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Maximum Channel Depth for High Rate

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Maximum channel depth for high rate
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The channel depth of a screw can be made deeper to provide more flow rate. However, the power that the screw will deliver to the polymer is inversely proportional to the channel depth. Therefore, a point is reached where a deeper channel for greater rate will not generate enough power for the melt to reach the desired temperature.

An increase in the lead length may be possible to gain flow rate with a smaller channel depth. However a point is eventually reached where no combination of lead and channel depth will provide more flow and desired melt temperature. Then, extruder length is needed to develop the desired product temperature for greater rates.

Of course, sufficient power and speed must also be available from the drive for the desired rate.

- Stephen J. Derezinski, Eastman Kodak Company

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