

Screen/Barrel Clearance

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Vol. 7 #2, July 1978

Question: What are the rough guidelines in terms of screw/barrel clearance that one can use to determine whether a barrel and/or screw is excessively worn and extruder surging is imminent?

- Thomas F. Rosenkranz, Ethyl Corporation, Fremont, CA

Answer: It is difficult to give a meaningful single number to answer this question. The location of barrel and/or screw wear is important in determining when a problem is about to occur. The rate of wear is also important to factor into an answer.

Interestingly, surging is not the only problem which may be affected by excessive screw/barrel wear. An increase of mean melt temperature, gels, or time position dependent temperature variations at the desired rate may signal an excessive screw/barrel wear problem.

My advise is to monitor the ratio of output rate to screw RPM from the time the screw is new. Follow this by a periodic inspection of screw and barrel wear pattern.

At the point where the rate per RPM begins to lessen by more than 10%, the screw should be rebuilt. If the other quality factors fall below an acceptable level before the rate per RPM has decreased by 10%, then that amount of wear represents an obvious limit.

- Robert B. Gregory

See also:

- Barrel and screw wear
- Causes of extruder surging
- Excessive screw wear
- Surging

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