

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

# DVF

**5000** 

2<sup>th</sup> Generation





DVF 5000 2nd generation provides significantly improved accuracy and higher productivity for simultaneous 5 axis machining compared to the previous model. The machine has stable bed structure/units and the top level cooling system for long-term base high accuracy condition. Its integrated automation, AWC(Auto Workpiece Changer) and Round Magazine provide "easy to make" automation solutions and enable to accelerate customer return on investment.





From small high precision medical parts to medium-sized automobile, aerospace and semiconductor parts, it is possible to cover various applications for both AL die-cast high-speed light cutting and titanium, inconel, Co-Cr difficult-to-cut machining with DVF's high rigidity, high speed spindle and rigid column/table structure.



### FAST & PRECISE 5-AXIS EXCEEDS EXPECTATIONS

- 15000, 20000 r/min high speed spindle
- B-axis/C-axis 0.0001 degree control as standard
- Tool change time(C-T-C) 3.8s, 28% faster than previous model.
- Increased X/Y/Z-axis rapid traverse speed & acc./dec.
- Cooling functions as std. on spindle, motor/LM guide/ball screw(X/Y/Z), C-axis table motor
- Integrated thermal compensation systems for spindle and structure

### FURTHER INCREASED MACHINING CAPACITY

- Ø630mm dia. 2-axis tilting table, 26% increased compared to previous model
- Max. Ø600 x H500mm machining area, 32% increased compared to previous model
- Max. 400kg table load capacity with stable table support structure
- X/Y/Z axis travel distance 650/520/480mm, up to 20% increased compared to previous model

### EASY ACCESS, EASIER OPERATION

- Easy setup of workpieces with 580mm distance between operator and table center
- Easy tool exchange by placing the tool magazine door on the front and applying a tool removal device (Auto Kicking Device)
- Improved chip disposal capability with enhanced coolant flood & flushing functions
- Grease lubrication system
- Compact integrated automation system(AWC)

### **BASIC STRUCTURE**

Roller LM guideways on X/Y/Z axes and 0.0001 deg. High accuracy B/C axis get higher accuracy and structural stability.

#### **Table size**

**Ø630 x 450** mm ø24.8 inch x 17.7 inch

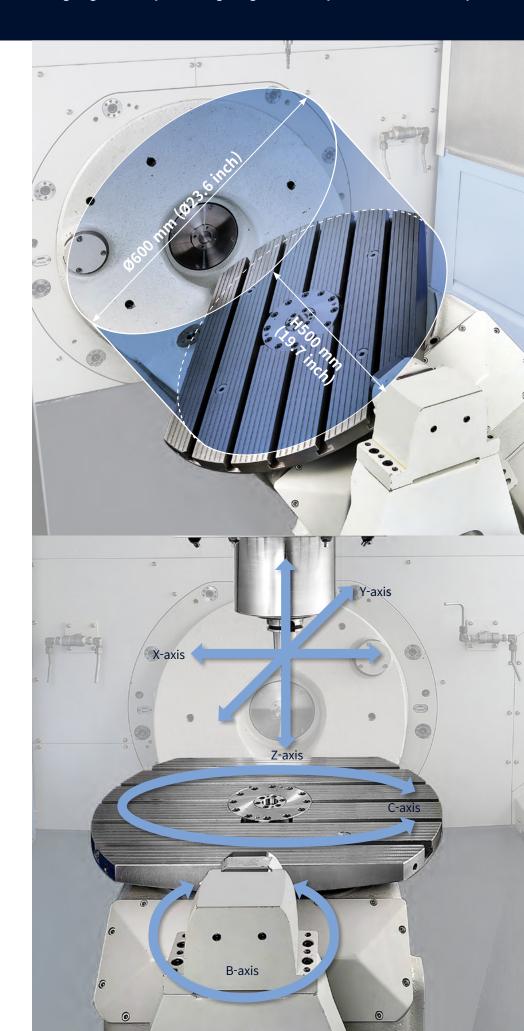
### Maximum workpiece size

**Ø600 x 500** mm ø23.6 inch x 19.7 inch

### Maximum workpiece weight

**400** kg 881.8 lbs

Description		Unit	DVF 5000 <sup>2th</sup>	
	X-axis	mm (inch)	650 (25.6)	
	Y-axis	mm (inch)	520 (20.5)	
Travel distance	Z-axis	mm (inch)	480 (18.9)	
	B-axis	deg	140(-30~+110)	
	C-axis	deg	360	
	X-axis	m/min (ipm)	42 (1653.5)	
Danid.	Y-axis	m/min (ipm)	42 (1653.5)	
Rapid traverse rate	Z-axis	m/min (ipm)	42 (1653.5)	
	B-axis	r/min	25	
	C-axis	r/min	25	



### SPINDLE SPECIFICATIONS

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



#### 15000 r/min, Direct-coupled

**18.5** kW / **118** N·m (FANUC) 24.8 Hp / 87.1 ft-lbs

**17** kW / **108** N·m (HEIDENHAIN) 22.8 Hp / 79.7 ft-lbs

**16.5** kW / **79** N·m (SIEMENS) 22.1 Hp / 58.3 ft-lbs

### 15000 r/min High Torque Built-in

 $30 \, \text{kW} / 230 \, \text{N} \cdot \text{m}$  (Fanuc/Heidenhain/Siemens)  $40.2 \, \text{Hp} / 169.7 \, \text{ft-lbs}$ 

### 20000 r/min, High Speed Built-in

**37** kW / **221** N·m (FANUC) 49.6 Hp / 163.1 ft-lbs

**30** kW / **155** N·m (HEIDENHAIN/SIEMENS) 40.2 Hp / 114.4 ft-lbs

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



### **MAGAZINE SPECIFICATIONS**

Servo tool magazine delivers high productivity and reliability.



40 tools



### 120 tools



### **Tool type**

**ISO #40** 

### **Tool capacity**

DRUM TYPE  $30 \{40^{\text{option}}\}$ CHAIN TYPE  $\{60/120^{\text{option}}\}$ 

#### **Maximum tool diameter**

continuous **75** mm w/o adjacent tools **125** mm

### **Maximum tool length**

**300** mm 11.8 inch

### Maximum tool weight

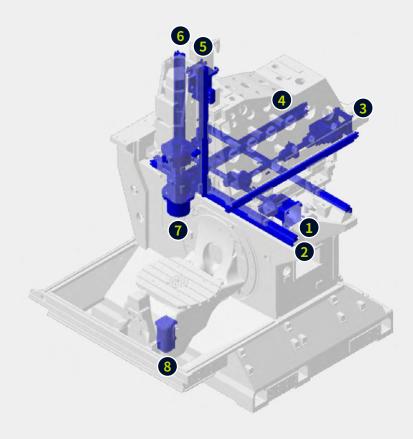
**8** kg 17.6 lb

#### **Tool-to-tool**

**1.3** sec **3.8** sec

## COOLING & THERMAL COMPENSATION CONCEPT TO ACHIEVE HIGH ACCURACIES OVER LONG MACHINING RUN

X/Y/Z-axis Cooling (Guideways, Ball screw, Motor) & Cooled motor plate in C axis



- 1 Cooled motor plate in X axis & ball screw shaft
- 2 Cooled X axis linear guideways
- 3 Cooled motor plate in Y axis & ball screw shaft
- 4 Cooled Y axis linear guideways
- **5** Cooled motor plate in Z axis & ball screw shaft
- **6** Cooled Z axis linear guideways
- **7** Cooled Spindle bearing & Motor plate
- 8 Cooled motor plate in C axis

## Thermal compensation function for Spindle and Structure as standard

- Real-time thermal displacement measuring and compensation through active thermal sensors
- 8 sensors are located: 2ea on spindle heads, 2ea on column units, 4ea on bed units



### STANDARD | OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

	Description		DVF 5000 <sup>2nd</sup>
	15000r/min, Direct-coupled		•
Spindle	15000r/min, Built-in		0
	20000r/min, Built-in		0
	30ea, Drum type		•
Tool Magazine 40ea, Drum type 60ea, Chain type	40ea Drum type		0
			0
	120ea, Chain type		<u>C</u>
Tool type(shank)	BIG PLUS BT40		<u> </u>
	CAT40/DIN40/HSK-A63	t olivi o ovin	<u> </u>
	Flood & Flushing	1.8kW, 0.2MPa	•
		4.0kW, 2.0MPa, Cyclone filter	0
		4.0kW, 2.0MPa, Paper filter	0
	TSC	2.9kW, 3.0MPa, Cyclone filter	0
Coolant	130	2.9kW, 3.0MPa, Paper filter	0
Journe		7.5kW, 7.0MPa, Cyclone filter	$\circ$
		7.5kW, 7.0MPa, Paper filter	0
	Chiller	·	0
	OIL SKIMMER	BELT TYPE	0
	Coolant level switch	High/Low	0
		Chip pan	•
	Chip conveyor	Left side, Hinged belt type	0
	Chip Conveyor	Left side, Drum type	<u></u>
	Chip bucket	Folklift type, 300L	0
Chip disposal		Rotation type, 300L	0
• •	Air blower		0
	Air gun		0
	Coolant gun		0
	Mist collector	Preparation(including internal hose)	0
		0.75kW(water soluble, none water soluble)	0
	Rotary joint	Hyd. Fixture line thru table center(Max. 6 port)	0
Chip disposal	Air clamping	B-axis/C-axis	•
	Fixture interface	2AB+GAP SENSING(5 PORTS)	0
	Spindle Smart Thermal Control		•
	Structure Smart Thermal Control		•
ccuracy	Linear scale	X/Y/Z axis	0
iccuracy	Pulse encoder	X/Y/Z axis	•
	Rotary encoder	B/C axis	
	Rotal y elicodel	S/W	
	IKC(Intelligent Kinematic Compensation)	·	
		S/W + Receiver(RMI-Q)	0
		Datum ball	0
		Master tool	<u> </u>
		RTS(Renishaw, Touch type)	0
Measurment	Auto tool length measurement	TT460(Heidenhain, Touch type)	0
-icusui inelit		ZX SPEED(Blum, Touch type)	0
		NC4F(Renishaw, Laser type)	0
		SINGLE NT(Blum, Laser type)	0
		OMP400(Renishaw)	0
	Auto workpiece measurement	TS460(Heidenhain)	0
	, , , , , , , , , , , , , , , , , , , ,	TC-60(Blum)	0
	AWC(Automatic Workpiece Changer)	4/6/8/12 pallets	0
	Multi-AWC	24/28/32/40 pallets	0
Automation	MUIU-AVVC		<u></u>
utomation	AUTO DOOD	Front door, with safety edge	-
	AUTO DOOR	Side door, with safety edge	0
		Roof door	<u> </u>
	LED work light		•
	3 color signal tower		•
	Floatric cabinat cooling	Fan cooler	●(Fanuc)
Others	Electric cabinet cooling	A/C(Air Conditioner)	○(Fanuc) / ●(Heidenhain, Siemens)
	EZ Work		•
	EZ Guide i		0
			-

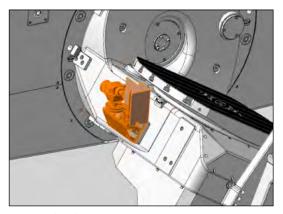
<sup>\*</sup> Please contact DN Solutions for detailed specification information.

● Standard ○ Optional X Not applicable

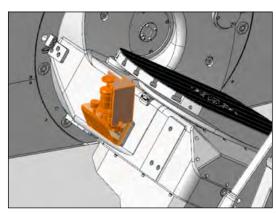
 $<sup>^*</sup>When \textit{ using a semi-synthetic type or synthetic type, contact our sales representative or service center in advance.}$ 

### **PERIPHERAL EQUIPMENT**

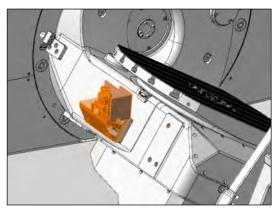
#### **Automatic Tool Measurement**



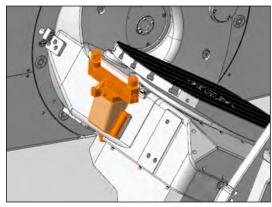
Renishaw(RTS)



Heidenhain(TT460)



Blum(ZX Speed)



Renishaw(NC4F)

### 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:



FANUC NC: IKC TOUCH PROBE

HEIDENHAIN NC; IKC

AUTO TOOL MEASUREMENT MASTER TOOL



DATUM BALL

**Touch type** 

### **RENISHAW**

RTS

### **HEIDENHAIN**

TT460

#### **BLUM**

**ZX SPEED** 

### Laser type

### RENISHAW

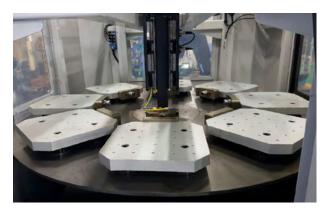
NC4F

### **BLUM**

MICRO SINGLE NT

#### **AWC, Multi-AWC**

A compact loading/unloading automation capable of mounting up to 40 workpieces.





#### AWC

A compact automation system providing fast, reliable and high productivity workpiece change capabilities.

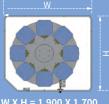


#### Multi-AWC option

Automation solution capable of mounting up to 40 workpieces.

Description	Pallet size	No. of pallets	Max. workpiece dia. x height	Max. workpiece weight
	250x250 mm (9.8x9.8 inch)	12ea	Ø300x350 mm (11.8x13.8 inch)	130 kg (286.6 lb)
AWC	350x350 mm (13.8x13.8 inch)	8ea	Ø400x350 mm (15.7x13.8 inch)	250 kg (551.1 lb)
AWC	400x400mm (15.7x15.7 inch)	6ea	Ø450x350 mm (17.7x13.8 inch)	250 kg (551.1 lb)
	500x500mm (19.7x19.7 inch)	4ea	Ø550x350 mm (21.7x13.8 inch)	250 kg (551.1 lb)
	250x250mm (9.8x9.8 inch)	40ea	Ø300x350 mm (11.8x13.8 inch)	65kg, 130kg (143.3, 286.6 lb)
Multi-	350x350mm (13.8x13.8 inch)	32ea	Ø400x350 mm (15.7x13.8 inch)	250 kg (551.1 lb)
AWC	400x400mm (15.7x15.7 inch)	28ea	Ø450x350 mm (17.7x13.8 inch)	250 kg (551.1 lb)
	500x500mm (19.7x19.7 inch)	24ea	Ø550x350 mm (21.7x13.8 inch)	250 kg (551.1 lb)

### Pallet storage-table configuration



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



250X250 (9.8 X 9.8) 12EA



350 X 350 (13.8 X 13.8) 8EA



400 X 400 (15.7 X 15.7) 6EA



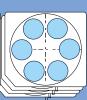
500X500 (19.7 X 19.7) 4EA



250X250 (9.8 X 9.8) 40EA



350 X 350 (13.8 X 13.8)

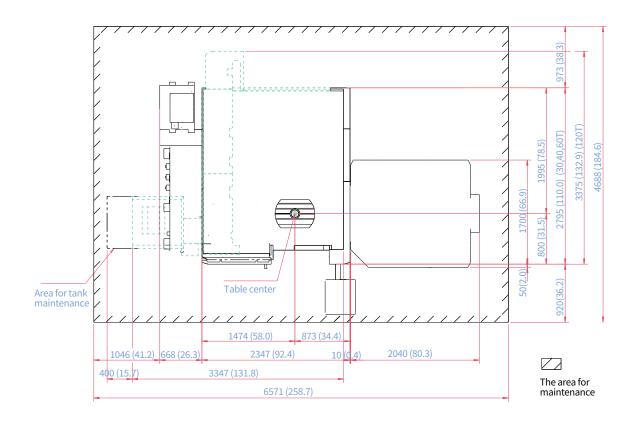


400X400 28EA (15.7 X 15.7) 500X500 24EA (19.7 X 19.7)

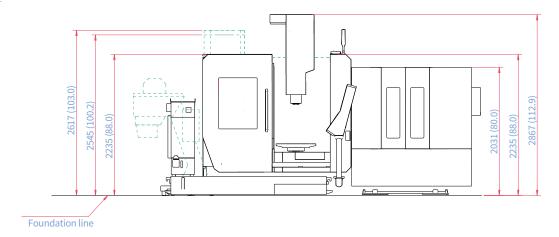
### AWC DIMENSIONS

Units : mm (inch)

TOP



FRONT



## CUSTOMIZED USER-FRIENDLY FLEXIBLE OPERATION SOLUTIONS

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

### **CUFOS FEATURES**

#### 19 INCH TOUCH SCREEN

- Program memory: 40GB
  - App-based Interface like smart phone, tablet PC

#### **EASY PROGRAMMING**

- Conversational Programming
- SSD Data Server : Program file sharing/ managing (CF card/USB/External PC)

### **EASY SET-UP/OPERATION**

- CPS(Collision Protection System)
- Manual Viewer
- File Manager

#### **EASY MAINTENANCE**

- Status Monitor
- Alarm Guidance
- Maintenance Manager
- Easy connection with external S/W (creating additional App.)





### **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 CUFOS operating system is based upon the integration of all aspects of the manufacturing process, including setting, machining and maintenance. It consolidates up-to-date software technology created by DN Solutions, to improve overall efficiency and productivity. Using the system's modular construction, each function can be easy integrated with external PC software systems and applications, such as CAM and Tool Data systems.







PC software



**Applications** 





### CPS (Collision Protection System)

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



### **CONVENIENT OPERATION**

### **HEIDENHAIN TNC640/TNC7**

### Visualized, intuitive task support, customized UI

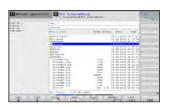
The TNC7 makes machining even easier, for everything from programming to program validation and from machine setup to actual machining. You intuitively operate highly complex applications directly on the touchscreen with various integrated solutions for standard tasks.

#### TNC7 NEW

- 19 inch touch screen
- 189GB Progra memory
- Look-ahead 5000
- Touch Probe Cycles Graphical Programming



#### Conversational convenient function



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



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



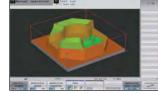
Collision protection system



Adaptive feed control option



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



**Graphic simulation** 

### NUMERIC CONTROL SPECIFICATIONS



	Item	Specifications	TNC640	TNC7
Controlled axis	Controlled axis		5 axes (X,Y,Z,C,B)	
	Simultaneously controlled axis		5 axes	
	Embedded ethernet		•	
Interface function	USB interface (USB 2.0)		•	
Feed function	Look-ahead 5000 blocks			
Axis compensation	KinematicsOpt  Automatic measurement and optimization of machine kinematics			
Collision monitoring	ng Dynamic collision monitoring (DCM)			
Network	MT Connect		O	
Others	Display unit	touch panel	15"	19"
	Program memory for NC programs		21GB	189GB

 $lacksquare Standard \quad \bigcirc \ Optional \quad \times \ Not \ Available \quad \bullet \ Available$ 

### **CONVENIENT OPERATION**

### **SIEMENS SINUMERIK ONE**

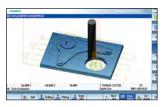
### Even Faster & Easier processing + 21.5" screen

All programming, set-up, actual machining and verification process are getting easier and faster. Especially, intuitive conversational programming guidance with 3D UI(user interface) on 21.5" large touch screen is helpful for unskilled engineers.

- 21.5 inch touch screer
- 50% improvement in processing speed (compared to \$840D)
- Graphic programming
- PLC-based flexible automation/peripheral device expandability



### **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**

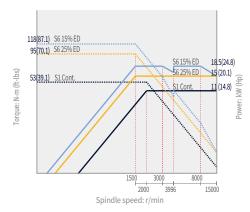
	Item	Specifications	S-ONE
Controlled axis	Controlled axes ( 제어축수 )		5 axes (X,Y,Z,C,B)
	Simultaneously controlled axes ( 동시 제어축수 )		5 axes
Data in mother to	Memory card input/output	(Local drive)	•
Data input/output	USB memory input/output		•
Interface function	Ethernet	(X130)	•
Onevation	On network drive	(without EES option, Extcall)	•
Operation	On USB storage medium, e.g. memory stick	(without EES option, Extcall)	•
Program input	Workpiece coordinate system	G54 - G57	•
Programmput	Addition of workpiece coordinate system	G505 - G599	•
Interpolation & Feed	Top surface		0
function	Look ahead number of block		1000
	3D simulation, finished part		•
Programming &	Simultaneous recording		•
Editing function	Measure kinematics		•
	DXF Reader for PC integrated in SINUMERIK Operate		0
Operation Guidance	ShopMill		•
Function	EZ Work		•
Setting and display	Operation via a VNC viewer		•
Network	MTConnect		•
Network	OPCUA		0
	18.5" color display with touch screen		0
	21.5" color display with touch screen		•
Others	CNC user memory	10 MB	•
Others	Max. CNC user memory	28 MB	0
	Collision avoidance (machine, working area)		0
	Collision avoidance ECO (machine, working area)		•

### POWER | TORQUE

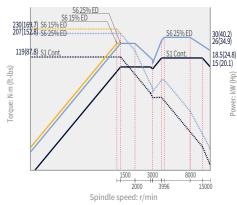
### **FANUC**

#### 15000r/min Direct

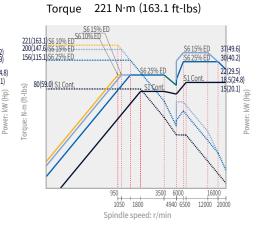
Power 18.5/11 kW (24.8/14.8 Hp) Torque 118 N·m (87.1 ft-lbs)



### 15000r/min Built-in option Power 30/15 kW (40.2/20.1 Hp) Torque 230 N·m (169.7 ft-lbs)



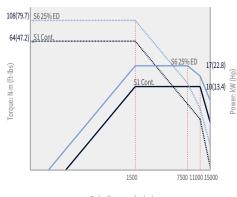
### 20000r/min Built-in option Power 37/15 kW (49.6/20.1 Hp)



### **HEIDENHAIN**

#### 15000r/min Direct

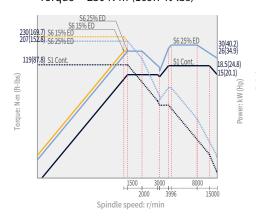
Power 17/10 kW (22.8/13.4 Hp) Torque 108 N·m (79.7 ft-lbs)



Spindle speed: r/min

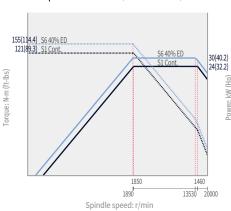
#### 15000r/min Built-in option

Power 30/15 kW (40.2/20.1 Hp) Torque 230 N·m (169.7 ft-lbs)



20000r/min Built-in option

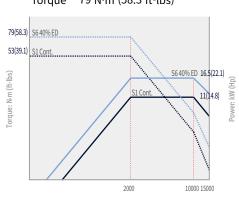
Power 30/24 kW (42.9/32.2 Hp) Torque 155 N·m (114.4 ft-lbs)



### **SIEMENS**

### 15000r/min Direct

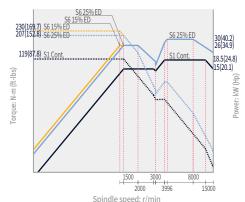
Power 16.5/11 kW (22.1/14.8 Hp) Torque 79 N·m (58.3 ft-lbs)



Spindle speed: r/min

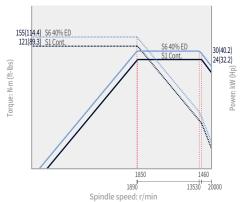
### 15000r/min Built-in option

Power 30/15 kW (40.2/20.1 Hp) Torque 230 N·m (169.7 ft-lbs)



20000r/min Built-in option

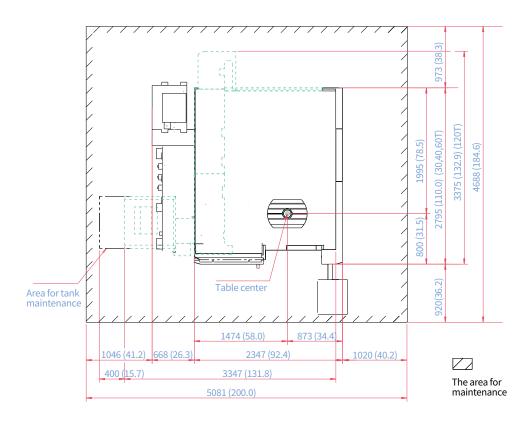
Power 30/24 kW (42.9/32.2 Hp) Torque 155 N·m (114.4 ft-lbs)



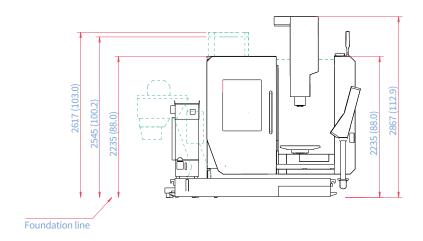
### **DIMENSIONS**

Units : mm (inch)

TOP

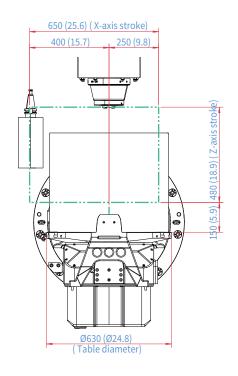


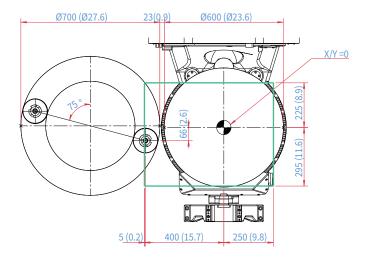
FRONT



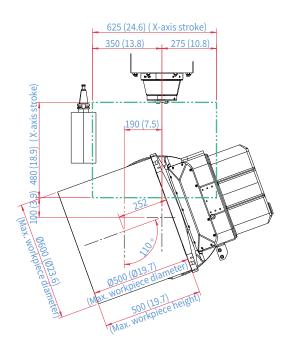
### INTERFERENCE

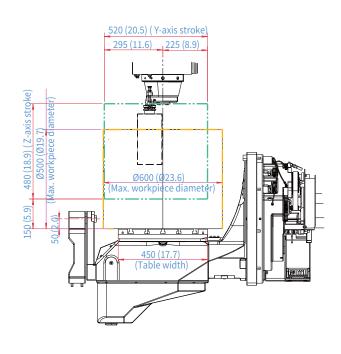
Units : mm (inch)





Front view Front view





Front view Right view

### MACHINE SPECIFICATIONS

Description		Unit	DVF 5000 <sup>2th</sup>		
	X axis		mm (inch)	650 (25.6)	
Travel distance	Yaxis		mm (inch)	520 (20.5)	
	Z axis		mm (inch)	480 (18.9)	
	B axis		deg	B:140(+110~-30)	
	C axis		deg	360	
Table	Table size		mm (inch)	Ø630 x 450 (Ø24.8 x 17.7)	
	Max. workpiece size		mm (inch)	Ø600 x H500 (Ø23.6 x H19.7)	
	Table loading cap	acity	kg (lb)	400 (881.8)	
	Max. speed		r/min	15000 {20000}	
Spindle	Max. power		kW (Hp)	CUFOS: 18.5/11(24.8/14.8) (S3 15%/cont) {30/18.5(40.2/24.8) (S3 25%/cont)} TNC640/TNC7: 17/10(22.8/13.4) (S3 25%/cont) {30/24(40.2/32.2) (S6 40%/cont)} Sinumerik One: 16.5/11(22.1/14.8)(S6 40%/cont) {30/24(40.2/32.2) (S6 40%/cont)}	
	Max.torque		N∙m (ft-lbs)	CUFOS: 118 {156 } (87.1 {115.1})  TNC640/TNC7: 108 {155} (79.7 {114.4})  Sinumerik One: 79 {155} (58.3 {114.4})	
	X axis		m/min (ipm)	42 (1653.5)	
	Y axis		m/min (ipm)	42 (1653.5)	
Rapid traverse rate	Z axis		m/min (ipm)	42 (1653.5)	
	B axis		r/min	25	
	C axis		r/min	25	
	Tool shank			ISO #40	
	Tool storage capa.		ea	30 {40, 60, 120}	
	Max. tool diameter	Continuous	mm (inch)	75 (3.0)	
Automatic		Without adjacent tools	mm (inch)	125 (4.9)	
tool changer	Max. tool length		mm (inch)	300 (11.8)	
	Max. tool weight		kg (lb)	8 (17.6)	
	Tool change time	Т-Т-Т	sec	1.3/1.5 (60Hz/50Hz)	
		C-T-C	sec	3.8/4.3 (60Hz/50Hz)	
Coolant	Coolant tank capacity		L (gal)	500 (132.1)	
	Height		mm (inch)	2867 (112.9)	
Machine dimensions	Length x Width		mm (inch)	2795 x 2347 (110.0 x 92.4)	
	Weight		kg (lb)	8000 (17636.7)	
Control	NC system		-	CUFOS, TNC640/TNC7, Sinumerik One	

### **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." "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…



### 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.

#### **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.

### 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.

#### **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

6	Corporations	
155	Dealer networks	
51	Technical centers Technical Center, Sales Support, Service Support, Parts Support	
204	Service posts	
3	Factories	









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<sup>\*</sup> Specifications and information contained within this catalogue may be changed without prior notice.



<sup>\*</sup> For more details, please contact DN Solutions.