



# Powerful, Efficient Hypoid Gearmotors

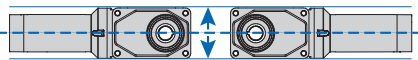
Right-angle gearmotors with hypoid gearsets have several advantages when compared with standard worm and worm-gear gearmotors. While they cost more to manufacture, hypoid gearmotors are more efficient, produce less heat, provide higher torque, and are usually smaller than equivalent gearmotors with worm-and-pinion reducers.

## More Efficient At Low Speeds And High Reductions

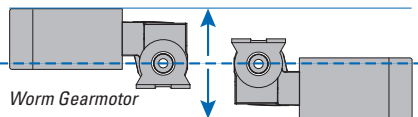
Hypoid gears require less energy to begin rotation, making them more efficient at lower speeds. At higher reductions, because the hypoid tooth pattern allows torque to be transferred smoothly with less friction they can be 40% to 60% more efficient than their worm-gear counterparts. In some cases this can mean that a motor rated at 1/2 hp coupled with a hypoid gearhead can deliver the same amount of torque as a worm gearhead driven by a 1hp motor.

## Cooler Operating Temperature

The hypoid gear design generates less friction between the gear teeth than worm-gears. Side-by-side tests have shown that hypoid gearmotors can run as much as 15% cooler than worm-and-pinion gearboxes driven by the same size motor. This can result in lower power consumption and better lubrication life.



Hypoid Gearmotor



Worm Gearmotor

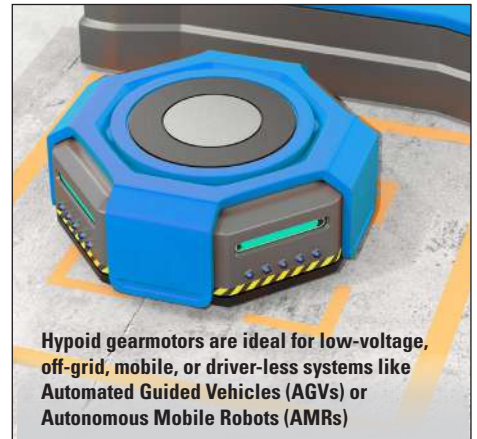
Hypoid gearheads are mounted parallel to the motor, while worm gearheads must be offset.

## Smaller Footprint

Not only can hypoid gearmotors be driven by smaller motor for the same load, but the geometry of the gearing allows them to be mounted in line with the motor, while the worm gearheads must be offset. Combining these benefits results in a much smaller overall package size for a hypoid gearmotor than a comparable worm gearmotor.

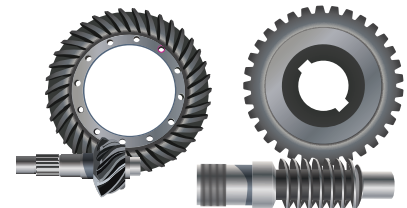
## Designed to Last

Worm gears are usually made from bronze, which is softer than steel. While hypoid gears cost more to manufacture than a simple worm gear, they are typically made from heat-treated steel, which allows them to operate at peak efficiency for longest possible product life and quiet operation.



Hypoid gearmotors are ideal for low-voltage, off-grid, mobile, or driver-less systems like Automated Guided Vehicles (AGVs) or Autonomous Mobile Robots (AMRs)

## Advantages of Hypoid Gearheads



Hypoid Gearing

Worm Gearing

A standard worm-and-pinion gearset (right) consists of a screw-like input gear that rotates perpendicularly over a larger output gear. This arrangement is less efficient than hypoid gearing, which combines worm and bevel gear design.



## New Hypoid Gearmotors From Bodine

Bodine's new type 33A7-25H2 and 33A7-30H3 hypoid gearmotors combine our high-performance 33A PMDC motor with our all new hypoid gearheads. The gearmotor's high torque and efficient performance make it an ideal drive for applications that require small overall size, lower energy consumption and cooler operation.

For more information, visit [bodine-electric.com](http://bodine-electric.com).