



TECHNICAL BUYER'S GUIDE · PRATISHNA ENGINEERS

MATERIAL HANDLING COMPONENTS INJECTION MOULDING MACHINE GUIDE

A practical guide for crate, bin, tray and handling-hardware makers: 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 crates, bins, lids, trays, castor wheels and container hardware.

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

MATERIAL HANDLING COMPONENTS & INJECTION MOULDING

Crates, bins, lids and trays move goods through farms, dairies, factories and warehouses. They are reused for years, so stacking strength and toughness matter more than looks.

WHERE INJECTION MOULDING FITS IN MATERIAL HANDLING

Most returnable crates and bins are injection moulded in HDPE or PP^[1]. Around them sits a second family of smaller moulded parts that sell in the same volumes: lids, label holders, dividers, castor wheels, handles, foldable crate hinges and latches, pallet feet and container fittings.

This guide covers crates and bins up to the small and medium sizes, plus the accessory parts. Full-size pallet decks need very large machines, and bulk containers and IBC bodies are blow or rotational moulded; only their fittings are covered here.

MAIN COMPONENT CATEGORIES

CRATES Stackable logistics and produce crates, milk crates	BINS Storage, picking and louvre bins	LIDS Crate and bin lids, hinged and split lids	ACCESSORIES Label and card holders, bin dividers
FOLDABLE CRATE PARTS Hinges, latches, locking clips	WHEELS Castor and trolley wheels for dollies	HANDLES Grips and drop-down handles	TRAYS & FITTINGS Dunnage trays, pallet feet, IBC fittings

WHY INJECTION MOULDING SUITS THESE PARTS

- Ribs, stacking lugs and interlocks moulded in one shot.
- Consistent size for stacking and nesting.
- Moulded-in colour for colour coding.
- Long service life and full recyclability.

TYPICAL MANUFACTURING CHALLENGES

- Large flat areas that warp if cooling is cut.
- Many openings and weld lines in crates.
- Recycled content with variable melt flow.
- Lids and bodies that must fit as a pair.

WHERE MOULDING SITS IN THE PRODUCT CHAIN

RESIN HDPE, PP, recycled blends	COLOUR masterbatch by code	INJECTION MOULDING crates, bins, parts	SECONDARY labels, inserts, assembly	TESTING stack, drop, fit	SUPPLY dairies, farms, logistics	RETURN LOOP wash, reuse, regrind
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WHERE THE PRODUCTS ARE USED

FARM AND PRODUCE Harvest, packhouse and market crates.	DAIRY Milk crates through fill, cold store and delivery ^[1] .	FABORY AND WAREHOUSE Bins, picking bins, trays and dollies.	ELECTRONICS ESD trays and dunnage for sensitive parts ^[3] .
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KEY REQUIREMENTS FOR HANDLING PRODUCTS

STACKING STRENGTH Crates carry the load of full crates above them, for months in a warehouse.	TEMPERATURE HDPE stays tough to about -30 °C; PP is not recommended below 0 °C ^[1] .	IMPACT Crates are dropped, thrown and hit by forklifts.
FIT AND NESTING Stack, nest, lid and panel fits must work on every moulded part.	FOOD CONTACT Dairy and produce crates need food-contact resin and colourants.	WASHING Returnable crates and clip-on parts survive repeated wash cycles.

SECTION 02 · COMPONENTS

MAJOR MATERIAL HANDLING COMPONENTS

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

COMPONENT	APPLICATION	MATERIAL(S)	INJECTION MOULDING CONSIDERATIONS
Plastic crate (small stackable, 10 to 40 L)	Logistics and produce	PP copolymer, HDPE, recycled PP/HDPE blend	Shot capacity must fill thick sections. Stacking and interlock tabs drift if the mould shifts. Vents must not weaken stacking.
Plastic bin (small parts and storage)	Storage and picking	PP copolymer, HDPE, recycled PP, FR PP	Open front lip warps: rib it. Check nesting and stacking on moulded parts. Do not cut cooling to gain cycle.
Milk crate	Dairy distribution	HDPE (food grade), PP copolymer	Deep draw with many openings and weld lines; venting and gates decide splitting. Food contact and recycled content limits.
Small picking / louvre bin (up to about 10 L)	Panel and rail storage	PP copolymer, HDPE, recycled PP	Hooks carry the load; consistent shrinkage to seat on the panel. One masterbatch across several tools.
Crate and bin lid (up to about 400 × 300 mm)	Closing crates and bins	PP copolymer, HDPE	Large flat area, so tonnage close to the body. Qualify lid and body as a pair. Living hinges need PP.
Label holder, card holder, bin divider	Identification and division	PP, HDPE, PS, PC (clear window)	High-cavitation parts; snap fits survive washing. Clear windows need a clarity grade and polished tool.
Castor and trolley wheel	Dollies and bin trolleys	PA6, PA6-GF, PP, HDPE, POM, TPU/TPR tread	Rigid hub with overmoulded tread, peel tested. Creep under standing load. Gauge nylon bearing seats conditioned.
Pallet foot, runner insert, anti-slip pad	Pallet parts	HDPE, PP, PA6-GF, TPE	Small separate mouldings. Check compression set under stacked load.
Foldable crate hinge, latch, locking clip	Collapsible crates	PA6-GF, POM, PP copolymer	Thousands of fold cycles: fatigue test. POM pivots, glass-filled nylon latches, moulded dry.
Component and dunnage tray (small)	Parts and electronics handling	PP copolymer, HIPS, HDPE, conductive/ESD PP	Flatness after ejection. ESD grades are more viscous and abrasive. Nesting ratio.
Container handle, grip, drop-down handle	Carrying containers	PP copolymer, PA6-GF, HDPE, TPE	Pivot boss fatigue. Snap pivots are a tolerance job. TPE soft grip for hand carrying.
Bulk container and IBC accessory parts	Corner guards, lid latches, drain fittings	HDPE, PP copolymer, PA6-GF	Seal groove and thread tolerance for leak-free drains. UV grades outdoors.

Pallet decks, bulk container bodies and IBC bottles are outside this guide. Bearings, axles, steel forks and seals are bought in.

SCOPE CHECK BEFORE QUOTING

PRODUCT	MOULDED CONTENT IN THIS GUIDE	USUALLY OUTSIDE
Pallet	Feet, runner inserts, anti-slip pads	Full-size deck
Bulk container / IBC	Corner guards, lid latches, drain fittings	Blow or rotational moulded body
Dolly and trolley	Castor and trolley wheels	Bearings, axles, steel forks
Foldable crate	Hinges, latches, locking clips	Large wall panels on big crates

SECTION 03 · MATERIALS

MATERIALS USED FOR MATERIAL HANDLING COMPONENTS

Crates and bins are mostly polyolefins. Engineering resins appear only where a part pivots, latches, rolls or carries a concentrated load.

MATERIAL	TYPICAL COMPONENTS	RELEVANT PROPERTIES	PROCESSING CONSIDERATIONS	LIMITATIONS TO CHECK
HDPE	Crates, milk crates, bins, lids, feet, IBC parts	Tough to about -30 °C; loaded use up to about 60 °C ^[1] .	High shrinkage; warp on flat parts.	Lower stiffness than PP.
PP, PP copolymer	Crates, bins, lids, holders, handles, trays	Stiffer; loaded use up to about 100 °C; living hinges ^{[1][4]} .	Copolymer for impact.	Not recommended below 0 °C ^[1] .
Recycled PP / HDPE	Crates, bins, picking bins	Lower cost and carbon.	Melt flow and colour vary by lot.	Food contact and impact.
FR PP	Bins for fire-rated storage	Flame retardant.	Additives affect flow and colour.	Confirm the fire test required.
PS, HIPS	Card holders, dunnage trays	Rigid, good flatness.	Low shrinkage, easy to hold flat.	Brittle (PS); chemical resistance.
PC	Clear label windows	Clear, tough.	Dry; polished tool.	Scratches, stress cracking.
PA6, PA6-GF	Wheels, latches, handles, pallet inserts	Strong, stiff with glass.	Must be dried ^[7] .	Moisture changes size.
POM	Wheels, hinge pivots	Low friction, stiff ^[8] .	Controlled melt temperature.	Poor overmould bonding.
TPE, TPU / TPR	Treads, anti-slip pads, soft grips	Grip and quiet running.	Grade matched to substrate ^[5] .	Wear, compression set.
Conductive / ESD PP	Electronics dunnage trays	Dissipative or conductive grades ^[3] .	Higher viscosity, abrasive filler.	Resistance range, cost.

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

MATCHING RESIN TO THE HANDLING ENVIRONMENT

ENVIRONMENT	MAIN CONCERN	RESIN DIRECTION IN THIS GUIDE
Cold store, frozen goods	Impact at low temperature ^[1]	HDPE
Hot wash, warm storage	Load at temperature ^[1]	PP copolymer
Electronics handling	Charge on the part ^[3]	Conductive or ESD PP
Outdoor yards	UV exposure	UV-stabilised HDPE or PP

MATERIAL SELECTION QUESTIONS

- ☐ Coldest and hottest use and wash temperature?
- ☐ Food contact, and which colourants are allowed?
- ☐ Stack height and time under load?
- ☐ How much recycled content, and is it food grade?
- ☐ ESD, fire or UV requirement?
- ☐ Single colour or a colour-code range?

SECTION 04 · DESIGN & MOULD

COMPONENT DESIGN & MOULD REQUIREMENTS

Crate and bin moulds are large, deep and full of openings. Accessory moulds are small and multi-cavity. Most plants need both.

DESIGN FEATURES THAT AFFECT MOULDING

FEATURE	WHY IT MATTERS IN HANDLING PRODUCTS	MOULDING IMPLICATION
Stacking lugs and interlocks	Stacks collapse if these drift out of size.	Mould must not shift under pressure; clamp and guiding checked.
Ribbed walls and base	Stiffness without heavy walls.	Rib to wall ratio avoids sink; even cooling.
Vent and grip openings	Airflow and handling.	Many weld lines; gate layout and venting.
Long unsupported edges	Bin lips and lid edges.	Warp; ribs rather than thicker walls.
Hooks and hanging rails	Louvre bins seat on panels.	Consistent shrinkage between tools and colours.
Living hinges	Hinged and split lids.	Flow across the hinge; flex while warm ^[4] .
Pivots and bearing seats	Handles, foldable crates, wheels.	Round, stable bores; conditioned nylon size ^[7] .

MOULD CONSIDERATIONS

ITEM	HANDLING POINTS	ITEM	HANDLING POINTS
Cavity layout	Crates, bins, lids: 1 or 2. Holders, clips, feet: 8 to 32.	Mould guiding	Interlocks and parallel alignment against core shift.
Gating	Hot runner or multi-point gates on large crates.	Ejection	Deep crates need air assist and wide stripping.
Cooling	Sets cycle and flatness on large parts ^[10] .	Inserts	Size and label inserts in one mould base.
Venting	Many openings trap air at meeting flow fronts.	Stroke	Deep crates need long opening stroke.

PLANNING A CRATE AND BIN RANGE

HEIGHT FAMILY	LID AND BODY	COLOUR CODE	ACCESSORIES
One footprint in several heights shares base and lid.	Qualify them together for fit and shrinkage.	Same masterbatch across tools; plan purges.	Holders and dividers need their own small tools.

SECONDARY OPERATIONS THAT SHAPE THE MOULD

OPERATION	TYPICAL PARTS	WHAT IT ASKS OF THE MOULDED PART
In-mould or applied labels	Branded crates	Flat label panel, label insert or recess.
Hinge and latch assembly	Foldable crates	Pin bores and snap pivots to size.
Wheel assembly	Castors and dolly wheels	Bearing seat and axle bore held after moulding.

SECTION 05 · PRODUCTION PLANNING

PRODUCTION CAPACITY & CYCLE-TIME PLANNING

A crate mould often runs one part per cycle for weeks, while accessory moulds run dozens per cycle. Plan both against the same order book.

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 · 1-CAVITY PP COPOLYMER 20 L CRATE

$1 \times 3600 \div 45 \text{ s} = 80 \text{ /h}$

$\times 0.85 \text{ utilisation} = 68 \text{ /h}$

$\times 22 \text{ h} = 1,496 \text{ /day}$

$\times 26 \text{ days} = 38,896 \text{ /month}$

Working backwards: 60,000 crates a month in 572 running hours need 105 per hour. One cavity would need a 29 s cycle ($1 \times 3600 \times 0.85 \div 105$), which a crate cannot hold, so plan a second mould and machine.

WHAT SETS THE CYCLE TIME

PHASE	HANDLING INFLUENCE
Injection	Large shots over long flow lengths.
Cooling	Usually the largest share; rises roughly with wall thickness squared ^[10] .
Mould opening	Long stroke for deep crates.
Ejection	Stripping deep parts cleanly.

EXAMPLE 2 · 16-CAVITY PP LABEL HOLDER

$16 \times 3600 \div 18 \text{ s} = 3,200 \text{ /h}$

$\times 0.85 = 2,720 \text{ /h} \cdot \times 22 \text{ h} = 59,840 \text{ /day}$

$\times 26 \text{ days} = 1,555,840 \text{ /month}$

Illustrative example. Cycle times of 45 s and 18 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.

BALANCING CAVITIES, CLAMP FORCE AND OUTPUT

PP LABEL HOLDER MOULD	PROJECTED AREA	CALCULATED FORCE	RATED AT 85%	SHOT	EFFECTIVE OUTPUT
8 cavities	58 cm ²	23 t	27 t	37 g	1,360 /h
16 cavities	112 cm ²	45 t	53 t	72 g	2,720 /h
24 cavities	166 cm ²	67 t	79 t	107 g	4,080 /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^[9], about 0.28 to 0.42 t/cm²; K = 0.35 t/cm² and S = 1.15 assumed. Also assumed: 6 cm² and 4 g per holder, runner area 10 / 16 / 22 cm² and weight 5 / 8 / 11 g, 18 s cycle, 85% utilisation.

CRATE AND ACCESSORY PLANS SIDE BY SIDE

PLANNING ITEM	20 L CRATE (EXAMPLE 1)	LABEL HOLDER (EXAMPLE 2)
Cavities	1	16
Effective output	68 /h	2,720 /h
Main limit on output	Cooling of a large part	Cavities and runner removal
Usual way to add output	Second mould and machine	More cavities

MACHINE UTILISATION AND PLANNED DOWNTIME

COLOUR CHANGES	RECYCLED LOTS	MOULD CHANGES	SEASONAL DEMAND
Run light to dark; group colour codes.	Check melt flow before each new lot.	Heavy crate moulds need crane time and planning.	Harvest and dairy peaks need stock built ahead.

SECTION 06 · AUTOMATION

AUTOMATION & PRODUCTION EFFICIENCY

Crates are big and awkward to handle by hand every 45 seconds. Automation in handling-product plants starts with take-out and stacking.

AUTOMATION	WHERE IT ADDS VALUE IN HANDLING PRODUCTS	WHEN IT USUALLY MAKES SENSE
Robot take-out	Removes crates, bins and lids from deep moulds.	Large parts on continuous runs.
Stacking and palletising	Stacks crates and nests bins at the machine.	High daily crate counts.
In-mould labelling	Places labels in crate side panels.	Branded or coded crates.
Sprue picker	Removes runners from holder and clip moulds.	Multi-cavity cold-runner moulds.
Conveyors and cooling	Carries parts off while they finish cooling.	Large flat parts that warp if stacked hot.
Hot runner control	Multi-zone temperature for large crate gates.	Hot-runner crate and lid moulds.
Material handling	Central feeding, blending of recycled and virgin, masterbatch dosing.	Several machines on crate grades.
Assembly fixtures	Wheels, foldable crate hinges and latches.	Multi-part products sold assembled.

AUTOMATION BY PRODUCT GROUP

PRODUCT GROUP	MAIN AUTOMATION	WHY
Crates and bins	Robot, stacking, labelling	Heavy, bulky, high daily counts
Lids and trays	Robot, cooling conveyor	Flatness depends on handling
Accessories	Sprue picker, counting	High counts per hour
Wheels and foldable parts	Overmould cell, assembly	Several parts per product

DECIDING ON AUTOMATION

VOLUME AND LABOUR Lifting large crates every cycle is slow and tiring.	CONSISTENCY Timed take-out keeps cycle and cooling the same every shot.	RECYCLED CONTENT Dosing controls keep blend and colour steady.
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INTERFACES TO SPECIFY ON THE MACHINE

ROBOT Signal interface and safety interlocks.	HOT RUNNER Zone control interface.	AIR EJECTION Valves for air-assisted stripping.	AUXILIARIES Blender, loader, conveyor and labeller.
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WHERE THE COST OF A MOULDED PART COMES FROM

MATERIAL resin, recycled share	MACHINE per machine hour	LABOUR take-out, stacking	POWER kWh per part	MOULD large crate tools	REJECTION warp, short shots	PACKING stacking, pallets
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On crates and bins, resin weight and cooling time dominate the part cost, so wall and rib design pays back directly. On accessories, machine hours and handling dominate. Use your own rates to compare options.

SECTION 07 • QUALITY

QUALITY, TESTING & COMMON DEFECTS

A crate fails in a stack, a cold store or a drop, often months after moulding. The tests try to bring those failures forward.

TESTS AND CHECKS

CHECK	WHAT IT INVOLVES	LINK TO MOULDING
Stacking load	Loaded crates stacked for a set time; deflection and collapse checked to the customer specification.	Rib fill, interlock size, mould shift
Drop and impact	Loaded drops, including at the lowest use temperature ^[1] .	Weld lines, resin choice, recycled content
Fit checks	Stacking, nesting, lid fit and panel seating on moulded parts.	Shrinkage, warp, colour-to-colour size
Hinge and latch cycles	Fold and latch cycling on collapsible crates.	Pivot bores, dry nylon, POM quality
Wheel checks	Tread peel ^[5] and load standing tests for flat spots.	Bond, drying, compound
ESD resistance	Surface resistance: dissipative 10^4 to below 10^{11} ohms, conductive below 10^4 ohms ^[3] .	Filler dispersion, flow
Wash and food contact	Wash cycles for returnable crates and clip-on parts; resin and colourant compliance.	Snap-fit retention, material records

IS 9907:1981 for HDPE milk bottle crates is listed as withdrawn^[2], so crate tests usually follow the buyer's specification. The ESD values are from the 2008 edition of ANSI/ESD S541; check the current edition.

IN-PROCESS CONTROLS

PART WEIGHT Tracks fill of ribs and interlocks.	STACK GAUGE Stacking and nesting fit on a master.	FLATNESS Lids and trays on a flat table.	MELT FLOW Recycled lots checked before use.
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TROUBLESHOOTING COMMON DEFECTS

DEFECT	POSSIBLE CAUSES	EFFECT ON THE PART	AREAS TO INVESTIGATE
Warped bins and lids	Short cooling, uneven walls, hot stacking	Poor fit, failed stack test	Cooling time, ribs, cooling conveyor
Weld line splits	Flow fronts meeting around openings	Crates crack when loaded or dropped	Gate layout, venting, melt temperature
Short ribs or lugs	Undersized shot, poor venting	Weak stacking features	Shot capacity, venting, injection speed
Interlock drift	Mould shift under marginal clamp	Collapsing stacks later	Clamp setting, mould guiding
Sink marks	Thick bosses and rib roots	Weak or poor-looking parts	Rib design, hold pressure
Brittle crates	Wrong resin for cold, degraded regrind	Cracks in cold store	Resin choice, regrind ratio
Colour variation	Masterbatch dosing, recycled lots	Colour codes mismatch	Dosing, lot control
Flat spots on wheels	Compound creep under standing load	Noisy, rough rolling	Compound, hub design

SECTION 08 · WORKED EXAMPLES

PRACTICAL MACHINE-SELECTION EXAMPLES

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

A · PP CRATE LID 400 × 300 MM		FLAT AREA
APPLICATION · MATERIAL	Crate lid · PP copolymer	
CHARACTERISTICS	Light part, 1,200 cm ² projected area (assumed)	
CAVITIES · OUTPUT	1 · matched to the crate body output	
MOULD CONSIDERATIONS	Flatness, rib layout, fit with the body	
SECONDARY	Stacking with bodies, labels	
EVALUATE At K = 0.35 t/cm ² and S = 1.15: 1,200 × 0.35 × 1.15 ≈ 483 t, so a clamp rated around 570 t or more, although the lid weighs little. STILL NEEDED CAD projected area, wall thickness, grade.		

B · CASTOR WHEEL WITH TPU TREAD		OVERMOULD
APPLICATION · MATERIAL	Dolly castor wheel · PA6-GF hub, TPU tread	
CHARACTERISTICS	Thick hub, bearing seat, soft tread	
CAVITIES · OUTPUT	2 to 4 · set by dolly volume	
MOULD CONSIDERATIONS	Two-shot or insert overmould, interlocks, bore	
SECONDARY	Bearing and fork assembly	
EVALUATE Needs dried nylon ^[7] , a TPU grade that bonds to it ^[5] and either a second injection unit or a transfer step. Tonnage follows the projected area. STILL NEEDED wheel drawing, load rating, grades, volume.		

C · FOLDABLE CRATE LATCH CLIP		FATIGUE
APPLICATION · MATERIAL	Collapsible crate latch · PA6-GF or POM (to be confirmed)	
CHARACTERISTICS	Small, loaded snap feature, pivot bore	
CAVITIES · OUTPUT	8 to 16 · at least 4 per crate	
MOULD CONSIDERATIONS	Slides for the pivot, gate away from the snap	
SECONDARY	Assembly onto crate walls	
EVALUATE A small clamp is enough; drying, shot repeatability and fatigue results decide the choice. STILL NEEDED drawing, grade, fold-cycle target, crate volume.		

WHAT DECIDED THE MACHINE IN EACH EXAMPLE

SELECTION FACTOR	A · CRATE LID	B · CASTOR WHEEL	C · LATCH CLIP
Main limit	Projected area	Two materials, drying	Fatigue, repeatability
Clamp force	About 570 t rated	Needs projected area	Small
Auxiliaries	Robot, cooling conveyor	Dryer, second shot, assembly	Dryer, sprue picker

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 crate, bin or handling part.

COMPONENT

- ☐ 2D drawing and 3D CAD model
- ☐ Part weight and wall and rib thickness
- ☐ Resin, recycled share and colour
- ☐ Stacking, nesting and lid features
- ☐ Inserts, pins and bearings

PRODUCTION

- ☐ Monthly volume per size and colour
- ☐ Accessory parts per crate
- ☐ Cavity count and target cycle time
- ☐ Operating hours and shifts
- ☐ Stacking and pallet quantities

MOULD

- ☐ Mould size, weight and height
- ☐ Hot runner zones and gates
- ☐ Opening stroke and ejection
- ☐ Height inserts or separate moulds
- ☐ Previous machine specification, if any

HANDLING APPLICATION

- ☐ Stacking load and stack height
- ☐ Cold store or hot wash use
- ☐ Food contact or ESD need
- ☐ Buyer test specification
- ☐ Outdoor or UV exposure

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 HANDLING PRODUCTS
1	Will my crate mould fit between the tie bars, with the stroke it needs?	Large, deep crates and bins.
2	Is the shot capacity enough for my heaviest crate with margin?	Thick sections short-fill or sink.
3	How parallel does the platen stay at full clamp?	Interlock and stacking feature size.
4	How many hot runner zones and air valves can it control?	Multi-gate crate and lid moulds.
5	What robot and in-mould labelling interfaces are supported?	Take-out and branded crates.
6	How stable is the process with recycled blends?	Variable melt flow between lots.
7	What is the energy use per crate at my cycle?	Long cycles on large machines.
8	Can the control store settings per mould and colour?	Many sizes and colour codes.
9	Can the machine log shot data for traceability?	Food-contact and buyer audits.
10	What installation, training and spare-parts support is included?	Harvest and dairy peaks need uptime.

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 stacking load, cold-store use or ESD grade.

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TECHNICAL DISCLAIMER

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