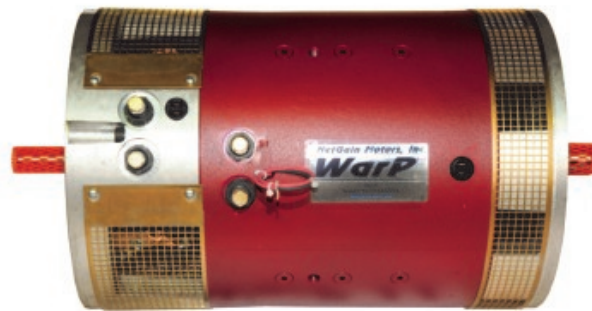




# NetGain Motors, Inc.

800 South State Street / Suite 4 / Lockport, IL 60441 / 630-243-9100 / 630-685-4054 (FAX)

## WarP 11™



### Dual Wafer Helwig Carbon Brushes:

Extra large brushes are designed for the high voltages and currents used by today's electric vehicles. Our motors use specially formulated, high performance brushes manufactured exclusively for our motors by Helwig Carbon. The split brush design offers longer brush life and better commutation.

Four wires go into each high performance brush (two per wafer) versus the more common single wire per brush.



- **Type:** Series wound DC
- **Diameter:** 11.45"
- **Length:** 17.027" (face-face)
- **Weight:** 229 lbs.
- **HP:** 32 (Continuous @ 144V)
- **RPM:** 5,800
- **Torque:** 135 lbs.-ft. @ 450 Amps
- **Shaft:** Double or Single ended
- **Timing:** Favored or neutral (User selectable)
- **Mounting:** Industry standard configuration
- **Brushes:** Dual wafer *Helwig Carbon* Red top
- **Insulation:** Class "H"
- **Terminal Studs:** 1/2"
- **Fan:** High efficiency 15 blade
- **Delivery:** Stock

### Why NetGain?

#### INSULATION

Class "H" insulation is used throughout the motor.

#### COMMUTATOR

The commutator bars are securely attached to the arbor.

#### DRIVE END SHAFT

The drive end shaft is bored for a pilot bearing and drilled & tapped for a 5/16 - 18 bolt.

#### TAIL SHAFT

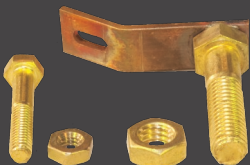
The commutator end shaft also has a 3/8 - 16 bolt hole to mount tach sensors or secure couplers and accessories.

#### FANS

Our improved fans offer up to 50% greater air flow than conventional paddle style fans

#### BIGGER IS BETTER

Most manufacturers use 3/8" terminal studs. Our WarP 9 motors use 1/2" terminal studs. Which would you prefer?



Manufactured Exclusively For:  
**NetGain Motors, Inc.**

800 South State Street – Suite 4  
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630-243-9100  
www.go-ev.com  
Since 1998

Available from:



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## WarP 11™

### Advantages

#### A BROAD RANGE OF SIZES

Torque, voltage, rotation, and shaft configuration choices are available.

#### HIGH EFFICIENCY DESIGN

WarP Motors use only low-loss laminations and welded or fused commutator connections for peak motor performance. This superior methodology lowers heat build-up and yields longer operating time per battery charge.

#### DURABLE CONSTRUCTION

Both the armature and the field assembly are resin varnish treated to lock in mechanical integrity and to provide permanent environmental protection. Our laminations are keyed on to the armature shaft.

#### PERFORMANCE TESTED

Quality is controlled throughout the manufacturing process and performance is confirmed with 100% load testing before shipment.

### Motor Selection

There are many factors that will determine which motor is the best match for your electric vehicle project. Some key areas to consider are:

- Voltage available: Determines motor RPM's
- Amperage available: Determines motor torque
- Vehicle weight
- Vehicle coefficient of drag
- Vehicle frontal area
- Vehicle speed to be maintained on level ground
- Vehicle speed to be maintained on a grade
- Percent of the grade
- Final gear ratio
- Tire diameter

When considering the option of direct drive for an application, the "rule of thumb" is that it will require twice the motor, and twice the controller of a comparable vehicle with a transmission.

**Our motors are the preferred choice for electric vehicle conversions.**

**We offer the greatest value for your money, as well as:**

- Unparalleled support
- Unparalleled performance
- Unparalleled durability

