<table>
<thead>
<tr>
<th>Problem</th>
<th>Source(s)</th>
<th>Cause(s)</th>
</tr>
</thead>
</table>
| Jetting | Machine | Excessive injection speed.  
Barel temperature too high or too low  
Nzal opening too small  
Inadequate nozzle temperature |
| | Mold | Mold temperature too low.  
Gates or runners too small  
Improper gate location  
Excessive gate land length |
| | Material | Improper flow rate.  
Barel temperature too low  
Inadequate back pressure  
Injection pressure or speed too low |
| Knit Lines | Machine | Excessive nozzle speed.  
Barel temperature too high or too low  
Inadequate nozzle temperature |
| | Mold | Mold temperature too low.  
Gates or runners too small  
Improper gate location  
Excessive gate land length |
| | Material | Improper flow rate.  
Inadequate nozzle temperature  
Injection pressure or speed too low |
| Non-fill (Short Shots) | Machine | Excessive material feed.  
Insufficient pressure or time  
Inadequate pressure or time  
Excessive screw rotation speed (RPM)  
Nozzle too small, too hot, or obstructed  
Excessive shot size  
Trapped air or gases  
Improper purge |
| | Mold | Mold temperature too low.  
Gates too small  
Obstruction in gate or runner  
Cras in mold |
| | Material | Excessive moisture.  
Contaminated resin |
| Shrinkage | Machine | Barel temperature too high.  
Insufficient injection pressure or time  
Inadequate cooling pressure or time  
Insufficient cushion and/or hold time  
Faul check valve |
| | Mold | Mold temperature too high.  
Gates or runners too small  
Improper gate location  
Excessive gate land length |
| | Material | Improper flow rate.  
Excessive moisture  
Non-uniform particle size |
| Sink Marks | Machine | Barel temperature too high.  
Insufficient injection pressure or time  
Inadequate cooling pressure or time  
Insufficient cushion and/or hold time  
Faul check valve |
| | Mold | Mold temperature too high opposite ribs  
Gates or runners too small |
| Source(s) | Cause(s) |
| Mold (cont) | Machine | Improper gate location |
| | Mold | Excessive gate land length  
Excessive rib thickness  
Unebalanced flow pattern |
| | Material | Improper flow rate.  
Barel temperature too high |
| Splay | Machine | Excessive screw rotation speed (RPM).  
Faul check valve  
Excessive shot size  
Improper purge |
| | Mold | Gates too small  
Obstruction in gate or runner |
| | Material | Excessive moisture |
| Warpage | Machine | Inadequate injection pressure or time  
Inadequate residence time  
Barel temperature too low  
Barel temperature too high  
Insufficient cycle time  
Lack of cushion - underpacking  
Excessive stress build-up |
| | Mold | Mold temperature too low  
Gates or runners too small  
Improper gate location |
| | Material | Insufficient flow rate.  
Uneven mold temperatures  
Uneven mold construction due to part design  
Non-uniform ejection  
Proper gate location |

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