

Feed Throat Design

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Feed throat design

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There are several good reasons for a separate feed throat casting:

- 1) Cooling of the feed throat is very important to prevent bridging. Most polymers will not run well at all without throat cooling. As a screw designer, I have fought the problems with inadequate cooling of these "all in one barrels" too often. The cooling cans that are frequently welded to the barrel are totally inadequate.
- 2) There is a very good reason for the feed throat to be of a larger bore than the main barrel. If they are the same, then as the screw heats up, it expands against the cold barrel which doesn't expand. Therefore, binding and galling can occur. Of course, this can be relieved by undercutting the screw which some OEM's do. A well designed feed throat will use a harden liner or even a centrifugally cast in liner in a sleeve. These can be pressed out and new ones inserted when the original is worn.
- 3) Since thousands of extruders have been in successful operation with separate feed throats, I don't see the problem. Of course, misalignment can cause problems, but remember that the internal pressure in the screw's channels is the main support for the screw and, with a good screw design, will keep it fairly well centered. Depending on close clearances in the feed throat, for alignment, can lead to other problems as in #2 above.

- Bob Barr, Robert Barr Inc.

See also:

- Barrels with integrated feed throats
- Feed throat cooling

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