SPECIFICATION SHEET · C-180

180 TON HORIZONTAL INJECTION MOULDING MACHINE (C SERIES)

Mould clamping force 180 Tons, two screw options from 40 to 45 mm, max. shot weight 249 to 315 gms (PS).

180 Tons
MOULD CLAMPING FORCE

249 to 315 gms
MAX. SHOT WEIGHT (PS)

40 / 45 mm
SCREW DIAMETER OPTIONS

480 x 424 mm
SPACE BETN. TIE BARS H X V

875 mm
MAX. DAY LIGHT OPENING

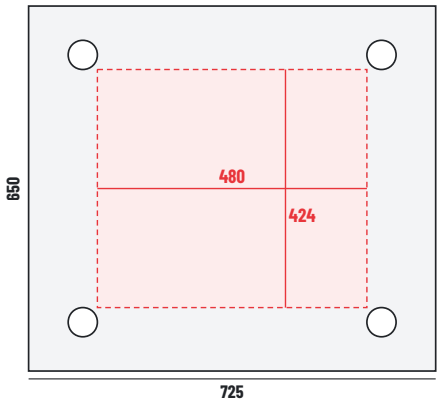
34.5 KW
TOTAL CONNECTED LOAD

TECHNICAL SPECIFICATION

TECHNICAL SPECIFICATION	UNIT	SCREW A	SCREW B
INJECTION UNIT			
Screw Diameter	mm	40	45
Screw L/D Ratio		20:1	18:1
Max. Swept Volume	Cub.cm	276	350
Max. Shot Weight (PS)	gms	249	315
Max. Injection Pressure	Kg/cm2	2250	1778
Rate Of Injection	cc/sec	111	140
Screw Speed	rpm	300	300
Nozzle Force	Tons	4.7	4.7
LOCKING UNIT			
Mould Clamping Force	Tons	180	
Mould Clamping Stroke	mm	375	
Mould Thickness - Min - Max.	mm	200 - 500	
Max. Day Light Opening	mm	875	
Space Betn. Tie Bars - H X V	mm	480 x 424	
Platen Size	mm	725 x 650	
HYDRAULIC EJECTOR			
Ejector Stroke	mm	110	
Ejector Force	Tons	7.5	
GENERAL			
Servo Motor	KW	22	
Heating Capacity	KW	12.5	
Total Connected Load	KW	34.5	
Tank Capacity	Ltrs	410	
Machine Weight	Tons	5.6	
Floor Space (L X W X H)	Mtr.	4.9 X 1.5 X 2	

Screw A and Screw B are alternative injection unit configurations. Locking unit, ejector and general values apply to both. Shot weight is stated for PS.

WILL YOUR MOULD FIT?



Platen schematic in mm. Tie-bar diameter is not shown; drawing not to scale.

SPACE BETN. TIE BARS H X V **480 x 424** mm	PLATEN SIZE **725 x 650** mm
MOULD THICKNESS **200 - 500** mm	MOULD CLAMPING STROKE **375** mm
MAX. DAY LIGHT OPENING **875** mm	EJECTOR STROKE **110** mm

MOULD AND PART FIT WORKSHEET

Fill in your values before an enquiry. Discuss anything close to a limit with us.

CHECK	C-180 LIMIT	WHAT TO CONFIRM	YOUR MOULD OR PART	OK
Mould width, height	480 x 424 mm	Fits between tie bars for loading		
Mould plate size	725 x 650 mm platen	Mould clamps fit on the platen		
Mould thickness (closed)	200 - 500 mm	Closed mould height in range		
Opening for removal	375 stroke, 875 day light mm	Part and runner clear when open		
Ejection	110 mm, 7.5 Tons	Travel and force the mould needs		
Shot (parts + runner)	249 (A) / 315 (B) gms PS	Other materials: Calculation Guide		
Injection pressure	2250 (A) / 1778 (B) Kg/cm2	Pressure the part needs		
Clamping force	180 Tons	From projected area: Calculation Guide		

CHOOSING BETWEEN THE SCREW OPTIONS

SCREW OPTION	A · 40 MM	B · 45 MM
Max. Swept Volume Cub.cm	276	350
Max. Shot Weight (PS) gms	249	315
Max. Injection Pressure Kg/cm2	2250	1778
Rate Of Injection cc/sec	111	140
Screw L/D Ratio	20:1	18:1

The smaller screw gives higher injection pressure and a smaller shot. The larger screw gives a larger shot and a higher rate of injection at lower pressure.

INSTALLATION AND UTILITIES

ITEM	UNIT	VALUE
Total connected load	KW	34.5
Heating capacity	KW	12.5
Servo motor	KW	22
Tank capacity (oil fill)	Ltrs	410
Machine weight	Tons	5.6
Floor space (L X W X H)	Mtr.	4.9 X 1.5 X 2

SITE CHECKS BEFORE INSTALLATION

- ☐ Power supply for the connected load
- ☐ Hydraulic oil for the first tank fill
- ☐ Cooling water for oil cooler and mould
- ☐ Foundation for the machine weight
- ☐ Lifting for unloading and mould changes
- ☐ Space for robot, conveyor and dryer

Confirm these details with Pratishna Engineers before delivery.

READING THIS SPECIFICATION SHEET

TERM	WHAT IT MEANS
Screw diameter	Injection screw size. A smaller screw gives more pressure, a smaller shot.
Screw L/D ratio	Flighted length over diameter. Affects melting and mixing.
Swept volume	Screw area times injection stroke: largest melt volume per shot.
Shot weight (PS)	Swept volume as a weight of PS. Other materials differ.
Injection pressure	Highest melt pressure the injection unit can apply.
Rate of injection	Melt volume per second. Matters for thin walls and long flows.
Screw speed · nozzle force	Max. screw rotation in recovery · force of nozzle on sprue bush.

TERM	WHAT IT MEANS
Mould clamping force	Force keeping the mould closed against injection pressure.
Clamping stroke	Opening travel of the moving platen.
Mould thickness	Range of closed mould heights the clamp accepts.
Max. day light	Largest gap between fixed and moving platens.
Space betn. tie bars	Clear gap between tie bars. Limits mould size.
Servo motor · heating	Rated servo motor power · barrel and nozzle heater power.
Total connected load	For power supply planning: servo motor plus heating.

OTHER MODELS IN THE C SERIES

MODEL	C-140	C-180	C-220	C-260	C-320
Mould clamping force (Tons)	125	**180**	200	250	320
Max. shot weight PS (gms)	151	**249 to 315**	343 to 513	513 to 610	699 to 821

Shot weight ranges cover the screw options of each model. Click a model for its page.

WHAT TO SEND FOR A MACHINE RECOMMENDATION

- ☐ Part drawing (2D and 3D CAD)
- ☐ Material and grade
- ☐ Part weight and runner weight
- ☐ Projected area of parts and runner
- ☐ Wall thickness and flow length
- ☐ Number of cavities
- ☐ Mould size (W X H X thickness) and weight
- ☐ Hot runner, core pulls or unscrewing
- ☐ Target cycle time and monthly volume
- ☐ Automation: robot, conveyor, dryer

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RELATED RESOURCES

C SERIES CATALOGUE
https://pratishnaengineers.com/resources/c-series-catalogue/

CLAMPING FORCE & SHOT-SIZE CALCULATION GUIDE
https://pratishnaengineers.com/resources/clamping-force-and-shot-size-calculation-guide/

SEND YOUR PART AND MOULD DETAILS FOR A MACHINE RECOMMENDATION

enquiry@pratishnaengineers.com · +91-22-66970281 / 82 · www.pratishnaengineers.com
A1-4, Vaibhav Ind. Premises, Opp. Oxford Chambers, Saki Vihar Road, Andheri (E), Mumbai 400 072, India

SPECIFICATION NOTE

Specifications are indicative and are based on Pratishna Engineers' standard machine configuration at the date of issue. Values may change with screw, barrel, mould and optional equipment choices, and are subject to change without notice as part of continuous product development. Shot weight is stated for polystyrene (PS). This sheet does not constitute a quotation, warranty or contractual commitment. Final specifications are confirmed only in Pratishna Engineers' written quotation and order acknowledgement.