

# Wheel Drives

## WheelMax™ Steering Series Wheel Drive Assemblies

*Handles loads up to 227 kg (500 lb) at up to 5 km/hr (3 mph)*

Allied Motion's **WheelMax Steering wheel drives** are engineered for use as steerable traction drives for electrically powered vehicles.

Each WheelMax Steering Drive combines a traction wheel with tire, an epicyclic gearbox, a robust steering gear and bearing system, and rugged PMDC brush motors for traction and steering power. The complete assembly is compact and designed to be easy to mount and maintain.

The traction motor is equipped standard with a holding brake and an incremental encoder. Standard tire material is polyurethane 95 Shore A. Other tire materials are available upon request. The WheelMax Steering models are currently available for loads up to 227 kg (500 lb).

Alternate motor types and custom mounting arrangements are available; contact an Allied Motion Solution Center for more information and application assistance.

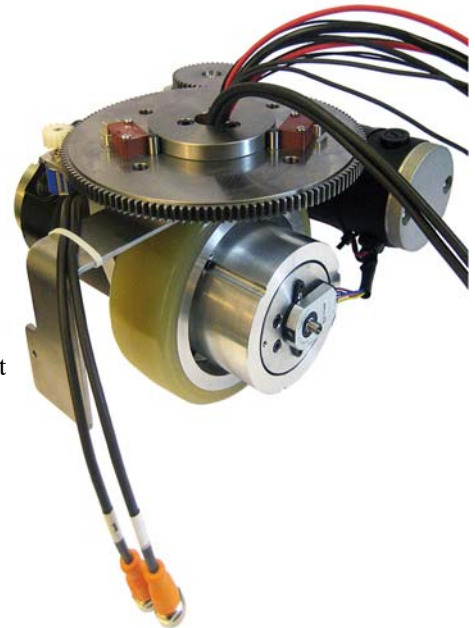
Applications for the WheelMax Steering series include AGVs, autonomous robotic material handlers, pushers, tuggers, powered utility carts, hospital patient handlers, to name a few.

### Features & Benefits

- Load carrying capacity class of 227 kg (500 lb)
- Up to 14 Nm continuous wheel torque and 250 Watts
- Optimized helical gear geometry minimizes noise and vibration
- A tapered roller bearing supports the wheel's load and an axial needle bearing supports vertical/unit loads
- Lifetime gear lubrication reduces maintenance
- Urethane tire for excellent traction, long life and low noise
- Exchange of wheel and tire is accomplished with minimal effort
- IP40 protection level as standard

### Options

- Models compatible with a 48 VDC source instead of 24 VDC
- BLDC motor with or without integrated drive electronics for traction and/or steering power
- Alternate tire materials
- Alternate feedback encoders for traction and/or steering
- Flexible wiring for high cycle rotation
- Manual-release holding brake



- Integrated compact electrically-powered, steerable traction wheel for electric vehicles
- Travel speed up to 5 km/hr (3 mph)
- Load capacity up to 227 kg (500 lb) and 14 Nm (120 lb-in) continuous torque

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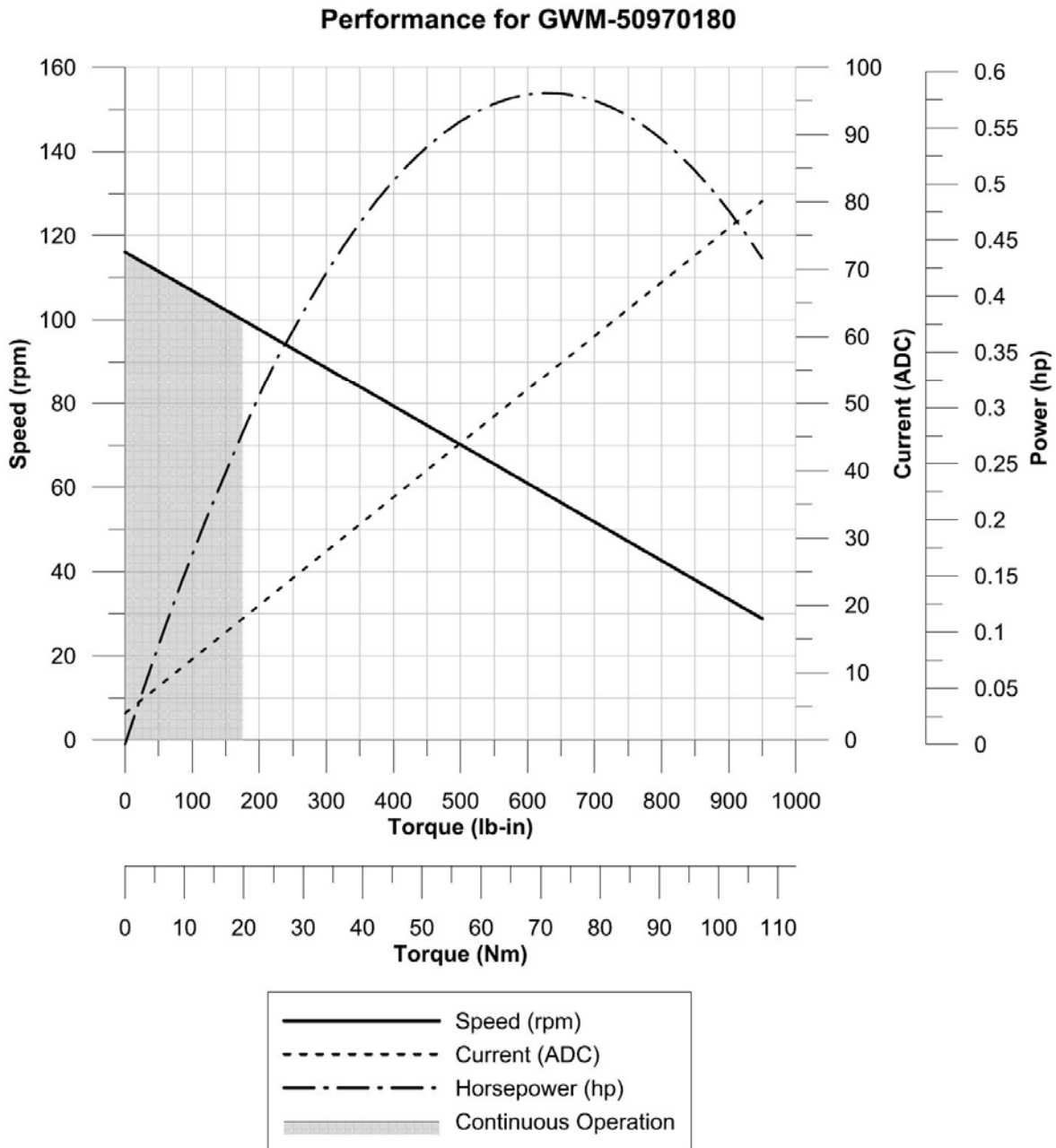
### SPECIFICATIONS

WheelMax™ Steering Model	GWM-50970180
<b>TRACTION</b>	
Rated Load Capacity [kg (lb)]	227 (500)
Nominal Tire Diameter [mm (in)]	152.4 (6)
Gear Ratio	22:1
Max. Continuous Wheel Torque [Nm (lb-in)]	14 (120)
No-Load Wheel Speed [rpm]	120
No-Load Linear Speed [km/h (mph)]	5.31 (3.30)
Wheel Speed at Max. Continuous Torque [rpm]	102
Linear Speed at Max. Continuous Torque [km/h (mph)]	3 (1.82)
Max. Continuous Power [W (hp)]	250 (.33)
Motor Voltage [VDC ± 15%]	24
Max. Continuous Current [ADC]	18
Brake Holding Torque at Wheel (Static) [Nm (lb-in)]	87 (770)
Feedback	<ul style="list-style-type: none"> <li>• Type: Encoder CUI AMT-102</li> <li>• Line count: 48-2048 ppr, adjustable</li> <li>• Supply Voltage: 3.6 - 5.5 VDC</li> </ul>
<b>STEERING</b>	
Vertical Rated Load Capacity [kg (lb)]	227 (500)
Gear Ratio	149:1
Max. Continuous Steering Torque [Nm (lb-in)]	18 (216)
Motor Voltage [VDC ± 15%]	24
Max. Continuous Turning Speed [rpm]	12
Max. Continuous Turning Current [ADC]	3
Feedback	<ul style="list-style-type: none"> <li>• Type: Potentiometer; Bourns #3541H-1-103L</li> <li>• Resistance: 10 kOhms</li> <li>• Number of Turns: 10 Turn</li> <li>• Number of Gangs: 2 Gang</li> <li>• Effective Electrical Angle: 3600° + 10° , - 0°</li> </ul>

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### PERFORMANCE



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### DIMENSIONS FOR MODEL GWM-50970180

