



HIGH PRODUCTIVITY DOUBLE TURRET VERTICAL TURNING CENTER  
FOR ALUMINUM WHEELS

# PUMA VAW

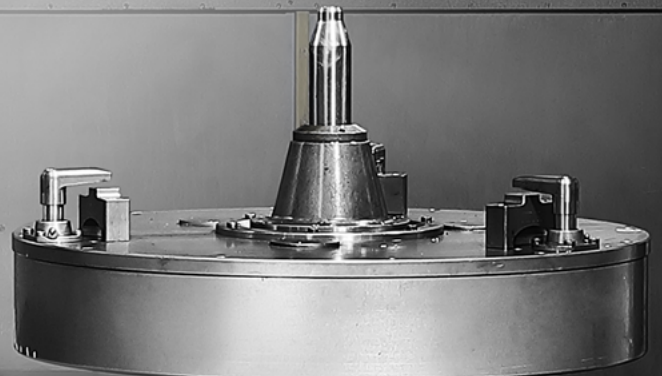
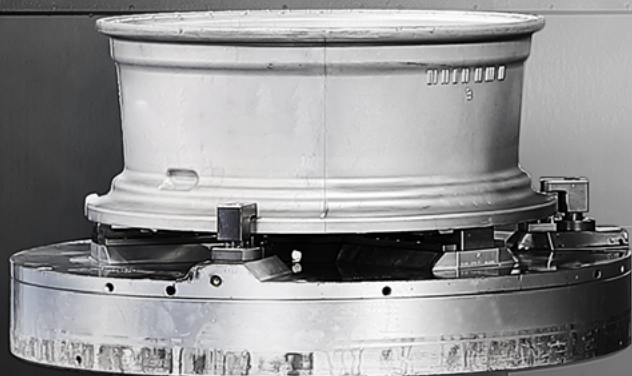
6000-ACC • 7500 • 800

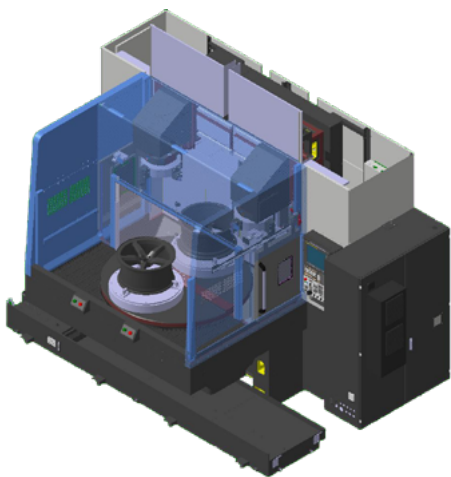


**DN** SOLUTIONS

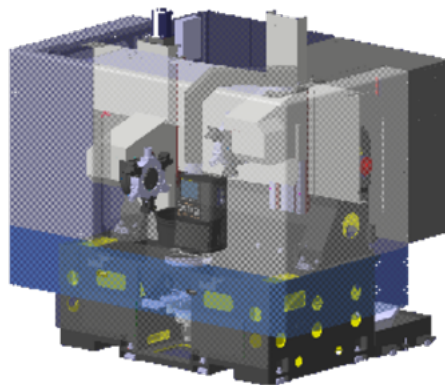
# PUMA VAW 6000-ACC · 7500 · 800

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.

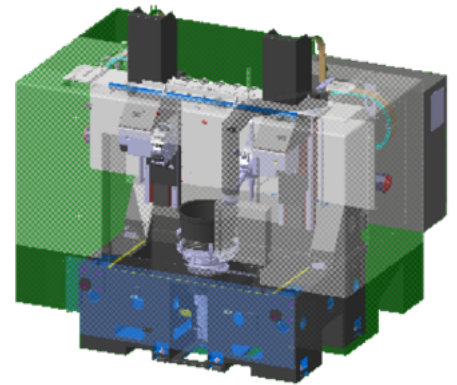




**PUMA VAW6000-ACC**



**PUMA VAW7500**



**PUMA VAW800**

### 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**



# BASIC STRUCTURE

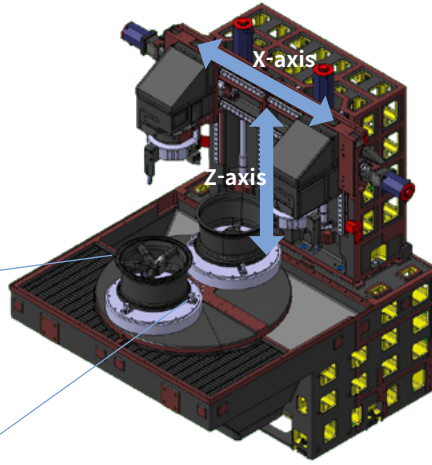
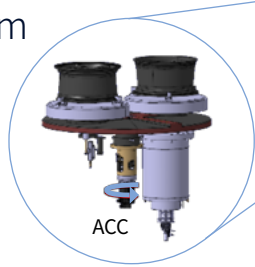
The PUMA VAW series improve productivity of wheel machining with powerful double turret.

## Travel distance

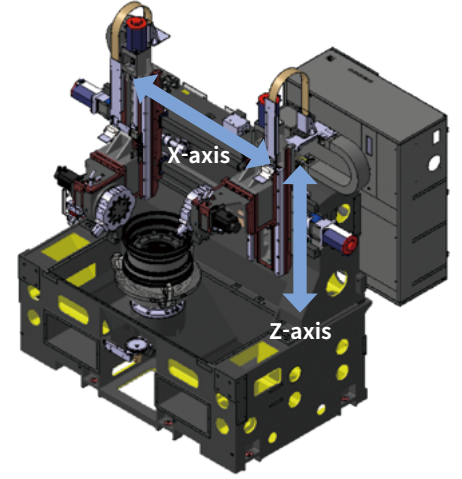
X/Z-axis **500/650** mm  
19.7/25.6 inch

## Rapid traverse rate

**30** m/min  
1181.1 ipm



PUMA VAW6000-ACC



PUMA VAW7500 / 800

Model	Unit	Travel distance		Unit	Rapid traverse rate	
		X-axis	Z-axis		X-axis	Z-axis
PUMA VAW6000-ACC	mm (inch)	500 (19.7)	650 (25.6)	m/min (ipm)	30 (1181.1)	30 (1181.1)
PUMA VAW7500		500 (19.7)	500 (19.7)		24 (944.9)	24 (944.9)
PUMA VAW800		570 (22.4)	650 (25.6)		16 (629.9)	16 (629.9)

## MACHINING AREA

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

## Max turning dia.

**790** mm  
31.1 inch

## Max turning wheel size

**28** inch

Model	Unit	Max turning dia.	Max turning length	Max turning wheel size
PUMA VAW 6000-ACC	mm (inch)	790 (31.1)	350 (13.8)	24 inch
PUMA VAW 7500		720 (28.3)	340 (13.4)	27.5 inch
PUMA VAW 800		711 (28.0)	440 (17.3)	28 inch





# SPINDLE

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

## PUMA VAW6000-ACC

### Max spindle speed

**2000** r/min

**3000** r/min OPTION

### Max spindle power (S3 25%/연속)

**85/75** kW

160.9/134.1 Hp

**120/100** kW OPTION

114.0/100.6 Hp

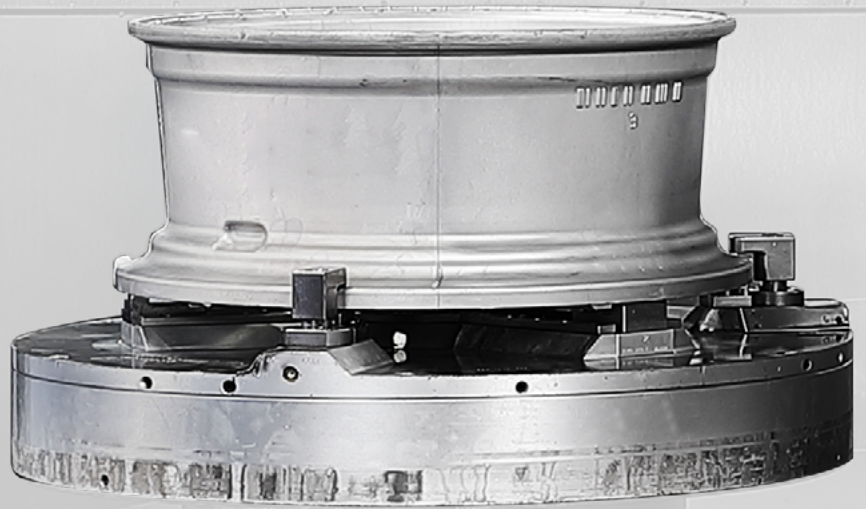
### Max spindle torque

**1279** N·m

943.9 ft-lbs

**1228** N·m OPTION

906.3 ft-lbs



Model	Max spindle speed	Max spindle power	Max spindle torque
PUMA VAW6000-ACC	2000 r/min	85 kW (114.0 Hp)	1279 N.m (943.9 ft-lbs)
	<b>3000</b> r/min <small>OPTION</small>	<b>120</b> kW <small>OPTION</small> (160.9 Hp)	<b>1228</b> N.m <small>OPTION</small> (906.3 ft-lbs)
PUMA VAW7500	2000 r/min	55 kW (73.8Hp)	692 N.m (510.7 ft-lbs)
PUMA VAW800	2000 r/min	55 kW (73.8Hp)	799 N.m (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.

Model	1 Station index time	No. of TOOL
PUMA VAW 6000-ACC	1.0 sec	8+8
PUMA VAW 7500	0.8 sec	6+6
PUMA VAW 800	0.8 sec	6+6

### No. of tool

PUMA VAW6000-ACC

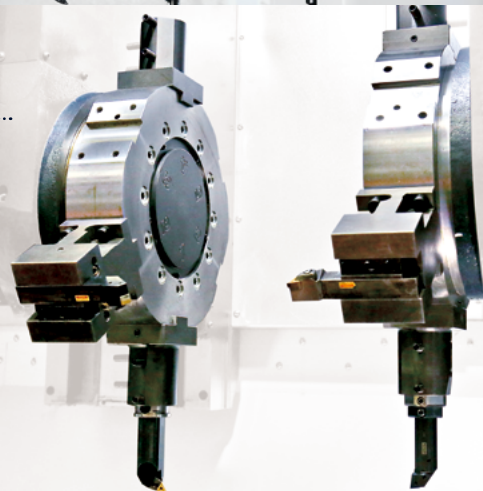
**8+8** ea



### No. of tool

PUMA VAW7500/800

**6+6** ea

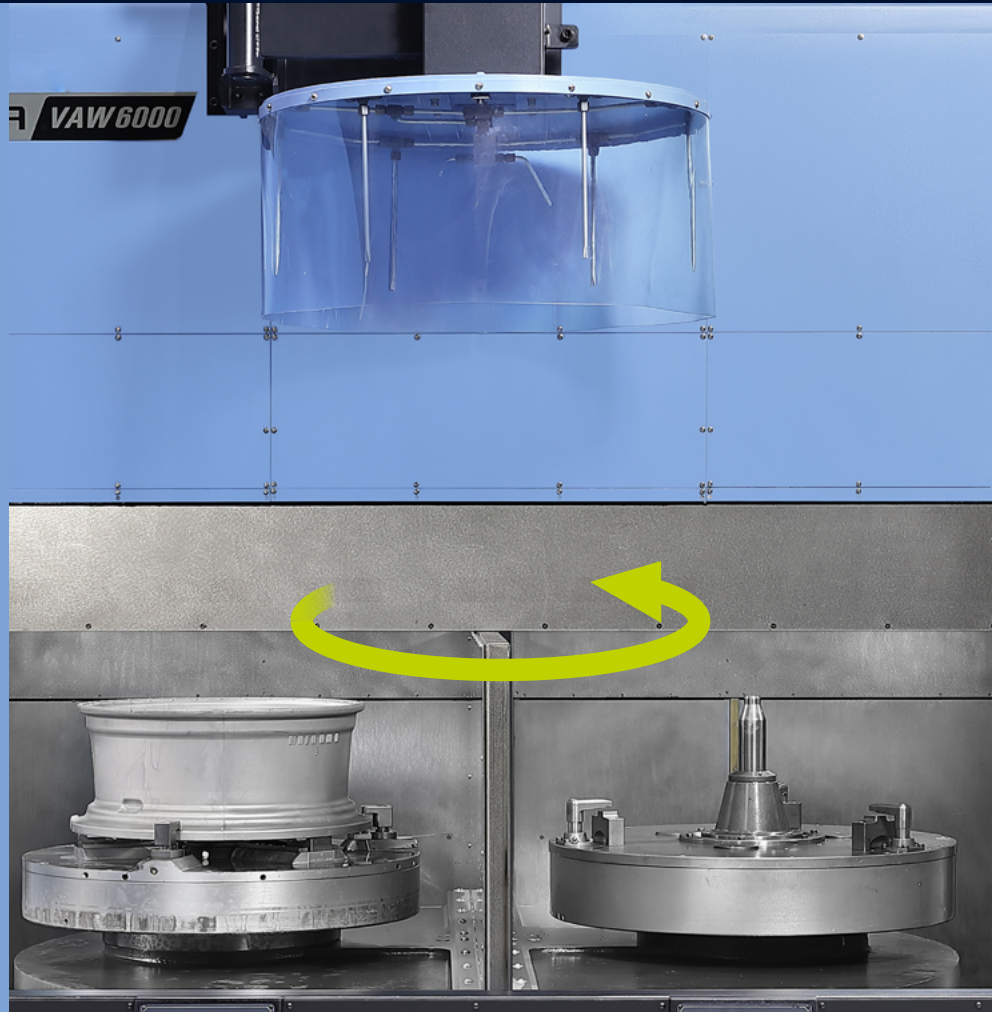


# HIGH PRODUCTIVITY

## ACC (Auto Chuck Changer)

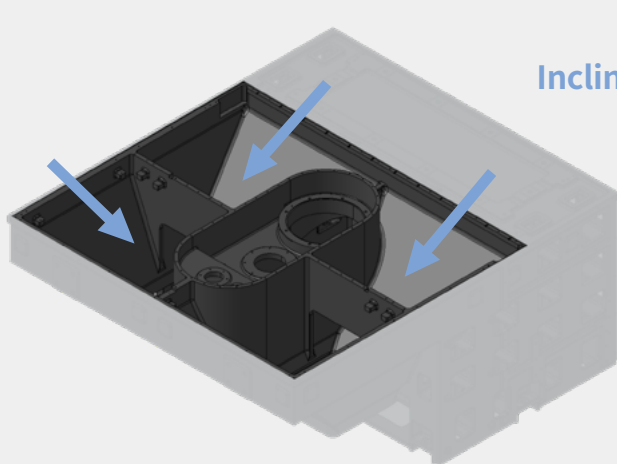
The Automatic chuck changer (AAC) provides optimum productivity by allowing load/unload of wheels during the machining cycle. In addition, the AAC allows op10 and op20 to be processes consecutively, thereby completing the machining process on one machine

\* PUMA VAW6000-ACC



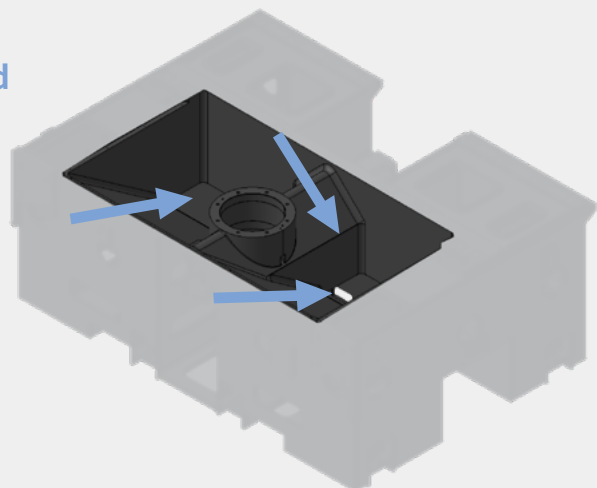
## CHIP DISPOSAL

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



**PUMA VAW6000-ACC**

Inclined bed



**PUMA VAW7500 / 800**

# STANDARD | OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

Description	Features	PUMA VAW6000-ACC	PUMA VAW7500	PUMA VAW800
CHUCK	NONE	●	●	○
CHUCKING OPTION	CHUCK CLAMP CONFIRMATION	●	●	●
SPINDLE	SPEED_2000 R/MIN	●	●	●
	SPEED_3000 R/MIN	○	X	X
	85/75 KW	●	X	X
	120/100 KW	○	X	X
	55/45 KW	X	X	●
	55/45 KW(HV)	X	●	X
TURRET	8 ST_BOLT	●	X	X
	6 ST_BOLT	X	●	●
LINEAR SCALE (X AXIS)	ABSOLUTE PULSE CODER	○	X	○
LINEAR SCALE (Z AXIS)	ABSOLUTE PULSE CODER	○	X	X
FEEDBACK SYSTEM	ENCODER (INCREMENTAL)	X	X	X
	ENCODER (ABSOLUTE)	●	●	●
COOLANT PUMP	DIRECTION(RIGHT SIDE)	●	X	●
	DIRECTION(LEFT SIDE)	X	X	○
	DIRECTION(REAR SIDE)	X	●	X
	1.1 KW_0.7 MPA_30 L/MIN	●	●	●
	1.1 KW_1.0 MPA_20 L/MIN	○	○	○
	4.0 KW_1.45 MPA_30 L/MIN	○	○	○
COOLANT OPTION	OIL SKIMMER	○	○	○
	COOLANT PRESSURE SWITCH	○	○	○
	COOLANT LEVEL SWITCH	○	△	△
CHIP CONVEYOR	HINGED BELT_REAR	△	○	X
	HINGED BELT_LEFT/RIGHT SIDE	△	X	X
	MAGNETIC SCRAPER TYPE	X	X	X
	HINGE SCRAPER WITH DRUM FILTER	△	△	△
CHIP DISPOSAL OPTION	CHIP BUCKET(ROTATION_300L)	○	○	○
	MIST COLLECTOR(2.2 KW_WATER SOLUBLE)	○	○	○
	CHUCK COOLANT	○	○	○
	AIR BLOWER FOR CHUCK	○	○	○
OPTIONAL EQUIPMENTS	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	X
	CHUCK CLEANER	○	X	X
	AUTOMATIC FRONT DOOR	X	●	●
	AUTOMATIC POWER OFF	○	○	○
	SCREEN DISPLAY UNIT SIZE 15 INCH	●	X	X
	SCREEN DISPLAY UNIT SIZE 10.4 INCH	X	○	○
	ADDITIONAL PORTABLE MPG	●	X	X
	SIGNAL TOWER (YELLOW, RED, GREEN)	○	○	○
	TOOL MONITORING SYSTEM	○	○	○
	SHOWER COOLANT	○	○	○
	AIR CONDITIONER	○	○	○
	WORK & TOOL COUNTER	○	X	X
	FLASH MEMORY CARD & ADAPTER(1GB)	○	X	○
	FLASH MEMORY CARD & ADAPTER(2GB)	○	○	○
	COOLANT CHILLER	○	○	○
	COOLANT GUN	○	○	○
	SIGNAL TOWER (YELLOW, RED, GREEN)	○	○	○
	TOOL MONITORING SYSTEM	○	○	○
	SHOWER COOLANT	○	○	○
	AIR CONDITIONER	○	○	○
	WORK & TOOL COUNTER	○	X	X
FLASH MEMORY CARD & ADAPTER(1GB)	○	X	○	
FLASH MEMORY CARD & ADAPTER(2GB)	○	○	○	

\* PUMA VAW6000-ACC : When the factory power source is AC220V, the external transformer is needed. (Please contact DN Solutions representative for detailed specifications)

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

● Standard ○ Optional X N/A



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

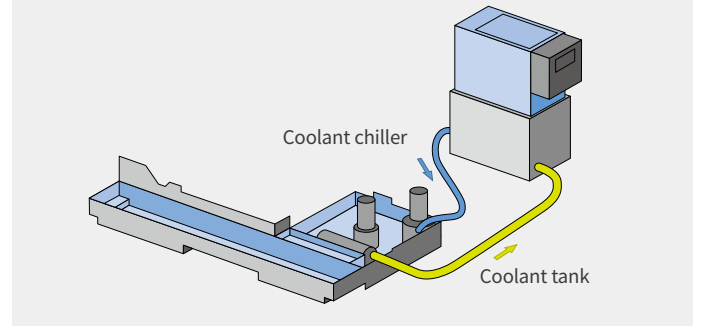
## Oil skimmer OPTION

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 선택

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)

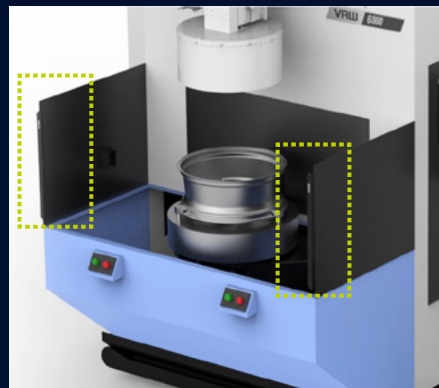
### Chuck Cleaner OPTION

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



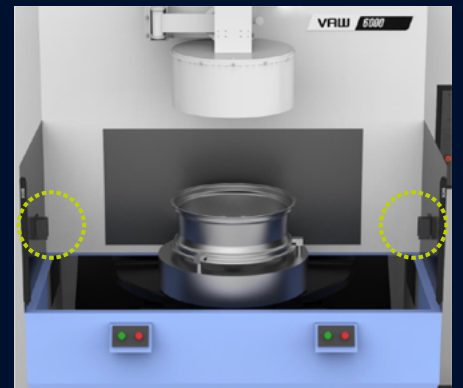
### Safety sensor for operator

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

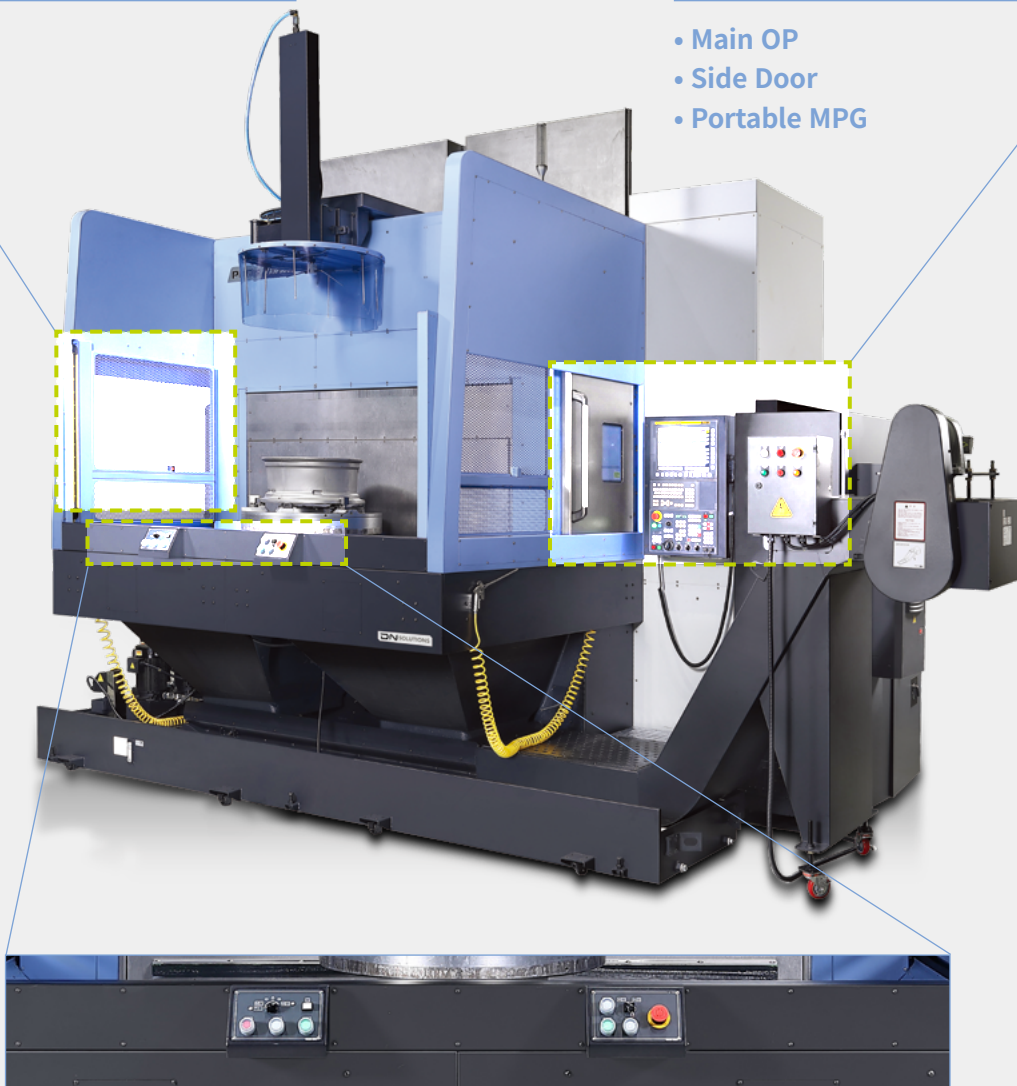
There is a Main OP (Operation Panel) on the left side of the machine to enable the main operation, and on the right side of the machine is a Sub OP (Operation Panel) that enables turret operation and axis travel. In addition, it is easy to change tools by providing Side Door and Portable MPG on both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

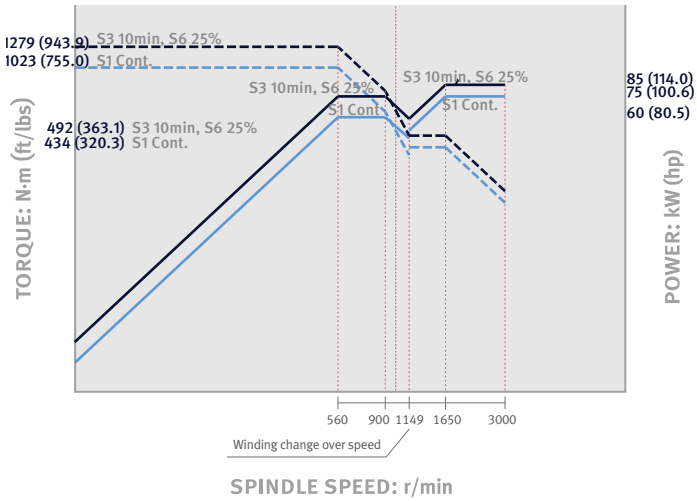
Division	Item	Specifications	PUMA VAW700/800	PUMA VAW6000
			DN Solutions Fanuc i Plus	DN Solutions Fanuc i Plus
Controlled axis	Control paths		2 Path	2 Path
	Controlled axes		4 (X1,Z1,X2,Z2)	4 (X1,Z1,X2,Z2)
	Simultaneously controlled axes		2 axes (each path)	2 axes (each path)
Data input/output	Fast 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	●	●
	EZ WORK		●	●
Setting and display	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	- ●	- ●

● Standard ○ Optional X N/A ✱ Available

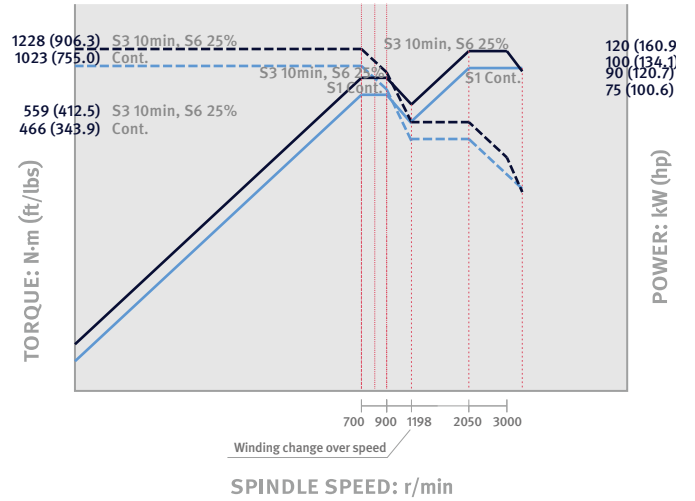


# POWER | TORQUE

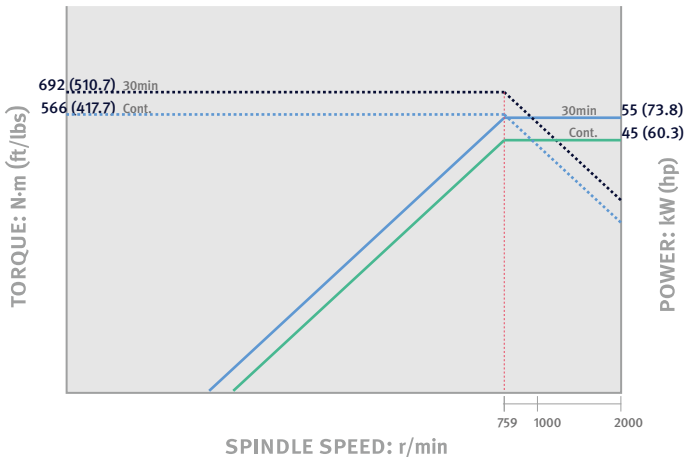
## PUMA VAW6000-ACC



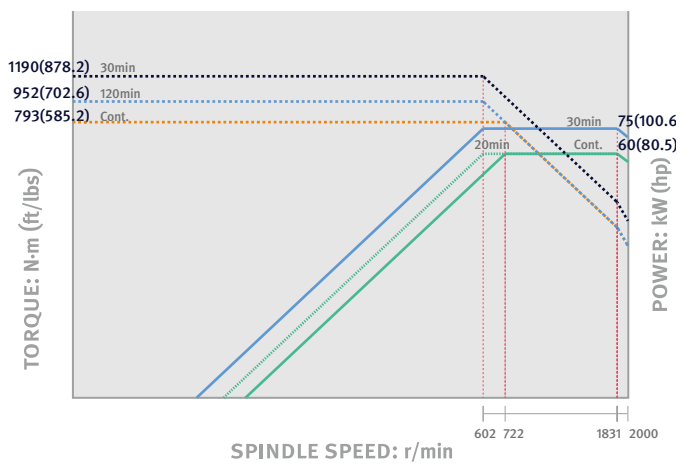
## PUMA VAW6000-ACC OPTION



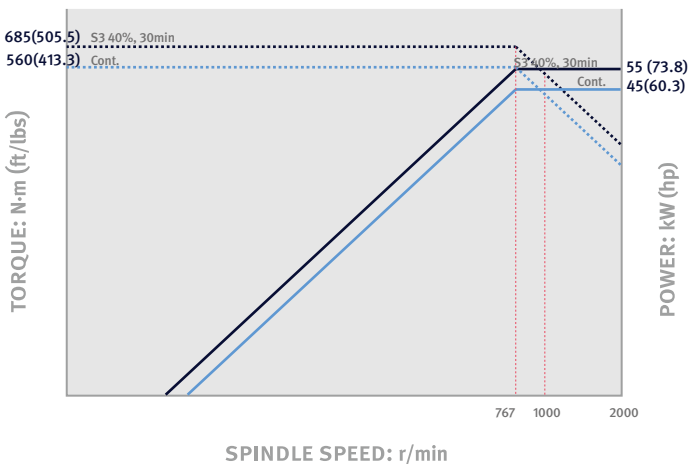
## PUMA VAW7500



## PUMA VAW7500 OPTION



## PUMA VAW800

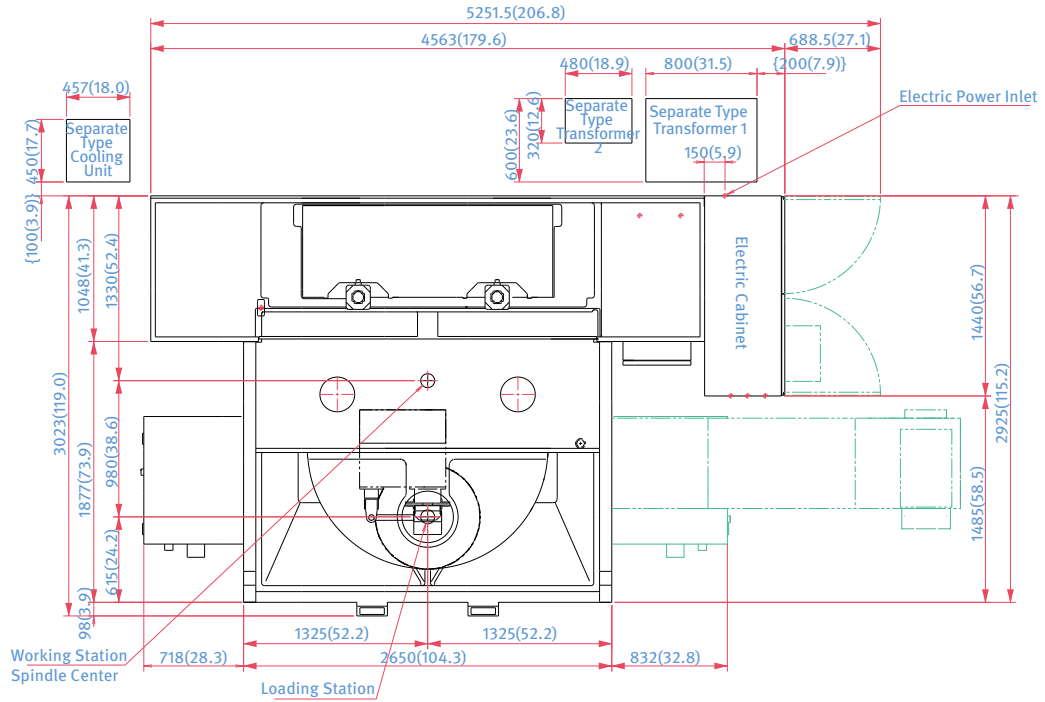


# EXTERNAL DIMENSIONS

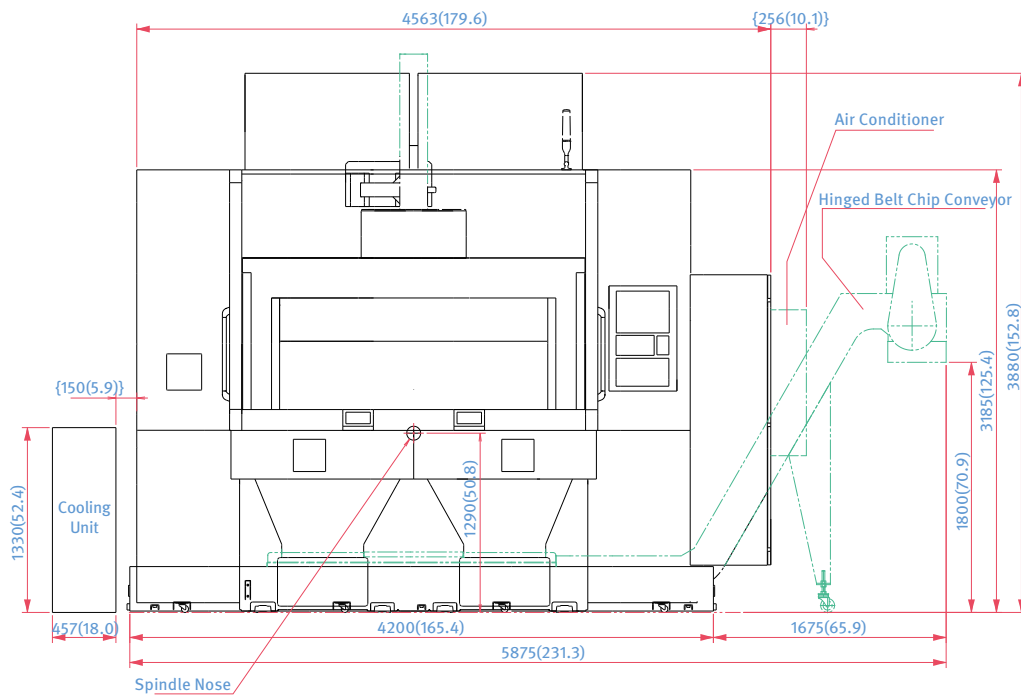
PUMA VAW6000-ACC

Unit : mm (inch)

TOP



FRONT

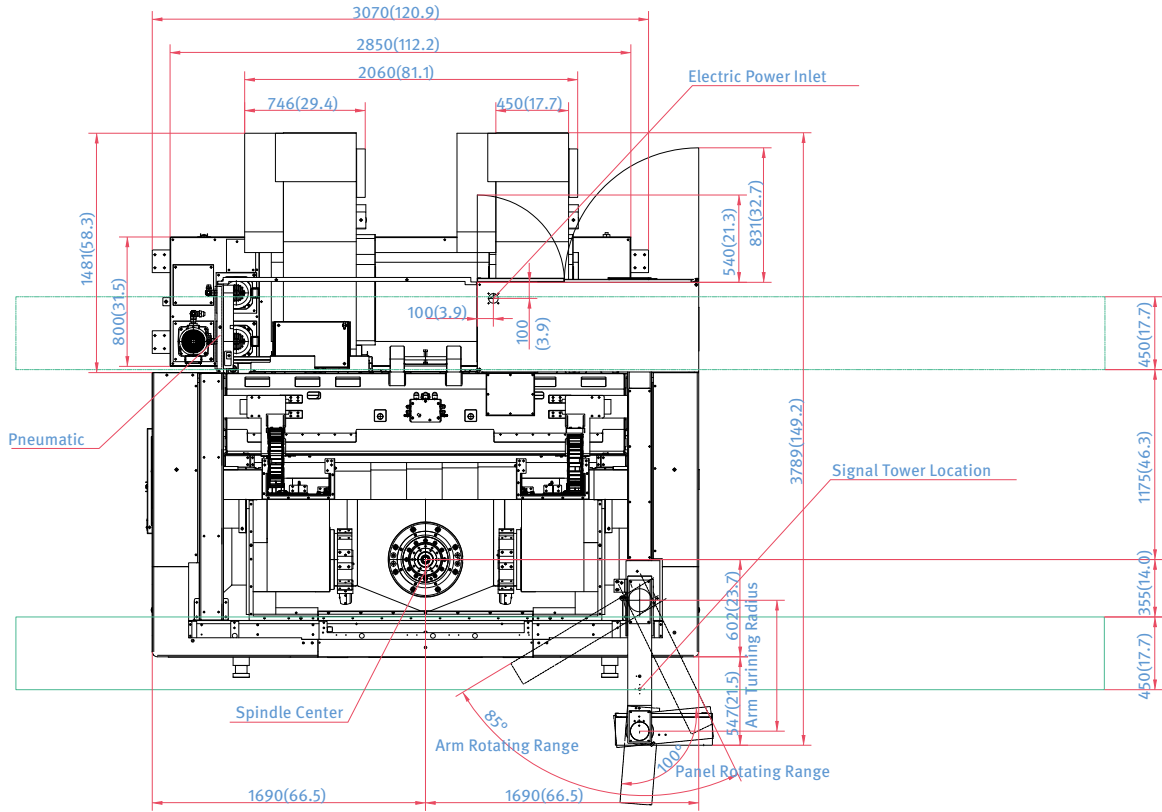


# EXTERNAL DIMENSIONS

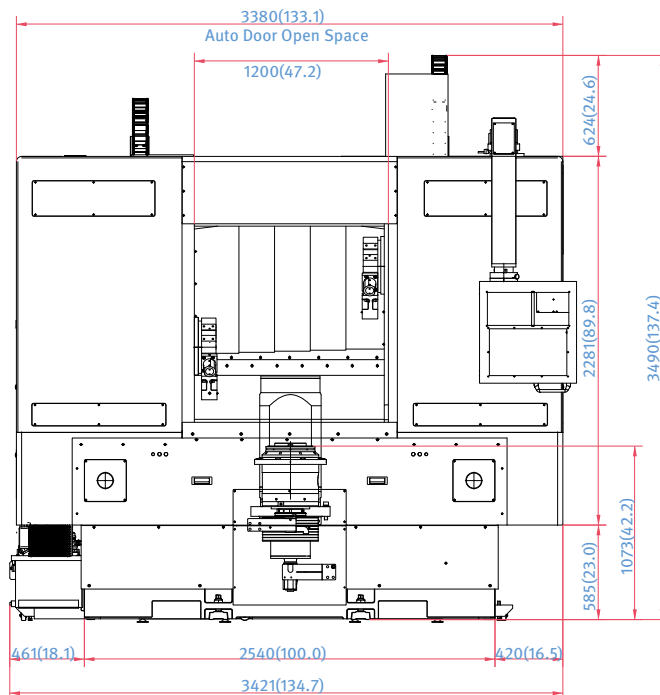
PUMA VAW7500

Unit : mm (inch)

TOP



FRONT



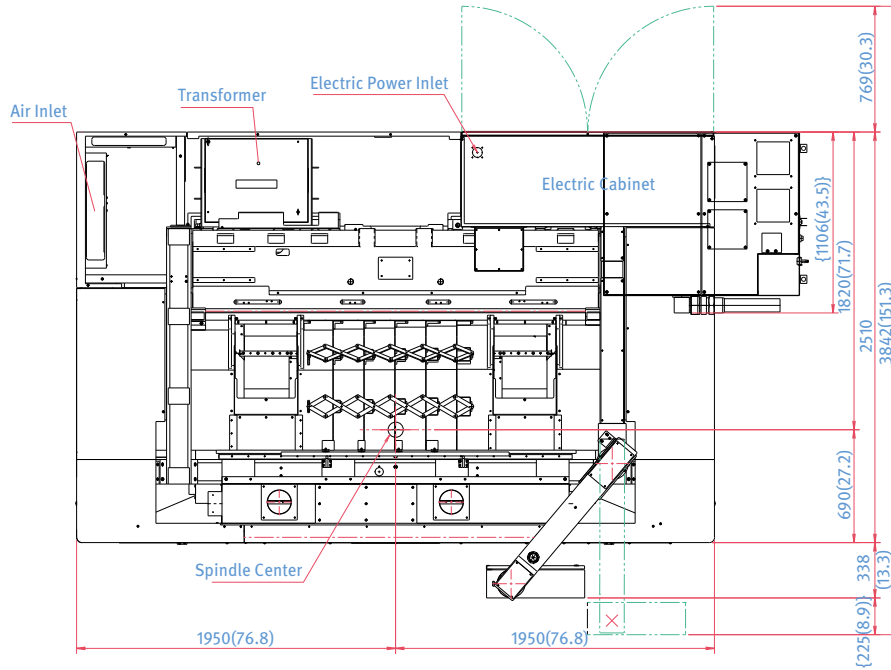


# EXTERNAL DIMENSIONS

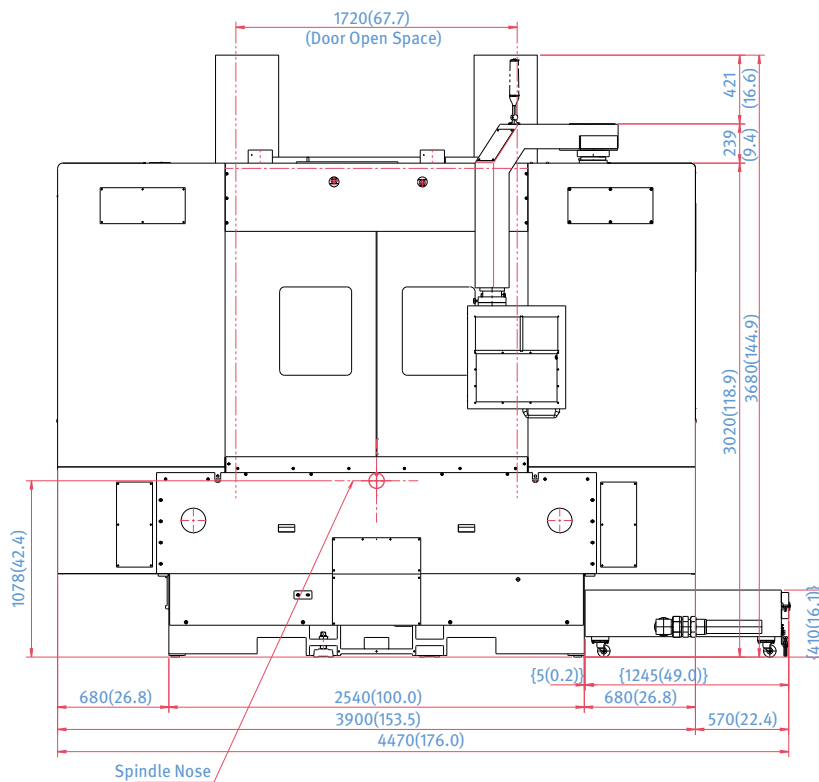
PUMA VAW800

Unit : mm (inch)

TOP



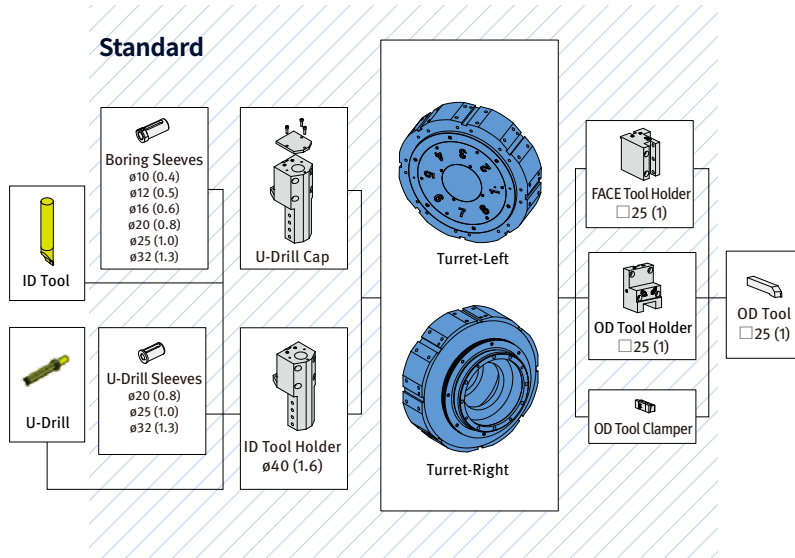
FRONT



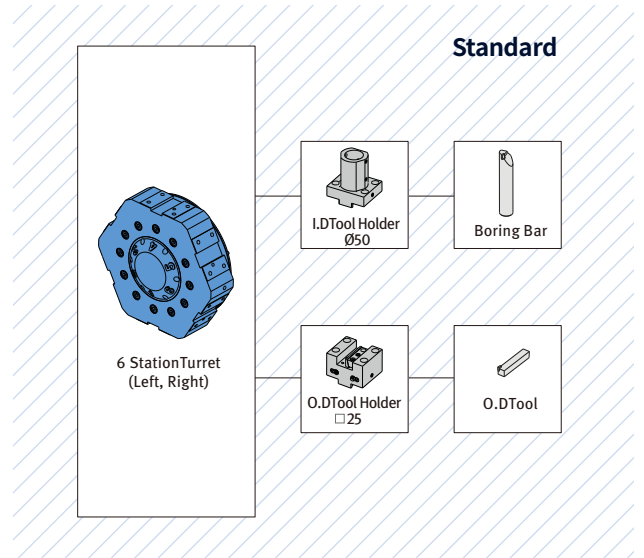
# TOOL INTERFACE

Unit : mm (inch)

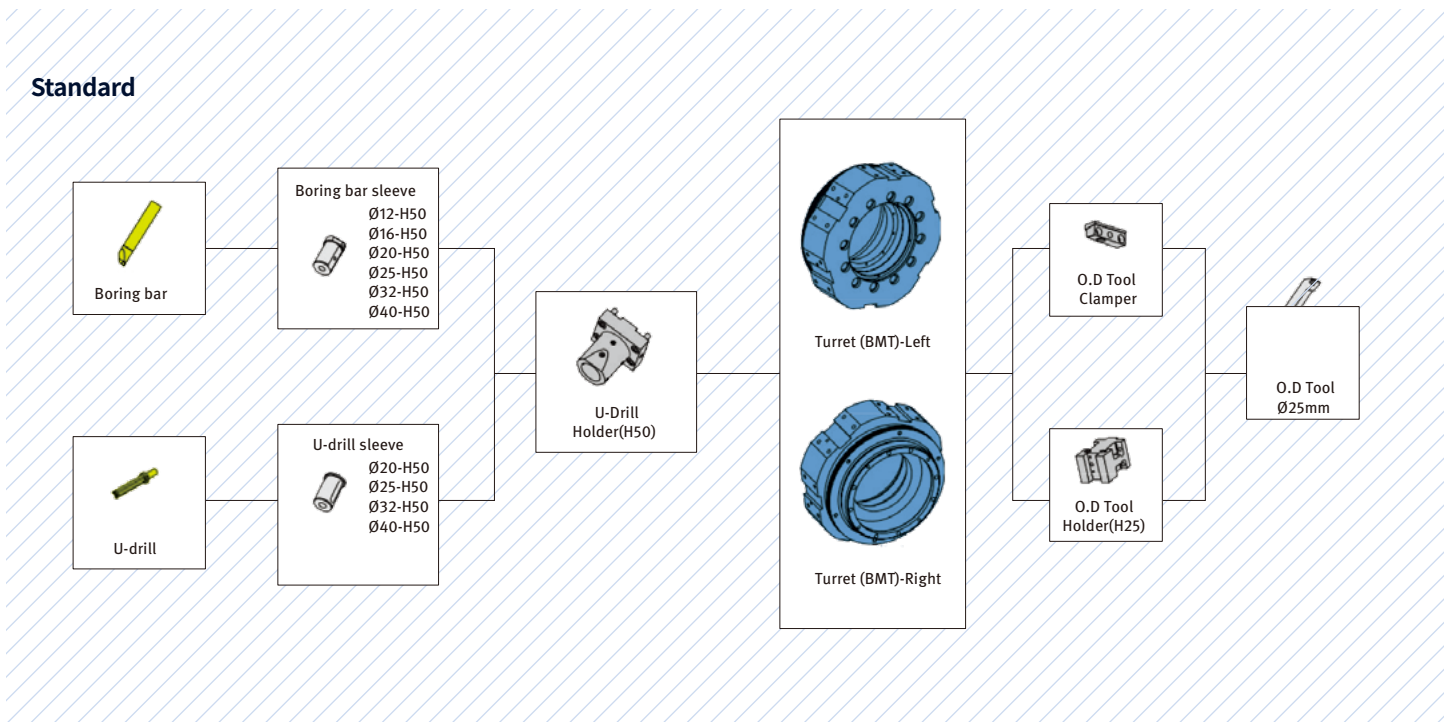
## PUMA VAW6000-ACC



## PUMA VAW800



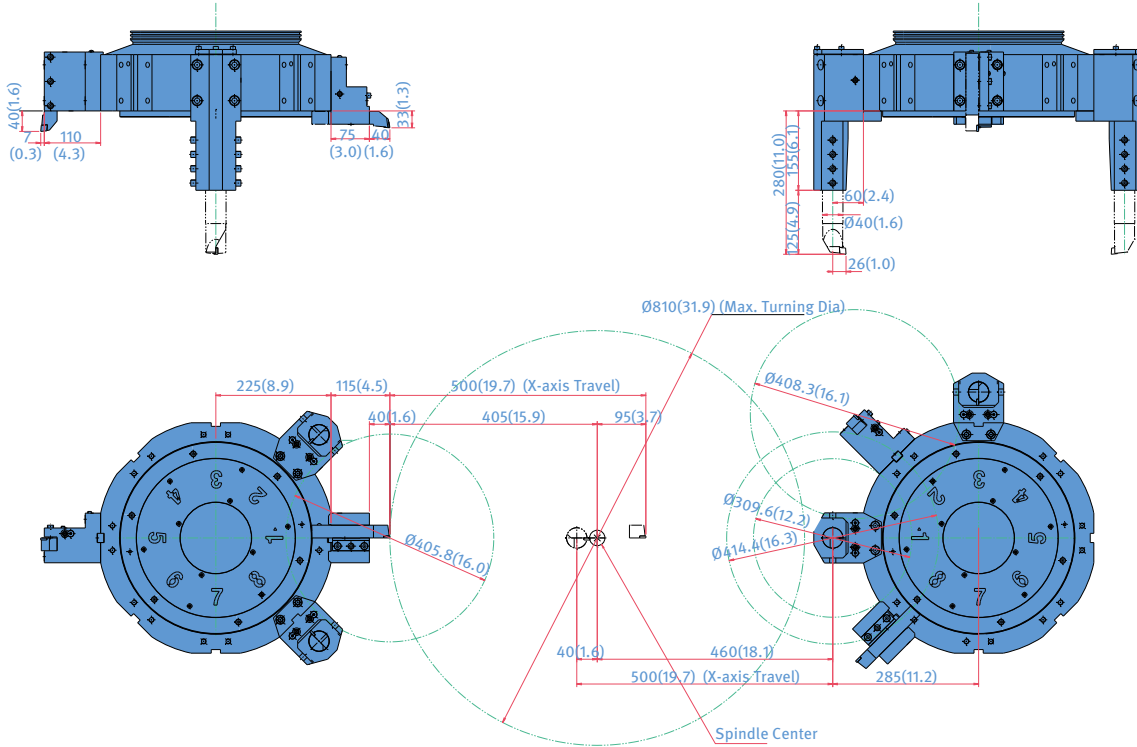
## PUMA VAW7500



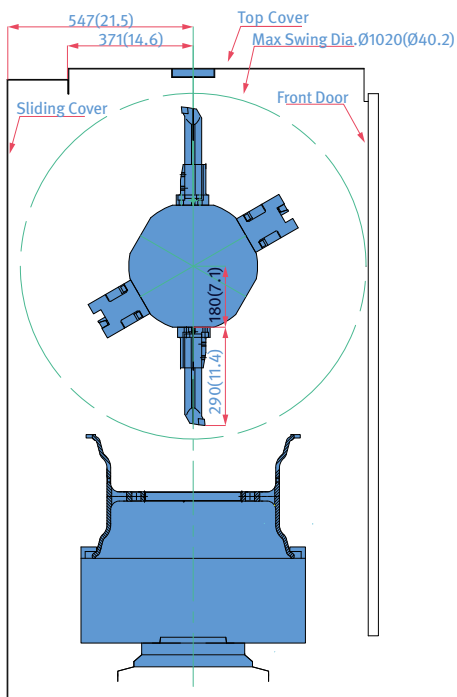
# TOOL INTERFACE

Unit : mm (inch)

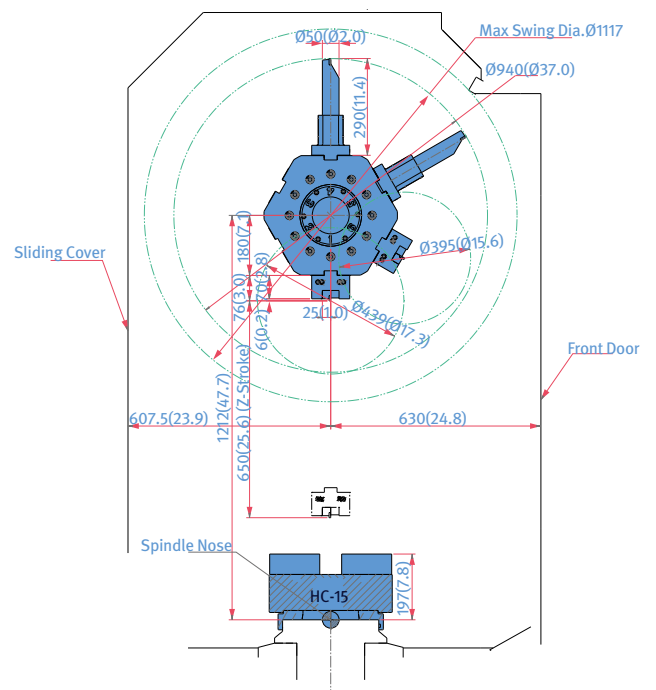
## PUMA VAW6000-ACC



## PUMA VAW7500



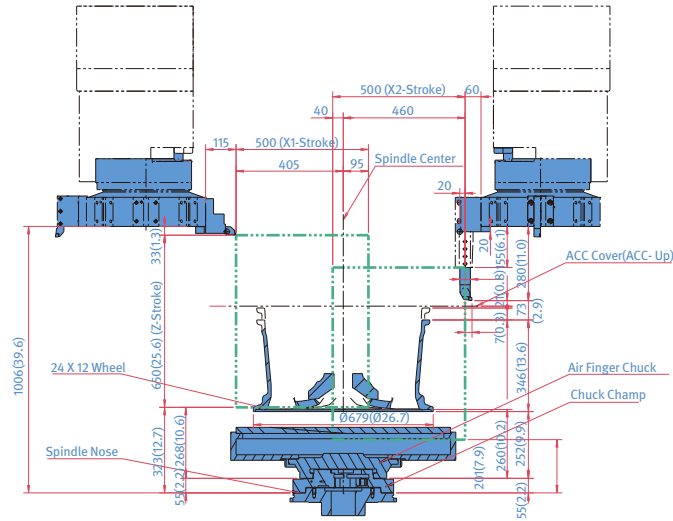
## PUMA VAW800



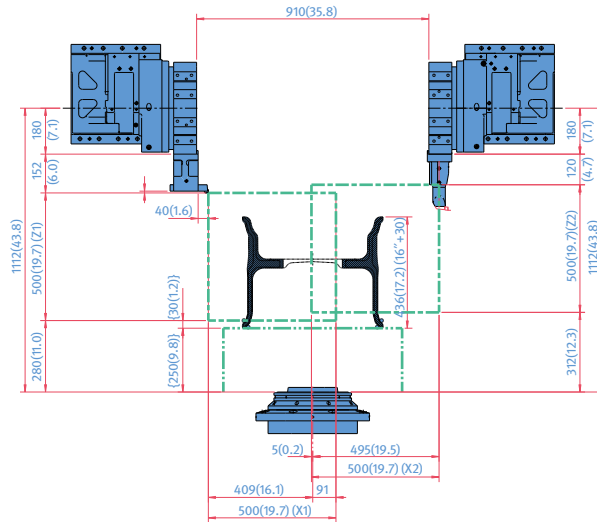
# WORKING RANGE

Unit : mm (inch)

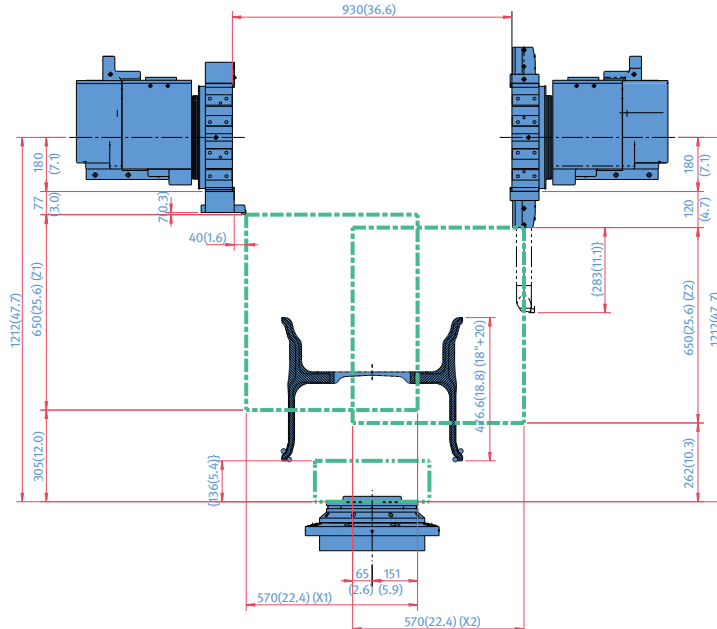
## PUMA VAW6000-ACC



## PUMA VAW7500



## PUMA VAW800





# MACHINE SPECIFICATIONS

**PUMA VAW** series

Description		Unit	PUMA VAW6000-ACC	PUMA VAW7500	PUMA VAW800	
Capacity	Swing over bed	mm (inch)	900 (35.4)	1044 (41.1)	1140	
	Swing over saddle	mm (inch)	790 (31.1)	900 (35.4)	970	
	Max. turning diameter	mm (inch)	790 (31.1)	720(28.3) (27.5")	711 (28.0) (28")	
	Max. turning length(height)	mm (inch)	350 (13.8)	340 (13.4)	440 (17.3)	
	Max wheel size	inch	24	27.5	28	
Travel	Travel distance_ LEFT	X-axis	mm (inch)	500 (19.7)	500 (19.7)	570 (22.4)
		Z-axis	mm (inch)	650 (25.6)	500 (19.7)	650 (25.6)
	Travel distance_ RIGHT	X-axis	mm (inch)	500 (19.7)	500 (19.7)	570 (22.4)
		Z-axis	mm (inch)	650 (25.6)	500 (19.7)	650 (25.6)
	Rapid traverse Rate	X-axis	m/min (ipm)	30 (1181.1)	24 (944.9)	16 (629.9)
		Z-axis	m/min (ipm)	30 (1181.1)	20( 787.4)	16 (629.9)
Main spindle	Max. Spindle speed	r/min	2000{3,000}	2000	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) {75/60 (100.6 /80.5)} (S3 40% 30min/Cont.)	55/45 (73.8/60.3) (S3 40% 30min/Cont.)	
	Max. Spindle Torque	N·m (ft·lbs)	1279 {1228} (943.9 {906.3})	692 {1190} (510.7 {878.2})	684.5 (505.2)	
	Spindle nose	ASA	A2-15	A2-11	A2-11	
	Spindle bearing diameter(Front)	mm (inch)	160 (6.3)	150 (5.9)	150 (5.9)	
	Spindle through hole diameter	mm (inch)		91 (3.6)		
Turret	No. of tool stations	st	8+8	6+6	6+6	
	OD tool size	mm (inch)		25x25 (1.0x1.0)		
	Max. Boring bar size	mm (inch)	Ø40 (Ø1.6)	Ø50 (Ø2.0)	Ø50 (Ø2.0)	
	Turret Indexing time(1station)	sec	1	1.2	1.2	
Power Source	Electric power supply	kVA	180	99.7	88.2	
Machine Dimensions	Length	mm (inch)	4563 (179.6)	3380 (133.1)	4470 (176.0)	
	Width	mm (inch)	3023 (119.0)	2899 (114.1)	3842 (151.3)	
	Height	mm (inch)	3880 (152.8)	3480 (137.0)	3680 (144.9)	
	Weight	kg (lb)	20000 (44091.8)	13000 (28659.7)	13500 (29762.0)	
CNC	NC system	-	DN Solutions Fanuc i Plus			

\*{}: 선택

# 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		<b>51</b>	<b>Technical centers</b> Technical center, Sales support, Service support, Parts support
<b>4</b>	Corporations	<b>200</b>	<b>Service posts</b>
<b>156</b>	Dealer networks	<b>3</b>	<b>Factories</b>



## 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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\* For more details, please contact DN Solutions.

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