

from Bodine Electric Company

■ Custom Gearmotors Solve AGV Challenge



Automated Guided Vehicle/Factory Automation

Large distribution warehouses have turned to Automated Guided Vehicles (AGVs) to keep up with ever-increasing demand for faster and more economical deliveries. An original equipment manufacturer (OEM) for AGVs contacted Bodine Electric Company to help with the development of two new custom gearmotors.

The Challenge

The OEM's specifications required two gearmotors, one of them had to lift up to 1,000 lbs (with substantial peak loads). The AGV's chassis had already been finalized, and left only limited space for the new gearmotors. The gearmotors were required to operate almost continuously for five years, under worst-case environmental conditions, and would be subjected to extreme vibration and shock.

The Result

Almost every part of these new gearmotors was engineered to match the customer's extensive list of requirements.

- **Low-voltage brushless DC motors** paired with all-new, highly efficient gearboxes prolong the AGV battery life and minimize downtime
- **Gearbox** designed to simplify the assembly process of the AGV
- **Custom output shaft assembly** designed for extremely heavy loads
- **Feedback device** tracked the position of the drive shaft
- **1024 PPR encoder** provided servo feedback to control the gearmotors
- **"Military style" plug and screw connections**
- **Temperature sensors** monitor gearmotor performance and to prevent overloads
- **Manual over-ride** in the event of a power failure

With Bodine's help, these sophisticated robotic vehicles have been performing flawlessly all over the world. Bodine not only developed two entirely new gearmotors for this application, they also helped navigate the difficult third-party approval process. Bodine engineers extensive experience in motion control made them an ideal partner in the development of this new product, which in turn is making warehouse jobs easier, more productive, and cost-efficient.

Bodine Electric engineers bring over 110 years of application engineering and problem solving experience to a wide range of applications in industries as diverse as medical, packaging, industrial automation, and solar powered outdoors equipment. We look forward to working with you on your next FHP gearmotor design challenge.

application insights

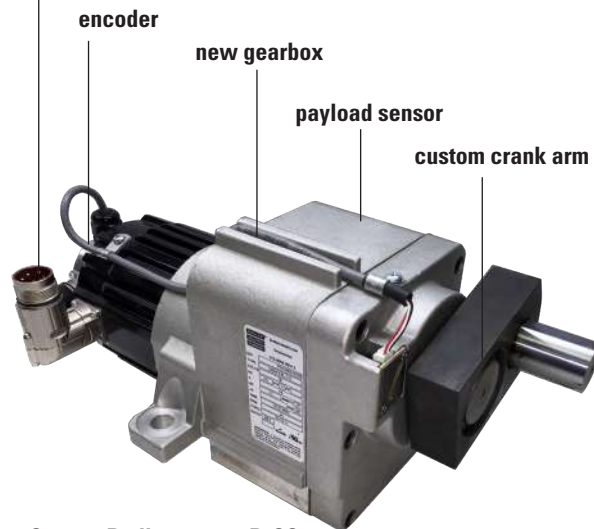
The Design Requirement

Bodine was asked to design, test, and manufacture two custom gearmotors under tight deadlines and with challenging requirements.

The Solution

Our engineering team developed two new gearmotors that met the customer's performance, cost, and delivery targets.

military style connector



Custom Bodine type 34B-CG parallel shaft gearmotor



Custom Bodine type 22B-Z parallel shaft gearmotor