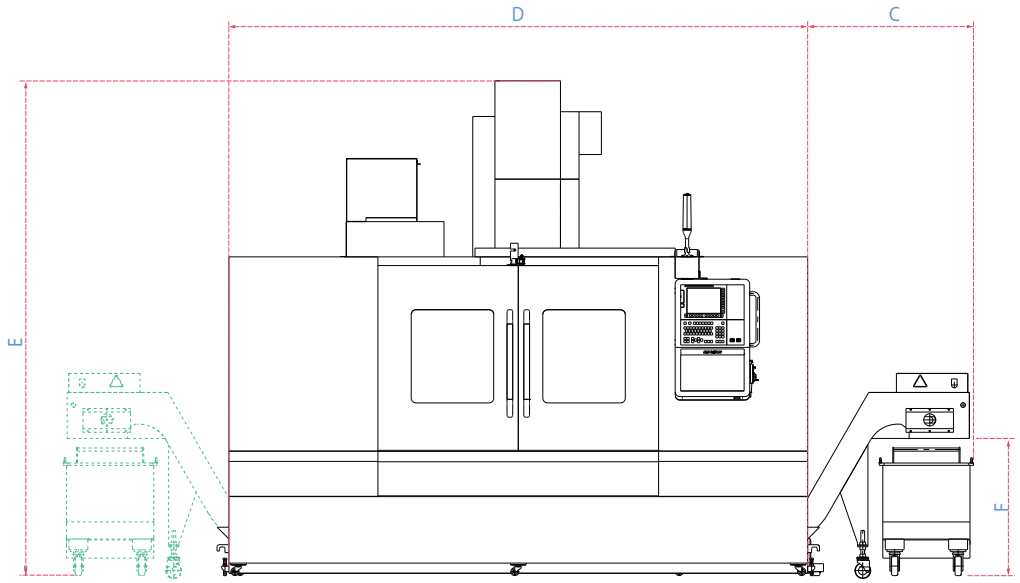
DNM 4500/5700/6700 series

Units : mm (inch)

TOP



FRONT



Model	A (Length)	B[1]	C[2]	D (Width)	E (Height)	F		
						SCRAPER	HINGED	SCREW
DNM 4500	1970 (77.6)	3200 (126.0)	1040 (415) [40.9(16.3)]	2465 (97.0)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 4500L	1970 (77.6)	3200 (126.0)	1040 (415) [40.9(16.3)]	2550(100.4)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 5700	2225 (87.6)	3365 (132.5)	1040 (415) [40.9(16.3)]	2960 (116.5)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 5700L	2225 (87.6)	3365 (132.5)	1040 (415) [40.9(16.3)]	3200 (126.0)	2985 (117.5)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 6700	2415 (95.1)	3510 (138.2)	1040 (415) [40.9(16.3)]	3200 (126.0)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)
DNM 6700L	2415 (95.1)	3510 (138.2)	1040 (415) [40.9(16.3)]	3650 (143.7)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)

1 Max. machine length (including electric cabinet door and operation panel swiveling)
2 Additional width to accommodate the side chip conveyor. [ ] indicates the additional width required to accommodate a screw(auger)type chip conveyor.

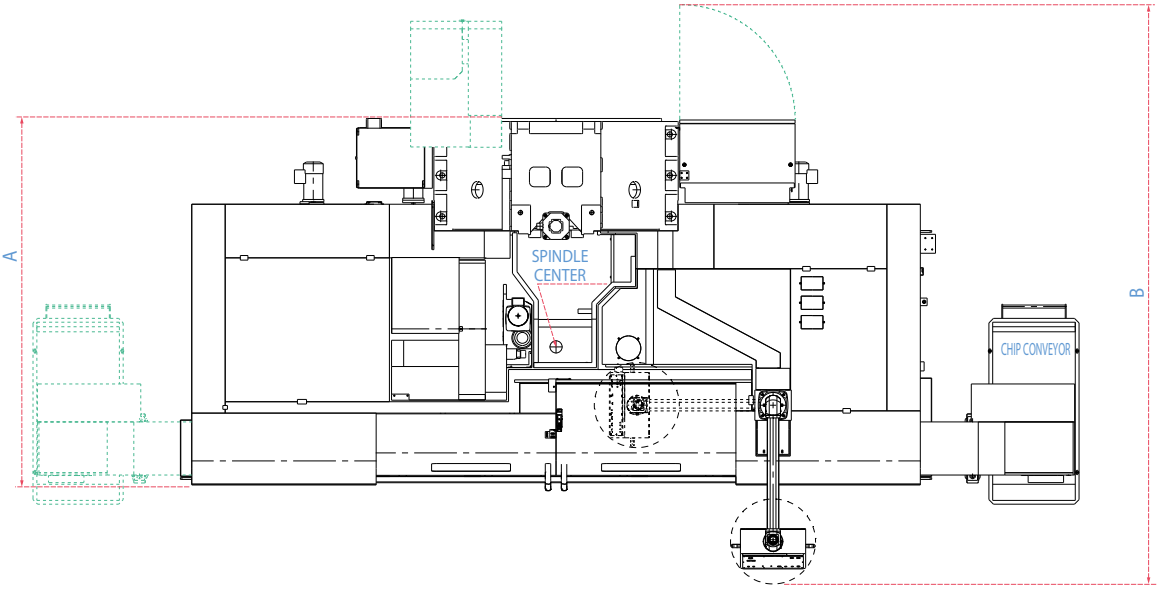
** Some peripheral equipment can be placed in other places *Rear chipconveyor need discuss with sales person*

DIMENSIONS

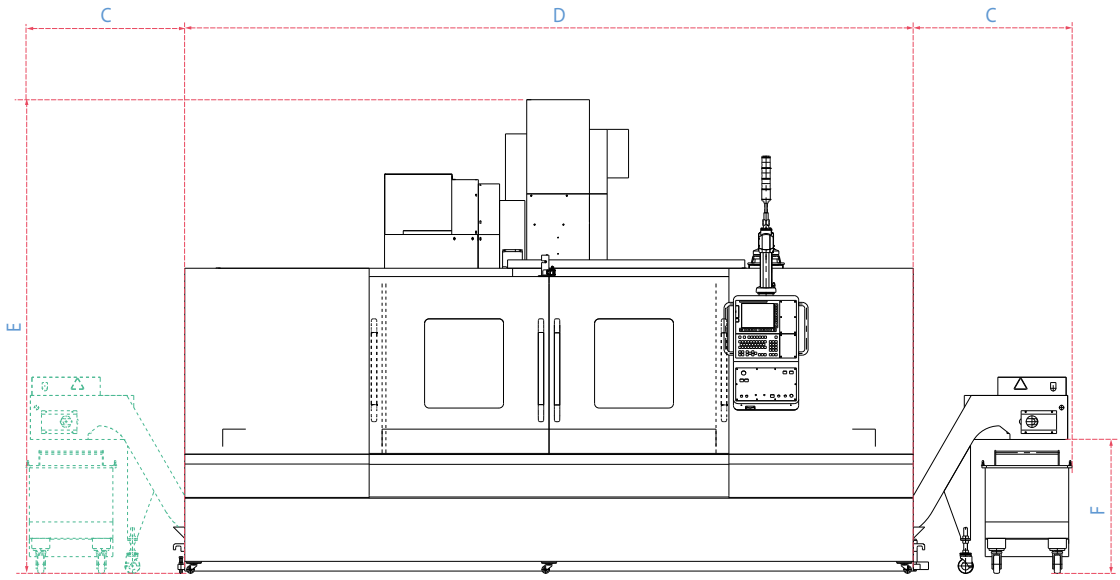
DNM 6700XL

Units : mm (inch)

TOP



FRONT



Model	A (Length)	B[1]	C[2]	D (Width)	E (Height)	F		
						SCRAPER	HINGED	SCREW
DNM 6700XL	2415 (95.1)	3820 (150.4)	1045 (41.1)	4800 (189.0)	3120 (122.8)	883 (34.8)	865 (34.1)	440 (17.3)

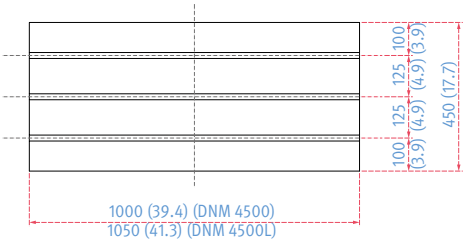
1 Max. machine length (including electric cabinet door and operation panel swiveling)
2 Additional width to accommodate the side chip conveyor. [ ] indicates the additional width required to accommodate a screw(auger)type chip conveyor.

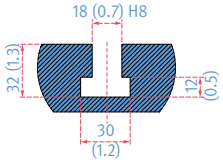
** Some peripheral equipment can be placed in other places *Rear chipconveyor need discuss with sales person*

TABLE

DNM 4500/L

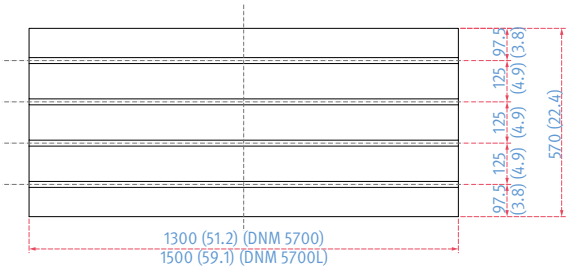
Units : mm (inch)

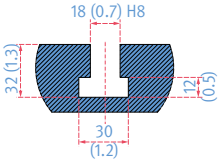




DNM 5700/L

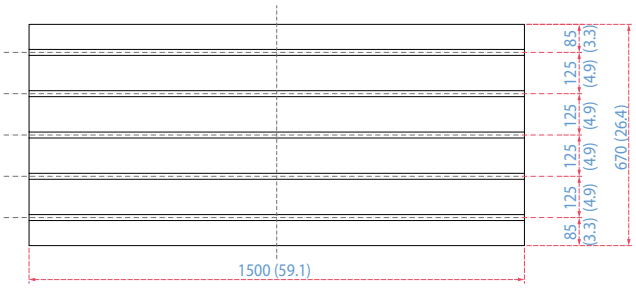
Units : mm (inch)

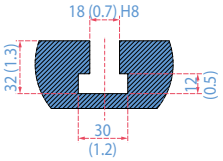




DNM 6700

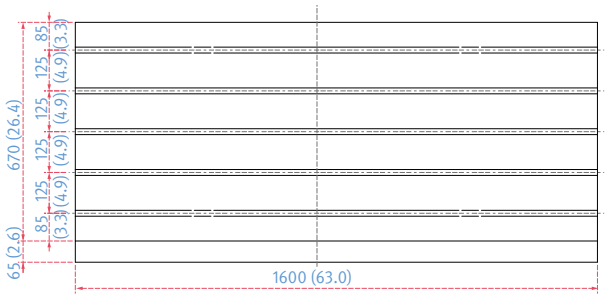
Units : mm (inch)

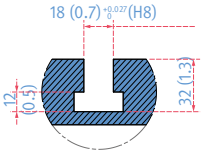




DNM 6700L

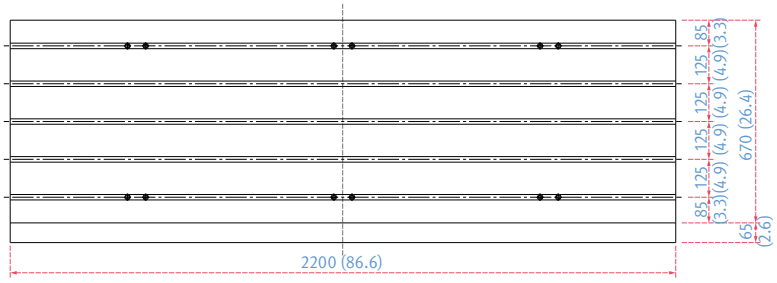
Units : mm (inch)

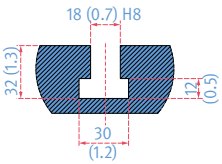




DNM 6700XL

Units : mm (inch)





MACHINE SPECIFICATIONS

Description			Unit	DNM 4500	DNM 4500L	DNM 5700	DNM 5700L	DNM 6700	DNM 6700L	DNM 6700XL
Travels	Travel distance	X axis	mm (inch)	800 (31.5)	910 (35.8)	1050 (41.3)	1300 (51.2)	1300 (51.2)	1500 (59.1)	2100 (82.7)
		Y axis	mm (inch)	450 (17.7)		570 (22.4)		670 (26.4)		
		Z axis	mm (inch)	510 (20.1)				625 (24.6)		
	Distance from spindle nose to table top		mm (inch)	150~660 (5.9~26.0)				150~775 (5.9~30.5)		
Table	Table size		mm (inch)	1000 x 450 (39.4 x 17.7)	1050 x 450 (41.3 x 17.7)	1300 x 570 (51.2 x 22.4)	1500 x 570 (59.1 x 22.4)	1500 x 670 (59.1 x 26.4)	1600 x 670 (63.0 x 26.4)	2200 x 670 (86.6 x 26.4)
	Table loading capacity		kg (lb)	600 (1322.8)		1000 (2204.6)		1300 (2866.0)		
	Table surface type		mm (inch)	T-SLOT (3-125(4.9) x 18(0.7) H8)		T-SLOT (4-125(4.9) x 18(0.7) H8)		T-SLOT (5-125(4.9) x 18(0.7)H8)		
Spindle	Taper		-	ISO #40						
	Max. spindle speed	Fanuc	r/min	8000 {8000*, 12000, 15000}						
		Siemens	r/min	12000 {15000}						
		Heidenhain	r/min	12000 {15000}						
		Mitsubishi	r/min	12000 {15000}						
	Max. Spindle power	Fanuc	kW (Hp)	18.5/11 (24.8/14.8) {15/11 (20.1/14.8)*, 18.5/11 (24.8/14.8), 18.5/11 (24.8/14.8)}				18.5/15 (24.8/20.1) {15/11 (20.1/14.8)*, 18.5/11 (24.8/14.8), 18.5/11 (24.8/14.8)}		
		Siemens	kW (Hp)	16.5/11 (22.1/14.8) {16.5/11 (22.1/14.8)}				21.8/16.3 (29.2/21.9) {16.5/11 (22.1/14.8)}		
		Heidenhain	kW (Hp)	17/10 (22.8/13.4) {17/10 (22.8/13.4)}				32/15 (42.9/20.1) {17/10 (22.8/13.4)}		
		Mitsubishi	kW (Hp)	18.5/11 (24.8/14.8)						
	Max. spindle torque	Fanuc	N·m (lbf-ft)	117.8 (86.9) {286 (211.1)*, 117.8 (86.9), 117.8 (86.9)}						
		Siemens	N·m (lbf-ft)	141.3 (104.3) {141.3 (104.3)}				150.1 (110.7) {141.3 (104.3)}		
		Heidenhain	N·m (lbf-ft)	108.2 (79.9) {108.2 (79.9)}				203.7 (150.2) {108.2 (79.9)}		
		Mitsubishi	N·m (lbf-ft)	117.8 (86.9)						
Feedrates	Rapid traverse rate	X axis	m/min (ipm)	36 (1417.3)						30 (1181.1)
		Y axis	m/min (ipm)	36 (1417.3)						30 (1181.1)
		Z axis	m/min (ipm)	30 (1181.1)						
Automatic Tool Changer	Type of tool shank	Tool shank	-	BT 40 {CAT 40 / DIN 40}						
		Pull stud	-	PS806 {Modified DIN / DIN 69872 #40}						
	Tool storage capa.		ea	30 {40, 60}						
	Max. tool diameter	Continous	mm (inch)	80 (3.1) {76 (3.0)}						
		Without Adjacent Tools	mm (inch)	125 (4.9)						
	Max. tool length		mm (inch)	300 (11.8)						
	Max. tool weight		kg (lb)	8 (17.6)						
	Max. tool moment		N·m (ft-lbs)	5.88 (4.3)						
	Tool selection			MEMORY RANDOM						
	Tool change time (Tool-to-tool)		sec	1.2						
	Tool change time (Chip-to-chip)		sec	3.2					3.5	
Power source	Electric power supply (rated capacity)		kVA	29.5				38.1 {33.0**}	40 {35}*	
	Compressed air supply		MPa (psi)	0.54 (78.3)						
Tank capacity	Coolant tank capacity		L (gal)	260 (68.7)	285 (75.3)	310 (81.9)	350 (92.5)	325 (85.9)	430 (113.6)	440 (116.2)
Machine Dimensions	Height		mm (inch)	2985 (117.5)				3120 (122.8)		
	Length		mm (inch)	2158 (85.0)		2413 (95.0)		2597 (102.2)		2970 (116.9)
	Width		mm (inch)	2615 (103.0)	2701 (106.3)	3110 (122.4)	3350 (131.9)	3350 (131.9)	3650 (143.7)	4800 (189.0)
	Weight		kg (lb)	5000 (11023.0)	5500 (12125.2)	6500 (14329.8)	7000 (15432.1)	8500 (18739.0)	9000 (19841.3)	10000 (22045.9)
Contrel	NC system		-	DN Solutions Fanuc i Plus / SIEMENS S828D / HEIDENHAIN TNC620 / MITSUBISHI M80A						

*{ } : Optional * 8000 r/min High torque version(FANUC only) ** Power capacity of 8000 r/min high torque and 12000 r/min spindle

WHY DN SOLUTIONS

The DN Solutions promise, MACHINE GREATNESS, has two important meanings. The first is simple: DN Solutions makes great machines. The second is a challenge to our end-users. With a product line that is this comprehensive, accurate and reliable, we equip our customers to machine greatness. The big question: **Why should you choose DN Solutions over other options?**

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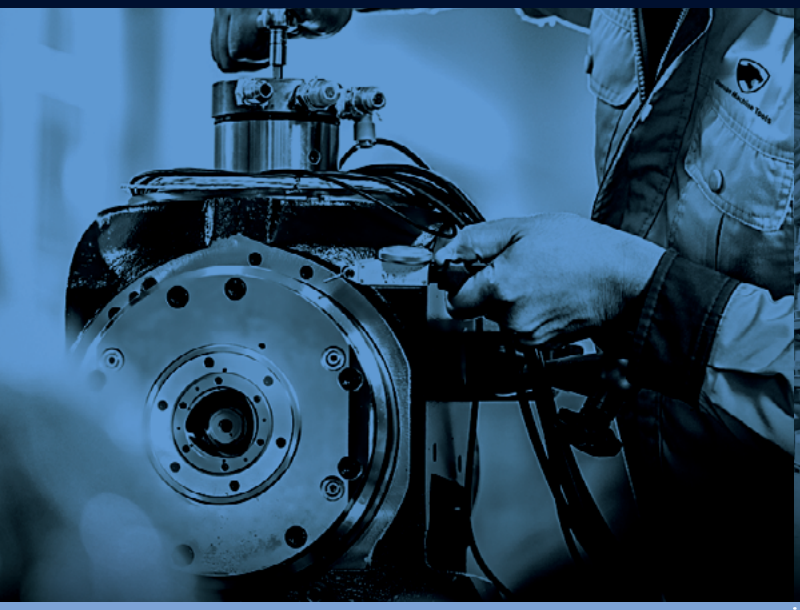

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