500 Amp : Non-Programmable
Controller Installation
or E-Z-Go PDS Golf Car

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Conversion Kit Parts List

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>FSIP Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motor Control</td>
<td>FX503</td>
</tr>
<tr>
<td>1</td>
<td>Wire Harness</td>
<td>51-FX503-EZPDS</td>
</tr>
<tr>
<td>1</td>
<td>Switch Plate</td>
<td>81138-2</td>
</tr>
</tbody>
</table>

Table 1

**RECOMMENDED TOOLS:**
1.) 1/4” drive wrench with 6” extension.
2.) 10, 11, and 14mm sockets.
3.) 13mm (two may be necessary) and 16mm combination wrench.
4.) 5/32 Allen wrench

**REMOVAL:**
1.) Jack up rear end of car, making sure that both wheels are off the ground
2.) Make sure the key switch is off and the Tow/Run switch is in the Tow position.
3.) Disconnect the battery positive and negative wires.
4.) Remove the motor control cover (Figure 1), by removing the four mounting bolts (10mm socket). Follow the Tow/Run switch wires to the control and then unplug connector (Figure 2).
5.) Remove the Tow/Run switch (16mm wrench) from the cover (the switch will be reinstalled on a new bracket later).

6.) Disconnect all remaining connectors on the control.
7.) Disconnect the motor wires (A1, B-, B+, F1 (white wire), and F2 (black wire)) from the control (13mm wrenches, 1/2 inch wrench will also work).
8.) Remove all the terminals from the contactor (13mm wrench) on the side that points to the passenger side of the cart (Figure 4). Remove the pre-charge resistor completely (it is not used with the new control)
9.) Remove the two nuts holding the contactor onto the bracket (11mm socket), and move contactor out of the way (Figure 4).
10.) Remove the two bolts (10mm socket) holding the contactor bracket to the heat sink and pull bracket out of cart (this bracket will be reinstalled later) as shown in Figure 4.
11.) Remove the three bolts (10mm) that mount the control to the heat sink.

Remove all terminals from this post of the contactor (13mm wrench). The short wire (B+) will be reinstalled to this post later. The “C” will be connected to the new control. Keep the lock washer and nut. Remove the pre-charge resistor completely at this time.
**INSTALLATION:**

1.) Cut the drill template out, **Figure 15** found at the end of this procedure. Punch out the holes labeled “A” and install the template to the heat sink, using the three original motor control mounting bolts as shown in **Figure 5**.

![Figure 5](image)

2.) Drill the six holes indicated by the template, then tap to 1/4 - 20.
3.) Install the new control using the motor control cover bolts and motor control bolts as shown in **Figure 6**. Be sure to remove the paper template before mounting the new control.

![Figure 6](image)

3.) Connect the wire labeled “A1” to the control terminal labeled “A1” using the supplied M6 -1.0 X 25MM bolt (HW B M6 X 25MM), M6 lock washer (HW L M6), and flat washer (HW F M6) with 10mm socket. See **Figure 7**.
4.) Connect the wire labeled “C” (which was disconnected from the contactor) to the control terminal labeled “A2”, using the supplied M6 - 1.0 X 50MM bolt (HW B M6 X 50MM), M6 lock washer (HW L M6), and flat washer (HW F M6) with 10mm socket. See **Figure 7**.

![Figure 7](image)
5.) Install the Tow/Run switch (16mm wrench) onto the rectangular plate supplied with the kit, refer to Figure 8.

![Figure 8](image)

6.) Install the contactor bracket onto the floor pan in front of the control. There are holes in the floor pan in which the bracket can be mounted with nuts and bolts (Figure 9).

7.) Slide the switch assembly onto the contactor bracket with the switch on the battery side of the control (Figure 10).

![Figure 9](image) ![Figure 10](image)

8.) Slide the contactor back into position and reinstall the contactor nuts (11mm socket) as shown in Figure 11.

9.) Connect the white motor wire to F1 of the control and the black motor wire to F2 of the control.

![Figure 11](image)
10.) Connect the wire labeled “B-” to the B- terminal of the control, using the supplied M6 -1.0 X 50MM bolt (HW B M6 X 50MM), M6 lock washer (HW L M6), and flat washer (HW F M6) with 10mm socket as shown in Figure 12.

11.) Connect the supplied wire to the contactor post, in which all wires were removed earlier, and then connect the other end of the wire to the B+ terminal of the control, using the supplied M6 -1.0 X 50MM bolt (HW B M6 X 50MM), M6 lock washer (HW L M6), and flat washer (HW F M6) with 10mm socket as shown in Figure 12.

12.) Connect all of the cart connectors to the proper mating connector of the wire harness supplied with the kit (refer to Figure 13).

13.) Connect the 23 pin connector to the control as shown in Figure 13.

14.) Reconnect the battery cables.
## Harness Wiring Table

<table>
<thead>
<tr>
<th>Connector Name</th>
<th>Pin Numbers</th>
<th>23 Pin Connector Pin Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tow/Run Switch</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Main Connector (10 Pin)</td>
<td>1, 7, 9</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5</td>
</tr>
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<td></td>
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<td></td>
<td>4</td>
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</tr>
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</tr>
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<td></td>
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<td>14</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>15</td>
</tr>
</tbody>
</table>

Pins 1 and 3 of the Tow/Run Connector are connected to Pin 5 of the Main Connector

There is a 475 Ohm resistor between Pins 7 and 8 of the 23 Pin Connector

Table 2
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Notes:

Troubleshooting:

Perform all troubleshooting checks with rear wheels off the ground.

Cart does not operate
- Verify that all wire connections are correct and secure.
- Verify that the Tow switch is closed. This can be done by measuring pin 1 on the control. If switch is closed this pin should measure battery volts.
- Verify battery volts on pin 2 of the control.
- Verify battery volts on pin 6 of the control with the key on.
- Verify battery volts on pin 3 of the control with the accelerator start switch closed.
- Verify that control is configured for the correct application (check label).
- Verify approximately 12 Volts on pin 15 of the control.
- Verify approximately 0.5V to 1.8V on pin 7 of the control as the accelerator is slowly depressed.

Contactor closes but no movement
- Verify proper armature and field connections (Refer to supplied wiring diagram).

Disclaimer:
D&D Motor Systems, Inc. is not responsible for personal injury or equipment damage due to misuse of the product.