Case History

Dual Belt Tractor Feed for Brittle Material Feeding Application

Objective

Provide a material feeding device for integration into an existing automated stamping system.

Case Specifications

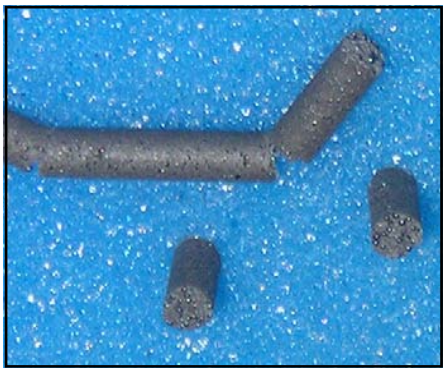
Feed unit must accurately feed and control several different diameters of a very brittle plastic extrusion without damaging or distorting the cross section. The feed unit must operate as a slave to a specialized stamping press, processing a signal from the press control encoder to determine the speed and feed length required.

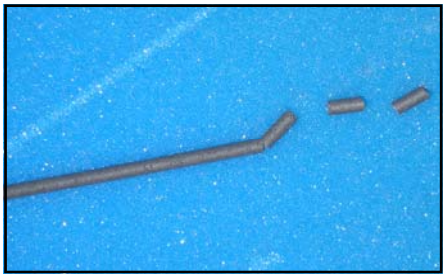
Solution

After testing the feed process utilizing a standard roll feed, the brittle nature of the plastic extrusion proved to be too delicate to be gripped and advanced adequately, even when using shaped rolls to match the material OD. The Novo Dual Belt Tractor Feed was then tested and proved to deliver the material at the desired rate. As a result of the greater surface area contact when compared with a roll feeder, less gripping pressure was required. This feature, when combined with the use of softer rubber cog belts, proved to deliver material at the required rate without any distortion or damage.

Custom controls and a single axis servo drive were applied to communicate with the press encoder. To facilitate ease of changeover and rethreading, a pneumatic cylinder was employed to open and close the gripping mechanism for the tractor drive belts.

A standard feed roll drive with radius ground rolls would not feed the extruded material without breakage or distortion of the cross section.





Voids and cracks in the extruded material proved to make it too delicate to withstand enough conventional feed roll grip pressure to advance it at the required rate.

The Dual Belt Tractor Feed utilizes 2 opposing cog belts to spread out the gripping force over a large area. Rubber belts proved to provide enough traction without distortion or breakage of the brittle material.

Running as a slave to a specialized press, a single axis servo drive and motor read a signal from the press-mounted encoder to deliver the required amount and speed of the material to be fed.

Click on the link below to go directly to the specification sheet for the Dual Belt Tractor Feed

http://www.novoprecision.com/products/linear-feed-drives/

To see Dual Belt Tractor Feeds in Operation, Click on the video links below:

http://www.novoprecision.com/video-gallery/tractor-feed-processing-3-wires/

http://www.novoprecision.com/video-gallery/dual-belt-tractor-on-187-w-x-010-t-strip/

http://www.novoprecision.com/video-gallery/medical-guidewire-arbor-cut-to-length-system/

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