

Case Study

Dyna-Purge® reduces initial scrap rate by more than 90% for an injection molder during resin changeovers.



Owner Judy Schmitt and machine operator Tabatha Sizemore inspect parts in front of one of two Van Dorn injection molding machines JC Tec operates. Since using Dyna-Purge, **the company has reduced scrap rates significantly, increased productivity, and lowered its cost to purge by 52%.**



Dyna-Purge solved the purging challenges for changeovers in the production of 5-inch diameter bicycle training wheel tires (above left). JC Tec produces approximately 200,000 tires annually.

Problem:

JC Tec Industries, Annville, Kentucky is a contract manufacturer of plastic components including insulators, cams, gears, end caps, rollers, ball valves, cable assemblies, latches, bearing inlets and other parts.

Changing over from flexible PVC to acetal resin in the production of bicycle tires for training wheels is the company's most difficult purging challenge. At a running rate of 200 parts-per-hour, and using its own resin to purge, JC Tec **experienced a scrap rate of 20% during the first hour**, resulting in an average of 40 defective parts being discarded.

The two Van Dorn 230 cold runner injection molding machines (50mm screw size), operating at a barrel temperature of 330°F to 350°F would be purged up to five times weekly. **This translated into as many as 200 defective parts per week**, with an additional cost of resin and machine downtime in excess of \$175.00.

On an annualized basis, it was costing the company more than \$9,000 to purge using in-house resins.

Solution:

Use **3 lbs. of Dyna-Purge V**, a grade specifically designed for purging rigid and flexible PVC from injection molding or extrusion equipment at 320°F to 400°F (160°C to 204°C).

Results:

- The **scrap rate during the first hour was reduced from 20% to 1.5%**, resulting in an average of only three defective parts-per-purge. This dramatically improved inspection, production, and scrap rate efficiencies as well.
- By using Dyna-Purge V, the cost to purge each time is only \$16.82, so JC Tec Industries **lowered its purging costs by 52%.**

On an annualized basis, this represents a savings of approximately \$5,000.00 with Dyna-Purge compared to using in-house resins to purge.

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CS-IM103

