



Product

Custom Ameriflex® Couplings

Application

Polymer Resin Pumps

Highlights

- Unique separated multi-convoluted diaphragm configuration
- No wearing parts, no lubrication and no required maintenance
- Low windage and horsepower loss
- High torque-to-weight and torque-to-diameter ratios
- API-671 compliant
- Stainless steel diaphragms designed for infinite life
- Black oxidized, heat treated, alloy steel torque transmitting components are standard

A major global petrochemical company experienced a coupling failure on a polymer pump in one of its larger resin processing facilities. The coupling problem caused expensive, time-consuming production line shutdowns.

Ameridrives was contacted to provide a solution. Gear couplings were initially installed on all the polymer pumps between the pumps and gearboxes for this high-torque, low-speed (50 RPM) application. However, while plant maintenance crews did their best, keeping all the expensive gear couplings properly lubricated throughout their plants around the world proved to be a tough challenge.

After careful review of the situation, Ameridrives engineers recommended replacing the gear couplings with Ameriflex diaphragm couplings, which can run continuously and require no lubrication or maintenance (unlike gear couplings which require maintenance at six-month intervals).

Ameriflex couplings are typically used on high-performance, high-speed applications. However, the Ameridrives team collaborated with industry-leading experts to provide custom-designed diaphragm couplings to meet the resin pump requirements. Many custom Ameriflex couplings were delivered in a variety of sizes and configurations with torque ranges up to 1,100,000 Nm (10,000,000 in.lbs.). One example is a 10' long, 23" diameter coupling (shown in upper left) that features specific split retaining rings on both the pump and gearbox end hubs, multiple convoluted diaphragm pack flex elements at each end, and a special spacer configuration for added stiffness in this dual output application. An integral indexing/timing device aligns the coupling with the mixing blades of the polymer pump.

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