



TECHNICAL BUYER'S GUIDE · PRATISHNA ENGINEERS

TEXTILE COMPONENTS INJECTION MOULDING MACHINE GUIDE

A practical guide for makers of cones, bobbins, dye tubes, spools and mill accessories: 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 yarn packages, dyeing accessories, sewing bobbins and textile mill spares.

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

TEXTILE COMPONENTS & INJECTION MOULDING

Every yarn package, dye lot and sewing line runs on moulded parts: cones, bobbins, dye tubes, spools and the accessories that carry them through the mill.

WHERE INJECTION MOULDING FITS IN A TEXTILE MILL

Textiles and apparel contribute about 2.3% of India's GDP, 13% of industrial production and 12% of exports, and employ over 45 million people directly^[1]. Much of that output moves between processes on moulded packages.

Most of these parts are machine interfaces. A cone must match the taper of the winder^[4], a bobbin must fit a named ring frame, and a dye tube must survive the dye vessel. The machine list matters as much as the drawing.

MAIN COMPONENT CATEGORIES

WINDING CONES Winding and dye cones in fixed tapers	SPINNING BOBBINS Ring frame, roving, simplex, TFO	DYEING PARTS Perforated tubes, dye springs	SPOOLS Thread, sewing and texturising spools
SEWING BOBBINS Class 15, L-style and others	CREEL & YARN PATH Cone holders, pegs, guides, tensioners	ROLL & BEAM Roll core plugs, warp beam flanges	MILL HANDLING Sliver can parts, trolleys, trays

WHY INJECTION MOULDING SUITS THESE PARTS

- Repeatable tapers, bores and concentricity at high volume.
- Perforations, ribs and snap features formed in one shot.
- Reusable parts, and used tubes are often reground into new ones.

TYPICAL MANUFACTURING CHALLENGES

- Balance and run-out on parts that spin fast.
- Clean winding surfaces with no flash or gate witness.
- Heat and pressure in dyeing^{[5][7]}.
- Many machine-specific sizes, each with its own mould.

WHERE THE MOULDED PARTS TRAVEL

SPINNING bobbins, sliver cans	WINDING cones, holders	DYEING dye tubes, springs	TWISTING TFO bobbins, guides	WEAVING creels, beams	FINISHING roll core plugs	GARMENT spools, sewing bobbins
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Not moulded: paper cones, wound or extruded roll cores, fabricated sliver can bodies and ceramic guide eyes.

WHO BUYS THE PARTS

SPINNING MILLS Bobbins, cones, can parts.	DYE HOUSES Dye tubes and springs.	WEAVING Beam flanges, guides, pegs.	GARMENT Sewing bobbins, spools.
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KEY REQUIREMENTS FOR TEXTILE COMPONENTS

MACHINE FIT Taper, bore and base must match the installed machine ^{[2][4]} .	BALANCE Uniform walls and concentric bores stop vibration and yarn breaks.	YARN-SAFE SURFACES Any ridge on the yarn path snags or breaks fibre.
DYEING DUTY Repeated cycles around 130 to 135 °C under package load ^{[5][7]} .	WEAR Guides and pegs rub against running yarn all day ^[8] .	COST PER USE Reusable tubes are judged on life, not price per piece ^[6] .

SECTION 02 · COMPONENTS

MAJOR TEXTILE COMPONENTS

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

COMPONENT	APPLICATION	MATERIAL(S)	INJECTION MOULDING CONSIDERATIONS
Textile cone (winding cone, dye cone)	Yarn packages on auto coner, open-end, TFO, doubling and texturising machines	PP copolymer, PP-GF, ABS, recycled PP	Taper held to fixed angles with low eccentricity. Winding surface free of flash, weld ridges and gate witness.
Bobbin (ring frame, roving, simplex, TFO)	Spinning and twisting on named frames	PP copolymer, PP-GF, ABS	Wall uniformity, concentricity and balance at high spindle speed. Base and nose suit auto-doffing. Antistatic behaviour.
Perforated tube (HTHP yarn dye tube)	Package dyeing and steam conditioning	PP, PP-GF, ABS, PC, PPO/PPE	Repeated cycles at 130 °C under radial load. Perforation pattern sets liquor flow. Lengths such as 170 and 230 mm.
Spool (thread, sewing, texturising)	Thread packaging and winding	PS, PP, ABS, PC	Flange concentricity and hub bore. Snap-together halves need matched shrinkage. Clear PS needs a polished tool.
Compressible dye spring, collapsible dye tube	Axial compaction of the package in dyeing	PP, PP-GF, PPO/PPE	Spring rate and recovery after many hot compressions. A fatigue part at temperature.
Sewing machine bobbin	Lower thread on sewing machines	PS, PC, ABS, POM	Balance and flange flatness decide stitch quality. Family of tools for class 15, L-style and others.
Cone holder, creel peg, adaptor	Holding packages on creels and machines	PP, PA6-GF, ABS, POM	Handling loads, no burrs. PA6-GF for cantilever pegs. Fit to the installed machine base.
Yarn guide, tensioner, traverse parts	Guiding and tensioning running yarn	POM, PA66-GF, PBT, PPS	Wear parts. Yarn-path finish is functional. Tensioner discs need flatness and even mass.
Fabric roll core end plug and cap	Closing and driving roll cores	PP, HDPE, recycled PP	Ribbed or sprung plugs for interference fit in a paper core. High cavitation.
Sliver can components (base, castor, ring, spring plate)	Sliver cans in spinning	PP copolymer, HDPE, PA6-GF	Castor wheels and bearing seats run loaded all day. Spring plate parts are fatigue parts.
Textile trolley, package tray, transport insert	Moving packages through the mill	PP copolymer, HDPE, recycled PP	Large flat parts; footprint sets the machine size. Nesting and stacking ribs.
Warp beam flange, disc, sample beam parts	Warp beams for weaving	PA6-GF, PP-GF, ABS	Flatness and run-out. Gate and fibre orientation keep discs flat.

Cone taper angles such as 3°30', 3°51', 4°20', 5°57' and 9°15' are fixed by the winder, not by the moulder. Wound paperboard cones compete at the low-cost end and are not moulded.

GROUPING BY MOULDING DEMAND

SPINNING PRECISION

Cones, bobbins, spools, sewing bobbins. Concentricity, balance and surface.

HOT AND LOADED

Dye tubes and dye springs. Material, perforations and fatigue.

WEAR AND HANDLING

Guides, pegs, plugs, castors, trays, flanges. Wear, fit and footprint.

SECTION 03 · MATERIALS

MATERIALS USED FOR TEXTILE COMPONENTS

Material choice follows the duty: speed and balance for spinning parts, hot water and steam for dyeing parts, and friction for anything the yarn touches.

MATERIAL	TYPICAL COMPONENTS	RELEVANT PROPERTIES	PROCESSING CONSIDERATIONS	LIMITATIONS TO CHECK
PP copolymer, PP	Cones, bobbins, spools, dye tubes and springs, plugs, holders, can parts, trays	Tough, light, low cost, chemical resistant.	Easy flow; shrinkage and warpage to control.	Stiffness and creep at dyeing temperatures.
Recycled PP	Cones, roll plugs, trays	Lower cost; used tubes are reground.	Consistent MFI and contamination control.	Property drift between lots.
PP-GF	Cones, bobbins, dye tubes and springs, beam flanges	Higher stiffness and heat resistance ^[5] .	Abrasive to screw and mould; fibre orientation.	Shorter dyeing life than PPO ^[5] .
HDPE	Roll plugs, can parts, trays	Tough, good impact.	High shrinkage.	Low stiffness.
ABS	Cones, bobbins, dye tubes, spools, sewing bobbins, holders, flanges	Rigid, good surface.	Dry before moulding.	Heat limit in dyeing.
PS	Spools, sewing bobbins	Clear, rigid, stiff.	Polished tool for clear parts.	Brittle under impact.
PC	Dye tubes, spools, sewing bobbins	Clear, tough, heat resistant.	Thorough drying; high melt temperature.	Stress cracking with some chemicals.
PPO/PPE	Dye tubes, dye springs	Resists fading and deformation at 135 °C ^[5] .	High melt temperature.	Material cost; judge on cycles of life.
POM	Sewing bobbins, holders, yarn guides	Low friction, stiff, low moisture uptake ^[8] .	Never in the same barrel as PVC.	Poor bonding and printing.
PA6-GF, PA66-GF	Pegs, can parts, beam flanges, guides	Strength, wear and fatigue ^[8] .	Must be dried ^[9] ; abrasive.	Moisture changes size and stiffness.
PBT, PPS	Yarn guides, tensioner parts	Dimensional stability; PPS for heat.	Dry; PPS runs hot.	Cost; PPS brittleness.

General material behaviour only. Confirm grade data with the resin supplier and trial on the mill's own machines.

DYEING TEMPERATURE AND TUBE MATERIAL

YARN DYED	TUBE RATING OFFERED ^[6]
Cotton	up to 120 °C
Blends	up to 135 °C
Polyester	up to 150 °C

HTHP vessels run to about 135 °C^[7]. One supplier puts PPO tube life at about three times PP-GF^[5], so compare cost per dyeing cycle.

TWO POINTS THAT ARE EASY TO MISS

Spinning bobbins that pick up static attract fly, so ask the resin supplier about antistatic grades or additives where the frame needs them. Nylon parts such as pegs and beam flanges take up moisture after moulding^[9], so agree with the customer whether parts are gauged dry as moulded or after conditioning.

MATERIAL SELECTION QUESTIONS

- ☐ Which machine, taper or frame must it fit?
- ☐ Does it spin, and at what speed?
- ☐ Dyeing temperature, and how many reuses?
- ☐ Does running yarn touch it?
- ☐ Clear grade needed to show thread remaining?
- ☐ Is regrind of used parts allowed?

SECTION 04 · DESIGN & MOULD

COMPONENT DESIGN & MOULD REQUIREMENTS

Textile moulds are mostly long cores and round parts. Concentricity, a clean outer surface and good core cooling decide whether the part runs true.

DESIGN FEATURES THAT AFFECT MOULDING

FEATURE	WHY IT MATTERS IN TEXTILES	MOULDING IMPLICATION
Taper (conicity)	Cones seat on the winder by taper ^[4] ; standards fix the half angle ^{[2][3]} .	Accurate core and cavity, stable shrinkage, taper gauging.
Wall uniformity	Out-of-balance bobbins vibrate and break yarn.	Core support, balanced filling, core cooling.
Winding surface	Anything proud of the surface snags yarn.	Gate away from the yarn surface; clean shut-offs.
Perforations	Hole pattern controls dye liquor flow.	Many pins, many weld lines; pin wear and breakage.
Spring geometry	Dye springs compress and recover each cycle.	Even walls; weld lines kept off flexing zones.
Flanges	Spools, sewing bobbins, beam discs.	Flatness and run-out; fibre orientation in GF grades.
Interference ribs	Roll plugs fit paper cores of wide tolerance.	Rib height and flex held to size.
Yarn-path faces	Guides and tensioners wear from running yarn ^[8] .	Polished steel on functional faces.

MOULD CONSIDERATIONS

ITEM	TEXTILE POINTS	ITEM	TEXTILE POINTS
Cavity layout	Sewing bobbins, plugs: 8 to 32. Dye tubes, cones: 2 to 8. Trays, flanges: 1.	Steel	Hardened steel for PP-GF and PA-GF.
Gating	Central or ring gating for round parts; no gate on the winding face.	Core support	Stops core deflection on long tubes.
Cooling	Long cores need core cooling; wall thickness drives cooling time ^[11] .	Size families	Common bases with inserts per taper or frame.
Venting	Vent between perforation pins.	Mould size	Long tubes need stroke; trays need platen area.

PLANNING A SIZE RANGE

MACHINE LIST	INSERT SETS	COLOUR CODES	TWO-PART SPOOLS
Group parts by frame or winder served.	Change length or taper with inserts.	Coloured tubes identify yarn counts ^[6] .	Mould both halves together to match shrinkage.

GATE POSITION BY PART

PART	USUAL GATING APPROACH	WHAT TO PROTECT
Cones and bobbins	Gate at the nose or base end, away from the winding face	Winding surface, concentricity
Perforated dye tubes	Gating that fills the webs evenly along the length	Web strength, weld lines at pins
Spools and sewing bobbins	Central gate at the hub	Flange flatness, bore roundness
Warp beam flanges	Central gate for radial fibre flow	Disc flatness and run-out
Trays	Several gates for balanced fill	Flatness, rib filling

SECTION 05 · PRODUCTION PLANNING

PRODUCTION CAPACITY & CYCLE-TIME PLANNING

Small spinning and sewing parts run in high-cavity moulds; dye tubes and trays run a few per shot. Total machine hours come from the full size and colour range.

OUTPUT

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

Effective/hour = Parts/hour × Utilisation

Day = Effective/hour × Hours run

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

EXAMPLE 1 · 16-CAVITY PS SEWING BOBBIN

16 × 3600 ÷ 10 s = 5,760 /h

× 0.85 utilisation = 4,896 /h

× 22 h = 107,712 /day

× 26 days = 2,800,512 /month

EXAMPLE 2 · 4-CAVITY PP-6F PERFORATED DYE TUBE

4 × 3600 ÷ 40 s = 360 /h

× 0.85 = 306 /h · × 22 h = 6,732 /day

× 26 days = 175,032 /month

Working backwards: for 250,000 tubes a month in 572 running hours, you need 437 per hour. Cavities = $437 \times 40 \div (3600 \times 0.85) \approx 5.7$, so a 6-cavity mould or a second machine.

Illustrative example. Cycle times of 10 s and 40 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	TEXTILE INFLUENCE
Filling	Thin walls and perforation webs need fast filling.
Cooling	Usually the largest share; rises roughly with wall thickness squared ^[11] .
Core cooling	Long cores hold heat and slow the cycle.
Ejection	Long tubes need stroke and even stripping.

BALANCING CAVITIES, CLAMP FORCE AND OUTPUT

PS SEWING BOBBIN MOULD	PROJECTED AREA	CALCULATED FORCE	RATED AT 85%	SHOT	EFFECTIVE OUTPUT
8 cavities	34 cm ²	14 t	16 t	11 g	2,448 /h
16 cavities	66 cm ²	27 t	31 t	21 g	4,896 /h
32 cavities	128 cm ²	52 t	61 t	40 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^[10], about 0.28 to 0.42 t/cm²; K = 0.35 t/cm² and S = 1.15 assumed. Also assumed: 3.5 cm² and 1 g per bobbin, runner area 6 / 10 / 16 cm² and weight 3 / 5 / 8 g, 10 s cycle, 85% utilisation.

PLANNING TOTAL MACHINE HOURS

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

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

Replacement demand matters as much as new mills. Bobbins and cones for older frames sell in steady small lots, so keep their moulds ready and schedule them between long runs of fast-moving sizes.

MACHINE UTILISATION AND PLANNED DOWNTIME**COLOUR CHANGES**

Count-coded colours^[6] mean frequent changes; run light to dark.

INSERT CHANGES

Group tapers and lengths that share a base.

GLASS-FILLED WEAR

Plan screw, check ring and gate inspections.

REGRIND

Keep reground used tubes out of balance-critical parts unless trialled.

SECTION 06 - AUTOMATION

AUTOMATION & PRODUCTION EFFICIENCY

In textile moulding, automation mostly protects the part surface, keeps counts right and handles long or bulky parts without damage.

AUTOMATION	WHERE IT ADDS VALUE IN TEXTILES	WHEN IT USUALLY MAKES SENSE
Sprue picker	Removes cold runners from bobbin, spool and plug moulds.	Multi-cavity cold-runner moulds on long runs.
Robot take-out	Lifts cones, dye tubes and flanges without scuffing.	Yarn-path surfaces and long cycles.
Stacking and nesting	Nests cones and tubes into columns for packing.	High-volume cones and tubes.
Conveyors and counting	Counts bobbins, spools and plugs into packs.	Small parts sold by count.
Colour dosing	Doses masterbatch for count-coded colours.	Many colours on one machine.
Vision check	Finds blocked perforations or short webs.	Perforated dye tubes.
Assembly	Snaps spool halves, fits castor bearings.	Multi-part products at volume.
Regrind handling	Grinds and blends used tubes back into the feed.	Mills returning used tubes.

A textile moulder often runs one family of parts for many frame types. Automation that serves the whole family, such as a sprue picker, stacker and counter, tends to pay back before tooling built for one mould.

AUTOMATION BY PRODUCT GROUP

PRODUCT GROUP	MAIN AUTOMATION	WHY
Cones and bobbins	Robot take-out, stacking	Surface and nesting
Dye tubes and springs	Vision check, regrind	Perforations and reuse
Sewing bobbins, spools, plugs	Sprue picker, counting, assembly	High counts per hour
Trays, flanges, can parts	Robot take-out	Large, heavy parts

DECIDING ON AUTOMATION

VOLUME AND LABOUR Counting and stacking at high cavitation add up fast.	SURFACE DAMAGE Hand removal can mark a winding surface that must stay clean.	REPEATABILITY A steady cycle holds balance and taper cavity to cavity.
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INTERFACES TO SPECIFY ON THE MACHINE

ROBOT Signal interface and safety interlocks.	EJECTOR Stroke and sequence for long tubes.	CORE PULLS Circuits for side cores on flanges or holders.	AUXILIARIES Dosing, conveyor and stacker connections.
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WHERE THE COST OF A MOULDED PART COMES FROM

MATERIAL resin, masterbatch	MACHINE per machine hour	LABOUR handling, packing	POWER kWh per part	MOULD many sizes	REJECTION flash, run-out	PACKING by count
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On dye tubes the useful comparison is cost per dyeing cycle, since a longer-lived material can cost more per piece^[5]. On sewing bobbins and plugs, machine hours and packing dominate. Use your own rates to compare options.

SECTION 07 · QUALITY

QUALITY, TESTING & COMMON DEFECTS

A textile part is judged on the mill floor: does it seat, spin true, survive the dye vessel and leave the yarn unharmed.

TESTS AND CHECKS

CHECK	WHAT IT INVOLVES	LINK TO MOULDING
Cone taper	Cone standards give dimensions, tolerances and the gauges used to measure cones ^[3] .	Core and cavity accuracy, shrinkage
Machine fit	Trial on the winder or frame the part is sold for ^[4] .	Base, nose and bore geometry
Run-out and balance	Concentricity and spin checks on bobbins and spools.	Wall uniformity, core shift
Dyeing trial	Repeated cycles in the dye vessel at the mill's temperature ^[7] .	Material, walls, weld lines
Spring recovery	Compress and release dye springs over repeated hot cycles.	Wall section, weld lines
Flange flatness	Spools, sewing bobbins and beam flanges on a surface plate.	Cooling, fibre orientation
Surface	Winding and yarn-path faces free of flash and ridges.	Shut-offs, gate position
Guide wear	Run guides against the actual yarn and check the contact face.	Material, surface finish

ISO 111:1978 is withdrawn^[2] and BS 2547-3 is listed as inactive^[3]. Confirm the current reference and limits with the machine maker or customer.

IN-PROCESS CONTROLS

TAPER GAUGE Go / no-go on cone taper and length.	WEIGHT BY CAVITY Flags filling imbalance.	RUN-OUT Dial check on a mandrel.	VISUAL Flash, blocked holes, colour.
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Before bulk supply, most mills ask for samples to run on their own machines. Keep the moulding settings from that approved sample lot and hold them for production.

TROUBLESHOOTING COMMON DEFECTS

DEFECT	POSSIBLE CAUSES	EFFECT ON THE PART	AREAS TO INVESTIGATE
Flash on winding surface	Worn shut-offs, low clamp	Yarn snags and breaks	Parting line, clamp setting
Weld-line ridges	Flow fronts meeting around pins	Snagging; weak tube webs	Gate position, melt and mould temperature
Eccentric walls	Core shift, uneven cooling	Vibration, yarn breaks	Core support, balanced filling
Wrong taper	Shrinkage drift, cooling	Poor seating on winder	Mould temperature, hold, material lot
Warped flanges	Fibre orientation, uneven cooling	Uneven winding and unwinding	Gate position, cooling layout
Short webs, blocked holes	Thin webs, venting, broken pins	Uneven dyeing	Injection speed, vents, pin condition
Splay	Moisture in PC, ABS or PA	Streaks, weaker parts	Drying
Size drift in PA	Moisture uptake after moulding	Out of tolerance at gauging	Conditioning before measurement

SECTION 08 · WORKED EXAMPLES

PRACTICAL MACHINE-SELECTION EXAMPLES

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

A · PS SEWING MACHINE BOBBIN		PRECISION SMALL PART
APPLICATION · MATERIAL	Class 15 style bobbin · clear PS	
CHARACTERISTICS	About 1 g, 3.5 cm ² projected area (assumed); flat flanges, true bore	
CAVITIES · OUTPUT	16 · about 4,896 per hour at 10 s (Section 05)	
MOULD CONSIDERATIONS	Balanced runner, polished cavities, flange flatness	
SECONDARY	Counting and packing	
EVALUATE The Section 05 table gives about 27 t calculated and a 21 g shot, so a clamp rated around 31 t or more. Shot repeatability matters more than tonnage. STILL NEEDED CAD projected area, bobbin styles, monthly volume.		

B · PP-GF PERFORATED DYE TUBE		HOT DUTY + PERFORATIONS
APPLICATION · MATERIAL	HTHP yarn dye tube · PP-GF or PPO (to be decided)	
CHARACTERISTICS	Long perforated tube; repeated dyeing cycles	
CAVITIES · OUTPUT	4 · about 306 per hour at 40 s (Section 05)	
MOULD CONSIDERATIONS	Long cores, many pins, hardened steel, core cooling	
SECONDARY	Vision check, regrind of used tubes	
EVALUATE Tonnage needs projected area from CAD. Ejector stroke and daylight for the tube length, a wear-resistant screw for glass fibre and steady injection speed for the webs drive the choice. STILL NEEDED tube length, grade, dyeing temperature, volume.		

C · PP COPOLYMER PACKAGE TRAY		LARGE FLAT PART
APPLICATION · MATERIAL	Package transport tray · impact PP copolymer	
CHARACTERISTICS	Large footprint, nesting and stacking ribs	
CAVITIES · OUTPUT	1 · set by the plant's tray demand	
MOULD CONSIDERATIONS	Rib balance, flatness, stacking features	
SECONDARY	Robot take-out	
EVALUATE Footprint sets the clamp force, platen size and tie-bar spacing. Shot weight follows the rib design. STILL NEEDED tray drawing, projected area, stacking load, volume.		

WHAT DECIDED THE MACHINE IN EACH EXAMPLE

SELECTION FACTOR	A · SEWING BOBBIN	B · DYE TUBE	C · PACKAGE TRAY
Main limit	Cavities, repeatability	Part length, glass fibre	Footprint
Clamp force	About 31 t rated	Needs projected area	Largest factor
Auxiliaries	Sprue picker, counter	Vision check, regrind	Robot take-out

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

In all three, the part drawing alone was not enough. The machine list, the dyeing duty or the stacking load 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 textile component.

COMPONENT

- ☐ 2D drawing and 3D CAD model
- ☐ Part and runner weight, wall thickness
- ☐ Taper, bore and flange dimensions
- ☐ Grade data and regrind share
- ☐ Sample from the installed machine
- ☐ Yarn-path or winding faces marked

PRODUCTION

- ☐ Monthly volume per size and colour
- ☐ Number of tapers or frame types
- ☐ Cavity count and target cycle time
- ☐ Operating hours and shifts
- ☐ Pack counts
- ☐ Colour range

MOULD

- ☐ New or existing mould; size and weight
- ☐ Part length and ejector stroke needed
- ☐ Hardened steel for glass-filled grades
- ☐ Insert sets or separate moulds
- ☐ Previous machine specification, if any
- ☐ Gate position agreed

TEXTILE APPLICATION

- ☐ Winder or frame models served
- ☐ Spindle speed or winding speed
- ☐ Dyeing temperature and reuse count
- ☐ Parts touched by running yarn
- ☐ Clear or colour-coded parts
- ☐ Antistatic needs

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 TEXTILE PARTS
1	What shot repeatability does the machine hold at my shot size?	Balance and taper cavity to cavity.
2	Is a wear-resistant screw and barrel available for glass-filled PP and PA?	Dye tubes, pegs, beam flanges.
3	What ejector stroke and daylight suit my longest tube?	Long dye tubes and bobbins.
4	Will my largest tray or flange mould fit between the tie bars?	Trays and beam discs.
5	How is injection speed profiled for thin perforation webs?	Blocked holes and weak webs.
6	Can the control store settings per taper, frame and colour?	Frequent changes across a family.
7	Which robot, stacker and dosing interfaces are supported?	Surface protection and colour codes.
8	How does the machine handle PC, PPO and PPS temperatures?	High-heat grades for dyeing and guides.
9	What is the energy use per part at my cycle?	Low price per bobbin or plug.
10	What installation, training and spare-parts support is included?	Mills depend on steady supply of packages.

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 frame or winder model, taper angle, dyeing temperature or automation.

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TECHNICAL REFERENCES

- [1] Press Information Bureau - Threads of Progress: How Make in India is Shaping the Future of Textiles and Apparel Industry - <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2117470&=48&lang=2>
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