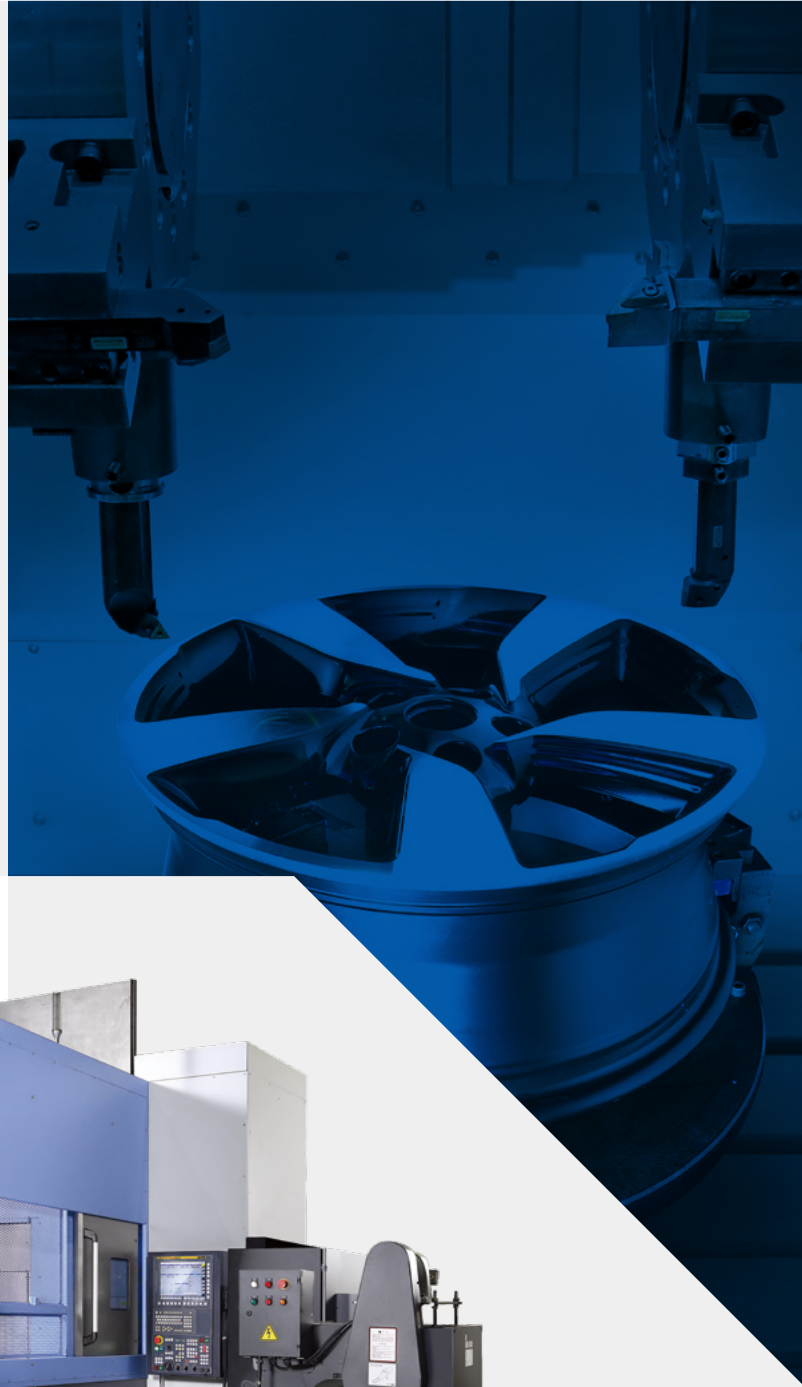


HIGH PRODUCTIVITY DOUBLE TURRET VERTICAL TURNING CENTER
FOR ALUMINUM WHEELS

PUMA VAW 6000·800

PUMA VAW 6000-ACC

PUMA VAW 800



PUMA VAW 6000·800

The PUMA VAW series vertical turning centers are designed for high performance machining of Aluminum Wheels. Double turrets are applied to enable simultaneous machining and optimize productivity. The wide machining area accommodates wheel sizes up to 28 inch diameter, and the inclined bed structure provides optimum chip removal.

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Product Overview

Basic Information

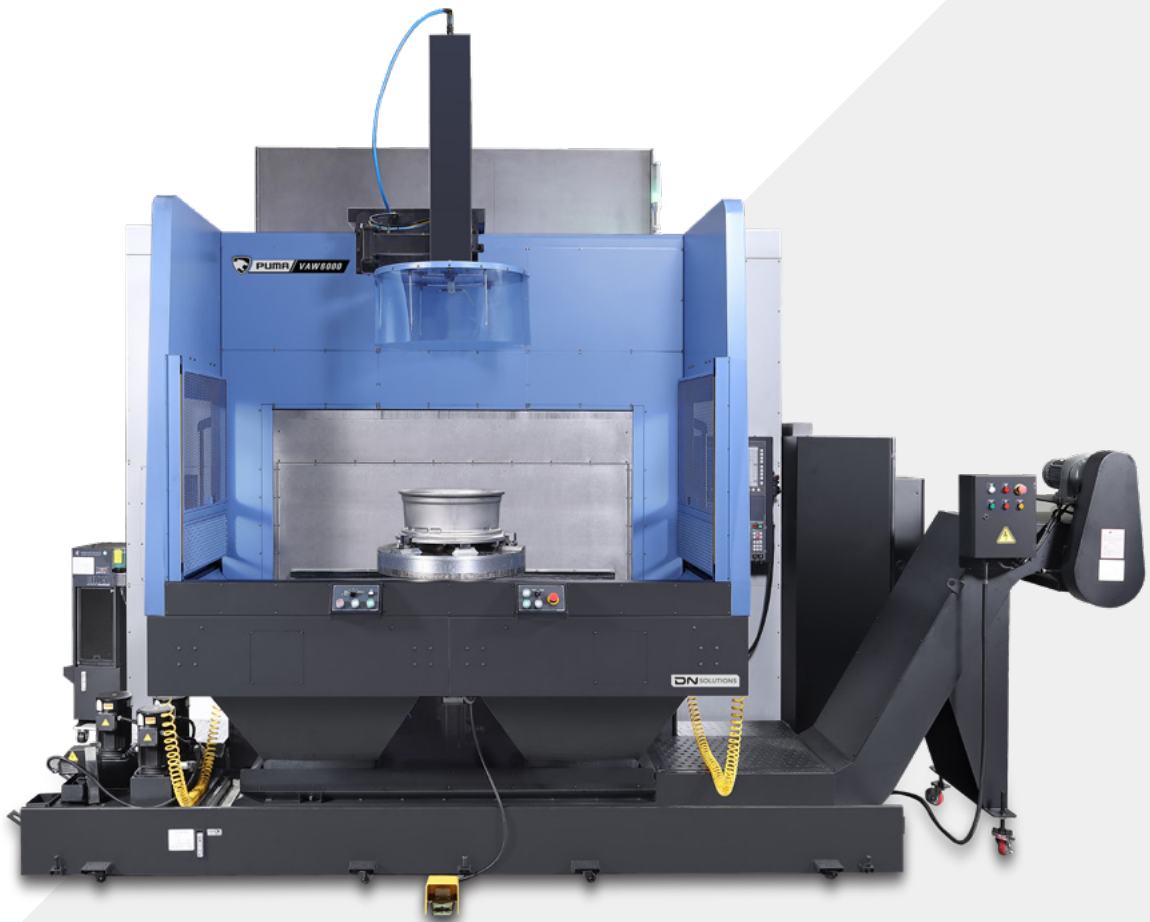
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WIDE MACHINING AREA



- The VAW Series enables automobile and truck wheels from 14" to 28" diameter to be handled efficiently.

HIGH PRODUCTIVITY



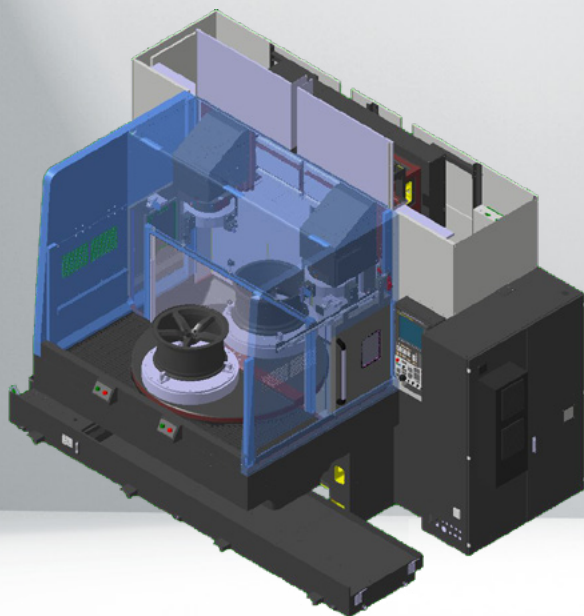
- The double turret capability enables machining of inner and outer wheel diameters to be carried out simultaneously, thereby significantly reducing cycle time.
- Cycle time can also be reduced by applying the Automatic Chuck Changer. (Model : PUMA VAW 6000-ACC)

ENHANCED CHIP DISPOSAL

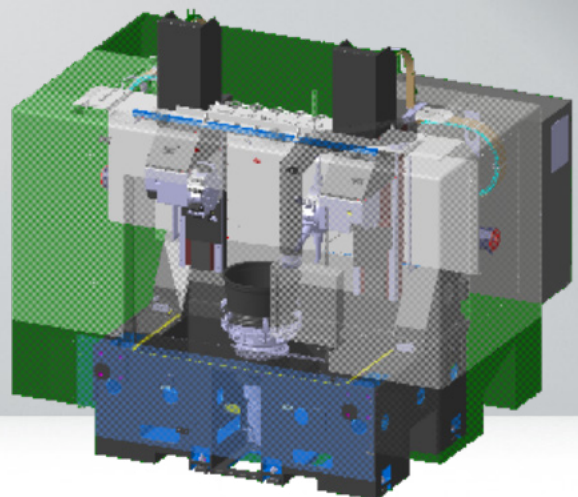


- Efficient chip removal is achieved by applying inclined surfaces to the bed structure.
- The overhead chuck cleaner enables any remaining chips to be cleared before unloading the finished wheel. (Model : PUMA VAW 6000-ACC **OPTION**)

PUMA VAW6000-ACC



PUMA VAW800



BASIC STRUCTURE

The PUMA VAW series improve productivity of wheel machining with powerful double turret.

X/Z-axis travel distance

PUMA VAW 6000-ACC

500/650 mm (19.7/25.6 inch)

PUMA VAW 800

570/650 mm (22.4/25.6 inch)

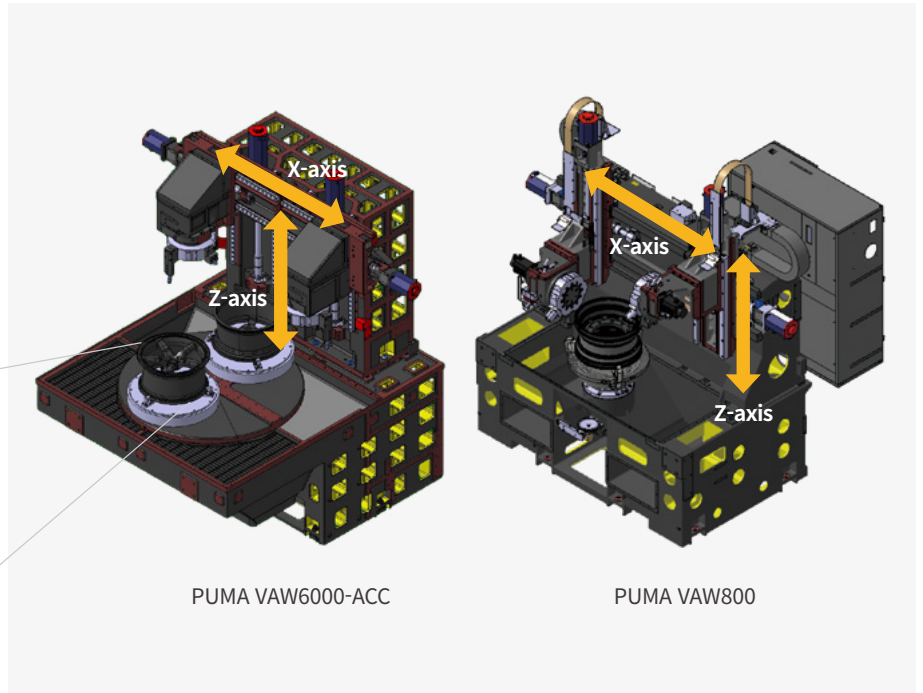
Rapid traverse rate

PUMA VAW 6000-ACC

30 m/min
(1181.1 ipm)

PUMA VAW 800

16 m/min
(629.9 ipm)



PUMA VAW6000-ACC

PUMA VAW800

MACHINING AREA

The PUMA VAW series provide the wide machining area from 14" to 28" for aluminum wheel.

Max turning dia.

PUMA VAW 6000-ACC / 800

790/711 mm
(31.1/28.0 inch)

Max turning length

PUMA VAW 6000-ACC / 800

350/440 mm
(13.8/17.3 inch)

Max turning wheel size

PUMA VAW 6000-ACC / 800

24/28 inch



SPINDLE

With its high power and torque specification, the machine provides the best performance in its class.

Max spindle speed

PUMA VAW 6000-ACC

2000 {3000 OPTION} r/min

PUMA VAW 800

2000 r/min

Max spindle power

PUMA VAW 6000-ACC (S3 25%/cont.)

85/75 {120/100 OPTION} kW
(160.9/134.1 {114.0/100.6} Hp)

PUMA VAW 800

55 kW (73.8 Hp)

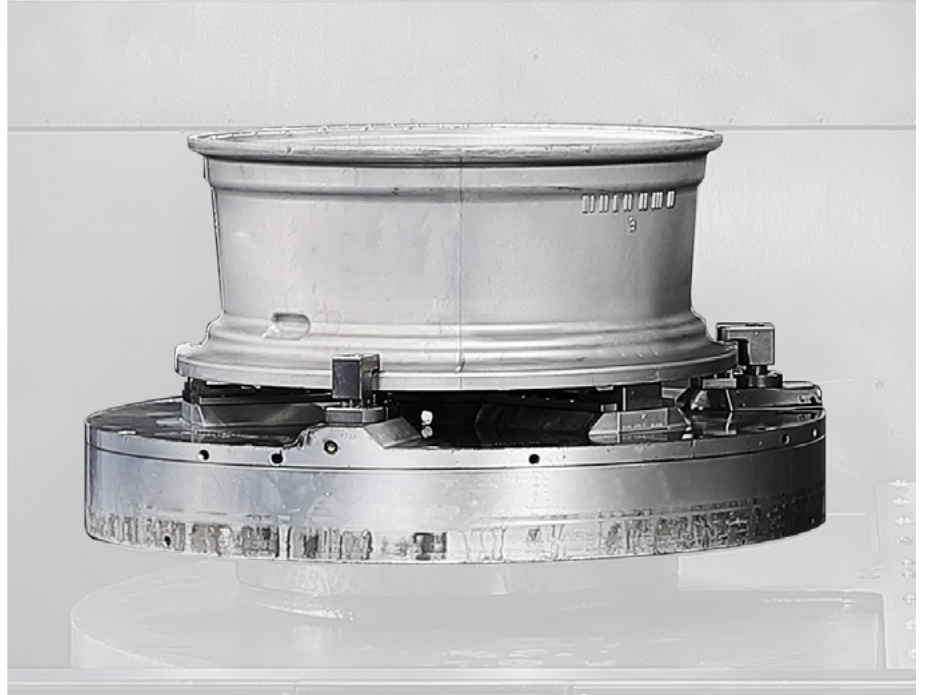
Max spindle torque

PUMA VAW 6000-ACC

1279 {1228 OPTION} N·m
(943.9 {906.3} ft-lbs)

PUMA VAW 800

799 kW (589.7 ft-lbs)



TURRET

The VAW series machines are provided with heavy duty double turrets for simultaneous machining with up to a total of 16 tools.

PUMA VAW6000-ACC

No. of tool

8+8 ea

1 Station index time

1.0 sec



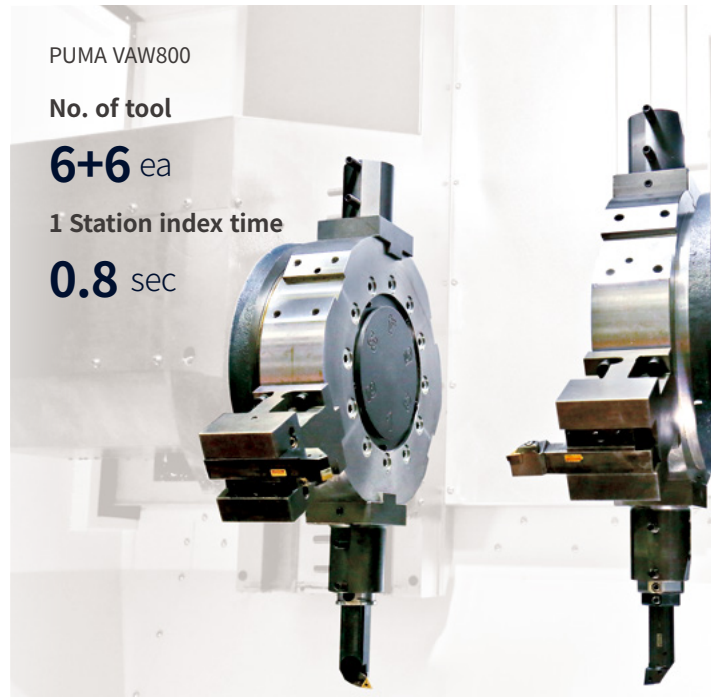
PUMA VAW800

No. of tool

6+6 ea

1 Station index time

0.8 sec

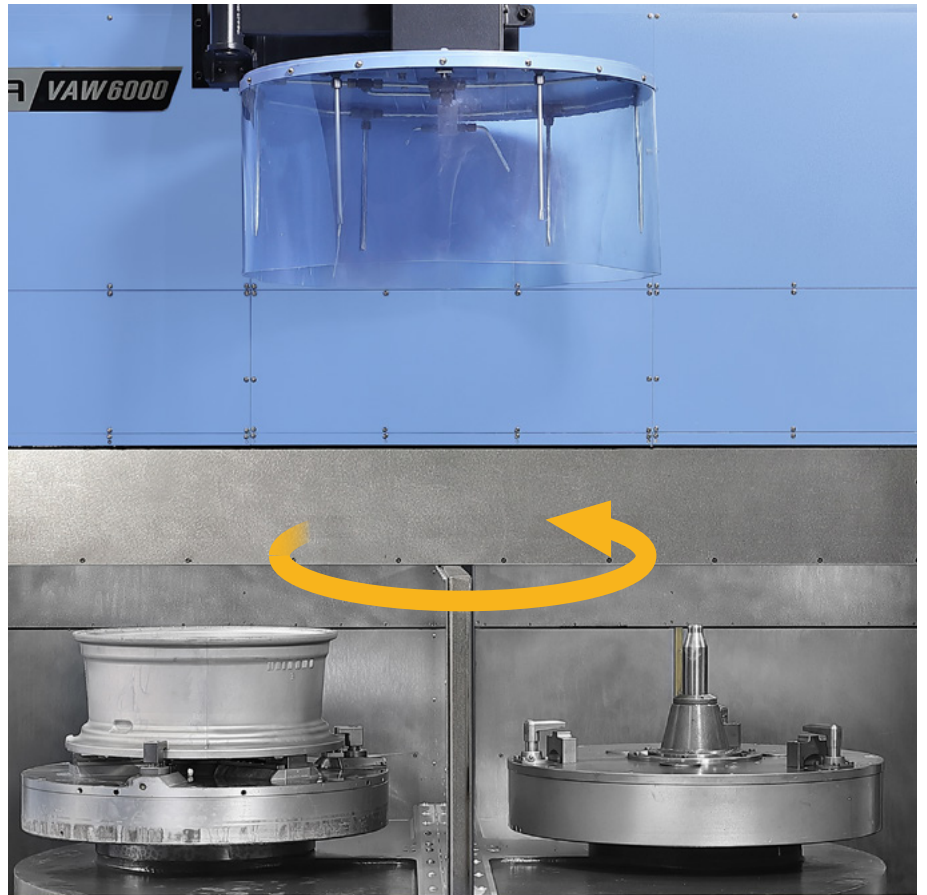


HIGH PRODUCTIVITY

ACC (Auto Chuck Changer)

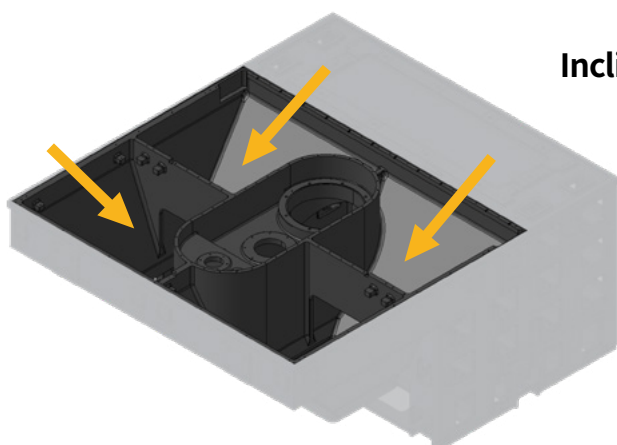
The Automatic chuck changer (ACC) provides optimum productivity by allowing load/unload of wheels during the machining cycle. In addition, the ACC allows op10 and op20 to be processes consecutively, thereby completing the machining process on one machine

* PUMA VAW6000-ACC



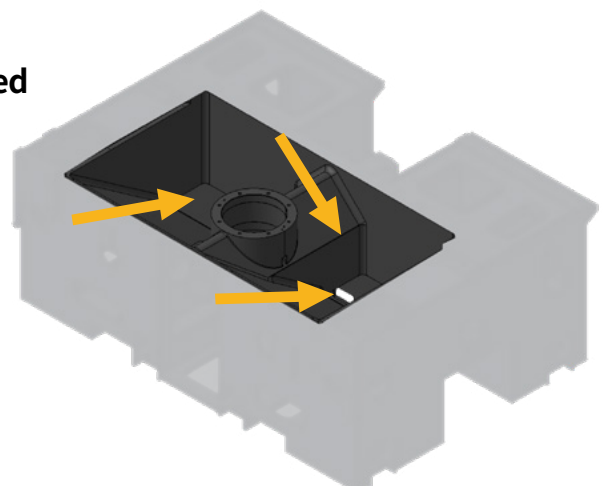
CHIP DISPOSAL

The inclined structure is applied inside the bed, so it is easy to remove chips.



PUMA VAW6000-ACC

Inclined bed



PUMA VAW800

STANDARD | OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

Description	Features	PUMA VAW6000-ACC	PUMA VAW800
CHUCK	NONE	●	○
CHUCKING OPTION	CHUCK CLAMP CONFIRMATION	●	●
SPINDLE	SPEED_2000 R/MIN	●	●
	SPEED_3000 R/MIN	○	X
	85/75 KW	●	X
	120/100 KW	○	X
	55/45 KW	X	●
	55/45 KW(HV)	X	X
TURRET	75/55 KW(HV)	X	X
	8 ST_BOLT	●	X
	6 ST_BOLT	X	●
LINEAR SCALE (X AXIS)	ABSOLUTE PULSE CODER	○	○
LINEAR SCALE (Z AXIS)	ABSOLUTE PULSE CODER	○	X
FEEDBACK SYSTEM	ENCODER (INCREMENTAL)	X	X
	ENCODER (ABSOLUTE)	●	●
COOLANT PUMP	DIRECTION(RIGHT SIDE)	●	●
	DIRECTION(LEFT SIDE)	X	○
	DIRECTION(REAR SIDE)	X	X
	1.1 KW_0.7 MPA_30 L/MIN	●	●
	1.1 KW_1.0 MPA_20 L/MIN	○	○
COOLANT OPTION	4.0 KW_1.45 MPA_30 L/MIN	○	○
	OIL SKIMMER	○	○
	COOLANT PRESSURE SWITCH	○	○
CHIP CONVEYOR	COOLANT LEVEL SWITCH	○	△
	HINGED BELT_REAR	△	X
	HINGED BELT_LEFT/RIGHT SIDE	△	X
	MAGNETIC SCRAPER TYPE	X	X
	HINGE SCRAPER WITH DRUM FILTER	△	△
CHIP DISPOSAL OPTION	CHIP BUCKET(ROTATION_300L)	○	○
	MIST COLLECTOR(2.2 KW_WATER SOLUBLE)	○	○
	CHUCK COOLANT	○	○
OPTIONAL EQUIPMENTS	AIR BLOWER FOR CHUCK	○	○
	ROBOT INTERFACE(PMC I/O MODULE TYPE)	○	○
	ROBOT INTERFACE(PROFIBUS-DP TYPE)	○	○
	AIR GUN	○	○
	AIR LIMIT	●	○
	SAFETY SENSOR FOR OPERATOR	●	△
	WORK LIGHT BEAM SENSOR	○	X
	CHUCK CLEANER	○	X
	AUTOMATIC FRONT DOOR	X	●
	AUTOMATIC POWER OFF	○	○
	SCREEN DISPLAY UNIT SIZE 15 INCH	●	X
	SCREEN DISPLAY UNIT SIZE 10.4 INCH	X	○
	ADDITIONAL PORTABLE MPG	●	X
	SIGNAL TOWER (YELLOW, RED, GREEN)	○	○
	TOOL MONITORING SYSTEM	○	○
	SHOWER COOLANT	○	○
	AIR CONDITIONER	○	○
	WORK & TOOL COUNTER	○	X
	FLASH MEMORY CARD & ADAPTER(1GB)	○	○
	FLASH MEMORY CARD & ADAPTER(2GB)	○	○
	Water soluble Coolant Chiller**	○	○
	COOLANT GUN	○	○
	SIGNAL TOWER (YELLOW, RED, GREEN)	○	○
	TOOL MONITORING SYSTEM	○	○
	SHOWER COOLANT	○	○
	AIR CONDITIONER	○	○
	WORK & TOOL COUNTER	○	X
FLASH MEMORY CARD & ADAPTER(1GB)	○	○	
FLASH MEMORY CARD & ADAPTER(2GB)	○	○	

* Please contact your DN Solutions representative for detailed machine information.

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

* PUMA VAW6000-ACC : When the factory power source is AC220V, the external transformer is needed.

(Please contact DN Solutions representative for detailed specifications)

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

● Standard ○ Optional X N/A



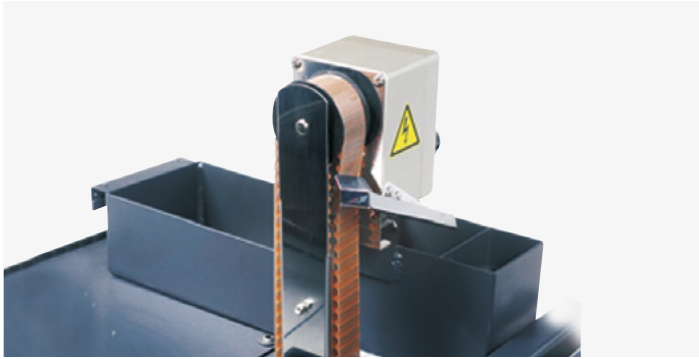
Fire Safety Precautions

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

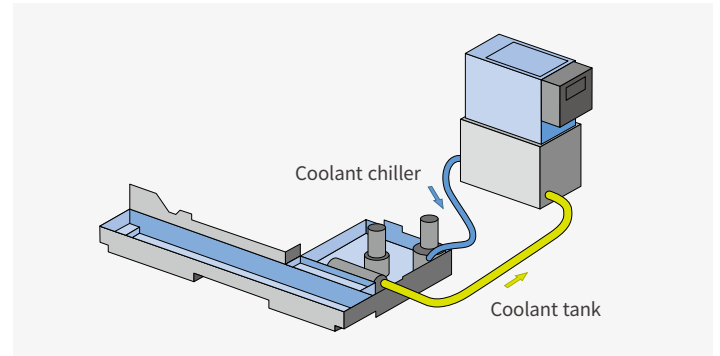
Oil skimmer OPTION

The oil skimmer keeps coolant and lubricant isolated from each other for extending lifecycle of coolant.



Coolant chiller (recommended) OPTION

A coolant chiller is recommended to help prevent temperature rises and to reduce thermal deformation when using a water-insoluble coolant or high-pressure coolant system (i.e., power over 1.5kW).



Dust Collector OPTION

The dust collector absorbs airborne oil vapor and fine dust in the system to improve working environment.



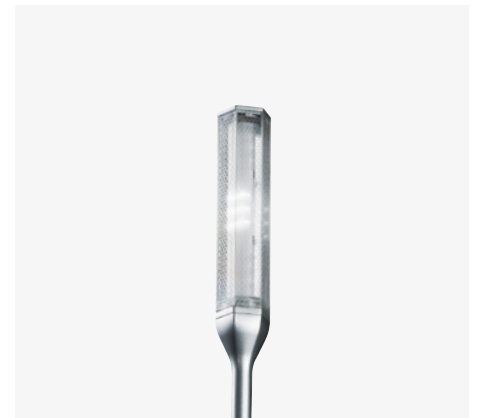
Work & tool counter OPTION

The counter counts daily and cumulative works, tool usage, etc.



Signal tower OPTION

Device to show present statuses of the machine.



Equipment for ACC (Auto Chuck Changer)

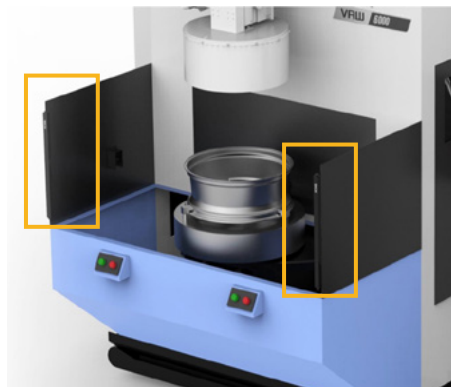
Chuck Cleaner OPTION

After machining, the chuck cleaner moves down to the finished wheel and provides an air blow to remove any remaining chips.



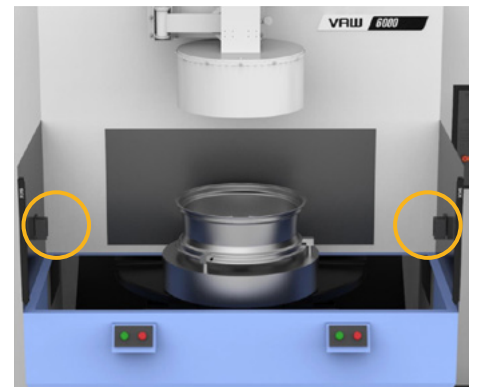
Safety sensor for operator

The sensor checks presence or absence of an operator in the Loading Station for the safety of worker.



Work Light Beam Sensor OPTION

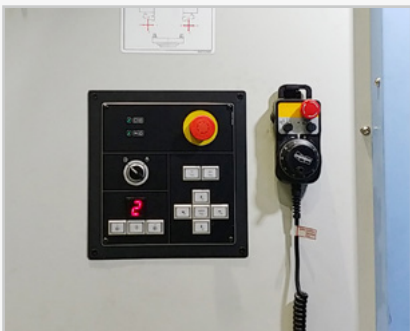
The device checks whether a workpiece is attached on the chuck by the beam sensor.



CONTROL EQUIPMENTS

Model : PUMA VAW 6000-ACC

There is a Main OP (Operation Panel) on the left side of the machine to enable the main operation, and on the right side of the machine is a Sub OP (Operation Panel) that enables turret operation and axis travel. In addition, it is easy to change tools by providing Side Door and Portable MPG on both the left and right sides. ACC Sub OP (Operation Panel) is applied to the front of the equipment to allow manual operation of ACC, making it easy to repair.



- Sub OP :
Turret operation/Axis travel
- Side Door
- Portable MPG



- Main OP
- Side Door
- Portable MPG



ACC Sub OP : Manual operation of ACC

DN SOLUTIONS FANUC i PLUS

DN Solutions Fanuc i Plus maximizes 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.

DN Solutions Fanuc i Plus

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

USB and PCMCIA card QWERTY keyboard

- EZ-Guide i 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

Division	Item	Specifications	PUMA VAW800	PUMA VAW6000
			DN Solutions Fanuc i Plus	DN Solutions Fanuc i Plus
Controlled axis	Control paths		2 Path	2 Path
	Controlled axes		4 (X1,Z1,X2,Z2)	4 (X1,Z1,X2,Z2)
	Simultaneously controlled axes		2 axes (each path)	2 axes (each path)
Data input/output	Fast 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	●	●
Feed function	AI contour control I	G5.1 Q_, 40 Blocks	●	●
	AI contour control II	G5.1 Q_, 200 Blocks	○	○
Operation Guidance Function	EZ Guidei (Conversational Programming Solution)		●	●
	iHMI with Machining Cycle	Note *1) Only with 15" Touch LCD standard	○ *1)	○ *1)
	Multi path function	Supporting 2 or 3 path machine	●	●
Setting and display	EZ WORK		●	●
	CNC screen dual display function		●	●
Network	FANUC MTConnect		⊕	⊕
	FANUC OPC UA		⊕	⊕
Others	Display unit	15" color LCD	●	●
		15" color LCD with Touch Panel	○	○
	Part program storage size & Number of registerable programs	640M(256KB)_500 programs 5120M(2MB)_1000 programs	- ●	- ●

POWER | TORQUE

PUMA VAW6000-ACC

Max. spindle speed

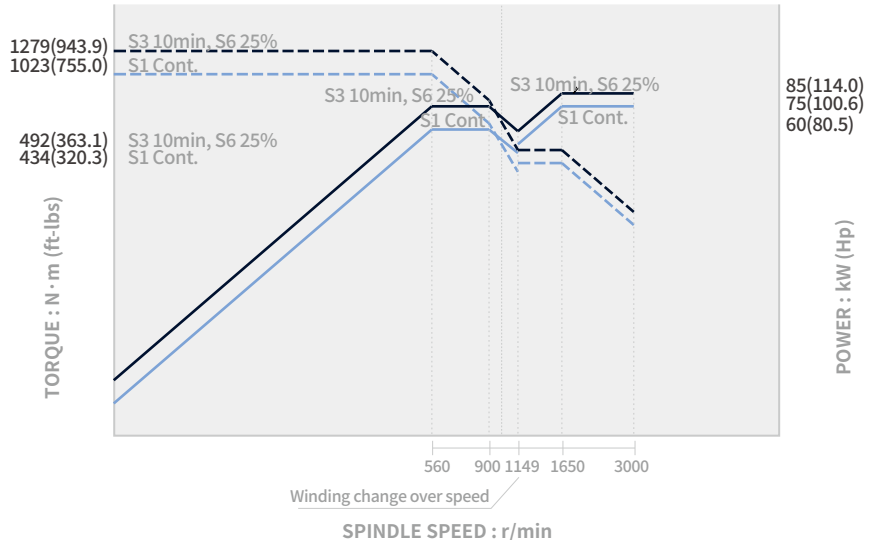
3000 r/min

Max. spindle power

85/60 kW (114.0/80.5 HP)

Max. Spindle torque

1279 N·m (943.9 ft-lbs)



PUMA VAW6000-ACC OPTION

Max. spindle speed

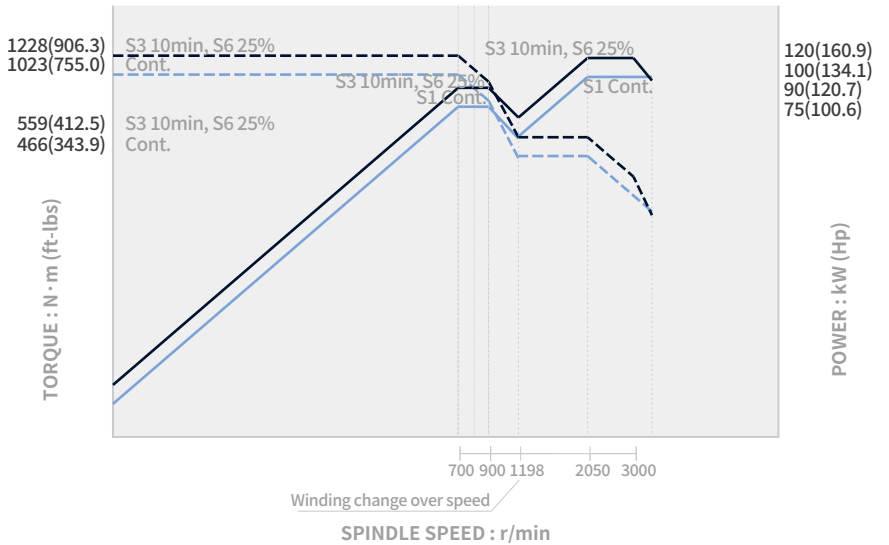
3000 r/min

Max. spindle power

120/75 kW (160.9/100.6 HP)

Max. Spindle torque

1228 N·m (906.3 ft-lbs)



PUMA VAW800

Max. spindle speed

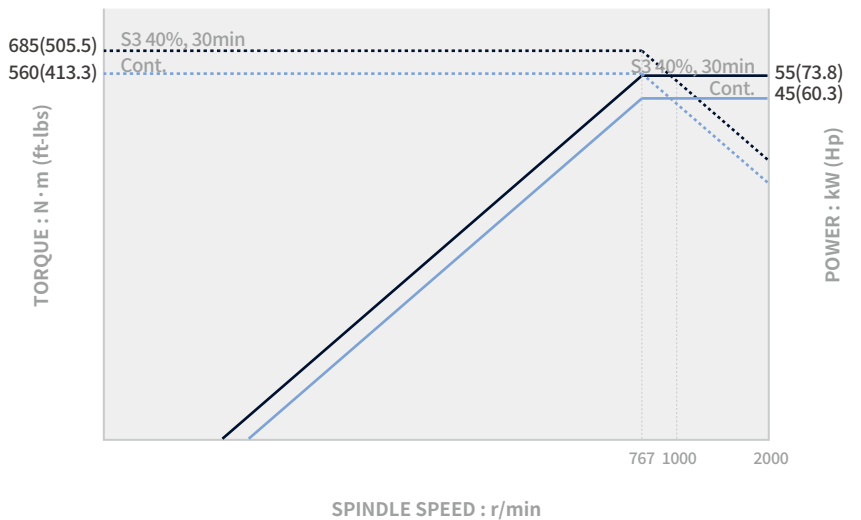
2000 r/min

Max. spindle power

55/45 kW (73.8/60.3 HP)

Max. Spindle torque

685 N·m (505.5 ft-lbs)

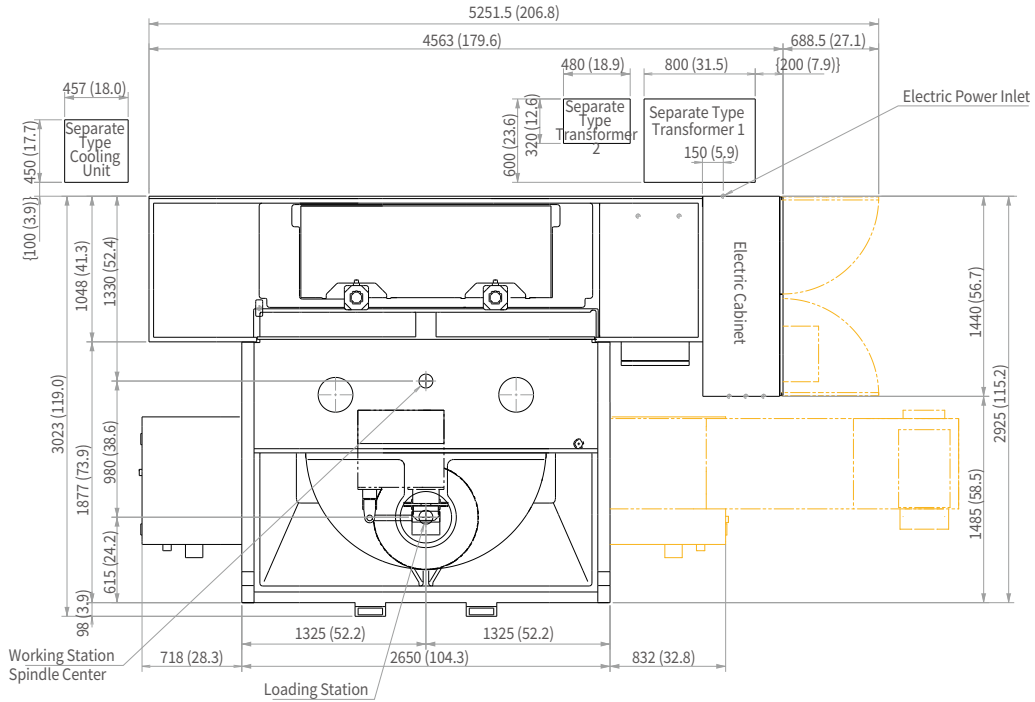


EXTERNAL DIMENSIONS

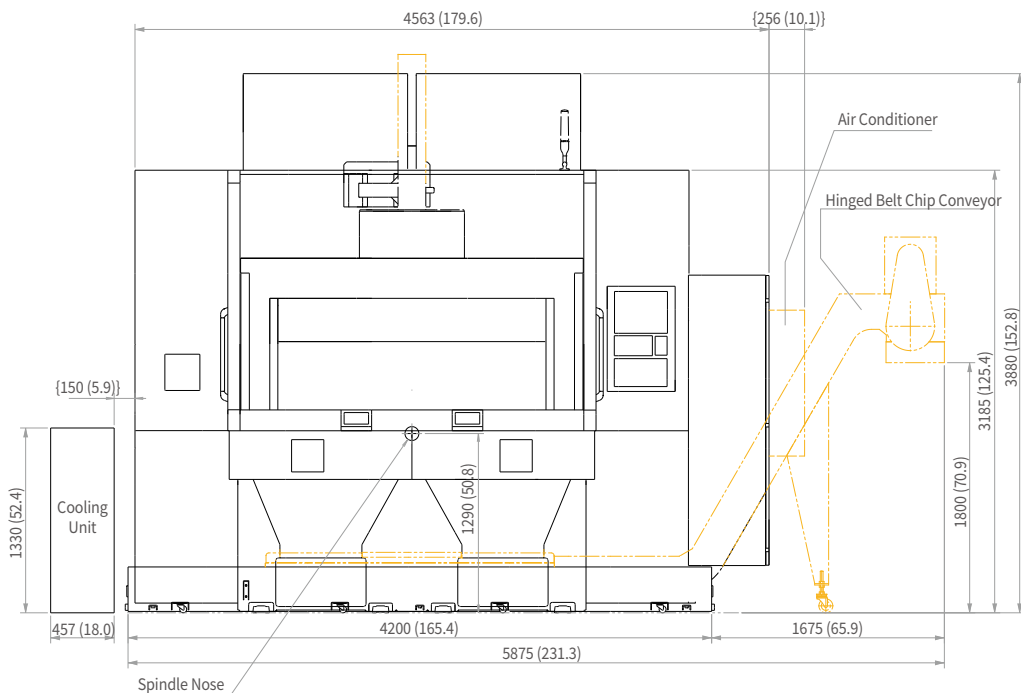
PUMA VAW6000-ACC

Unit : mm (inch)

TOP



FRONT

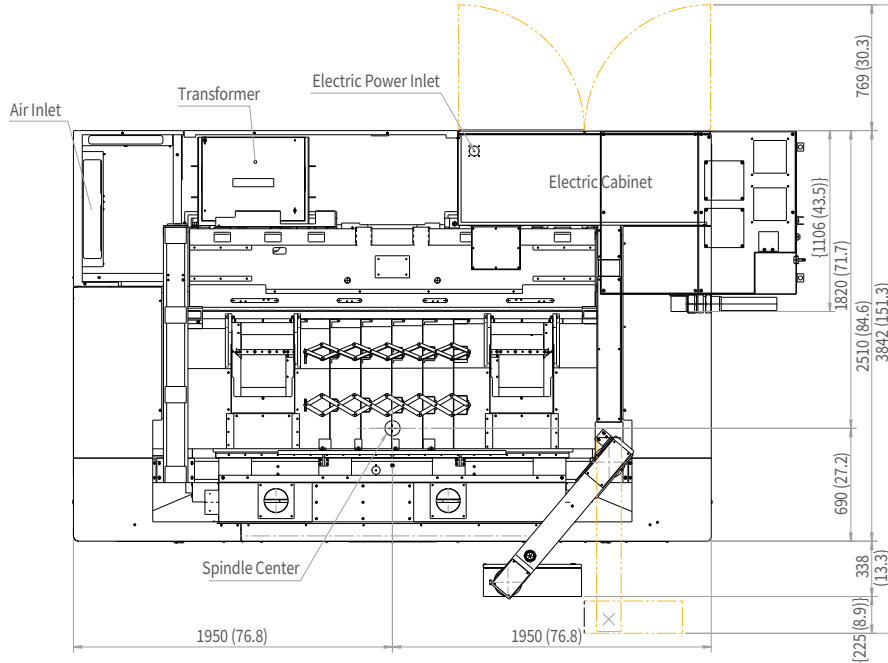


EXTERNAL DIMENSIONS

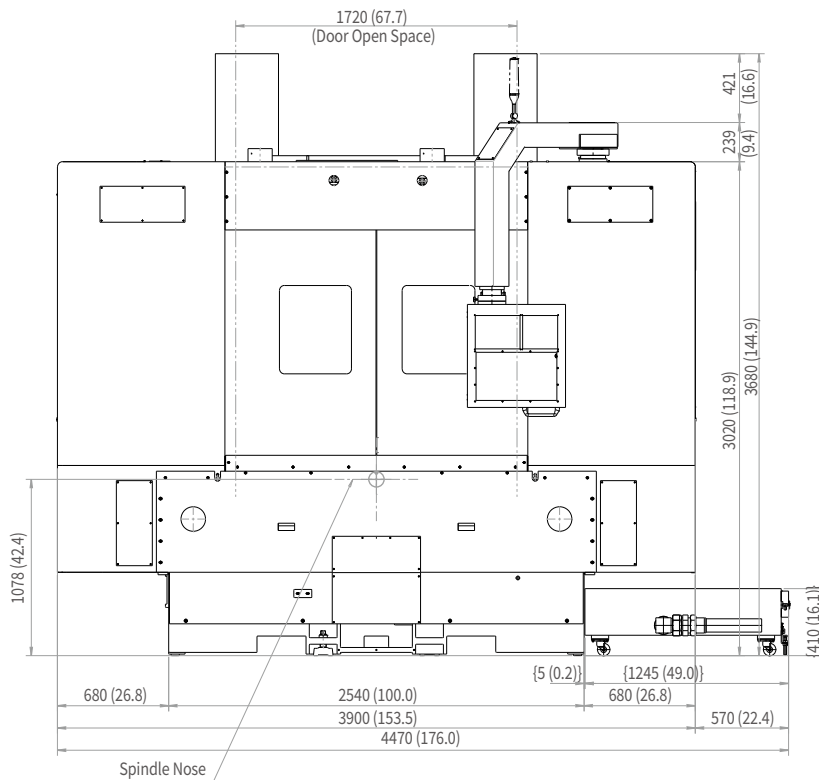
PUMA VAW800

Unit : mm (inch)

TOP



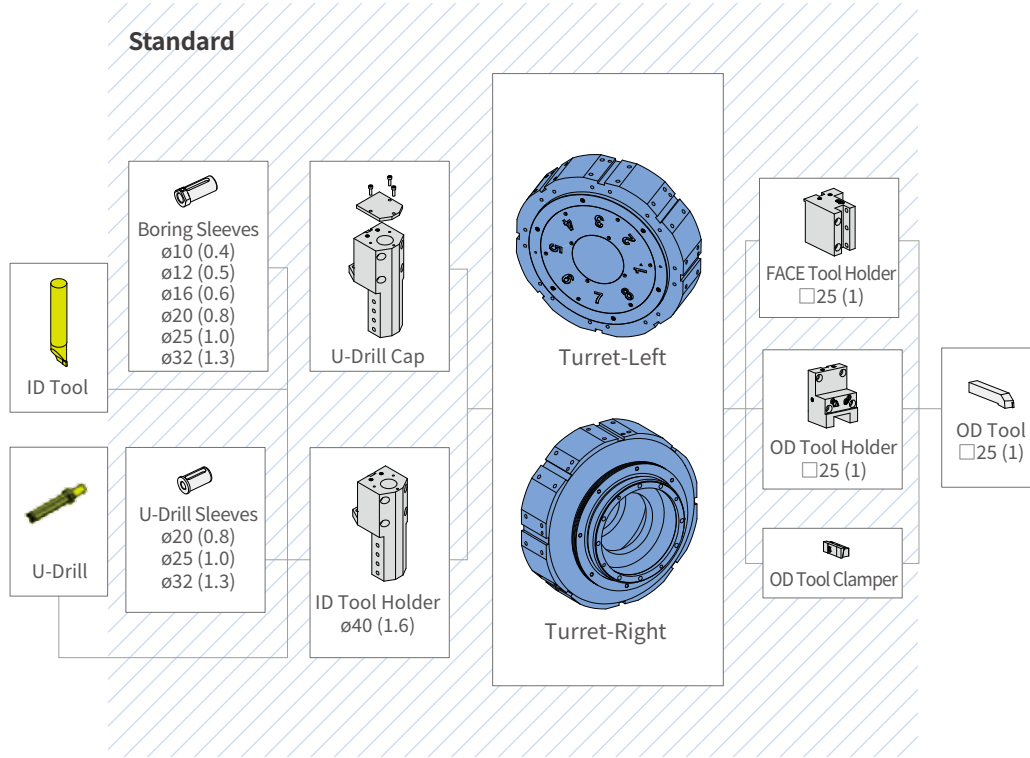
FRONT



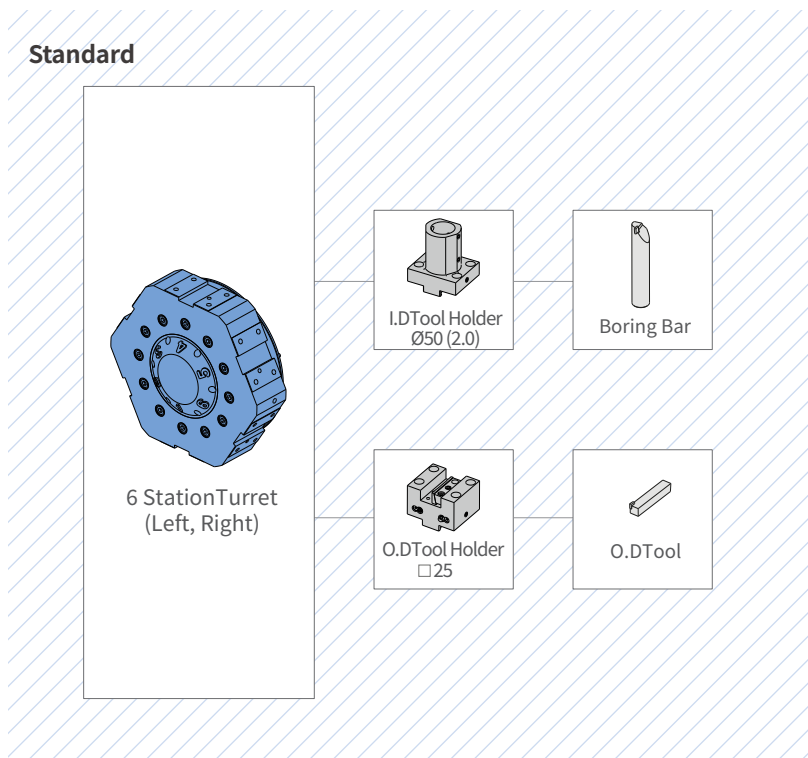
TOOLING SYSTEM

PUMA VAW6000-ACC

Unit : mm (inch)



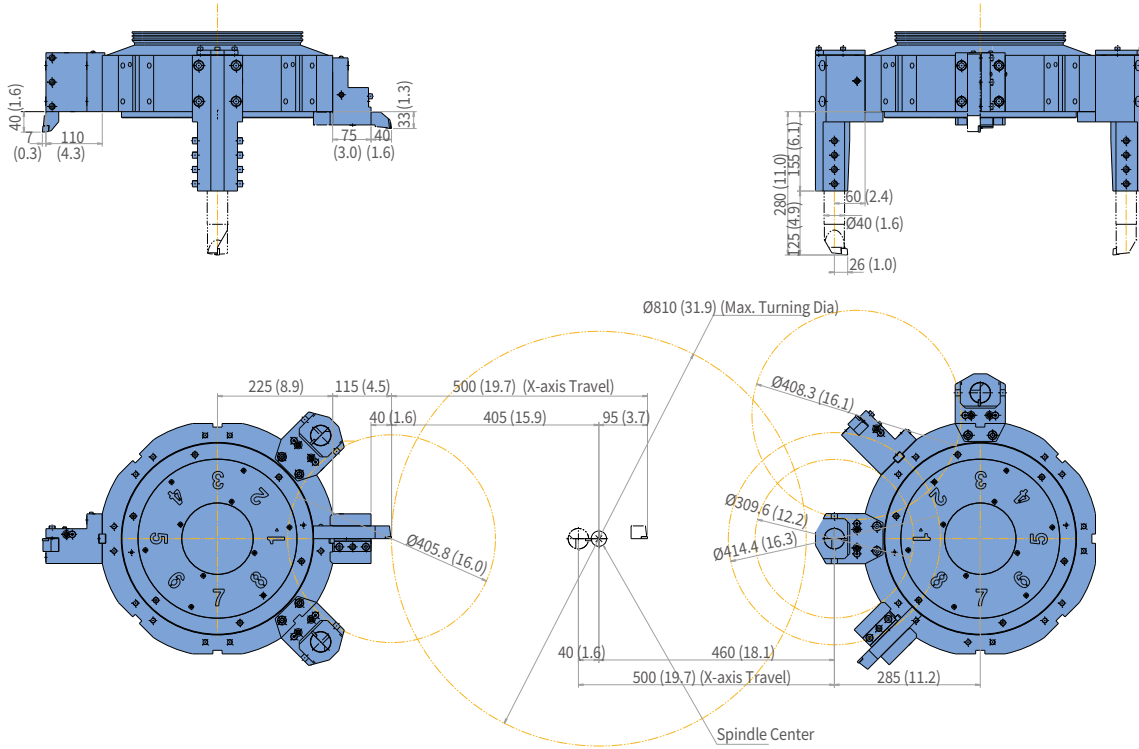
PUMA VAW800



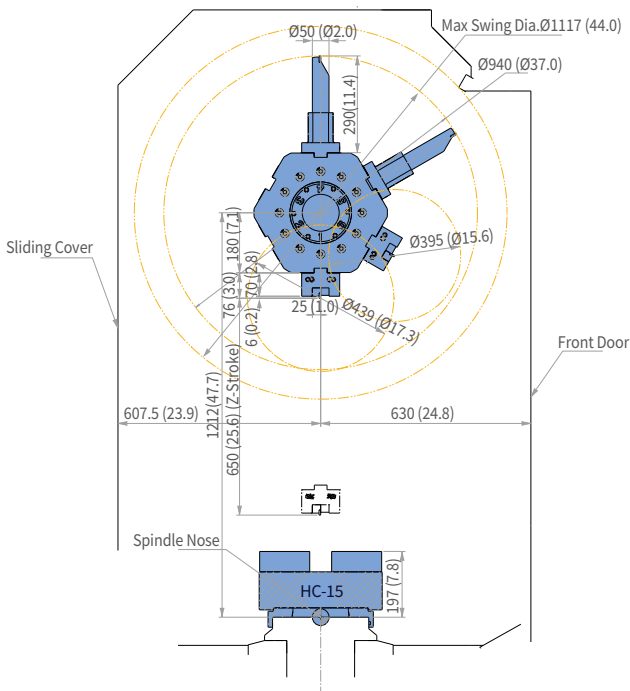
TOOL INTERFACE

PUMA VAW6000-ACC

Unit : mm (inch)



PUMA VAW800



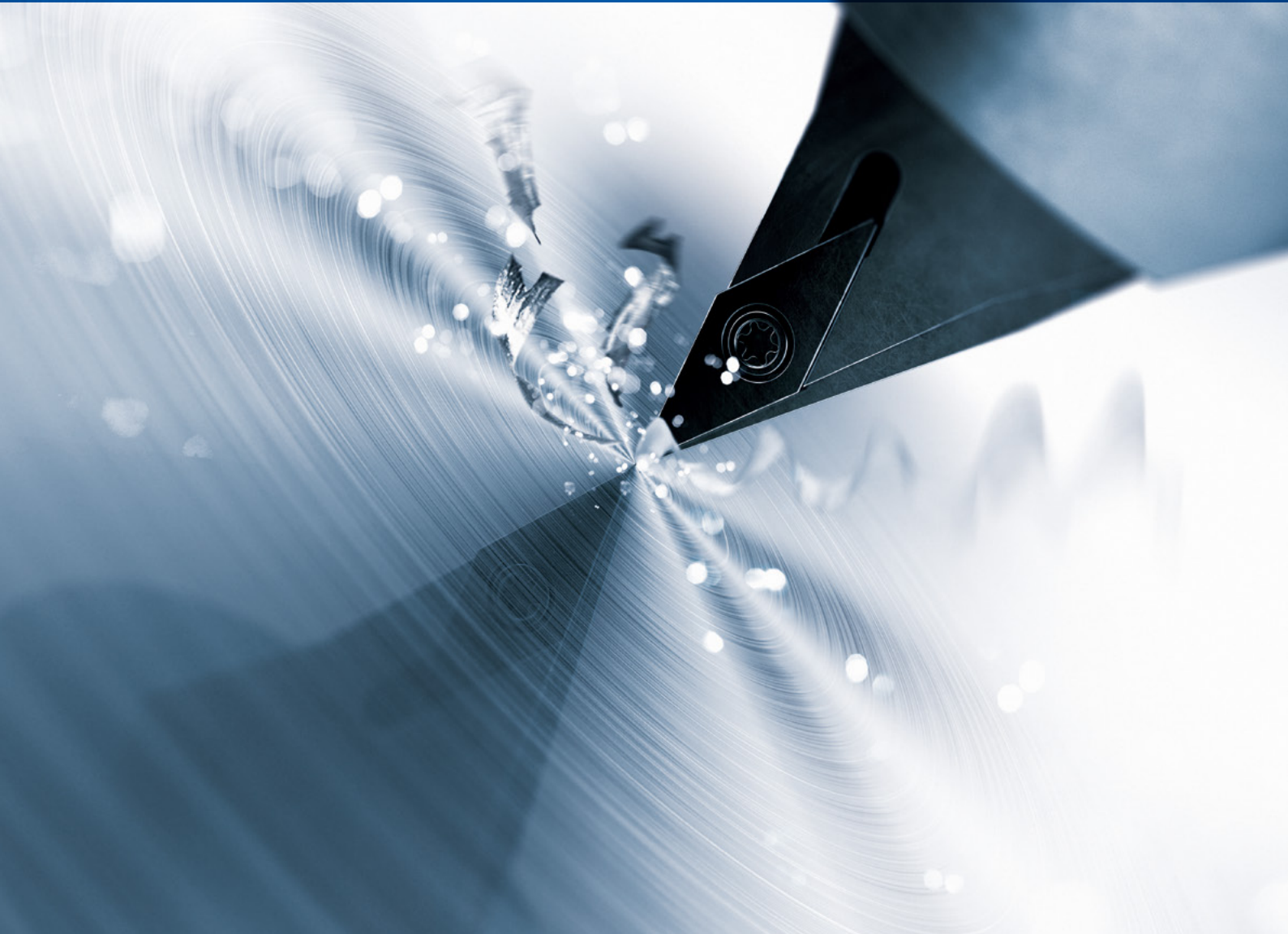
MACHINE SPECIFICATIONS

PUMA VAW series

Description		Unit	PUMA VAW6000-ACC	PUMA VAW800	
Capacity	Swing over bed	mm (inch)	900 (35.4)	1140 (44.9)	
	Swing over saddle	mm (inch)	790 (31.1)	970 (38.2)	
	Max. turning diameter	mm (inch)	790 (31.1)	711 (28.0) (28")	
	Max. turning length(height)	mm (inch)	350 (13.8)	440 (17.3)	
	Max wheel size	inch	24	28	
Travel	Travel distance_ LEFT	X-axis	mm (inch)	500 (19.7)	570 (22.4)
		Z-axis	mm (inch)	650 (25.6)	650 (25.6)
	Travel distance_ RIGHT	X-axis	mm (inch)	500 (19.7)	570 (22.4)
		Z-axis	mm (inch)	650 (25.6)	650 (25.6)
	Rapid traverse Rate	X-axis	m/min (ipm)	30 (1181.1)	16 (629.9)
		Z-axis	m/min (ipm)	30 (1181.1)	16 (629.9)
Main spindle	Max. Spindle speed	r/min	2000{3,000}	2000	
	Spindle motor power	kW (Hp)	85/75(STD) {120/100} (114.0/100.6 {160.9/134.1}) (S3 25%/Cont.)	55/45 (73.8/60.3) (S3 40% 30min/Cont.)	
	Max. Spindle Torque	N·m (ft-lbs)	1279 {1228} (943.9 {906.3})	684.5 (505.2)	
	Spindle nose	ASA	A2-15	A2-11	
	Spindle bearing diameter(Front)	mm (inch)	160 (6.3)	150 (5.9)	
	Spindle through hole diameter	mm (inch)	91 (3.6)		
Turret	No. of tool stations	st	8+8	6+6	
	OD tool size	mm (inch)	25x25 (1.0x1.0)		
	Max. Boring bar size	mm (inch)	Ø40 (Ø1.6)	Ø50 (Ø2.0)	
	Turret Indexing time(1station)	sec	1	1.2	
Power Source	Electric power supply	kVA	180	88.19	
Machine Dimensions	Length	mm (inch)	4563 (179.6)	4470 (176.0)	
	Width	mm (inch)	3023 (119.0)	3842 (151.3)	
	Height	mm (inch)	3880 (152.8)	3680 (144.9)	
	Weight	kg (lb)	20000 (44091.8)	13500 (29762.0)	
CNC	NC system	-	DN Solutions Fanuc i Plus		

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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