



TECHNICAL BUYER'S GUIDE · PRATISHNA ENGINEERS

FURNITURE & HARDWARE COMPONENTS INJECTION MOULDING MACHINE GUIDE

A practical guide for plastic furniture and furniture hardware manufacturers: components, materials, mould requirements, production planning, automation, quality, worked examples and what to send for a machine recommendation.

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WHO THIS GUIDE IS FOR

Owners, plant and production managers, process engineers and purchase teams making moulded chairs, tables and storage, and hardware such as hinges, drawer parts, castors, wall plugs, caps and fittings.

HOW TO USE IT

Sections 01 to 04 define the part, material and mould. Section 05 plans output. Sections 06 to 09 cover automation, quality, examples and your enquiry. Clamp force and shot sizing are covered in our Machine Selection Guide.

NEED A RECOMMENDATION?

Send your drawing, material, part weight, cavities and output target to sales@pratishnaengineers.com. The checklist in Section 09 lists what to include.

SECTION 01 · OVERVIEW

FURNITURE & HARDWARE COMPONENTS & INJECTION MOULDING

Two very different businesses share this title: large one-piece furniture such as chairs, tables and storage, and small high-volume hardware that holds furniture together.

WHERE INJECTION MOULDING FITS IN FURNITURE

Moulded plastic furniture replaces wood and metal in homes, offices, schools, restaurants and outdoor use. IS 13713 already allowed one-piece moulded plastic chairs in filled or unfilled grades^[1]. Behind every cabinet, wardrobe and ready-to-assemble panel sits a second product family: hinge parts, drawer rollers, cam housings, shelf pins, caps, clips and wall plugs. Regulation is tightening. The Furniture (Quality Control) Order, 2025 requires BIS certification and the Standard Mark for listed furniture, including general-purpose chairs and stools to IS 17632, tables and desks to IS 17633 and storage units to IS 17634^[2]. Check the current status and amendments for your product, since certification decisions now reach back to the moulding shop.

MAIN COMPONENT CATEGORIES

SEATING & TABLES Monobloc chairs, stools, small tables	DRAWERS & STORAGE Drawer boxes, bins, crates, tote lids	HINGES & SLIDES Hinge sub-parts, drawer rollers, stops	KNOBS & HOOKS Knobs, handles, coat hooks, brackets
WHEELS Furniture castors, trolley wheels	WALL FIXING Wall plugs, hollow-wall anchors	CAPS & GLIDES Screw caps, tube end caps, leg glides, grommets	KD & CLIPS Cam housings, dowels, clips, catches, bumpers

WHY INJECTION MOULDING SUITS THESE PARTS

- A full chair, table top or crate in one shot, with no joints.
- Moulded-in colour and texture with no painting.
- Very high cavitation for caps, pins and plugs.
- Self-lubricating plastics for quiet sliding parts.

PARTS THAT ARE NOT INJECTION MOULDED

- Steel drawer channels, hinge arms, castor forks and axles.
- Zinc die-cast cam discs and many premium knobs.
- EPDM or NBR rubber grommets, which are compression moulded.

WHERE MOULDING SITS IN THE PRODUCT CHAIN

COMPOUND PP, POM, PA, TPE	PREPARATION drying, colour	INJECTION MOULDING shells, hardware	SECONDARY inserts, overmould, hinge flex	ASSEMBLY wheels, hinges	TESTING load, pull-out	PACKING stacks, counts
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KEY REQUIREMENTS FOR FURNITURE AND HARDWARE PARTS

LOAD AND FATIGUE Chairs are tested for static, fatigue and impact strength and for stability ^[1] .	COLOUR AND DAYLIGHT Chair shells have a colour-fastness requirement ^[1] ; UV grades for outdoor use.	FIT IN THE ASSEMBLY End caps, cam housings and plugs must fit tubes and bored holes.
QUIET MOVEMENT Rollers, catches and dampers are judged by noise and feel.	RETENTION Pull-out of anchors and retention of clips are the sold values.	COST PER PART Hardware margins come from cavity count and cycle time.

SECTION 02 · COMPONENTS

MAJOR FURNITURE & HARDWARE COMPONENTS

The furniture and hardware parts covered by this guide, their materials and what each asks of the moulding process.

COMPONENT	APPLICATION	MATERIAL(S)	INJECTION MOULDING CONSIDERATIONS
Monobloc chair, plastic stool	Seating, including small and stacking sizes	PP copolymer, talc- or glass-filled PP, recycled PP blend, ABS, HDPE	Long thin-wall flow; short shot at the seat rim is common. Stacking draft affects the tool. UV masterbatch for outdoor use.
Plastic table (small)	Home, garden, school	PP copolymer, HDPE, talc- or glass-filled PP	Flat top dominates projected area. Rib the underside for flatness; gas assist suits hollow legs and rails.
Drawer box and tray	Cabinets and storage units	PP copolymer, HIPS, ABS, HDPE	Deep draw: core cooling limits the cycle and long walls bow inward. Draft for nesting.
Modular storage (bins, crates, boxes, shelving connectors); crate and tote lid, latch	Storage and transport	PP copolymer, HDPE, ABS	Lid and base tools with matched shrinkage. Copolymer or filled grades for load; latches and connectors as separate small mouldings.
Hinge parts (cup liner, cover cap, damper housing), living hinge	Cabinet hinges, hinged boxes	POM, PA66, PP, ABS	Soft-close hinge is a steel assembly; only sub-parts are moulded. Living hinge gated across the hinge line ^[3] .
Drawer channel parts (rollers, guides, sockets, end stops, back plates)	Drawer slides	POM, PA66, HDPE, PP	Wear and low side play matter more than finish. Very high volume, 16 to 32 cavity tools.
Knob, handle; coat hook, handle bracket, wall-mount fitting	Visible hardware under load	ABS, PP, PA6-GF, PC, POM	Core and rib bosses to avoid sink on show faces. Plating grades, brass inserts, pull-out tests.
Castor wheel and housing; trolley wheel	Furniture and trolleys	PA6, PA6-GF, PP, POM, HDPE, TPR / TPU tread	Hub with overmoulded tread; thick rims are cooling-limited. Bearing seat concentricity.
Wall plug, rawl plug; hollow-wall and self-drilling anchor	Fixing to walls and boards	PA6, PA66, PE, PP	Very high cavitation. Slides or collapsing cores for ribs and expansion zones. Dry nylon.
Grommet	Cable and panel openings	TPE, TPV, soft PVC, LDPE, PP	Low clamp but flash control and soft-part demoulding. Two-shot for rigid carrier plus seal.
Fastener cap (screw cover, bolt cap, hole plug); tube end cap, leg cap and glide	Covers and tube ends	PP, PE, LDPE, PA6, ABS, PVC, TPE	32 to 64 cavities. Colour match to panels; press-fit interference on tube ends.
Furniture leg, foot, levelling glide	Load-bearing feet	PP, PA6-GF, ABS, POM	Moulded load thread; POM or GF nylon where PP would creep. Thick legs need coring.
Knock-down fitting (cam housing, dowel, shelf pin); push-fit, trim clip, panel fastener	RTA furniture and panels	POM, PA6, PA66, ABS, PP	Repeatable dimensions for tight panels. Snap arms designed on conditioned modulus.
Door catch, bumper, damper housing	Doors and drawers	POM, PA66, ABS, TPE	Noise, feel and fatigue over many cycles. TPE bumpers two-shot or assembled.

Steel channels, hinge arms, castor forks and axles, zinc cam discs and rubber grommets are made by other processes and are outside this guide. Where the sheet lists several grades for one part, the service load, finish and cost decide which one is used.

SECTION 03 · MATERIALS

MATERIALS USED FOR FURNITURE & HARDWARE COMPONENTS

Large furniture runs on polypropylene and polyethylene; hardware leans on POM, nylon and elastomers for wear, strength and grip.

MATERIAL	TYPICAL COMPONENTS	RELEVANT PROPERTIES	PROCESSING CONSIDERATIONS	LIMITATIONS TO CHECK
PP copolymer, PP	Chairs, stools, tables, drawers, crates, caps, clips, living hinges	Tough, light, low cost; flexes as a living hinge ^[3] .	High shrinkage and warpage on flat parts.	Creep under constant load; UV grade outdoors.
Talc- or glass-filled PP	Chairs, stools, tables	Higher stiffness than unfilled PP.	Anisotropic shrinkage; tool wear with glass.	Fillers harm hinge life ^[3] .
Recycled PP blend	Economy chairs and tables	Lower material cost.	Changes the process window; qualify each source.	Lot-to-lot variation.
HDPE, LDPE, PE	Stools, tables, crates, drawer parts, plugs, caps, grommets	Tough, impact resistant at low temperature.	High shrinkage; soft grades flash.	Low stiffness.
ABS, HIPS	Drawers, knobs, hooks, KD fittings	Rigid, good surface, plating grades (ABS).	ABS needs drying.	Chemical and UV resistance.
PC	Knobs and handles	Clear or tough show parts.	Must be dried; high melt temperature.	Stress cracking with some cleaners.
POM	Hinge parts, rollers, cams, glides, catches	Stiff, low friction and wear ^[7] .	Keep apart from PVC in the barrel.	High shrinkage; sink on thick parts.
PA6, PA66	Plugs, anchors, wheels, clips, hinge parts	Strong, tough when conditioned.	Dry before moulding ^[6] .	Moisture changes size and stiffness ^[5] .
PA6-GF	Trolley wheels, handles, legs, hooks	Stiffness, load and creep resistance.	Dry; fibre shows on the surface.	Warpage; tool wear.
TPE, TPV, TPR, TPU	Grommets, wheel treads, bumpers, glides	Soft grip, quiet contact.	Bond to the hub or carrier must be checked.	Flash; compression set.
PVC, soft PVC	Grommets, end caps	Flexible, low cost.	Heat sensitive; corrosion-resistant screw.	Plasticiser migration.

General material behaviour only. Confirm grade data with the material supplier.

WHAT THE CHAIR STANDARD SAYS ABOUT MATERIALS

IS 13713 allows filled and unfilled thermoplastics and thermosets for chairs, and sets two material-linked checks on top of the strength tests: a colour-fastness rating of at least 3 for the shell and an oxygen index of at least 17^[1]. The 1993 edition was read; confirm how it relates to IS 17632 and the current QCO scope.

NYLON: DRY IN, CONDITIONED OUT

Nylon is moulded dry but used conditioned. Moisture pickup after moulding changes dimensions^[5], so wall plugs, clips and bearing seats should be gauged and tested in the state they are used.

MATERIAL SELECTION QUESTIONS

- ☐ Indoor or outdoor, and is UV stability needed?
- ☐ Static load, cyclic load or sliding wear?
- ☐ Moulded-in colour, painted or plated?
- ☐ Is recycled content allowed?

PVC AND POM IN ONE PLANT

Hardware plants often mould POM rollers and cams next to soft PVC grommets and end caps. Keep the two on separate machines, or purge very thoroughly between them, and never mix their regrind. Follow each supplier's processing guide.

SECTION 04 · DESIGN & MOULD

COMPONENT DESIGN & MOULD REQUIREMENTS

Furniture moulds fight size, flatness and flow length. Hardware moulds fight cavity count, slides and repeatability.

DESIGN FEATURES THAT AFFECT MOULDING

FEATURE	WHY IT MATTERS IN FURNITURE AND HARDWARE	MOULDING IMPLICATION
Large flat areas	Table tops and lids must stay flat after ejection.	Ribs rather than thick walls; balanced cooling; warpage control.
Deep walls	Drawer boxes, bins and crates.	Core cooling sets the cycle; draft on all walls for nesting.
Thick sections	Armrests, legs, handles and wheel rims.	Sink and voids; coring, ribbing or gas assist ^[4] .
Long thin flow	Chair and stool shells.	Short shots at the rim; gate position and injection speed.
Living hinges	Hinged caps, boxes and clips.	Gate so melt crosses the hinge; flex soon after ejection ^[3] .
Snap arms, press fits	Clips, cam housings, end caps.	Tight dimensions; strain checked on conditioned data.
Moulded threads	Levelling glides and adjuster feet.	Unscrewing cores or inserts; thread form carries the load.
Inserts, overmoulding	Brass inserts in knobs, soft treads on wheels.	Insert loading or two-shot; bond validated by test.

MOULD CONSIDERATIONS

ITEM	FURNITURE AND HARDWARE POINTS	ITEM	FURNITURE AND HARDWARE POINTS
Cavity layout	Chairs and tables: 1. Caps, pins, plugs: 16 to 64.	Cooling	Core cooling on deep boxes; thick sections set the cycle ^[9] .
Runner	Hot runner on large parts; cold runner often cheaper for small nylon parts.	Surface	Textures on chairs; high polish for plated knobs.
Gas assist	Hollow legs, rails and handles ^[4] .	Matched tools	Lid and base shrink together or they will not seal.
Side actions	Plug ribs, anchor expansion zones, crate handles.	Mould size	Chair and table moulds need large platens and long strokes.

SECONDARY OPERATIONS THAT SHAPE THE MOULD

OPERATION	TYPICAL PARTS	WHAT IT ASKS OF THE MOULDED PART
Hinge flexing	Hinged caps and boxes	Part presented so the hinge can be flexed while warm.
Plating or painting	Knobs, handles, hooks	Plating grade, polished tool, no flow marks on show faces.
Assembly	Castors, hinge sub-parts, catches	Bearing seats, pin holes and snap features held to size.

For a product range, size a storage family on its largest item, qualify lids and bases as a pair on one material lot, and check whether a hardware enquiry is one part or a full set.

SECTION 05 · PRODUCTION PLANNING

PRODUCTION CAPACITY & CYCLE-TIME PLANNING

Furniture output is limited by one large part per long cycle; hardware output is limited by how many cavities a mould can run cleanly.

OUTPUT

Parts/hour = Cavities × 3600 ÷ Cycle time (s)

Effective/hour = Parts/hour × Utilisation

Day = Effective/hour × Hours run

Utilisation covers colour and mould changes, start-up, maintenance and rejects.

EXAMPLE 1 · 32-CAVITY PP SCREW COVER CAP

32 × 3600 ÷ 10 s = 11,520 /h

× 0.85 utilisation = 9,792 /h

× 22 h = 215,424 /day

× 26 days = 5,601,024 /month

EXAMPLE 2 · SINGLE-CAVITY PP STOOL

1 × 3600 ÷ 45 s = 80 /h

× 0.85 = 68 /h · × 22 h = 1,496 /day

× 26 days = 38,896 /month

Working backwards: for 60,000 stools a month in 572 running hours you need 105 per hour. 105 ÷ 68 = 1.54, so two machines with one mould each, since a single cavity would need a cycle near 29 s.

Illustrative example. Cycle times of 10 s and 45 s, 85% utilisation, 22 h per day and 26 days per month are assumptions. Actual requirements depend on the component, material, mould and production conditions.

WHAT SETS THE CYCLE TIME

PHASE	FURNITURE AND HARDWARE INFLUENCE
Injection & hold	Long flow on chair shells; high speed on thin walls.
Cooling	Usually the largest share; rises roughly with wall thickness squared ^[9] .
Mould opening	Long strokes on chairs, crates and tables.
Take-out	Robot removal and stacking of large parts.

BALANCING CAVITIES, CLAMP FORCE AND OUTPUT

PP STORAGE BIN MOULD	PROJECTED AREA	CALCULATED FORCE	RATED AT 85%	SHOT	EFFECTIVE OUTPUT
1 cavity	300 cm ²	121 t	142 t	150 g	102 /h
2 cavities	600 cm ²	242 t	284 t	300 g	204 /h
4 cavities	1,200 cm ²	483 t	568 t	600 g	408 /h

Illustrative example. Force = projected area × clamp factor K × safety factor S. PP, PE and PS are commonly given 2 to 3 US tons per square inch^[8], about 0.28 to 0.42 t/cm²; K = 0.35 t/cm² and S = 1.15 assumed. Also assumed: 300 cm² and 150 g per bin, hot runner with no runner area, 30 s cycle at every cavity count, 85% utilisation.

PLANNING TOTAL MACHINE HOURS

Machine hours = Σ (monthly volume per item ÷ effective output per item)

Add the hours for every item and colour, then divide by the running hours per machine (572 in these examples). Large furniture and small hardware normally need different machine sizes, so plan them as separate groups.

PLAN BY MOULDING GROUP

Chairs, stools, tables and crates grow output only by adding machines or cutting the cycle. Caps, plugs, pins and clips grow it with cavities and balance. Wheels, bumpers and grommets follow the overmould or assembly route.

MACHINE UTILISATION AND PLANNED DOWNTIME**COLOUR CHANGES**

Chairs and caps run in many colours; sequence light to dark.

HEAVY MOULDS

Chair and table moulds take longer to change.

NYLON DRYING

Plan dryer capacity so wet material never stops a press.

RECYCLED LOTS

Requalify settings when the recycled source changes.

SECTION 06 · AUTOMATION

AUTOMATION & PRODUCTION EFFICIENCY

Large furniture needs automation for handling and stacking; small hardware needs it for counting, flexing, inserting and assembling.

AUTOMATION	WHERE IT ADDS VALUE IN FURNITURE AND HARDWARE	WHEN IT USUALLY MAKES SENSE
Robot take-out and stacking	Removes chairs, stools and table tops and stacks them.	Large parts on continuous runs; consistent cooling time.
Sprue picker	Removes cold runners from cap, clip and plug moulds.	Multi-cavity cold-runner tools.
Hinge flexing station	Flexes living hinges while the part is warm ^[3] .	Hinged caps and boxes at volume.
Insert loading	Places brass inserts and adjuster studs.	Knobs and levelling glides at volume.
Two-shot or overmoulding	Soft tread on wheels, TPE on bumpers and carriers.	Where the bond must be controlled in the mould.
Conveyors and separators	Separate small parts from runners and carry them away.	Caps, pins, rollers and clips.
Counting and packing	Counts hardware into packs and sets.	Hardware sold by count or as fitting kits.
Assembly	Castors, hinge sub-parts, catches with springs.	Multi-part products at volume.
Drying and conveying	Central dryers and loaders for nylon and ABS.	Several machines on hygroscopic grades.

A chair plant and a hardware plant automate for different reasons. On a chair, the robot protects cycle consistency and stack quality. On hardware, automation removes labour that would otherwise be spent counting and sorting thousands of small parts an hour.

AUTOMATION BY PRODUCT GROUP

PRODUCT GROUP	MAIN AUTOMATION	WHY
Chairs, stools, tables, crates	Robot take-out and stacking	Heavy parts, long strokes, stack quality
Caps, plugs, pins, clips	Sprue picker, conveyor, counting	Sold by count in large numbers
Wheels, knobs, glides	Overmoulding, insert loading, assembly	Two materials or inserts per part

INTERFACES TO SPECIFY ON THE MACHINE

ROBOT Signal interface, safety interlocks and mounting.	CORE PULLS Hydraulic circuits for slides and unscrewing.	GAS OR SECOND SHOT Gas-assist or second-injection interface.	AUXILIARIES Dryer, loader, conveyor and counter.
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WHERE THE COST OF A MOULDED PART COMES FROM

MATERIAL PP, POM, PA	MACHINE per machine hour	LABOUR take-out, packing	POWER kWh per part	MOULD large or multi-cavity	REJECTION sinks, warp, colour	PACKING stacks, counts
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On chairs and tables, material weight and cycle time dominate, so wall thickness and rib design decide cost. On hardware, cavity count and cycle decide machine hours per thousand parts. Use your own rates to compare options, and include the cost of stacking, counting and packing labour in each case.

SECTION 07 • QUALITY

QUALITY, TESTING & COMMON DEFECTS

Furniture is judged by load, stability and appearance; hardware by fit, retention and how it feels in use.

TESTS AND CHECKS

CHECK	WHAT IT INVOLVES	LINK TO MOULDING
Chair strength	Static, fatigue and impact tests to IS 5416 (Part 1); no structural defects after test ^[1] .	Weld lines, voids, rib and wall design
Stability and back rigidity	Stability to IS 5416 (Part 2); backrest under 300 N for 4 h must not move more than 75 mm ^[1] .	Stiffness, filler content, wall thickness
Colour and flammability	Shell colour fastness at least 3; oxygen index at least 17 ^[1] .	Masterbatch, UV package, grade
QCO certification	Chairs and stools, tables and storage units to IS 17632, 17633 and 17634 with the Standard Mark ^[2] .	Test to the current standard text
Pull-out and retention	Anchors, plugs, hooks and clips under load.	Nylon moisture, regrind, fill
Tread bond	Peel test between hub and soft tread.	Overmould temperature, material pair
Conditioned dimensions	Nylon parts gauged after moisture pickup ^[5] .	Shrinkage, drying, conditioning

IS 13713 (1993) was read for these clauses. Confirm the current editions and which standard applies to each product under the QCO. Hardware tests usually follow the customer or product specification.

IN-PROCESS CONTROLS

WEIGHT Shot and cavity weight flag short shots and imbalance.	FLATNESS Table tops and lids on a flatness fixture.	COLOUR Against a master under set lighting.	FIT GAUGES Tube, bore and thread gauges for caps and fittings.
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TROUBLESHOOTING COMMON DEFECTS

DEFECT	POSSIBLE CAUSES	EFFECT ON THE PART	AREAS TO INVESTIGATE
Short shot at seat rim	Long flow, cold melt, slow injection	Weak or rejected shell	Gate position, speed, melt and mould temperature
Warped tops and lids	Uneven cooling, thick flat areas	Rocking tables, lids that do not seal	Cooling layout, ribs, hold
Bowed drawer walls	Core runs hotter than cavity	Drawer binds in the carcass	Core cooling, cycle, draft
Sink on show faces	Thick bosses and ribs, short hold	Visible marks on knobs and legs	Coring, hold pressure, gas assist ^[4]
Cracked living hinge	Weld line or hesitation at hinge, fillers	Hinge fails in use	Gate position, flexing after ejection ^[3]
Splitting wall plugs	Wet nylon, heavy regrind	Plug splits on the first screw	Drying ^[6] , regrind ratio
Colour variation	Masterbatch dosing, resin lot, recycled content	Mismatch with panels or sets	Dosing, lot control
Flash on soft parts	Worn shut-offs, soft TPE or PVC	Poor fit, trimming	Parting line, injection pressure

SECTION 08 · WORKED EXAMPLES

PRACTICAL MACHINE-SELECTION EXAMPLES

Three typical furniture and hardware parts show how the selection logic changes with the component. These are engineering illustrations with assumed inputs, not customer case studies.

A · PP STOOL		LARGE PART
APPLICATION · MATERIAL	Stacking stool · PP copolymer with UV masterbatch	
CHARACTERISTICS	Thin wall, long flow to the seat rim; stacking draft	
CAVITIES · OUTPUT	1 · about 68 per hour at 45 s (Section 05)	
MOULD CONSIDERATIONS	Hot runner, rim venting, core cooling, long mould opening	
SECONDARY	Robot take-out and stacking	
EVALUATE With an assumed 1,200 cm ² projected area, K = 0.35 t/cm ² and S = 1.15, the calculated force is about 483 t. Long thin flow can need a higher K, so confirm with filling analysis before choosing. STILL NEEDED CAD model, wall thickness, grade data, colours, monthly volume.		

B · NYLON WALL PLUG		HIGH CAVITATION
APPLICATION · MATERIAL	Wall plug · PA6	
CHARACTERISTICS	Small part, anti-rotation ribs, split expansion zone	
CAVITIES · OUTPUT	High cavity count · set by cycle and balance	
MOULD CONSIDERATIONS	Slides or collapsing cores; cold or hot runner decision	
SECONDARY	Counting and packing; conditioned pull-out tests	
EVALUATE Tonnage is small; shot repeatability, dryer capacity ^[6] and core-pull circuits decide the choice. STILL NEEDED plug sizes, cavity count, volume per size, test standard.		

C · CASTOR WHEEL WITH SOFT TREAD		TWO MATERIALS
APPLICATION · MATERIAL	Furniture castor · PA6 or PP hub with TPU tread (to be confirmed)	
CHARACTERISTICS	Thick tread, bearing seat, hub-to-tread bond	
CAVITIES · OUTPUT	Set by the overmould route and assembly rate	
MOULD CONSIDERATIONS	Two-shot or insert overmould; coring the rim	
SECONDARY	Castor assembly; peel and rolling tests	
EVALUATE The route (two-shot, rotary tool or transfer to a second machine) decides the machine configuration more than tonnage. STILL NEEDED drawings, grade pair, bond test, load rating, volume.		

WHAT DECIDED THE MACHINE IN EACH EXAMPLE

SELECTION FACTOR	A · STOOL	B · WALL PLUG	C · CASTOR WHEEL
Main limit	Projected area, flow length	Cavities, cycle, drying	Two-material route
Clamp force	About 483 t calculated	Small	Hub and tread areas
Auxiliaries	Robot, stacker	Dryer, counter	Second injection or robot

Illustrative example. Actual requirements depend on the component, material, mould and production conditions.

SECTION 09 • BUYER CHECKLIST

MACHINE BUYER'S CHECKLIST

What to prepare before asking an injection moulding machine manufacturer for a recommendation on furniture or furniture hardware. Large furniture and small hardware usually need separate enquiries.

COMPONENT ☐ 2D drawing and 3D CAD model ☐ Part and runner weight, wall thickness ☐ Grade data, filler and recycled content ☐ Show faces, textures, plating ☐ Inserts, threads, soft overmould	PRODUCTION ☐ Monthly volume per item and colour ☐ Cavity count and target cycle time ☐ Operating hours and shifts ☐ Stacking, counting and packing ☐ Sets or single parts
MOULD ☐ New or existing mould; size and weight ☐ Hot or cold runner, gas assist ☐ Slides, core pulls, unscrewing ☐ Mould height and opening stroke ☐ Previous machine specification, if any	FURNITURE APPLICATION ☐ Indoor or outdoor, UV needs ☐ Load, stability or pull-out tests ☐ BIS standard and QCO status ☐ Colour match to panels or ranges ☐ Assembly: wheels, hinges, catches

DOCUMENTS TO REQUEST FROM THE MACHINE SUPPLIER

PLATEN DRAWING Tie-bar spacing, mounting holes, ejector pattern, nozzle details.	LAYOUT Footprint, robot and conveyor space, access.	UTILITIES Connected load, cooling water, air and oil needs.	TRIAL REPORT Trial or acceptance data at your settings.
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QUESTIONS TO ASK BEFORE YOU BUY A MACHINE

#	QUESTION	WHY IT MATTERS FOR FURNITURE AND HARDWARE
1	Will my largest chair, table or crate mould fit between tie bars, with the opening stroke it needs?	Large, deep furniture moulds.
2	What injection speed and pressure are available for long thin flow?	Short shots at chair and stool rims.
3	What shot repeatability does the machine hold at my shot size?	Cavity balance on caps, pins and plugs.
4	How many core-pull and unscrewing circuits are available?	Plugs, anchors, glides and crate handles.
5	Is a gas-assist or second-injection interface available?	Hollow legs, handles, wheel treads.
6	What robot and stacking interfaces are supported?	Chairs and tables removed every cycle.
7	Can the control store settings for each item and colour?	Frequent colour and mould changes.
8	What is the energy use per part at my cycle?	Heavy PP parts and long cycles.
9	Can the machine log shot data for traceability?	QCO certification and load-test records.
10	What installation, training and spare-parts support is included?	Uptime on high-volume hardware lines.

SECTION 10 • TECHNICAL CONSULTATION

PRATISHNA ENGINEERS & TECHNICAL CONSULTATION

Pratishna Engineers Ltd. is a Mumbai-based injection moulding machine manufacturer with in-house design, manufacturing, assembly, testing and service, supplying plastic component manufacturers in India and international markets.

35+

YEARS OF EXPERIENCE

9,000+

MACHINES SUPPLIED

1,000+

CUSTOMERS

In-house

DESIGN TO SERVICE

Machines are used for automotive, packaging, electrical and electronics, medical, consumer, agriculture and industrial applications.

OUR TECHNICAL APPROACH

COMPONENT	MATERIAL	MOULD	PRODUCTION REQUIREMENT	MACHINE CONFIGURATION
1 • CALCULATE Clamp force and shot weight from part, cavities and grade.	2 • CHECK THE MOULD Size, stroke, core pulls and inserts.	3 • CHECK OUTPUT Cycle and cavities against your volume.	4 • CONFIGURE Screw, barrel, controls and auxiliaries.	

SEND YOUR COMPONENT & PRODUCTION REQUIREMENTS

Component drawing · material · part weight · mould details · cavity count · production requirement · other requirements such as colours, inserts, overmoulding or load tests.

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TECHNICAL REFERENCES

- [1] Bureau of Indian Standards – IS 13713:1993 Plastic chairs for general office purposes, Specification – <https://law.resource.org/pub/in/bis/S03/is.13713.1993.pdf>
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