

| Problem | Suggested solution |
|---|---|
| Parts stick in the fixed or moving half of the mould. Fixed half Moving half | Decrease injection pressure Decrease hold pressure Minimize cushion Check for undercuts or insufficient draft Increase close time Decrease Moving half temperature Decrease close time Decrease Fixed half temperature |
| Flash | Decrease injection pressure Decrease hold pressure & time Decrease melt temperature to reduce flow Decrease injection speed Increase melt temperature to reduce pressure & clamp force New mould - check bedding out of tool Large tools - check machine tie bar wear |
| Poor Weld Lines. Flow front meeting angles of less than 120 degrees increase weld line visibility. | Increase injection pressure Increase hold time Raise mould temperature Vent cavity at area of weld line Raise melt temperature Increase injection speed Relocate gate to alter flow pattern Provide overflow well at weld area Check for leaking check ring |
| Burn marks | Decrease injection speed Decrease injection pressure Improve venting Increase gate size Decrease regrind volume |
| Short Shots, Pit Marks, Surface Ripples | Increase shot volume Increase injection pressure Increase mould temperature Decrease cushion Increase injection speed Increase hold time Add vents Use larger machine Check for leaking check ring |
| Sink Marks | Increase injection pressure Increase hold time Maintain proper cushion Reduce tool temperature Increase injection speed Increase shot volume Enlarge gate or runner |
| Voids | Increase injection pressure Increase hold time Decrease cushion Increase mould temperature Increase gate, runner & sprue Check for leaking check ring |

| Problem | Suggested solution |
|--------------------------------|--|
| Splay Marks / De-lamination | Reduce injection speed Enlarge gate size Reduce barrel temperature Increase mould temperature Dry material |
| Discoloration | Purge machine Reduce barrel temperature Decrease back pressure Reduce screw speed Decrease nozzle temperature Reduce injection speed Eliminate contamination from feed Check nozzle and barrel for hold up points Ensure moulding machine has free flowing check ring Try machine where shot size is 50 - 80% of capacity Reduce barrel residence time |
| Warpage / Distortion | Equalise temperature in both halves of mould Check uniformity of ejection Check handling of parts after ejection from mould Increase hold time Experiment with injection pressure—increase / decrease Increase cooling time Reduce material temperature Try differential mould temperatures to counteract warp Fixture parts in a cooling jig |
| Brittleness | Reduce melt temperature Check for contamination Decrease regrind level Radii sharp corners & notch points |
| Nozzle drool | Reduce nozzle temperature Reduce material temperature Minimize cushion Delay sprue break time Decrease mould open time Use nozzle with smaller diameter orifice Use decompression |
| Incomplete melting of pellets. | Barrel temperatures too low, particularly at rear zone Increase screw speed Increase back pressure Check for proper screw compression ratio Check for wear of the screw or barrel Check for proper screw flight depth Increase machine plasticising capacity—larger screw/barrel |

imtech design - True 3D Injection Moulding Simulation Service using Moldflow Software and our Injection Moulding / Problem Solving Expertise.

Email: sales@imtechdesign.com

Web: www.imtechdesign.com

