



TECHNICAL BUYER'S GUIDE · PRATISHNA ENGINEERS

WATER TREATMENT COMPONENTS INJECTION MOULDING MACHINE GUIDE

A practical guide for purifier, filter, softener and fitting 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 moulding purifier parts, filter and membrane housings, softener valves, connectors and dosing parts.

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

WATER TREATMENT COMPONENTS & INJECTION MOULDING

Purifiers, filters and softeners are built from moulded parts that hold pressure, touch drinking water and face chlorine every day.

WHERE INJECTION MOULDING FITS IN WATER TREATMENT

As of 28 January 2026, more than 15.79 crore of India's 19.36 crore rural households had tap water at home, up from 3.23 crore in 2019. In a survey of working connections, 76% of households were receiving water that met prescribed quality standards^[1]. Treatment at home and at the point of entry fills much of that gap, and every purifier, filter and softener sold is a set of moulded parts.

RO-based point-of-use purifiers sold in India need BIS certification to IS 16240^{[3][4]}, and wetted parts must be corrosion resistant or of food-grade quality^[3]. That makes resin choice, traceability and moulded-in stress part of the product specification.

MAIN COMPONENT CATEGORIES

HOUSINGS RO membrane and filter housings	PURIFIER PARTS UV chambers, panels, caps	CONNECTORS Push-fit elbows, tees, straights	CONSUMABLES Cartridge end caps, retainers
SOFTENER VALVES Control valve bodies, pistons	VESSEL INTERNALS End caps, risers, hubs, baskets	SAFETY DEVICES Vacuum breakers, rotameters	FITTINGS & DOSING Faucets, saddles, tank ports, pump heads

WHY INJECTION MOULDING SUITS THESE PARTS

- Threads, O-ring grooves and ports formed in one shot.
- Corrosion-free parts for water and brine.
- Low cost for consumables sold in large numbers.

TYPICAL MANUFACTURING CHALLENGES

- Stress cracking from chlorine and cleaning chemicals^[5].
- Thick pressure walls with long cooling^[9].
- Seal-face and groove tolerances.
- Clear and cosmetic parts on the same product.

WHERE THE MOULDED PARTS SIT

INLET saddle strap, connectors	PRE-FILTER bowl, cap, cartridge	RO / UV membrane housing, UV chamber	STORAGE tank ports, fittings	DISPENSE faucet, lever	SOFTENER valve body, vessel internals	DOSING pump head, quill
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Not moulded: filament-wound FRP, PVC and stainless RO pressure vessels, extruded vessel sidewalls, machined PTFE parts, glass or drawn metering tubes, and elastomer seals.

KEY REQUIREMENTS FOR WATER TREATMENT PARTS

PRESSURE Housings and fittings pass burst and pressure-cycle tests.	POTABLE CONTACT Wetted parts of food-grade quality ^[3] .	CHEMICAL EXPOSURE Chlorine at low levels can crack some plastics ^[5] .
SEAL GEOMETRY Threads, grooves and seal faces decide leak-tightness.	LONG SERVICE Softener valves and vessel internals stay in place for years.	TRACEABILITY Raw material test certificates for certified products ^[2] .

SECTION 02 · COMPONENTS

MAJOR WATER TREATMENT COMPONENTS

The water treatment parts covered by this guide, their materials and what each asks of the moulding process. Most are small, but nearly all of them seal, carry pressure or touch drinking water.

COMPONENT	APPLICATION	MATERIAL(S)	INJECTION MOULDING CONSIDERATIONS
RO housing (domestic membrane housing, end caps)	Domestic RO	PP, PP-GF, ABS, PA6-GF	Domestic 1812 and 2012 housings, caps, ports. Burst and cycle tested; O-ring groove and thread tolerance.
Water purifier part (UV chamber, pump bracket, panel, cartridge caps)	Purifier units	ABS, PP, SAN, PC, food-grade grades	Class A panels plus wetted parts. Stress cracking at bosses and gates; family tools.
Filter housing (10 / 20 inch bowl, cap, bracket)	Pre-filtration	PP, PP-GF, SAN, PC	Thick-wall pressure part; sink control. Clear bowls craze with chlorine or wrong O-ring grease.
Fluid connector (push-fit, elbow, tee, 1/4 to 3/8 inch)	Tubing joints	POM, PP, PA66, PPSU	Even walls and smooth bore. Collet teeth and groove decide grip and seal. High cavitation.
Rotameter (panel body, scale block)	Flow reading	PMMA, SAN, PC, PP	Optical part: polished tool, slow pack, low stress. Precision tubes usually machined.
Saddle strap (feed water adaptor)	Feed water tap	PP, PP-GF, ABS, PA6-GF	Creep under bolt load. Generous boss sections; tool family per pipe size.
Distributor hub, lateral hub	Vessel underdrain	PP, ABS, PPO/PPE, PA6-GF	Fine slots retain media; slot consistency cavity to cavity. Brine and chlorine resistance.
Vacuum breaker (anti-siphon, air relief)	Backflow safety	POM, PP, ABS, PA66	Certified safety device. Seat flatness and guide bore. High cavitation, low tonnage.
Cartridge end cap, media retainer	Filter cartridges	PP, food-grade PP, ABS	Welded or bonded to media; weld geometry and steady shrinkage. Short cycles.
Pressure vessel end cap, riser adaptor, basket	Softener, filter tanks	PP-GF, PA6-GF, PPO/PPE, ABS	End caps welded to extruded tube. Flow area and burst strength; weld interface.
Purifier faucet, dispensing tap, lever	Dispensing	ABS (plated), POM, PP, SAN	Cosmetic and wetted. Plating-grade ABS, high polish; POM stem and seat.
Storage tank fittings, bladder tank ports	Storage tanks	PP, PP-GF, PA6-GF, ABS	Thread strength, flat seal faces, hydrolysis resistance. Condition nylon before gauging.
Softener control valve body and internals	Softener control	PPO/PPE, POM, PP-GF, PA66-GF	Multi-port body cycling in brine. Bore concentricity and finish decide seal life.
Dosing pump head, injection quill, foot valve	Chemical dosing	PP, PVDF, PVC, POM	Chemical decides material. Flat sealing faces, accurate check-valve seats.

PTFE-lined dosing components are listed with this group, but PTFE parts are machined, not moulded. Elastomer seals, diaphragms and gaskets are bought-in parts.

GROUPING BY MOULDING DEMAND

PRESSURE PARTS

Housings, bowls, vessel caps, tank ports. Thick walls, threads, burst tests.

PRECISION SMALL PARTS

Connectors, vacuum breakers, valve internals. Cavity consistency and seats.

COSMETIC AND OPTICAL

Panels, faucets, rotameters, clear bowls. Surface and low stress.

SECTION 03 · MATERIALS

MATERIALS USED FOR WATER TREATMENT COMPONENTS

Material choice starts with the water: pressure, temperature, chlorine, brine or dosing chemical, and whether the part touches drinking water.

MATERIAL	TYPICAL COMPONENTS	RELEVANT PROPERTIES	PROCESSING CONSIDERATIONS	LIMITATIONS TO CHECK
PP, food-grade PP	Housings, bowls, connectors, caps, hubs, fittings, dosing parts	Chemical resistant, weldable to PP media.	Shrinkage and sink in thick walls.	Creep under sustained load.
PP-GF	Housings, bowls, saddles, vessel caps, tank ports, valve bodies	Stiffness, lower creep.	Abrasive; fibre orientation and warpage.	Weld lines at ports.
ABS, plated ABS	Housings, panels, saddles, hubs, faucets, caps	Rigid, good surface; plating grades.	Dry before moulding.	Chemical cracking with cleaners.
SAN, PC	Clear bowls, purifier parts, rotameters, faucets	Clear, rigid; PC tough.	Dry; low-stress moulding.	Craze with chlorine, ozone, some greases.
PMMA	Rotameter bodies and scale blocks	Clear, optical.	Polished tool, slow pack.	Attacked by solvents, some sealants.
POM	Connectors, collets, vacuum breakers, stems, pistons, dosing parts	Low friction, stiff ^[6] .	Controlled mould temperature; not with PVC.	Chlorine can cause stress cracking ^[5] .
PA66, PA6-GF, PA66-GF	Connectors, housings, saddles, hubs, tank ports, valve parts	Strength, fatigue ^[6] .	Must be dried ^[7] ; GF abrasive.	Size drift with moisture.
PPO/PPE	Distributor hubs, vessel caps, valve bodies	Dimensional stability, hydrolysis resistance.	High melt temperature.	Cost.
PPSU	Premium connectors	High heat and pressure.	Very high melt and mould temperature; dry.	Cost.
PVDF, PVC	Dosing heads, quills, foot valves	Strong chemical resistance.	PVC needs corrosion-resistant screw and steel.	Confirm chemical at storage temperature.

General material behaviour only. Confirm potable-contact status, chlorine resistance and chemical compatibility with the resin supplier.

WHAT THE STANDARDS ASK OF MATERIALS

IS 16240 asks that wetted parts of RO purifiers be corrosion resistant or of food-grade quality^[3], and the BIS product manual asks for a test certificate with each consignment of raw material^[2]. Export products may need other potable-water approvals.

Chlorine at 1 to 3 ppm has cracked POM connectors and faucet parts^[5]. Ask for chlorine-resistant grades.

MATERIAL SELECTION QUESTIONS

- ☐ Does it touch drinking water?
- ☐ Working pressure and pressure cycles?
- ☐ Chlorine, chloramine, ozone or brine?
- ☐ Which dosing chemical and at what temperature?
- ☐ Clear, cosmetic or plated?
- ☐ Welded, threaded or push-fit joint?

CLEAR PARTS NEED A COMBINED DECISION

DECISION	WHY IT MATTERS FOR CLEAR BOWLS AND BODIES
Resin grade	SAN, PC and PMMA differ in chemical and stress-crack resistance.
Moulding stress	Slow pack and correct mould temperature lower residual stress.
Assembly grease	The wrong O-ring lubricant can craze a clear bowl.

SECTION 04 · DESIGN & MOULD

COMPONENT DESIGN & MOULD REQUIREMENTS

Water treatment moulds are built around seals: threads, O-ring grooves, seats and ports, often in thick pressure walls.

DESIGN FEATURES THAT AFFECT MOULDING

FEATURE	WHY IT MATTERS IN WATER TREATMENT	MOULDING IMPLICATION
O-ring grooves	Housings, bowls and connectors seal on them.	Groove size and finish held; no parting line across the seal.
Threads	Bowls, caps and tank ports carry pressure through threads.	Unscrewing or collapsible cores; thread start accuracy.
Thick walls	Pressure housings resist burst.	Long cooling ^[9] ; sink and void control by packing.
Bosses and gates	Chemicals attack moulded-in stress ^[5] .	Gate away from stressed zones; low-stress settings.
Media slots	Distributor hubs retain sand and resin.	Fine slot inserts; consistent fill and venting.
Weld interfaces	End caps weld to media or to extruded tubes.	Joint geometry and stable shrinkage.
Clear sections	Bowls and rotameters must stay clear.	Polished steel; slow pack; no flow lines.
Multi-port bodies	Softener valves have many internal passages.	Several side cores; bore concentricity.

MOULD CONSIDERATIONS

ITEM	WATER TREATMENT POINTS	ITEM	WATER TREATMENT POINTS
Cavity layout	Connectors, caps: 8 to 32. Bowls: 1 to 4. Valve bodies: 1 or 2.	Steel	Polished for clear parts; hardened for GF grades.
Runner	Hot runners for high-volume consumables.	Cooling	Core cooling for deep bowls and housings.
Core pulls	Hydraulic cores for ports; unscrewing for threads.	Size families	Common bases with inserts for sizes.
Venting	Slots and thin webs need good venting.	Mould size	Deep bowls need long stroke and daylight.

PARTS MADE IN FAMILIES

FAMILY	WHAT CHANGES BETWEEN SIZES	TOOLING APPROACH
Filter bowls and caps	10 and 20 inch lengths, thread sizes	Common base, length inserts
Connectors	1/4 and 3/8 inch tube sizes, elbow, tee, straight	Family moulds or insert sets
Saddle straps	Pipe diameters	Tool family per pipe size
Purifier parts	Model variants each season	Family tools, insert changes

KEEPING SEALS AND JOINTS RIGHT

PARTING LINE Keep it off sealing faces and grooves.	GATE WITNESS Not on seal faces or thread starts.	EJECTION Eject from strong areas, not thin threads.	SHRINKAGE Match caps and bowls moulded on different tools.
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SECTION 05 · PRODUCTION PLANNING

PRODUCTION CAPACITY & CYCLE-TIME PLANNING

Consumables such as end caps and connectors run in many-cavity moulds; pressure housings run few per shot on long cycles. Total hours come from the whole range.

OUTPUT

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

Effective/hour = Parts/hour × Utilisation

Day = Effective/hour × Hours run

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

EXAMPLE 1 · 8-CAVITY PP CARTRIDGE END CAP

$8 \times 3600 \div 15 \text{ s} = 1,920 \text{ /h}$

$\times 0.85 \text{ utilisation} = 1,632 \text{ /h}$

$\times 22 \text{ h} = 35,904 \text{ /day}$

$\times 26 \text{ days} = 933,504 \text{ /month}$

EXAMPLE 2 · 2-CAVITY PP-GF 20 INCH FILTER BOWL

$2 \times 3600 \div 90 \text{ s} = 80 \text{ /h}$

$\times 0.85 = 68 \text{ /h} \cdot \times 22 \text{ h} = 1,496 \text{ /day}$

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

Working backwards: for 60,000 bowls a month in 572 running hours, you need 105 per hour. Cavities = $105 \times 90 \div (3600 \times 0.85) \approx 3.1$, so a 4-cavity mould or a second machine.

Illustrative example. Cycle times of 15 s and 90 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	WATER TREATMENT INFLUENCE
Filling	Slow fill for clear, low-stress parts.
Cooling	Usually the largest share; rises roughly with wall thickness squared ^[9] .
Packing	Thick walls need long hold for sink control.
Unscrewing	Threaded cores add time.

BALANCING CAVITIES, CLAMP FORCE AND OUTPUT

PP CARTRIDGE END CAP MOULD	PROJECTED AREA	CALCULATED FORCE	RATED AT 85%	SHOT	EFFECTIVE OUTPUT
4 cavities	122 cm ²	49 t	58 t	53 g	816 /h
8 cavities	240 cm ²	97 t	114 t	104 g	1,632 /h
16 cavities	474 cm ²	191 t	224 t	204 g	3,264 /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: 28 cm² and 12 g per cap, runner area 10 / 16 / 26 cm² and weight 5 / 8 / 12 g, 15 s cycle, 85% utilisation.

PLANNING TOTAL MACHINE HOURS

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

Add the hours for every part and size, then divide by the running hours per machine (572 here) to see how many machines the range needs.

Consumables such as cartridge end caps are reordered all year, while purifier bodies and panels follow model launches and summer demand. Dedicate machines to the steady consumables and keep flexible capacity for seasonal and new-model parts, so that long bowl cycles do not block short consumable runs.

MACHINE UTILISATION AND PLANNED DOWNTIME**SEASONAL DEMAND**

Purifier sales peak in summer; build stock ahead.

SIZE CHANGES

Group sizes that share a mould base.

MATERIAL CHANGES

Purge fully between PP, PC and POM.

CERTIFIED LOTS

Keep resin lots traceable for certified products, with test certificates on file^[2].

SECTION 06 · AUTOMATION

AUTOMATION & PRODUCTION EFFICIENCY

In water treatment plants, automation mostly handles high-count consumables, protects clear and cosmetic surfaces, and supports leak testing.

AUTOMATION	WHERE IT ADDS VALUE IN WATER TREATMENT	WHEN IT USUALLY MAKES SENSE
Sprue picker	Removes runners from connector and cap moulds.	Multi-cavity cold-runner moulds.
Robot take-out	Lifts clear bowls and panels without scratches.	Clear and cosmetic parts.
Conveyors and counting	Counts caps and connectors into packs.	Consumables sold by count.
Welding	Welds end caps to media or vessel caps to tubes.	Cartridges and softener vessels.
Assembly	Fits collets and O-rings into connectors.	Push-fit connectors at volume.
Leak and pressure testing	Tests housings, bowls and assemblies.	Every pressure part or a set sample.
Vision check	Checks slots, seats and clear-part defects.	Hubs, vacuum breakers, bowls.
Drying and conveying	Dries PC, PA and PPSU and feeds machines.	Hygroscopic grades.

Water treatment makers usually mould both consumables and durable parts. Automation for the consumables, such as sprue pickers, counters and welding, runs every day and tends to pay back first.

AUTOMATION BY PRODUCT GROUP

PRODUCT GROUP	MAIN AUTOMATION	WHY
Cartridge caps, connectors	Sprue picker, counting, assembly	High counts, many parts per product
Housings and bowls	Robot take-out, leak test	Pressure parts, clear surfaces
Softener valves and internals	Robot take-out, welding	Precise, multi-part assemblies
Purifier panels and faucets	Robot take-out	Cosmetic and plated parts

DECIDING ON AUTOMATION

VOLUME AND LABOUR Consumables sell in large numbers; counting and packing add up.	SURFACE DAMAGE Clear and plated parts mark easily by hand.	TESTING Leak tests on every pressure part protect the brand.
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INTERFACES TO SPECIFY ON THE MACHINE

CORE PULLS Hydraulic cores and unscrewing for threads.	ROBOT Signal interface and safety interlocks.	HOT RUNNER Zones for consumable moulds.	AUXILIARIES Dryer, conveyor and counter connections.
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WHERE THE COST OF A MOULDED PART COMES FROM

MATERIAL resin grade	MACHINE per machine hour	LABOUR handling, packing	POWER kWh per part	MOULD sizes, threads	REJECTION leaks, cracks	PACKING by count
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On bowls and housings, material and long cooling dominate. On caps and connectors, machine hours and packing dominate. A field crack costs far more than the part, so material and stress control belong in the cost comparison. Use your own rates.

SECTION 07 • QUALITY

QUALITY, TESTING & COMMON DEFECTS

A water treatment part must hold pressure, keep sealing and resist the water it treats, often for years after it leaves the plant.

TESTS AND CHECKS

CHECK	WHAT IT INVOLVES	LINK TO MOULDING
Product certification	RO purifiers certified to IS 16240 with the ISI mark ^{[3][4]} ; the product manual sets sampling and tests ^[2] .	Traceable material and process
Raw material	Test certificate with each resin consignment ^[2] .	Resin lot control, regrind policy
Burst and pressure cycling	Housings, bowls and fittings pressurised per standard or customer specification.	Walls, weld lines, voids
Leak test	Seal faces, grooves and threads under pressure.	Groove size, parting line, flash
Chemical exposure	Soak or stress tests in chlorinated water or the dosing chemical.	Moulded-in stress, gate position
Dimensional	Threads, grooves, bores, slots.	Shrinkage, core position
Function	Connector pull-out, valve cycling, vacuum breaker reseating.	Collet teeth, seats, bores

Test methods and limits come from the applicable standard and approval scheme. IS 16240 has been revised; confirm the current edition^[4].

IN-PROCESS CONTROLS

THREAD GAUGES Go / no-go on bowls, caps, ports.	WEIGHT BY CAVITY Flags filling and packing drift.	STRESS CHECK Polarised light on clear parts.	LEAK SAMPLE Set sample per shift or lot.
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Record the settings, resin lot and colour of the approved sample and hold certified production to them. Keep regrind out of pressure and potable parts unless it has been qualified.

TROUBLESHOOTING COMMON DEFECTS

DEFECT	POSSIBLE CAUSES	EFFECT ON THE PART	AREAS TO INVESTIGATE
Stress cracking in service	Moulded-in stress, chlorine or chemicals ^[5]	Leaks after weeks or months	Gate position, packing, material grade
Crazing on clear bowls	Stress, wrong grease or cleaner	Loss of clarity, cracks	Moulding stress, assembly grease
Sink marks and voids	Thick walls, short hold	Weak walls, burst failures	Hold pressure and time, wall design
Weld lines	Flow fronts around ports	Burst at the weld	Gate position, melt temperature
Flash on seal faces	Worn shut-offs, low clamp	Leaks	Parting line, clamp setting
Oval bores or threads	Uneven cooling, early ejection	Leaks, poor thread fit	Core cooling, cycle time
Blocked slots	Short shots, poor venting	Pressure drop, media bleed	Injection speed, vents
Splay	Moisture in PC, PA, PPSU	Streaks, weak parts	Drying

SECTION 08 · WORKED EXAMPLES

PRACTICAL MACHINE-SELECTION EXAMPLES

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

A · PP CARTRIDGE END CAP		CONSUMABLE, VOLUME
APPLICATION · MATERIAL	10 inch cartridge end cap · food-grade PP	
CHARACTERISTICS	About 12 g, 28 cm ² projected area (assumed); weld face to media	
CAVITIES · OUTPUT	8 · about 1,632 per hour at 15 s (Section 05)	
MOULD CONSIDERATIONS	Hot or balanced runner, flat weld face, venting	
SECONDARY	Welding to media, counting	
EVALUATE The Section 05 table gives about 97 t calculated and a 104 g shot, so a clamp rated around 114 t or more. Cycle time and flatness matter as much as tonnage. STILL NEEDED CAD projected area, cartridge sizes, volume.		

B · PP-GF 20 INCH FILTER BOWL		PRESSURE PART
APPLICATION · MATERIAL	Filter bowl · PP-GF	
CHARACTERISTICS	Deep thick-wall bowl, internal thread, O-ring seat	
CAVITIES · OUTPUT	2 · about 68 per hour at 90 s (Section 05)	
MOULD CONSIDERATIONS	Long core with cooling, unscrewing or collapsible core	
SECONDARY	Leak and burst testing	
EVALUATE Tonnage needs projected area from CAD. Daylight and stroke for the bowl depth, a wear-resistant screw for glass fibre and steady hold pressure drive the choice. STILL NEEDED bowl drawing, working pressure, volume.		

C · SOFTENER CONTROL VALVE BODY		PRECISION MULTI-PORT
APPLICATION · MATERIAL	Multi-port valve body · PPO or PP-GF (to be decided)	
CHARACTERISTICS	Several ports and bores; brine service	
CAVITIES · OUTPUT	1 · set by valve assembly rate	
MOULD CONSIDERATIONS	Several hydraulic side cores, bore concentricity	
SECONDARY	Assembly of pistons and seals, leak test	
EVALUATE Number of core pulls, shot repeatability and temperature control for PPO drive the choice more than clamp force. STILL NEEDED drawings of body and internals, grade, volume.		

WHAT DECIDED THE MACHINE IN EACH EXAMPLE

SELECTION FACTOR	A · END CAP	B · FILTER BOWL	C · VALVE BODY
Main limit	Cavities, cycle time	Depth, thick walls	Core pulls, precision
Clamp force	About 114 t rated	Needs projected area	Needs projected area
Auxiliaries	Sprue picker, counter	Robot, leak test	Core-pull circuits, robot

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

In all three, the part drawing alone was not enough. The working pressure, water chemistry and approvals had to be known before the configuration could be settled.

SECTION 09 • BUYER CHECKLIST

MACHINE BUYER'S CHECKLIST

What to prepare before asking an injection moulding machine manufacturer for a recommendation on a water treatment component.

COMPONENT

- ☐ 2D drawing and 3D CAD model
- ☐ Part and runner weight, wall thickness
- ☐ Threads, grooves and seal faces
- ☐ Grade data and potable status
- ☐ Clear, cosmetic or plated faces
- ☐ Seal and weld faces marked

PRODUCTION

- ☐ Monthly and seasonal volume
- ☐ Sizes and variants
- ☐ Cavity count and target cycle time
- ☐ Operating hours and shifts
- ☐ Pack counts
- ☐ Seasonal peak dates

MOULD

- ☐ New or existing mould; size and weight
- ☐ Core pulls and unscrewing needed
- ☐ Hot or cold runner
- ☐ Steel and polish specification
- ☐ Previous machine specification, if any
- ☐ Gate position agreed

WATER APPLICATION

- ☐ Working and test pressure
- ☐ Water chemistry: chlorine, brine, dosing chemical
- ☐ Temperature
- ☐ Approvals: IS 16240 or export
- ☐ Joint type: thread, weld, push-fit
- ☐ Test method and cycles

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 WATER TREATMENT
1	What shot repeatability does the machine hold at my shot size?	Groove, thread and slot consistency.
2	How is hold pressure profiled for thick walls?	Sink and voids in pressure parts.
3	How many core-pull and unscrewing circuits are available?	Threaded bowls, ports, valve bodies.
4	What daylight and stroke suit my deepest bowl?	20 inch bowls and housings.
5	Can the machine run PC, PPO and PPSU temperatures?	Clear bowls and premium fittings.
6	Is a wear-resistant screw available for glass-filled grades?	PP-GF and PA-GF parts.
7	What robot, hot-runner and dryer interfaces are supported?	Consumables and clear parts.
8	Can the control log shot data per lot?	Certified product traceability.
9	What is the energy use per part at my cycle?	Low price per consumable.
10	What installation, training and spare-parts support is included?	Seasonal 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 working pressure, water chemistry, approvals or automation.

sales@pratishnaengineers.com • +91-22-66970281 / 82 • www.pratishnaengineers.com

A1-4, Vaibhav Ind. Premises, Opp. Oxford Chambers, Saki Vihar Road, Andheri (E), Mumbai 400 072, India

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