

MULTI-PURPOSE VERTICAL MACHINING CENTER

VCF/VCR 5500

VCF 5500L
VCF 5500UL
VCF 5500SL
VCR 5500L



VCF/VCR 5500

VCF 5500L/UL/SL is multi-purpose, moving column vertical machining centers equipped with fixed tables that are suitable for a range of applications. The machines have a user-friendly design and their productivity is further enhanced by an optional center partition. VCR 5500L is a high-productivity column moving machine equipped with rotary tables for 2.2M length and is optimized for machining long-shaped parts such as EV(Electric Vehicle) frames and battery systems. Equipped with up to a 5000mm X-axis travel (196.9 inch.), and an extensive range of flexible options, the VCF Series delivers incredible flexibility and productivity from a single machine.

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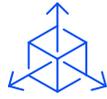
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**LARGE MACHINING AREA
AND EXCELLENT CHIP
DISPOSAL**



- The machines have the largest machining area in their class as well as an efficient coolant system for excellent chip disposal.
- Diverse X-axis size are offered for customer's optimizing investment.

**EFFICIENT OPERATION AND
WIDE VARIETY OF
APPLICATIONS**



- Higher productivity and efficiencies can be achieved by selecting/specifying a range of different options.
- VCR 5500L with the rotary table guarantees smooth chip handling when machining high chip volume materials like AL die-casting.

**THE LINEAR AXES ARE
EQUIPPED WITH
ROLLER-TYPE LM
GUIDEWAYS**

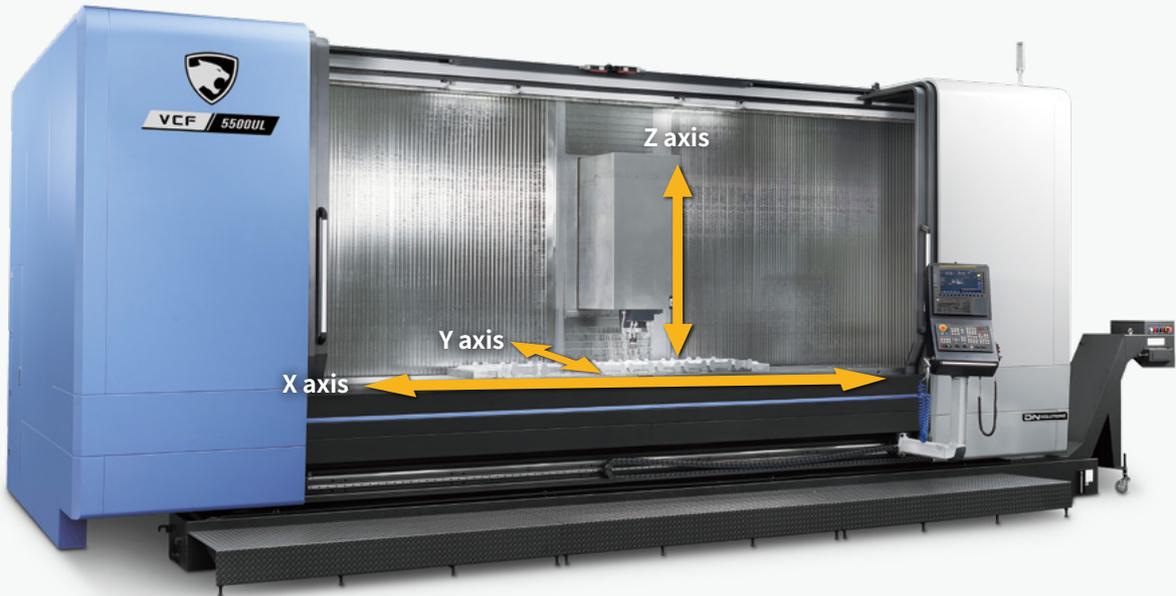


- Linear axes are equipped with roller-type LM guideways for increased rigidity, long life and high rapid traverse rates. The linear scale is applied to the X axis as standard to optimize positional accuracy.



BASIC STRUCTURE

The moving-column, fixed table structure is suitable for machining narrow and long parts.



Travel distance (X/Y/Z axis)

VCF 5500L · VCR 5500L

2200 x 550 x 510 mm
(86.6 X 21.7 X 20.1 inch)

VCF 5500UL

5000 x 550 x 570 mm
(196.9 X 21.7 X 22.4 inch)

VCF 5500SL

6200 x 550 x 570 mm
(244.1 X 21.7 X 22.4 inch)

AXIS SYSTEM

The linear axes are equipped with roller-type LM guideways for increased rigidity, long life and high rapid rates.

Rapid traverse rate (X/Y/Z axis)

VCF 5500L · VCR 5500L

42 / 42 / 42 m/min
(1653.5 / 1653.5 / 1653.5 ipm)

VCF 5500UL

30 / 36 / 46 m/min
(1181.1 / 1417.3 / 1811.0 ipm)

VCF 5500SL

20 / 36 / 46 m/min
(787.4 / 1417.3 / 1811.0 ipm)

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



SPINDLE INFORMATION

A direct-coupled spindle is a standard feature and helps minimize vibration and noise whilst, at the same time, improving productivity, precision and the working environment.

Max. spindle speed

VCF 5500L/UL/SL

12000 r/min

VCR 5500L

10000 r/min

Max. spindle motor power

18.5 kW
(24.8 hp)

Max. spindle motor torque

117.8 N·m
(86.9 ft-lbs)



Linear scales

The linear scale feedback system (supplied as standard on X axis), provides reliable and robust positional accuracies.

** VCF 5500UL/SL Only standard*



TABLE

The large capacity table can be used for many different types of application.

Max. weight on table

VCF 5500L

2000 kg
(4409.2 lb)

VCF 5500UL

6000 kg
(13227.5 lb)

VCF 5500SL

7500 kg
(16534.4 lb)

Table size

VCF 5500L

2500 x 580 mm
(98.4 X 22.8 inch)

VCF 5500UL

5600 x 580 mm
(220.5 x 22.8 inch)

VCF 5500SL

6600 x 580 mm
(259.8 x 22.8 inch)



VCR 5500L has a structure exclusively for mounting a rotary table, which guarantees increased machining flexibility and smooth chip disposal.

Max. weight on table

VCR 5500L

500 kg
(1102.3 lb)

Table size

VCR 5500L

2200 x Ø600 mm
(86.6 x 23.6 inch)



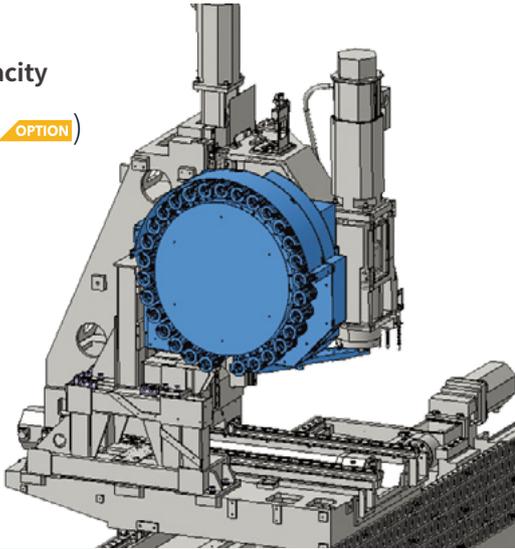
AUTOMATIC TOOL CHANGER

The servo-driven ATC provides high reliability and accuracy.

VCF 5500L

Tool selection
RANDOM ADDRESS

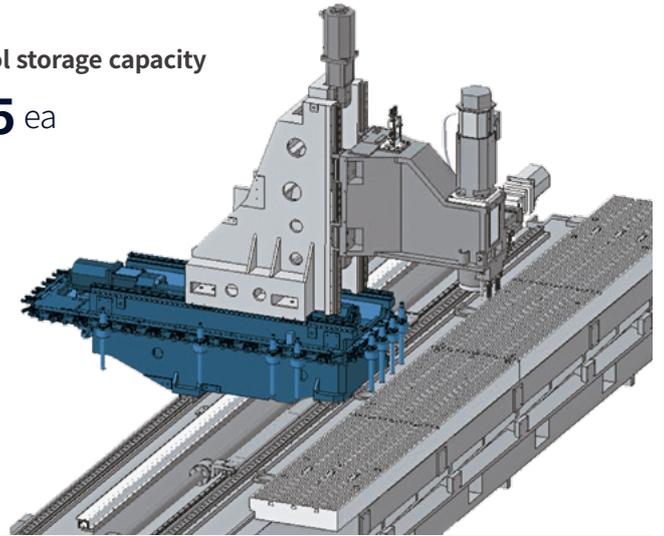
Tool storage capacity
30 ea (40/60 OPTION)



VCF 5500UL/SL

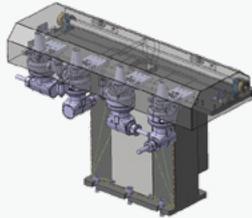
Tool selection
FIXED ADDRESS

Tool storage capacity
35 ea



Pickup magazine OPTION

An optional feature for tools with large diameters or lengths.



Description		Unit	VCF 5500UL/SL
Max. tool diameter	Continuous	mm (inch)	150 (5.9)
	Adjacent pot empty	mm (inch)	230 (9.1)
No. of Tools		ea	4
Max. tool length		mm (inch)	420 (16.5)
Max. tool weight		kg (lb)	8 (17.6)

VCR 5500L

Tool selection
RANDOM ADDRESS

Tool storage capacity
20 ea

Tool change time
T-T-T(Tool to Tool time)
1.3 S

C-T-C(Chip to Chip time)
3.5 S



STANDARD | OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

Description	Features		VCF 5500L	VCF 5500UL	VCF 5500SL	VCR 5500L
Spindle	12000 r/min, Direct		●	●	●	X
	10000 r/min, Direct		X	X	X	●
Spindle cooling system (Oilcooler)	Apply		●	●	●	X
	not apply		X	X	X	●
Tool storage capacity	20 ea		X	X	X	●
	30 ea		●	X	X	X
	35 ea		X	●	●	X
	40 ea		○	X	X	X
	60 ea		○	X	X	X
Tool shank type	ISO #40	BIG PLUS BT40	●	●	●	●
		BIG PLUS CAT40	○	○	○	○
		BIG PLUS DIN40	○	○	○	○
Coolant	Flood (Max Pressure 60Hz(50Hz), Pump Motor Power)	0.45(0.3)MPa / 0.75kW	●	●	●	●
		0.7(0.5)MPa / 1.1kW	○	○	○	○
	TSC (Max Pressure 60Hz(50Hz), Pump Motor Power)	2.0(1.3)MPa / 4.0kW	○	○	○	○
		2.0(1.9)MPa / 1.5kW	X	○	○	X
		3.0(3.0)MPa / 2.9kW	○	○	○	○
	Flushing	7.0(7.0)MPa / 7.5kW	○	○	○	○
		0.15(0.1)MPa / 1.1kW	●	X	X	X
	Shower	0.32(0.22)MPa / 2.5kW	X	●	●	●
		0.15(0.1)MPa / 1.1kW	X	X	X	○
	Water soluble Coolant Chiller*4)		○	○	○	○
Oil skimmer	Belt type	○	○	○	○	
	MQL	○	○	○	○	
Chip disposal	Chip conveyor	Hinged type (Right)	○	○	○	○
		Magnetic scraper type (Right)	○	○	○	○
	Chip bucket	○	○	○	○	
	Air blower	○	○	○	○	
	Air gun	○	○	○	○	
	Coolant gun	○	○	○	○	
Precision machining option	Linear scale	X axis	○	●	●	X
		Y / Z axis	○	○	○	X
	AICC II (200 block)		●	●	●	●
	AICC II (400 block)		○*1)	○*1)	○*1)	○*1)
Measurement & automation	Automatic tool measurement	TS27R	○	○	○	○
	Automatic tool breakage detection		○	○	○	○
	Automatic workpiece measurement	RMP 60	○	○	○	○
	Automatic front door		○	○	○	○
Others	LED work light		●	●	●	●
	Signal tower		●	●	●	●
	4th axis auxiliary device interface		○	○	○	○
	Tool load monitoring		●	●	●	●
	EZ guide i (Conversational programming solution)		●*2)	●*2)	●*2)	●*2)
	iHMI with machining cycle		○*3)	○*3)	○*3)	○*3)
	Automatic power off		○	○	○	○
	4th axis preparation cabling for servo/1-pneumation piping	Factory ready made	○	○	○	○
Partition for pendulum machining mode		○	○	○	○	
Customized special option	Drum chipconveyor	Hinged type	○	○	○	○
		Scraper type	○	○	○	○
	Anchoring	J-BOLT	○	○	○	○
Smart thermal control	Sensor type (only spindle)	○	○	○	X	

* Please contact DN Solutions for detailed specification information.

● Standard ○ Optional X N/A

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

*1) AICC2 (400block) of OiMF must be changed to high speed main board. Ask R&D center for information

*2) Only with 15" LCD standard *3) Only with 15" touch LCD standard

*4) Technical consultation is mandatory for the chilling of non-water soluble coolant

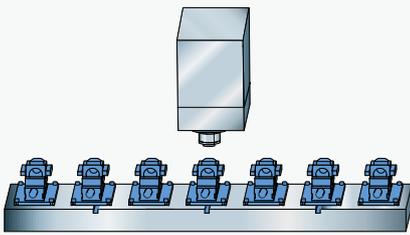
Fire Safety Precautions | There is a high risk of fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting the controlled and careful use of coolants and modifying the machine without the consent of the manufacturer. Always check the SAFETY GUIDELINES carefully before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

APPLICATIONS

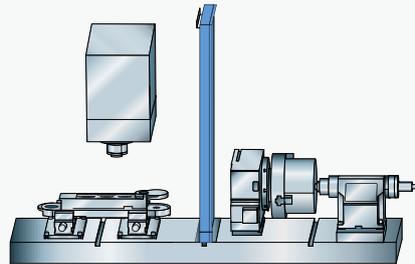
Whatever the application the VCF series is flexible enough to deliver the optimum machining solution.

VCF 5500L/UL/SL

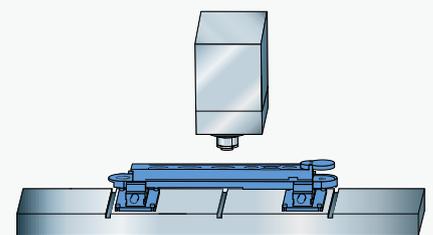
Various configurations are available to meet customers' different application requirements: all are designed to deliver the highest levels of productivity.



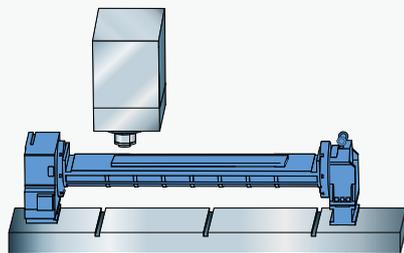
Small items, mass production



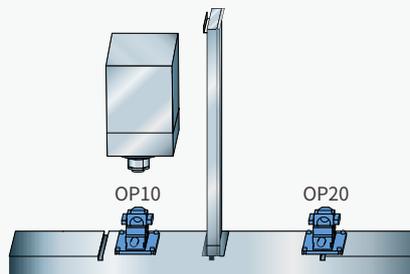
Multi-functional use of table with center partitioning



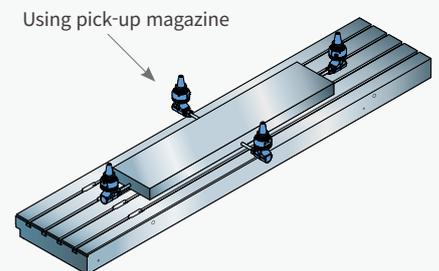
Long workpiece machining



4-axis rotary table and long workpiece



Eliminate operator loading time through use of the center partition



4-side machining using angled head

* Please contact DN Solutions for more details.

VCF 5500L



4-axis table Specification

Model	HRS-430F30-RJ08
Maker	SAMCHULLY
Applied Servo Motor	FANUC A30F/3000i
Table Diameter	Ø432 mm (Ø17.0 inch)
Center Height	283 mm (11.1 inch)
Base Diameter	Ø45 H7
Clamp Method	Hydraulic (25~35 kgf/cm ²)
Allowable Work Inertia	10.67 kg·m ²
Clamp Torque	2500 N·m (1845.0 ft·lbs)
Max. Table Speed	16.6 r/min (Max input 2000 r/min)

Tail spindle Specification

Model	43SP-MH-RJ08
Maker	SAMCHULLY
Center Height	283 mm (11.1 inch)
Base Diameter	Ø40 H7
Clamp Method	Hydraulic (25~35 kgf/cm ²)
Clamp Torque	2500 N·m (1845.0 ft·lbs)
Clamp Method	Hydraulic (25~35 kgf/cm ²)

The 4-axis table and tail spindle follow DNS hydraulic specifications; other specs are handled by R&D.

FANUC i PLUS

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

15" Screen + New OP

DN Solutions Fanuc i 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 i PLUS

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

USB and PCMCIA card QWERTY Keyboard

- EZ Work standard
- Ergonomic operator panel
- 2MB Memory
- Hot keys



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) VCF 5500L/UL/SL, VCR 5500L
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		●
	Workpiece coordinate system	G52 - G59	●
Program input	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	X
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		●
	FANUC MTConnect		⊕
Network	FANUC OPC UA		⊕
	Others	Display unit	10.4" color LCD
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		

10 *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 MTConnect and FANUC OPC UA available.

CONVENIENT OPERATION

SIEMENS 828D

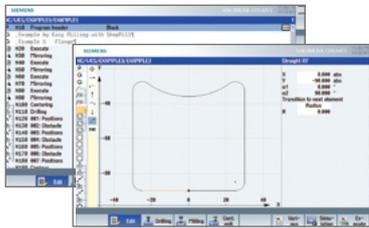
15.6" screen + new operation panel

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.

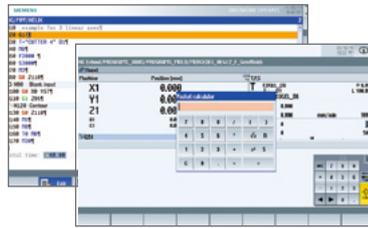
- 15.6" display
- 10MB high capacity user memory
- USB & ethernet (standard)
- QWERTY keyboard (standard)
- High-speed calculation and simulation can be fulfilled by improved processor functionality



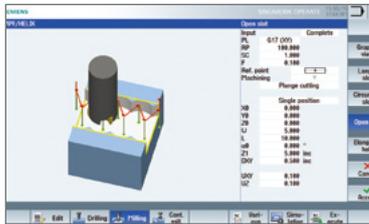
Conversational convenient function



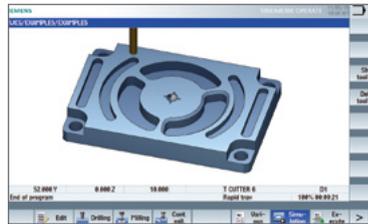
Shop Mill Part Programming



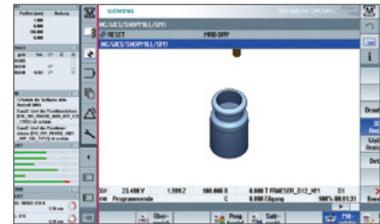
Smart function



Advanced program language programGUIDE



Simulation and machining contour monitoring



Side screen widget

NUMERIC CONTROL SPECIFICATIONS

SIEMENS

Item	Specifications	S828D
		VCF5500L
Controlled axis	Controlled axes	-
	Simultaneously controlled axes	3 axis
Data input/output	Memory card input/output	(Local drive)
	USB memory input/output	X
Interface function	Ethernet	(X130)
	Operation	On network drive On USB storage medium, e.g. memory stick (without EES option, Extcall) (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	
Programming & Editing function	Look ahead number of block	S/W version 4.95
	3D simulation, finished part	
Operation Guidance Function	Simultaneous recording	
	Measure kinematics	
Setting and display	DXF Reader for PC integrated in SINUMERIK Operate	
	ShopMill	
Network	EZ Work	
	Operation via a VNC viewer	
Etc. function	MTConnect	
	OPCUA	
Etc. function	15.6" color display with touch screen	
	19" color display without touch screen	X
Etc. function	21.5" color display with touch screen	X
	CNC user memory	10 MB
Etc. function	Expansion by increments	2 ~ 12 MB
	Collision avoidance	
Etc. function	Collision avoidance ECO (machine, working area)	

POWER | TORQUE

VCF 5500L/UL/SL

SPEED

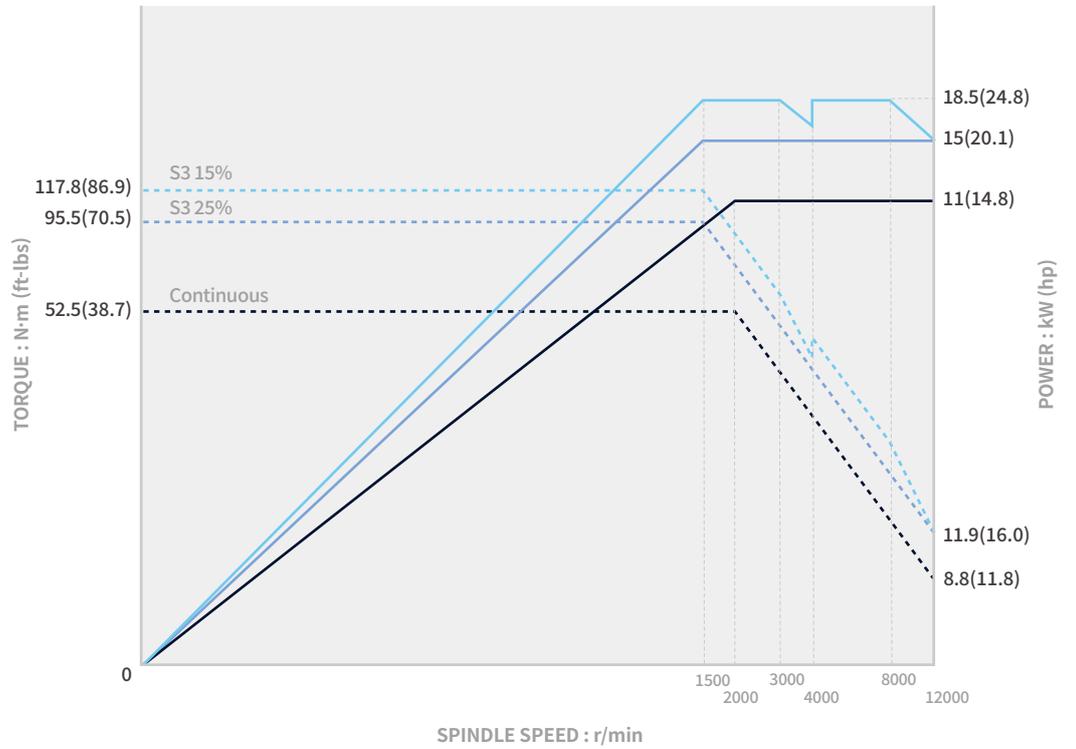
12000 r/min

POWER

18.5/11 kW
(24.8/14.8 hp)

TORQUE

117.8 N·m
(86.9 ft-lbs)



VCR 5500L

SPEED

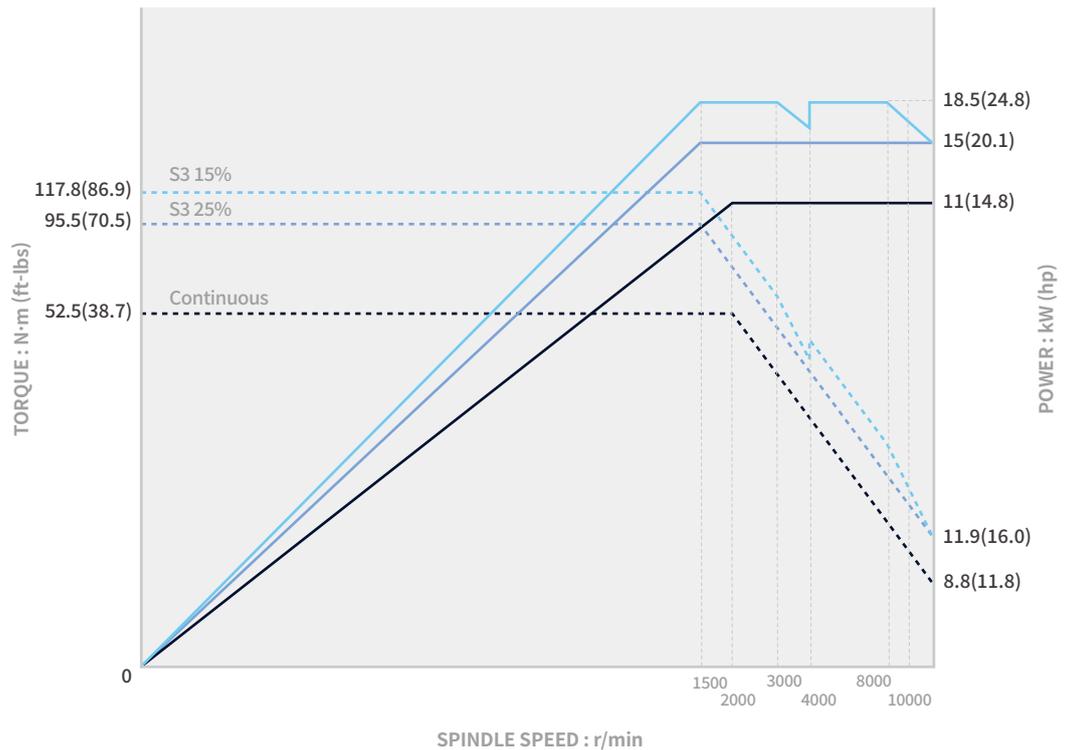
10000 r/min

POWER

18.5/11 kW
(24.8/14.8 hp)

TORQUE

117.8 N·m
(86.9 ft-lbs)

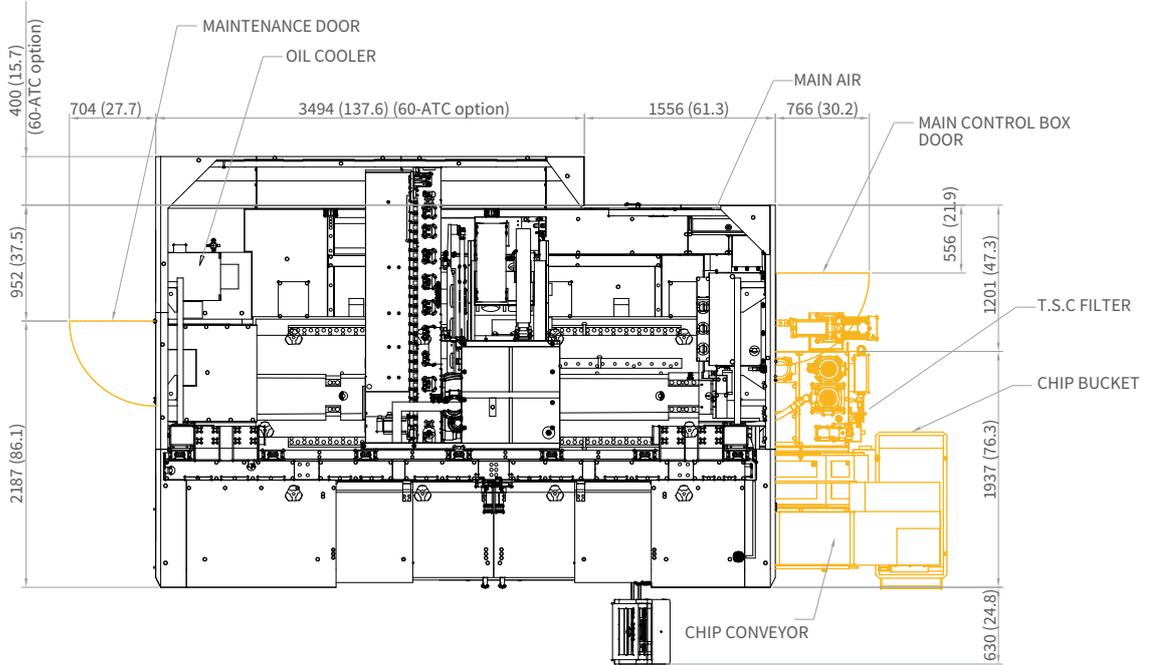


DIMENSIONS

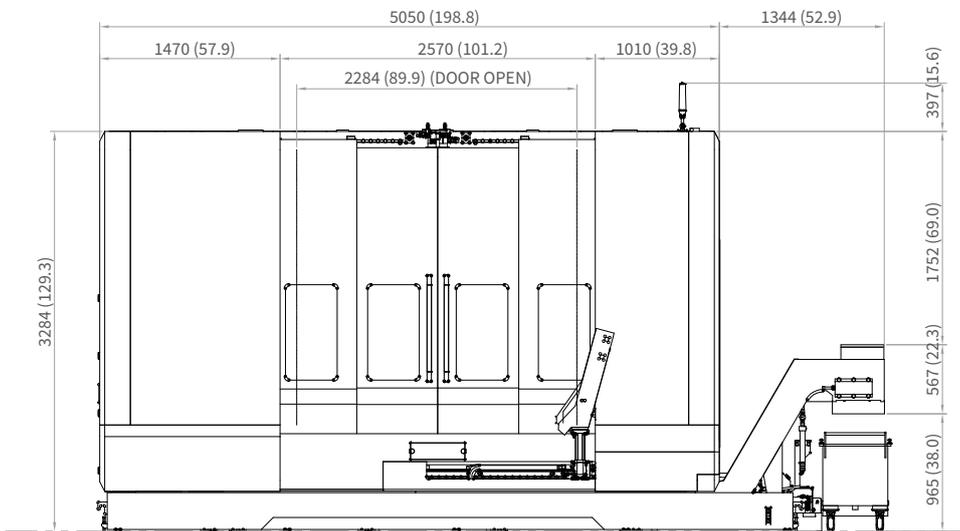
VCF 5500L

TOP VIEW

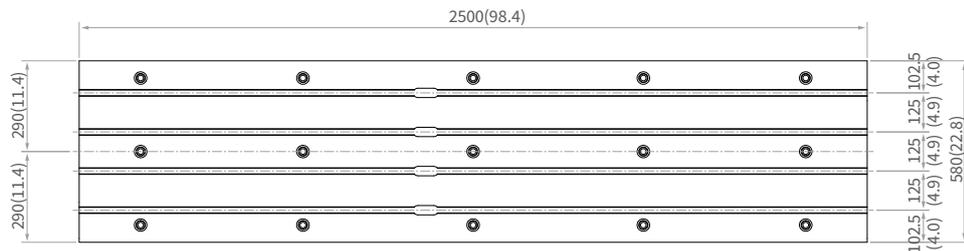
Units : mm (inch)



FRONT VIEW



TABLE



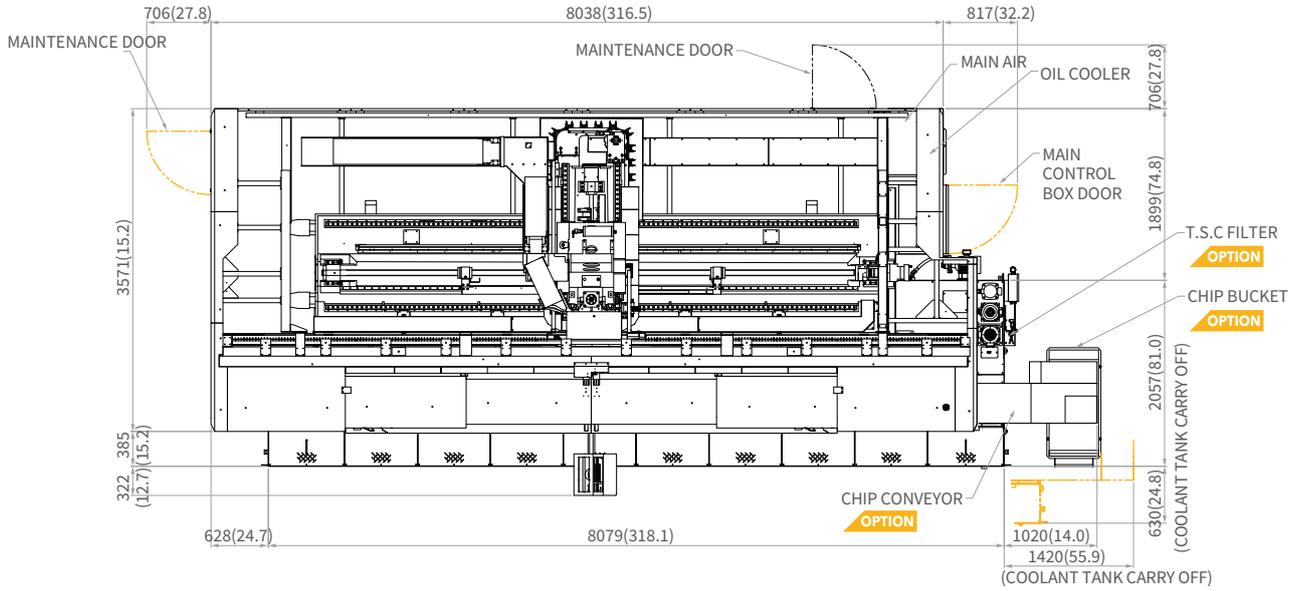
* Some peripheral equipment can be placed in other places

DIMENSIONS

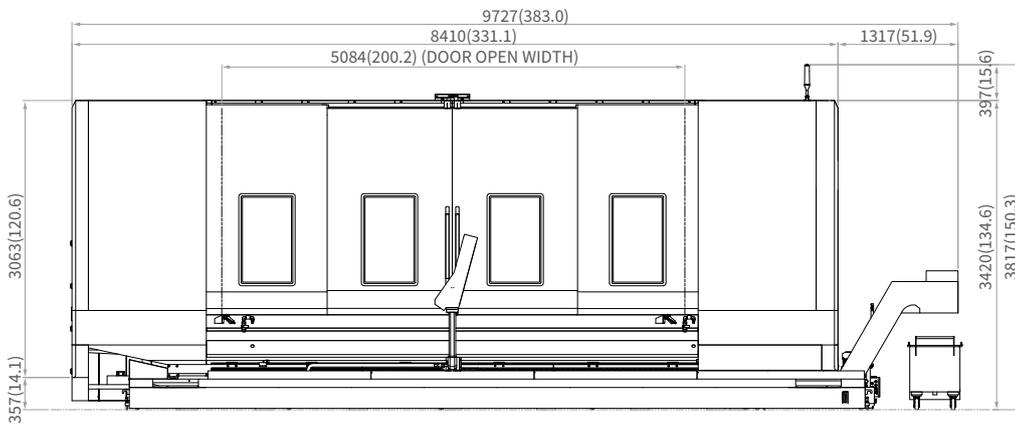
VCF 5500UL

Units : mm (inch)

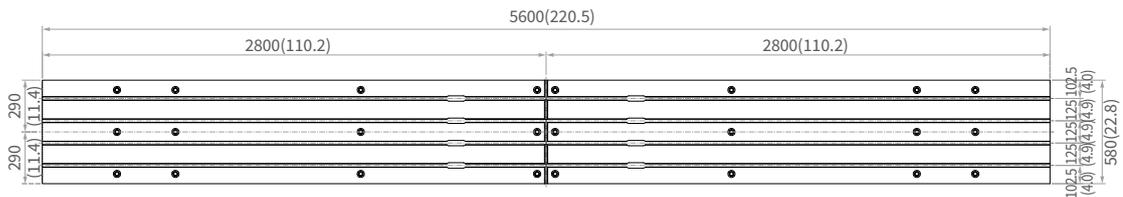
TOP VIEW



FRONT VIEW



TABLE

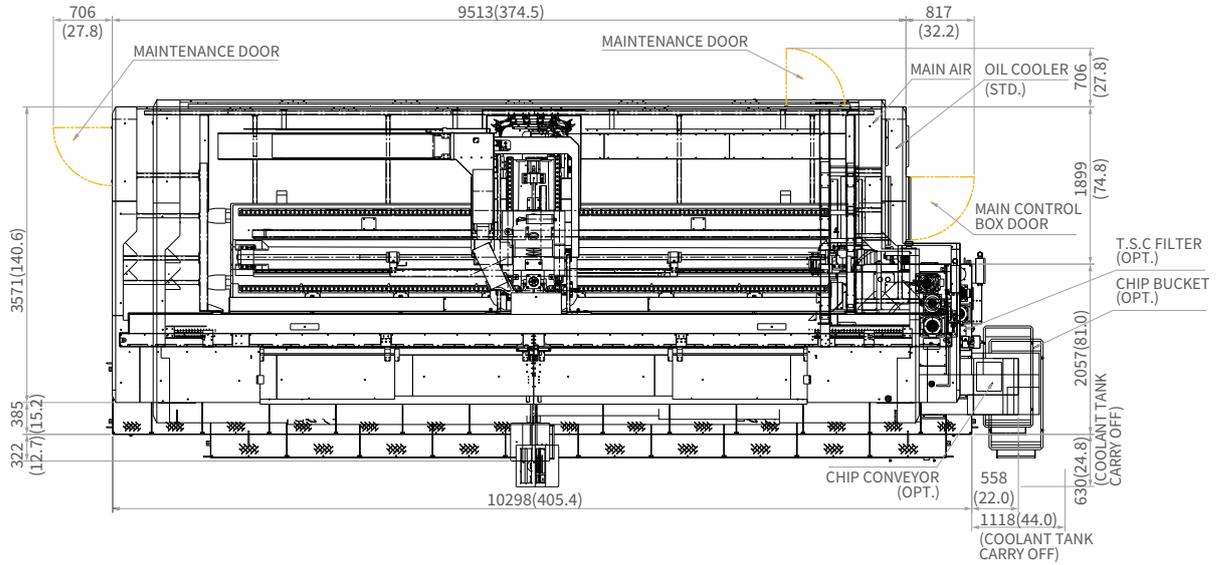


DIMENSIONS

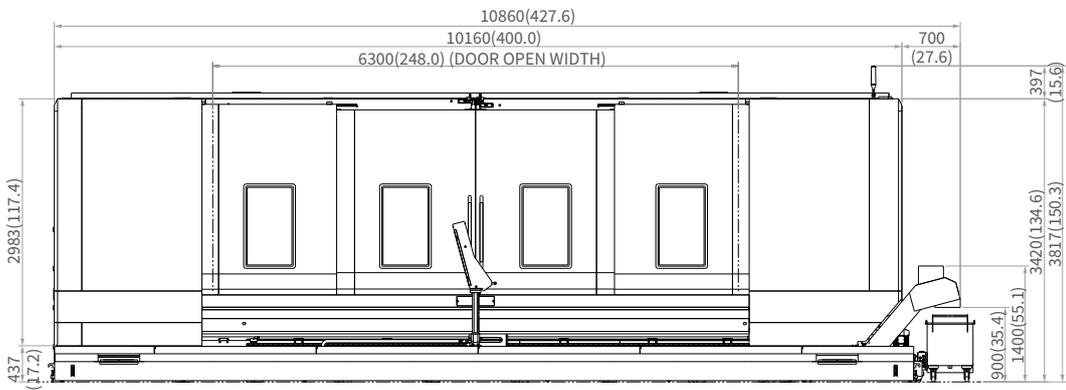
VCF 5500SL

TOP VIEW

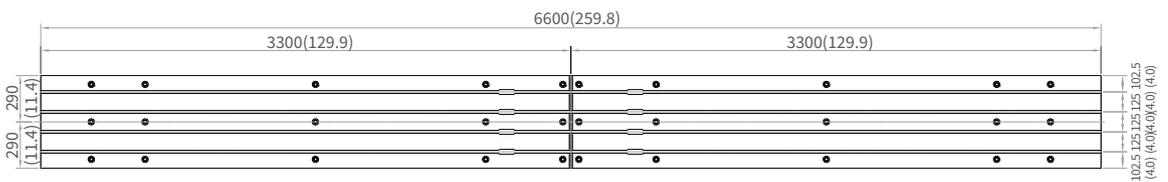
Units : mm (inch)



FRONT VIEW



TABLE



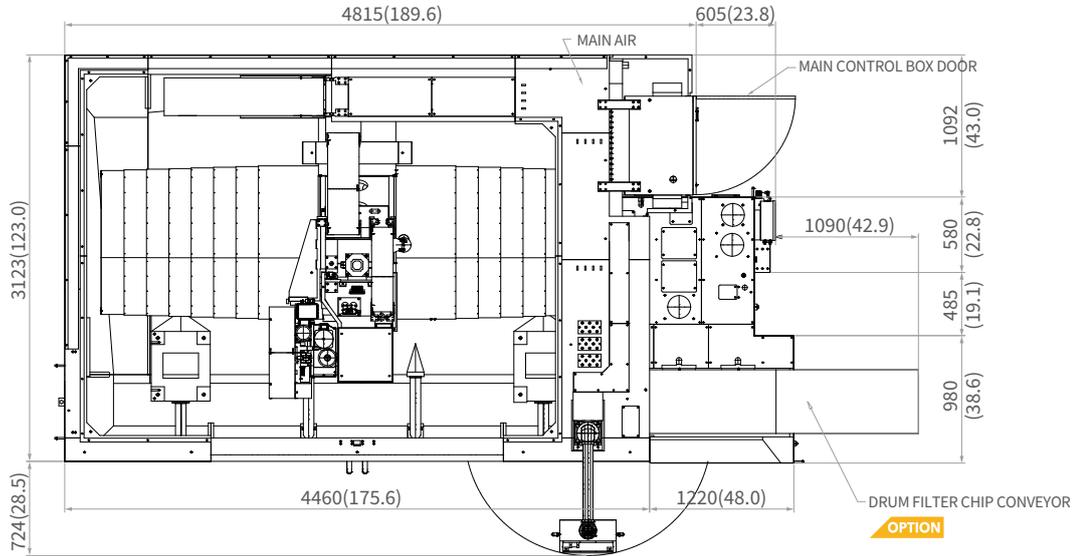
* Some peripheral equipment can be placed in other places

DIMENSIONS

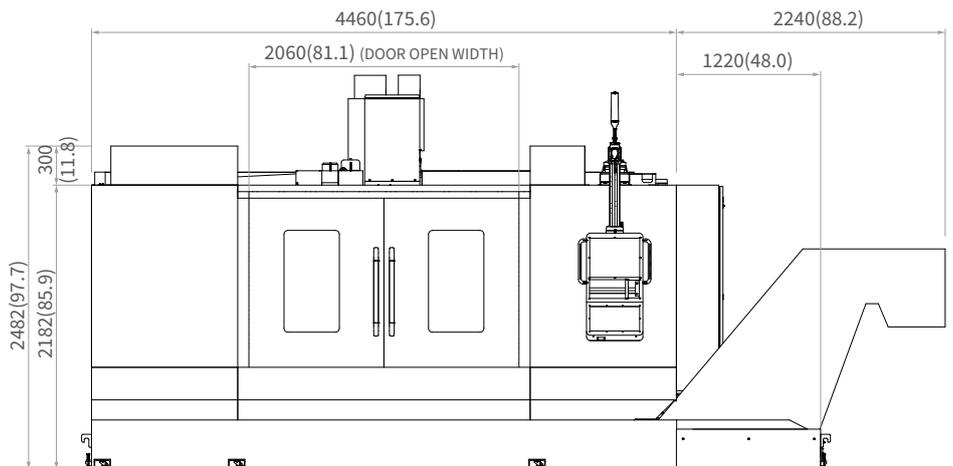
VCR 5500L

Units : mm (inch)

TOP VIEW



FRONT VIEW



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...



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.

RESPONDING TO CUSTOMERS **ANYTIME, ANYWHERE**

DN SOLUTIONS GLOBAL NETWORK

66 COUNTRIES | **140** + SALES NETWORKS | **3** FACTORIES | **6** REGIONAL HQS



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

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