



DuPont Engineering Polymers

Switch to Rynite® PET, Delrin® Streamlines Valve Production



Application Description

A solenoid-operated valve has been designed using Rynite® PET thermoplastic polyester resin and Delrin® acetal resin. The solenoid assembly is encapsulated with Rynite® PET thermoplastic polyester resin instead of epoxy. The coil bobbin is injection molded from Rynite® PET or, for valves installed in food or beverage equipment, from Delrin® acetal resin. The valve body, formerly machined in brass, stainless steel or aluminum, is now injection molded from Delrin®.

Peter Paul's Series 40 valve serves in humidifiers, pneumatic factory automation systems, beverage dispensers and other equipment.

Manufacturer

Peter Paul Electronics Co., Inc., New Britain, CT
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Benefits Gained

Lower manufacturing costs. The switch from potted epoxy to Rynite® PET for encapsulation speeded production, avoided VOC emissions, eliminated secondary finishing and allowed integration of a mounting bracket in the design and elimination of a costly welded metal assembly for plunger guiding.

Durability. Peter Paul has tested valves for 20 million open-close cycles without failure.

Standards compliance. Peter Paul saved time and money in meeting UL 1446 Class F (155°C) requirements by using a preapproved, pretested DuPont electrical insulation system (EIS).

Materials Chosen and Why

Solenoid encapsulation: Rynite® 415 HP. Bobbin: Rynite® FR530. Both meet needs for strength, stiffness, high productivity in injection molding and UL1446 Class F listing.

Valve body and bobbin: Delrin® 500 BK642. This material fulfills requirements for strength, stiffness, and suitability for use in food and beverage equipment.

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