

The numbers stand for the sequence in which remedies should be tried, and the arrows indicate either an increase in the setting, a decrease in the setting, or the necessity to balance the setting.

MACHINE DEFECTS							PART DEFECTS																					
Numbers indicate sequence of making corrective steps; Arrows indicate ↑ - Increase ↓ - Decrease ↕ - Balance/Vary							Excessive Flash	Oversized Part	Part Sticking	Short Shot	Sprue Sticking	Undersized Part	Black Spots, Brown Streaks	Blisters	Brittleness	Burn Marks	Cracking, Cracking	Delamination	Discoloration	Flow Marks	Jetting	Poor Surface Finish (Gloss)	Poor Weld Lines	Silver Streaks, Splay, Splash	Sink Marks	Voids	Warping	
MACHINE VARIABLES	Backpressure						5↓			8↑			5↓	2↑	2↓				4↓							7↑		
	Inj. Forward (Booster) Time							2↓	3↓		3↓	3↑				4↓												
	Clamp Pressure						3↑	8↑																				
	Cylinder Temperature						2↓	5↓	6↓			6↑					2↑		2↓	1↑		3↑		3↓				
	Holding Pressure							4↓	2↓			4↑													3↑	3↑		
	Injection Hold Time						4↓		7↓	9↑	2↓	5↑											3↑				3↑	
	Injection Pressure						1↓	3↓	1↓	2↑	1↓	2↑			4↓	5↓	5↓			4↑		2↑	1↑		2↑	2↑	4↕	
	Injection Speed						6↓	1↓	8↓	6↑	5↓	1↑				1↓	1↑	4↕		5↕	1↓	4↑	5↑	4↓	6↑	6↓		
	Shot Size (Material Feed)									1↑															1↑	1↑		
	Melt Temperature									3↑			3↓	4↓	1↑	2↓		2↑			2↑		2↑		5↓	5↓	5↕	
	Mold Cooling Time								4↑		4↓	9↓											8↑				2↑	
	Mold Temperature						7↓	6↑	5↓	5↑		7↓		3↑		3↓	4↑	1↑		2↑	3↑	1↑	4↑	6↑	4↓	4↑	1↕	
	Nozzle Temperature									4↑	6↕							3↑		3↓	3↑				5↓			
	Overall Cycle Time							7↓					4↓							5↓					7↓			
	Screw Speed													1↓	3↓											8↑		
MOLD VAR.	Change Gate Location													6							5	7	7		13	11	7	
	Size of Gate									11↑		8↑				6↑				6↑	4↑			8↑	10↑	9↑	6↑	
	Size of Sprue/Runner									10↑									7↑						9↑	8↑		
	Size of Vent						10↕			7↑				7↑		8↑			7↑			5↑	6↑					
OTHER ACTION	Check for Material Contamination												2		7			3	6					2				
	Check Fit of Mold Faces						9																					
	Clean Cavity Surface																				6							
	Clean Mold Faces						8																					
	Clean Vents									12						7										7		
	Dry Materials													5	5		6	5					8	1	11	10		
	Regrind Quantity														6↓			6↓							12↓			
	Purge/Clean Screw & Barrel												1						1									

Troubleshooting Guide

This troubleshooting guide is divided into two parts. This first page will help you identify defects. The back page includes a chart showing you recommended courses of action to fix any of these defects.

Black Specks

Tiny black particles on the surface of an opaque part and visible throughout a transparent part.

Blister

Defect on the surface of a molded part caused by gases trapped within the part during curing.

Blush

Discoloration generally appearing at gates, around inserts, or other obstruction along the flow path. Usually indicates weak points.

Brittleness

Tendency of a molded part to break, crack, shatter, etc. under conditions which it would not normally do so.

Burn Marks

Black marks or scorch marks on surface of molded part; usually on the side of the part opposite the gate or in a deep cavity.

Cracking

Fracture of the plastic material in an area around a boss, projection, or molded insert.

Crazing

Fine cracks in part surface. May extend in a network over the surface or through the part.

Delamination (Skinning)

Surface of the finished part separates or appears to be composed of layer of solidified resin. Strata or fish scale type appearance where the layers may be separated.

Discoloration

Refers to any non-uniform coloration, whether a general brown color such as that caused by overheating or streaky discoloration resulting from contamination.

Excessive Warpage/Shrinkage

Excessive dimensional change in a part after processing, or the excessive decrease in dimension in a part through cooling.

Flash

Excess plastic that flows into the parting line of the mold beyond the edges of the part and freezes to form thin, sheet-like protrusions from the part.

Flow Marks

Marks visible on the finished item that indicate the direction of flow in the cavity.

Gels (Clear Spots)

Surface imperfections resulting from usage of unplasticized pellets.

Jetting ("Snake Flow")

Turbulence in the resin melt flow caused by undersized gate, abrupt change in cavity volume, or too high injection pressure.

Poor Surface Finish (Gloss)

Surface roughness resulting from high speed fill which causes surface wrinkling as the polymer melt flows along the wall of the mold.

Poor Weld Lines (Knit Lines)

Inability of two melt fronts to knit together in a homogeneous fashion during the molding process, resulting in weak areas in the part of varying severity.

Short Shot

Injection of insufficient material to fill the mold.

Sink Marks

Depression in a molded part caused by shrinking or collapsing of the resin during cooling.

Splay Marks (Silver Streaking, Splash Marks)

Marks or droplet type imperfections formed on the surface of a finished part.

Voids (Bubbles)

An unfilled space within the part.