

Troubleshooting Guide for INJECTION MOLDING BMC

CORRECTIONS	Mold Temperature	Injection Pressure	Holding Pressure	Injection Speed	Speed of Ejection	Barrel Temperature	Screw Speed	Screw Back Pressure	Clamp Pressure	Shot Size	Hold Time	Cure Time	Refer to Comment Sheet.
	PROBLEM												
Crazing/Cracking	4I				3D								1A,2B,5C,6E,7F
Contamination													1G,2H,3J
Dieseling		2D		2D									1K,3L,4M,5N,6P
Drag Marks													1R,2A,3S
Dull Appearance	1I					2I		2I					3T,4U
Flash - Excessive	4I	2D	2D			3I		3I	6I	1D			5V
Flow Lines	4D	2I	2I	1I		5D		5D			3I		6E
Injection Too Slow		1I		2I		3I		3I					4M
Knit Lines	3D	2D		2D									1E
Laking	6I	5I		5I					1I		4D		2W,3X,7V
Nonfills or Short Shots	4D	3I	3I			2I		2I		1I			5Y,6Z
Pin Cracking	4I				1D							5I	2A,3S,6N,7AA
Pre Cure	2D	1I		1I									
Screw Does Not Go Home"		1I	1I			5D		5D				2D	3BB,4CC, 6M
Screw Pickup is Erratic						3I	2D	3I					1EE,4Z
Screw Pickup is Too Slow						3D	2I	3D					1EE,4FF
Scumming	3I	5I		5I					1I				2X,4E
Part Shrinkage - Excessive	2I	1I	1I			3I		3I				5I	4Y
Part Shrinkage - Insufficient	1D		2D									4D	3Y
Sink Marks	2I	3I	3I	4D						1I			5Y
Sprue Sticking		2D	3D										1GG,4HH,5JJ
Sticking in Mold	3I		2D							4D		6I	1KK,5T
Trapped Gas	6D	5D	5D	4D		3D		3D	7D				1PP, 2Y,8LL
Warpage When Ejected													1KK,2T,3MM,4NN
Warpage After Cooling	1I			3D		2I		2I				5I	4Y,6F,7E
Wood Screwing						2D	3D	1I					

Legend: Number = Priority I = Increase D = Decrease Other Letters = Comment ID

Comment Sheet for INJECTION MOLDING BMC

- A. Check mold for back draft or undercuts and remove them.
- B. Eliminate any sharp transitions from thick to thin cross sections.
- C. Allow the parts to cool at a controlled uniform rate.
- E. Increase the size of the gate and if possible relocate it.
- F. Use shrink fixtures to hold the parts flat as they cool.
- G. Checked all unmolded material for foreign matter and if possible remove it. If it can't be removed, quarantine the remaining material.
- H. Check all equipment used in molding the material for potential sources of contamination and remove them.
- J. Check for air borne particulates from other processes and eliminate their source.
- K. If mold is vacuum vented, check system to insure that it is pulling a minimum of 21" of Hg in the mold. If not resolve problem with vacuum system.
- L. Decrease the screw position for the transfer from primary to secondary pressure.
- M. Increase the mold temperature and if that does not resolve the problem try decreasing it.
- N. Vent the ejector pins.
- P. Vacuum vent the tool.
- R. Check parallelism of ejector system and repair as needed.
- S. Check mold for the amount of draft and increase if necessary.
- T. Check the condition of the mold plating and re-plate if necessary. If the mold is unplated, polishing or polishing and plating may be necessary.
- U. Polish the mold.
- V. Check the parting line for wear or damage and repair as needed.

- W. Verify the correct charge weight is being used and change as needed.
- X. Verify that clamp pressure is maintained on the mold during the entire cycle and correct as needed.
- Y. Check the vents and correct as needed. (See Section #6 "Thermoset Injection Mold Design Tips")
- Z. Check the screw and barrel for wear and if necessary recondition or replace them.
- AA. Relocate ejector pins or increase the diameter and/or number of pins.
- BB. Check the primary injection timer to insure ram has sufficient time to reach the secondary pressure limit switch.
- CC. Decrease the amount of cushion.
- EE. Check material feed from stuffer.
- FF. Increase the barrel temperature of the feed zone.
- GG. Make sure that the orifice of the sprue bushing is larger than the orifice of the nozzle. Also, check the sprue bushing and nozzle for damage or wear and repair or replace as needed.
- HH. Check the sprue tip for a "soft bulb" on the end and adjust process parameters as needed to get it.
- JJ. Check the sprue puller design and revise as needed. (See Section #6 "Thermoset Injection Mold Design Tips")
- KK. Check mold for wear and correct as needed.
- LL. Increase the gate and runner size.

MM. Add undercuts to hold the parts in the movable half of the mold until they are ready to be ejected.

NN. Watch the dropping of the parts from the mold or observe the part picker to see if the parts are being deformed.

PP. If mold is vacuum vented, check if system is pulling a minimum of 21" Hg in the mold. If not, resolve problem with vacuum system.