

Surging (Consultant's Corner)

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Single screws seldom have a perfectly matched feeding and pumping rate. If they do, it is only at one screw speed and/or set of operating conditions. Consequently, it is necessary to have sufficient head pressure to insure that the metering section is filled for at least several turns, or the output may be unstable. This type of instability (or surging) is usually characterized by a steady, rhythmic surge that defies correction with operating conditions. It's very prevalent in two stage screws where the second stage has been designed for excessive capacity versus the first stage. If you experience this kind of surge, addition of screens, restrictive breaker plates, or other means of building head pressure will improve stability. Although you may not completely eliminate the instability with increased head pressure, you will see a reduction in the instability or the surge is probably due to another cause.

— Jim Frankland

See also:

- [Causes of extruder surging](#)
- [Correcting flow instability in coextrusion](#)
- [Extruder surging](#)
- [Feed throat cooling](#)
- [Flow surging in single-screw, plasticating extruders](#)
- [Notes on polyethylene extruder surging](#)
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