COMPACT, SIMULTANEOUS 5-AXIS MACHINING CENTER
FOR HIGH-SPEED MACHINING

DVF

5000

DN SOLUTIONS

DVF 5000

The newDN Solutions DVF 5000 5 axis machining center provides world-class productivity and reliability for simultaneous 5 axis machining operations. Its stable structure and compact footprint is ideal for the production of small to medium size workpieces with complex shapes. The DVF 5000 also features an eco-friendly all-grease lubrication system.

DN Solutions DVF 5-axis models, with their rigid travelling column design and fully integrated tables, are available in a range of sizes. They are ideal for machining everything from small high-precision medical parts through to large aerospace jet engine components. DVF machines are the ultimate simultaneous 5-axis machining centres.

HIGH SPEED, HIGH-PRODUCTIVITY SIMULTANEOUS 5-AXIS MACHINE	USER-FRIENDLY MACHINE	HIGH PRECISION FUNCTION
• 12000 / 15000 / 18000 r/min high speed spindle • Ø500 mm (19.7 inch) rotary tilting table (option : Ø630mm (Ø24.8 inch)) • Max. workpiece weight 400kg (881.8 lb)	• Compact footprint • Grease lubrication system • Easy operator access to machine • Compact automation system (AWC)	• Integrated thermal compensation systems for spindle and structure • Spindle cooling provided as standard

BASIC STRUCTURE

Providing stable machining performance with a high-speed, direct-coupled or a built-in spindle.
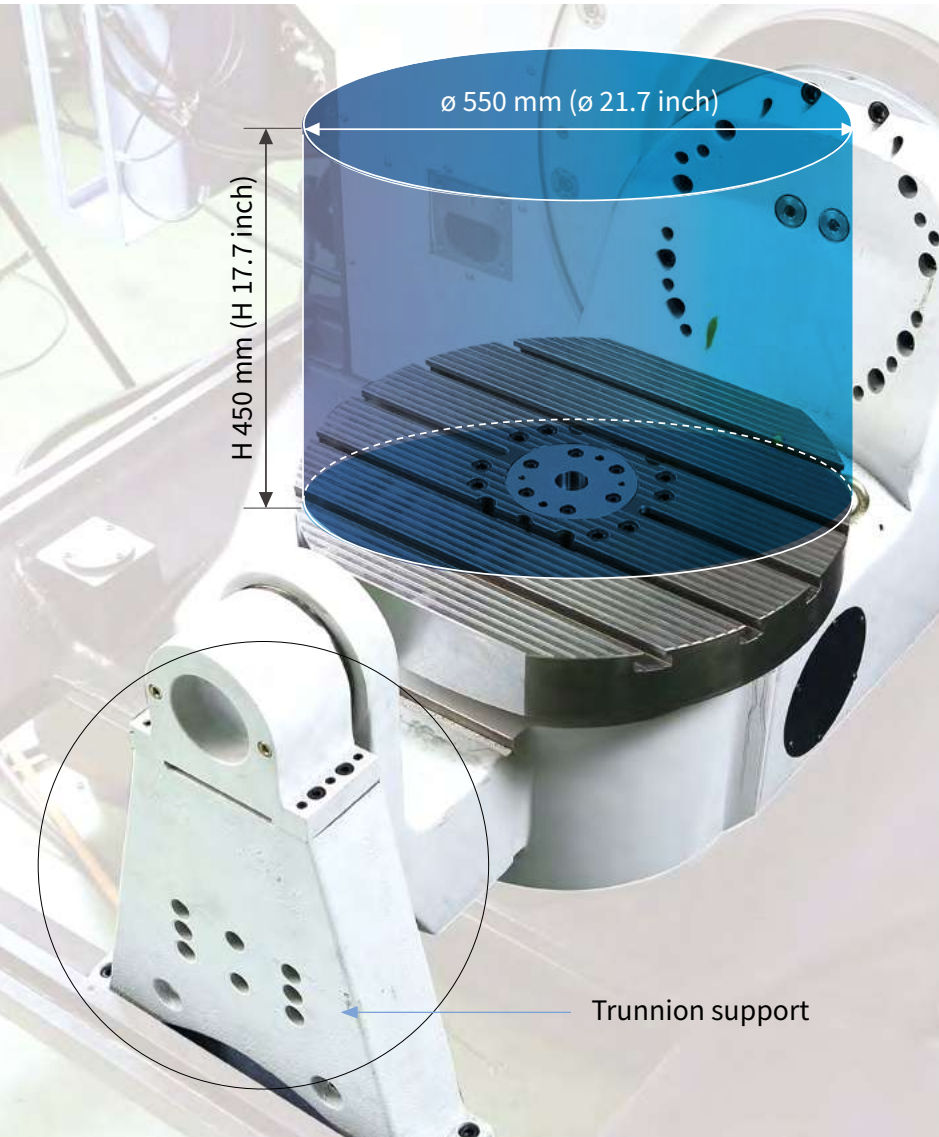

ø 550 mm (ø 21.7 inch)

H 450 mm (H 17.7 inch)

Trunnion support

Table size

ø500 x 450 mm
ø19.7 inch x 17.7 inch

ø630 x 450 mm `option`
ø24.8 inch x 17.7 inch

Maximum workpiece size

ø550 x H 450 mm
ø21.7 inch x 17.7 inch

Maximum workpiece weight

400 kg *(WITH TRUNNION SUPPORT)*
881.8 lbs

Description		Unit	DVF 5000
Travel distance	X-axis	mm (inch)	625 (24.6)
	Y-axis	mm (inch)	450 (17.7)
	Z-axis	mm (inch)	400 (15.7)
Rapid traverse rate	X-axis	m/min (ipm)	40 (1574.8)
	Y-axis	m/min (ipm)	40 (1574.8)
	Z-axis	m/min (ipm)	40 (1574.8)

Z-axis
Y-axis
X-axis

C-axis : ±360

B-axis
-30 ~ + 110
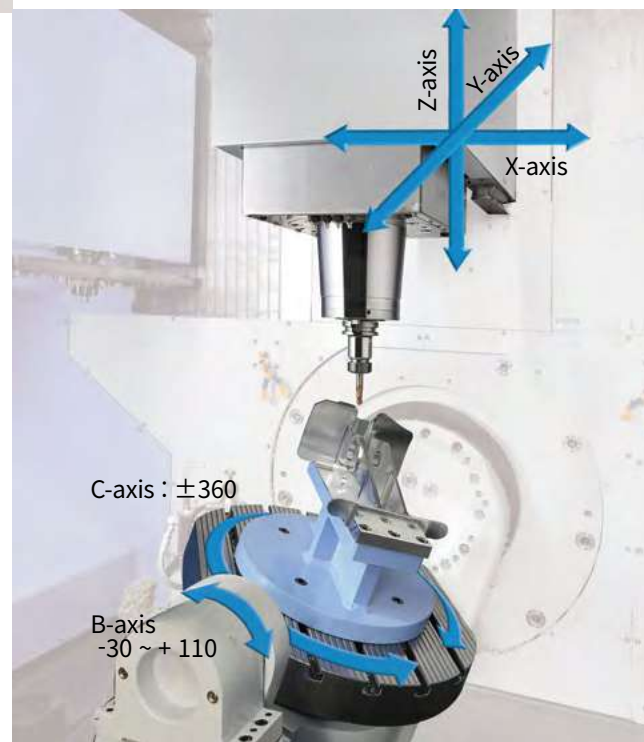
SPINDLE SPECIFICATIONS

Providing stable machining performance with a high-speed, direct-coupled or a built-in spindle.

Maximum speed

12000 r/min
15000 r/min *option*
18000 r/min *option*

Maximum power

FANUC:
18.5 kW
24.8 hp

22 kW *option*
29.5 hp

HEIDENHAIN:
17 kW
22.8 hp

30 kW *option*
40.2 hp

SIEMENS:
16.5 kW
22.1 hp

30 kW *option*
40.2 hp

- **Oil cooling spindle thermal compensation as standard**
- **Tool clamp confirmation sensor**
- **FANUC, HEIDENHAIN, SIEMENS controls**

CUTTING PERFORMANCE

From high-speed machining to heavy duty cutting - diverse machining operations for a wide range of complex components are all possible.

Machining performance

Max. chip throughput

Item	Material (SM45C)	Condition
Machining removal rate	599 cm^3/min	
feedrate	4680 mm/min	Ø80mm (3.15 in.) Face Mill (6Z)
depth of cut	2 mm	

Item	Material (AL6061)	Condition
Machining removal rate	1814 cm^3/min	
feedrate	9450 mm/min	Ø80mm (3.15 in.) Face Mill (6Z)
depth of cut	3 mm	

* The results presented are provided as examples only. Different cutting and environmental conditions may well deliver different results.

Machining examples

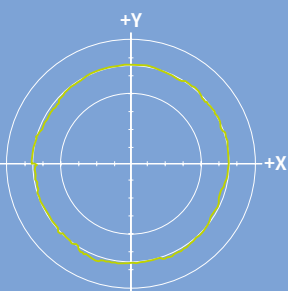| Item	Door Handle (Aerospace)
Material	Aluminum
Cycle time	3 hour 30 min
Tool	Ø12 x R2 Endmill
Spindle speed	8000 r/min
Feed rate	1800 mm/min (70.9 ipm)

Ball bar measurement test

Roundness **3.8 ㎛**

Feedrate **4000** mm/min 157.5 ipm

Higher roundness accuracy is realized by the advanced machine design and structure and by DN Solutions's control system.

+Y
+X

MAGAZINE SPECIFICATIONS

Servo tool magazine delivers high productivity and reliability.
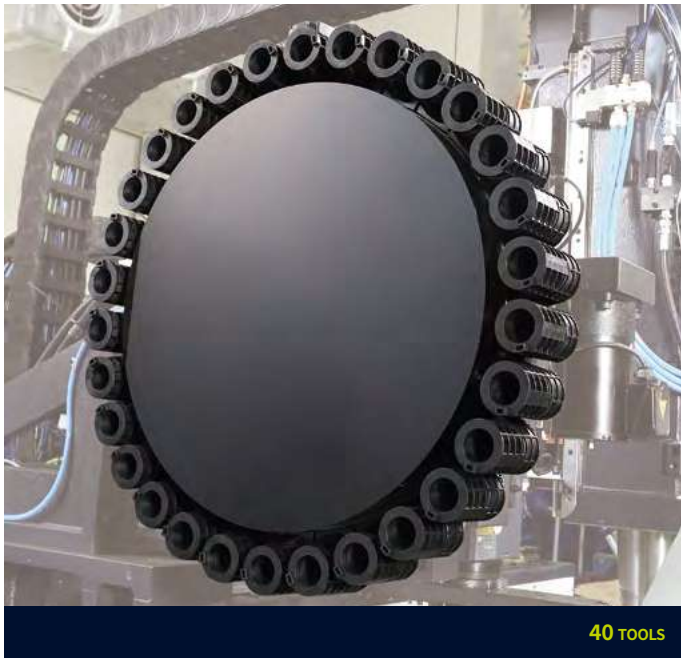
40 TOOLS

120 TOOLS

Tool type

ISO #40

Tool capacity

DRUM TYPE	**30, 40** tools
CHAIN TYPE	**60, 90, 120** tools

Maximum tool diameter

CONTINUOUS	**70** mm 3.0 inch
W/O ADJACENT TOOLS	**125** mm 4.9 inch

Maximum tool length

300 mm 11.8 inch

Maximum tool weight

8 kg 17.6 lbs

Tool-to-tool

1.3 second

ATC MAGAZINE PANEL
More than 60 tools

- Touch panel 7"
  (FANUC, HEIDENHAIN)
- Touch panel 8.4"
  (SIEMENS)
- Touch panel 10.2"
  (FANUC, HEIDENHAIN)
  option

COVER ALL POSSIBILITIES

With cutting-edge technology and an automation-ready framework, this machine elevates your 5-axis capability.

STANDARD | OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

Description	Features		DVF 5000
Spindle	12000 r/min		●
	15000 r/min		○
	18000 r/min		○
Magazine	Tool storage capacity	30 ea	●
		40 / 60 / 90 / 120 ea	○
Tool shank type	BIG PLUS BT40		●
	CAT40 / DIN / HSK A63		○
Coolant	FLOOD	1.1 KW_0.7 MPA_30 L/MIN	●
	TSC	None	●
		4.0 KW_2.0 MPA_BUILT-IN FILTER	○
		3.7 KW_3.0 MPA_BUILT-IN FILTER	○
		7.5 KW_7.0 MPA_BUILT-IN FILTER	○
	OIL SKIMMER	None	●
		BELT TYPE	○
	Coolant level switch : Sensing level - Low / High		
Chip disposal	Chip conveyor	CHIP PAN	●
		HINGED BELT_LEFT SIDE	○
		DRUM CHIP C/C	○
	Chip bucket	Folklift type	○
		Rotation type	○
	Air gun		○
	Coolant gun		○
Precision machining options	Linear scale	X / Y / Z axis	○
Measurement & automation	IKC READY	S/W ONLY	●
		RENISHAW (RMI-Q) + S/W	○
		HEIDENHAIN (SE660) + S/W	○
		BLUM (RC66) + S/W	○
	DATUM BALL FOR IKC	NONE	●
		DATUM BALL_D25	○
	TOUCH PROBE FOR IKC	NONE	●
		RMP60_RENISHAW	○
		TS460_HEIDENHAIN	○
		TC60_BLUM	○
	Automatic tool measurement	NONE	●
		TS27R_RENISHAW	○
		RTS_RENISHAW	○
		NC4S_RENISHAW	○
		TT160_HEIDENHAIN	○
		ZX SPEED_BLUM	○
	MASTER TOOL	NONE	●
		MASTER TOOL	○
Others	LED Work light		●
	3 Color signal tower		●
	Tool load monitoring		●
	EZ Guide i		○
	Automatic power off		●
Customized special option	Front _ Auto door (w/safty edge)	-	○
	Right side _ Auto door (w/safty edge)	-	○
	Roof_ Auto door	-	○
	Automatic workpiece changer	4 / 6 / 8 / 12	○
	Rotary joint for table	Fixture line thru rotary table center (Max.HYD 4port & PNE 2port)	○
	Paper filter with TSC	20 / 30 / 70 BAR	○
	IKC(Intelligent Kinematic Compensation)	DCP-i	○
		Kinematic OPT.	○

● Standard ○ Optional X Not applicable

※ Please contact DN Solutions for detailed specification information.

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

⚠ **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.
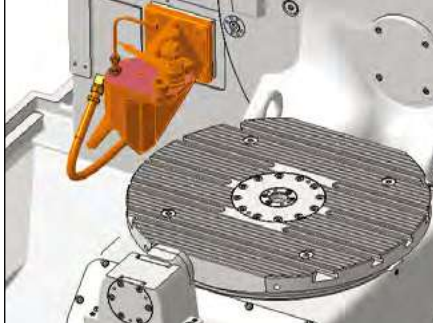
PERIPHERAL EQUIPMENT

Automatic tool measurement

When using Tool Length Measurement, contactDN Solutions for detailed capacity diagrams
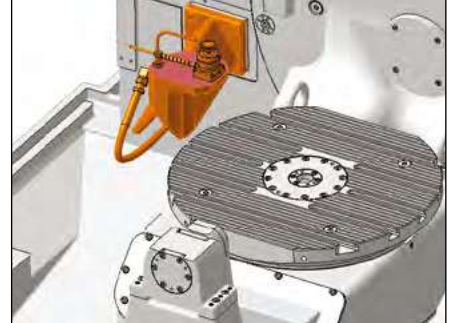
LIMITED USE OF MAX WORKPIECE
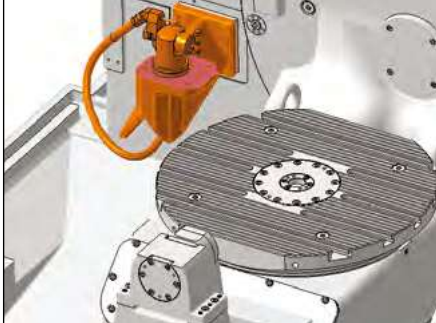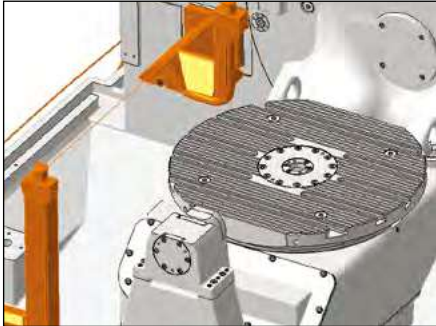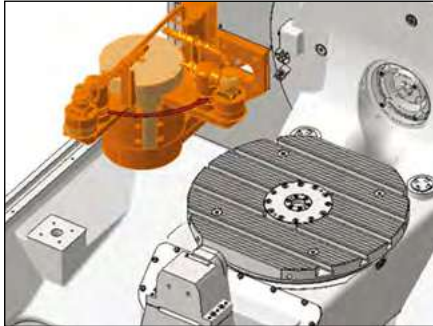

Renishaw(TS27R)

Heidenhain (TT160)

Blum (ZX Speed)

NON LIMITED USE OF MAX WORKPIECE

Head separated type
Renishaw NC4S · Blum MICRO SINGLE NT

Swing type
Renishaw(TS27R) · Heidenhain (TT160) · Blum (ZX Speed)

Intelligent kinematic compensation for 5-axis machining

For high-accuracy 5-axis machining, the Intelligent Kinematic Compensation function is recommended. This function minimizes errors in complex 5-axis machining applications by maintaining the tool point in the correct position relative to the workpiece.

In order to use this function, the following optional items are required:

SOFTWARE

FANUC NC : IKC

HEIDENHAIN NC ; IKC

RECEIVER Recommended Option

TOUCH PROBE
Recommended Option

DATUM BALL
Recommended Option

AUTO TOOL MEASUREMENT
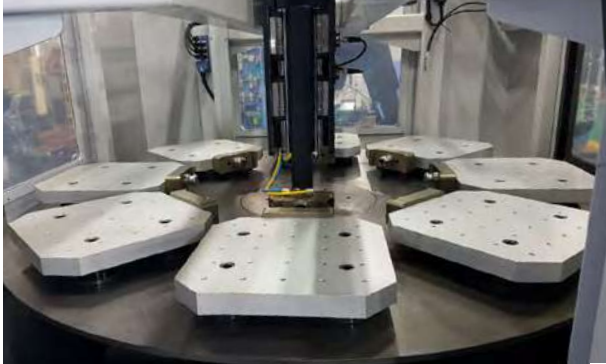Recommended Option

MASTER TOOL
Recommended Option

Tool length measuring

ø550 x 240 mm
(Fixed touch type)
ø21.7 inch x 9.4 inch

ø550 x 450 mm
(Laser type / Rotating touch type)
ø21.7 inch x 17.7 inch

Touch type

RENISHAW
TS27R

HEIDENHAIN
TT160

BLUM
ZX SPEED

Laser type

RENISHAW
NC4S

BLUM
MICRO SINGLE NT

AWC

AWC
An optimized solution from a compact automation system.

### AWC `option`
A compact automation system providing fast, reliable and high productivity workpiece change capabilities.

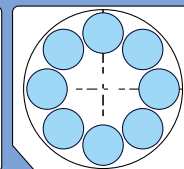| Max. workpiece dimensions	Unit	Count	Max. loading	Max. construction height on the pallet
250 x 250 (9.8x9.8) or ø 300 (11.8)	mm (inch)	12	130kg (286.6lb)	350mm (13.8inch)
350 x 350 (13.8x13.8) or ø 400 (15.7)	mm (inch)	8	250kg (551.1lb)	340mm (13.4inch)
400 x 400 (15.7x15.7) or ø 450 (17.7)	mm (inch)	6		335mm (13.2inch)
500 x 500 (19.7x19.7) or ø 550 (21.7)	mm (inch)	4		

Pallet storage-table configuration
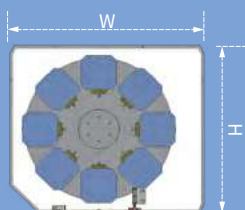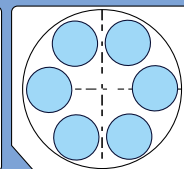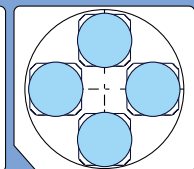
unit : mm (inch)

W X H = 1,900 X 1,700
(74.8 X 66.9)
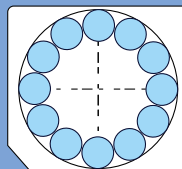
250 X 250
(9.8 X 9.8)

350 X 350
(13.8 X 13.8)

400 X 400
(15.7 X 15.7)

500 X 500
(19.7 X 19.7)

AWC DIMENSIONS

Oil cooler (opt.)

464 (18.3)

790 (31.1)

708 (27.9)

334 (13.1)

2700 (106.3)

1565 (61.6)

455 (17.9)

185 (7.3)

175 (6.9)

85 (3.3)

1223 (48.1)

646 (25.4)

R1147 (45.2)

920 (36.2) (Door open width)

160 (6.3)

2205 (86.8)

3418 (134.6)

4284 (168.7)

TOP

DOOSAN DVF 5000

631 (24.8)

931 (36.7)

2901 (114.2)

Table Center

2230 (87.8)

2270 (89.4)

960 (37.8)

1257 (49.5)

53 (2.1)

730 (28.7)
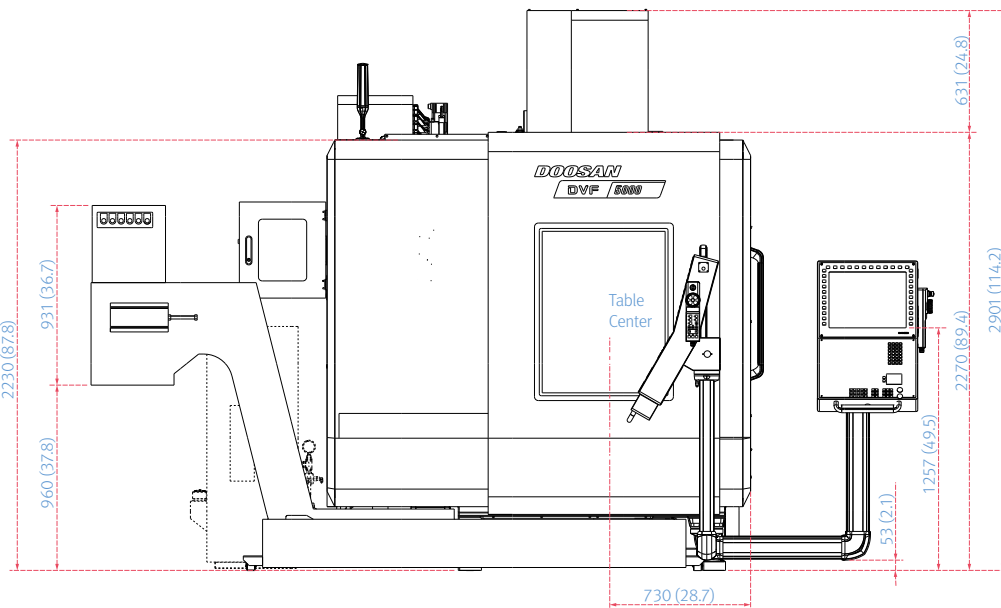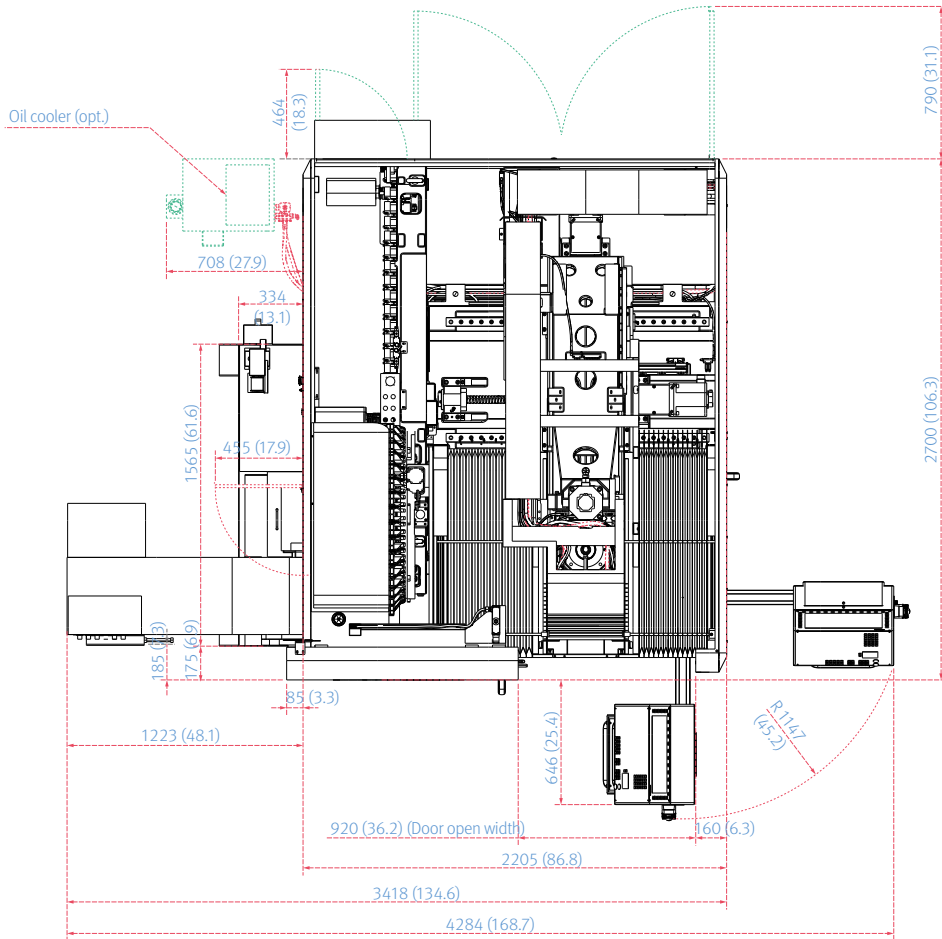
CUSTOMIZED USER-FRIENDLY FLEXIBLE OPERATION SOLUTIONS

CUFOS is a PC-based control system created by DN Solutions. Equipped with intuitive and user-friendly functions such as a smartphone screen and easy customization, CUFOS helps to improve operators' operational efficiency and performance.

CUFOS *FEATURES*

USER-FRIENDLY

- 19" multi-touchscreen
- Multiple built-in applications
  - CPS app (Collision Protection System)
  - Turn-cut app
  - Tool management app
  - Status monitoring and alarm guidance app
- Max. program memory : 40GB *option*
- App-based interface for smartphones and tablet PCs

FLEXIBLE

- Simple connectivity with external software (Cloud, Office, etc.)
- SSD data server app
- PC-based operating system (Windows® 7)

CUSTOMIZED

- Simple customization
- Extend functionality with additional apps
- Register up to 6 individual users

CUFOS

CUFOS INTERFACE

User-friendly screen controls

CUFOS, the PC-based control created by DN Solutions, is an integrated system solution using an intuitive 19-inch touchscreen. The system provides a convenient operator interface, a high level of customization and many useful high technology apps.

Intuitive operation via touch screen

Simple customization is available for specific work environments.

Supports various apps in three fields—setup, machining and utility

It provides easy configuration by allowing users to add and edit functions on the home screen according to job requirements.

CUFOS open CNC

CUFOS operation for enhanced productivity

The newly-designed operation panel enhances operating convenience by incorporating common-design buttons and layouts, and features the QWERTY keyboard for fast and easy operation.

CUFOS

- PROGRAMMING
- SET UP
- TOOL DATA
- MACHINING
- MAINTENANCE

PC software

Applications

CUFOS INTERFACE: UTILITIES

Support user convenience functions and additional software modules handling various peripheral devices like measurement.

Setting

CUFOS provides management and setting functions such as HMI parameter, user setting, setup manager or e-mail. User setting allows users to register and delete up to six users from the account. CUFOS apps and NC functions can be user-restricted as necessary.

Register up to six user accounts
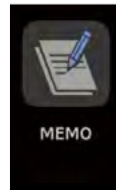
Memo

Users can generate memos, either with a high level of detail via screen capture, or entered by keyboard/touchscreen. The user can add data to existing memos if required. A maximum of 120 memos can be saved

Screen captures

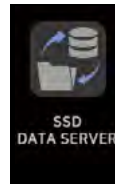*Memo through touch screen or key board or using a captured screen.*

CUFOS: MACHINING

Reduce downtime and improve productivity with Collision Protection System (CPS), real-time status monitoring and maintenance guides during machine operation.

Collision protection system (CPS)

A function to prevent real-time collision in manual mode between the tool and equipment/machine elements inside the working area.

Use the Setup Manager with the CPS app to build up the machine model and add tool, workpiece and workholding equipment details.

SSD data server

As a PC-based NC, it allows the HDD to be used as a storage space for machining programs, saving time for program transfers.

Maximum storage size:
40GB*

Maximum file size:
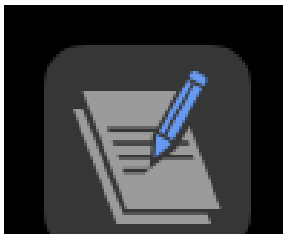## 2GB

Maximum file number:
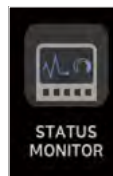## Up to 1000
(including folder)

*Maximum storage size is determined by the size of SSD in Panel iHPro. If customers need a storage size of 40GB, it is necessary to select SSD129GB (option).

NC control

Easy to convert the screen to standard FANUC format for operator convenience.
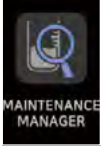
Status monitoring & alarm guidance

Displays the cause and necessary action for NC/PMC alarms during machine running time. The system can send an email containing the alarm message if the condition persists for a specified time period.
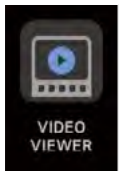

CUFOS

Maintenance manager

Monitors the status of machine and control elements, and confirms the alarm condition and maintenance schedule for preventative machine maintenance.

Video viewer

Video transfer and viewer functions make clearer communication possible between operators, and it facilitates the training of new workers on complex job arrangements.

Video formats:

WMV · AVI · WAV · MOV · MPG · MPEG
MP2 · MP3 · MP4 *(same as Windows Media open files)*

VIDEO SCREEN
USB DRIVE
CNC MEMORY

VIDEO LIST

FORWARD
PLAY/STOP
REWIND

A diverse range of functions and apps are available to meet your needs.

Description	Features		DVF 5000
Hardware	Display unit	19" color display	●
	Main RAM memory	4 GB	●
	Program storage memory	2 GB	●
		20 GB	○
		40 GB	○
	2 point-touch panel port		●
	Windows® 7 operating system		●
Applications	DN Solutions tool management		X
	Collision Protection System (CPS)		○
	SSD data server application		○
	Set and inspection application (Renishaw)		X
	Manager's message notification application		●
	FTP server service		●
	Smart key access control application		○
	Memo application		●
	Machine status monitor application		●
	Alarm guidance application		●
	Sketch cycle		X
	Sketch turn for CUFOS		X
	CS turncut		X
	BLUM contour scan (BLUM)		X
	Alarm notification via email		●
iHMI basic application	Manual viewer application		●
	Calendar application		●
	Browser application		●
	Periodic maintenance application		●
	Data logger application		●
	Servo viewer application		●

● *Standard*   ○ *Optional*   X *N/A*

FANUC 31i PLUS

Fanuc 31i Plus maximizes customer productivity and convenience.

15" Touch screen + New OP

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

Fanuc 31i Plus

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

USB and PCMCIA card QWERTY keyboard

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

iHMI touchscreen

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

Range of applications

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

NUMERIC CONTROL SPECIFICATIONS

FANUC

Item		Specifications	F31iB5 Plus DVF Series
Controlled axis	Controlled axes		5 (X,Y,Z,C,A) (X,Y,Z,C,B)
	Simultaneously controlled axes		5 axis
	Additional controlled axis	Add 1 Axis (5th Axis)	●
Data input/output	data server		○
	Memory card input/output		●
	USB memory input/output		●
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 II	G5.1 Q_, 1000 Blocks	●
	High smooth TCP		●
Operation Guidance Function	EZ Guide i		●
	EZ Operation package		●
Setting and display	CNC screen dual display function		●
Network	FANUC MTConnect		✪
	FANUC OPC UA		✪
Others	Display unit	15" color LCD with Touch Panel	●
	Part program storage size & number of registerable programs	10240M(4MB)_1000 programs	●
		20480M(8MB)_1000 programs	○
		2560M(1MB)_2000 programs	○
		5120M(2MB)_4000 programs	○
		10240M(4MB)_4000 programs	○
		20480M(8MB)_4000 programs	○

*Network: FANUC MTConnect and FANUC OPC UA available.*

● Standard   ○ Optional   ✕ Not Available   ✪ Available

EZ WORK

The software developed byDN Solutions's own technology provides numerous functions designed for 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.
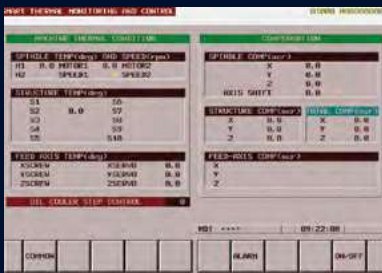
Thermal Compensation

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

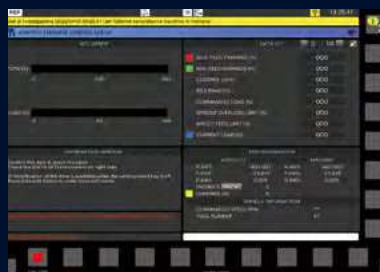Functional description of M code and G code

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

IKC (DCP-I)

The function to compensate the position of the workpiece and the tool tip to be constant regardless of the rotation of the rotating shaft error
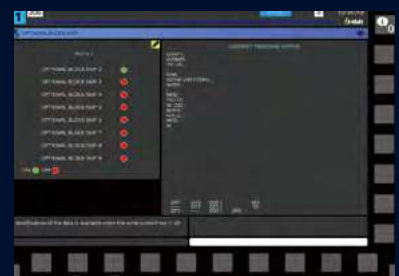

Spindle Warm Up

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 TNC640

Superior hardware specifications

The TNC 640 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

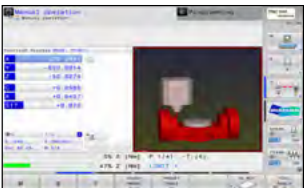• High user convenience with folder structure data management
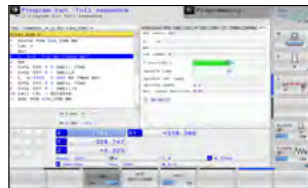
Conversational convenient function
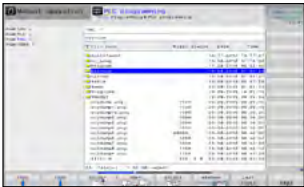
Data are controlled in the folder structure; convenient communication via USB devices

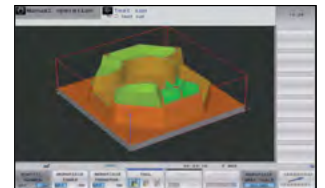KinematicOpt & KinematicComp `option` (Touch probe cycle for automatic measurement)

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	TNC640 DVF Series
Controlled axis	Controlled axis		5 (X,Y,Z,C,A) (X,Y,Z,C,B)
	Simultaneously controlled axis		5 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)		○
Network	MTConnect		✪
Others	Display unit	15" color LCD	●
		15" color LCD with touch panel	○
	Part program storage size & number of registerable programs	21 GB	●

● Standard　○ Optional　✕ Not Available　✪ Available

CONVENIENT OPERATION
Siemens 840D

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
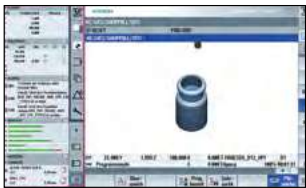
Conversational convenient function

Simulation and machining contour monitoring

Smart function

Side screen widget

5-axis kinematic measuring cycles

3D collision avoidance and collision avoidance ECO

Shop mill part programming

NUMERIC CONTROL SPECIFICATIONS

SIEMENS

	Item	Specifications	S840Dsl DVF 5000
Controlled axis	Controlled axes	5 axes	●
	Simultaneously controlled axes	5 axes	●
Data input/output	Memory card input/output	(Local drive)	●
	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	1000
Programming & editing function	3D simulation, finished part		●
	Simultaneous recording		●
	Measure kinematics		●
	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		○
	21.5" color display with touch screen		○
	CNC user memory	10 MB	●
	Expansion by increments	2 ~ 12 MB	○
	Collision avoidance		○
	Collision avoidance ECO (machine, working area)		●

● Standard   ○ Optional   X Not Available   ✪ Available

POWER | TORQUE
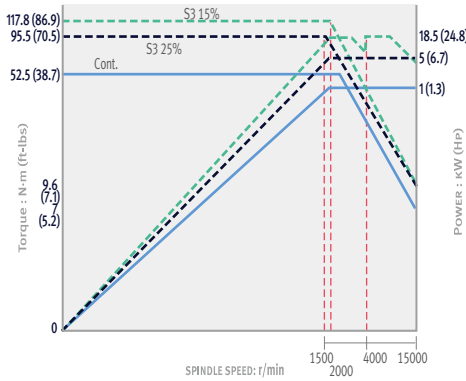
FANUC

12000r/min Direct
Power   18.5/11 kW (24.8/14.8 Hp)
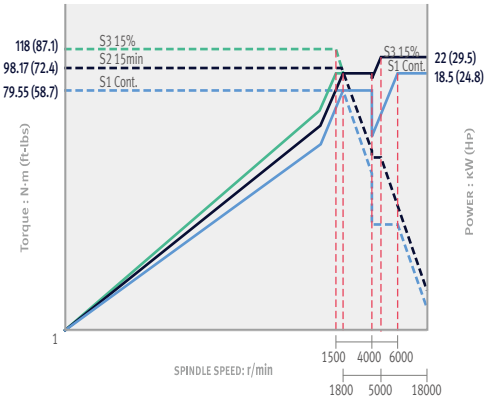Torque   118 N·m (87.1 ft-lbs)
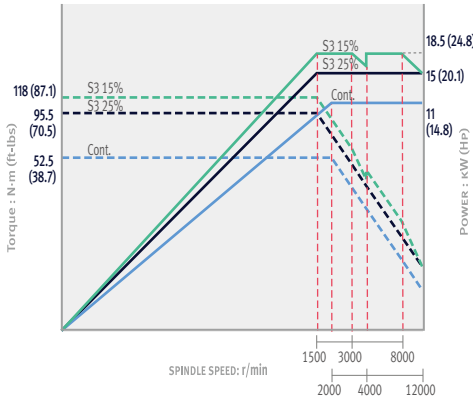
15000r/min Direct (option)
Power   18.5 kW (24.8 Hp)
Torque   117.8 N·m (86.9 ft-lbs)
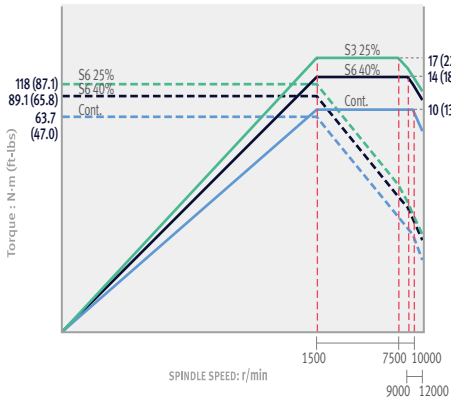

18000r/min Built-in (option)
Power   22/18.5 kW (29.5/24.8 Hp)
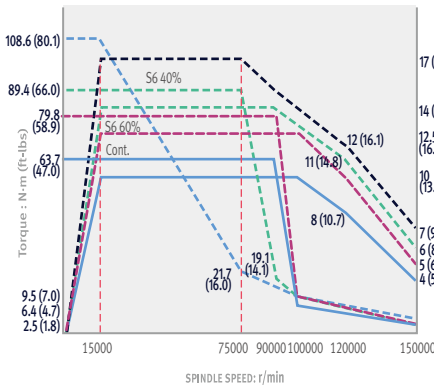Torque   118 N·m (87.1 ft-lbs)

HEIDENHAIN

12000r/min Direct
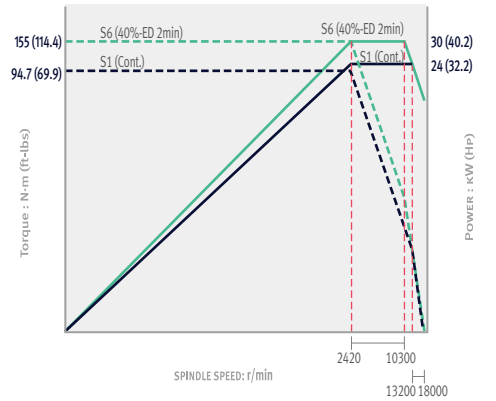Power   17/10 kW (22.8/13.4 Hp)
Torque   109 N·m (80.4 ft-lbs)

15000r/min Direct (option)
Power   17 kW (22.8 Hp)
Torque   108.6 N·m (80.1 ft-lbs)
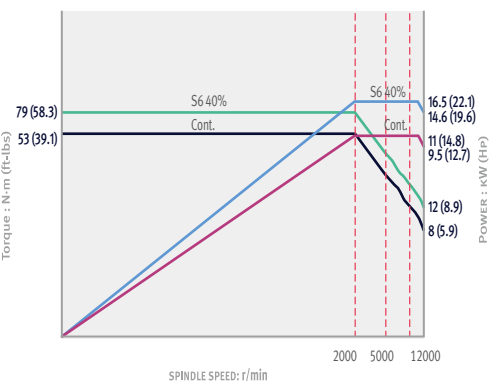

18000r/min Built-in (option)
Power   30/24 kW (40.2/32.2 Hp)
Torque   155 N·m (114.4 ft-lbs)
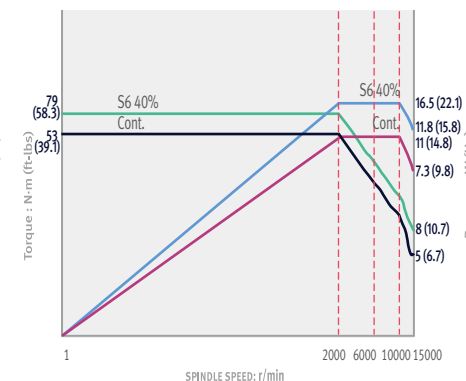

SIEMENS

12000r/min Direct
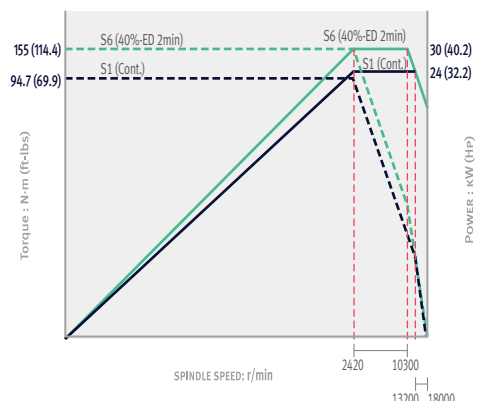Power   16.5/11 kW (22.1/14.8 Hp)
Torque   79 N·m (58.3 ft-lbs)

15000r/min Direct (option)
Power   16.5/11 kW (22.1/14.8 Hp)
Torque   79 N·m (58.3 ft-lbs)

18000r/min Built-in (option)
Power   30/24 kW (40.2/32.2 Hp)
Torque   155 N·m (114.4 ft-lbs)

DIMENSIONS

Units : mm (inch)

Oil cooler (opt.)

464 (18.3)
790 (31.1)
708 (27.9)
334 (13.1)
2700 (106.3)
1565 (61.6)
455 (17.9)
185 (7.3)
175 (6.9)
85 (3.3)
1223 (48.1)
646 (25.4)
R 1147 (45.2)
920 (36.2) (Door open width)
160 (6.3)
2205 (86.8)
3418 (134.6)
4284 (168.7)

TOP

DOOSAN DVF 5000

Table Center

631 (24.8)
2901 (114.2)
931 (36.7)
2230 (87.8)
2270 (89.4)
960 (37.8)
1257 (49.5)
53 (2.1)
730 (28.7)
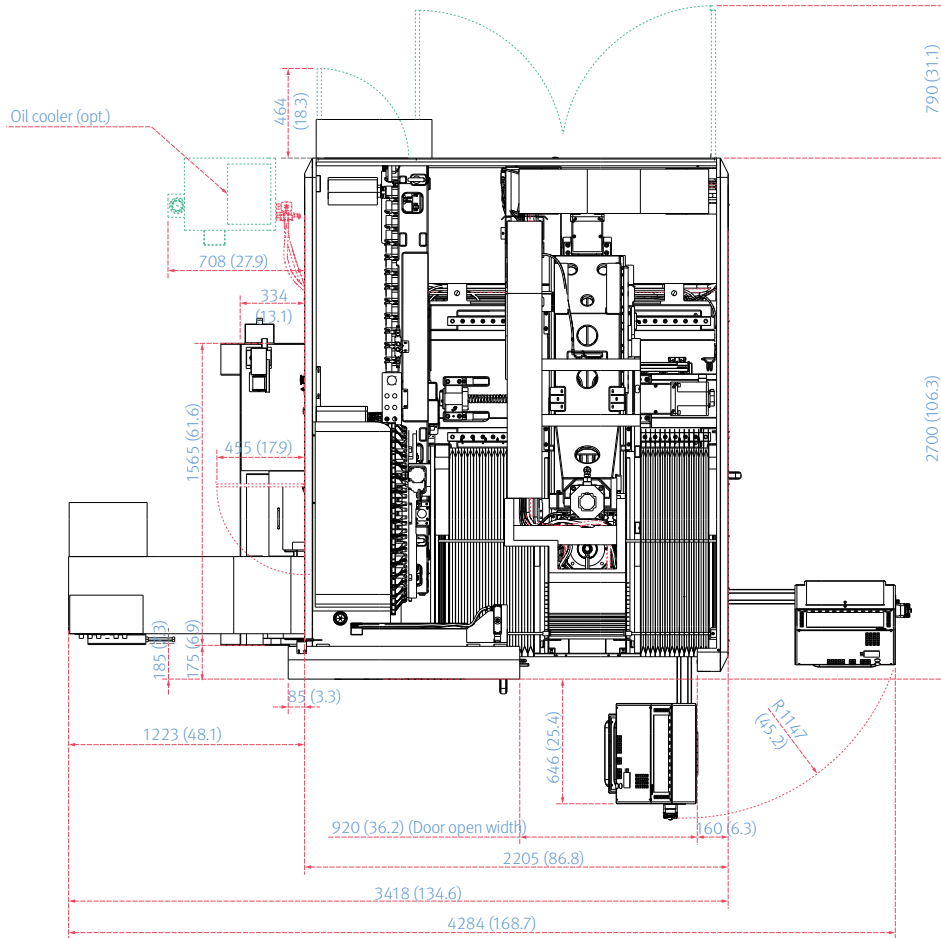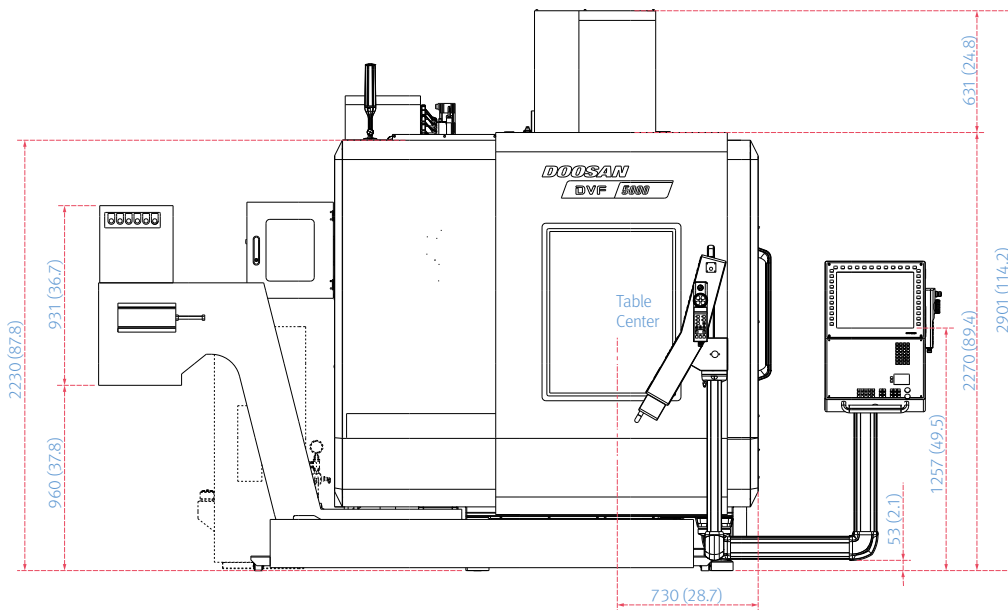
FRONT

Some peripheral equipment can be placed in other areas

Units : mm (inch)

Front view (1:10)

Front view (1:10)
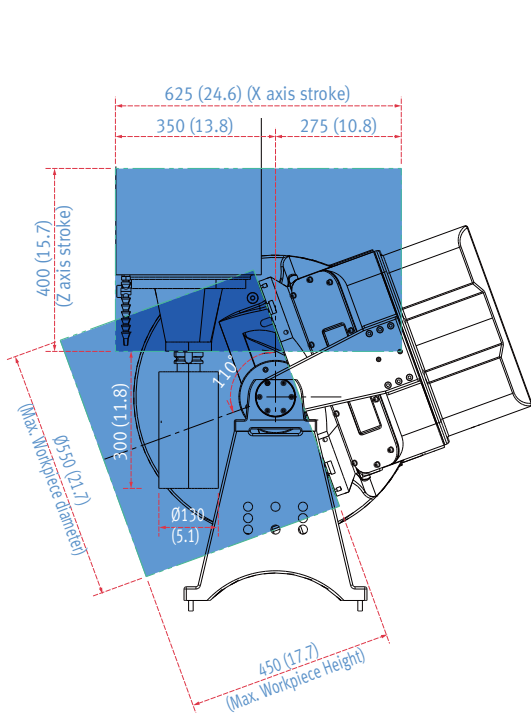
Front view (1:10)

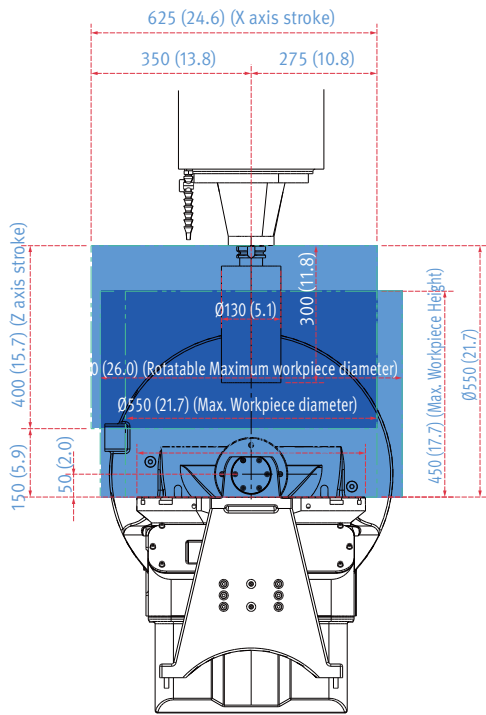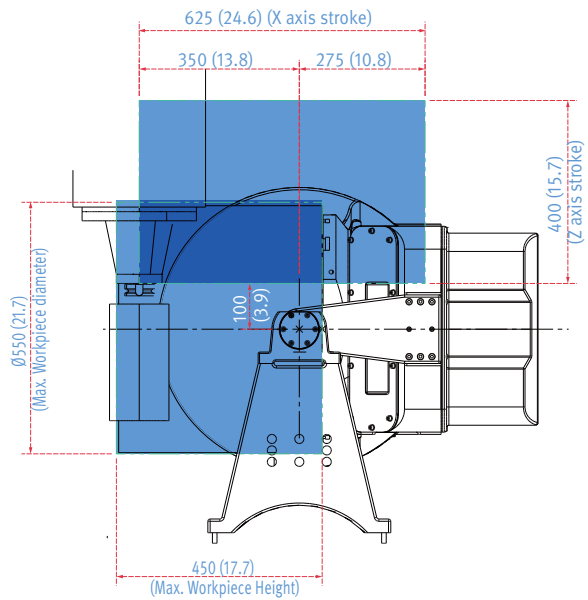Right view (1:10)

*Some peripheral equipment can be placed in other areas
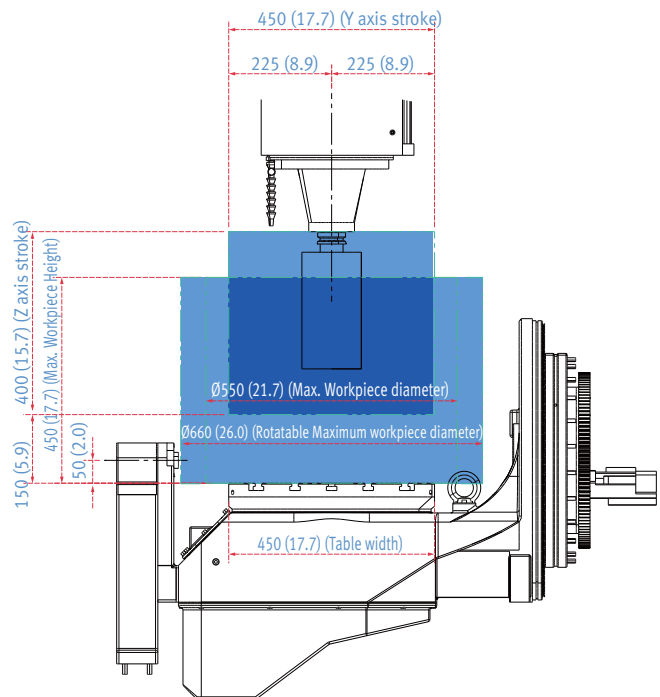
MACHINE SPECIFICATIONS

Description			Unit	DVF 5000
Travels	Travel distance	X axis	mm (inch)	625 (24.6)
		Y axis	mm (inch)	450 (17.7)
		Z axis	mm (inch)	400 (15.7)
		B axis	deg	-30 ~ +110
		C axis	deg	360
Table	Table size		mm (inch)	ø 500 x 450 {ø 630 x 450}* (ø 19.7 x 17.7 {ø 24.8 x 17.7})
	Max. workpiece size		mm (inch)	ø 550 x h 450 (ø 21.7 x h 17.7)
	Table loading capacity		kg (lb)	400 (881.8)
Spindle	Max. spindle speed		r/min	12000 {15000, 18000}*
	Max. spindle power (S3/Cont.)		kW (Hp)	Fanuc : 18.5 {22}* (24.8 {29.5}) H/H : 17 {30}* (22.8 {40.2})
	Max. spindle torque		N·m (ft-lbs)	Fanuc : 118 {118}* (87.1 {87.1}) H/H : 109 {155}* (80.4 {114.4})
Feedrate	Rapid traverse rate	X axis	m/min (ipm)	40 (1574.8)
		Y axis	m/min (ipm)	40 (1574.8)
		Z axis	m/min (ipm)	40 (1574.8)
		B axis	r/min	20
		C axis	r/min	20
Automatic tool changer	Type of tool shank	Tool shank	-	ISO #40
	Tool storage capa.		ea	30 {40, 60, 90, 120}*
	Max. tool diameter	Continous	mm (inch)	75 (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)
	Tool change (Tool-to-Tool)		sec	1.3
Tank capacity	Coolant tank capacity		L (gal)	410 (108.3)
Machine dimensions	Height		mm (inch)	2890 (113.8)
	Length		mm (inch)	2205 (86.8)
	Width		mm (inch)	2700 (106.3)
	Weight		kg (lb)	7500 (16534.4)
Control	NC system		-	CUFOS / F31iB5 Plus / HEIDENHAIN TNC640 / SIEMENS S840D

{ } : Option

WHY 5-AXIS MACHINING?

Single setup efficiency

5-axis machining allows you to approach the workpiece from all angles, with complete access to five sides of the part in a single setup. This reduces the overall number of part setups compared to traditional machining, which minimizes machine downtime and maximizes chip making time.

Improved part accuracy

When making parts with multi-sided features using traditional 3-axis machining, multiple part setups are required. This means new inaccuracies can arise each time the workpiece is repositioned. 5-axis machining eliminates stacked tolerances and improves overall part dimensional accuracy.

Extended machine shop capability

DN Solutions 5-axis machines open up new doors for your machine shop. The increased efficiency will make you instantly more competitive, and full 5-axis machining capabilities give you the opportunity to quote on jobs that previously weren't possible. So, what are you going to make today?

"Compared with similar machines from Japan or Europe, DN Solutions has the same level of precision and quality at a better value for money."

– *OMGM Group, Italy*

"Our DN Solutions 5-axis is making complex, high precision parts for aerospace and defense. Cycle times have been reduced dramatically."

– *Aerotech Precision Manufacturing, Great Britain*

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···

MACHINE GREATNESS™

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.
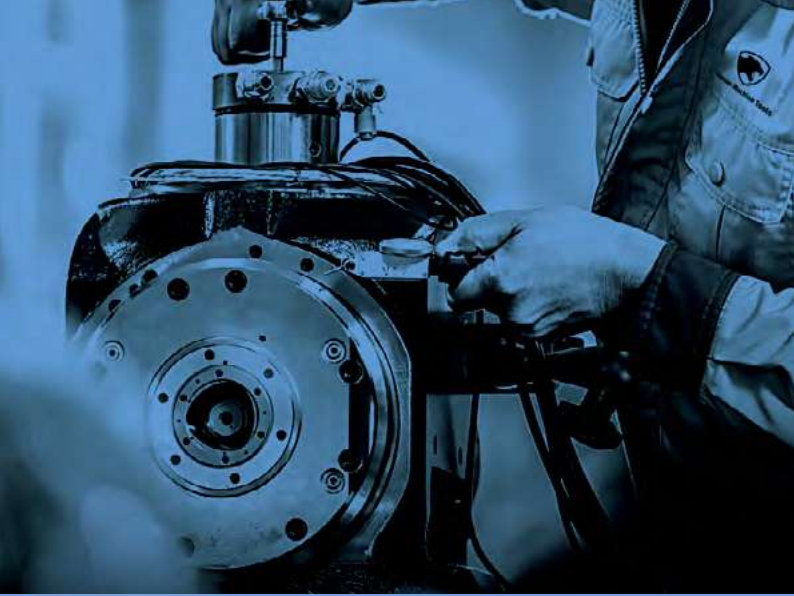
FIELD SERVICES

- 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.

Changwon Factory

Head Office

China Yantai Factory

China

United States

Europe

India

Global sales and service support network

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

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