

TDPRO USATD029-USATD037-USATK001

TDPRO 48V 1800W Brushless Electric Motor and Controller with Throttle Grip Set User Manual

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your TDPRO 48V 1800W Brushless Electric Motor and Controller with Throttle Grip Set. This system is designed for various electric vehicles including e-bikes, scooters, go-karts, ATVs, mopeds, and motorized bicycles. Please read this manual thoroughly before installation and use to ensure proper function and safety.

Brushless motors offer several advantages over brushed motors, including:

- Reduced electrical and electromagnetic noise.
- Extended lifespan due to the absence of brushes, typically three times longer than brushed motors.
- Lower maintenance requirements as there are no brushes to replace.
- Higher power efficiency, consuming approximately one-third the power of brushed motors.
- Superior efficiency, typically 85-90% compared to 75-80% for brushed DC motors.

The primary difference between brushed and brushless direct current electric motors lies in how electric current is transferred. In a brushed motor, current is transferred mechanically via metallic brushes to a commutator. In contrast, a brushless motor's rotor is turned electronically, eliminating the need for physical contacts.

2. PRODUCT OVERVIEW

The TDPRO 48V 1800W Brushless Electric Motor and Controller with Throttle Grip Set includes the following components:

- 1 x 48V 1800W Brushless Electric Motor
- 1 x 48V Brushless Electric Controller
- 1 x Throttle Grip Set



Figure 2.1: Overview of the TDPRO 48V 1800W Brushless Electric Motor, Controller, and Throttle Grip Set components.

The motor features a 9-tooth sprocket designed for T8F chains. The sprocket is replaceable, but the inner dimension of any new sprocket must be 8.5x10mm.

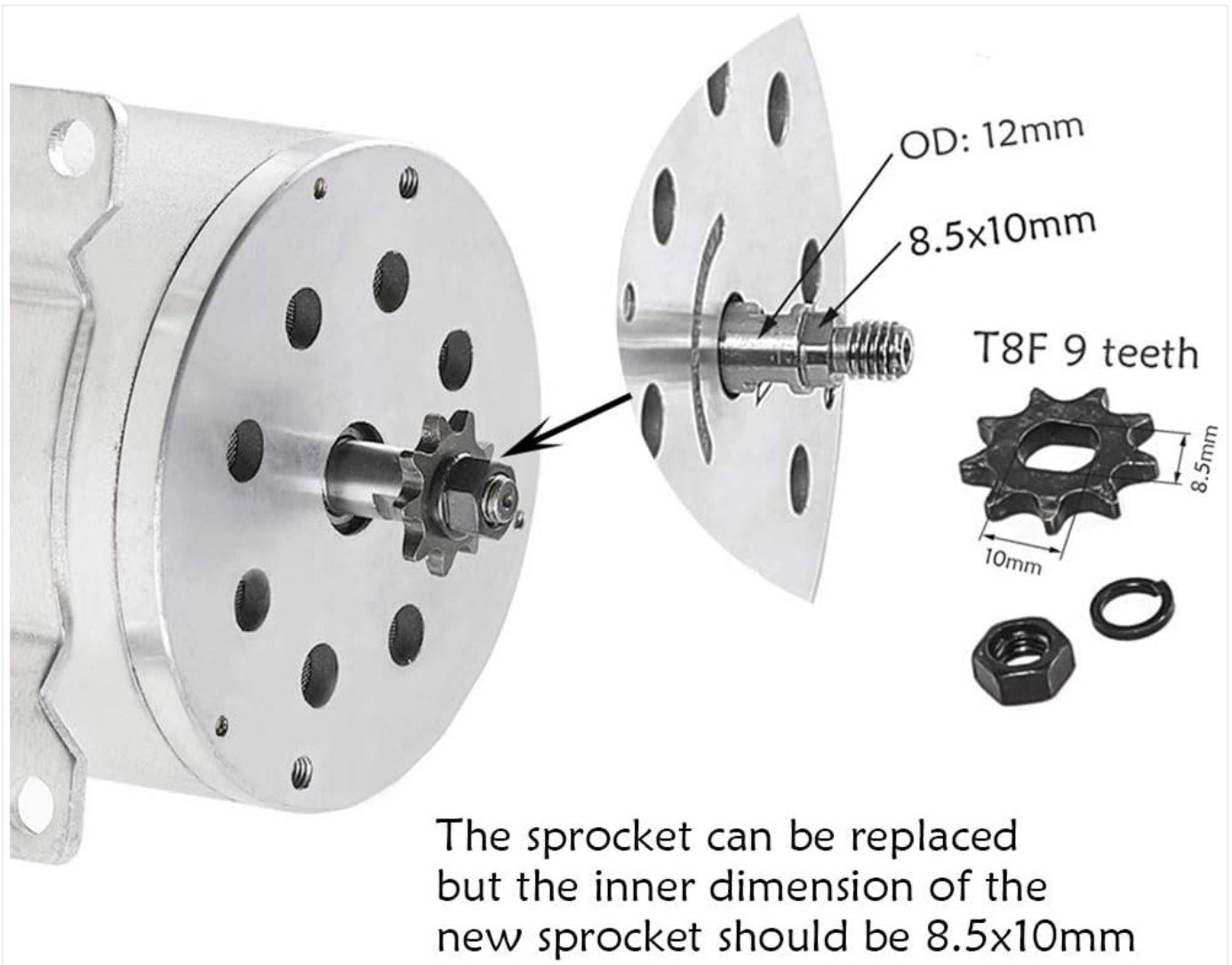


Figure 2.2: Detailed view of the motor sprocket, showing its dimensions (OD: 12mm, 8.5x10mm) and T8F 9 teeth configuration.

3. SETUP AND INSTALLATION

3.1 Component Dimensions

Refer to the following diagrams for the physical dimensions of the motor and controller, which are crucial for planning your installation.

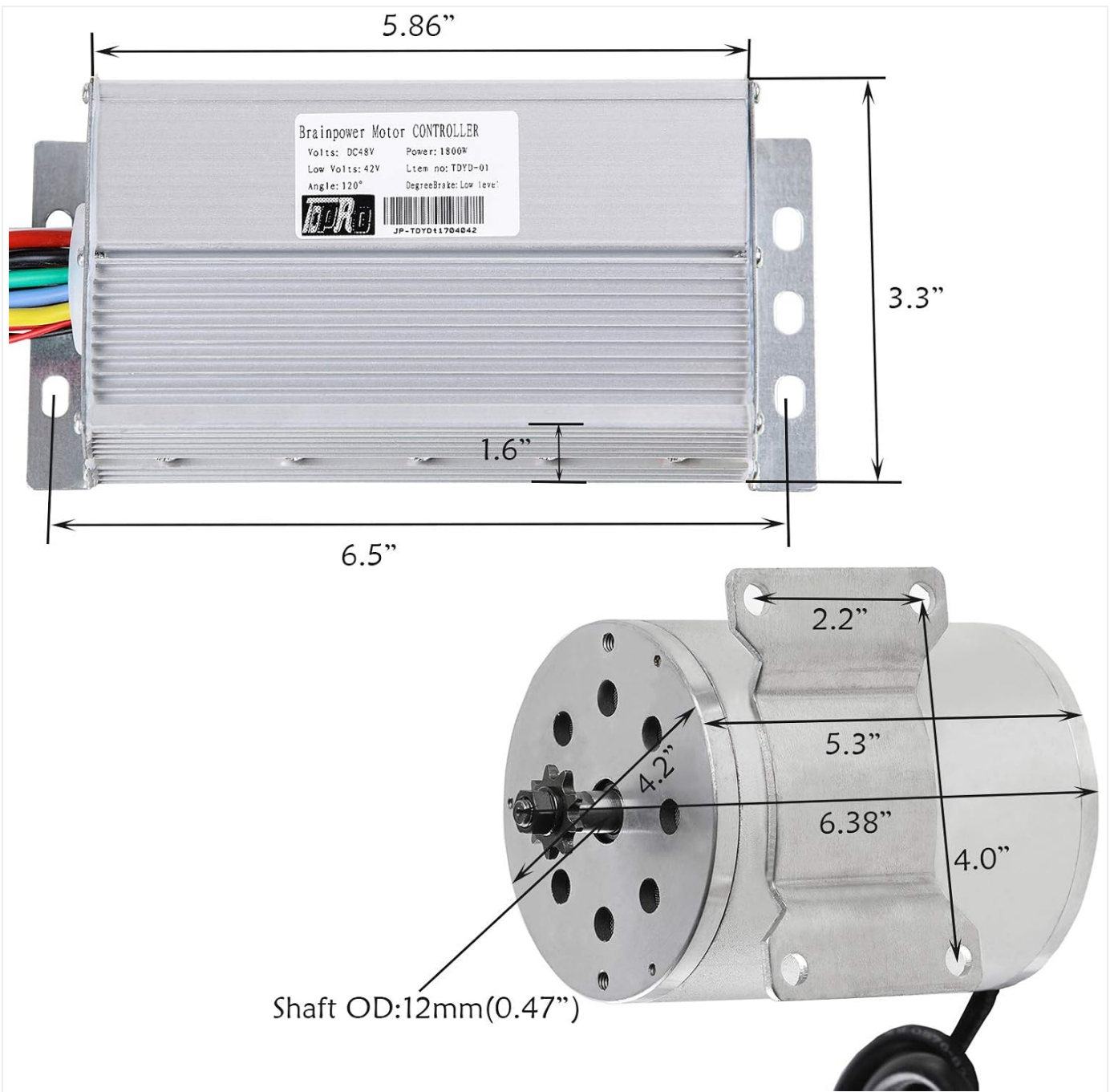


Figure 3.1: Key dimensions for the motor (Shaft OD: 12mm/0.47") and controller (5.86" x 3.3" x 1.6" x 6.5").



Figure 3.2: Detailed dimensions of the controller in millimeters (149mm x 41mm x 166mm x 83mm x 6mm).

3.2 Wiring Instructions

The controller requires connection of four essential cable groups for normal operation: Battery, Motor, Ignition Lock, and Throttle. Other functions are optional and can be connected based on your application needs.

Standard Wiring Connections:

- **Battery:** Thick Black (Power Negative) / Thick Red (Power Positive)
- **Motor:** Thick Yellow (Motor Negative) / Thick Blue (Motor Positive)
- **Ignition Switch:** Thin Red (VCC) / Thin Blue
- **Indicator:** Thin Red (Indicator power output) / Thin Black (Indicator negative)
- **Brake:** Thin Yellow (Brake signal) / Thin Black (Negative Power)
- **Speed Governor (Throttle):** Thin Blue (Speed handlebar Signal input) / Thin Black (Negative Power) / Thin Red (5V Positive Power)
- **Charge Port:** Thin Red (Charge input power Positive) / Thin Black (Power negative)
- **Brake Light:** Thin Red (Power Positive) / Thin Black (Power negative)

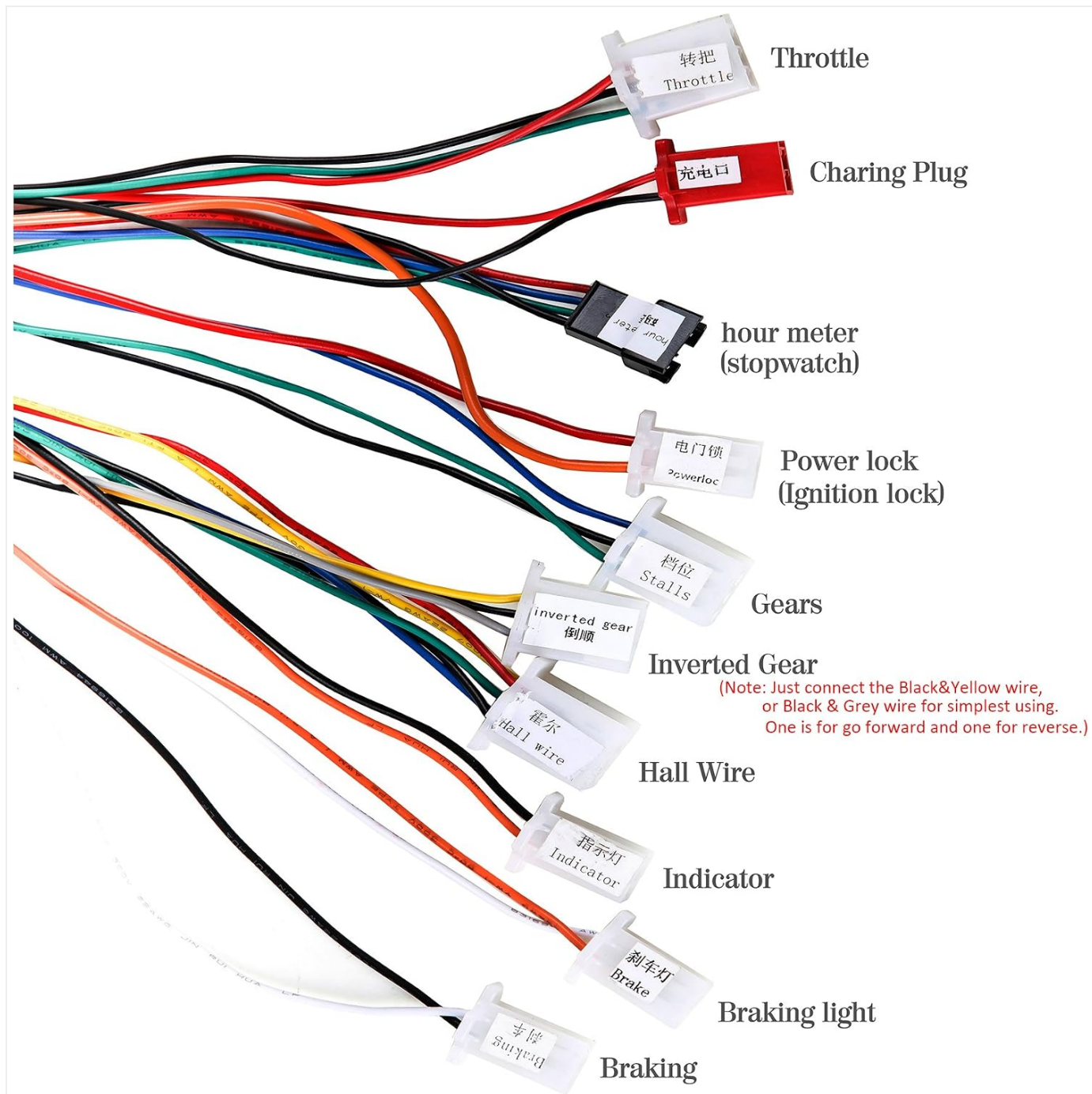


Figure 3.3: Labels for various wiring connections on the controller, including Throttle, Charging Plug, Hour Meter, Power Lock, Gears, Inverted Gear, Hall Wire, Indicator, Brake, and Braking Light.

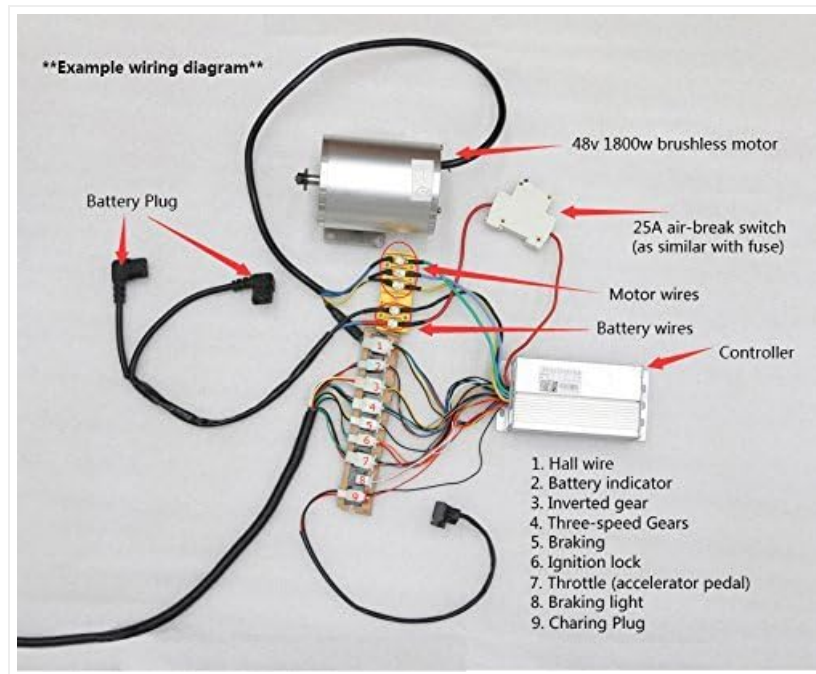
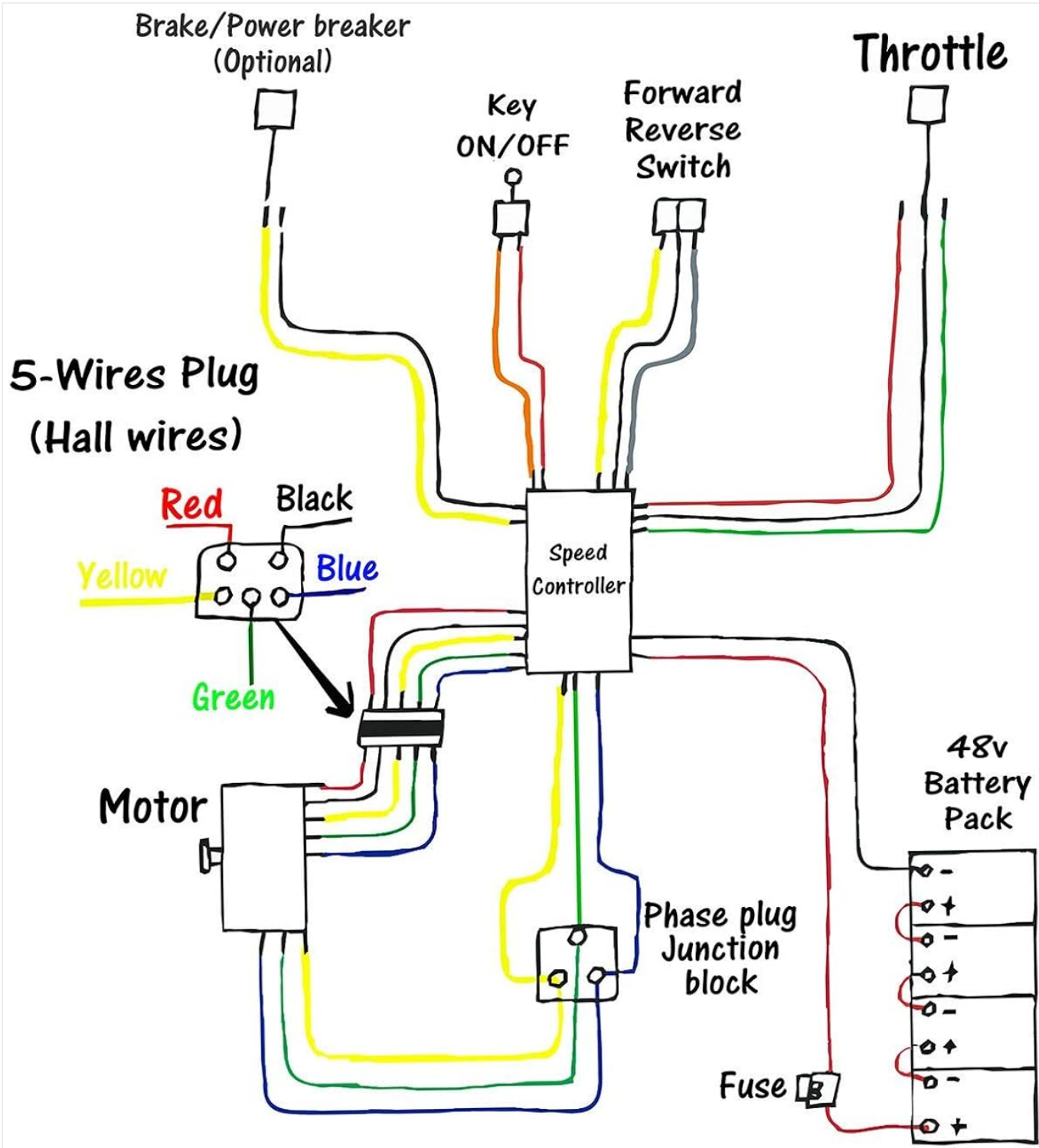


Figure 3.4: An example wiring diagram illustrating connections for the 48V 1800W brushless motor, controller, battery plug, air-break switch, and various control wires.



1,800 Watt Brushless DC Motor & Controller Wiring Diagram

Figure 3.5: Detailed wiring diagram for the 1800 Watt Brushless DC Motor and Controller, showing connections for the 48V battery pack, fuse, speed controller, motor, 5-wires plug (Hall wires), brake/power breaker, key ON/OFF, forward/reverse switch, and throttle.

3.3 Sprocket Side Wiring Adjustment

Depending on whether the chain sprocket is on the left or right side of your vehicle, specific hall wire and phase wire connections may need adjustment.

- If the chain sprocket is on the left side of the bike:

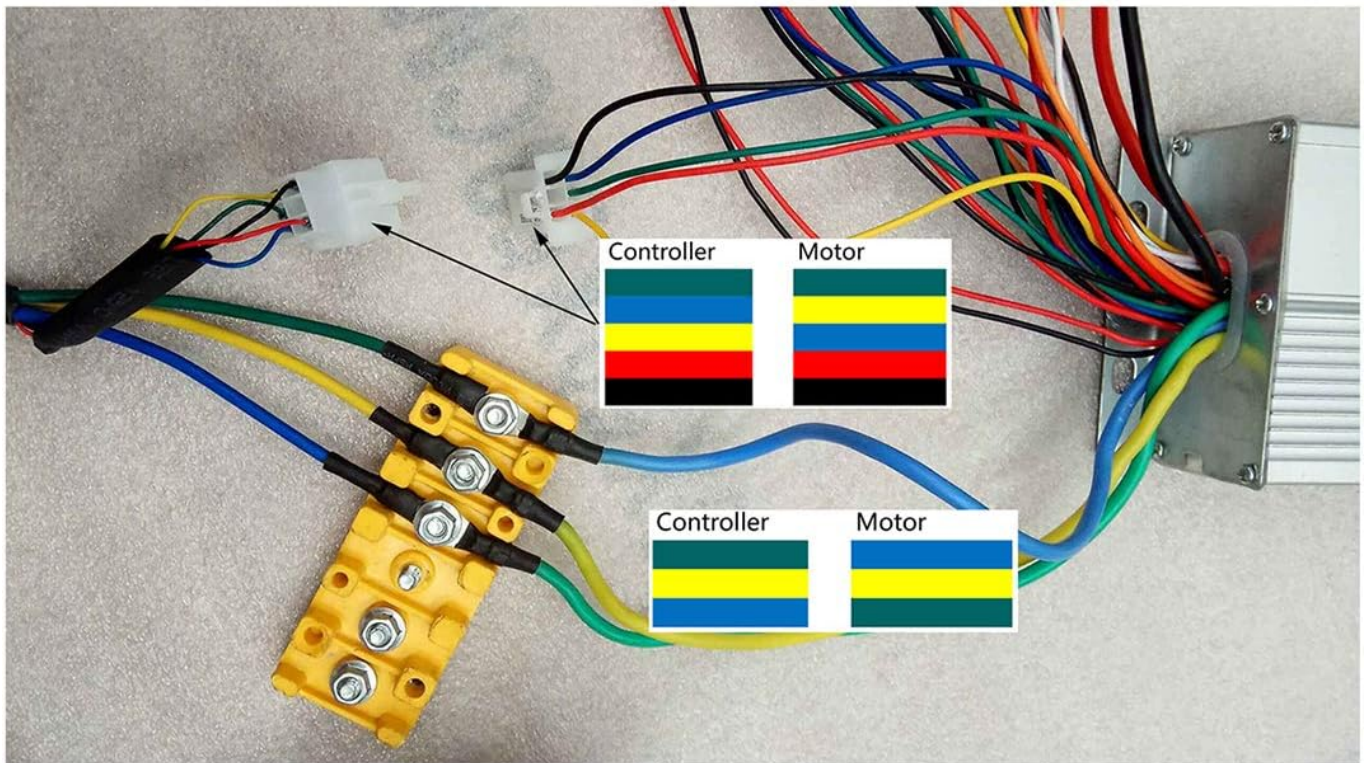
1. The blue hall wire and yellow hall wire should be swapped.
2. The blue phase wire and green phase wire should be swapped.

- **If the chain sprocket is on the right side of the bike:**

1. Connect all hall wires one by one with matching colors.
2. Connect all phase wires one by one with matching colors.

If the chain sprocket is on the **left** of the bike

1. The blue hall wire and yellow hall wire should be swapped connected
2. The blue phase wire and green phase wire should be swapped connected



If the chain sprocket is on the **right** of the bike

1. Just connect all hall wires one by one with same color
2. Just connect all phase wires one by one with same color

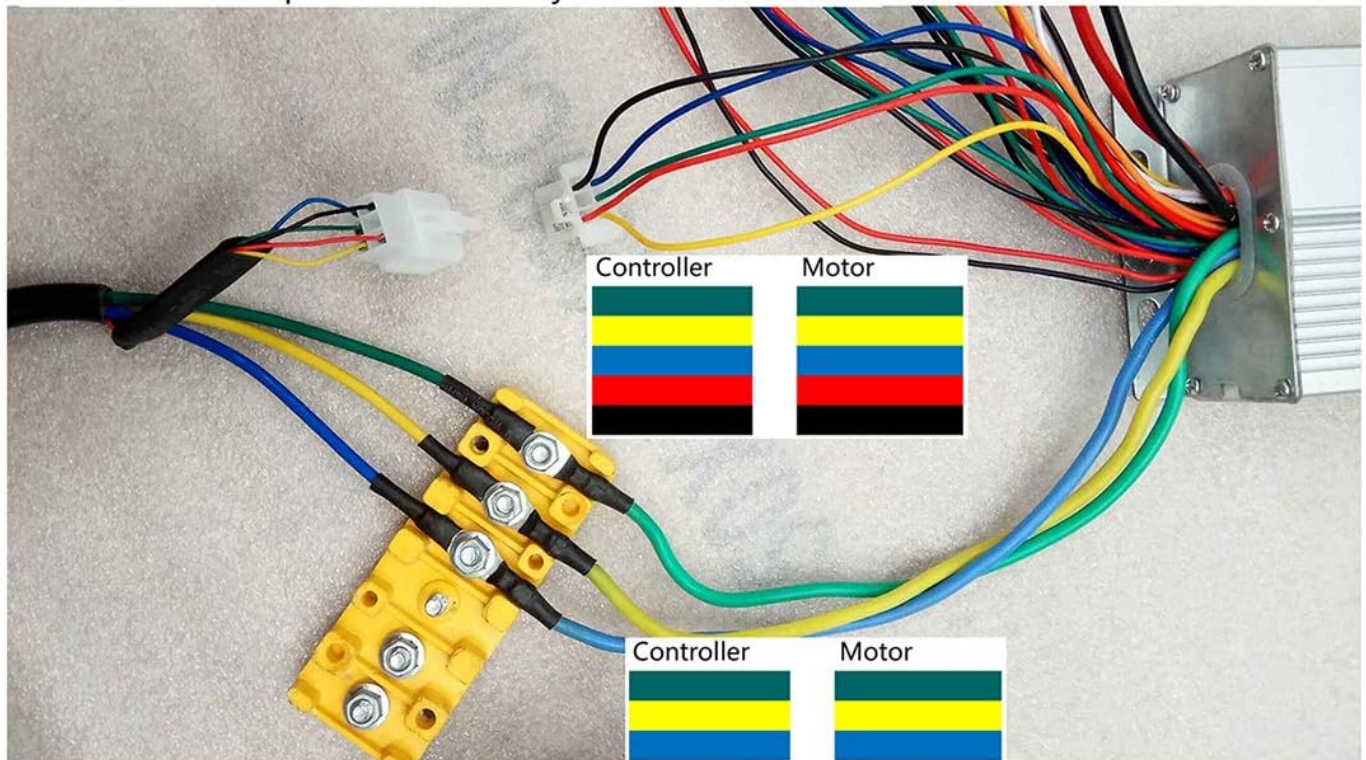


Figure 3.6: Visual guide for wiring adjustments based on the chain sprocket's position (left or right side of the bike).

4. OPERATION

Once all components are correctly installed and wired, ensure the battery is fully charged. Turn the ignition key (if installed) to the 'ON' position. The throttle grip controls the motor speed. Gently twist the throttle to engage the motor and control acceleration. Release the throttle to reduce speed or apply the brake to stop the vehicle.

5. MAINTENANCE

Brushless motors are known for their low maintenance requirements. However, regular checks are recommended to ensure optimal performance and longevity:

- **Wiring Inspection:** Periodically check all wiring connections for tightness and signs of wear or damage. Secure any loose connections and replace damaged wires immediately.
- **Motor Cleanliness:** Keep the motor free from excessive dirt, dust, and debris. A clean motor dissipates heat more efficiently.
- **Sprocket and Chain:** Inspect the sprocket and chain for wear. Ensure the chain is properly tensioned and lubricated according to your vehicle's specifications.
- **Controller Environment:** Ensure the controller is mounted in a location that allows for adequate airflow and protection from moisture and physical impact.

6. TROUBLESHOOTING

If you encounter issues with your motor and controller set, consider the following basic troubleshooting steps:

- **No Power:** Check battery charge level and all battery connections. Verify the ignition switch is in the 'ON' position.
- **Motor Not Responding:** Inspect throttle grip connections and ensure they are secure. Check motor phase wire connections.
- **Intermittent Operation:** Examine all wiring for loose connections or damaged insulation. Ensure the controller is not overheating.
- **Incorrect Sprocket Rotation:** Refer to Section 3.3 for sprocket side wiring adjustments.

For complex issues or if basic troubleshooting does not resolve the problem, it is recommended to consult a qualified technician or contact TDPRO customer support.

7. SPECIFICATIONS

7.1 Brushless Electric Motor Specifications



48v DC 1800w Motor

- Rated current: 28A
- Max current: 40A
- No-load current: $\leq 3.0A$
- Rated torque: $\geq 3.5-10N.m$
- Max power: 1800w-2000w
- Motor weight: 10.5 lbs (4.8kg)
- Rated rotating speed: 4300-4500RPM

Figure 7.1: Detailed specifications for the 48V DC 1800W Motor.

Feature	Specification
Voltage	48V DC
Power	1800W
Rated Current	28A
Max Current	40A
No-load Current	$\leq 3.0A$
Rated Torque	$\geq 3.5-10N.m$
Max Power	1800W-2000W
Rated Speed	4300-4500 RPM
Horsepower	1.8 HP
Sprocket	9-tooth (fits T8F chains)
Shaft OD	12mm (0.47")

Feature	Specification
Material	Metal
Weight	10.5 lbs (4.8 kg)

7.2 Brushless Electric Controller Specifications

Feature	Specification
Rated Voltage	48V DC
Current Limit	32A
Matching Motor	48V DC 1800W
Conversion Efficiency	95%

8. WARRANTY AND SUPPORT

For warranty information, technical support, or any inquiries regarding your TDPRO product, please contact the seller or manufacturer directly. Retain your proof of purchase for warranty claims.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

