



HIGH PRODUCTIVITY, 6/8/10/12 INCH CLASS,
2-SPINDLE HORIZONTAL TURNING CENTER

PUMA

TW/TS 2100/2600/M • **TW/TS** 2100/2600/M-GL •
TW 2600B/M • **TW** 2600B/M-GL



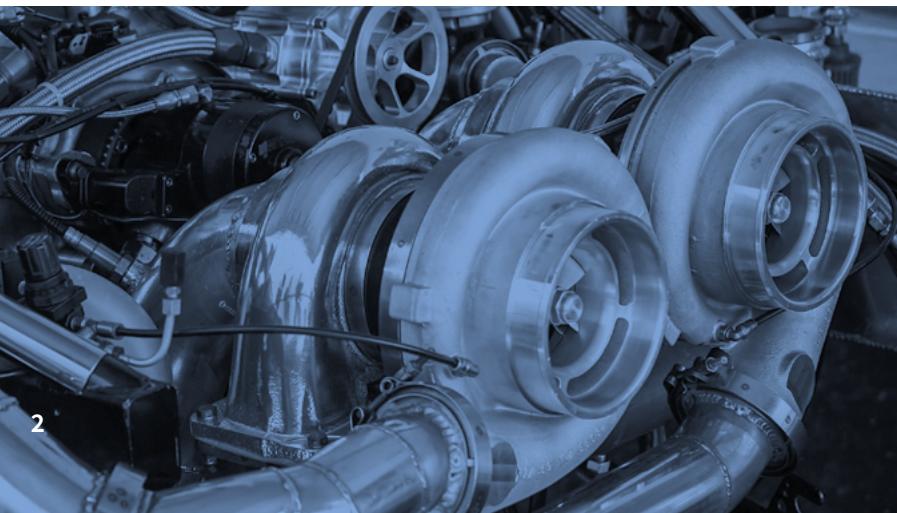
DN SOLUTIONS

PUMA TW/TS SERIES

TW/TS 2100/2600/M • **TW/TS** 2100/2600/M-GL •

TW 2600B/M • **TW** 2600B/M-GL

The 6 / 8 / 10 / 12 inch PUMA TW/TS series turning center is a next-generation, twin-spindle automated machine tool providing users with excellent productivity and accuracy, and even higher levels of satisfaction.



The PUMA TW has parallel twin spindles and a twin live tool turret construction, which makes it ideal for machining automotive-type jobs like ring gears or clutch boss applications.



SUPERIOR PRODUCTIVITY

Equipped with Feed System Optimization Technology, the PUMA TW/TS Series delivers high productivity and features high-performance feed motors, and impressive rapid rates and acceleration/deceleration.

SUPERIOR MACHINING PERFORMANCE

PUMA TW/TS series' machining performance is based on high power and high torque. The BMT turret (available on 'M' models) deliver superior milling performance.

IMPROVED USER CONVENIENCE

EZ work, hot keys and other features control machine and peripheral device operations. Work counting, gantry operation and parts control functions further improve user convenience, especially, in mass production.

BASIC STRUCTURE

PUMA TW/TS machines have a rigid box guideway design that delivers excellent stability, reduces vibration and improves tool life.

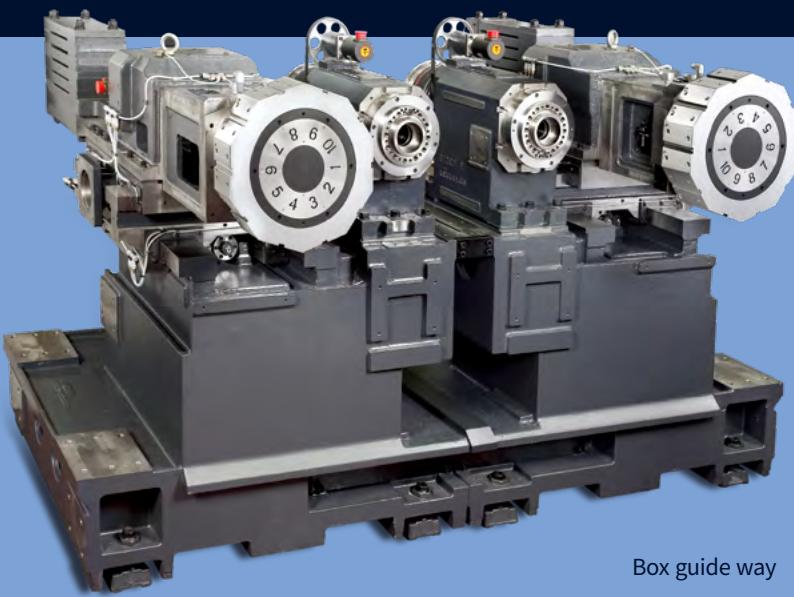
Chuck size

PUMA TW/TS 2600 SERIES

8, 10, 12 inch

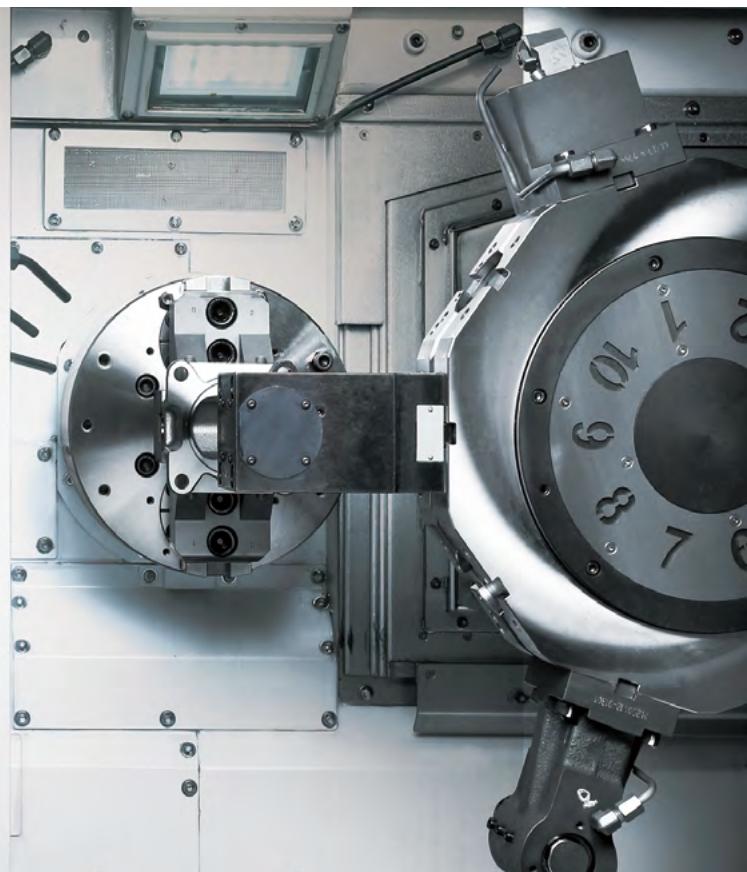
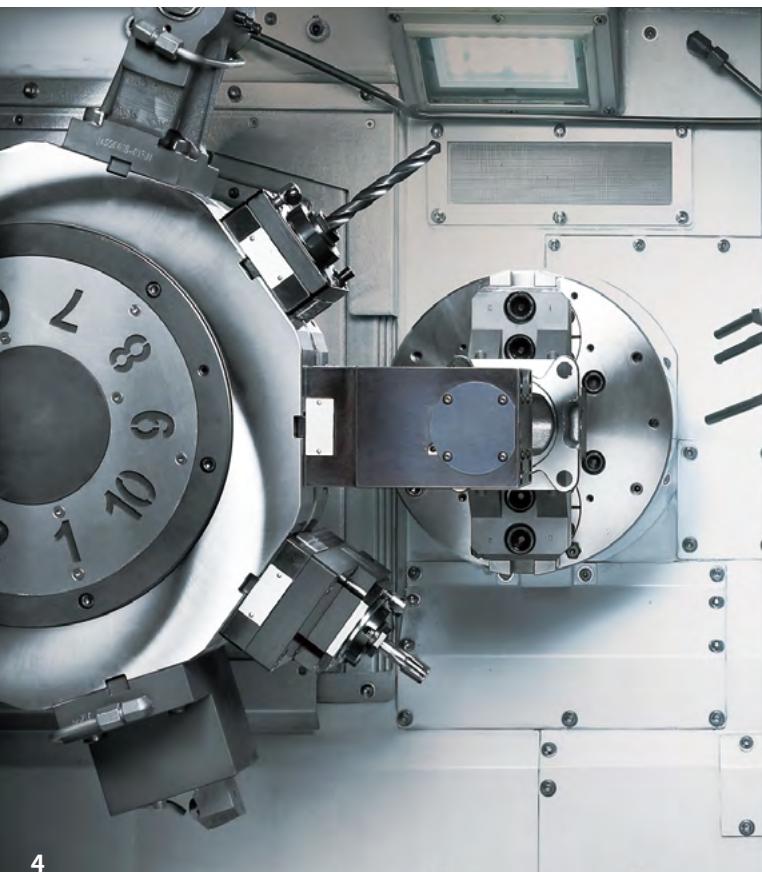
PUMA TW/TS 2100 SERIES

6, 8 inch



Box guide way

Chuck size	Machine	Travel distance (mm (inch))		Rapid traverse rate (m/min (ipm))		Functions	
		X axis	Z axis	X axis	Z axis	2 axis	M
6, 8 inch	PUMA TW/TS 2100/M	135 (5.3)	160 (6.3)	24 (944.9)	24 (944.9)	0	0
	PUMA TW/TS 2100GL/M-GL						
8, 10, 12 inch	PUMA TW/TS 2600/M	190 (7.5)	180 (7.1)	24 (944.9)	24 (944.9)	0	0
12 inch	PUMA TW 2600B/MB						



SPINDLE INFORMATION

The high-power/torque motor supports high-precision and heavy-duty machining - improving productivity.

Max. spindle speed

PUMA TW/TS 2100 SERIES

4500 {6000_{option}} r/min

PUMA TW/TS 2600 SERIES

3500 r/min

Max. spindle motor torque

PUMA TW/TS 2600 SERIES

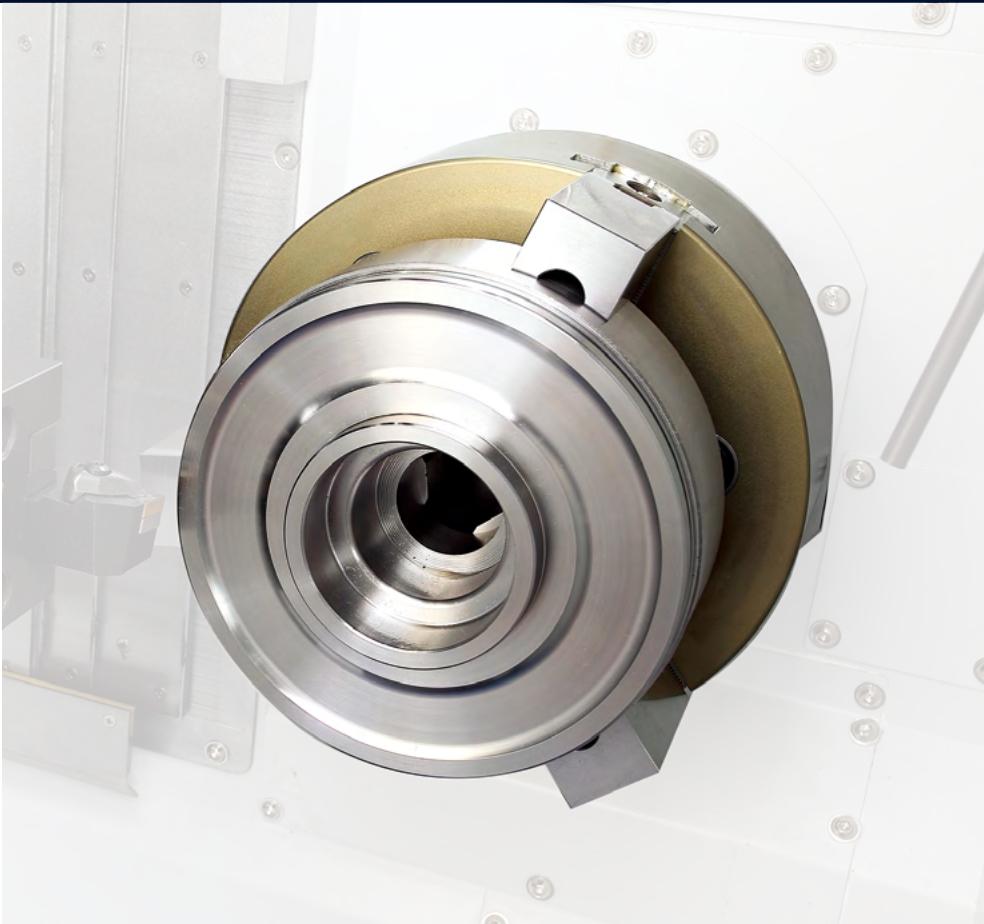
202{404_{option}} N·m
149.1{298.2} ft-lbs

PUMA TW/TS 2100 SERIES

127 N·m
93.7 ft-lbs

PUMA TW 2600B SERIES

622 N·m
459.0 ft-lbs



Machining area

The Series offers the largest machining area of its class, up to Ø360mm (Ø14.2 inch) maximum turning diameter, and 170mm (6.7 inch) maximum turning length.

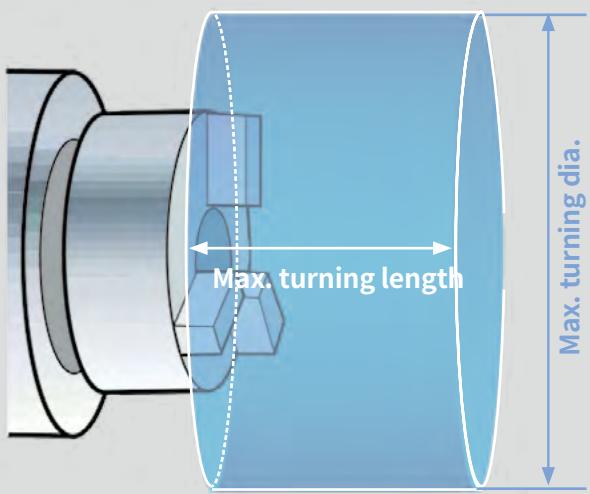
Max. machining area

Max. turning diameter

Ø360 mm
Ø14.2 inch

Max. turning length

170 mm
6.7 inch



Description		Unit	PUMA TW/TS 2100/M	PUMA TW/TS 2600/M	PUMA TW 2600B/MB
Max. turning diameter		mm (inch)	Ø240 (Ø9.4)	Ø360 (Ø14.2)	Ø360 (Ø14.2)
Max. turning length		mm (inch)	128 (5.0)	170 (6.7)	170 (6.7)
Chuck size	Standard	mm (inch)	Ø210 (8")	Ø255 (10")	Ø304 (12")
	Optional	mm (inch)	Ø 160(6")	Ø210 (8"), Ø305 (12")	X

TURRET

Turret rotation is controlled by a servo motor that ensures the rapid and accurate selection of tools. M model machines are equipped with DN Solutions's unique BMT turret that provides superior milling performance.

2-axis Turret_PUMA TW/TS series

No. of tool posts (PUMA TW 2100/TS 2100)

8+8 ea

{**10+10** option}

No. of tool posts (PUMA TW 2600/TS 2600)

10+10 ea

{**12+12** option}

3-axis Turret_PUMA TW/TS series

No. of tool posts (PUMA TW 2100M/TS 2100M)

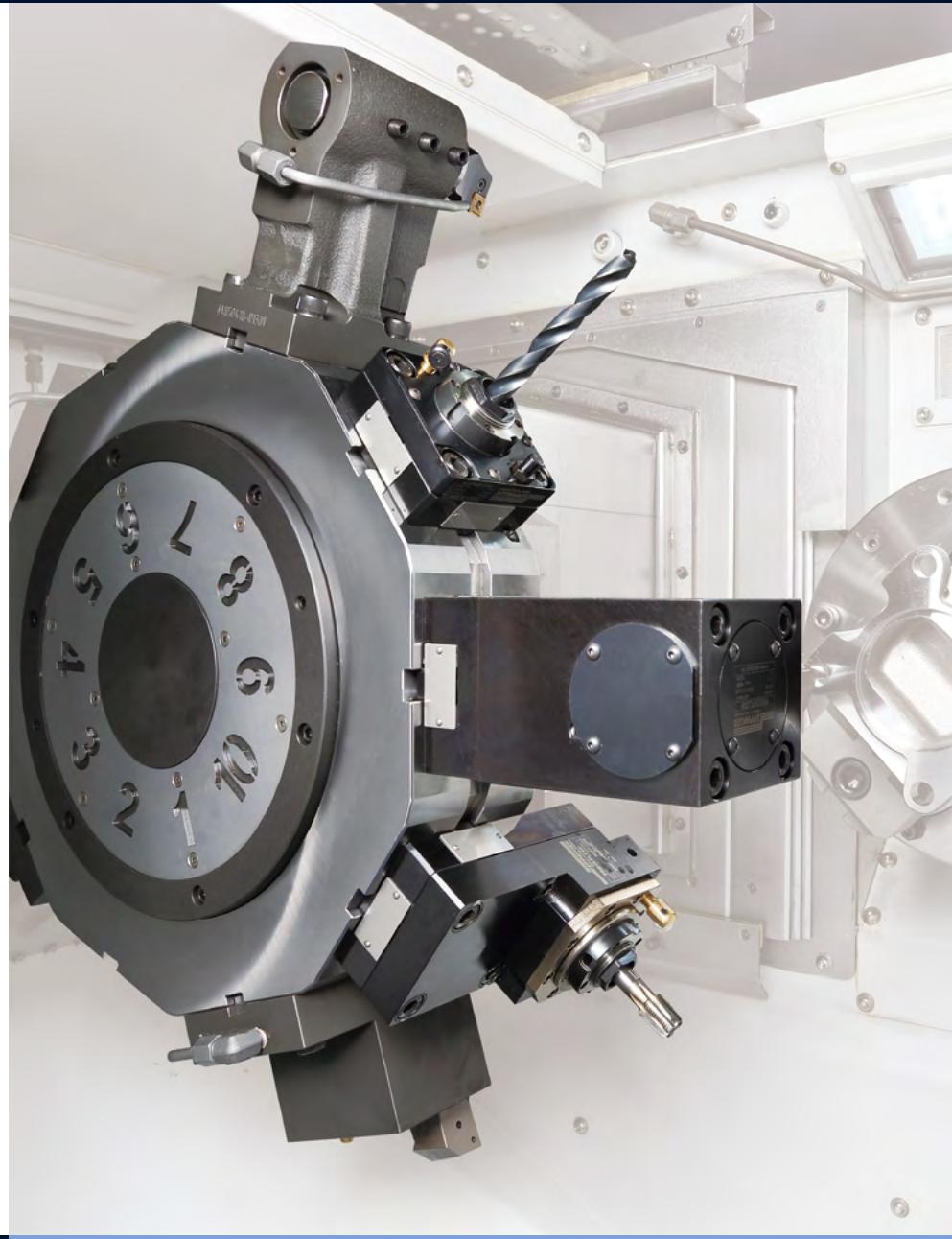
10+10 ea, **BMT45P**

{**BMT55P** option}

No. of tool posts (PUMA TW 2600M/TS 2600M)

10+10 ea, **BMT55P**

{**BMT65P** option}



- REDUCE NON-CUTTING TIME BY 10%
- HIGHER INDEXING SPEEDS
- IMPROVED ACCURACY

Rotary tool structure - highly resistant to thermal error

The milling turret, including the rotary tools, features the BMT design for higher rigidity. In addition, the reduction of thermal displacement due to oil and air lubrication of the rotary tools, ensures the best milling, drilling and tapping performance in its class.

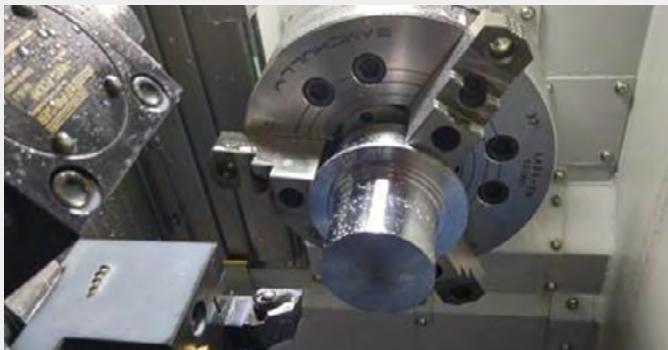
CUTTING PERFORMANCE

PUMA TW/TS series delivers class-leading cutting performance with maximum torque of 404 N·m (298.2 ft-lbs).

PUMA TW 2600 (202 N·m (149.1 ft-lbs)) (Material: SM45C)

Outer diameter turning

Outer diameter turning	Rough	Finish
Cutting speed (m/min (ipm))	210 (8267.7)	200 (7874.0)
Feed (mm/rev (ipr))	0.55 (0.0)	0.1 (0.0)
Spindle speed (r/min)	875	920
Cutting depth (mm (inch))	4.6 (0.2)	0.2 (0.0)



Inner diameter turning

Inner diameter turning	Rough	Finish
Cutting speed (m/min (ipm))	280 (11023.6)	200 (7874.0)
Feed (mm/rev (ipr))	0.3 (0.0)	0.1 (0.0)
Spindle speed (r/min)	1393	1481
Cutting depth (mm (inch))	3 (0.1)	0.4 (0.0)
Tool length	4.0D	3.0D



Tapping

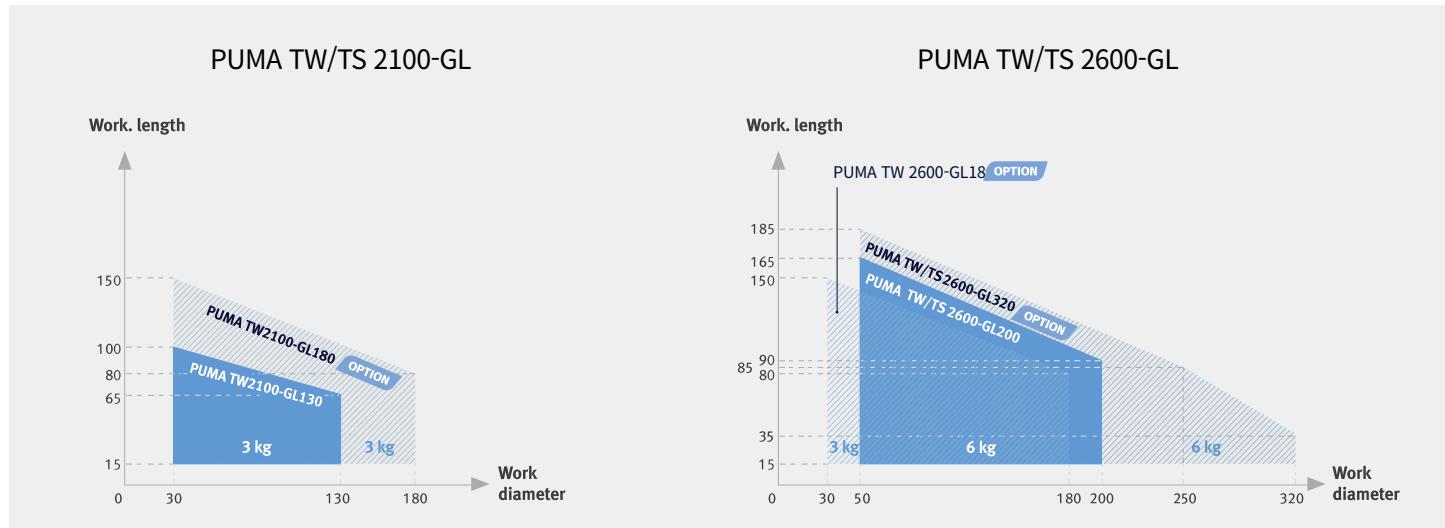
Tapping	
Tap size (mm (inch))	M20 x P2.5 (M0.8 x P0.1)
Cutting speed (m/min (ipm))	10 / 20 (393.7 / 787.4)
Spindle speed (r/min)	159 / 318



HIGH-SPEED GANTRY LOADER

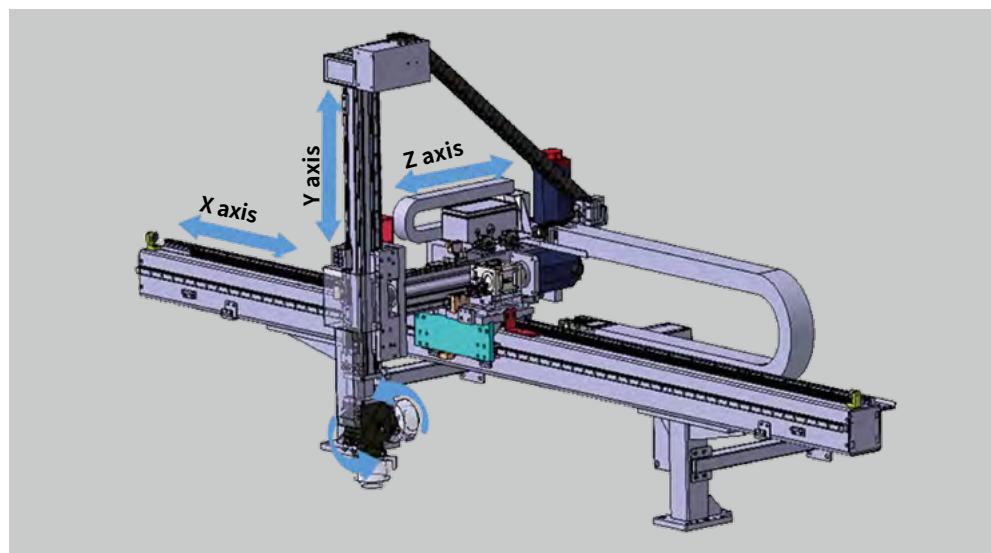
The 3-axis, servo-driven, high-speed gantry loader reduces work loading/unloading times and maximizes productivity.

DN Solutions has various types of gantry loader options to meet customer's individual requirements.



● Standard ○ Optional

Max. Handling diameter	PUMA TW/TS 2100-GL130	PUMA TW/TS 2100-GL180	PUMA TW/TS 2600-GL180	PUMA TW/TS 2600-GL200	PUMA TW/TS 2600-GL320
Ø130 x 65mm 3.0kg/ea	●				
Ø180 x 80mm 3.0kg/ea		○	○		
Ø200 x 90mm 6.0kg/ea				●	
Ø320 x 35mm 6.0kg/ea					○



Gantry loader handling time
(Enter → Change Work → Exit)

PUMA TW/TS 2100-GL

5.7 S

PUMA TW/TS 2600-GL

7.9 S

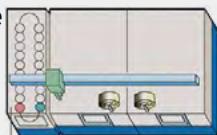
* Without Top door operating time

Description	Unit	PUMA TW 2100/M-GL	PUMA TW 2600/M-GL	PUMA TS 2600-GL
Rapid traverse	X axis	m/min (ipm)	210 (8267.7)	150 (5905.5)
	Y axis	m/min (ipm)	180 (7086.6)	130 (5118.1)
	Z axis	m/min (ipm)	55 (2165.4)	50 (1968.5)
Travel distance (GL TYPE A1 / A2 / A3)	X axis	mm (inch)	1910 / 1910 / 3220 (75.2 / 75.2 / 126.8)	2260 / 2260 / 4120 (89.0 / 89.0 / 162.2)
	Y axis	mm (inch)	560 (22.0)(GL130), 610 (24.0) (GL180)	710 (28.0)
	Z axis	mm (inch)	200 (7.9)	270 (10.6)

Gantry and stocker types

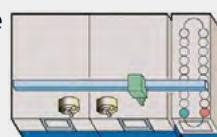
- Loading position
- Unloading position

A-1 type



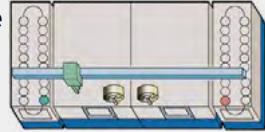
Work in/out and stocker are at the left side of the gantry

A-2 type



Work in/out and stocker are at the right side of the gantry

A-3 type



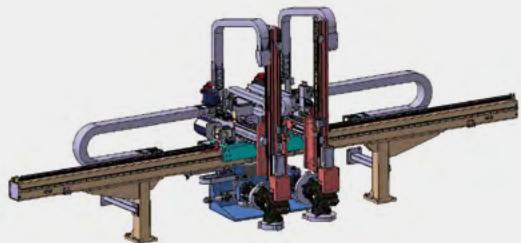
Work in/out position is independent, and stockers are at both the left and right sides of the gantry

* Contact your sales representative for more details regarding gantry and stocker configurations.

Various gantry loader option

Twin gantry loader

The twin gantry loader uses a double loader to reduce processing times.



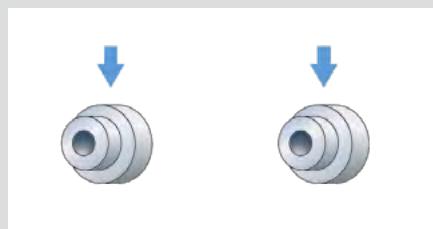
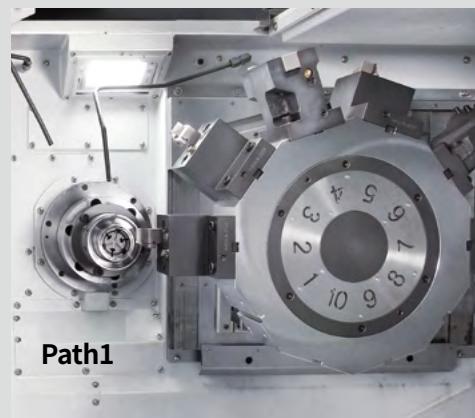
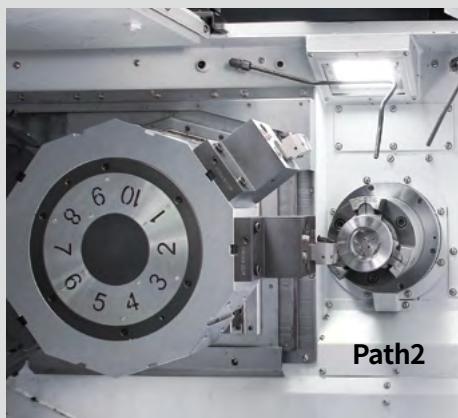
Extended gantry loader

Provides extended X,Y and Z axis strokes.
(Contact your sales representative for details).

Separate type option

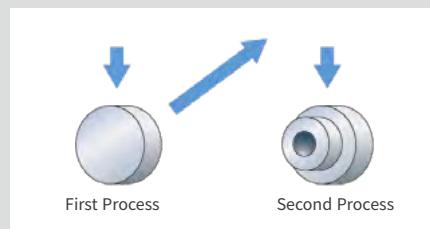
Completely separate and ultra-productive, the left and right bed and gantry loader can be used in conjunction with each other - rough machining being undertaken on one side and finish machining on the other.
(Contact your sales representative for details).

Applications



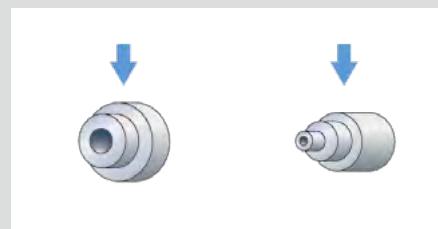
Work concept : example 1

Simultaneous machining of the same parts on the left and right sides



Work concept : example 2

Simultaneous machining of two sequential processes of the same part



Work concept : example 3

Simultaneous machining of different parts
(in case of Non-GL, Twin -GL)

PUMA TW AUTOMATION SOLUTION

Improve customer's convenience by providing a variety of standard/modular peripheral equipment.

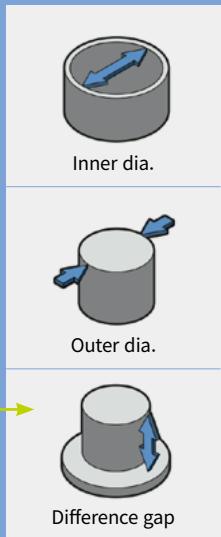
Peripheral equipment

Standardization of variety option	Price competitiveness	Short delivery lead time	Quality and stability	Improving operator convenience
Modular system with 26 types of stocker / measurement	Reduce costs by up to 15% than previously	Estimated 80% faster delivery time and quicker maintenance	Quality assurance through standardization	Provide PLC control and motion control

Stocker



Measurement



A 1

S TR 14 - 200

M O B 200

A 3

S PU 30 - 100 - 2R

M D T 200

① Gantry type

② Stocker system define

③ Measuring system define

① Gantry type

- A1
- A2
- A3

②-1 Stocker type

- Rotary Track
- Rotary Round
- Conveyor Pitch
- Push type
- Conveyor Plate

②-2 Station

- 6/7/8/10/12/14/30/50 station or pitch

②-3 Size

- Max 100
- Max 125
- Max 200

②-4 Row

- 2Row
- 3Row

③-1 Measuring type

- Inner diameter
- Outer diameter
- Difference gap

③-2 Type

- Button
- Touch

③-3 Size

- Max 200

Modular peripheral equipment

		Stoker (5 Type)								Measurement (3 Type)									
		Drum		Rotary		Pitch conveyor		Push		Conveyor		Inner dia.		Outer dia.					
Image																			
Description		· Convenient space to stack workpieces		· Minimal installation space required		· Superior accuracy of loading / unloading operations		· Shaft types and asymmetric square shapes can be loaded		· No separate feeder required		· Can be used to transfer between each process		· Data back-up function enables part dimension status and history to be checked					
														· Automatic offset function ensures machining accuracy					
Station	Station	8 10 12 14		6 8 10		14 Pitch		30 Stock		50 Stock		7 Stock		Button	Touch	Button	Touch	Button	Touch
		Work size (Outer dia.) mm (inch)		2row (Max100)		3row (Max100)		2row (Max100)		3row (Max100)		50~125 (2.0~4.9)		125~200 (4.9~7.9)		50~200 (2.0~7.9)			
TW Type	A1	○ ○ ○ ○ ○ ○ ○ ○																	
	A2	○ ○ ○ ○ ○ ○ ○ ○																	
Out stoker		All				Only out stoker		All											

Matrix

Item	Stoker																		
	Type Station		Drum						Rotary										
Work size (outer dia.) mm (inch)		50~200 (2.0~7.9)																	
- (No measurement)		A1-STR08-50(~200) A2-STR08-50(~200)		A1-STR10-50(~200) A2-STR10-50(~200)		A1-STR12-50(~200) A2-STR12-50(~200)		A1-STR14-50(~200) A2-STR14-50(~200)		A1-SR006-50(~200) A2-SR006-50(~200)		A1-SR008-50(~200) A2-SR008-50(~200)		A1-SR010-50(~200) A2-SR010-50(~200)					
Measurement	Inner diameter	Button		50~200 (2.0~7.9)		A3-STR08-50(~200)-MIB50(~200)		A3-STR10-50(~200)-MIB50(~200)		A3-STR12-50(~200)-MIB50(~200)		A3-STR14-50(~200)-MIB50(~200)		A3-SR006-50(~200)-MIB50(~200)		A3-SR008-50(~200)-MIB50(~200)			
		Touch				A3-STR08-50(~200)-MIT50(~200)		A3-STR10-50(~200)-MIT50(~200)		A3-STR12-50(~200)-MIT50(~200)		A3-STR14-50(~200)-MIT50(~200)		A3-SR006-50(~200)-MIT50(~200)		A3-SR008-50(~200)-MIT50(~200)			
	Outer diameter	Button				A3-STR08-50(~200)-MOB50(~200)		A3-STR10-50(~200)-MOB50(~200)		A3-STR12-50(~200)-MOB50(~200)		A3-STR14-50(~200)-MOB50(~200)		A3-SR006-50(~200)-MOB50(~200)		A3-SR008-50(~200)-MOB50(~200)			
		Touch				A3-STR08-50(~200)-MOT50(~200)		A3-STR10-50(~200)-MOT50(~200)		A3-STR12-50(~200)-MOT50(~200)		A3-STR14-50(~200)-MOT50(~200)		A3-SR006-50(~200)-MOT50(~200)		A3-SR008-50(~200)-MOT50(~200)			
	Difference gap	Button				A3-STR08-50(~200)-MDB50(~200)		A3-STR10-50(~200)-MDB50(~200)		A3-STR12-50(~200)-MDB50(~200)		A3-STR14-50(~200)-MDB50(~200)		A3-SR006-50(~200)-MDB50(~200)		A3-SR008-50(~200)-MDB50(~200)			
		Touch				A3-STR08-50(~200)-MDT50(~200)		A3-STR10-50(~200)-MDT50(~200)		A3-STR12-50(~200)-MDT50(~200)		A3-STR14-50(~200)-MDT50(~200)		A3-SR006-50(~200)-MDT50(~200)		A3-SR008-50(~200)-MDT50(~200)			

Item	Stoker														
	Type Station		Pitch Conveyor						Push						
			14		30 stock		50 stock		7 stock						
	Station		2 row		3 row		2 row		3 row		50~125 (2.0~4.9)		125~200 (4.9~7.9)		
Measurement	Work size (outer dia.) mm (inch)	50~100 (2.0~3.9)		A3-SPI14-2R-50(~100)-MIB50(~200)		A3-SPI14-3R-50(~100)-MIB50(~200)		A3-SPU30-2R-50(~100)-MIB50(~200)		A3-SPU50-2R-50(~100)-MIB50(~200)		A3-SPL07-50(~125)-MIB50(~200)		A3-SPL07-125(~200)-MIB50(~200)	
				A3-SPI14-2R-50(~100)-MIT50(~200)		A3-SPI14-3R-50(~100)-MIT50(~200)		A3-SPU30-2R-50(~100)-MIT50(~200)		A3-SPU50-2R-50(~100)-MIT50(~200)		A3-SPL07-50(~125)-MIT50(~200)		A3-SPL07-125(~200)-MIT50(~200)	
				A3-SPI14-2R-50(~100)-MOB50(~200)		A3-SPI14-3R-50(~100)-MOB50(~200)		A3-SPU30-2R-50(~100)-MOB50(~200)		A3-SPU50-2R-50(~100)-MOB50(~200)		A3-SPL07-50(~125)-MOB50(~200)		A3-SPL07-125(~200)-MOB50(~200)	
				A3-SPI14-2R-50(~100)-MOT50(~200)		A3-SPI14-3R-50(~100)-MOT50(~200)		A3-SPU30-2R-50(~100)-MOT50(~200)		A3-SPU50-2R-50(~100)-MOT50(~200)		A3-SPL07-50(~125)-MOT50(~200)		A3-SPL07-125(~200)-MOT50(~200)	
				A3-SPI14-2R-50(~100)-MDB50(~200)		A3-SPI14-3R-50(~100)-MDB50(~200)		A3-SPU30-2R-50(~100)-MDB50(~200)		A3-SPU50-2R-50(~100)-MDB50(~200)		A3-SPL07-50(~125)-MDB50(~200)		A3-SPL07-125(~200)-MDB50(~200)	
				A3-SPI14-2R-50(~100)-MDT50(~200)		A3-SPI14-3R-50(~100)-MDT50(~200)		A3-SPU30-2R-50(~100)-MDT50(~200)		A3-SPU50-2R-50(~100)-MDT50(~200)		A3-SPL07-50(~125)-MDT50(~200)		A3-SPL07-125(~200)-MDT50(~200)	

* Please contact DN Solutions Machine Tools sales to discuss more detail consultation regarding material shape.

STANDARD & OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

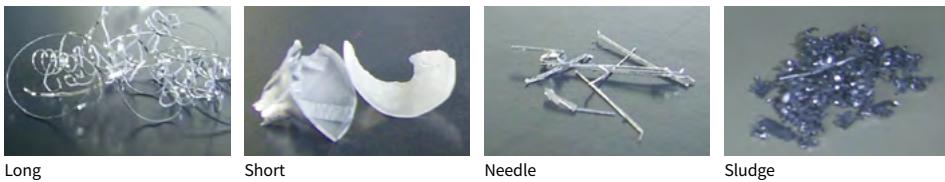
Description	Features	PUMA TW2100/M TS2100/M	PUMA TW2100/M-GL TS2100/M-GL	PUMA TW2600/M TS2600/M	PUMA TW2600B/M
					PUMA TW2600/M-GL TS2600/M-GL TW2600B/M-GL
Chuck	8 inch	○	○	○	○
	10 inch	○	○	○	○
	12 inch	X	X	○	○
	Chuck excluded	●	●	●	●
Turret	2 axis_8 station	●	●	X	X
	2 axis_10 station	○	○	●	●
	2 axis_12 station	X	X	○	○
	3 axis(M)_10 station, BMT45P	●	●	X	X
	3 axis(M)_10 station, BMT55P	○	○	●	●
	3 axis(M)_10 station, BMT65P	X	X	○	○
	1.5 bar	●	●	●	●
Coolant pump	4.5 bar	○	○	○	○
	7 bar	○	○	○	○
	Oil skimmer (Belt-type)	○	○	○	○
Coolant system options	Flushing coolant	○	○	○	○
	Through-spindle coolant	○	○	○	○
	Coolant pressure switch	○	○	○	○
	Chucking option	○	○	○	○
Rear chip conveyor	Hinged belt type	○	○	○	○
	Magnetic scrapper type (for castings)	○	○	○	○
	Screw type	○	○	○	○
Chip bucket	Forklift 300L	○	○	○	○
	Rotation 300L	○	○	○	○
Chip disposal options	Air blower	○	●	○	●
	Chuck coolant	○	●	○	●
	Air gun	○	○	○	○
	Coolant gun	○	○	○	○
	Mist collector_ready	○	○	○	○
	Mist collector soluble	○	○	○	○
Measurement & automation	Tool setter (Removable)	○	○	○	○
	Work position confirmation device_ready	○	○	○	○
	Work position confirmation device_TACO	○	○	○	○
	Auto door	○	Top Door Standard	○	Top Door Standard
	Work & tool counter	○	○	○	○
Gantry loader	A1 Type loader	-	●	-	●
	A2 Type loader	-	○	-	○
	A3 Type loader	-	○	-	○
	Stocker (A1/A2/A3)	-	○	-	○
	Turn over Unit	-	●	-	●
	Gripper	-	○	-	○
	Gripper head type (CAM type swicel)	-	○	-	○
	Work inspection chute	-	○	-	○
Optional accessories	Tool load monitoring system	○	○	○	○
	Tail stock	○	○	○	○
	Linear scale (X/Z-axis)	○	○	○	○
	Air conditioner	○	○	○	○
	Signal tower	○	●	○	●
	Electric cabinet lamp	○	○	○	○
	Auto power cut-off	○	○	○	○
	Quick change tooling(CAPTO)	○	○	○	○
Customized special option	High torque motor	○	○	○	○
	Chip conveyor side-way type (Left & Right)	○	○	○	○
	Screw type chip conveyor	○	○	○	○
	Through spindle Air	○	○	○	○
	High pressure coolant(10Bar, 20Bar, 70Bar)	○	○	○	○
	Stand-alone gantry loader	X	○	X	○
	Gantry loader twin carriage	X	○	X	○
	Gantry loader cam type swivel	X	○	X	○
	Coolant level switch : Sensing level - Low / High	○	○	○	○

Please contact your DN Solutions representative for detailed machine information.

● Standard ○ Optional X N/A

PERIPHERAL EQUIPMENT

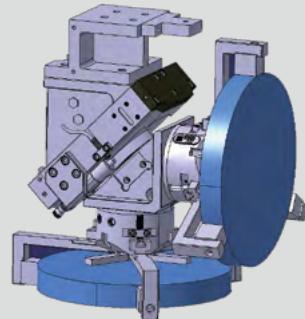
Chip conveyor option



Chip conveyor type	Material	Carbon steel			Cast iron		Aluminium		
		Long	Short	Needle	Short	Sludge	Long	Short	Needle
Hinged belt type		○	△	×	△	×	○	△	×
Scrapper type	Normal	×	○	△	○	△	×	△	×
	Magnetic	×	○	○	○	○	-	-	-
Drum filter type	Hinged type	○	△	×	△	×	○	△	×
	Scrapper	×	○	△	○	△	×	○	△

○ : Suitable, △ : Possible, × : Not suitable

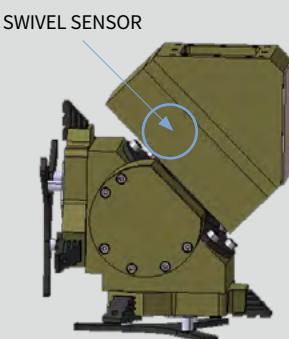
Unique solution for non-conventional turning applications option



* Delivery terms will be advised on request.

CAM TYPE (SWIVEL) option

Stable rotation reduces time and improves productivity by making material loading / unloading more efficient.



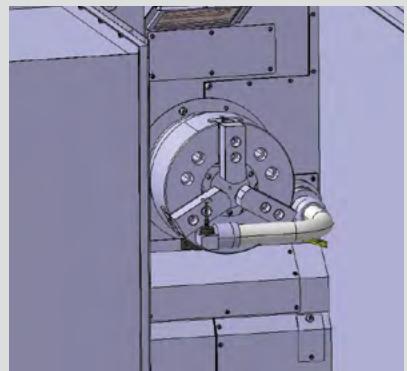
Quick change CAPTO option

The Quick Change Tool system simplifies the tool change operation. The system is recommended for users who need to change tools frequently, or who are looking to significantly reduce set-up times.



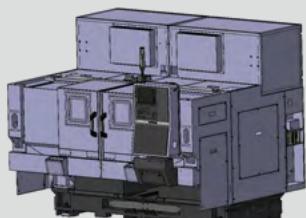
Tool setter option

The tool setter ensures fast and precise tool length and diameter measurement, and the detection of broken tools.



Coolant tank

The coolant tank can be isolated without removing the chip conveyor, significantly improving productivity and enhancing operator convenience.



Independent gantry operation panel

Independent gantry loader operation panel is provided as standard for improved user convenience.



Work counter option

Available counting categories are Total, Daily, and Work. This function further enhances productivity through planned work management.



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

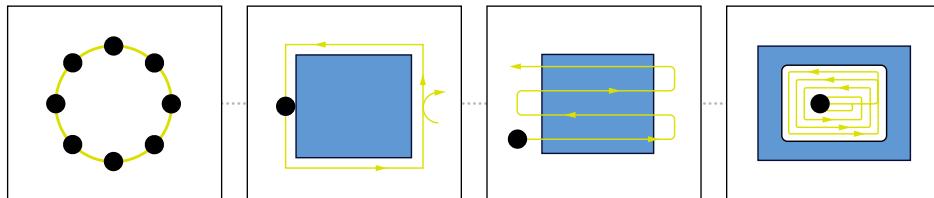
Division	Item	Specifications	TS2100 TS2600	TW2100/ TW2600	TW2100M/ TW2600M	TS2100-GL TS2600-GL	TW2100-GL/ TW2600-GL	TW2100M-GL/ TW2600M-GL	TW2100-TWIN GL TW2600-TWIN GL	TW2100M-TWIN GL TW2600M-TWIN GL
			DN Solutions Fanuc i Plus							
Controlled axis	Control paths		1 Path	2 Path	2 Path	2 Path	3 Path	3 Path	4 Path	4 Path
	Controlled axis		2 (X,Z)	4 (XR,ZR, XL,ZL)	6 (XR,ZR,CR, XL,ZL,CL)	5 (X,Z)+ (GX,GY,GZ)	7 (XR,ZR,XL,ZL)+ (GX,GY,GZ)	9 (XR,ZR,CR, XL,ZL,CL)+ (GX,GY,GZ)	10 (XR,ZR,XL,ZL)+ (XGR,YGR,ZGR, XGL,YGL,ZGL)	12 (XR,ZR,CR,XL,ZL,CL)+ (XGR,YGR,ZGR, XGL,YGL,ZGL)
	Simultaneously controlled axis		2 axes	2 axes (each path)	3 axes (each path)	2 axes/ 3 axes (Gantry)	2 axes (each path)/ 3 axes(Gantry)	3 axes (each path)/ 3 axes(Gantry)	2 axes (each path)/3 axes (Gantry each path)	3 axes (each path)/3 axes (Gantry each path)
Data input/ output	Data server	●	●	●	●	●	●	●	●	●
	Memory card input/output	●	●	●	●	●	●	●	●	●
	USB memory input/output	●	●	●	●	●	●	●	●	●
Interface function	Embedded ethernet	●	●	●	●	●	●	●	●	●
	Fast Ethernet	●	●	●	●	●	●	●	●	●
Operation	Enhanced embedded ethernet function	●	●	●	●	●	●	●	●	●
	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 Guide i (Conversational Programming Solution)		●	●	●	●	●	●	●	●
	iHMI with machining cycle	Note *1) Only with 15" Touch LCD standard	● *1)	● *1)	● *1)	● *1)	● *1)	● *1)	● *1)	● *1)
	Multi path function	Supporting 2- or 3-path machine	●	●	●	●	●	●	●	●
Setting & display	EZ Operation package		●	●	●	●	●	●	●	●
	CNC screen dual display function		●	●	●	●	●	●	●	●
	FANUC MTConnect	●	●	●	●	●	●	●	●	●
Network	FANUC OPC UA		●	●	●	●	●	●	●	●
	Display unit	15" color LCD	●	●	●	●	●	●	●	●
	Part program storage size & number of registerable programs	5120M (2MB) 1000 programs	●	●	●	●	●	●	●	●

DN SOLUTIONS FANUC i PLUS

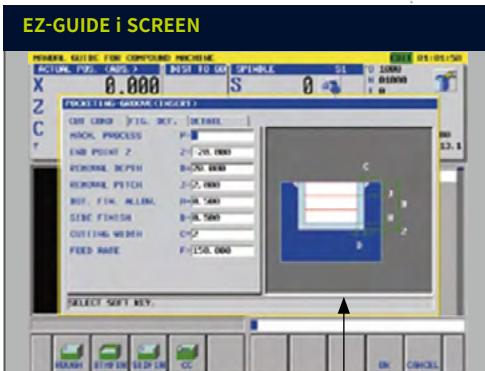
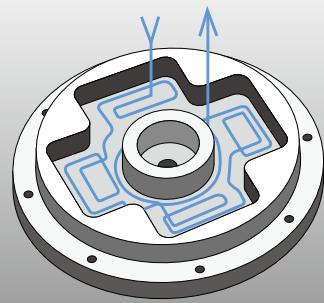
EZ-Guide i

Using the DN Solutions EZ-Guide i, users can create a cutting program for any desired shape, including patterns, by entering just the dimensions.

EXAMPLE PROGRAMMING : CUTTING SHAPE



EXAMPLE PART



Enter the dimensions of the shape

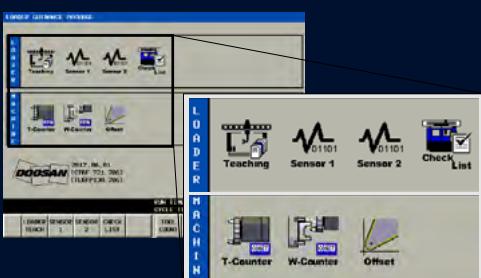
```
O7000 (SAMPLE PROGRAM) ;
...
M3 S1500 ;
G0 X50. Y125. ;
G0 Z30. ;
G1040 T0.5 J3. H0.2 K0.5 ... ;
G1020 H120. V50. U37. W68. ... ;
G0 Z80. ;
M5 ;
```

A cutting program is automatically created with the entered values.

EZ work

DN Solutions's EZ work supports the user with functions relating to tool data, error diagnostics, set up and machine monitoring.

Main screen



Loader teaching



Help setting position of the travel axis of the loader. (Up to 5 different positions can be set and loaded.)

Real time check sensor of



The status of the sensor (swivel unit, turn-over unit) in the loader can be checked in real time.

Check list



Operators can check, immediately, the status of the machine and loader.

Tool counter



The tool life management screen displays tool usage and the ratio of tools used.

Work counter



Different screens help manage customers' production scheduling and inspection routines.

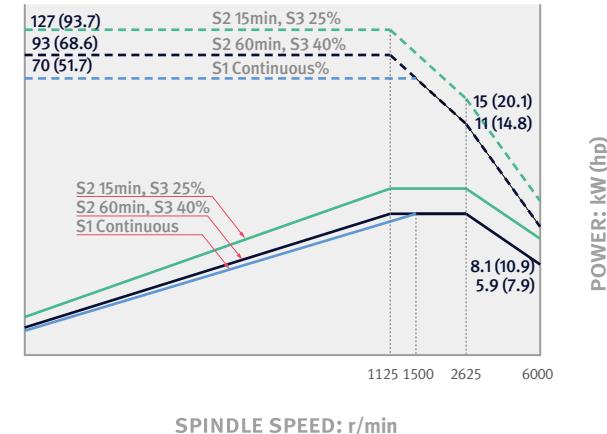
POWER | TORQUE

Spindle

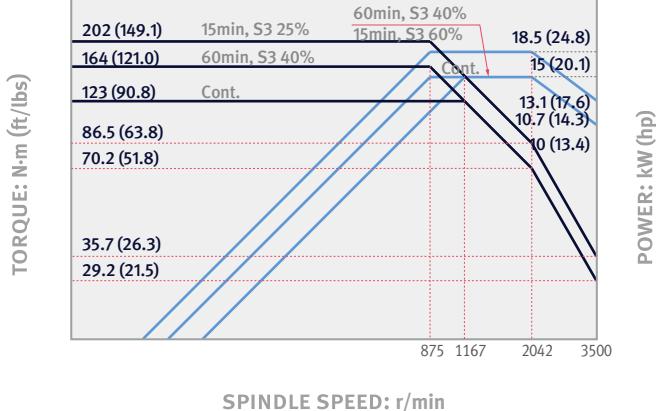
PUMA TW 2100/TW 2100-GL/TS 2100/TS 2100-GL series



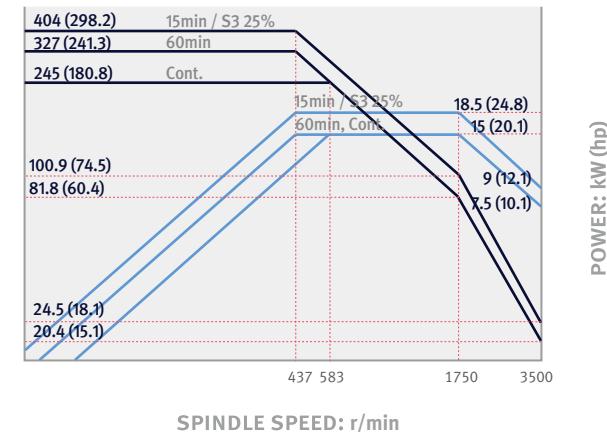
PUMA TW 2100/TW 2100-GL/TS 2100/TS 2100-GL series option



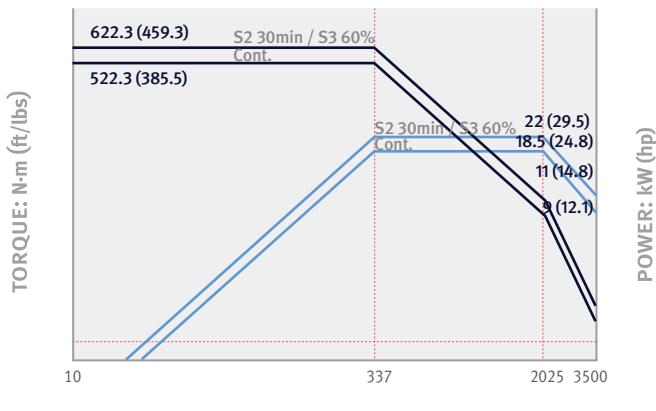
PUMA TW 2600/TW 2600-GL/TS 2600/TS 2600-GL series



PUMA TW 2600/GL (High Torque) option



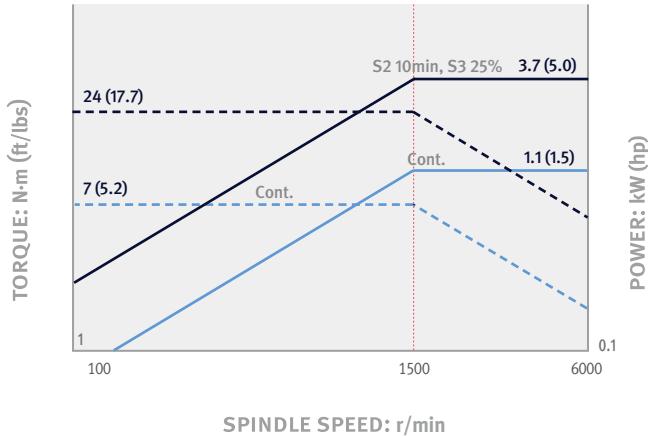
PUMA TW 2600B/TW 2600B-GL series



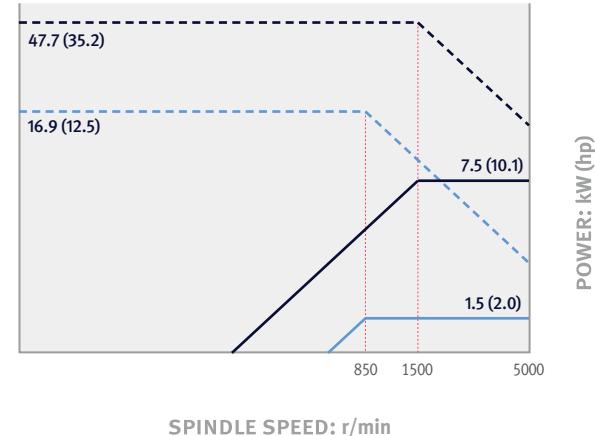
POWER | TORQUE

Rotary Tool

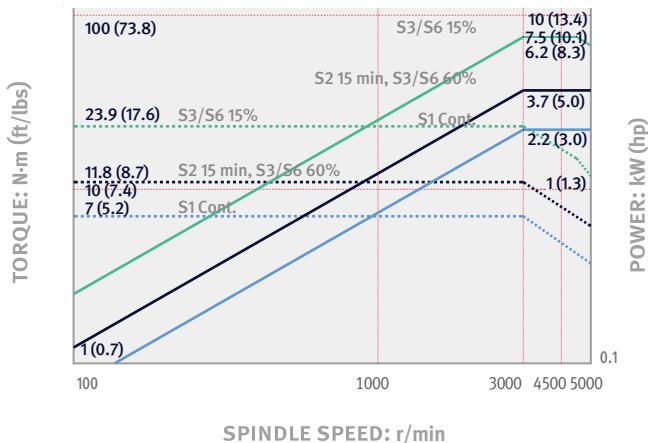
PUMA TW 2100/TW 2100-GL/TS 2100/TS 2100-GL series
(BMT 45P)



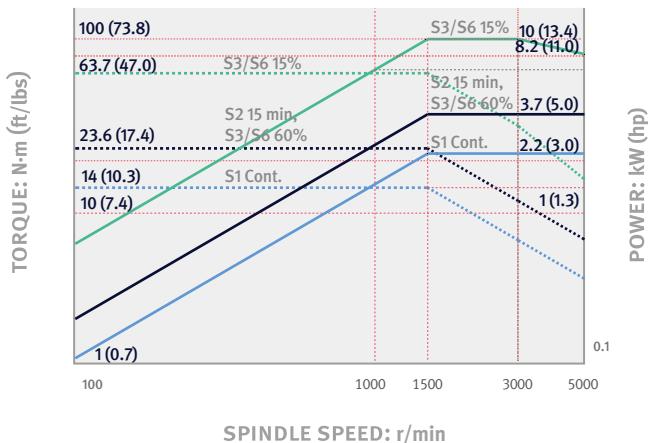
PUMA TW 2600/TW 2600-GL/TS 2600/TS 2600-GL series
(BMT 55P)



PUMA TW 2100/TW 2100-GL/TS 2100/TS 2100-GL series
(BMT 55P) **option**



PUMA TW 2600/TW 2600-GL/TS 2600/TS 2600-GL series
(BMT 65P) **option**

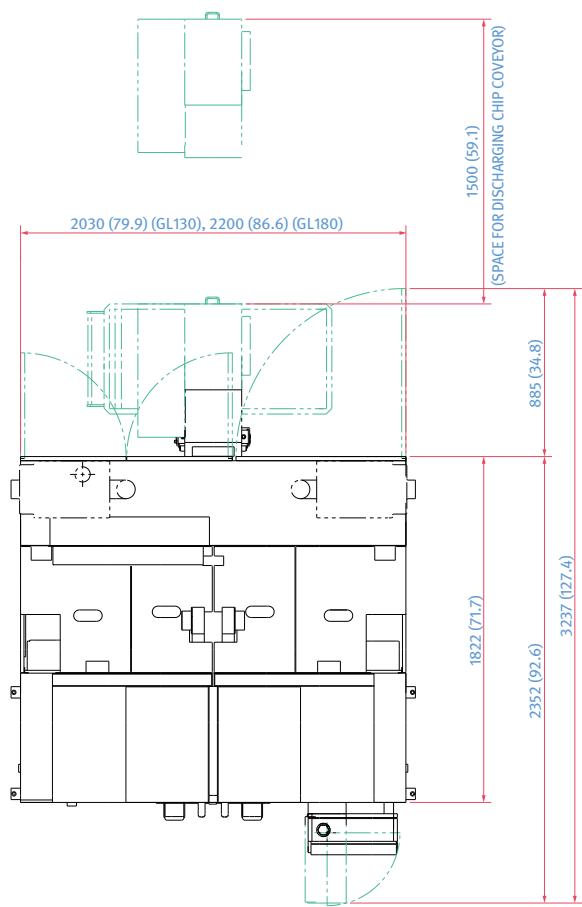


EXTERNAL DIMENSIONS

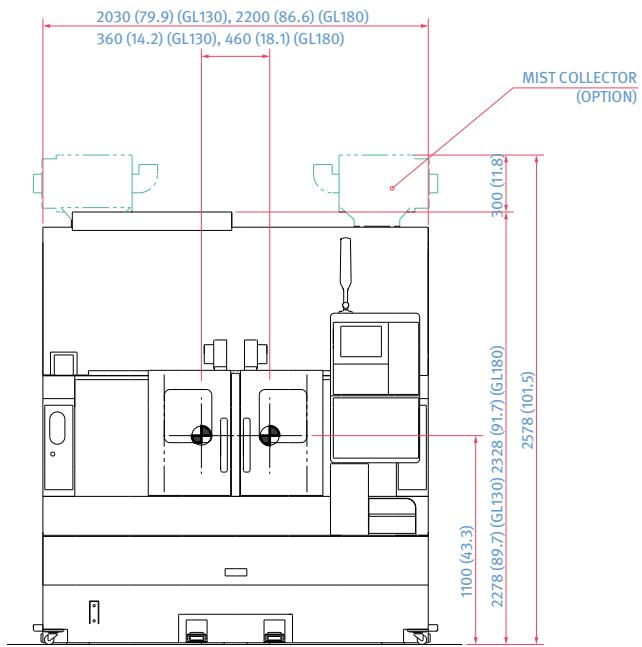
PUMA TW 2100/M

Unit : mm (inch)

TOP



FRONT

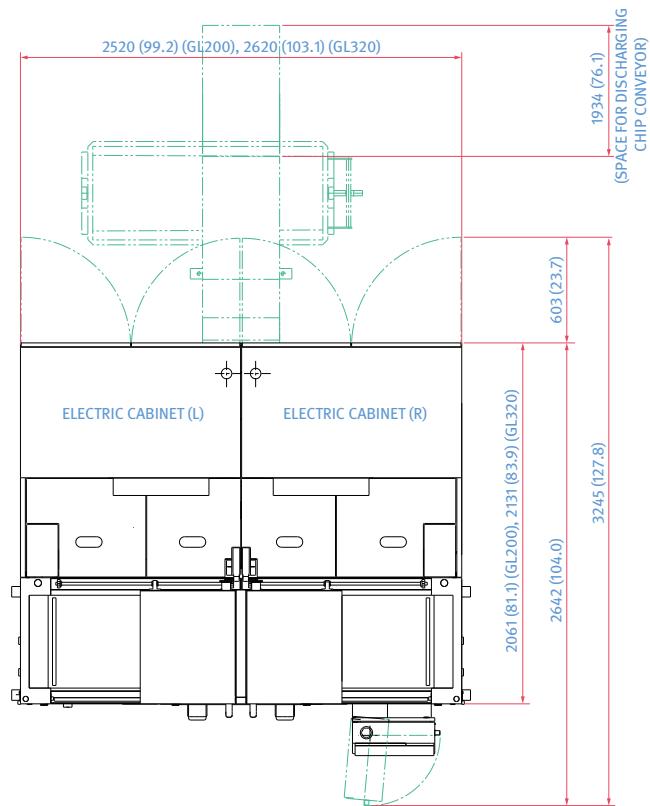


EXTERNAL DIMENSIONS

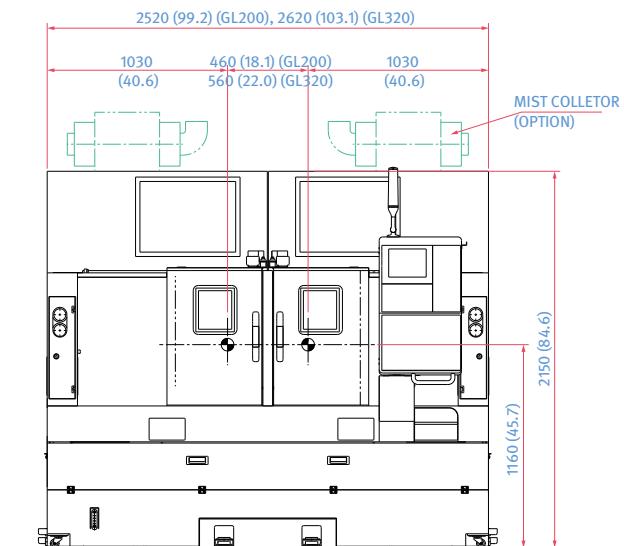
PUMA TW 2600/M (TW 2600B/MB)

Unit : mm (inch)

TOP



FRONT

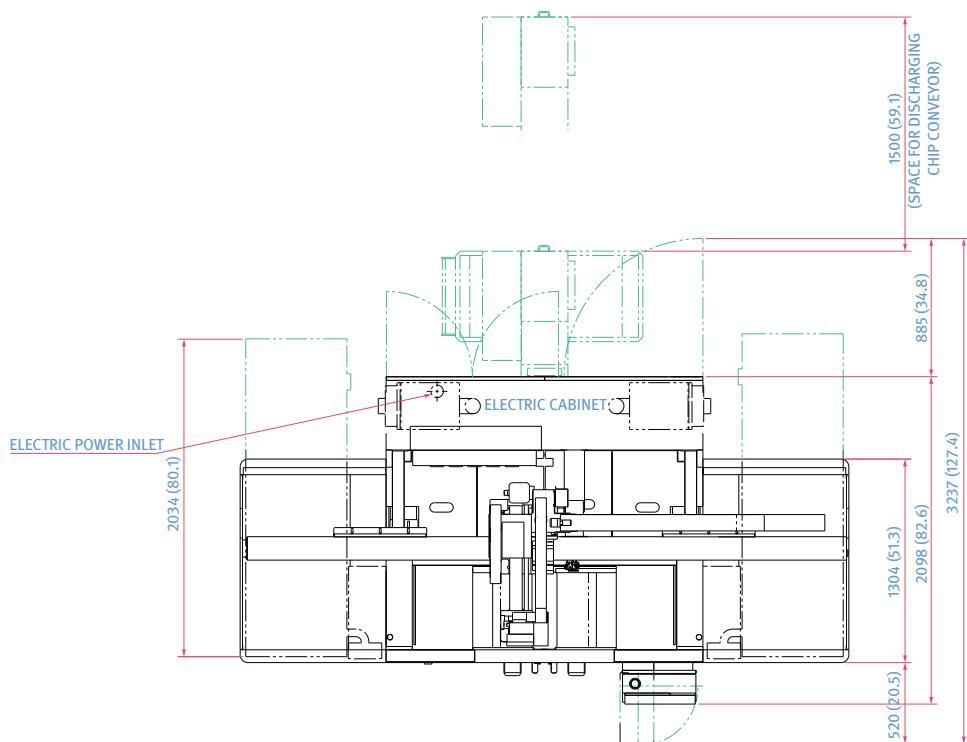


EXTERNAL DIMENSIONS

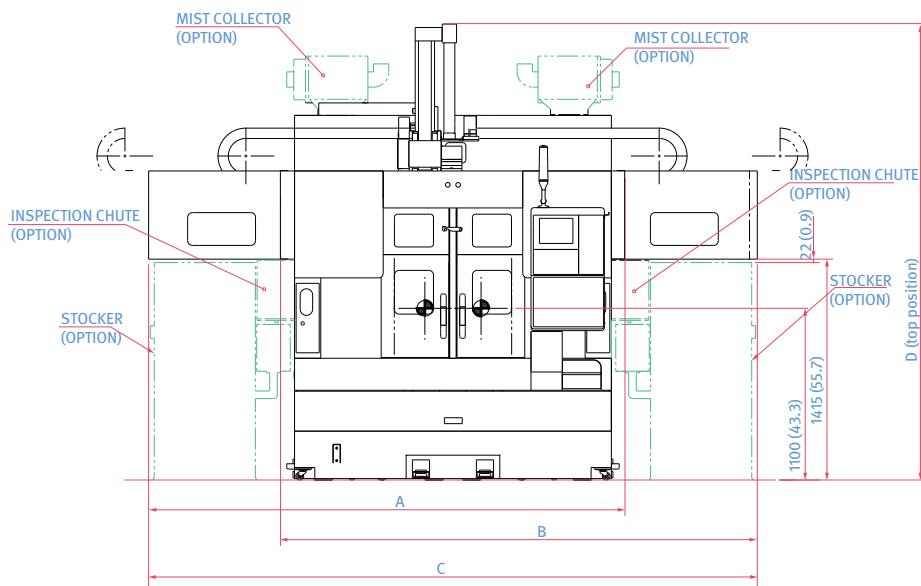
PUMA TW 2100-GL series

Unit : mm (inch)

TOP



FRONT



	A	B	C	D
PUMA TW 2100-GL130 (A1 type)	3295 (129.7)	-	-	2921 (115.0)
PUMA TW 2100-GL130 (A2 type)	-	3295 (129.7)	-	2921 (115.0)
PUMA TW 2100-GL130 (A3 type)	-	-	3900 (153.5)	2921 (115.0)
PUMA TW 2100-GL180 (A1 type)	3465 (136.4)	-	-	2971 (117.0)
PUMA TW 2100-GL180 (A2 type)	-	3465 (136.4)	-	2971 (117.0)
PUMA TW 2100-GL180 (A3 type)	-	-	4000 (157.5)	2971 (117.0)

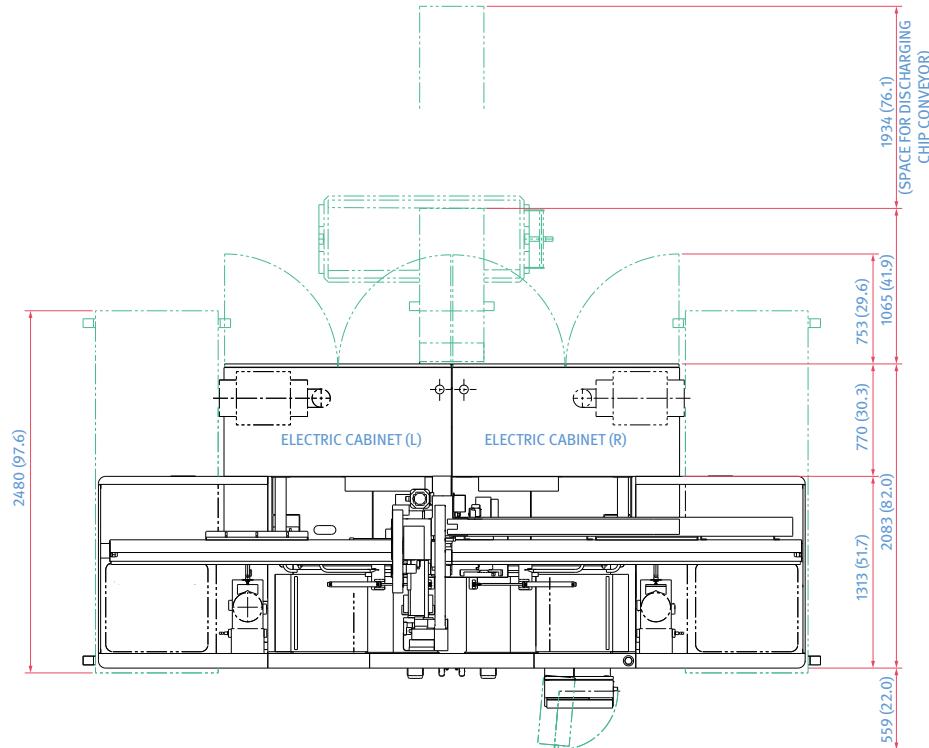
* Some peripheral equipment can be placed in other places

EXTERNAL DIMENSIONS

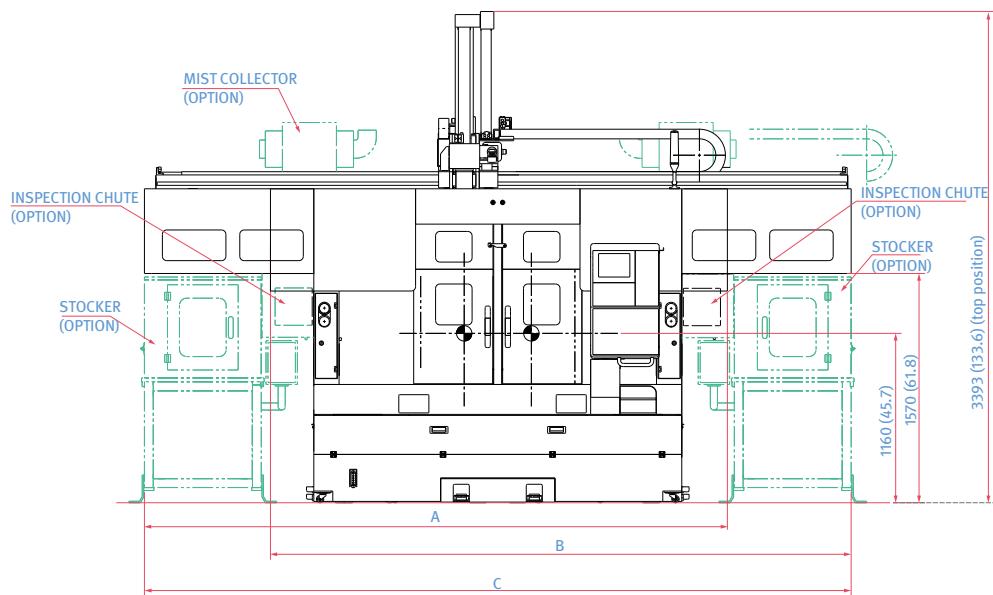
PUMA TW 2600-GL series (TW 2600B/MB)

Unit : mm (inch)

TOP



FRONT



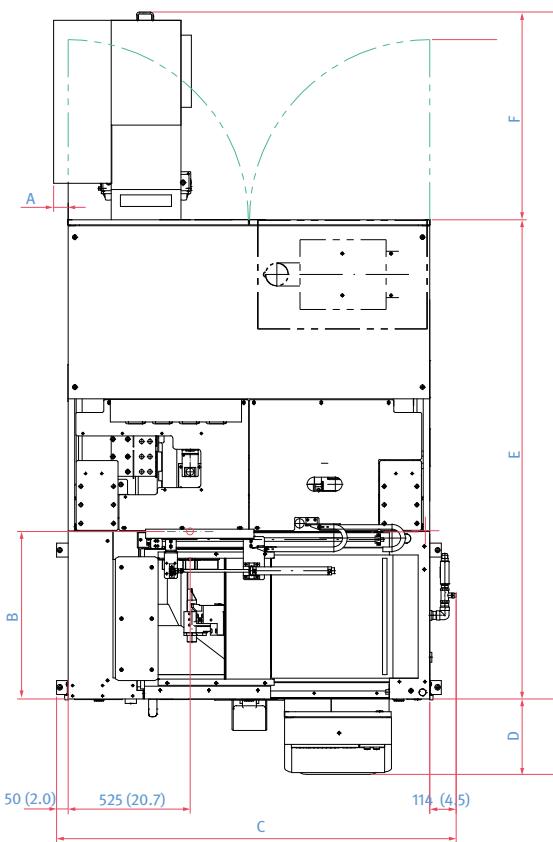
	A	B	C
PUMA TW 2600-GL200 (A1 type)	3980 (156.7)	-	-
PUMA TW 2600-GL200 (A2 type)	-	3980 (156.7)	-
PUMA TW 2600-GL200 (A3 type)	-	-	4840 (190.6)
PUMA TW 2600-GL320(A1 type)	4120 (162.2)	-	-
PUMA TW 2600-GL320(A2 type)	-	4120 (162.2)	-
PUMA TW 2600-GL320(A3 type)	-	-	4940 (194.5)

* Some peripheral equipment can be placed in other places

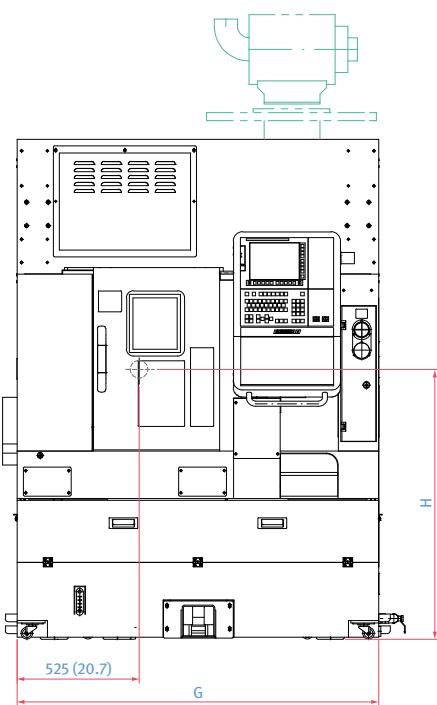
EXTERNAL DIMENSIONS

PUMA TS 2100/2600

TOP



FRONT



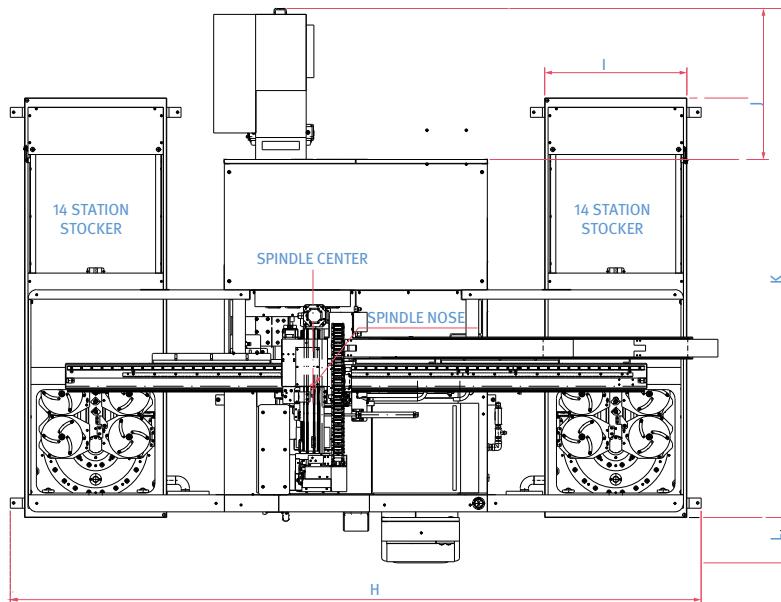
	A	B	C	D	E	F	G	H
PUMA TS 2100/M	52 (2.0)	681 (26.8)	1524 (60.0)	265.7 (10.5)	1833(72.2)	839 (33.0)	1360 (53.5)	1100 (43.3)
PUMA TS 2600/M	62 (2.4)	720 (28.3)	1719 (67.7)	324.1 (12.8)	2061(81.1)	893.5(35.2)	1555 (61.2)	1160 (45.7)

22 *Some peripheral equipment can be placed in other places

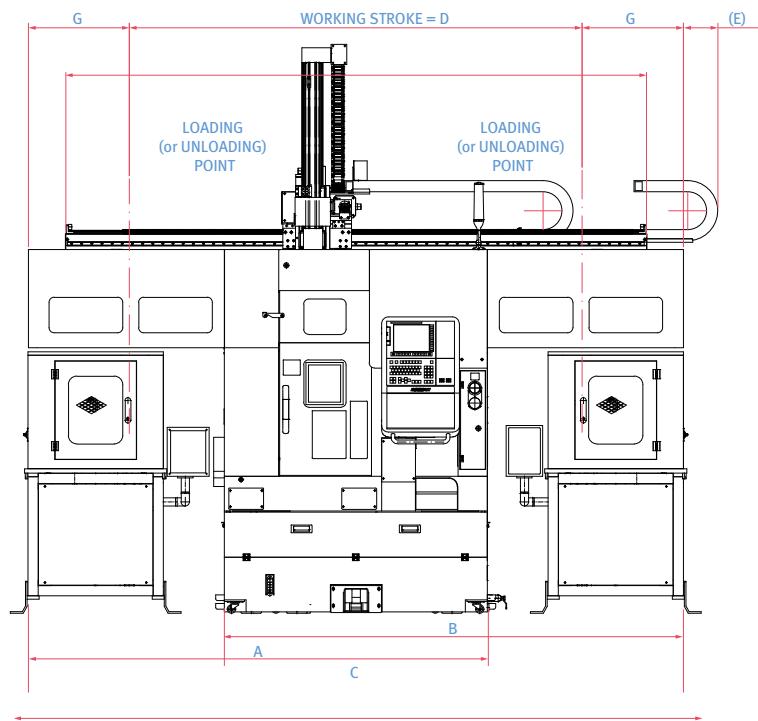
EXTERNAL DIMENSIONS

PUMA TS 2100/2600-GL

TOP



FRONT



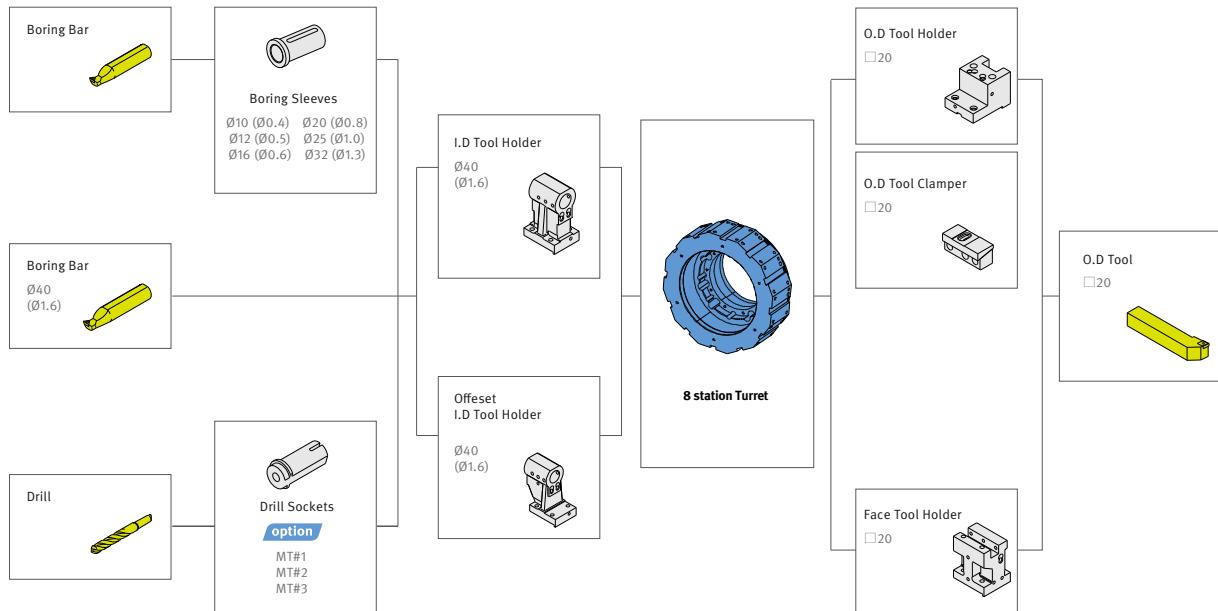
	Type	A	B	C	D	E	G	H	I	J	K	L
PUMA TS 2100/M	A1	2625 (103.3)	-	-	1235 (48.6)	-	-	-	-	-	-	-
	A2	-	2659 (104.7)	-	1579 (62.2)	407.5 (16.0)	-	-	-	-	-	-
	A3	-	-	3264 (128.5)	2274 (89.5)	267 (10.5)	495 (19.5)	3300 (129.9)	642 (25.3)	839 (33.0)	2672 (105.2)	265.7 (10.5)
PUMA TS 2600/M	A1	3007 (118.4)	-	-	1535 (60.4)	-	-	-	-	-	-	-
	A2	-	2955 (116.3)	-	2040 (80.3)	-	-	-	-	-	-	-
	A3	-	-	3875 (152.6)	2677 (105.4)	203.5 (8.0)	599 (23.6)	4085 (160.8)	840 (33.1)	893.5 (35.2)	3010 (118.5)	269.1 (10.6)

* Some peripheral equipment can be placed in other places

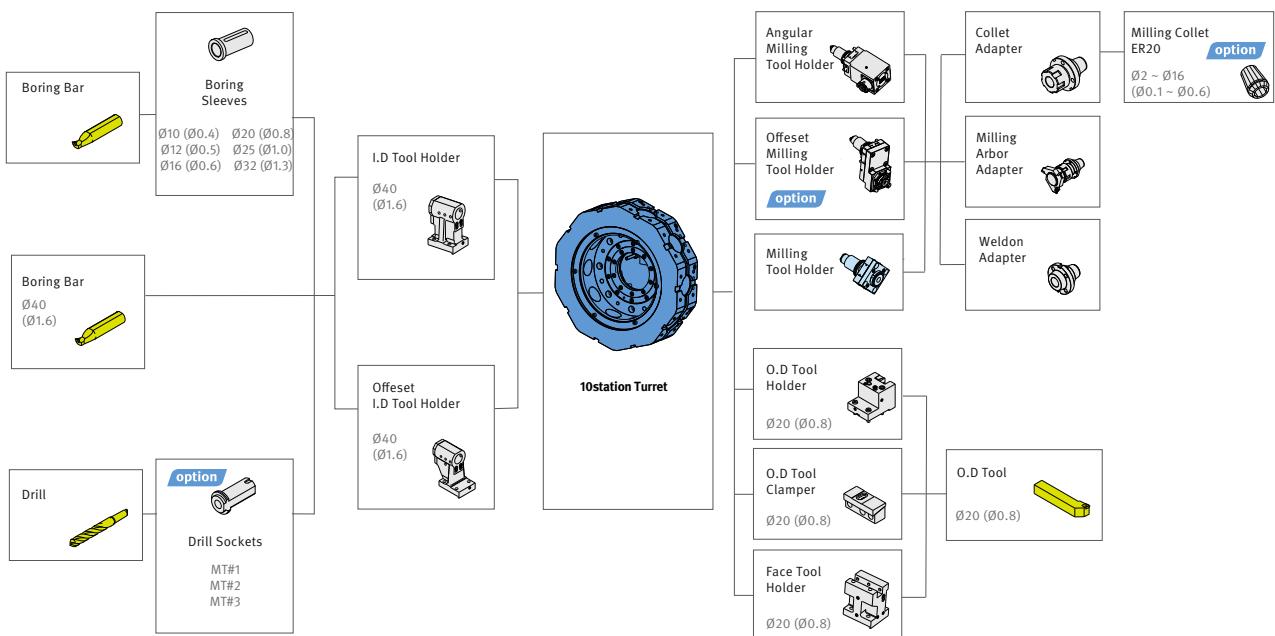
TOOLING SYSTEM

Unit : mm (inch)

PUMA TW 2100/2100-GL • TS 2100/2100-GL



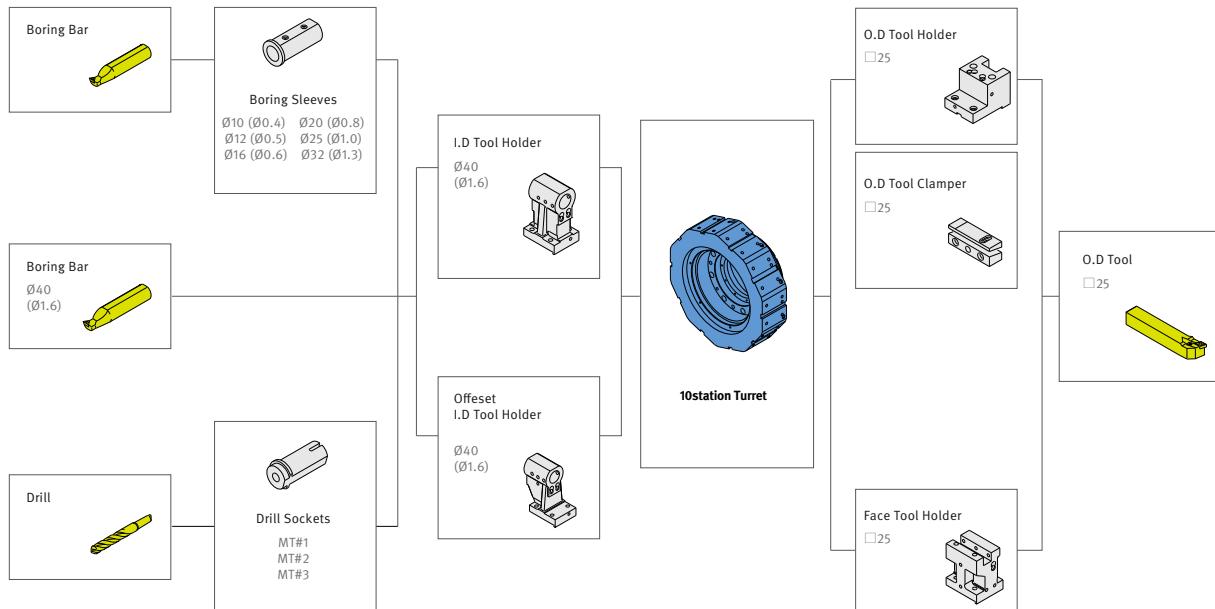
PUMA TW 2100M/2100M-GL • TS 2100M/2100M-GL



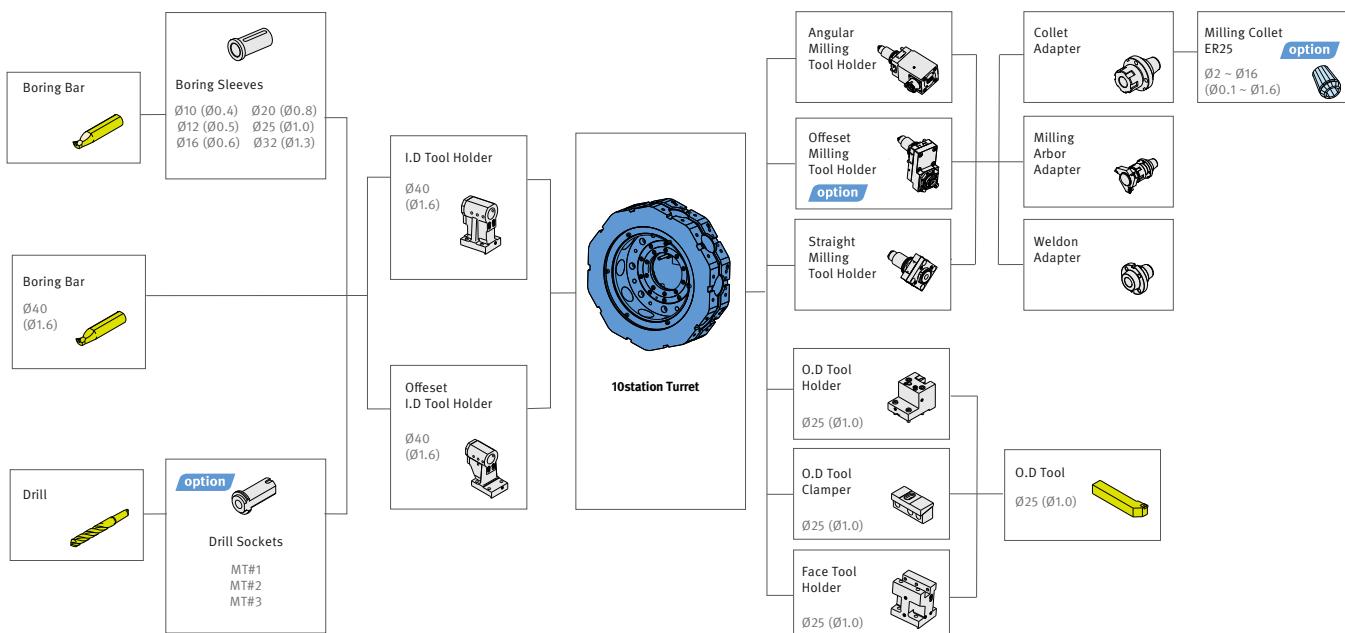
TOOLING SYSTEM

Unit : mm (inch)

PUMA TW 2600/2600-GL • TS 2600/2600-GL

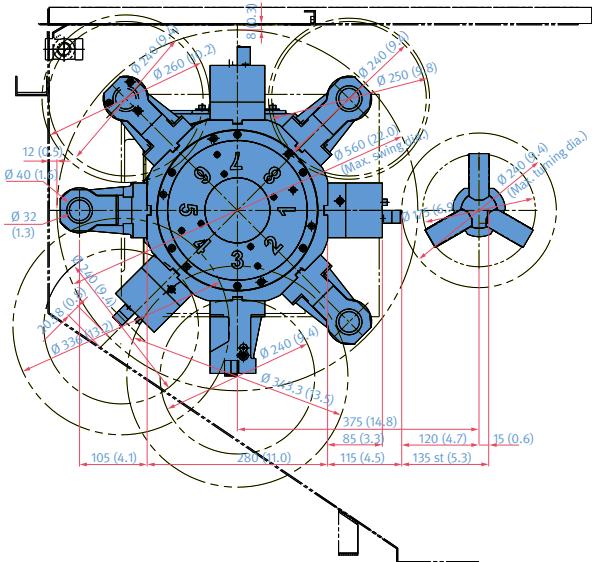


PUMA TW 2600M/2600M-GL • TS 2600M/2600M-GL

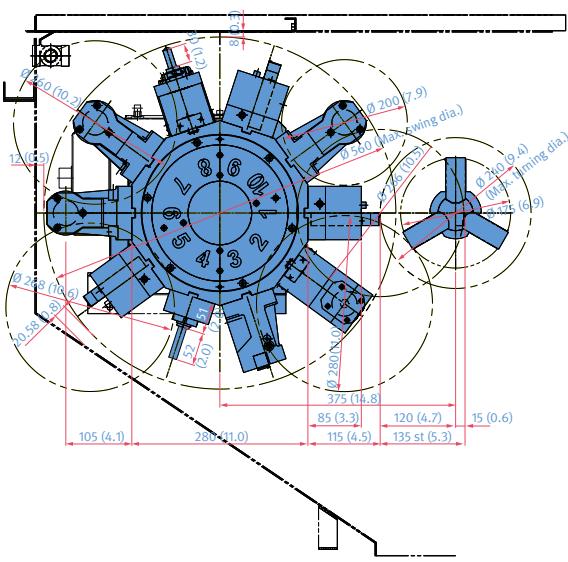


TOOL INTERFACE

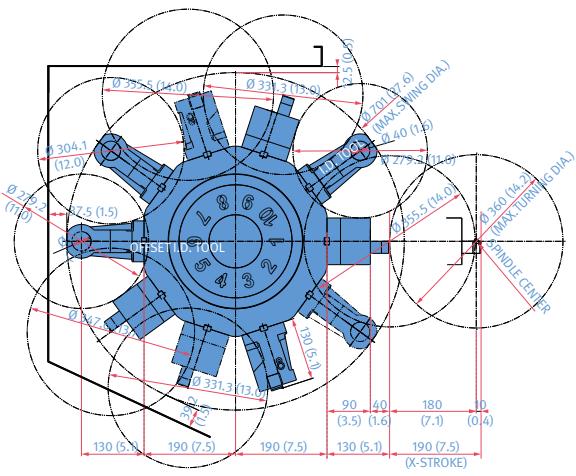
PUMA TW 2100/2100-GL/TS 2100/TS 2100-GL (2 AXIS, 8 STATION)



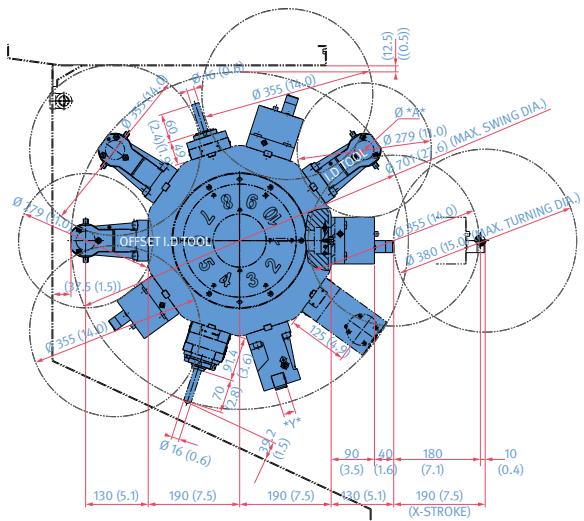
PUMA TW 2100M/2100M-GL/TS 2100M/ TS 2100M-GL (3 AXIS, 10 STATION, BMT45P)



PUMA TW 2600/PUMA TW 2600-GL/TS 2600/TS 2600-GL (2 AXIS, 10 STATION)



PUMA TW 2600M/TW 2600M-GL/TS 2600M/ TS 2600M-GL (3 AXIS, 10 STATION, BMT55P)

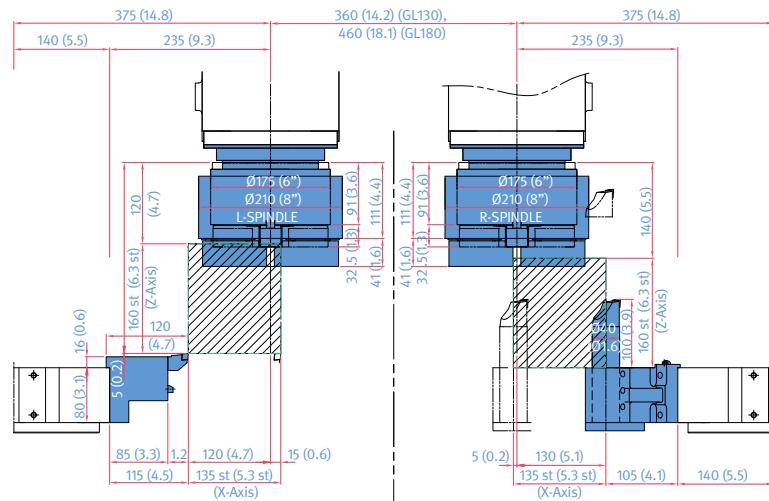


WORKING RANGE

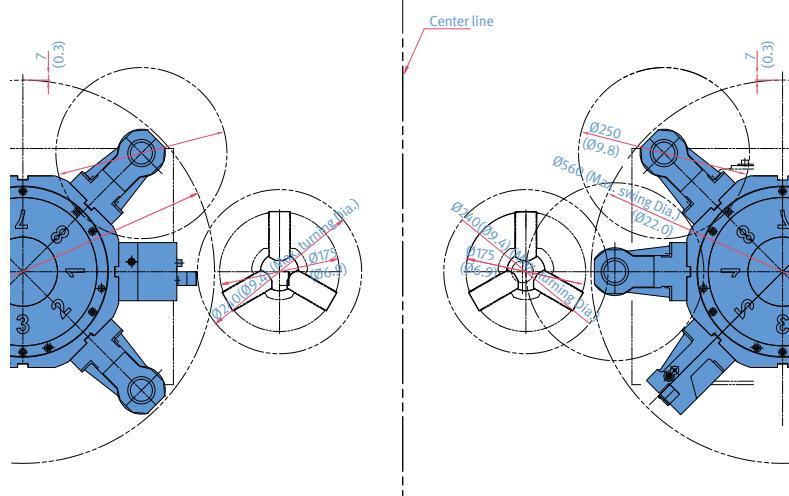
PUMA TW 2100/2100-GL/**TS** 2100/2100-GL

Unit : mm (inch)

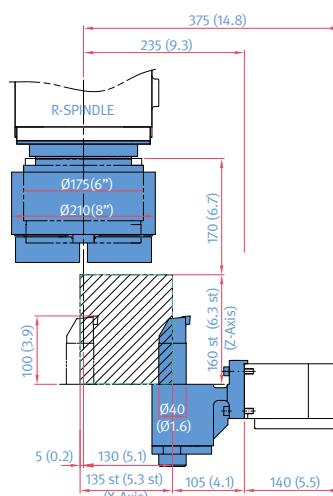
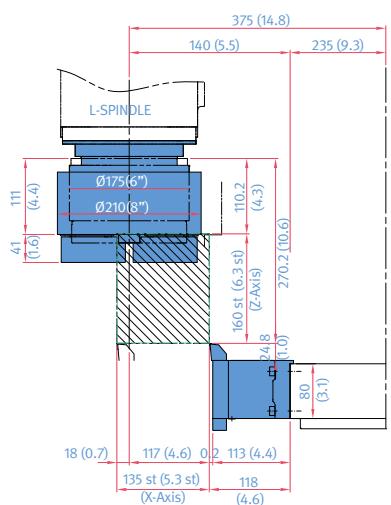
O.D HOLDER



I.D HOLDER



FACE TOOL HOLDER



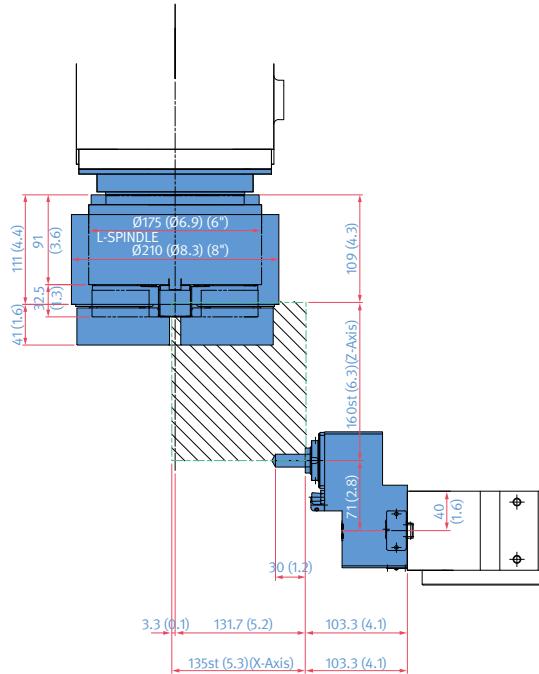
OFFSET I.D HOLDER

WORKING RANGE

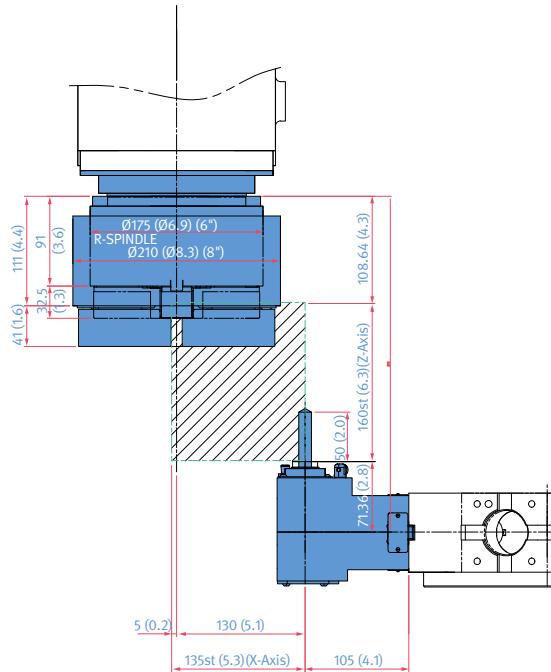
PUMA TW 2100M/2100M-GL • **TS** 2100M/2100M-GL

Unit : mm (inch)

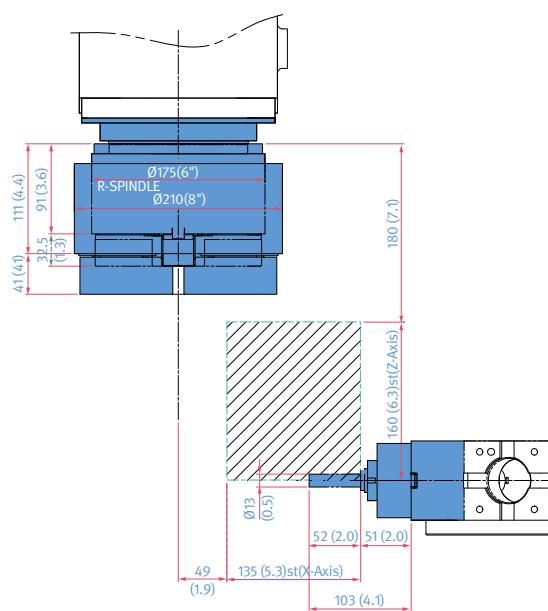
OFFSET MILLING HEAD option



ANGULAR MILLING HEAD



STRAIGHT MILLING HOLDER

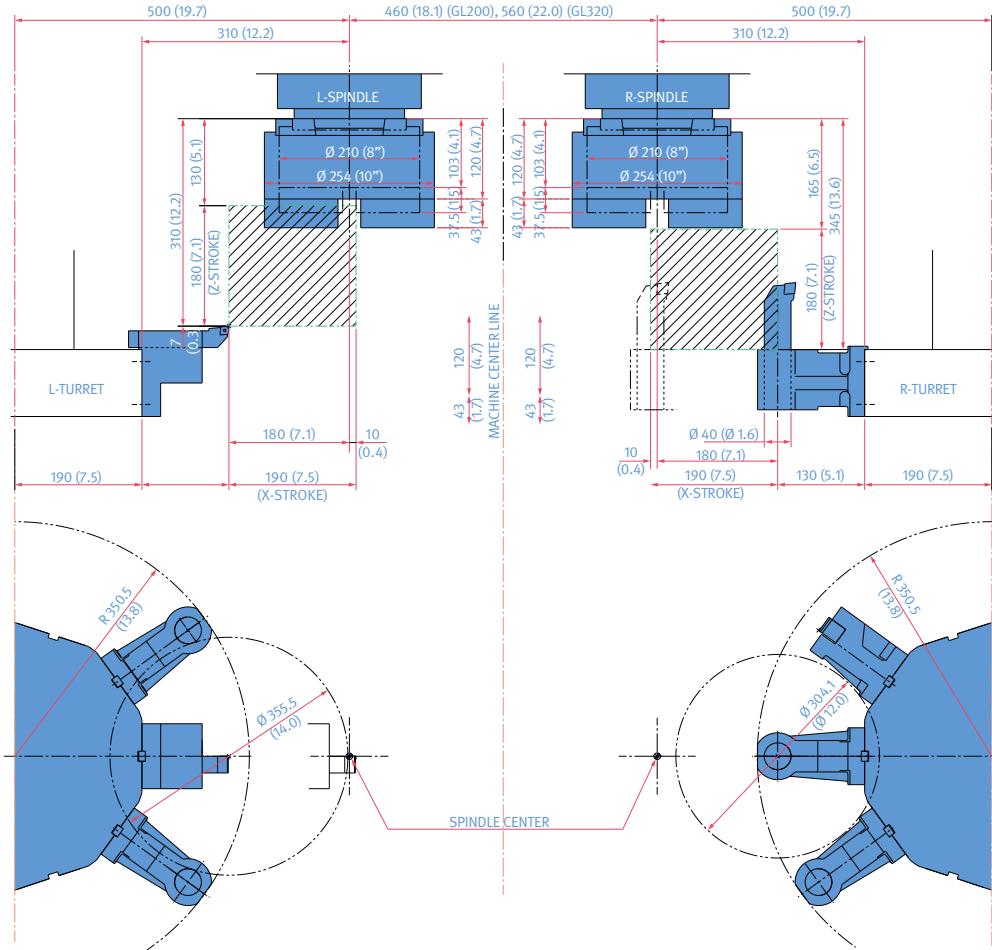


WORKING RANGE

PUMA TW 2600/2600-GL • TS 2600/2600-GL

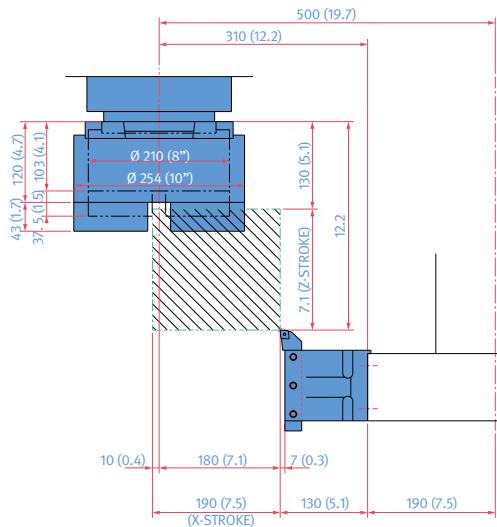
Unit : mm (inch)

O.D HOLDER

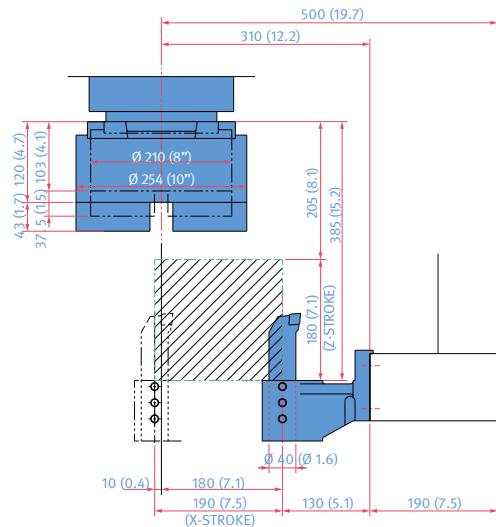


I.D HOLDER

FACE TOOL HOLDER



OFFSET I.D HOLDER

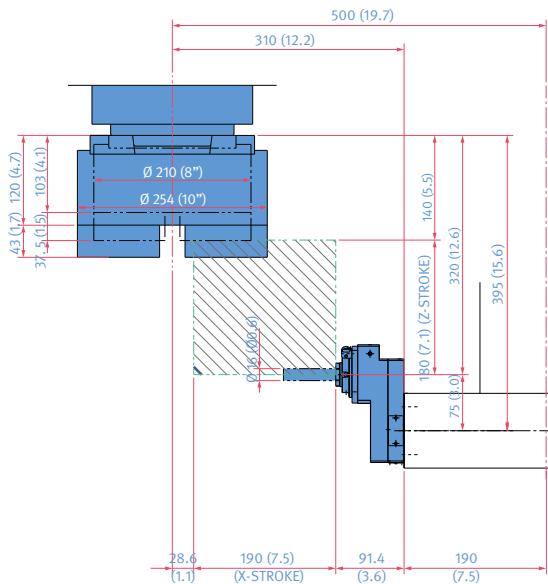


WORKING RANGE

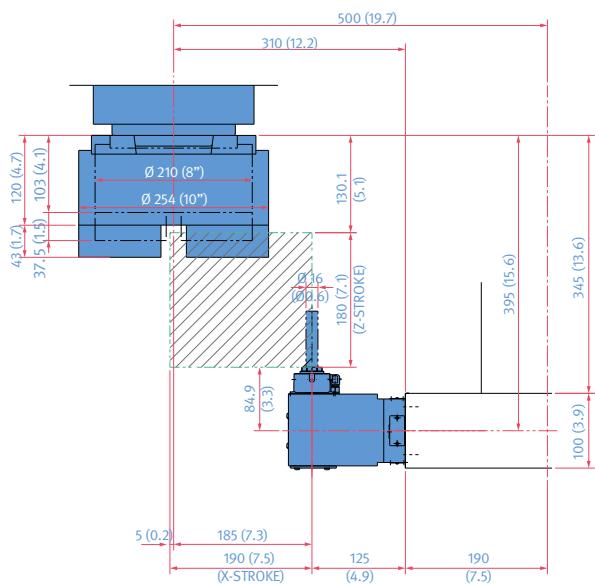
PUMA TW 2600M/2600M-GL · **TS** 2600M/2600M-GL

Unit : mm (inch)

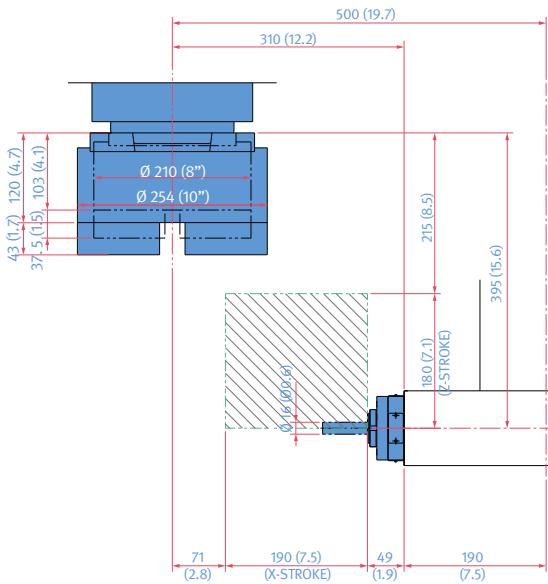
OFFSET MILLING HOLDER **option**



ANGULAR MILLING HOLDER



Straight Milling Holder

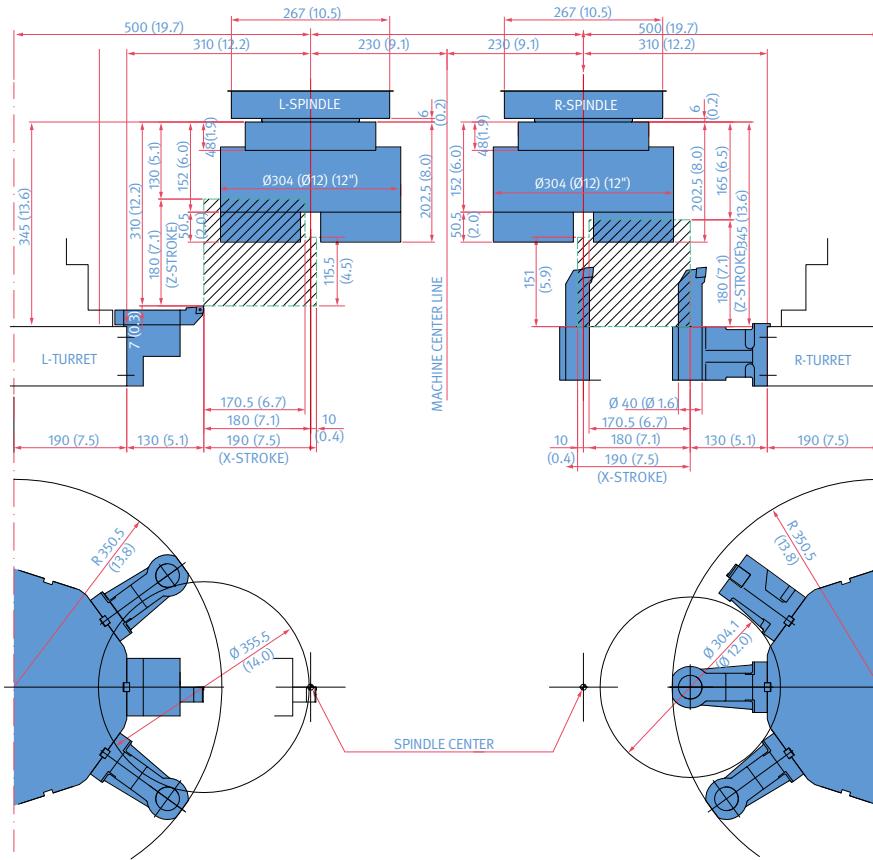


WORKING RANGE

PUMA TW 2600MB

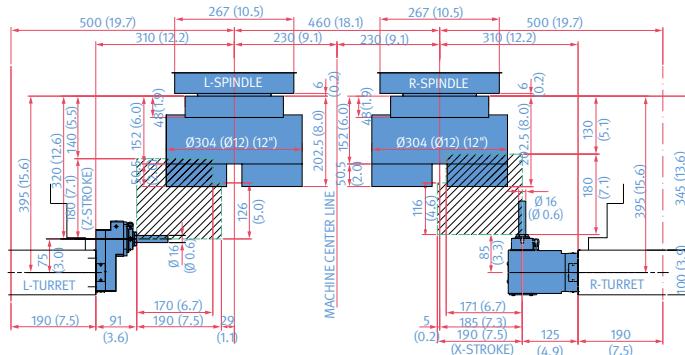
Unit : mm (inch)

O.D HOLDER

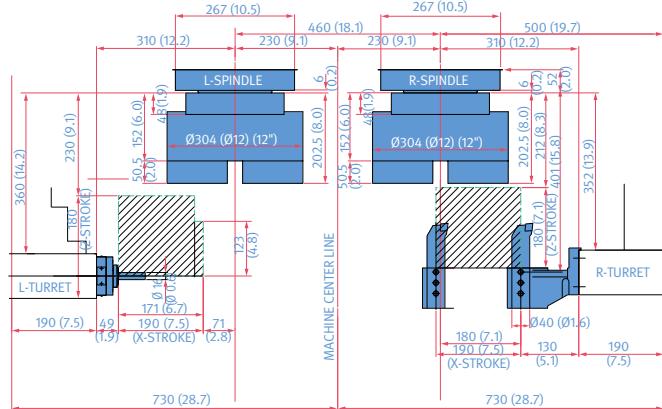


I.D HOLDER

FACE TOOL HOLDER



OFFSET I.D HOLDER

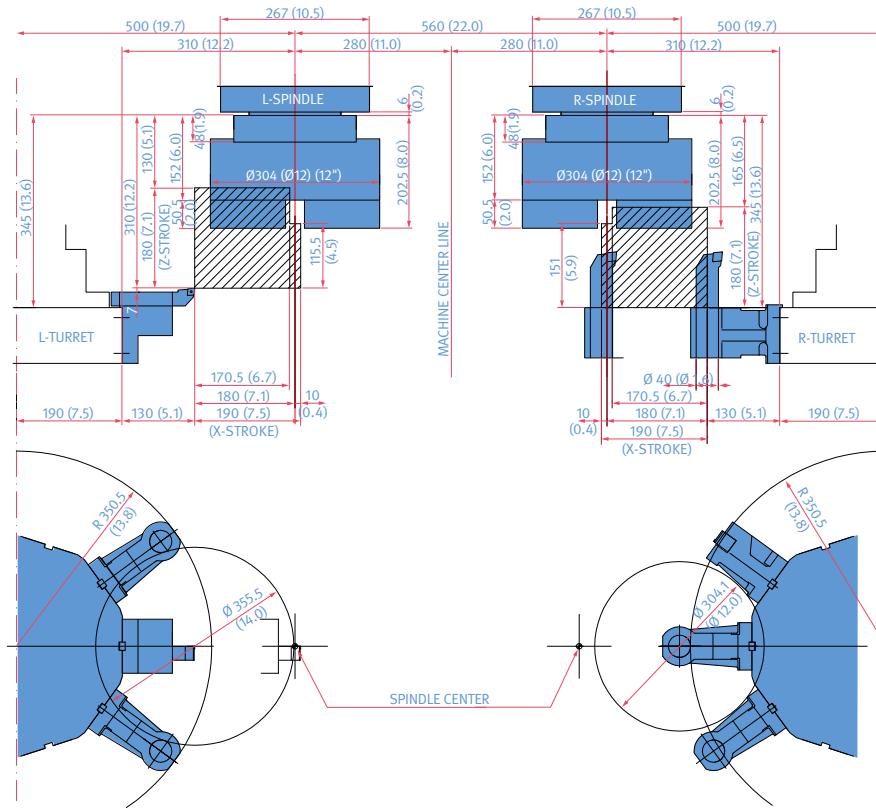


WORKING RANGE

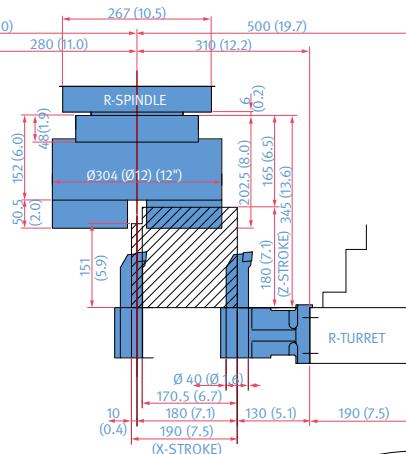
PUMA TW 2600WMB

Unit : mm (inch)

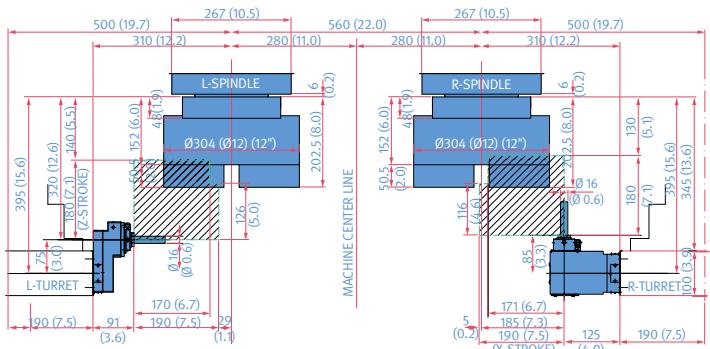
O.D HOLDER



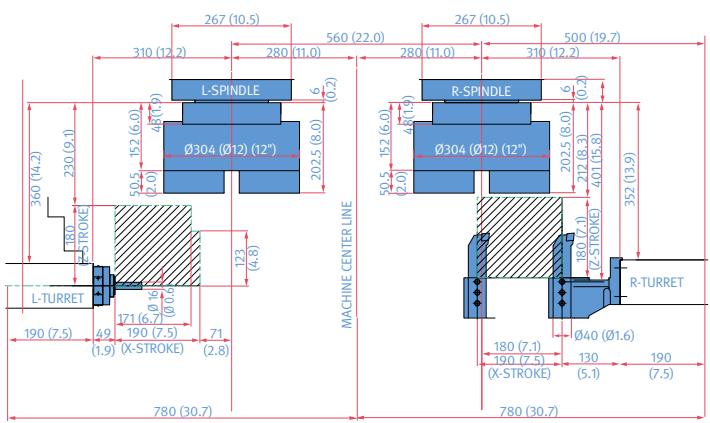
I.D HOLDER



FACE TOOL HOLDER



OFFSET I.D HOLDER



MACHINE SPECIFICATIONS

PUMA TW 2100/2600/M • **TW** 2600B/M • **TS** 2100/2600/M

The DN Solutions promise, MACHINE GREATNESS, has two important meanings. The first is simple: DN Solutions makes great machines. The second is a challenge to our end-users. With a product line that is this comprehensive, accurate and reliable, we equip our customers to machine greatness. **The big question: *Why should you choose DN Solutions over other options?***

Here's why...

MACHINE GREATNESS™



WHAT YOU MAKE AND HOW YOU MAKE IT MATTERS—SO MAKE IT
GREAT WITH DN SOLUTIONS.

UNBEATABLE MACHINES

You won't find a more comprehensive range or a better combination of value, performance and reliability anywhere else.

READYLY 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

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	51	Technical centers Technical center, Sales support, Service support, Parts support
4	Corporations	200
155	Dealer networks	3
		Factories



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