



POLYPROPYLENE EXTRUSION BLOW MOLDING TROUBLE SHOOTING GUIDE

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PROCESSING

Suggested Starting Operating Conditions Temp Zones*

	°F	°C
Rear	370	188
Transition	390	200
Metering	400	205
Head	410	210
Molds	60	16
	psi	
Air Pressure, psi Blow Air	90	
Pre-Blow (psi)	10	

* Actual set points may vary

PARISON

PROBLEM	CAUSE (S)	SOLUTION (S)
1. Parison Curl	Non-uniform wall thickness Non-uniform heating	Adjust die bolts. Check centering of core. Ensure good heater performance. Ovalized Tooling. Die / Mandrel Alignment.
2. Rough parison	Melt temperature too low Incorrect extrusion rate	Increase back pressure, raise temperatures. Adjust rate up or down.
3. Contamination	Degraded material in system Dead areas in head Poor housekeeping	Purge to clean system. Avoid long idle machine time with barrel at elevated temperatures.
4. Neck down or parison sag	Improper material selection Melt temperature too high Slow extruder speed	Select a more viscous material. Lower melt temperature. Increase extruder speed to reduce parison drop time.
5. Rings	Programming changes too drastic	Decrease flow to programming cylinder. Decrease weight changes.
6. Bubbles or holes in parison.	Moisture in resin Trapped air Condensation in feed throat	Check resin for moisture. Hold resin in warm area 24 hours before using. Allow extruder to run to fill screw. Decrease cooling at feed throat. Increase back pressure.

CONTAINER

PROBLEM	CAUSE (S)	SOLUTION (S)
1. Blowing Incomplete	Air restricted Pinch-off area too sharp Poor mold venting	Check system. Broaden pinch-off area. Clean/wipe out vents.
2. Poor surface	Mold temp. too low Melt temp. too low Low air pressure Inadequate venting	Increase mold temperature. Increase melt temperature. Increase blow pressure. Increase vent area.
3. Warpage	Improper cooling Excessive variation in wall thickness	Check cooling flow in mold. Increase cooling cycle or redesign part. Check air pressure.
4. Excessive Shrinkage	Inadequate cooling	Increase cooling time. Increase blow pressure to achieve better mold surface contact/cooling. Reduce melt temperature.
5. Low Impact Strength on weld seam	Poor weld from low process temperature	Raise melt temperature. Redesign pinch off area.
6. Thin wall streak at parting line	Mold not completely Closed. Blow pressure is stretching polymer	Increase clamp pressure. Make sure dies do not bounce on contact.
7. Thin wall at pinch-off	Pinch-off too sharp; material Poor venting	Increase pinch-off land width; reduce relief area to aid in cooling pinch-off. Increase wall thickness at pinch (programmer).
8. Thick wall at pinch-off	Pinch-off clearance too high Pinch-off angle too small	Reduce pinch-off clearance. Open pinch Angle to about 30°.
9. Undercuts fail to strip	Undercuts too severe Excessive shrinkage	Reduce cycle. Use moveable die insert to produce undercut.