

from Bodine Electric Company

## ■ Design Options for Changing Environments



Case Sealer / Packaging Equipment

### Packaging Machine

Case sealers are packaging machines that drive an open cardboard box between two vertical conveyors while tape is wrapped around the box to close it. An OEM customer uses two Bodine type 42R-FX (AC) parallel shaft gearmotors to drive the conveyors.

When this customer developed a new machine for use in areas where water might be sprayed on the equipment, naturally they used the same Bodine

gearmotors. However, while these gearmotors worked flawlessly for years in the old design, they didn't work as well in the new machine. The problems obviously stemmed from the splashing water.

Bodine engineers recommended replacing the fan-cooled gearmotor with a standard product that combined a totally enclosed motor with the gearbox that was currently used in the application. As a rule of thumb the horsepower rating of a fan-cooled motor must be cut in half if the fan is removed. The original 1/6 HP rated fan-cooled motor was switched to a 1/3 HP model (derated to 1/6 when the fan was removed).

**Bodine brings over 110 years of problem solving experience to a wide range of applications in industries as diverse as energy production, medical, packaging, industrial automation, and solar powered outdoors equipment. We look forward to working with you on your next fractional-horsepower gearmotor design challenge.**

### application insights

#### The Design Requirement

An OEM customer of Bodine Electric Company found motors that worked flawlessly in equipment designed for dry environments were not working as well in a new machine designed for use in areas where liquids might be present.

#### The Solution

Bodine engineers determined that water was seeping into the gearmotors through their cooling fans. The motors were replaced with totally enclosed models that did not require cooling fans.



A 1/6 HP Bodine type 42R5BFCI-FX3 gearmotor (top) and a 1/3 HP Bodine type 48R6BFCI-FX3 gearmotor (bottom). After removing the fan from the larger gearmotor, the two gearmotors had the same horsepower rating. [Click here](#) to view all Bodine AC products.