



TECHNICAL BUYER'S GUIDE · PRATISHNA ENGINEERS

HOUSEHOLD PRODUCTS COMPONENTS INJECTION MOULDING MACHINE GUIDE

A practical guide for household plasticware 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 buckets, tubs, bins, kitchenware, containers, thermoware, cleaning products and home accessories.

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

HOUSEHOLD PRODUCTS COMPONENTS & INJECTION MOULDING

Household plasticware runs from 20 litre buckets to curtain rings. The machines, moulds and margins for each end of that range are very different.

WHERE INJECTION MOULDING FITS IN THE HOME

Most rigid plastic items in an Indian home are injection moulded, and many are sold as sets and colour families rather than single parts.

Food-contact items carry a regulatory load. Under the FSSAI packaging regulations, plastic containers for packing or storing food must conform to the Indian Standards listed in the schedule, such as IS 10146 for polyethylene and IS 10910 for polypropylene, and must pass overall migration limits^[1].

MAIN COMPONENT CATEGORIES

BUCKETS & TUBS Buckets, tubs, basins, dustbins	STORAGE Boxes, baskets, trays, organisers	KITCHENWARE Mugs, bowls, cups, funnels, caps	FOOD STORAGE Airtight containers, tiffins
THERMOWARE Casserole and insulated ware shells	LAUNDRY Hangers, pegs, hooks, drying stand joints	CLEANING Broom, mop, wiper and brush parts	HOME DÉCOR & BATH Curtain fittings, bath accessories

WHY INJECTION MOULDING SUITS THESE PARTS

- Large, thin, one-piece parts with handles and rims.
- Moulded-in colour for coordinated sets.
- Food-contact grades of PP and PE.

PARTS THAT ARE NOT INJECTION MOULDED

- Melamine crockery, which is compression moulded.
- Steel liners and PU foam in thermoware and casseroles.
- Brush bristles, wiper blades and long handle tubes.

WHERE MOULDING SITS IN THE PRODUCT CHAIN

COMPOUND PP, HDPE, SAN	COLOUR masterbatch, labels	INJECTION MOULDING bodies, lids, parts	SECONDARY foaming, tufting, gaskets	ASSEMBLY handles, sets	TESTING drop, leak, load	PACKING nested, in sets
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TWO ENDS OF THE HOUSEHOLD RANGE

SEGMENT	TYPICAL PARTS	WHAT DECIDES THE MACHINE
Large and bulky	Buckets, tubs, bins, boxes, baskets	Projected area, mould size, opening stroke
Thin-wall and clear	Bowls, mugs, containers, closures	Injection speed, drying, cycle time
Small and many	Rings, pegs, hooks, accessories	Cavity count, balance, counting

KEY REQUIREMENTS FOR HOUSEHOLD PRODUCTS

FOOD CONTACT Food-grade materials and migration testing ^[1] .	DROP AND LOAD Full buckets, tubs and bins must survive a drop.	SEAL AND FIT Lids, gaskets and latches must seal as a set.
FLATNESS Trays, lids, dustpan lips and wiper heads must stay flat.	COLOUR SETS Colour matched across tools and resins.	NESTING Draft and stacking cut freight on bulky items.

SECTION 02 • COMPONENTS

MAJOR HOUSEHOLD PRODUCTS COMPONENTS

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

COMPONENT	MATERIAL(S)	INJECTION MOULDING CONSIDERATIONS
Bucket (2 to 20 L, with handle); open tub, washing basin	PP copolymer, HDPE, recycled PP blend	Projected area sets tonnage. Rim strength for a full-drop; nesting draft. Handle and lid are separate tools.
Storage box with lid	PP copolymer, HDPE	Box and lid must shrink compatibly to seal and stack. Rib long lids. Copolymer against corner cracking in cold.
Dustbin, waste bin	PP copolymer, HDPE, recycled PP / HDPE	Body sized on projected area; lid, pedal and hinge are small separate tools. UV and impact grades outdoors.
Fruit and vegetable basket; plastic tray	PP copolymer, HDPE, PP, PS, ABS	Baskets: weld lines around every opening, so venting matters. Trays: flatness and finish; rib the underside.
Mug; bowl; measuring cup, funnel, smallware	PP, SAN, PC, copolyester, PS	Mug handle needs a slide. Bowls are thin-wall, high-speed. Clear grades dried. Graduations legible after shrink.
Airtight kitchen container; tiffin, lunch box	PP, SAN, copolyester, TPE (gasket)	The seal is the product: lid, body and gasket tolerances stack. A tiffin is a set of tools; steel inserts are not moulded.
Casserole; thermoware (jugs, bottles, ice buckets, sets)	PP, SAN, ABS, LDPE, TPE (gaskets)	Shells, lid, handle and gasket each a tool; PU foaming is separate. Gloss and colour match across the set.
Container cap and closure	PP, HDPE, LDPE	16 to 48 cavities, hot runner balance. Threads stripped; flip-top hinges flexed after ejection ^[4] .
Cutlery tray, drawer organiser, spice rack	PP, HIPS, ABS	Compartments cause sink if dividers are thick. Flatness; shared datum grid across a modular range.
Curtain ring, ornament (finial), bracket	PP, HDPE, POM, ABS, PS, PA6-GF	Rings: smooth flash-free bore, 16 to 48 cavities. Finials: core thick sections, plating grade. Brackets: pull-out with the wall plug.
Clothes hanger; plastic hook; cloth clip; drying stand joints	PP copolymer, PP, HIPS, ABS, recycled PP, PA6, POM, PA6-GF	Hangers fill-limited at the shoulder. Hooks sold on pull-out load. Pegs pass fatigue; UV grade outdoors. Joints carry wet loads.
Broom body and clamp; broom, mop, brush handle parts; floor wiper head; mop head	PP copolymer, HDPE, PP, ABS, PA6, PA6-GF, POM, TPE	Handle tubes, blades, yarn and bristles are not moulded. Round burr-free tuft holes; flat broom and wiper heads; thread and taper fit.
Cleaning brush body; toilet brush and holder	PP copolymer, PP, ABS, PS, TPE, PET	Bristles are extruded monofilament tufted in. Holder is the deep-draw tonnage part; no water traps; chemical resistance.
Scrubber holder; soap dish, toothbrush holder, bath accessory	PP, ABS, PS	Small, high cavitation. Drainage and wall-mount bosses; colour match across the range.

Melamine ware, steel liners, PU insulation, handle tubes, wiper blades, yarn and bristles are made by other processes and are outside this guide.

GROUPING BY MOULDING DEMAND

LARGE AREA Buckets, tubs, bins, boxes, trays. Projected area, drop strength, nesting.	THIN-WALL AND CLEAR Bowls, mugs, containers. Speed, drying and sealing.	SMALL HIGH-CAVITY Caps, rings, pegs, hooks. Cavities, balance and cycle.
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SECTION 03 · MATERIALS

MATERIALS USED FOR HOUSEHOLD PRODUCTS

Polypropylene and polyethylene carry most of the volume; clear styrenics and copolyester serve kitchenware; nylon and POM do the load-bearing and moving jobs.

MATERIAL	TYPICAL COMPONENTS	RELEVANT PROPERTIES	PROCESSING CONSIDERATIONS	LIMITATIONS TO CHECK
PP copolymer	Buckets, tubs, bins, boxes, baskets, pegs, brooms	Impact at low temperature, flexes as a hinge ^[4] .	High shrinkage; warp on flat parts.	UV grade outdoors; creep under load.
PP	Kitchenware, containers, caps, trays, accessories	Light, food-contact grades (IS 10910) ^[1] .	Fast cycles in thin walls.	Homopolymer cracks at cold corners.
HDPE, LDPE	Buckets, bins, baskets, caps, gaskets	Tough; food grades to IS 10146 ^[1] .	High shrinkage.	Low stiffness.
Recycled PP / HDPE	Buckets, tubs, bins, hangers	Lower cost.	Shifts the process window; qualify blends.	Colour and flow vary; not for food contact without checks.
PS, HIPS	Trays, bowls, organisers, bath accessories	Rigid, glossy, low shrinkage.	Easy flow.	Brittle; stress cracking with some cleaners.
SAN	Mugs, bowls, containers, thermoware	Clear and rigid.	Dry to avoid splay.	Brittle on impact.
PC	Mugs and bowls	Clear and tough.	Must be dried; high melt temperature.	Food-contact status to confirm.
Copolyester	Mugs, bowls, airtight containers, tiffins	Clear and tough.	Drying is essential to avoid splay and property loss ^[3] .	Cost; colder moulds ^[3] .
ABS	Thermoware shells, trays, finials, brackets, brushes	Gloss, plating grades.	Needs drying.	UV and chemical resistance.
POM	Curtain rings, pegs, hooks, spin-mop gears	Stiff, low friction.	Keep apart from PVC in the barrel.	Sink on thick parts.
PA6, PA6-GF	Brackets, hooks, wiper joints, stand joints	Strength; GF adds stiffness.	Dry before moulding ^[6] .	Moisture changes size ^[5] ; GF shows on surface.
TPE	Gaskets, soft grips	Seal and grip.	Two-shot or separate tool.	Bond and compression set.
PET	Brush bristles (extruded, then tufted)	Monofilament, often recycled.	Not injection moulded here.	Bought-in fibre.

General material behaviour only. Confirm grade and food-contact certificates with the material supplier.

FOOD CONTACT IN PRACTICE

Use food-grade virgin resin and approved masterbatch for parts that touch food. Plastic packaging materials are tested for overall migration to IS 9845^[2]; keep recycled content to non-food parts unless it is qualified.

MATERIAL SELECTION QUESTIONS

- ☐ Does the part touch food or water?
- ☐ Clear, glossy or utility finish?
- ☐ Dropped full, stacked or loaded?
- ☐ Hot filling, microwave or dishwasher?

CLEAR KITCHENWARE NEEDS A DRY, CLEAN PROCESS

SAN, PC and copolyester show every flaw. Moisture in copolyester reacts with the melt and causes splay or lower properties^[3], so dryer capacity, hopper residence and clean purging belong in the plan before the mould arrives.

SECTION 04 · DESIGN & MOULD

COMPONENT DESIGN & MOULD REQUIREMENTS

Household moulds are either large and deep, or small and crowded. Both reward good cooling and consistent shrinkage.

DESIGN FEATURES THAT AFFECT MOULDING

FEATURE	WHY IT MATTERS IN HOUSEHOLD PRODUCTS	MOULDING IMPLICATION
Large open area	Tubs, trays, bin bodies and lids.	Footprint sets tonnage; ribs instead of thick walls.
Deep thin walls	Buckets, bins, holders, boxes.	Core cooling, core shift and nesting draft.
Rims and handles	Full buckets and tubs are lifted by them.	Rolled or ribbed rims; handle lugs and bosses.
Perforations	Baskets and drainers.	Weld lines everywhere; venting and melt temperature.
Seals and gaskets	Airtight containers, tiffins, thermoware.	Lid and body tolerances; TPE two-shot or separate.
Undercuts	Mug handles, latches, closure threads.	Slides, split cavities or stripped threads.
Living hinges	Flip-top caps, folding dustpans.	Gate across the hinge; flex after ejection ^[4] .
Tuft holes	Brooms and brushes.	Round, burr-free holes held to depth for tufting.

MOULD CONSIDERATIONS

ITEM	HOUSEHOLD POINTS	ITEM	HOUSEHOLD POINTS
Cavity layout	Buckets and tubs: 1. Caps, rings, pegs: 16 to 48.	Cooling	Core cooling on deep parts; rises with wall squared ^[8] .
Runner	Hot runner on thin-wall and multi-cavity; cold runner on simple small parts.	Surface	Gloss for serveware and thermoware; texture for utility.
Venting	Critical on baskets and thin rims.	Labels	In-mould labels on buckets and containers.
Side actions	Mug handles, latches, bin hinges.	Set tools	Body, lid, gasket and latch tools qualified together.

PLANNING A SET OR RANGE

COUNT THE TOOLS	PAIRS	SIZE FAMILIES	SMALL PARTS
A thermoware or tiffin set can be five to eight tools.	Qualify lids and bodies as a pair on one resin lot.	Share bases and datums across container sizes.	Lids, pedals and latches suit a smaller press.

SECONDARY OPERATIONS THAT SHAPE THE MOULD

OPERATION	TYPICAL PARTS	WHAT IT ASKS OF THE MOULDED PART
PU foaming	Casserole and thermoware shells	Matched inner and outer shells that locate and seal for foaming.
Tufting	Broom bodies, cleaning and toilet brushes	Round, burr-free tuft holes at consistent depth and pitch.
Handle and blade fitting	Buckets, wipers, mops	Lugs, sockets and grooves held to size.
Plating or painting	Curtain finials, bath accessories	Plating grade, polished tool, no sink on show faces.

SECTION 05 · PRODUCTION PLANNING

PRODUCTION CAPACITY & CYCLE-TIME PLANNING

A bucket plant counts parts per hour in the hundreds; a closure or peg plant counts them in the thousands. Plan the two separately.

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 · 16-CAVITY PP CLOSURE

16 × 3600 ÷ 8 s = 7,200 /h

× 0.85 utilisation = 6,120 /h

× 22 h = 134,640 /day

× 26 days = 3,500,640 /month

EXAMPLE 2 · SINGLE-CAVITY 12 L PP BUCKET

1 × 3600 ÷ 30 s = 120 /h

× 0.85 = 102 /h · × 22 h = 2,244 /day

× 26 days = 58,344 /month

Working backwards: for 100,000 buckets a month in 572 running hours you need 175 per hour, which is 1.7 times this machine. Either a second machine or a cycle near 17.5 s.

Illustrative example. Cycle times of 8 s and 30 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	HOUSEHOLD INFLUENCE
Injection	High speed on thin walls and long flow.
Cooling	Usually the largest share; rises roughly with wall thickness squared ^[8] .
Mould opening	Long strokes on buckets and bins.
Take-out	Robot removal, labels and stacking.

BALANCING CAVITIES, CLAMP FORCE AND OUTPUT

PP CLOTH PEG MOULD	PROJECTED AREA	CALCULATED FORCE	RATED AT 85%	SHOT	EFFECTIVE OUTPUT
16 cavities	74 cm ²	30 t	35 t	54 g	3,264 /h
32 cavities	144 cm ²	58 t	68 t	105 g	6,528 /h
48 cavities	216 cm ²	87 t	102 t	157 g	9,792 /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^[7], about 0.28 to 0.42 t/cm²; K = 0.35 t/cm² and S = 1.15 assumed. Also assumed: one-piece peg of 4 cm² and 3 g, runner area 10 / 16 / 24 cm² and weight 6 / 9 / 13 g, 15 s cycle, 85% utilisation.

PLANNING TOTAL MACHINE HOURS

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

Plan large and small parts as separate groups; divide by 572 running hours per machine.

PLAN BY MOULDING GROUP

LARGE PARTS

Buckets, tubs, bins, boxes. Output grows by adding machines or cutting cycle.

THIN-WALL AND CLEAR

Bowls, containers, closures. Output grows with speed, cavities and drying capacity.

SMALL PARTS

Pegs, rings, hooks. Output grows with cavities while balance holds.

MACHINE UTILISATION AND PLANNED DOWNTIME

COLOUR CHANGES

Sets come in many colours; sequence light to dark.

BIG MOULD CHANGES

Bucket and bin moulds take longer to change.

FESTIVE PEAKS

Build stock of fast sizes before peak seasons.

RECYCLED LOTS

Requalify settings when the source changes.

SECTION 06 · AUTOMATION

AUTOMATION & PRODUCTION EFFICIENCY

Household plants automate to handle bulky parts, fit labels and handles, and pack sets, more than to speed up moulding itself.

AUTOMATION	WHERE IT ADDS VALUE IN HOUSEHOLD PRODUCTS	WHEN IT USUALLY MAKES SENSE
Robot take-out and stacking	Removes buckets, tubs, bins and boxes and nests them.	Large parts on continuous runs.
In-mould labelling	Decorated buckets and food containers.	Printed designs at volume.
Handle assembly	Fits bail handles to buckets.	High bucket volumes.
Sprue picker	Removes runners from cold-runner tools.	Pegs, rings, hooks, accessories.
Two-shot moulding	TPE gaskets and soft grips.	Airtight containers and brush handles.
Hinge flexing	Flip-top caps and folding dustpans ^[4] .	Hinged parts at volume.
Counting and set packing	Counts small parts; packs container and tiffin sets.	Parts sold by count or in sets.
Leak testing	Checks airtight containers and lunch boxes.	Products sold with a seal claim.
Central drying and loading	Dries SAN, copolyester, PC, ABS and nylon.	Several presses on clear or hygroscopic grades.

AUTOMATION BY PRODUCT GROUP

PRODUCT GROUP	MAIN AUTOMATION	WHY
Buckets, tubs, bins, boxes	Robot, stacking, labels, handles	Bulky parts, decoration, assembly
Containers, tiffins, thermoware	Two-shot or gasket fitting, leak test, set packing	Seal claims and multi-part sets
Pegs, rings, hooks, caps	Sprue picker, conveyor, counting	Thousands of small parts an hour

DECIDING ON AUTOMATION

PART SIZE Buckets and bins are awkward to remove and nest by hand every cycle.	DECORATION IML removes a separate printing step and adds shelf appeal.	SEAL CLAIMS Leak testing protects a product sold as airtight.
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INTERFACES TO SPECIFY ON THE MACHINE

ROBOT Signal interface, interlocks and mounting.	IML Label robot and static charging interface.	CORE PULLS Circuits for handles, latches and hinges.	AUXILIARIES Dryer, loader, conveyor and counter.
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WHERE THE COST OF A MOULDED PART COMES FROM

MATERIAL PP, HDPE, SAN	MACHINE per machine hour	LABOUR take-out, sets	POWER kWh per part	MOULD large or multi-cavity	REJECTION warp, leaks, colour	PACKING nesting, sets
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On buckets, tubs and bins, material weight is the biggest cost, so wall thickness and rim design decide margin. On caps, pegs and rings, cavity count and cycle decide it. Use your own rates to compare options.

SECTION 07 · QUALITY

QUALITY, TESTING & COMMON DEFECTS

Household products are judged by the user at home: the bucket must not crack, the lid must seal and the colour must match the set.

TESTS AND CHECKS

CHECK	WHAT IT INVOLVES	LINK TO MOULDING
Food contact	Plastic containers for food to the listed Indian Standards, such as IS 10146 and IS 10910, with overall migration limits ^[1] .	Grade, masterbatch, no unapproved regrind
Migration testing	Overall migration tested to IS 9845 with no visible colour migration ^[2] .	Material and colourant choice
Drop test	Full buckets, tubs and bins dropped.	Rim design, weld lines, copolymer grade
Leak test	Airtight containers and tiffins filled and inverted or dropped.	Lid, body and gasket tolerances
Load and fatigue	Hooks and brackets pull-out; pegs open and close.	Nylon moisture ^[5] , regrind, fill
Flatness	Trays, lids, dustpan lips, wiper heads.	Cooling balance, ribs, ejection
Colour and finish	Colour match across a set; gloss on thermoware.	Dosing, resin lot, tool polish

Test limits usually come from the regulation, the buyer or the product specification. Confirm the current edition of each standard.

IN-PROCESS CONTROLS

WEIGHT	FIT CHECKS	FLATNESS	COLOUR
Shot and part weight flag short shots and drift.	Lid on body and closure on neck every shift.	Fixtures for trays, lids and wiper heads.	Against the master under set lighting.

TROUBLESHOOTING COMMON DEFECTS

DEFECT	POSSIBLE CAUSES	EFFECT ON THE PART	AREAS TO INVESTIGATE
Flash on rims	Undersized clamp, worn shut-offs, high pressure	Sharp edges, poor fit	Clamp force, parting line, pressure
Core shift, uneven wall	Long core, unbalanced fill	Weak side, bucket cracks	Core support, gate, fill
Weak weld lines	Many openings, cold melt, poor venting	Baskets split when loaded	Venting, melt and mould temperature
Warped lids and trays	Uneven cooling, thick flat areas	Lids do not seal, trays rock	Cooling layout, ribs, hold
Splay on clear parts	Moisture in SAN, PC or copolyester ^[3]	Reject on bowls and mugs	Drying, residence time
Sink on show faces	Thick dividers, bosses, finials	Visible marks	Coring, rib ratio, hold
Leaking containers	Lid and body shrink mismatch, gasket fit	Failed seal claim	Pair qualification, gasket design
Colour mismatch	Dosing, resin lot, recycled content	Odd colours in a set	Dosing, lot control

SECTION 08 · WORKED EXAMPLES

PRACTICAL MACHINE-SELECTION EXAMPLES

Three typical household products show how the selection logic changes with the component. These are engineering illustrations with assumed inputs, not customer case studies.

A · 12 L PP BUCKET		LARGE PART
APPLICATION · MATERIAL	Household bucket · PP copolymer	
CHARACTERISTICS	Deep thin wall, rim and handle lugs, nesting draft	
CAVITIES · OUTPUT	1 · about 102 per hour at 30 s (Section 05)	
MOULD CONSIDERATIONS	Core cooling, core support, long opening stroke, IML option	
SECONDARY	Handle assembly, stacking	
EVALUATE With an assumed 700 cm ² projected area, K = 0.35 t/cm ² and S = 1.15, the calculated force is about 282 t. Deep thin-wall containers can need a higher K, so confirm with filling analysis. STILL NEEDED CAD, wall thickness, volume, IML plan.		

B · AIRTIGHT KITCHEN CONTAINER		SEAL SET
APPLICATION · MATERIAL	Food storage · clear copolyester or SAN body, PP lid, TPE gasket	
CHARACTERISTICS	Lid and body tolerances; gasket compression	
CAVITIES · OUTPUT	Body and lid tools · set by size family	
MOULD CONSIDERATIONS	High polish, gate on non-visible face, two-shot or separate gasket	
SECONDARY	Leak testing, set packing	
EVALUATE Drying capacity for the clear body ^[3] , shot repeatability and a second injection unit if the gasket is overmoulded. STILL NEEDED sizes, food-contact grades, seal test, volume.		

C · THERMOWARE SET		MANY TOOLS
APPLICATION · MATERIAL	Insulated jug set · PP or ABS outer, PP inner, TPE gasket	
CHARACTERISTICS	Inner and outer shells, lid, handle, gasket	
CAVITIES · OUTPUT	Five to eight tools · set by the foaming and assembly line	
MOULD CONSIDERATIONS	Gloss finish, matched shells for PU foaming	
SECONDARY	PU foaming, assembly, packing	
EVALUATE Plan a machine mix: the outer shell sets the largest press; lids, handles and gaskets run on smaller ones. STILL NEEDED drawings of every part, colours, set volume.		

WHAT DECIDED THE MACHINE IN EACH EXAMPLE

SELECTION FACTOR	A · BUCKET	B · CONTAINER	C · THERMOWARE
Main limit	Projected area, stroke	Seal, clarity	Number of tools
Clamp force	About 282 t calculated	Largest body sets it	Outer shell sets it
Auxiliaries	Robot, IML, handles	Dryer, second injection	Several presses, foaming line

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 household products.

COMPONENT ☐ 2D drawing and 3D CAD model ☐ Part and runner weight, wall thickness ☐ Material, food-contact status ☐ Finish: gloss, texture, IML ☐ Undercuts, hinges, gaskets	PRODUCTION ☐ Monthly volume per item and colour ☐ Cavity count and target cycle time ☐ Operating hours and shifts ☐ Sets and packing format ☐ Seasonal peaks
MOULD ☐ New or existing mould; size and weight ☐ Mould height and opening stroke ☐ Hot or cold runner ☐ Slides, core pulls, stripping ☐ Previous machine specification, if any	HOUSEHOLD APPLICATION ☐ Food, water or non-food use ☐ Drop, leak or load tests ☐ Recycled content allowed ☐ Colour sets across tools ☐ Assembly: handles, gaskets, foaming

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 HOUSEHOLD PRODUCTS
1	Will my largest bucket, tub or bin mould fit, with the opening stroke it needs to eject?	Deep parts need long strokes.
2	What injection speed is available for thin walls and long flow?	Bowls, containers, hangers, rims.
3	What shot repeatability does the machine hold at my shot size?	Lid fit and multi-cavity balance.
4	How many core-pull circuits are available?	Mug handles, latches, bin hinges.
5	Is a second injection unit available?	TPE gaskets and grips.
6	What robot and IML interfaces are supported?	Stacking and decorated containers.
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 on long runs.
9	Can the machine log shot data for traceability?	Food-contact and batch records.
10	What installation, training and spare-parts support is included?	Uptime through peak seasons.

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 food contact, sets, colours or in-mould labels.

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