■ NC Specification / FANUC 0*i*-TD

	Item	Specification
Controls	Simultaneous controllable axes	X, Z axes
	Least command increment	0.001 mm (0.000039″)
	Least input increment	0.001 mm (0.000039″)
Feed functions	Feedrate override	0 ~ 150% (10 % unit)
	Dwell	G04
	Zero return	G27, G28, G30
	Pulse handle feed	x1, x10, x100
	Rapid traverse rate override	F0, 25%, 50%, 100%
	Feedrate per minute	G98
	Feedrate per revolution	G99
	3rd and 4th reference return	
	Feed forward function	
Tool functions	Tool number command	T4 - digit
	Tool nose radius compensation	G40 - G42
	Number of tool offsets	16 pairs
	Tool geometry/wear offset	Geometry & wear data
	Tool life management	
	Tool path graphic display	
Programming functions	Absolute/ incremental programming	X, Z & U, W
	Constant surface speed control	G96, G97
	Multiple repetitive canned cycle	G70 - G76
	Simple canned cycle	G90, G92, G94
	Decimal point input	Decimal point value
	Inch/metric conversion	G20, G21
	Circular interpolation by radius programming	Radius R instead of I, K
	Chamfering & corner R programming	Chamfer & corner R can be machined
	Sub program call	4 Nested holes
	Thread cutting cycle retract	Thread cutting is temp. stop, return to start point
	Work coordinate system selection	G54 - G59
	Local/ machine coordinate system	G52, G53
	Maximum programmable dimension	±99999.999mm (9999.9999″)
	M function	M3 digit
	User macros	
	Variable lead thread cutting	
	Continuous thread cutting	
	Drilling canned cycle (G80 series)	
	Line/ angle (direct dimension) programming	
	Three G code system (selectable)	
Tape functions	Input code	ISO, EIA
	I/O interface	RS-232C
	Part program storage length	1,280m
	Number of stored programs	400EA
	Search function	Sequence, program, address search
Other functions	MDI / CRT unit	8.4″ TFT LCD
	Stored stroke check 1	Overtravel control
	Background editing	Program editing during automatic operation
	Help function	Alarm & operation display
	Running time / Parts number display	Automatic running time & parts number display
	Load meter display	Spindle load display
	Self diagnostic function	Self-design Test
	Expanded program editing	Copy, move, change of NC program
	Stored stroke 2 and 3	
	Spindle orientation	

SMEC
SAMSUNG MACHINE TOOLS

SMEC Co., Ltd.
667-1, Gasul-ri, Daesan-myeon, Changwon-si Gyeongsangnam-do, Korea 641-921
Tel +82 55 250 4832(4800) Fax +82 55 250 4901(4902)
http://www.esmec.com

SAMSUNG Machine Tools

PL20/240/20MC

CNC TURNING CENTER

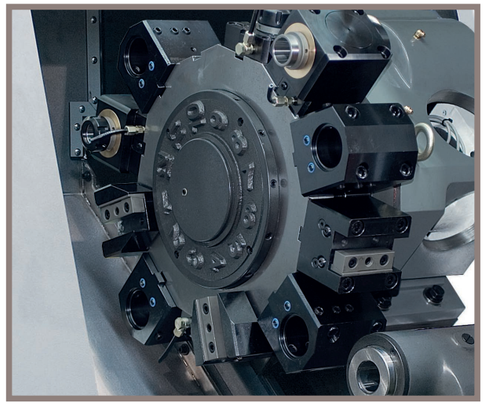
SMEC
SAMSUNG MACHINE TOOLS

SAMSUNG'S Advanced Engineering and Machine Design

- *Cast iron structure for superior dampening characteristics and thermal displacement*
- *Rigid 45 degree slant bed design for heavy-duty machining*
- *Torque tube design to minimize bending and twisting*
- *Integrated box ways for long-term rigidity and heavy-duty machining*

PL 20
PL 240
PL 20MC

SL20/20MC is a heavy duty, ultra precision Turning Center, combined with Samsung's advanced technological features.



Spindle Speed
4,000 rpm

Spindle Motor(Cont./30min)
11/15 kW (PL20/20MC)
15/18.5 kW (PL240)

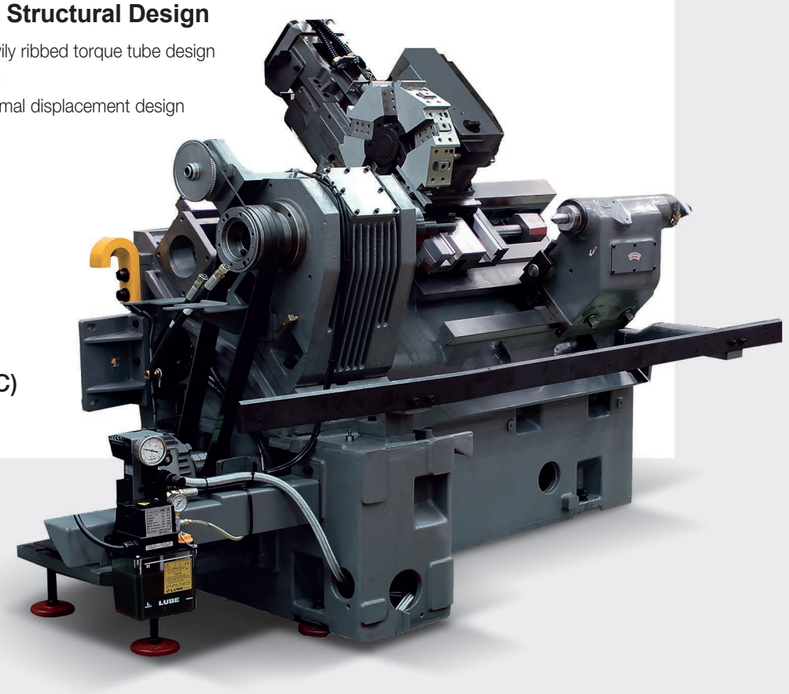
Rapid travel(X/Z)
24/24 m/min (PL20/240)
18/24 m/min (PL20MC)

■ Highly Reliable and Rigid Structural Design

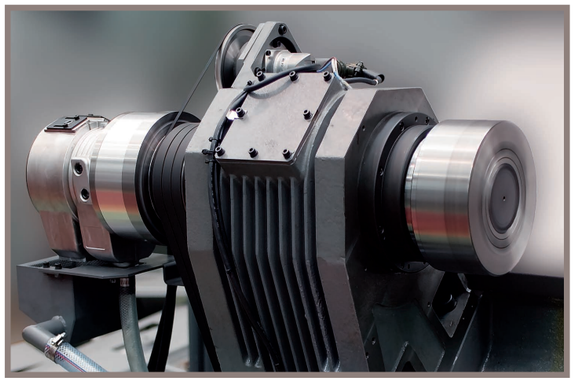
- One piece Meehanite casting with heavily ribbed torque tube design
- Rigid bed supports for powerful cutting
- Excellent vibration dampening and thermal displacement design

Max. Turning Diameter
300 mm (PL20)
350 mm (PL240)
365 mm (PL20MC)

Max. Turning Length
520 mm (PL20/20MC)
540 mm (PL240)



High Accuracy, High Rigidity Spindle

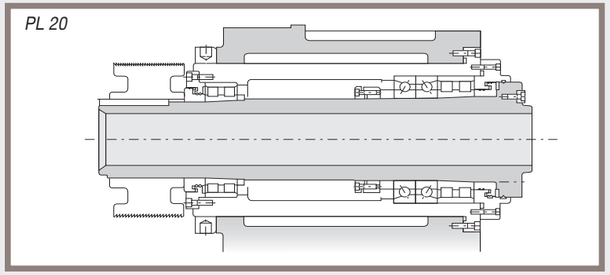


■ Pin Tube Rib Design for Minimal Axis Heat Transfer

Radiator fan-like pin tube rib design dissipates heat generated by axis movements, maintaining minimal thermal expansion.

■ SPINDLE & HEADSTOCK

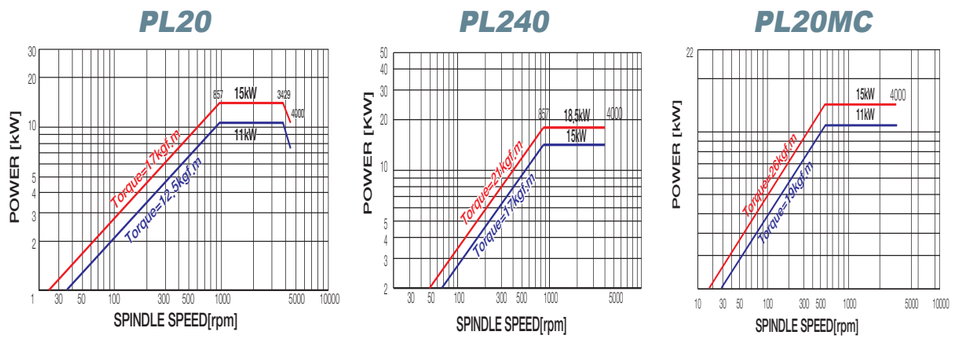
The Spindle and Headstock are machined and ground in temperature controlled environment and assembled in a clean room.



Precision double row cylindrical roller bearings and angular contact ball bearings are located at the front of the spindle, and a double row of cylindrical roller bearings is located in the rear to ensure heavy cutting capabilities with precision.

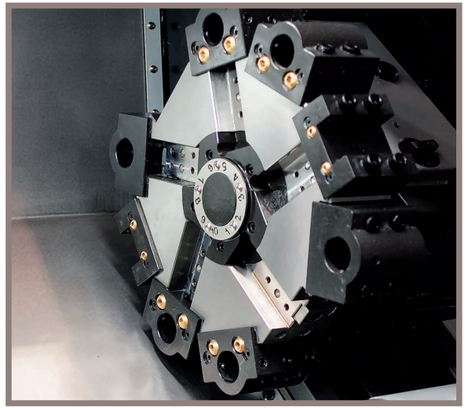
■ Spindle Power & Torque Diagram

Unit : mm

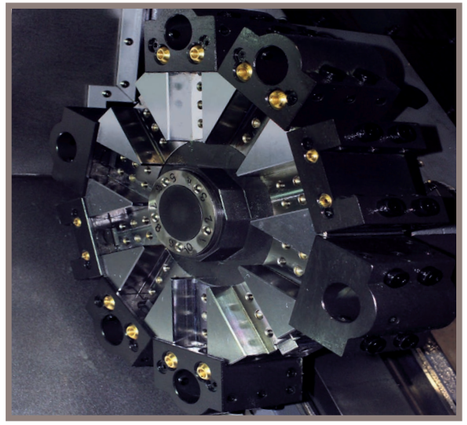


■ Turret Structure

■ PL20 (High Speed Hyd. index Turret)



■ PL240 (High Speed Hyd. index Turret)

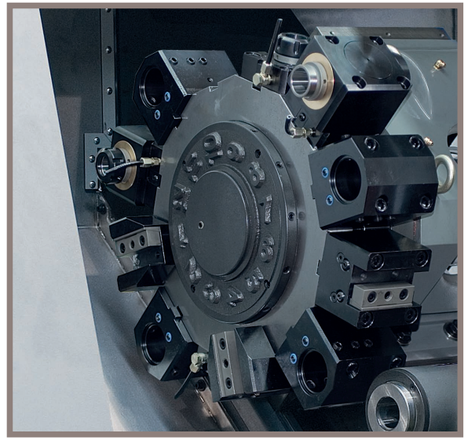


Indexing time **0.25 sec.**
Number of tool positions **10 stations**

■ High Speed, Heavy Duty Hyd. Index Turret

Driven by a high torque hydraulic index motor, the 10-station heavy-duty turret can accept tools on both left and right side of each station. Turret indexing (repeatability ± 0.0005)is non-stop, bi-directional with a fast 0.25 second next station index time. A large diameter (ø180) Curvic coupling with 2,300kgf clamping force enables precision as well as heavy-duty cutting.

■ PL20MC (High Speed Servo Turret)

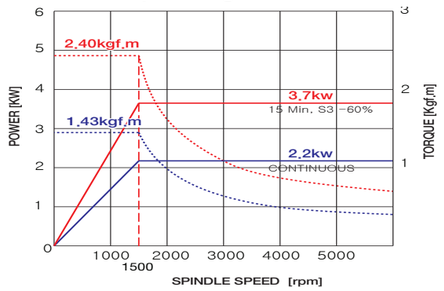


Indexing time **0.2 sec.**
Number of tool positions **12 stations**
Spindle Speed **5,000 rpm**
Tool Holder **BMT 65**

■ BMT Milling Turret (M Type)

SL20MC is equipped with standard 12-station BMT turret capable of accepting rotary tools at any station, providing flexible machining thru various machining operations in just one set-up. Each BMT holder is securley tightened by 4 screws, allowing the turret to perform heavy-duty cutting, milling and drilling operations. Turret indexing is non-stop, bi-directional with a fast 0.2 second next station index time.

■ Turret Torque Diagram

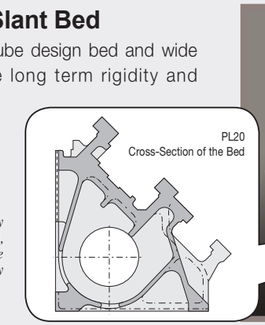


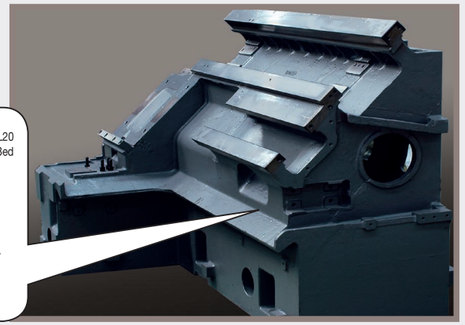
■ Machine Structure

■ Rigid 45 degree Slant Bed

45 degree slant torque tube design bed and wide guide slide way ensure long term rigidity and machining accuracy.

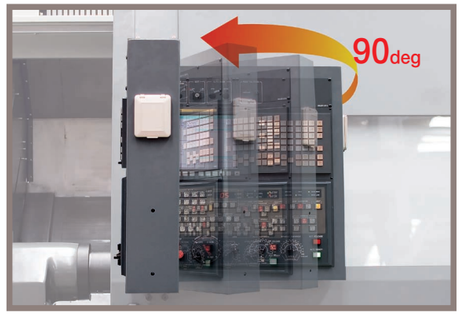
Featuring superior workability and chip-discharging capability, the bed is designed in a single tube structure boasting strong durability even in heavy-duty cutting.





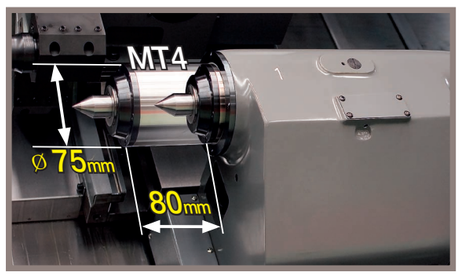
■ Swivel Operation Panel

Swivel operation panel of 8.4 inch color TFT LCD monitor can turn to 90 degree, providing operators with easy access to the control panel while working on the machine.



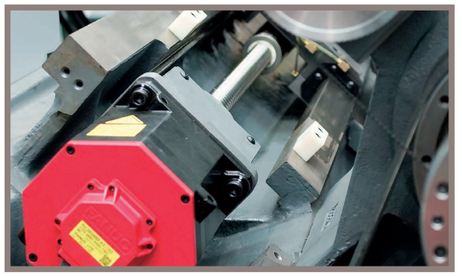
■ Programmable Tailstock (carriage direct-coupled)

The programmable tailstock body mounted is on wide guide ways to ensure rigid work piece support.



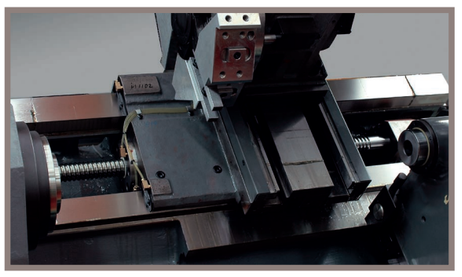
■ Pre-tensioned and Double Anchored Ballscrews

All axes ballscrews are pre-tensioned, heat treated, and fixed by double anchors on both ends, providing ultimate rigidity and minimal thermal growth.



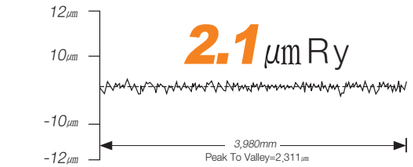
■ Hexahedral Slide Way Frame

Wide integral way is machined from the casting, induction hardened and precision ground to ensure long-term rigidity and machining accuracy and heavy-duty machining.



■ High Precision

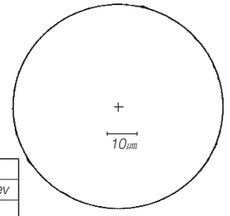
■ Surface Roughness 〈O.D. cutting〉



Machine type	PL20
Tool	Diamond tool 〈nose radius 0.5mm〉
Material	AL150 〈Aluminum〉

Cutting speed	230m/min
Feedrate	0.05mm/rev
Depth of cut	0.1mm
Outer diameter	200mm

■ Roundness



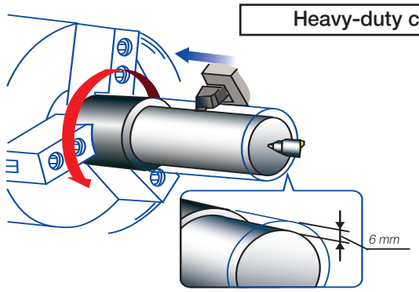
0.35㎛ *(actual result)*

Machine type	PL20
Tool	Diamond tool 〈nose radius 0.5mm〉
Material	AL150 〈Aluminum〉
Cutting speed	230m/min
Feedrate	0.05mm/rev
Depth of cut	0.1mm
Outer diameter	200mm
Filter	1-50

■ Processing Speed

■ Turning Performance (material:SM45C) PL20

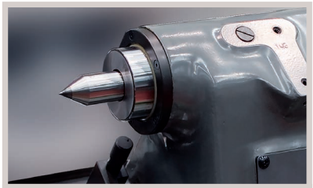
Heavy-duty cutting (O.D) 〈25mm×25mm qualified tool〉



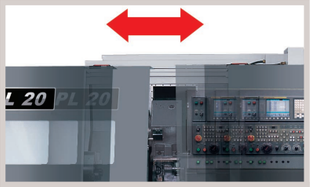
Spindle speed
868 rpm
Cutting speed
120 m/min
Depth of cut
6 mm <Spindle Load 50%>
Feedrate
0.3 mm/rev

■ Accessories

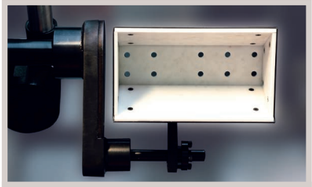

Automatic Lubricator (Standard)


Programmable Tailstock (Option), 20MC:Standard

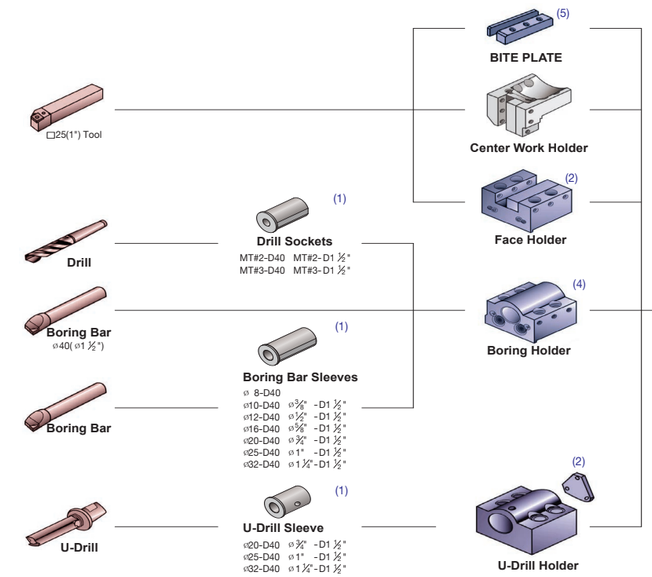

Tool Presetter (Option)

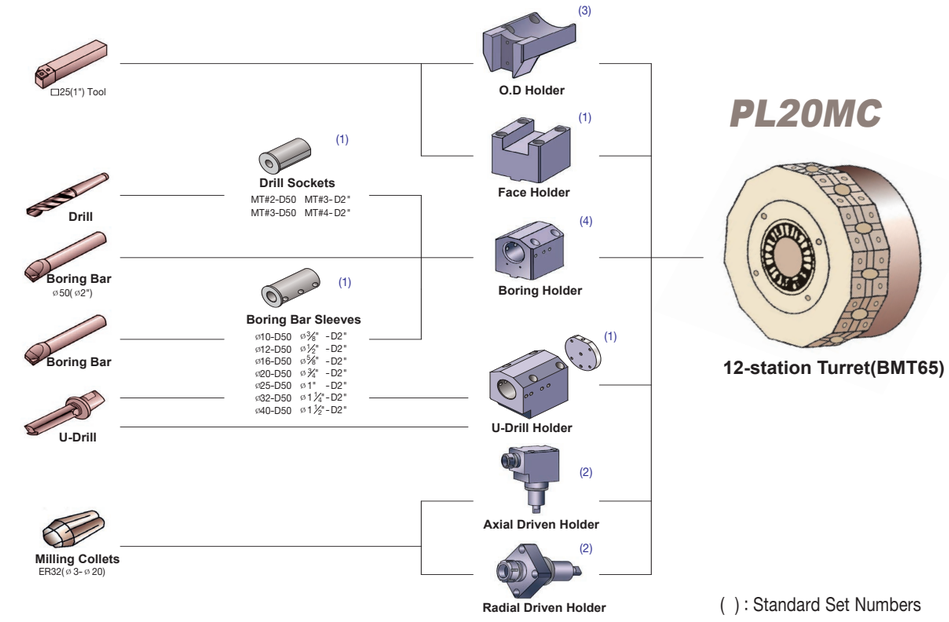

Auto Door (Option)


Chip Conveyor (Option)


Part Catcher (Option)

■ Tooling System

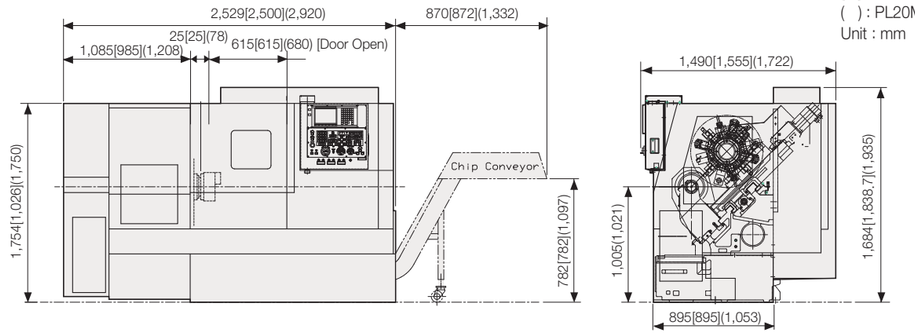




( ) : Standard Set Numbers

Machine Dimensions

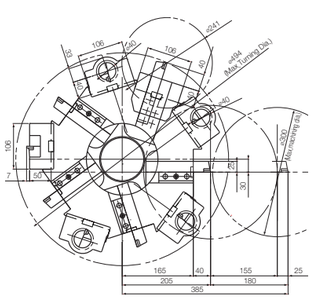
[ ] : PL240
( ) : PL20MC
Unit : mm



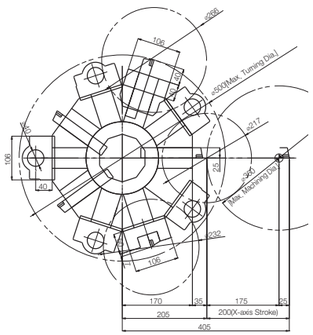
Turret Head Interference

Unit : mm

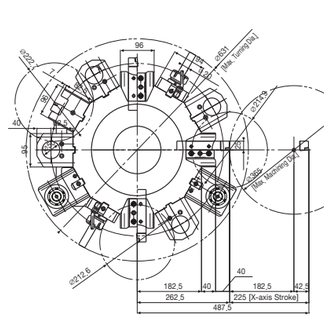
PL20



PL240



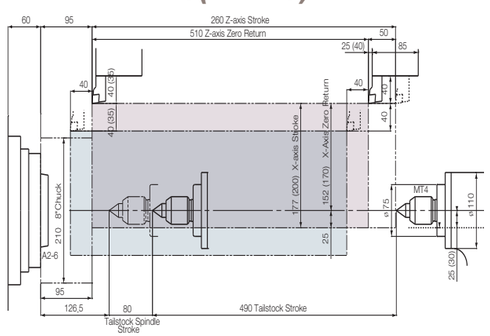
PL20MC



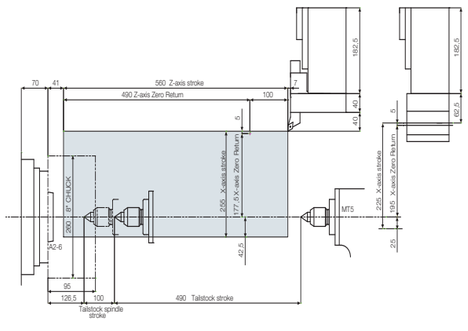
Work Range

Unit : mm

PL20(PL240)



PL20MC



Major Specifications

DESCRIPTION			PL20	PL240	PL20MC
CAPACITY	Swing over the bed	mm	ø 450	ø 510	ø 650
	Swing over the cross slide	mm	300	360	480
	Max. machining diameter	mm	ø 300	ø 350	ø 350
	Max. machining length	mm	520	540	520
MAIN SPINDLE	Chuck size	mm	8		
	Speed	rpm	4,000		
	Spindle nose	ASA	A2-6		
	Bore diameter	mm	ø 61	ø 76	ø 78
	Draw tube I.D.	mm	52	66	
	Motor(cont./30min)	kW	11 / 15	15 / 18.5	11 / 15
TRAVEL	X/Z axis travel	mm	180 / 560	200 / 560	225 / 540
	X/Z rapid traverse rate	m/min	24 / 24		18 / 24
	X/Z feed motor	kW	1.6 / 3.0		3.0 / 3.0
TURRET	Number of tool positions	st.	10		12(BMT65)
	Indexing time	sec	0.25		0.2
	Shank size for square tool	mm	□ 25		
	Shank diameter for boring bar	mm	ø 40		ø 50
	Live tool speed	rpm	-		5,000
	Milling motor(cont./30min)	kW	-		2.2 / 3.7
TAILSTOCK	Tailstock quill travel	mm	80		100
	Tailstock quill diameter	mm	75		110
ELECTRIC POWER SUPPLY		kVA/V	22 / 220		36 / 220
REQUIRED FLOOR SPACE(L × W)		mm	2,530 × 1,475	2,530 × 1,555	2,923 × 1,722
MACHINE WEIGHT		kg	3,900	4,000	5,100
CONTROLLER			Fanuc O*i*-TD		

• Figures in inches are converted from metric measurements.
• Design and specifications subject to change without notice.

Standard Accessories

- COOLANT SYSTEM
- BUILT-IN WORK LIGHT
- SPLASH GUARD
- HAND TOOLS
- TOOL HOLDER
- 8 ″ HYDRAULIC CHUCK
- SOFT JAWS 3 SETS
- LEVELING BLOCK

Optional Accessories

- HARD JAWS 1 SET
- CHIP CONVEYOR WITH BUCKET
- PARTS CATCHER
- AUTO DOOR
- AIR BLOW UNIT
- AUTO MEASURING SYSTEM
- TOOL PRESETTER
- PROGRAMMABLE TAILSTOCK (PL20MC:STANDARD)