



TECHNICAL BUYER'S GUIDE · PRATISHNA ENGINEERS

FMCG PACKAGING COMPONENTS INJECTION MOULDING MACHINE GUIDE

A practical guide for closure, preform, container and dispenser moulders: 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 caps, closures, preforms, thin-wall containers, IML tubs and dispensing parts for FMCG brands.

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

FMCG PACKAGING COMPONENTS & INJECTION MOULDING

Caps, preforms, tubs, lids and dispensers are made in very large numbers at very low weight. Cycle time, cavitation and food-contact compliance decide who makes money.

WHERE INJECTION MOULDING FITS IN FMCG PACKAGING

Almost every bottle, jar and tub on an Indian shelf carries at least one injection-moulded part: the closure, the preform the bottle is blown from, the tub and lid, or the pump, sprayer or scoop. Food-contact plastics must meet the Indian Standards named in the FSSAI Packaging Regulations, such as IS 10146 for PE, IS 10910 for PP and IS 12252 for PET^[3].

Two regulatory shifts matter to moulders. Plastic cups, glasses, cutlery and stirrers were banned from 1 July 2022^[1], with compostable plastic outside the ban^[2]. And rigid plastic packaging now carries recycled-content targets, starting at 30% in 2025-26^[6], while FSSAI allows food-contact rPET only from approved decontamination processes^[5].

MAIN COMPONENT CATEGORIES

CLOSURES Screw caps, CSD caps, water caps	DISPENSING CLOSURES Flip-tops, spouts, pourers	PREFORMS PET and rPET bottle preforms	THIN-WALL CONTAINERS Tubs, containers and lids
IML PACKS IML tubs, ice cream containers	DISPENSERS Pumps, sprayers, aerosol actuators	FOOD SERVICE Cups, tumblers, spoons, cutlery	ACCESSORIES Scoops, sweet boxes, handles, clips

WHY INJECTION MOULDING SUITS THESE PARTS

- Threads, seals and tamper bands formed exactly in one shot.
- Very high cavitation and short cycles for low piece cost.
- In-mould labels decorate the pack in the same cycle.

TYPICAL MANUFACTURING CHALLENGES

- Thin walls and long flow lengths push fill limits.
- Seal dimensions must hold across dozens of cavities.
- PET must be dried hard or it loses IV^[7].
- Single-use items face bans and market checks^[1].

WHERE MOULDING SITS IN THE PRODUCT CHAIN

RESIN PP, HDPE, PET, PS	DRYING PET, PS, SAN	INJECTION MOULDING caps, preforms, tubs	LABELS & DECORATION IML, print	ASSEMBLY lining, folding, pumps	INSPECTION vision, leak, weight	FILLING LINE brand owner
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Packaging moulders usually supply brand owners or fillers under tight specifications, so the part is judged on how it runs on a high-speed filling line as much as on the drawing.

KEY REQUIREMENTS FOR FMCG PACKAGING PARTS

FOOD-CONTACT COMPLIANCE Material to the listed IS standards and migration limits ^{[3][4]} .	SEAL INTEGRITY Caps and lids must hold product, pressure and freshness.	FILLING-LINE FIT Parts must run on the brand owner's high-speed lines.
LOW WEIGHT Every gram saved is multiplied by millions of parts.	TAMPER EVIDENCE Bands and bridges must break cleanly and show opening.	RECYCLABILITY Mono-material packs, recycled content and label choice.

SECTION 02 · COMPONENTS

MAJOR FMCG PACKAGING COMPONENTS

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

COMPONENT	MATERIAL(S)	INJECTION MOULDING CONSIDERATIONS
Bottle cap / plastic closure (screw closure)	HDPE, PP, LDPE	Cavitation drives sizing; under-clamping flashes every shot. Sealing surfaces held to about ± 0.02 mm. 16, 32 and 48 cavities are standard counts.
CSD cap (PCO 1881 / 1810)	HDPE (bimodal), PP	Bore and bump seal geometry holds carbonation for the shelf life. Many CSD caps are compression moulded, so confirm the route. 100% vision inspection is standard.
Water bottle cap (lightweight, tethered)	HDPE, PP	Tethered designs (EU 2019/904) change the tool, not the melt, and may need more mould space. 64 to 96 cavities common. Tether slitting is a downstream station.
Flip-top cap	PP (living hinge grade), HDPE, TPE (seal)	Gate so melt crosses the hinge; flex after ejection. Hinge fatigue is the acceptance test. Closing station in the cell; two-shot adds a TPE seal.
Spout, pourer and dispensing insert; measuring scoop and dosing cap	PP, HDPE, LDPE, PS	Multi-part closures with matched tolerances; hot runner balance sets scrap. Scoop graduations must stay accurate after shrinkage.
PET preform	Bottle-grade PET, rPET	Dedicated PET setup: low-compression screw, drying below 50 ppm, hot runner, post-mould cooling. Watch acetaldehyde, IV retention and weight.
Thin-wall container; tub and container lid (to about 1 L)	High-MFI PP, PP copolymer, recycled PP, IML-grade PP, PS	Fill, not clamp, is the limit: very high injection speed and pressure. Lids have large flat area for little weight. Lid and body qualified as a pair.
IML tub; ice cream container	PP copolymer, IML-grade PP, high-MFI PP	Label robot, static charge and placement set the cycle. Label and tub in the same polymer family. Copolymer for freezer service down to about -25°C .
Dispensing pump; sprayer (trigger, fine mist)	PP, POM, HDPE, LDPE	Six to fifteen mouldings that must seal together; repeatability decides leak-test yield. Output per stroke set by orifice tolerances.
Aerosol actuator and overcap	PP, HDPE, LDPE	Actuator insert orifice is a micro-feature; actuator and insert are two tools. Check chemical compatibility with the formulation.
Disposable spoon; disposable cutlery (fork, knife, stirrer)	PS, PP, CPLA	Long thin flow; tines and blades short first. Cavity balance sets rejects. Banned in India as single-use plastic ^[1] ; check the market before tooling.
Disposable cup; plastic tumbler	PP, PS, SAN, copolyester	Thin-wall, high-speed; rim and stacking geometry. Many cups are thermoformed. Reusable tumblers need clarity and drop resistance; dry clear grades.
Sweet box (box and lid)	Crystal PS, PP, copolyester	Clarity sells the box: gate, polish and flow marks matter. PP lids use a living hinge. Box and lid qualified as a pair.
Tub handle, bail grip and tamper-evident clip	PP, HDPE, PA6	Pivot boss is the fatigue point under full load. Clips must break cleanly and not reseal.

Not injection moulded: blow-moulded bottles, thermoformed cups, compression-moulded CSD caps, metal springs and balls, labels.

GROUPING BY MOULDING DEMAND

CLOSURES AND SMALL PARTS Caps, spouts, scoops, clips. Cavitation and seal tolerance.	THIN-WALL AND IML Containers, tubs, lids, cups. Injection speed, labels, stacking.	PREFORMS AND ASSEMBLIES Preforms and dispensers. Dedicated setup or matched tools.
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SECTION 03 · MATERIALS

MATERIALS USED FOR FMCG PACKAGING

FMCG parts use a short list of resins in many grades. The grade, not just the polymer, decides flow, seal behaviour and food-contact status.

MATERIAL	TYPICAL COMPONENTS	RELEVANT PROPERTIES	PROCESSING CONSIDERATIONS	LIMITATIONS TO CHECK
HDPE (incl. bimodal)	Caps, CSD and water caps, spouts, pumps, handles	Tough, good seal behaviour, food grades ^[3] .	High shrinkage; fast cooling.	Stress cracking with some products.
LDPE	Closure liners, pump and sprayer parts, overcaps	Soft, flexible.	Easy flow.	Low stiffness.
PP, high-MFI PP	Caps, flip-tops, thin-wall containers, scoops, cups	Stiff, living hinges, food grades ^[3] .	High-MFI grades fill thin walls.	Brittle when cold (homopolymer).
PP copolymer, IML-grade PP	Tubs, lids, ice cream containers	Impact at freezer temperature.	Label-compatible grades for IML.	Stiffness lower than homopolymer.
Recycled PP	Thin-wall containers	Supports recycled-content targets ^[6] .	Melt flow varies lot to lot.	Food-contact status to confirm.
PET, rPET	Preforms	Clear, strong, gas barrier.	Dry to about 50 ppm or below ^[7] .	Food-contact rPET from approved processes only ^[5] .
PS, crystal PS	Sweet boxes, cups, scoops, cutlery	Clear, stiff, easy to mould.	Fast cycles; polish for clarity.	Brittle; single-use restrictions ^[1] .
SAN, copolyester	Tumblers, sweet boxes	Clarity with better toughness than PS.	Must be dried; splay shows in clear walls.	Cost.
POM	Pump and sprayer sliding and sealing parts	Stiff, low friction.	Never mix with PVC in a barrel.	Chemical compatibility.
TPE	Flip-top seals	Soft sealing element.	Two-shot or insert.	Bond to PP.
PA6	Handles and clips	Tough, fatigue resistant.	Must be dried.	Moisture uptake.
CPLA	Compostable cutlery and spoons	Compostable alternative.	Own process window.	Market and certification rules.

General material behaviour only. Confirm food-contact compliance, migration results and grade data with the resin supplier.

RECYCLED CONTENT AND THE MOULDING FLOOR

Recycled-content targets for rigid packaging rise year by year from 30% in 2025-26 towards 60% by 2028-29^[6]. For moulders this means more lot-to-lot variation in melt flow and colour, more attention to drying and filtration, and a need to record which recycled grade went into which batch. For food-contact PET, only FSSAI-approved rPET can be used^[5].

FOOD-CONTACT RULES FOR MATERIALS

Plastics in contact with food must conform to the listed IS material standards^[3] and pass the overall migration limit of 60 mg/kg or 10 mg/dm² when tested to IS 9845^[4]. Colourants must meet IS 9833^[3]. Recycled PET may be used only from FSSAI-approved recycling technologies with a decontamination step^[5].

MATERIAL SELECTION QUESTIONS

- ☐ Is it food, drink, personal care or household chemical?
- ☐ Hot fill, freezer or ambient storage?
- ☐ Does the closure hold pressure or a live hinge?
- ☐ Is recycled content required, and in which part?
- ☐ Which market: is the item restricted there?

SECTION 04 · DESIGN & MOULD

COMPONENT DESIGN & MOULD REQUIREMENTS

Packaging moulds are built for speed and repeatability: many identical cavities, hot runners, fast cooling and unscrewing or stripping of threads.

DESIGN FEATURES THAT AFFECT MOULDING

FEATURE	WHY IT MATTERS IN PACKAGING	MOULDING IMPLICATION
Threads and seals	Caps must seal on the bottle neck finish.	Stripped or unscrewed threads; seal lips held tight across cavities.
Tamper bands and bridges	Show first opening.	Thin bridges fill last; folding or slitting after moulding.
Living hinges	Flip-tops and hinged lids open thousands of times.	Flow across the hinge; flex straight after ejection.
Thin walls	Containers and lids save weight.	Very fast injection; high-MFI grades; stiff moulds.
Rims and stacking features	Cups, tubs and lids must stack and denest.	Rim concentricity, stacking lugs, nesting draft.
Preform neck finish	Must match the closure and blowing.	Neck held cold and accurate; split neck rings.
Label area	IML tubs and lids carry the brand.	Label placement, static and venting behind the label.
Micro orifices	Pump and actuator outputs.	Precision inserts; separate tools for inserts.

MOULD CONSIDERATIONS

ITEM	PACKAGING POINTS	ITEM	PACKAGING POINTS
Cavities	Caps 16 to 96; preforms up to 72 or more; tubs 1 to 8.	Stack moulds	Double the cavities on the same projected area for lids and caps.
Hot runner	Standard for caps and preforms; balance sets scrap.	Thread release	Stripping for flexible PE caps; unscrewing for rigid threads.
Cooling	Usually the largest cycle share; rises with wall squared ^[9] .	Steel	Hardened, well-cooled inserts for long runs.
Venting	Thin walls and label areas trap air.	Change parts	Neck, colour and label changes by insert.

MOULDS THAT COME AS A PACKAGE

PAIRS	FAMILIES	SETS
Box and lid, tub and lid: qualified together for fit and seal.	Pumps and sprayers: many tools for one assembly.	Spoon, fork, knife and stirrer: one tool programme.

SECONDARY OPERATIONS THAT SHAPE THE MOULD

OPERATION	TYPICAL PARTS	WHAT IT ASKS OF THE MOULDED PART
Slitting and folding	Tamper bands, tethered caps	Band geometry ready for the downstream station.
Closing	Flip-tops, hinged lids	Hinge flexed while warm.
Pump and sprayer assembly	Pumps, sprayers, actuators	Parts that seal together from separate tools.

SECTION 05 · PRODUCTION PLANNING

PRODUCTION CAPACITY & CYCLE-TIME PLANNING

Packaging output is counted in millions a month. Small changes in cycle time or cavities change annual output more than anything else in the plant.

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, hot runner faults, maintenance and rejects.

EXAMPLE 1 · 32-CAVITY HDPE WATER CAP

32 × 3600 ÷ 4 s = 28,800 /h
 × 0.85 utilisation = 24,480 /h
 × 22 h = 538,560 /day
 × 26 days = 14,002,560 /month

EXAMPLE 2 · 4-CAVITY PP THIN-WALL CONTAINER

4 × 3600 ÷ 6 s = 2,400 /h
 × 0.85 = 2,040 /h · × 22 h = 44,880 /day
 × 26 days = 1,166,880 /month

Working backwards: for 2,000,000 containers a month in 572 running hours you need 3,497 per hour. Cavities = $3,497 \times 6 \div (3600 \times 0.85) \approx 6.9$, so an 8-cavity mould or a second machine.

Illustrative example. Cycle times of 4 s and 6 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	PACKAGING INFLUENCE
Injection	Fast fill for thin walls and long flow.
Cooling	Largest share; set by the thickest wall ^[9] .
Mould movement	Fast clamp and ejection count at short cycles.
Labels	IML label placement adds robot time.

BALANCING CAVITIES, CLAMP FORCE AND OUTPUT

PP MEASURING SCOOP	PROJECTED AREA	CALCULATED FORCE	RATED AT 85%	SHOT	EFFECTIVE OUTPUT
8 cavities	106 cm ²	43 t	50 t	37 g	2,448 /h
16 cavities	208 cm ²	84 t	99 t	72 g	4,896 /h
32 cavities	410 cm ²	165 t	194 t	141 g	9,792 /h

Illustrative example. Force = projected area × clamp factor K × safety factor S. PP is 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: 12 cm² and 4 g per scoop, runner area 10 / 16 / 26 cm² and weight 5 / 8 / 13 g, 10 s cycle, 85% utilisation. This general factor does not cover high-pressure thin-wall caps and containers; confirm their clamp force separately.

PLANNING TOTAL MACHINE HOURS

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

Add the hours for every cap, container, lid and accessory, then divide by the running hours per machine (572 here). Lids and bodies should be planned as matched pairs.

MACHINE UTILISATION AND PLANNED DOWNTIME**COLOUR CHANGES**

Brand colours on caps mean frequent purges.

HOT RUNNER UPKEEP

A blocked drop cuts output in every cycle.

SEASONAL PEAKS

Beverage caps and ice cream tubs peak in summer.

PET DRYING

Dryer capacity must match preform throughput^[7].

SECTION 06 - AUTOMATION

AUTOMATION & PRODUCTION EFFICIENCY

Packaging cells are automated by default. The question is which downstream steps sit inside the cell and which run separately.

AUTOMATION	WHERE IT ADDS VALUE IN PACKAGING	WHEN IT USUALLY MAKES SENSE
IML robot	Places labels in tubs and lids each cycle.	Branded tubs, dairy and ice cream packs.
Post-mould cooling	Cools preforms after ejection so the cycle can shorten.	PET preform systems.
High-speed take-out	Removes thin-wall parts and stacks them.	Containers, lids, cups.
Vision inspection	Checks caps and preforms for defects.	Closures and preforms at high output.
Slitting and folding	Tamper bands and tethers.	Water and beverage caps.
Closing station	Closes flip-tops and hinged lids.	Flip-top caps, hinged boxes.
Assembly and leak test	Builds pumps and sprayers.	Dispensing products at volume.
Counting and bagging	Packs caps and scoops by count.	High-cavitation small parts.

At these output rates, one hand-handled step can limit the whole cell. Plan conveying, inspection and packing capacity to match the fastest mould, not the average one.

AUTOMATION BY PRODUCT GROUP

PRODUCT GROUP	MAIN AUTOMATION	WHY
Caps and closures	Vision, slitting, counting	Millions of parts, zero leaks
Preforms	Post-mould cooling, inspection	Cycle and PET quality
Tubs and lids	IML robot, stacking	Decoration and nesting
Pumps and sprayers	Assembly, leak test	Many parts per product

DECIDING ON AUTOMATION

VOLUME High-cavitation output cannot be handled by hand.	HYGIENE Food-contact parts are best untouched.	CONSISTENCY Labels, folds and closings repeat exactly.
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INTERFACES TO SPECIFY ON THE MACHINE

ROBOT Fast signal interface and safety interlocks.	HOT RUNNER Zone control integrated or connected.	DOWNSTREAM Conveyor, vision and packing signals.	AUXILIARIES Dryer, loader, chiller connections.
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WHERE THE COST OF A MOULDED PART COMES FROM

MATERIAL grams per part	MACHINE per machine hour	LABOUR minimal	POWER kWh per 1,000	MOULD cavities, hot runner	REJECTION flash, shorts	PACKING by count
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In packaging, material is usually the largest share, which is why weight reduction matters so much. Machine hours, power per thousand parts and rejects follow. Use your own rates to compare options.

SECTION 07 · QUALITY

QUALITY, TESTING & COMMON DEFECTS

A packaging part is judged on the filling line and on the shelf: it must run, seal, open as intended and be safe in contact with the product.

TESTS AND CHECKS

CHECK	WHAT IT INVOLVES	LINK TO MOULDING
Material conformity	Food-contact plastics to the listed IS standards, colourants to IS 9833 ^[3] .	Grade control, masterbatch
Overall migration	IS 9845 test against 60 mg/kg or 10 mg/dm ² ^[4] .	Grade, additives, colour
Drinking water containers	Colourless, transparent, tamper-proof, at least 85% light transmittance ^[3] .	Clarity, tamper features
Preform quality	Weight, dimensions, clarity, IV and acetaldehyde.	Drying ^[7] , melt temperature, residence time
Closure function	Application and removal torque, leak and tamper-band break.	Seal dimensions, band bridges
Container performance	Stacking, top load, drop and lid fit; freezer impact for ice cream.	Wall distribution, grade
Decoration	IML label position and adhesion.	Label placement, static, venting

Test methods and limits come from the applicable regulation, standard or brand-owner specification. Confirm the current editions for each product.

IN-PROCESS CONTROLS

WEIGHT BY CAVITY Flags a blocked hot-runner drop.	VISION Caps and preforms checked in line.	DRYER CHECKS Dew point and moisture for PET ^[7] .	SEAL GAUGES Cap and lid seal dimensions sampled.
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TROUBLESHOOTING COMMON DEFECTS

DEFECT	POSSIBLE CAUSES	EFFECT ON THE PART	AREAS TO INVESTIGATE
Flash on caps	Under-clamping, worn shut-offs	Leaks, line jams	Clamp setting, parting line
Short shots	Long thin flow, blocked drop	Thin tines, incomplete rims	Injection speed, hot runner zones
Haze or bubbles in preforms	Wet PET, overheating ^[7]	Weak, cloudy bottles	Drying, melt temperature
High acetaldehyde	Excess heat or residence time	Taste in beverages	Barrel and hot runner temperatures
Warped lids	Uneven cooling, flat areas	Lids that will not seal	Cooling layout, hold
Weak hinges	Wrong gating, no flexing	Flip-tops that crack	Gate position, closing station
Label defects	Label shift, static loss	Rejected IML packs	Robot, static charge, venting
Brittle freezer tubs	Homopolymer grade	Cracks at base corners	Grade selection

SECTION 08 · WORKED EXAMPLES

PRACTICAL MACHINE-SELECTION EXAMPLES

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

A · 28 MM HDPE WATER CAP		HIGH CAVITATION
APPLICATION · MATERIAL	Lightweight tethered water cap · HDPE	
CHARACTERISTICS	Thin top panel, seal lip, tamper band, tether	
CAVITIES · OUTPUT	32 · about 24,480 per hour at 4 s (Section 05)	
MOULD CONSIDERATIONS	Hot runner, stripping, cooling of every cavity	
SECONDARY	Slitting and folding, vision inspection	
EVALUATE Fast clamp and ejection, injection speed and hot-runner control matter as much as tonnage. Clamp force must be confirmed for the thin-wall cap at the chosen cavity count. STILL NEEDED cap drawing, neck finish, cavities, monthly volume.		

B · PET PREFORM		DEDICATED PET
APPLICATION · MATERIAL	Water bottle preform · bottle-grade PET or FSSAI-approved rPET	
CHARACTERISTICS	Neck finish, controlled weight, clarity	
CAVITIES · OUTPUT	Set by bottle volume and blow-moulding capacity	
MOULD CONSIDERATIONS	Hot runner, split neck rings, cold cores	
SECONDARY	Post-mould cooling, inspection	
EVALUATE Drying capacity, a PET screw and post-mould cooling decide the cell. A general-purpose setup raises the risk of acetaldehyde and IV loss. STILL NEEDED preform drawing, weight, neck, resin, output.		

C · PP IML ICE CREAM TUB		DECORATION + FREEZER
APPLICATION · MATERIAL	1 L ice cream tub · PP copolymer, IML grade	
CHARACTERISTICS	Thin wall, label on the side wall, stacking rim	
CAVITIES · OUTPUT	1 to 4 · set by label robot time	
MOULD CONSIDERATIONS	Label placement, static, venting behind the label	
SECONDARY	Stacking, lid pairing	
EVALUATE The IML robot interface and fast injection side drive the choice. The lid is planned alongside, as its flat area can need similar clamp force. STILL NEEDED tub and lid drawings, label spec, volume.		

WHAT DECIDED THE MACHINE IN EACH EXAMPLE

SELECTION FACTOR	A · WATER CAP	B · PREFORM	C · IML TUB
Main limit	Cycle and cavitation	PET quality	Label placement
Clamp force	Confirm for thin wall	From tool layout	Tub and lid area
Auxiliaries	Vision, slitting	Dryer, cooling robot	IML robot, stacker

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 a packaging part.

COMPONENT

- ☐ 2D drawing and 3D CAD model
- ☐ Part weight and wall thickness
- ☐ Neck finish or seal design
- ☐ Grade and food-contact status
- ☐ Label or decoration details

PRODUCTION

- ☐ Monthly volume and seasonal peaks
- ☐ Colour range
- ☐ Cavity count and target cycle time
- ☐ Operating hours and shifts
- ☐ Packing and pallet format

MOULD

- ☐ New or existing mould; size and weight
- ☐ Hot runner make and zones
- ☐ Stack mould or single face
- ☐ Stripping or unscrewing
- ☐ Previous machine specification, if any

PACKAGING APPLICATION

- ☐ Food, drink, personal care or chemical
- ☐ Hot fill, freezer or ambient
- ☐ Recycled content target
- ☐ Tethering or tamper rules
- ☐ Destination market restrictions

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.

QUESTIONS TO ASK BEFORE YOU BUY A MACHINE

#	QUESTION	WHY IT MATTERS FOR PACKAGING
1	What injection speed and pressure can the machine hold at my shot size?	Thin-wall fill.
2	How fast are the clamp and ejector movements?	Short cycles decide output.
3	Is a PET screw, barrel and drying package available?	Preform quality.
4	How many hot-runner zones can be controlled or connected?	High-cavitation caps and preforms.
5	Will my stack or high-cavitation mould fit, with the opening it needs?	Mould size and stroke.
6	What robot, IML and downstream interfaces are supported?	Labels, vision and packing.
7	What is the energy use per 1,000 parts at my cycle?	Power is a large share of cost.
8	What shot repeatability does the machine hold?	Seal dimensions across cavities.
9	Can shot data be logged for traceability?	Food-contact records.
10	What installation, training and spare-parts support is included?	Uptime through seasonal peaks.

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
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SEND YOUR COMPONENT & PRODUCTION REQUIREMENTS

Component drawing · material · part weight · mould details · cavity count · production requirement · other requirements such as food-contact grade, IML, tethering or cycle target.

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