

BLOW MOLDING POLYETHYLENE

TROUBLE SHOOTING GUIDE



47 ROCKINGHAM ROAD
WINDHAM, NH 03087
603-893-4366
Fax: 603-893-5937
www.a-toppolymers.com



PARISON PROBLEMS

POSSIBLE CAUSE

Plastic temperature imbalance
Die head or die tip temperature
Parison extrusion rate
Fill pressure (reciprocating screw)
Dirty die face
Mandrel face is not flush with die bushing face

CURLING

SUGGESTED REMEDY

Lower stock temperature
Lower temperature due to air drafts or air leakage from blow pin mold
Slow down parison extrusion rate
Lower fill pressure
Clean die face
Correct so mandrel/die bushing faces are flush

POSSIBLE CAUSE

Parison thickness imbalance
Uneven temperature
Dirty die head

HOOKING

SUGGESTED REMEDY

Adjust die bushing
Check for defective heaters on die heads and/or extruders
Disable and clean

POSSIBLE CAUSE

Heat controller calibration
Barrel coolant fluid
Regrind variability
Fill pressure (reciprocating screw)
Inconsistent cycle

INCONSISTENT TAIL LENGTH

SUGGESTED REMEDY

Recalibrate (gain control)
Maintain proper operational temperature and flow rate
Maintain constant ration of regrind and virgin resin
Increase to obtain maximum allowable pressure without die head tool
Check timer for mold close speed or parison drop time variations

POSSIBLE CAUSE

Contamination of die head

BLOWOUTS/PINHOLES

SUGGESTED REMEDY

Open die gap and purge out contamination

PART FORMATION PROBLEMS

POOR WALL THICKNESS DISTRIBUTION (TOP TO BOTTOM)

POSSIBLE CAUSE

Parison necking down

SUGGESTED REMEDY

Use parison programming
Increase parison extrusion rate
Lower stock temperature
User lower MI material

ASYMMETRICAL PART

POSSIBLE CAUSE

Parison drop crooked
Non-symmetrical part shape

SUGGESTED REMEDY

Straighten parison drop
Pre-pinch and pre-blow parison
Use larger die tooling
Use die shaping to increase thickness in thin area

POOR WELD

POSSIBLE CAUSE

Mold closing speed incorrect
Main blow air
Mold cushion gap incorrect
Pinch pocket depth

SUGGESTED REMEDY

Increase/decrease final mold closing speed (slowdown)
Start main blow air sooner
Ensure flow rate is adequate
Increase/decrease mold cushion gap for start of slowdown
Determine proper pinch pocket depth for part weight

POOR PARTING LINE

POSSIBLE CAUSE

Low blowing pressure
Low blow air rate
Air entrapment

SUGGESTED REMEDY

Increase air pressure
Eliminate excessive restrictions in air lines
Unplug parting line vents
More venting is needed

CONTAMINATION IN PARTS

POSSIBLE CAUSE

Dirty regrind
Degraded resin in machine

SUGGESTED REMEDY

Keep regrind clean and to a minimum level
Minimize idle time with machine up to temperature
Disassemble and clean die head or extruder

FLASHING TEAR

POSSIBLE CAUSE

Width of pinch-off
Land length distance
Worn out pinch-offs
Mold alignment

SUGGESTED REMEDY

Check width of pinch-off
Rework molds to reduce land length to 0.010-0.015 inches
Refurbish worn places in pinch-offs
Replace worn locating pins if molds are out of alignment

HOLES IN PINCH-OFFS

POSSIBLE CAUSE

Stock temperature too low
Speed of mold closing

SUGGESTED REMEDY

Raise stock temperature by 5 - 10 degrees Fahrenheit until cutting stops
Slow the speed of mold closing

BLOW-OUTS

POSSIBLE CAUSE

Clamp pressure incorrect
Blow pressure too high
Parison length incorrect
Resin swell characteristics

SUGGESTED REMEDY

Raise clamp
Gradually lower blow pressure
Lengthen the parison
Reduce parison to part blow-up ratio
Switch to a higher die-swell resin