

# MACHINE DESIGN

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## SCANNING THE FIELD FOR IDEAS

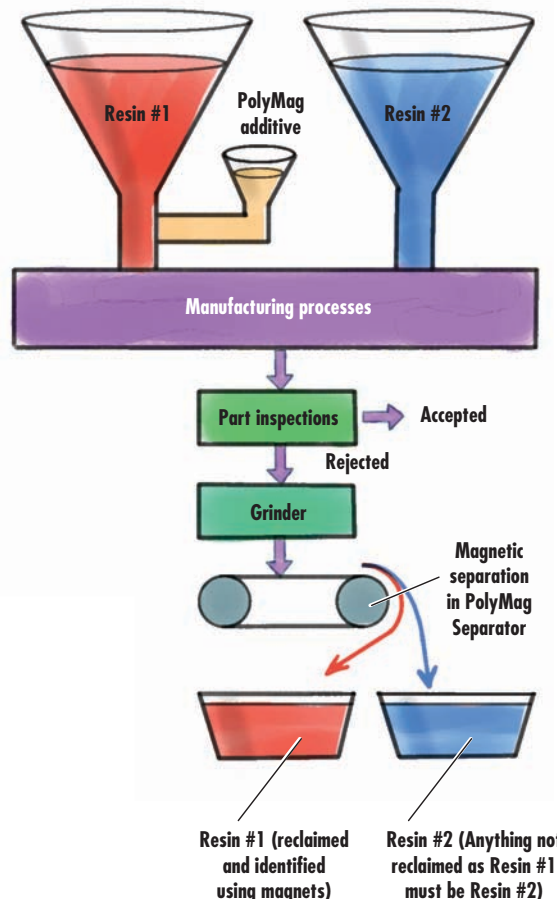
By Stephen J. Mraz

# Recycling plastics with magnets

Many plastics manufacturers use processes like sequential 3D blow-in molding and two-shot injection molding, but they create a lot of scrap during start-ups or due to flashing and defects. This waste can be hand cut and sorted to salvage some of the higher-end plastic, but manual labor is expensive. As a result, most is thrown away because it is mixed with so many other resins. A new process and machine from **Eriez Magnetics**, Erie, Pa. ([eriez.com](http://eriez.com)), embeds magnetic particles in a resin, letting a machine pick it out from the other resins.

The process begins with magnetic particles called PolyMag added to the high-priced or most-valuable resin, such as Santoprene — at a 1:99 ratio. The magnetic additive doesn't affect the resin's properties. Then, if a run of 100 parts has defects, they get ground up and sent through the PolyMag Separator. The Separator pulls out Santoprene using a magnet. Once complete, the recycled Santoprene is of high enough quality to be reused. The process saves money and gives company a cost-effective way to recycle polymers and plastics. Engineers at Eriez say that varying amounts of PolyMag can be added to several resins, letting all the resins in a device or part be separately reclaimed and reused.

Circle 401



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