

DOOSAN



PUMA 2100/2600/3100 series

High Performance Horizontal Turning Center

PUMA 2100
PUMA 2600
PUMA 3100

**MACHINE
GREATNESS™**



Basic information

Basic Structure
Cutting
Performance

Detailed
Information

Options
Applications
Capacity Diagram
Specifications

Customer Support
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PUMA 2100/2600/3100 series

PUMA 2100/2600/3100 series has been developed to create full line up of high level 8" to 12" size with model variations from 2 axis to Y axis and sub spindle.

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High Performance

These Doosan machines offer a high level of machining capability to provide optimum productivity for the customer.

Wide Variation

A wide variety of machine specifications from 2-axis models to turning centers with sub spindles is available to meet your production requirements.

Easy Operation

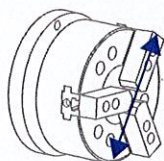
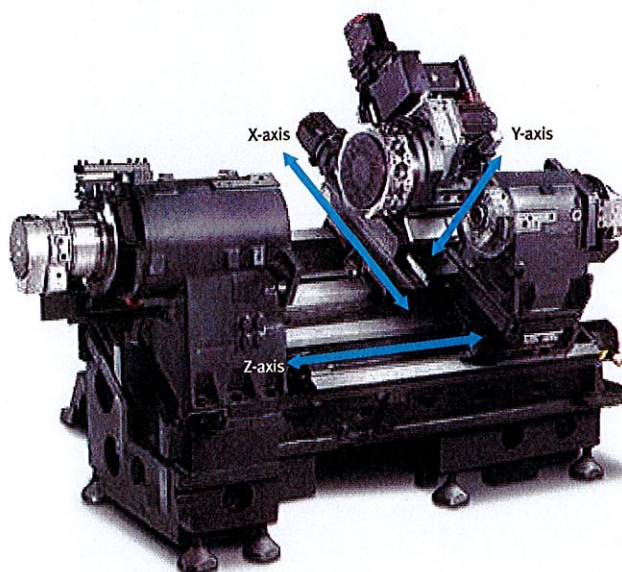
User-friendly operation panel configurations, EZ Guide i and EOP(Easy Operation Package) can make easy and comfortable to use various features of the product.

- Basic Structure
- Cutting
- Performance

Box guideways are applied to all axes to prevent vibration, secure dynamic rigidity, and ensure powerful and precise machining.

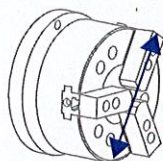
- Options
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- Specifications

**Customer Support
Service**



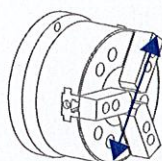
Ø 210 mm
(Ø 8.3 inch)

PUMA 2100				2A / M / MS / Y / SY	
PUMA 2100L				2A / M / MS / Y / SY	
Work length	520 (20.5)	760 (29.9)	1280 (50.4) mm (inch)	2125 (83.7)	3125 (123.0) mm (inch)



Ø 255 mm
(Ø 10 inch)

Work length	520 (20.5)	760 (29.9)	1280 (50.4)	2125 (83.7)	3125 (123.0)
PUMA 2600/500					2A / M
PUMA 2600				2A / M / MS / Y / SY	
PUMA 2600L				2A / M / MS / Y / SY	



Ø 305 mm
(Ø 12 inch)

Model	Work length (mm)	Work length (inch)	Options
PUMA 2600B	520	20.5	2A / M / S / MS / Y / SY
PUMA 2600LB	1280	50.4	2A / M / Y
PUMA 3100	760	29.9	2A / M / Y
PUMA 3100L	1280	50.4	2A / M / Y
PUMA 3100XL	2125	83.7	2A / M / Y
PUMA 3100UL	3125	123.0	2A / M / Y

High performance Y axis complex machining

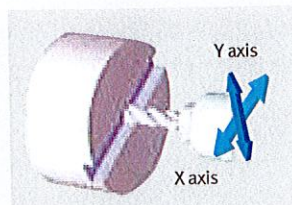
Free operation in all directions of the rotary milling tool using Y axis control perform a variety of complex shape machining easily with high accuracy.

PUMA 2100 / 2600

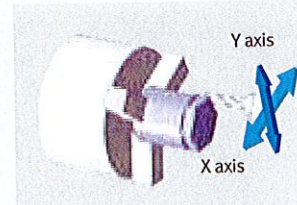
105(±52.5)mm
(4.1 (±2.1) inch)

PUMA 3100

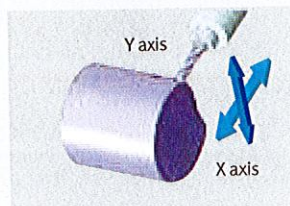
130(±65)mm
(5.1 (±26) inch)



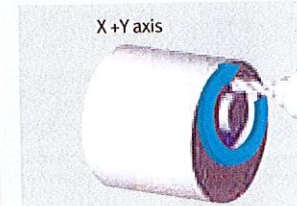
Groove finish cutting using the Y-axis



Multi-face cutting



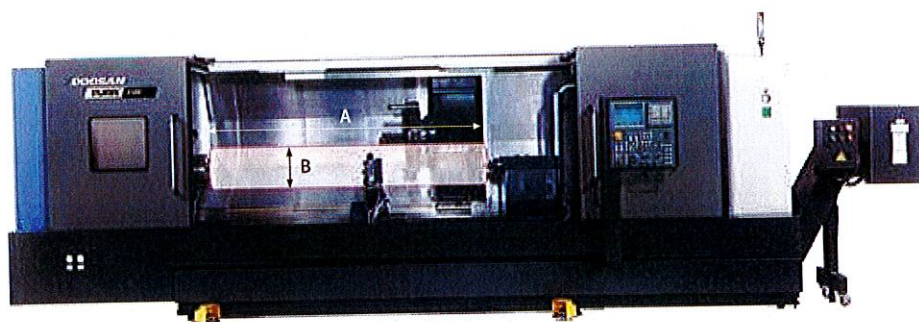
Milling in an eccentric position



Y & X axes circular interpolation

Machining area

These machines provide outstanding performance from general machining to large & long workpiece machining.



Unit : mm (inch)

Model	Max. turning length (A)	Max. turning dia. (B)
PUMA 2100	545 (21.4)	481 (18.9)
PUMA 2100M / MS / Y / SY	520 (20.5)	406 (16.0)
PUMA 2100L	785 (30.9)	481 (18.9)
PUMA 2100LM / LMS / LY / LSY	760 (29.9)	406 (16.0)
PUMA 2600	790 (31.1)	481 (18.9)
PUMA 2600M / MS / Y / SY	760 (29.9)	376 (14.8)
PUMA 2600L	1310 (51.6)	481 (18.9)
PUMA 2600LM / LMS / LY / LSY	1280 (50.4)	376 (14.8)
PUMA 2600/500	550 (21.7)	481 (18.9)
PUMA 2600M/500	520 (20.5)	376 (14.8)
PUMA 2600B / SB	755 (29.7)	481 (18.9)
PUMA 2600LB	1275 (50.2)	481 (18.9)
PUMA 2600MB / MSB / YB / SYB	725 (28.5)	376 (14.8)
PUMA 2600LMB / LYB	1245 (49.0)	376 (14.8)
PUMA 3100	790 (31.1)	525 (20.7)
PUMA 3100M / Y	765 (30.1)	420 (16.5)
PUMA 3100L	1310 (51.6)	525 (20.7)
PUMA 3100LM / LY	1285 (50.6)	420 (16.5)
PUMA 3100XL	2150 (84.7)	525 (20.7)
PUMA 3100XLM / XLY	2125 (83.7)	420 (16.5)
PUMA 3100UL	3150 (124.0)	525 (20.7)
PUMA 3100ULM / ULY	3125 (123.0)	420 (16.5)

Product Preview

Basic information

Basic Structure
Cutting
Performance

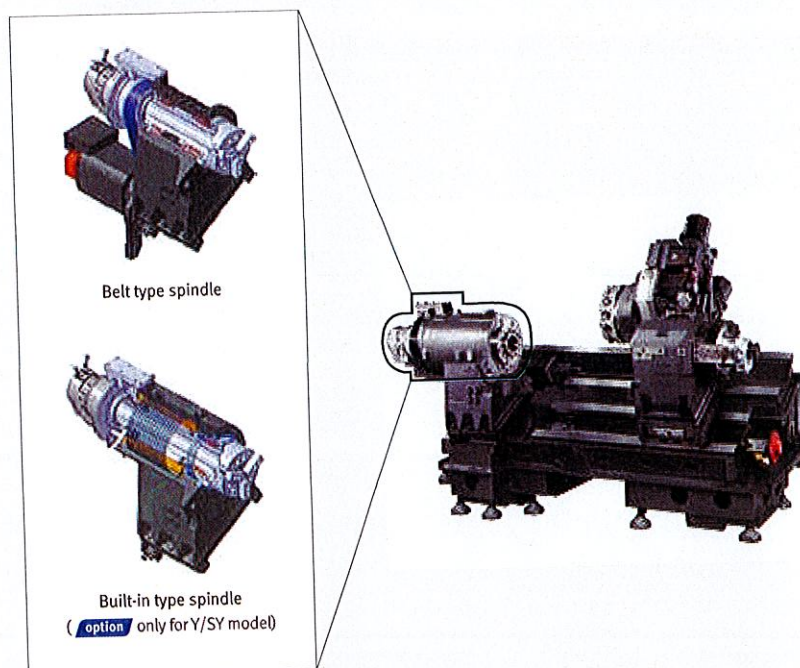
Detailed Information

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Spindle

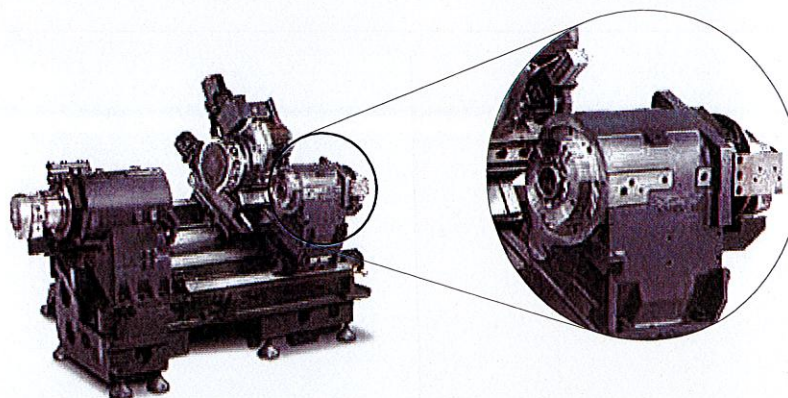
Applying superior spindle motor & increase rigidity of headstock, to achieve stable performance during heavy & high speed machining.



Model	Type	Max. speed r/min	Max. power kW (Hp)	Max. torque N-m (ft-lbs)
PUMA 2100	Belt	4500	18.5 (25)	183 (135)
PUMA 2600	Belt	3500	22 (30)	240 (177)
PUMA 2600B	Belt	2800	22 (30)	1123 (829)
PUMA 3100	Belt	2800	22 (30)	1123 (829)
	Built-in option	3000	30 (40)	1203 (888)

Sub spindle

Sub spindle function allow rear side cutting in a single setup.



Model	Type	Max. speed r/min	Max. power kW (Hp)	Max. torque N-m (ft-lbs)
PUMA 2100 / PUMA 2600	Belt	4500	7.5 (10)	85 (61)



Turret

Turret rotation is controlled by servo motor for fast and reliable tool selection. Doosan's unique BMT turret design is used on M and Y specification models to boost heavy duty milling performance.

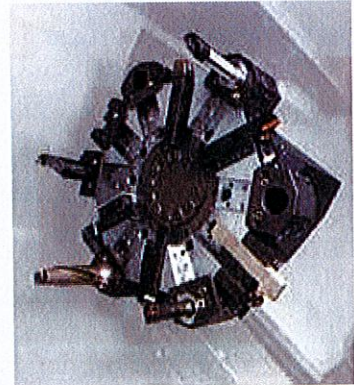
2-axis model

PUMA 2100 / 2600
No. of tool stations

12st

PUMA 3100
No. of tool stations

10st
12st option



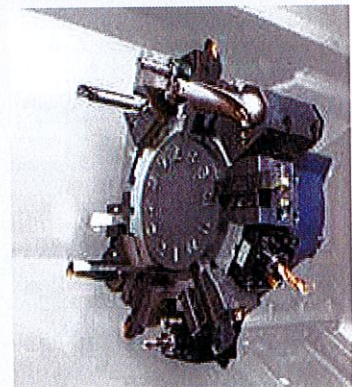
M,Y Model

PUMA 2100 : BMT 55P
PUMA 2600 / 3100 : BMT 65P
No. of tool stations

12st

Position index

12^{index}
24^{index} option



16st turret for Y axis model option

PUMA 2100 / 2600 : BMT 55P
No. of tool stations

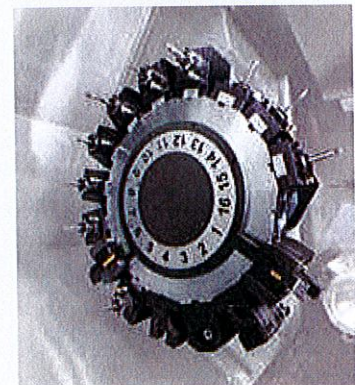
16st

Position index

16^{index}

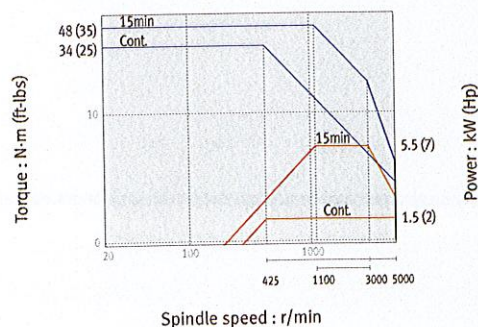
Available Model

- PUMA 2100Y / LY / SY / LSY
- PUMA 2600Y / LY / SY / LSY



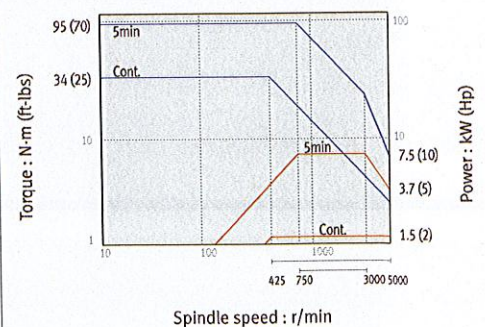
Rotary tool power-torque diagram

Max. power : 5.5 kW (7 Hp)
Max. speed : 5000 r/min



Rotary tool power-torque diagram option

Max. power : 7.5 kW (10 Hp)
Max. speed : 5000 r/min



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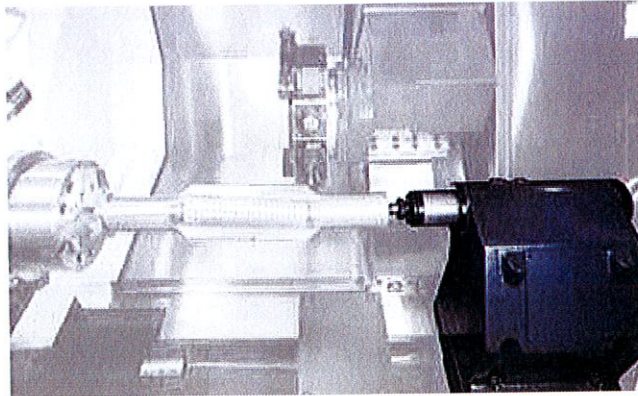
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Tailstock

High rigidity hydraulic tailstock is rigidly clamped to the bed slide way to provide stable support for long workpieces.



Tailstock type

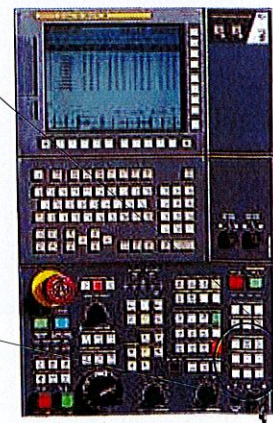
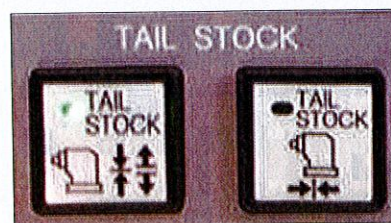
- Manual
- Programmable
- Servo driven

Tailstock type

Tailstock type		PUMA 2100 / L series	PUMA 2600 / L series PUMA 3100 / L series	PUMA 3100XL / UL series
Manual 	Live center MT4	Standard	Not available	Not available
	Built-in center MT3	Option		
	Live center MT5	Not available	Standard	
	Built-in center MT4		Option	
Programmable 	Live center MT4	Option	Not available	Not available
	Built-in center MT3			
	Live center MT5	Not available	Option	
	Built-in center MT4			
	Built-in center MT5		Not available	Standard
Servo driven 	Live center MT4	Option	Not available	Not available
	Built-in center MT3			
	Live center MT5	Not available	Option	
	Built-in center MT4			

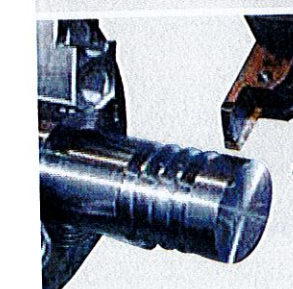
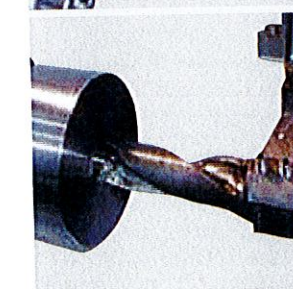
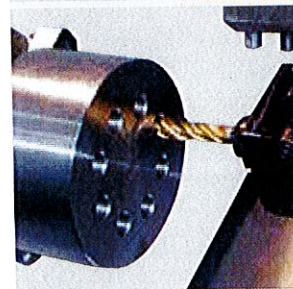
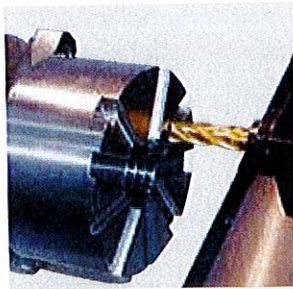
Tailstock EZ function

In programmable tail stock, the Z-axis position of tail stock is recorded automatically as the clamped position of tail stock.



Cutting Performance

Multi-functionality including end milling, face milling, drilling, tapping, etc. offers better machining performance while minimizing work setting.



End mill

Carbon steel (SM45C)

	Unit	PUMA 2100 BMT55P	PUMA 2600 BMT65P
Chip removal rate	cm ³ /min (inch ³ /min)	90 (35.43)	105 (41.34)
Tool Dia.	mm (inch)	18 (0.71)	20 (0.79)
Cutting Depth	mm (inch)	20 (0.79)	21 (0.83)
Feedrate	mm/min (ipm)	250 (9.8)	250 (9.8)

Tapping

Carbon steel (SM45C)

	Unit	PUMA 2100 BMT55P	PUMA 2600 BMT65P
Rotary tool spindle speed	r/min	240	240
Tap Size		M20 x P2.5	M24 x P3
Feedrate	mm/min (ipm)	600 (23.6)	600 (23.6)

Face mill

Carbon steel (SM45C)

	Unit	PUMA 2100 BMT55P	PUMA 2600 BMT65P
Chip removal rate	cm ³ /min (inch ³ /min)	41.9 (16.5)	53.9 (21.2)
Tool Dia.	mm (inch)	63 (2.5)	63 (2.5)
Cutting Depth	mm (inch)	3.5 (0.1)	4.5 (0.2)
Feedrate	mm/min (ipm)	190 (7.5)	190 (7.5)

O.D turning

Carbon steel (SM45C)

	Unit	PUMA 2100 BMT55P	PUMA 2600 BMT65P
Chip removal rate	cm ³ /min (inch ³ /min)	528 (207.9)	616 (242.5)
Cutting Depth	mm (inch)	4.3 (0.2)	5.0 (0.2)
Feedrate	mm/rev (ipr)	0.55 (0.022)	0.55 (0.022)

U-Drill dia. (ø63 mm (2.5 inch))

Carbon steel (SM45C)

	Unit	PUMA 2100	PUMA 2600
Chip removal rate	cm ³ /min (inch ³ /min)	472 (185.8)	630 (248.0)
Feedrate	mm/min (ipm)	0.15 (0.006)	0.2 (0.008)

Grooving

Carbon steel (SM45C)

	Unit	PUMA 2100	PUMA 2600
Chip removal rate	cm ³ /min (inch ³ /min)	169 (66.54)	241 (94.9)
Cutting Depth	mm (inch)	8 (0.3)	8 (0.3)
Feedrate	mm/rev (ipr)	0.14 (0.006)	0.2 (0.008)

* The results, indicated in this catalogue are provides as example. They may not be obtained due to differences in cutting conditions and environmental conditions during measurement.

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Standard / Optional Specifications

Various options are available to satisfy the customers' requirements.

● Standard ○ Optional △: Pre-discussion is required X Not applicable

NO.	Description	PUMA 2100(L) / 2600(L)					PUMA 3100 Std./L			PUMA 3100 XL/UL		
		2-axis Std.	M	MS	Y	SY	2-axis Std.	M	Y	2-axis Std.	M	Y
1	Special chucks	△	△	△	△	△	△	△	△	△	△	△
2	Soft jaws	●	●	●	●	●	●	●	●	●	●	●
3	Dual pressure chucking	○	○	○	○	○	○	○	○	○	○	○
4	Hydraulic chuck pressure switch	○	○	○	○	○	○	○	○	○	○	○
5	Chuck clamp confirmation	○	○	○	○	○	○	○	○	○	○	○
6	Tail stock center : Live center	●	●	X	●	X	●	●	●	X	X	X
7	Tail stock center : Dead center	○	○	X	○	X	○	○	○	●	●	●
8	Tail stock : Manual	●	●	X	●	X	●	●	●	X	X	X
9	Tail stock : Programmable	○	○	X	○	X	○	○	○	●	●	●
10	Tail stock : Servo driven	○	○	X	○	X	○	○	○	X	X	X
11	Automatic quill advance & retract	○	○	X	○	X	○	○	○	○	○	○
12	Rotary tool holder	X	●	●	●	●	X	●	●	X	●	●
13	Tool setter : Manual	○	○	○	○	○	○	○	○	○	○	○
14	Tool setter : Automatic_electric	○	○	○	○	○	○	○	○	○	○	○
15	Auto workpiece measurement	○	○	○	○	○	○	○	○	○	○	○
16	Linear scale (X-axis)	○	○	○	○	○	○	○	○	○	○	○
17	Linear scale (Z-axis)	○	○	○	○	○	○	○	○	○	○	○
18	Linear scale (Y-axis)	X	X	X	○	○	X	X	○	X	X	○
19	Feedback system : Absolute position encoder	●	●	●	●	●	●	●	●	●	●	●
20	Bar feeder interface	○	○	○	○	○	○	○	○	○	○	○
21	Bar puller	△	△	△	△	△	△	△	△	X	X	X
22	Workpiece ejector	X	X	○	X	○	X	X	X	X	X	X
23	Parts catcher with box	○	○	○	○	○	△	△	△	X	X	X
24	Parts catcher with conveyor	○	○	○	○	○	△	△	△	X	X	X
25	Workpiece cut off confirmation	X	X	○	X	○	X	X	X	X	X	X
26	Automatic front door : with safety device	○	○	○	○	○	○	○	○	○	○	○
27	Chip conveyor type : Right side	○	○	○	○	○	○	○	○	○	○	○
28	Chip conveyor type : Rear side *1	○	○	○	○	○	○	○	○	X	X	X
29	Chip bucket	○	○	○	○	○	○	○	○	○	○	○
30	TSC for main / left spindle	○	○	○	○	○	○	○	○	○	○	○
31	Oil skimmer	○	○	○	○	○	○	○	○	○	○	○
32	Coolant level switch	○	○	○	○	○	○	○	○	○	○	○
33	Coolant chiller	○	○	○	○	○	○	○	○	○	○	○
34	Oil mist collector	○	○	○	○	○	○	○	○	○	○	○
35	Coolant blower	○	○	○	○	○	○	○	○	○	○	○
36	Air blower	○	○	○	○	○	○	○	○	○	○	○
37	Air gun	○	○	○	○	○	○	○	○	○	○	○
38	Signal tower (yellow, red, green)	○	○	○	○	○	○	○	○	○	○	○
39	Gantry loader	△	△	△	△	△	△	△	△	△	△	△
40	V-stand for shaft workpiece	○	○	X	○	X	○	○	○	X	X	X

*1 : PUMA 2100/L, PUMA 2600, PUMA 3100 only

Steady rest

○ Optional X Not applicable

Steady Rest		PUMA 2100		PUMA 2600		PUMA 3100	
		Std.	L	Std.	L	Std./L	XL/UL
Type	Hydraulic	○	○	○	○	○	○
	Programmable	○	○	○	○	○	○
	Servo driven *1	X	X	X	X	X	○
Size	SLU-1	○	○	○	○	X	X
	SLU-2	○	○	○	○	○	○
	SLU-B3.1	X	○	○	○	X	X
	SLU-3.1	X	X	X	X	○	○
	SLU-3.2	X	X	X	X	X	○
	SLU-4	X	X	X	X	X	○ *2
	SLU-B4	X	X	X	X	X	○

*1 : Rack & Pinion type.

*2 : SLU-4 is not available in servo driven type.

* Recommend using coolant chiller

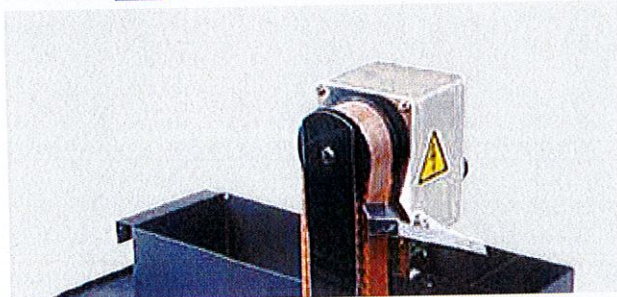
High pressure coolant

Model		PUMA 2100 / 2600 / 3100	
		60Hz	50Hz
Standard	1.5 bar	0.4 kW x 0.15 MPa x 40 L/min	0.4 kW x 0.15 MPa x 40 L/min
	5 bar	0.9 kW x 0.45 MPa x 30 L/min	0.9 kW x 0.30 MPa x 30 L/min
	7 bar	1.5 kW x 0.7 MPa x 30 L/min	1.5 kW x 0.5 MPa x 30 L/min
	10 bar*	2.2 kW x 1.0 MPa x 30 L/min	2.2 kW x 0.7 MPa x 30 L/min
option	15 bar*	3.7 kW x 1.45 MPa x 30 L/min	4.0 kW x 2.8 MPa x 20 L/min
	28 bar*	4.0 kW x 2.8 MPa x 20 L/min	4.0 kW x 1.95 MPa x 20 L/min
	70 bar*	5.5 kW x 7.0 MPa x 30 L/min	5.5 kW x 7.0 MPa x 26 L/min

PUMA
2100/2600/3100
series

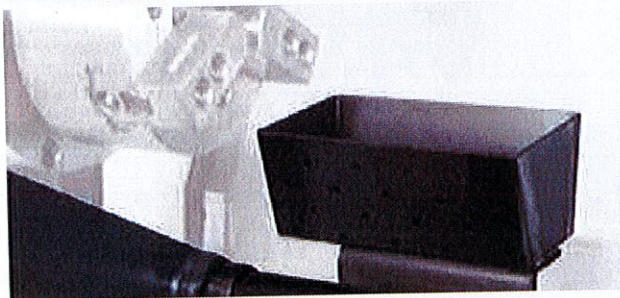
Peripheral equipments

Oil skimmer option



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

Part catcher option



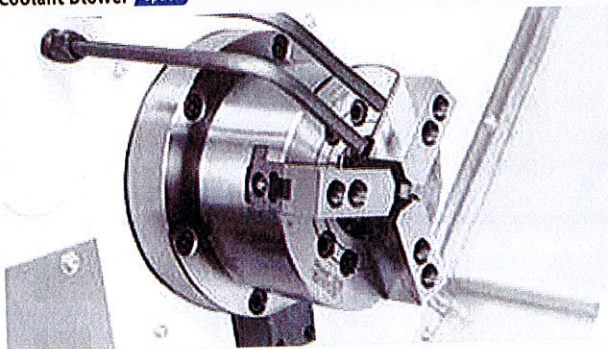
The part catcher automatically accepts parts completed of machining, and ejects them out of the system.

Mist collector option

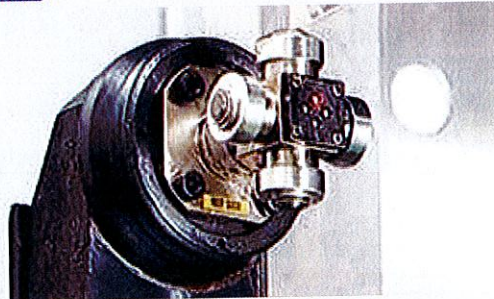


The mist collector absorbs airborne oil vapor and fine dusts in the system to improve working environment.

Coolant Blower option

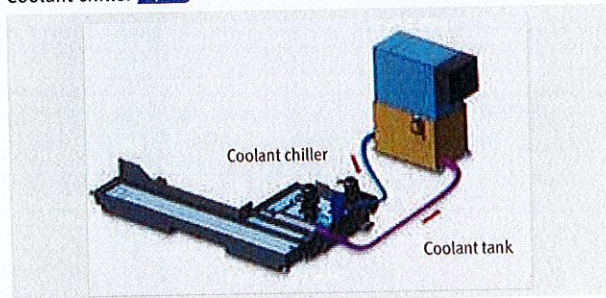


Tool setter option



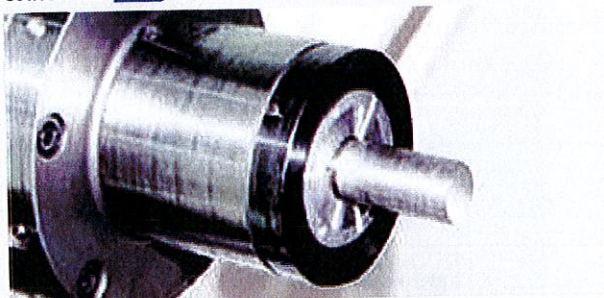
The tool setter facilitates setting of tools, and fast and precise length compensation of abraded tool.

Coolant chiller option



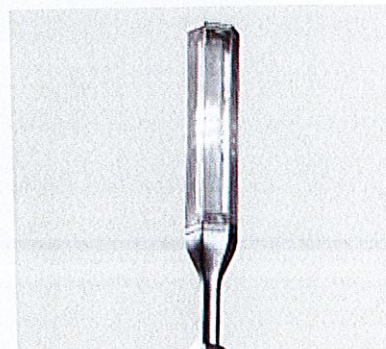
Detachable coolant chiller is recommended to keep thermal error minimal and get higher machining precision.

Collet chuck option



The collet chuck is ideal for loading workpiece of small diameter and light weight.

Singnal tower option



Product Preview

FANUC

User-friendly OP Panel

Basic information

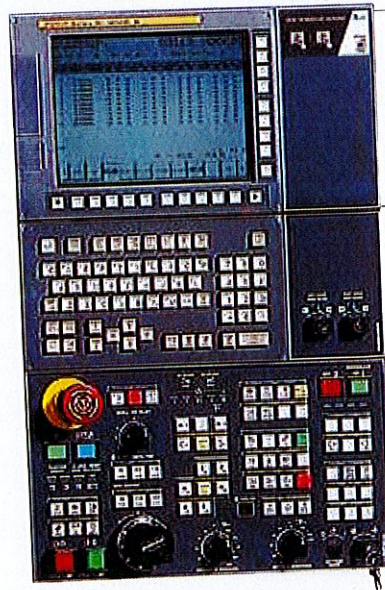
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Apply Fanuc CNC on the Doosan machine to fulfill best performance and productivity.



10.4 inch Display

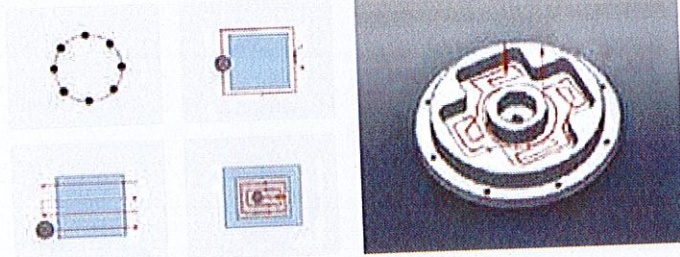
- USB & PCMCIA card (Std.)
- Qwerty type keyboard
- Easy to put button switch for attached option
- Ergonomic new design

EZ-Guide i

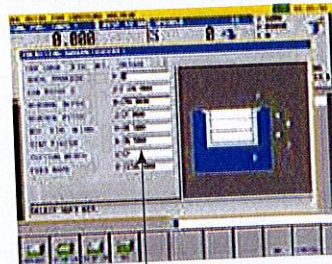
Using the DOOSAN EZ-Guide i, users can create a cutting program for any desired shape, including patterns, by entering figures only.

Example programming

Cutting shape



EZ-Guide i screen



Enter the dimensions of the shape.

Automatic creation of cutting program

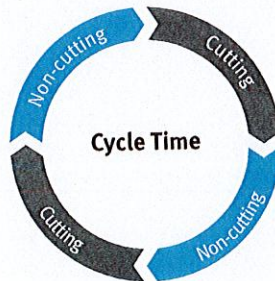
```
O7000 (SAMPLE PROGRAM) ;
...
M3 S1500 ;
G0 X50. Y125. ;
G0 Z30. ;
G1040 T0.5 J3. H0.2 K0.5 ... ;
G1020 H120. V50. U37. W68. ... ;
G0 Z80. ;
M5 ;
```

A cutting program is automatically created with the entered values.

Improve productivity

Reduced
non-cutting
cycle time

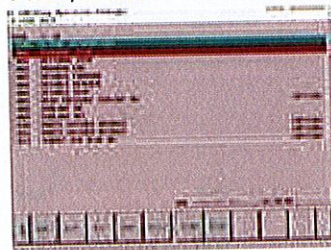
10 %



Non-cutting time during machining process is dramatically reduced to guarantee the highest productivity.

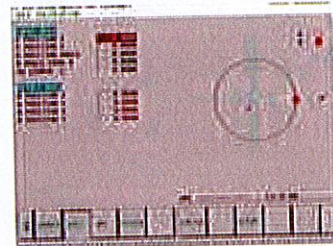
Easy operation package

G code / M code



G code / M code help function provides code number and description to view.

Calculator



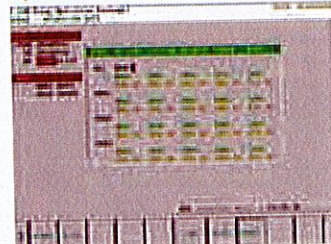
Calculator function provides a variety of calculations which are arithmetic, hole, arc, machining condition.

Turret recovery



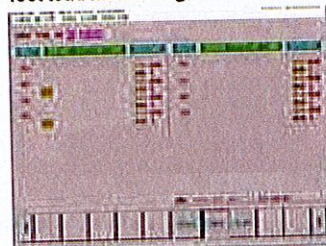
Screen with recovery information about turret malfunction.

Operation rate



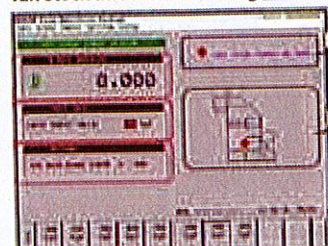
Function allows users to easily keep track of machine operating hours and the number of completed parts.

Tool load monitoring



This function detects overload on tools, caused by wear and damage, and triggers an alarm to minimize damage.

Tail stock thrust force setting option



This function allows users to easily setup tailstock thrust force on the screen.

Spindle power-torque diagram

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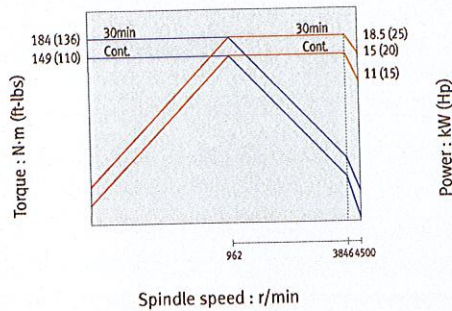
PUMA 2100 series

Belt type

Max. speed
4500 r/min

Max. power
18.5 kW
(25 Hp)

Max. torque
184 N·m
(136 ft-lbs)

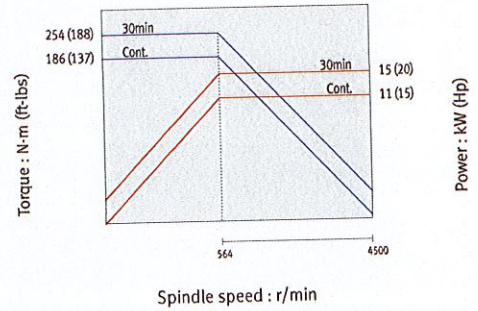


Belt type **option**

Max. speed
4500 r/min

Max. power
15 kW
(20 Hp)

Max. torque
254 N·m
(188 ft-lbs)

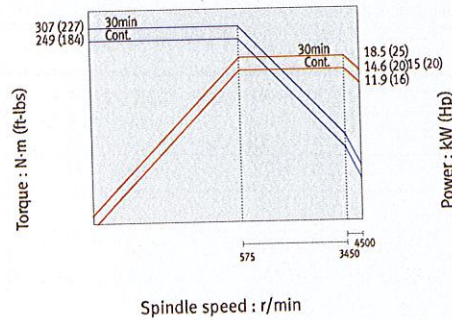


Belt type **option**

Max. speed
4500 r/min

Max. power
18.5 kW
(25 Hp)

Max. torque
307 N·m
(227 ft-lbs)



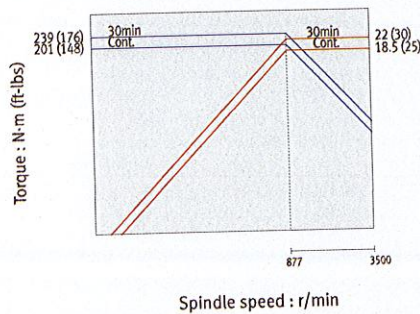
PUMA 2600 series

Belt type

Max. speed
3500 r/min

Max. power
22 kW
(30 Hp)

Max. torque
239 N·m
(176 ft-lbs)

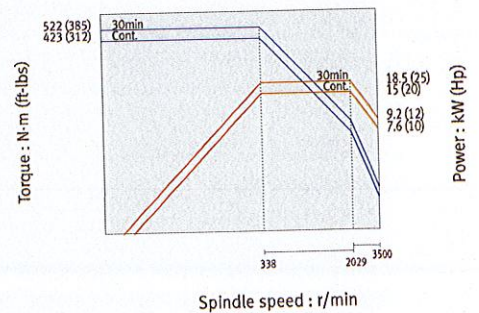


Belt type **option**

Max. speed
3500 r/min

Max. power
18.5 kW
(25 Hp)

Max. torque
522 N·m
(385 ft-lbs)

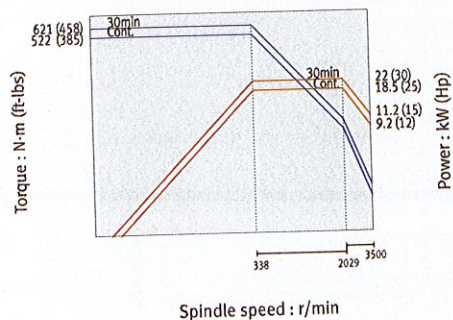


Belt type **option**

Max. speed
3500 r/min

Max. power
22 kW
(30 Hp)

Max. torque
621 N·m
(458 ft-lbs)



Spindle power-torque diagram

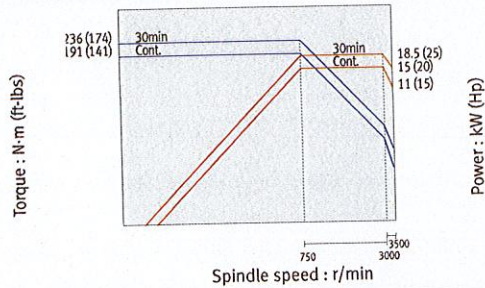
PUMA 2600 / 500, PUMA 2600M / 500

Belt type

Max. speed
3500 r/min

Max. power
18.5 kW (25 Hp)

Max. torque
236 N·m
(174 ft-lbs)



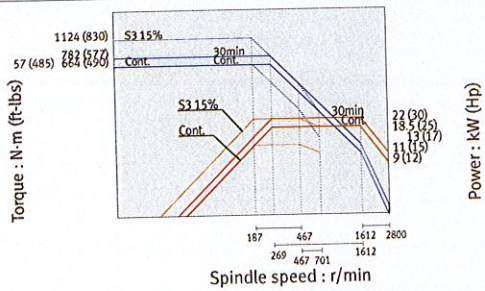
PUMA 2600B / 3100 series

Belt type

Max. speed
2800 r/min

Max. power
22 kW (30 Hp)

Max. torque
1124 N·m
(830 ft-lbs)

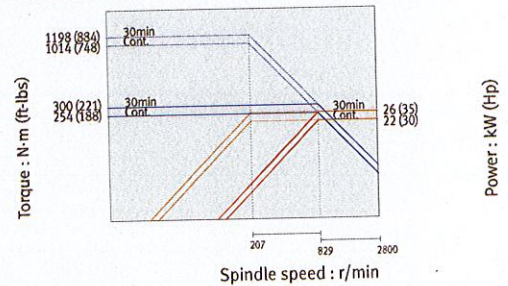


Belt type **option** With Gear Box (PUMA 2600B/LB, PUMA 3100/L/XL/UL only)

Max. speed
2800 r/min

Max. power
26 kW (35 Hp)

Max. torque
1198 N·m
(884 ft-lbs)



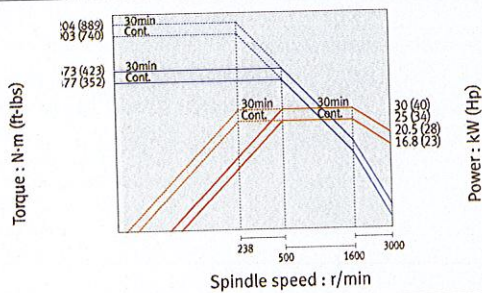
PUMA 3100 series

Built-in type **option**

Max. speed
3000 r/min

Max. power
30 kW (40 Hp)

Max. torque
1204 N·m
(889 ft-lbs)



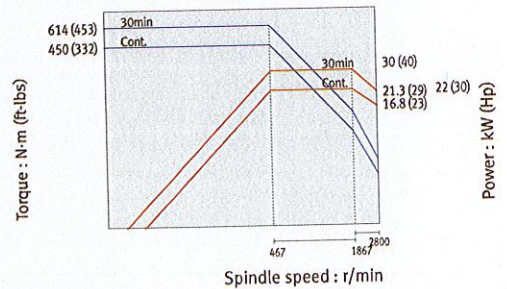
PUMA 3100 XL/UL

Belt type **option**

Max. speed
2800 r/min

Max. power
30 kW (40 Hp)

Max. torque
614 N·m
(453 ft-lbs)



Sub spindle power-torque diagram

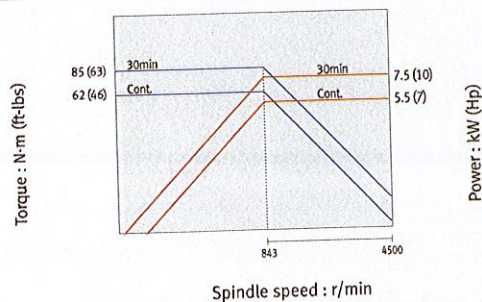
PUMA 2100 / 2600

Belt type

Max. speed
4500 r/min

Max. power
7.5 kW (10 Hp)

Max. torque
85 N·m
(63 ft-lbs)



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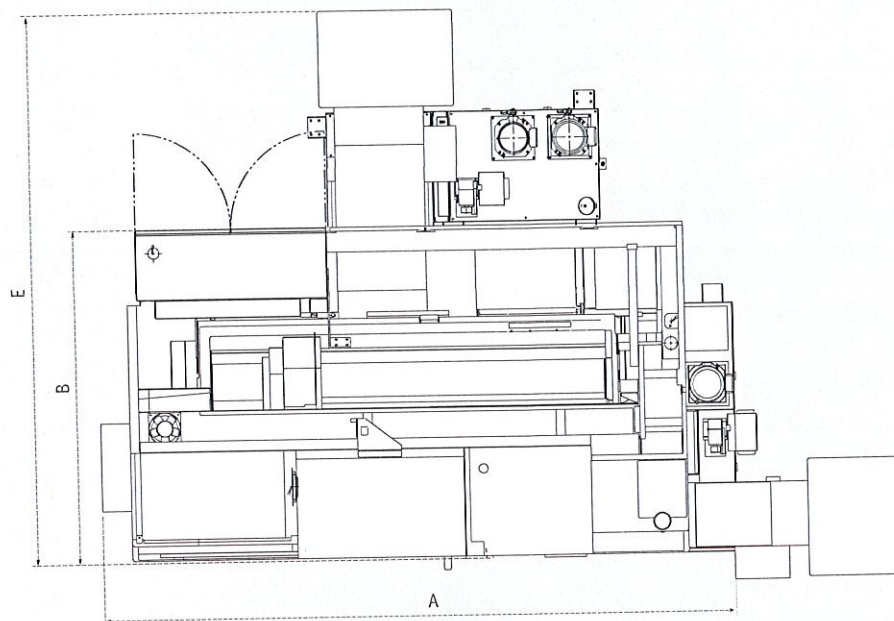
Customer Support Service

External Dimensions

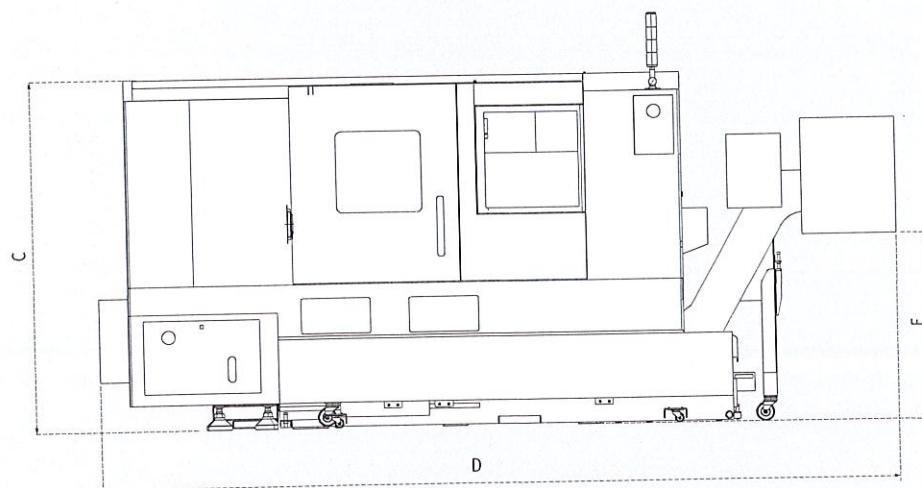
PUMA 2100 / 2600

Unit: mm (inch)

Top view



Front view



Model	A (Length)	B (Width)	C (Height)	D (Length with side chip conveyor)	E (Width with rear chip conveyor)	F (Height of ground to chip outlet)
PUMA 2100	3415 (134.4)	1863 (73.3)	1900 [2163] (74.8 [85.2])	4190 (165.0)	3032 (119.4)	1010 (39.8)
PUMA 2100L	3530 (139.0)	1863 (73.3)	1900 [2163] (74.8 [85.2])	4410 (173.6)	3032 (119.4)	1010 (39.8)
PUMA 2600/500	3415 (134.4)	1863 (73.3)	1900 (74.8)	4260 (167.7)	3032 (119.4)	1010 (39.8)
PUMA 2600	3600 (141.7)	1863 (73.3)	1900 [2163] (74.8 [85.2])	4480 (176.4)	3032 (119.4)	1010 (39.8)
PUMA 2600L	4335 (170.7)	1965 (77.4)	1900 [2163] (74.8 [85.2])	5389 (212.2)	-	1010 (39.8)
PUMA 2600B	3873 (152.5)	1863 (73.3)	1900 (74.8)	4753 (187.1)	3032 (119.4)	1010 (39.8)
PUMA 2600LB	4438 (174.7)	1965 (77.4)	1900 (74.8)	5492 (216.2)	-	1010 (39.8)

PUMA
2100/2600/3100
series

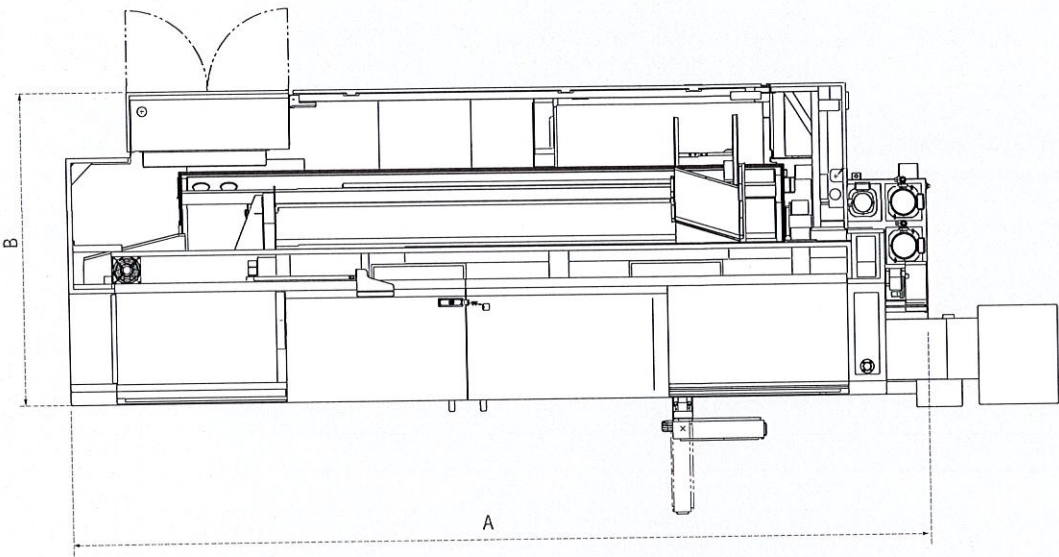
* Some peripheral equipment can be placed in other places

External Dimensions

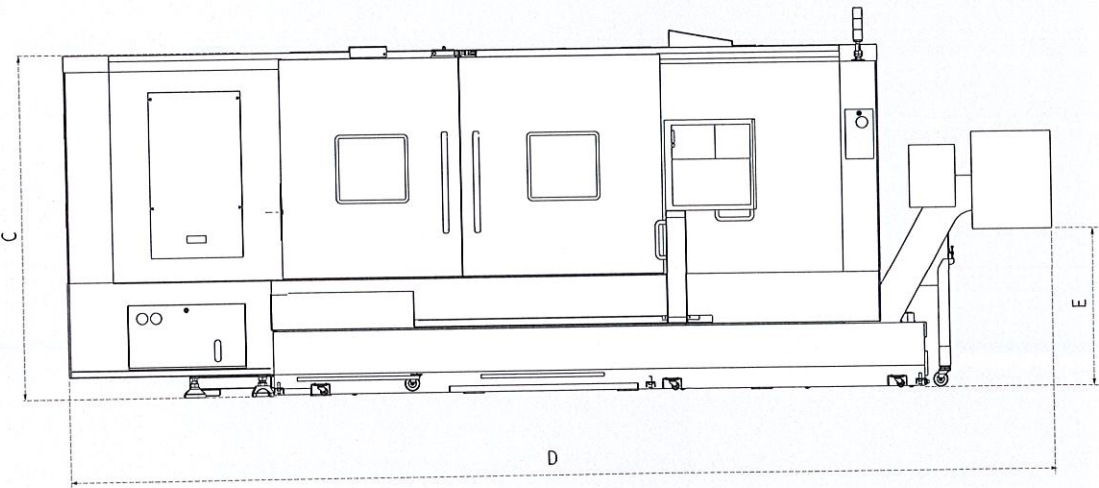
PUMA 3100XL

Unit: mm (inch)

Top view



Front view



Model	A (Length)	B (Width)	C (Height)	D (Length with side chip conveyor)	E (Height of ground to chip outlet)
PUMA 3100	3908 (153.9)	1978 (77.9)	2010 [2315] (79.1 [91.1])	4819 (189.7)	1010 (39.8)
PUMA 3100L	4527 (178.2)	2067 (81.4)	2010 [2315] (79.1 [91.1])	5599 (220.4)	1010 (39.8)
PUMA 3100XL	5615 (221.1)	2280 (89.8)	2315 (91.1)	6443 (253.7)	1010 (39.8)
PUMA 3100UL	6585 (259.3)	2280 (89.8)	2315 (91.1)	7670 (302.0)	1010 (39.8)

* Some peripheral equipment can be placed in other places

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PUMA

2100 series

Description			Unit	PUMA 2100/L	PUMA 2100M/LM	PUMA 2100MS/LMS
Capacity	Swing over bed		mm (inch)	780 (30.7)		
	Swing over front door		mm (inch)	680 (26.8)		
	Swing over saddle*		mm (inch)	630 (24.8)		
	Recom. Turning diameter		mm (inch)	210 (8.3)		
	Max. turning diameter		mm (inch)	481 (18.9)	406 (16.0)	
	Max. turning length		mm (inch)	545 / 785 (21.5 / 30.9)	520 / 760 (20.5 / 29.9)	
	Bar working diameter		mm (inch)	65 (2.6)		
Travels	Travel distance	X-axis	mm (inch)	260 (10.2)		
		Z-axis	mm (inch)	590 / 830 (23.2 / 32.7)		
		Y-axis	mm (inch)	-		
		B-axis	mm (inch)	-	590 / 830 (23.2 / 32.7)	
Feedrates	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)		
		Z-axis	m/min (ipm)	30 (1181.1)		
		Y-axis	m/min (ipm)	-		
		B-axis	m/min (ipm)	-	30 (1181.1)	
Spindle	Spindle speed (Belt Type)		r/min	4500		
	Spindle speed (Built-in Type)		r/min	-		
	Spindle nose			ASA A2#6		
	Spindle bearing diameter (Front)		mm (inch)	120 (4.7)		
	Spindle through hole diameter		mm (inch)	76 (3.0)		
	Min. spindle indexing angle (C-axis)		deg	-	0.001	
Turret	No. of tool stations		st	12	12 {24}*	
	OD tool size		mm (inch)	25 (1.0)	25 {20}* (1.0 {0.8})	
	Boring bar diameter		mm (inch)	50 (2.0)	40 {32}* (1.6 {1.3})	
	Indexing time (1st swivel time)		s	0.15		
	Rotary tool spindle speed		r/min	-	5000	
Tail stock	Quill diameter		mm (inch)	80 (3.1)		-
	Quill bore taper (Live)			MT#4		-
	Compressed air supply		mm (inch)	80 (3.1)		-
Sub-spindle	Spindle speed (Belt {Built-in})		r/min	-		4500
	Spindle nose			-		ASA A2-5
	Spindle bearing diameter (Front)		mm (inch)	-		90 (3.5)
	Spindle through hole diameter		mm (inch)	-		62 (2.4)
	Min. spindle indexing angle (C-axis)		deg	-		0.001
Motors	Main spindle motor		kW (Hp)	18.5 / 15 (25 / 20)		
	Sub spindle motor		kW (Hp)	-		7.5 / 5.5 (10 / 7)
	Rotary tool spindle motor		kW (Hp)	-		5.5 (7)
	Coolant pump motor		kW (Hp)	0.4 (0)		
Power source	Electric power supply (Rated capacity)		kVA	35.63	38.41	45.63
Machine size	Machine height		mm (inch)	1900 (74.8)		
	Machine dimension	length	mm (inch)	3310 / 3530 (130.3 / 139.0)		
		width	mm (inch)	1863 (73.3)		
	Machine weight			kg (lb)	4850 / 5350 (10692.3 / 11794.6)	5000 / 5500 (11023.0 / 12125.2)

* { } : Option

* The specifications and information above-mentioned may be changed without prior notice.

* For more details, please contact Doosan.

Machine Specifications

PUMA 2100 / 2600 series

Description			Unit	PUMA 2100Y/LY	PUMA 2100SY/LSY	PUMA 2600/L	PUMA 2600M/LM
Capacity	Swing over bed		mm (inch)	780 (30.7)			
	Swing over front door		mm (inch)	680 (26.8)			
	Swing over saddle*		mm (inch)	630 (24.8)			
	Recom. Turning diameter		mm (inch)	210 (8.3)		255 (10.0)	
	Max. turning diameter		mm (inch)	406 (16.0)		481 (18.9)	376 (14.8)
	Max. turning length		mm (inch)	520 / 760 (20.5 / 29.9)		790 / 1310 (31.1 / 51.6)	760 / 1280 (29.9 / 50.4)
	Bar working diameter		mm (inch)	65 (2.6)		76 (3.0)	
Travels	Travel distance	X-axis	mm (inch)	260 (10.2)			
		Z-axis	mm (inch)	590 / 830 (23.2 / 32.7)		830 / 1350 (32.7 / 53.1)	
		Y-axis	mm (inch)	105 (4.1)		-	
		B-axis	mm (inch)	-	590 / 830 (23.2 / 32.7)	-	
Feedrates	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)			
		Z-axis	m/min (ipm)	30 (1181.1)			
		Y-axis	m/min (ipm)	10 (393.7)		-	
		B-axis	m/min (ipm)	-	30 (1181.1)	-	
Spindle	Spindle speed (Belt Type)		r/min	4500		3500	
	Spindle speed (Built-in Type)		r/min	PUMA 2100Y II series		-	
	Spindle nose			ASA A2#6		ASA A2#8	
	Spindle bearing diameter (Front)		mm (inch)	120 (4.7)		140 (5.5)	
	Spindle through hole diameter		mm (inch)	76 (3.0)		86 (3.4)	
	Min. spindle indexing angle (C-axis)		deg	0.001		-	0.001
Turret	No. of tool stations		st	12 {24} {16}*		12	12 {24}*
	OD tool size		mm (inch)	25 {20} {25} (1.0 {0.8} {1.0})*		25 (1.0)	25 {20} (1.0 {0.8})*
	Boring bar diameter		mm (inch)	40 {32} {32} (1.6 {1.3} {1.3})*		50 (2.0)	50 {40} (2.0 {1.6})*
	Indexing time (1st swivel time)		s	0.15			
	Rotary tool spindle speed		r/min	5000		-	5000
Tail stock	Quill diameter		mm (inch)	80 (3.1)	-	100 (3.9)	
	Quill bore taper (Live)			MT#4	-	MT#5	
	Compressed air supply		mm (inch)	80 (3.1)	-	100 (3.9)	
Sub-spindle	Spindle speed (Belt [Built-in])		r/min	-	4500 [PUMA 2100SY II /LSY II]	-	
	Spindle nose			-	ASA A2-5	-	
	Spindle bearing diameter (Front)		mm (inch)	-	90	-	
	Spindle through hole diameter		mm (inch)	-	62	-	
	Min. spindle indexing angle (C-axis)		deg	-	0.001	-	
Motors	Main spindle motor		kW (Hp)	18.5 / 15 (25 / 20)		22 / 18.5 (30 / 25)	
	Sub spindle motor		kW (Hp)	-	7.5 / 5.5 (10 / 7)	-	
	Rotary tool spindle motor		kW (Hp)	5.5 (7)		-	
	Coolant pump motor		kW (Hp)	0.4 (0)			
Power source	Electric power supply (Rated capacity)		kVA	41.32	48.54	40.72	43.5
Machine size	Machine height		mm (inch)	2163 (85.2)		1900 (74.8)	
	Machine dimension	length	mm (inch)	3310 / 3530 (130.3 / 139.0)		3600 / 4335 (141.7 / 170.7)	
		width	mm (inch)	1863 (73.3)		1863 / 1965 (73.3 / 77.4)	
	Machine weight		kg (lb)	5450 / 5950 (12015.0 / 13117.3)	5900 / 6400 (13007.1 / 14109.4)	5400 / 6700 (11904.8 / 14770.8)	5550 / 6850 (12235.5 / 15101.4)

*{ } : Option

* The specifications and information above-mentioned may be changed without prior notice.

* For more details, please contact Doosan.

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PUMA

2600 series

Description			Unit	PUMA 2600MS/LMS	PUMA 2600Y/LY	PUMA 2600SY/LSY
Capacity	Swing over bed		mm (inch)	780 (30.7)		
	Swing over front door		mm (inch)	680 (26.8)		
	Swing over saddle*		mm (inch)	630 (24.8)		
	Recom. Turning diameter		mm (inch)	255 (10.0)		
	Max. turning diameter		mm (inch)	376 (14.8)	376 (14.8)	
	Max. turning length		mm (inch)	760 / 1280 (29.9 / 50.4)	760 / 1280 (29.9 / 50.4)	
	Bar working diameter		mm (inch)	76 (3.0)		
Travels	Travel distance	X-axis	mm (inch)	260 (10.2)		
		Z-axis	mm (inch)	830 / 1350 (32.7 / 53.1)		
		Y-axis	mm (inch)	-	105 (±52.5) (4.1 (±2.1))	
		B-axis	mm (inch)	830 / 1350 (32.7 / 53.1)	-	830 / 1350 (32.7 / 53.1)
Feedrates	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)		
		Z-axis	m/min (ipm)	30 (1181.1)		
		Y-axis	m/min (ipm)	-	10 (393.7)	
		B-axis	m/min (ipm)	30 (1181.1)	-	30 (1181.1)
Spindle	Spindle speed (Belt Type)		r/min	3500		
	Spindle speed (Built-in Type)		r/min	-	PUMA 2600Y II series	
	Spindle nose			ASA A2#8		
	Spindle bearing diameter (Front)		mm (inch)	140 (5.5)		
	Spindle through hole diameter		mm (inch)	86 (3.4)		
	Min. spindle indexing angle (C-axis)		deg	0.001	0.001	
Turret	No. of tool stations		st	12 {24}* 25 {20}* (1.0 {0.8})	12 {24}* 25 {20}* (1.0 {0.8})	
	OD tool size		mm (inch)	25 {20}* (1.0 {0.8})	25 {20}* (1.0 {0.8})	
	Boring bar diameter		mm (inch)	50 {40}* (2.0 {1.6})	50 {40}* (2.0 {1.6})	
	Indexing time (1st swivel time)		s	0.15		
	Rotary tool spindle speed		r/min	5000	5000	
Tail stock	Quill diameter		mm (inch)	-	100 (3.9)	-
	Quill bore taper (Live)			-	MT#5	-
	Compressed air supply		mm (inch)	-	100 (3.9)	-
Sub-spindle	Spindle speed (Belt {Built-in})		r/min	4500	-	4500 [PUMA 2600SY II /LSY II]
	Spindle nose			ASA A2-5	-	ASA A2-5
	Spindle bearing diameter (Front)		mm (inch)	90 (3.5)	-	90 (3.5)
	Spindle through hole diameter		mm (inch)	62 (2.4)	-	62 (2.4)
	Min. spindle indexing angle (C-axis)		deg	0.001	-	0.001
Motors	Main spindle motor		kW (Hp)	22 / 18.5 (30 / 25)		
	Sub spindle motor		kW (Hp)	7.5 / 5.5 (11 / 7)	-	7.5/5.5(11/7)
	Rotary tool spindle motor		kW (Hp)	5.5 {7.5}* (7 {10})	5.5 (7.5)* 7 (10)	
	Coolant pump motor		kW (Hp)	0.4 (0.5)		
Power source	Electric power supply (Rated capacity)		kVA	51.65	46.4	54.55
Machine size	Machine height		mm (inch)	1900 (74.8)	2163 (85.2)	
	Machine dimension	length	mm (inch)	3600 / 4335 (141.7 / 170.7)	3600 / 4435 (141.7 / 174.6)	
		width	mm (inch)	1863 / 1965 (73.3 / 77.4)		
	Machine weight		kg (lb)	6000 / 7300 (13227.5 / 16093.5)	6000 / 7300 (13227.5 / 16093.5)	6450 / 7750 (14219.6 / 17085.6)

*{ } : Option

* The specifications and information above-mentioned may be changed without prior notice.

* For more details, please contact Doosan.

Machine Specifications

PUMA 2600 series

Description			Unit	PUMA 2600/500	PUMA 2600M/500	PUMA 2600B/LB	PUMA 2600MB/LMB
Capacity	Swing over bed		mm (inch)	780 (30.7)			
	Swing over front door		mm (inch)	680 (26.8)			
	Swing over saddle*		mm (inch)	630 (24.8)			
	Recom. Turning diameter		mm (inch)	255 (10.0)		305 (12.0)	
	Max. turning diameter		mm (inch)	481 (18.9)	376 (14.8)	481 (18.9)	376 (14.8)
	Max. turning length		mm (inch)	550 (21.7)	520 (20.5)	755 / 1275 (29.7 / 50.2)	725 / 1245 (28.5 / 49.0)
	Bar working diameter		mm (inch)	65 (2.6)		102 (4.0)	
Travels	Travel distance	X-axis	mm (inch)	260 (10.2)			
		Z-axis	mm (inch)	590 (23.2)		830 / 1350 (32.7 / 53.1)	
		Y-axis	mm (inch)	-			
		B-axis	mm (inch)	-			
Feedrates	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)			
		Z-axis	m/min (ipm)	30 (1181.1)			
		Y-axis	m/min (ipm)	-			
		B-axis	m/min (ipm)	-			
Spindle	Spindle speed (Belt Type)		r/min	3500		2800	
	Spindle nose			ASA A2-8		A2-11	
	Spindle bearing diameter (Front)		mm (inch)	140 (5.5)		160 (6.3)	
	Spindle through hole diameter		mm (inch)	86 (3.4)		115 (4.5)	
	Min. spindle indexing angle (C-axis)		deg	0.001			
Turret	No. of tool stations		st	12	12 {24}*	12	12 {24}*
	OD tool size		mm (inch)	25 (1.0)	25 {20}* (1.0 {0.8})	25	25 {20}* (1.0 {0.8})
	Boring bar diameter		mm (inch)	50 (2.0)	50 {40}* (2.0 {1.6})	50	50 {40}* (2.0 {1.6})
	Indexing time (1st swivel time)		s	0.15			
	Rotary tool spindle speed		r/min	-	5000	-	5000
Tail stock	Quill diameter		mm (inch)	100 (3.9)			
	Quill bore taper (Live)			MT#5			
	Compressed air supply		mm (inch)	100 (3.9)			
Sub-spindle	Spindle speed (Belt [Built-in])		r/min	-			
	Spindle nose			-			
	Spindle bearing diameter (Front)		mm (inch)	-			
	Spindle through hole diameter		mm (inch)	-			
	Min. spindle indexing angle (C-axis)		deg	-			
Motors	Main spindle motor		kW (Hp)	18.5 / 15 (25 / 20)		22 / 18.5 (30 / 25)	
	Sub spindle motor		kW (Hp)	-			
	Rotary tool spindle motor		kW (Hp)	-	5.5 (7)	-	5.5 (7)
	Coolant pump motor		kW (Hp)	0.4 (0)			
Power source	Electric power supply (Rated capacity)		kVA	40.72	44.42	40.72	44.42
Machine size	Machine height		mm (inch)	1900 (74.8)			
	Machine dimension	length	mm (inch)	3370 (132.7)		3700 {4438}* (145.7 {174.7})	
		width	mm (inch)	1863 (73.3)			
	Machine weight		kg (lb)	4900 (10802.5)	5000 (11023.0)	5500 / 6800 (12125.2 / 14991.2)	5650 / 6950 (12455.9 / 15321.9)

*{ } : Option

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* For more details, please contact Doosan.

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PUMA

2600 series

Description			Unit	PUMA 2600SB	PUMA 2600MSB
Capacity	Swing over bed		mm (inch)	780 (30.7)	
	Swing over front door		mm (inch)	680 (26.8)	
	Swing over saddle*		mm (inch)	630 (24.8)	
	Recom. Turning diameter		mm (inch)	305 (12.0)	
	Max. turning diameter		mm (inch)	481 (18.9)	376 (14.8)
	Max. turning length		mm (inch)	755 (29.7)	725 (28.5)
	Bar working diameter		mm (inch)	102 (4.0)	
Travels	Travel distance	X-axis	mm (inch)	260 (10.2)	
		Z-axis	mm (inch)	830 (32.7)	
		Y-axis	mm (inch)	-	
		B-axis	mm (inch)	830 (32.7)	
Feedrates	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)	
		Z-axis	m/min (ipm)	30 (1181.1)	
		Y-axis	m/min (ipm)	-	
		B-axis	m/min (ipm)	30 (1181.1)	
Spindle	Spindle speed (Belt Type)		r/min	2800	
	Spindle nose			ASA A2-11	
	Spindle bearing diameter (Front)		mm (inch)	160 (6.3)	
	Spindle through hole diameter		mm (inch)	115 (4.5)	
	Min. spindle indexing angle (C-axis)		deg	-	0.001
Turret	No. of tool stations		st	12	12 (24)*
	OD tool size		mm (inch)	25 (1.0)	25 (20) (1.0 (0.8))*
	Boring bar diameter		mm (inch)	50 (2.0)	50 (40) (2.0 (1.6))*
	Indexing time (1st swivel time)		s	0.15	
	Rotary tool spindle speed		r/min	-	5000
Tail stock	Quill diameter		mm (inch)	100 (3.9)	
	Quill bore taper (Live)			MT#5	
	Compressed air supply		mm (inch)	100 (3.9)	
Sub-spindle	Spindle speed (Belt [Built-in])		r/min	4500	
	Spindle nose			ASA A2#5	
	Spindle bearing diameter (Front)		mm (inch)	90 (3.5)	
	Spindle through hole diameter		mm (inch)	62 (2.4)	
	Min. spindle indexing angle (C-axis)		deg	0.001	
Motors	Main spindle motor		kW (Hp)	22 / 18.5 (30 / 25)	
	Sub spindle motor		kW (Hp)	7.5 / 5.5 (10 / 7)	
	Rotary tool spindle motor		kW (Hp)	-	5.5 (7)
	Coolant pump motor		kW (Hp)	0.4 (0)	
Power source	Electric power supply (Rated capacity)		kVA	48.86	
Machine size	Machine height		mm (inch)	1900 (74.8)	
	Machine dimension	length	mm (inch)	3700 (145.7)	
		width	mm (inch)	1863 (73.3)	
	Machine weight		kg (lb)	5950 (13117.3)	6100 (13448.0)

*{ } : Option

* The specifications and information above-mentioned may be changed without prior notice.

* For more details, please contact Doosan.

Machine Specifications

PUMA 3100 series

Description			Unit	PUMA 3100 /L/XL/UL	PUMA 3100 M/LM/XLM/ULM	PUMA 3100 Y/LY/XLY/ULY
Capacity	Swing over bed		mm (inch)	850 (33.5)		
	Swing over front door		mm (inch)	720 (28.3)** / 850 (33.5)***		
	Swing over saddle*		mm (inch)	670 (26.4)		
	Recom. Turning diameter		mm (inch)	305 (12.0)		
	Max. turning diameter		mm (inch)	525 (20.7)	420 (16.5)	
	Max. turning length		mm (inch)	790 / 1310 / 2150 / 3150 (31.1 / 51.6 / 84.6 / 124.0)	765 / 1285 / 2125 / 3125 (30.1 / 50.6 / 83.7 / 123.0)	
	Bar working diameter		mm (inch)	102 (4.0)		
Travels	Travel distance	X-axis	mm (inch)	293 {30.5+262.5} (11.5 {1.2+10.3})*	293 {83+210} (11.5 {3.3+8.3})*	
		Z-axis	mm (inch)	830 / 1350 / 2190 / 3190(32.7 / 53.1 / 86.2 / 125.6)		
		Y-axis	mm (inch)	-		130 (±65) (5.1 (±2.6))
		B-axis	mm (inch)	-		
Feedrates	Rapid traverse	X-axis	m/min (ipm)	30 (1181.1)		
		Z-axis	m/min (ipm)	30 / 30 / 30 / 26 (1181.1 / 1181.1 / 1181.1 / 1023.6)		
		Y-axis	m/min (ipm)	-		10 (393.7)
		B-axis	m/min (ipm)	-		
Spindle	Spindle speed (Belt Type)		r/min	2800		
	Spindle speed (Built-in Type)		r/min	3000		
	Spindle nose			ASA A2#11		
	Spindle bearing diameter (Front)		mm (inch)	160 (6.3)		
	Spindle through hole diameter		mm (inch)	115 (4.5)		
	Min. spindle indexing angle (C-axis)		deg	0.001		
Turret	No. of tool stations		st	10	12	
	OD tool size		mm (inch)	25 (1.0)		
	Boring bar diameter		mm (inch)	50 (2.0)		
	Indexing time (1st swivel time)		s	0.15		
	Rotary tool spindle speed		r/min	-	5000	
Tail stock	Quill diameter		mm (inch)	100 / 100 / 120 / 120 (3.9 / 3.9 / 4.7 / 4.7)		
	Quill bore taper (Live)			MT#5		
	Compressed air supply		mm (inch)	100 / 100 / 120 / 120 (3.9 / 3.9 / 4.7 / 4.7)		
Sub-spindle	Spindle speed (Belt (Built-in))		r/min	-		
	Spindle nose			-		
	Spindle bearing diameter (Front)		mm (inch)	-		
	Spindle through hole diameter		mm (inch)	-		
	Min. spindle indexing angle (C-axis)		deg	-		
Motors	Main spindle motor		kW (Hp)	22 / 18.5 (30 / 25)		
	Sub spindle motor		kW (Hp)	-		
	Rotary tool spindle motor		kW (Hp)	7.5 / 5.5 (7 / 10)		
	Coolant pump motor		kW (Hp)	0.4		
Power source	Electric power supply (Rated capacity)		kVA	41.64 / 41.64 / 42.83 / 42.83	44.42 / 44.42 / 45.61 / 45.61	46.40 / 46.40 / 47.59 / 47.59
Machine size	Machine height		mm (inch)	2020 / 2020 / 2315 / 2315 (79.5 / 79.5 / 91.1 / 91.1)		2315 (91.1)
	Machine dimension	length	mm (inch)	3910 / 4530 / 5615 / 5685 (153.9 / 178.3 / 221.1 / 223.8)		
		width	mm (inch)	2002 / 2105 / 2280 / 2280 (78.8 / 82.9 / 89.8 / 89.8)		
	Machine weight		kg (lb)	5850 / 7350 / 10150 / 11650 (12896.9 / 16203.7 / 22376.6 / 23683.5)	6000 / 7500 / 10300 / 11800 (13227.5 / 16534.4/22707.3 / 26014.4)	6500 / 8000 / 10800 / 12300 (14329.8 / 17636.7 / 23809.6 / 27116.5)

*{ } : Option

* The specifications and information above-mentioned may be changed without prior notice.
 ** : PUMA 3100/M/L/LM/Y/LY *** : PUMA 3100XL/UL/XLM/ULY/ULY
 * For more details, please contact Doosan.

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FANUC

NO.	Division	Item	Spec.	DOOSAN-FANUC i					Fanuc 31i	
				2 axis	M	MS	Y	SY	Y	SY
1	Controlled axis	Controlled axes		X, Z	X, Z, C	X, Z, C, B	X, Z, C, Y	X, Z, C1, Y, C2, B	X, Z, C, Y	X, Z, C1, Y, C2, B
2		Cs contouring control		X	●	●	●	●	●	●
3		Synchronous / Composite control (C1 & C2 Synchro Control)		X	X	●	X	●	X	●
4		Torque control		●	●	●	●	●	●	●
5		HRV2 control		●	●	●	●	●	●	●
6		Inch / metric conversion		●	●	●	●	●	●	●
7		Stored limit check before move		●	●	●	●	●	○	○
8		Chamfering on / off		●	●	●	●	●	●	●
9		Unexpected disturbance torque detection function		●	●	●	●	●	●	●
10		Position switch		●	●	●	●	●	●	●
11	Operation	DNC operation	Included in RS232C interface.	●	●	●	●	●	●	●
12		DNC operation with memory card		●	●	●	●	●	●	●
13		Tool retract and recover		X	X	X	X	X	○	○
14		Dry run		●	●	●	●	●	●	●
15		Single block		●	●	●	●	●	●	●
16		Handle interruption		○	○	○	○	○	○	○
17		Incremental feed	x1, x10, x100	●	●	●	●	●	●	●
18		Manual handle retrace		○	○	○	○	○	○	○
19		Active block cancel		X	X	X	X	X	○	○
20	Interpolation functions	Nano interpolation		●	●	●	●	●	●	●
21		Linear interpolation		●	●	●	●	●	●	●
22		Circular interpolation		●	●	●	●	●	●	●
23		Polar coordinate interpolation		X	●	●	●	●	●	●
24		Cylindrical interpolation		X	●	●	●	●	●	●
25		Helical interpolation		X	○	○	●	●	●	●
26		Thread cutting, synchronous cutting		●	●	●	●	●	●	●
27		Multi threading		●	●	●	●	●	●	●
28		Thread cutting retract		●	●	●	●	●	●	●
29		Continuous threading		●	●	●	●	●	●	●
30		Variable lead thread cutting		●	●	●	●	●	○	○
31		Circular thread cutting		X	X	X	X	X	○	○
32		Polygon machining with two spindles		X	●	●	●	●	○	○
33		High-speed skip	Input signal is 8 points.	○	○	○	○	○	○	○
34	Feed function	2nd reference position return	G30	●	●	●	●	●	●	●
35		3rd / 4th reference position return		●	●	●	●	●	○	○
36		Override cancel		●	●	●	●	●	●	●
37		AI contour control I		○	○	○	○	○	●	●
38	Program input	AI contour control II		○	○	○	○	○	○	○
39		Rapid traverse block overlap		●	●	●	●	●	●	●
40	Program input	Optional block skip	9 pieces	●	●	●	●	●	●	●
41		Absolute / incremental programming	Combined use in the same block	●	●	●	●	●	●	●
42		Diameter / Radius programming		●	●	●	●	●	●	●
43		Automatic coordinate system setting		●	●	●	●	●	●	●
44		Workpiece coordinate system	G52 - G59	●	●	●	●	●	●	●
45		Workpiece coordinate system preset		●	●	●	●	●	○	○
46		Addition of workpiece coordinate system	48 pairs	X	X	X	X	X	○	○
47	Program input	Direct drawing dimension programming		●	●	●	●	●	●	●

● Standard ○ Optional X Not applicable

NO.	Division	Item	Spec.	DOOSAN-FANUC i					Fanuc 31i	
				2 axis	M	MS	Y	SY	Y	SY
48	Program input	G code system	A	●	●	●	●	●	●	●
49		G code system	B / C	●	●	●	●	●	●	●
50		Chamfering / Corner R		●	●	●	●	●	○	○
51		Custom macro		●	●	●	●	●	●	●
52		Addition of custom macro common variables	#100 - #199, #500 - #999	●	●	●	●	●	○	○
53		Interruption type custom macro		●	●	●	●	●	○	○
54		Canned cycle		●	●	●	●	●	●	●
55		Multiple repetitive cycles	G70-G76	●	●	●	●	●	●	●
56		Multiple repetitive cycles II	Pocket profile	●	●	●	●	●	●	●
57		Canned cycle for drilling		●	●	●	●	●	●	●
58		Automatic corner override		X	X	X	X	X	○	○
59		Coordinate system shift		●	●	●	●	●	●	●
60		Direct input of coordinate system shift		●	●	●	●	●	●	●
61		Pattern data input		●	●	●	●	●	○	○
62	Operation	EZ Guidei (Conversational Programming Solution)		●	●	●	●	●	●	●
63	Guidance Function	EZ Operation package		●	●	●	●	●	●	●
64	Auxiliary / Spindle speed function	Constant surface speed control		●	●	●	●	●	●	●
65		Spindle override	0 - 150%	●	●	●	●	●	●	●
66		Spindle orientation		●	●	●	●	●	●	●
67		Spindle synchronous control		X	X	●	X	●	X	●
68		Rigid tap		●	●	●	●	●	●	●
69		Arbitrary speed threading		○	○	○	○	○	○	○
70	Tool function / Tool compensation	Tool offset pairs	32-pairs	X	X	X	X	X	●	●
71			64-pairs	●	●	X	●	X	○	○
72			99-pairs	○	○	X	○	X	○	○
73			128-pairs	X	X	●	X	●	X	X
74			200-pairs	X	X	○	X	○	○	○
75			400-pairs	X	X	X	X	X	○	○
76		Tool offset		●	●	●	●	●	●	●
77		Tool radius/Tool nose radius compensation		●	●	●	●	●	●	●
78		Tool geometry / wear compensation		●	●	●	●	●	●	●
79		Automatic tool offset	G36/G37	●	●	●	●	●	●	●
80		Direct input of offset value measured B		●	●	●	●	●	●	●
81		Tool life management		●	●	●	●	●	●	●
82	Accuracy compensation function	Backlash compensation for each rapid traverse and cutting feed		●	●	●	●	●	●	●
83		Stored pitch error compensation		○	○	○	○	○	○	○
84	Editing operation	Part program storage size & Number of registerable programs	400 programs_512KB	●	●	X	●	X	X	X
85			800 programs_1MB	X	X	●	X	●	X	X
86			400 programs_2MB	○	○	X	○	X	X	X
87			800 programs_2MB	X	X	○	X	○	X	X
88			500 programs_256KB	X	X	X	X	X	●	●
89			1000 programs_512KB, 1MB, 2MB, 4MB, 8MB	X	X	X	X	X	○	○
90			2000 programs_1MB	X	X	X	X	X	○	○
91			4000 programs_2MB, 4MB, 8MB	X	X	X	X	X	○	○
92		Program protect		●	●	●	●	●	●	●
93		Password function		●	●	●	●	●	○	○
94		Playback		●	●	●	●	●	○	○
95	Data input / output	Fast data server		○	○	○	○	○	○	○
96		External data input		●	●	●	●	●	○	○
97		Memory card input / output		●	●	●	●	●	●	●
98		USB memory input / output		●	●	●	●	●	●	●
99		Automatic data backup		○	○	○	○	○	●	●
100	Interface function	Embedded Ethernet		●	●	●	●	●	●	●
101		Fast Ethernet		○	○	○	○	○	○	○
102	Others	Display unit	10.4" color LCD	●	●	●	●	●	●	●
103		Robot interface	with PMC I / O module	○	○	○	○	○	○	○
104			with PROFIBUS-DP	○	○	○	○	○	○	○

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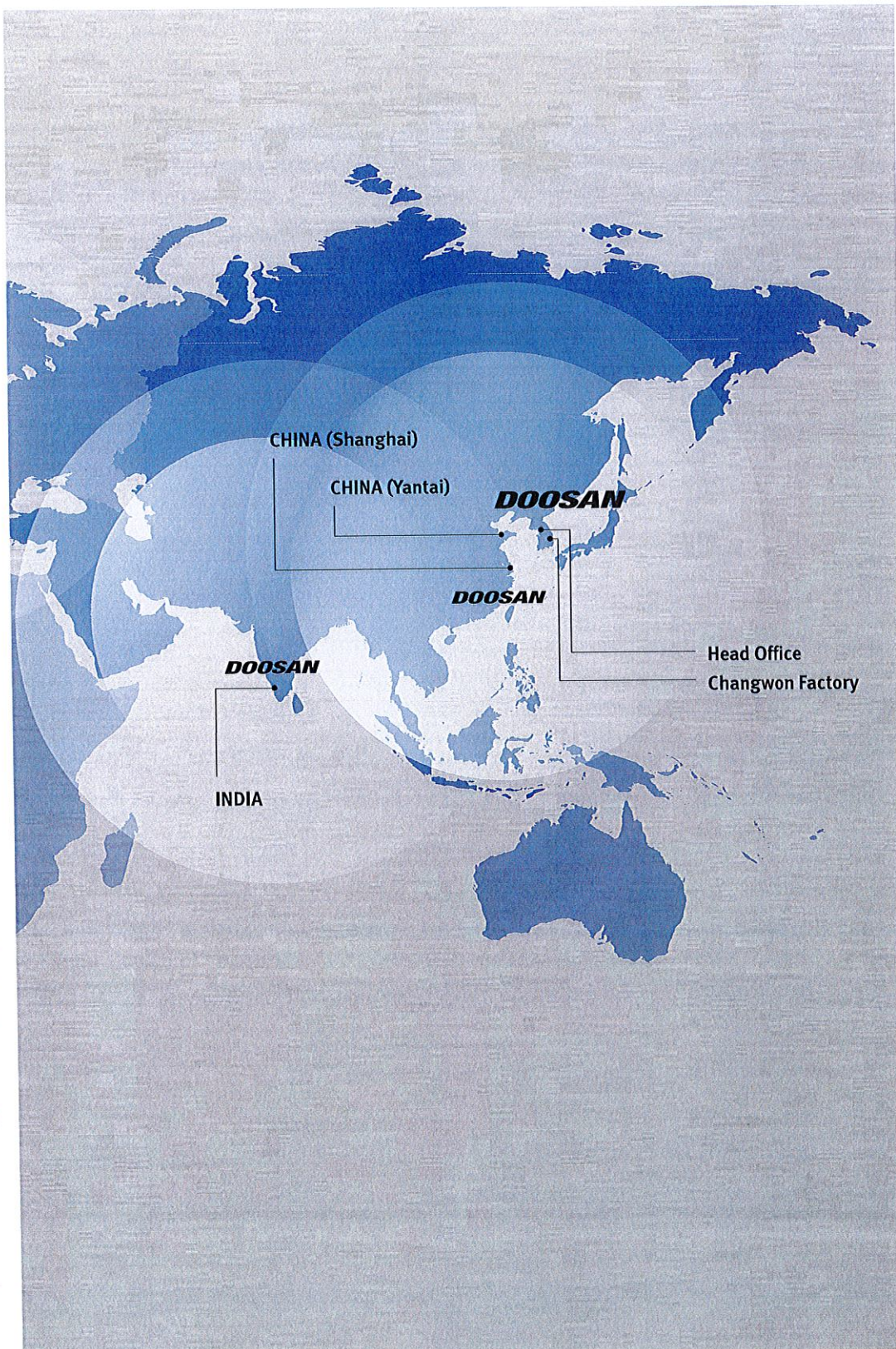
Responding to Customers Anytime, Anywhere



Doosan Machine Tools' Global Network, Responding to Customer's Needs nearby, Anytime, Anywhere

Doosan machine tools provides a system-based professional support service before and after the machine tool sale by responding quickly and efficiently to customers' demands.

By supplying spare parts, product training, field service and technical support, we can provide top class support to our customers around the world.



Customer Support Service

We help customers to achieve success by providing a variety of professional services from pre-sales consultancy to post-sales support.

Supplying Parts



- Supplying a wide range of original Doosan spare parts
- Parts repair service

Field Services



- On site service
- Machine installation and testing
- Scheduled preventive maintenance
- Machine repair

Technical Support



- Supports machining methods and technology
- Responds to technical queries
- Provides technical consultancy

Training



- Programming / machine setup and operation
- Electrical and mechanical maintenance
- Applications engineering

Major Specifications

PUMA 2100 / 2600 / 3100 series



Description	Unit	PUM 2100	PUMA 2600	PUMA 2600B	PUMA 3100
Max. turning diameter (2axis / M&Y)	mm (inch)	481 / 406 (18.9 / 16.0)	481 / 376 (18.9 / 14.8)	481 / 376 (18.9 / 14.8)	525 / 420 (20.7 / 16.5)
Max. turning length*	mm (inch)	500 / 750 (19.7 / 29.5)	500 / 750 / 1250 (19.7 / 29.5 / 49.2)	750 / 1250 (29.5 / 49.2)	750 / 1250 / 2000 / 3000 (29.5 / 49.2 / 78.7 / 118.1)
Chuck size	inch	8	10	12	12
Bar working diameter	mm (inch)	65 (2.6)	76 (3.0)	102 (4.0)	102 (4.0)
Max. spindle speed	r/min	4500	3500	2800	2800

* approximate value

Doosan Machine Tools

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* The specifications and information above-mentioned may be changed without prior notice.

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Fire Safety
Precautions

There is a high risk of fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting use coolants and modifying the machine without the consent of the manufacturer. Please check the SAFETY GUIDANCE carefully before using the machine.

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