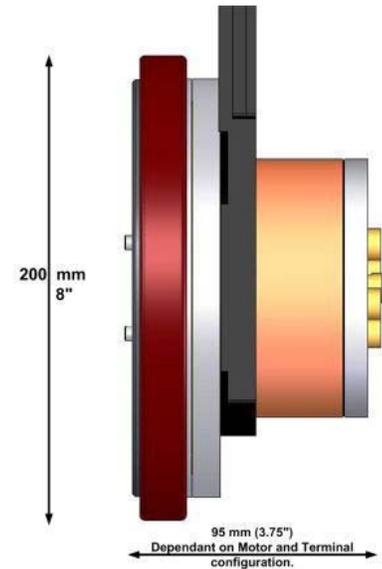


# WHEEL ASSEMBLY

## 10 Reasons to *Upgrade your wheel drive designs.*

Cycogs' advanced, compact, modular, ready-to-bolt-on motorized Wheel Assembly (WA) replaces your axle-based electric wheel assemblies and transaxle wheel designs. The WA provides driving force and supports 1000 lb loads. Applications include robot drives for robot bases, electric motorized carts, and mobility drives for wheel chairs.



- 1) **Compact:** Self-contained with integrated, hi-tech motor and built-in gear reduction. No axle, no transaxle, no large external gears required. Since the axial length of the WA is less than 4 inches, there's more volume and design room compared to transaxle designs which encompass most or all of the vehicle's width. For example, batteries could be placed where the transaxle usually resides.
- 2) **Modular & Scalable:** For a minimum configuration, install one WA as the drive wheel in the front with two idler wheels in the rear. For any configuration, bolt-on one or more WAs to increase the drive force and load capacity where needed.
- 3) **Off-Center Wheel Spacing:** No need to design and integrate a precisely aligned drive train system. Our WAs do not require the wheels to be located on a common center line, like other designs such as fixed shaft transaxles that require the wheels to be inline, coincident, and directly across from each other.
- 4) **Bolt-on:** Engineering and assembly are already complete. Our WA includes one load-bearing, simple mounting bracket per wheel, ready to bolt-on to your vehicle's chassis. Then, simply connect two wires from motor controller to the motor. By comparison, transaxle designs typically require three mounting brackets at precisely aligned mounting points. Encoder marks for measuring wheel movement are built into the design.
- 5) **Regenerative Braking:** Our unique gear reduction drive system can use the regenerative braking effect to recoup the vehicle's kinetic energy during braking.

- 6) **Energy Efficient Tire:** Semi-hard polyurethane tire for indoor use has lower rolling resistance than an air or foam filled tire. Lower friction equates to less power consumption. The indoor red tread increases visibility for safety purposes. (Please contact us for outdoor applications.)
- 7) **Minimum Ground Clearance:** Low profile vehicle designs are possible using our WA, but nearly impossible with most other axle designs.
- 8) **Energy Efficient Weight:** Our hub-based wheel design replaces the heavy and bulky axle designs. Less weight means lower power consumption and larger vehicle payload. Our integrated design embeds the 25-to-1 redundant gears and wheel bearing inside the wheel eliminating much of the weight, volume, and rotating parts associated with other designs. For example, most transaxle designs use heavy gears and heavy low-tech electric motors.
- 9) **Energy Efficient Hi-Tech Motor:** The WA motor is capable of producing high power near 2000 watts for short periods. The lightweight, low inertia armature in the WA's motor offers extremely high acceleration rates, and it takes less energy than most other motors to accelerate or decelerate. The light-weight non-ferrous disk motor is capable of constant torque throughout its rpm range. Because the WA motor can deliver full torque at zero rpm, it does not need the higher gear reduction ratio that standard motors require. When other wheel drives require more speed, the motors operate at higher rpm than the WA motor; they over-produce power, create noise, and lose efficiency.
- 10) **Engineered & Assembled in the USA.** We, as an OEM, strive to use American domestic components wherever possible. Details covered in our patent #7789175.

Pricing: Please contact us for a quote.

Delivery: 2-8 weeks depending on quantity ordered and inventory.