ICONSPORTSS ICOTD225+ICOTD228+TD057-2+ACC

ICONSPORTSS 60V 2500W Brushless Motor Kit Instruction Manual

Model: ICOTD225+ICOTD228+TD057-2+ACC

1. Introduction

This manual provides essential instructions for the safe and effective installation, operation, and maintenance of your ICONSPORTSS 60V 2500W High-Speed Brushless Motor Kit. This kit is designed for various electric vehicle applications, including electric scooters, ebikes, DIY go-karts, ATVs, quads, and buggies. Please read this manual thoroughly before attempting any installation or operation.

2. Product Overview and Components

The ICONSPORTSS 60V 2500W Brushless Motor Kit includes a comprehensive set of components necessary for building or upgrading an electric vehicle system. Familiarize yourself with all parts before proceeding with installation.

Kit Contents:

- 1x 2500W Brushless Motor (Model: MY1020)
- 1x 60V 2500W Controller
- 5x 12V 12Ah 6-DZM-12 Batteries
- 1x Battery Charger
- 1x LCD Display
- 1x Foot Pedal (Throttle)
- 1x T8F Rear Sprocket (29mm)
- 1x T8F Chain (106 links)
- 1x Air Switch
- 1x Wiring Harness
- 1x Battery Connecting Cable

- 5x Battery Lines (for series connection)
- 1x 3-Speed Switch
- 1x Forward/Reverse Switch
- 1x Ignition Key Switch
- 1x Brake Cable
- 1x Charging Port
- 1x Terminal Board

Figure 1: All components included in the ICONSPORTSS 60V 2500W Brushless Motor Kit. This image displays the motor, controller, batteries, LCD display, foot pedal, sprocket, chain, various switches, and wiring components.

Figure 2: The 2500W brushless motor, a key component of the kit, shown with its output shaft and mounting points.

Figure 3: The LCD display unit, which provides real-time information such as speed, battery level, and other operational data.

Figure 4: One of the five 12V 12Ah 6-DZM-12 batteries included in the kit, showing its specifications and dimensions.

3. Specifications

Detailed technical specifications for the main components of the kit:

Motor (Model: MY1020)

- **Voltage:** 60V DC
- **Output Power:** 2500W
- **Rated Speed:** 4500 RPM
- **Rated Current:** 45A
- **Material:** Aluminum

Figure 5: Close-up of the motor's specification label, detailing its model, voltage, output, and rated speed.

Figure 6: Diagram illustrating the physical dimensions of the 2500W brushless motor, including length, diameter, and shaft measurements.

Controller

- **Nominal Voltage:** 36V / 42V / 48V / 52V / 58V / 60V / 64V / 72V / 84V (Automatic Identification)
- **Maximum Current:** 45A-60A
- **Brake:** Low / High Electrical Level
- **Motor Phase Angle:** Automatic Identification (60°/120°)
- **MOS Tube Configuration:** 18mos double-row

Figure 7: Label on the controller detailing its voltage range, current limits, brake type, and phase angle identification capabilities.

Batteries (DONGJIN 6-DZM-12)

- **Voltage:** 12V per battery
- **Capacity:** 12Ah
- **Quantity:** 5 batteries (for 60V system, connect in series)
- **Weight per battery:** 8.3 lbs (3.8 kg)
- **Dimensions per battery:** L 6" x W 4" x H 4"

4. Setup and Installation

This section outlines the general steps for installing the motor kit. Due to the custom nature of DIY projects, specific mounting and wiring may vary. Always ensure power is disconnected before making any connections.

4.1 Battery Connection

1. Connect the five 12V batteries in series using the provided battery connecting cables and lines to

achieve a total of 60V. Ensure correct polarity (positive to negative) for each connection.

2. Securely mount the batteries in a suitable, well-ventilated location on your vehicle.

4.2 Motor and Sprocket Installation

1. Mount the 2500W brushless motor securely to your vehicle's frame using appropriate hardware. Ensure proper alignment with the drive wheel.
2. Install the T8F rear sprocket onto the drive wheel.
3. Install the T8F chain, connecting the motor's output shaft sprocket to the rear wheel sprocket. Adjust chain tension as needed.

4.3 Controller and Wiring Harness Connection

The controller is the central control unit. Refer to the wiring diagram below for detailed connections. Use the provided wiring harness and terminal board.

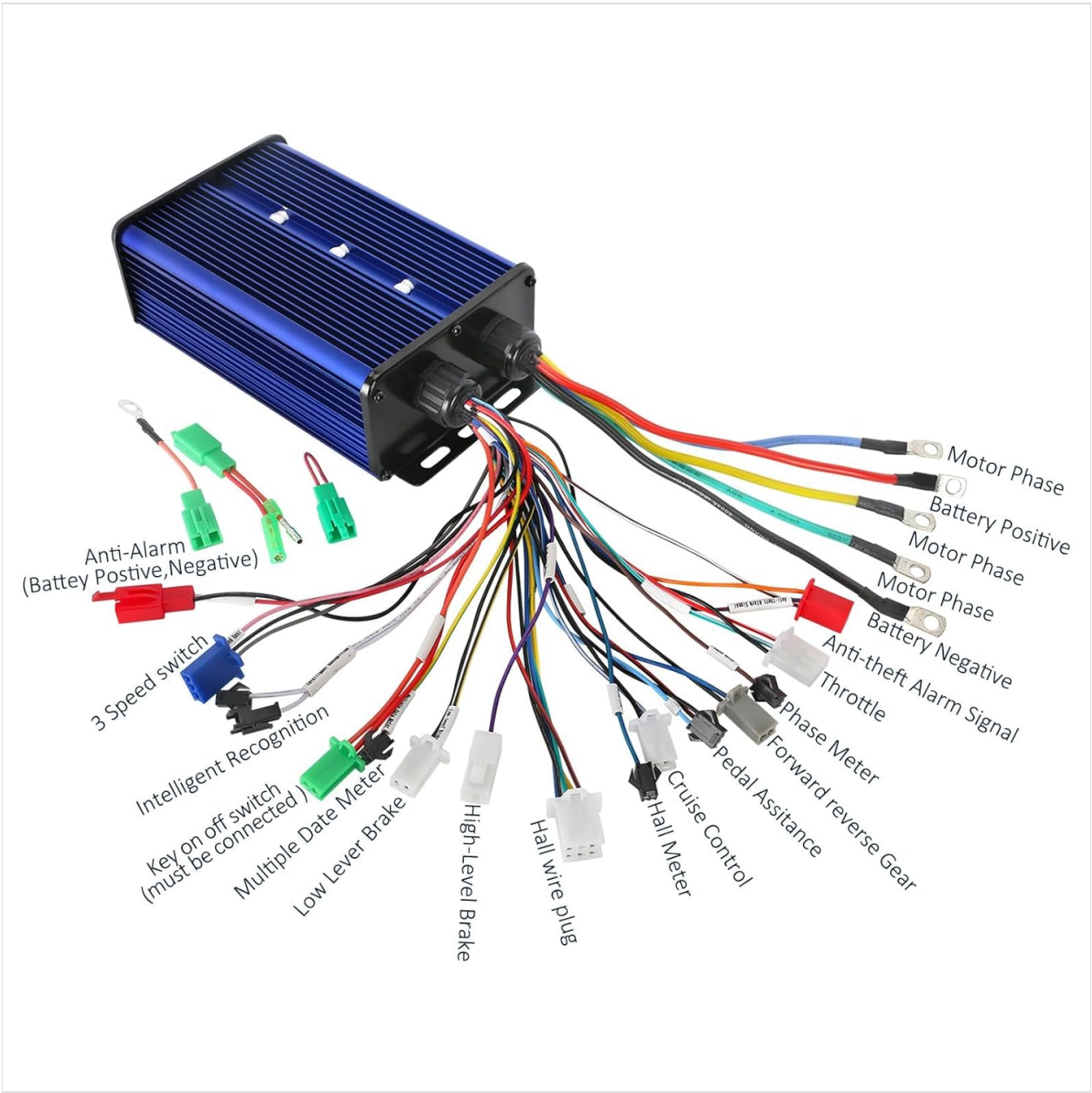

Figure 8: Detailed wiring diagram for the controller, showing connections for motor phases, battery, throttle, display, switches, and other accessories.

1. **Motor Phase Wires:** Connect the three thick motor phase wires (usually green, blue, yellow) from the

motor to the corresponding phase wires on the controller.

2. **Battery Power:** Connect the main positive and negative battery cables to the controller's battery input terminals. Ensure correct polarity.
3. **Hall Sensor Wires:** Connect the motor's Hall sensor wires to the controller's Hall sensor input.
4. **Throttle (Foot Pedal):** Connect the foot pedal throttle to the designated throttle input on the controller.
5. **LCD Display:** Connect the LCD display to the controller's display port.
6. **Ignition Key Switch:** Connect the ignition key switch to the controller's power lock input. This controls the main power to the system.
7. **3-Speed Switch:** Connect the 3-speed switch to allow selection of different speed modes.
8. **Forward/Reverse Switch:** Connect the forward/reverse switch for directional control.
9. **Brake Cable:** Connect the brake cable to the controller's brake input. This will cut motor power when brakes are applied.
10. **Charging Port:** Install the charging port and connect it to the battery system for convenient charging.
11. **Air Switch:** Connect the air switch as a main circuit breaker for safety.
12. **Anti-Alarm (Optional):** If desired, connect an anti-theft alarm system to the designated ports.

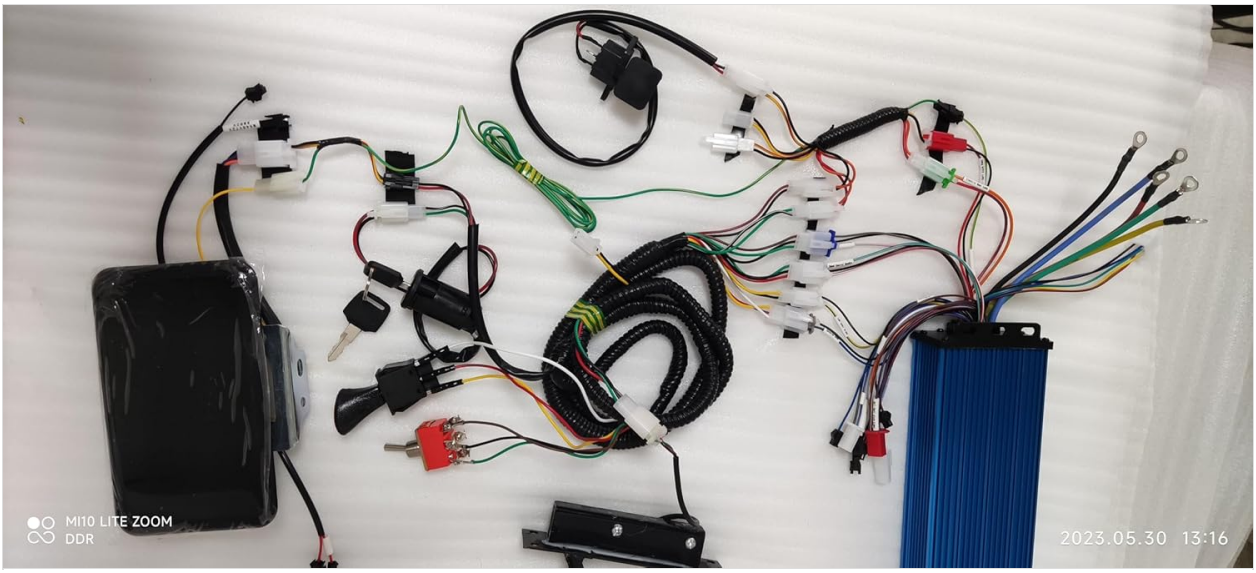

Figure 9: The wiring harness, ignition key switch, 3-speed switch, and forward/reverse switch, illustrating the various connections required for system control.

4.4 Initial Power-Up and Testing

1. Double-check all connections for security and correct polarity.
2. Ensure the vehicle is safely supported with the drive wheel off the ground.
3. Turn on the air switch, then the ignition key switch.
4. Observe the LCD display for power indication.
5. Gently apply the foot pedal throttle to test motor rotation. The motor should spin smoothly.
6. Test the 3-speed switch and forward/reverse switch functionalities.
7. Test the brake function to ensure motor power is cut when activated.

5. Operating Instructions

Once installed and tested, operate your electric vehicle safely and responsibly.

1. **Power On:** Turn on the main air switch, then insert and turn the ignition key to the 'ON' position. The

LCD display will illuminate.

2. **Speed Selection:** Use the 3-speed switch to select your desired speed mode (Low, Medium, High).
3. **Direction Control:** Use the forward/reverse switch to select the direction of travel. Ensure the vehicle is stationary before changing direction.
4. **Acceleration:** Gradually press the foot pedal throttle to accelerate. Avoid sudden, full throttle application, especially from a standstill.
5. **Braking:** Apply the vehicle's brakes as needed. The controller is designed to cut motor power when the brakes are engaged.
6. **Monitoring:** Regularly check the LCD display for battery level, speed, and any error codes.
7. **Power Off:** When finished, turn the ignition key to 'OFF' and then turn off the main air switch.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your motor kit.

- **Battery Care:**
  - Charge batteries fully after each use.
  - Do not over-discharge batteries.
  - Store batteries in a cool, dry place if not used for extended periods, and recharge periodically.
  - Check battery terminals for corrosion and clean as necessary.
- **Motor:** Brushless motors generally require minimal maintenance. Keep the motor free from dirt, dust, and moisture. Ensure mounting bolts remain tight.
- **Controller:** Keep the controller clean and dry. Ensure it is mounted in a location with adequate airflow to prevent overheating.
- **Chain and Sprocket:** Regularly inspect the chain for wear, rust, and proper tension. Lubricate the chain as needed. Check sprocket teeth for wear.
- **Wiring:** Periodically inspect all wiring connections for looseness, damage, or fraying. Repair or replace damaged wires immediately.
- **General Cleaning:** Keep all components clean and free of debris.

7. Troubleshooting

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
Motor does not run	No power to controller Loose wiring connection Low battery voltage Brake engaged Faulty throttle	Check air switch and ignition key switch Inspect all wiring, especially battery and motor connections Charge batteries; check battery voltage with a multimeter Ensure brake lever is not engaged Test throttle functionality

Problem	Possible Cause	Solution
Motor runs intermittently	Loose Hall sensor connection Intermittent power connection Overheating controller	Check Hall sensor wiring Inspect all power connections Ensure controller has adequate ventilation; reduce load
LCD display not working	No power to display Loose display connection	Check main power and display wiring Ensure display cable is securely connected to controller
Reduced power or speed	Low battery charge Incorrect speed setting Motor or controller overheating	Charge batteries fully Select a higher speed mode with the 3-speed switch Allow components to cool down; check for obstructions

8. Warranty and Support

Warranty information for the ICONSPORTSS 60V 2500W Brushless Motor Kit is not provided in this manual. For specific warranty details, technical support, or replacement parts, please contact the manufacturer or your point of purchase directly. Keep your purchase receipt as proof of purchase.