# GEARMOTOR SOLUTIONS FOR PACKAGING AND CONVEYOR APPLICATIONS

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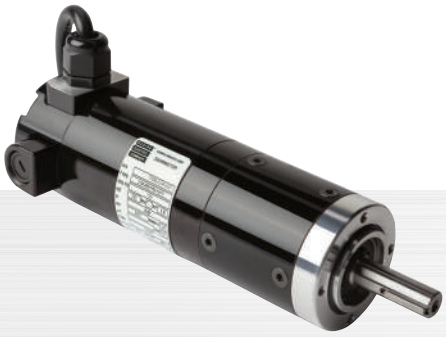
# Fractional HP Gearmotor Types and Benefits

## Variable and Fixed Speed AC

### Highly Efficient, Long Lasting Performance

- No maintenance required
- Inverter duty, 3-phase models are available with either 230V or 230/460 VAC windings
- Many totally enclosed, fan cooled IP-20 rated models
- System-matched 3-phase AC motor speed controls available



## Permanent Magnet DC

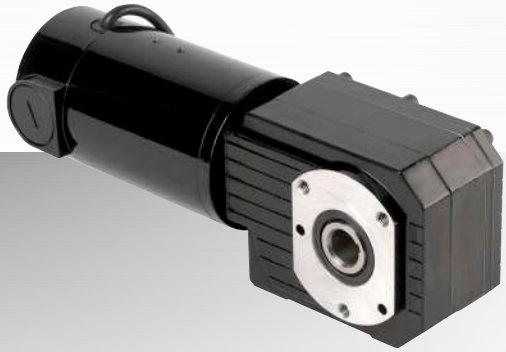
### Variable Speed, Easy to Install

- DC power supply (via battery, solar, or speed controls)
- High starting torque and predictable linear speed torque performance
- High starting current, relative to full load running current
- Easy control set-up

## Brushless DC (EC) and INTEGRAmotors

### Quiet Running, Zero Maintenance

- 24 or 130VDC windings
- INTEGRAmotors feature a low-voltage brushless DC speed control, motor and encoder in one compact package.
- Models rated Class I Div 2 for use in hazardous locations available
- Small package size



## Hollow Shaft Gearmotors

### Eliminate Sprockets, Couplings and Drive Chains

- Versatile mounting options in tight spaces
- Easier to mount and maintain than regular right-angle gearmotors
- Available in AC, PMDC or BLDC configurations
- Shaft kits, mounting flanges and other hollow-shaft accessories available

# AC Synchronous Gearmotors Simplify Design

## The Design Requirement

**A manufacturer of an automated bag sealer required that two conveyors within the same machine operate at synchronous speeds.**

## The Solution

- **Each conveyor is driven by a synchronous AC inverter duty gearmotor**
- **One AC speed control (VFD) was used to precisely sync both gearmotors**
- **This design upgrade allowed for the elimination of mechanical linkages (chains and sprockets) between the two conveyors**

## Automated Bag Sealer

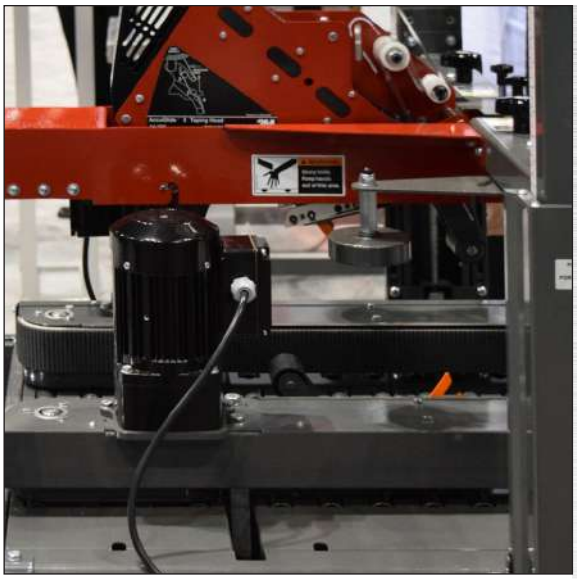
Continuous band poly-bag sealers can seal almost any thermoplastic material, including poly-propylene, polyethylene and foil laminates. These machines typically have two driven conveyors: the lower one moves packag-es through the machine, and the upper one drives the unsealed packages through two continuously heated jaws. To insure that both top and bottom run at precisely the same speed the two conveyors are frequently coupled together with chains and sprockets.

By taking advantage of the unique properties of Bodine type 30R-D and 34R-WX AC synchronous, three-phase, inverter duty gearmotors, our design team worked with a packaging equipment OEM manufacturer on a solution that radically simplified their design. Rather than joining the two conveyors mechanically, the team suggested that each conveyor should have its own gearmotor. By linking both gearmotors to a single AC speed control (VFD = variable frequency drive), the speed of both conveyors would always be precisely in sync. This not only eliminated the bulky chain and sprocket assembly, it also meant that there would be no need for feedback devices (encoders) or an expensive servo-drive system.

Choosing the right gearmotor was a matter of simple mathematics: if multiple AC synchronous gearmotors are operated from one inverter drive, the sum of rated motor power for all synchronized axes must be equal or less the rated output power of the VFD.

This design took advantage of the unique properties of custom Bodine type 30R-D (left) and 34R-WX AC (right) synchronous gearmotors.

# FHP Gearmotors Drive the Packaging Industry



## Case Sealer

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

Bodine type 42R-FX

## Foam-in-Bag Packaging Equipment

Foam-in-bag molding systems create molded cushions for products that require a consistent, precise fit and product protection during the shipping and handling process. The machine shown is driven by a Bodine INTEGRAmotor brushless DC (EC) gearmotor with built-in control.

Bodine type 22B/SR-D INTEGRAmotor

# Bodine Drives the Packaging Industry

*Bodine design and application engineers are ready for your next design challenge.* We supply rugged, high-performance gearmotor solutions to many OEMs in the packaging industry and understand the demanding performance requirements for packaging machines where downtime is not an option.

- Over 1,300 standard/stock products
- Unlimited custom design solutions
- Gear ratios from 4:1 to 3600:1
- Torque to 1000 lb-in (113Nm)
- Horsepower up to ¾ hp (560W).

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