Flow Surging

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Many things can cause flow surging in single-screw plasticating extruders. Many of these causes originate from the solids conveying section, especially if the frequency of the surge is on the order of once every 5 to 20 seconds. The first thing to check is the temperature controls for the barrel and cooling water flows to the feed casing and internal screw cooling. If the feed casing and screw cooling section in the solids conveying zone become too hot, then a high-frequency flow surge can develop. Disconnecting the service water pipes from the discharge sections of the casing and screw cooling section will help diagnose water flow problems. Poor water flow to these sections can be caused by poor line pressure between the supply and discharge manifolds and by corrosion.

- Mark Spalding Dow Chemical Co.

See also:

- Causes of extruder surging
- Correcting flow instability in extrusion
- Extruder surging
- Flow surging in single-screw, plasticating extruders (ANTEC Best Paper 2000)
- Material conveying systems
- Screw cooling in extrusion

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