

# Curtis 1206HB

This sheet is provided to aid in the installation of your remanufactured CURTIS controller. Upon installation, you may encounter problems that may, or may not, be due to a faulty controller. The following steps must be taken to help diagnose a possible cart fault or faulty controller. An analog or digital volt ohm meter (VOM) will be needed to perform these checks.



## **WARRANTY WILL BE VOID** **If These Steps are Not Performed Before Installing The Control**

➔ STEPS TO PERFORM *BEFORE* CONTROL INSTALLATION ←

### **CHECK MOTOR WINDINGS:**

- Set your VOM to RESISTANCE ( $\Omega$ ).
- With your motor disconnected, measure A1 to A2. This must measure BETWEEN  $.3\Omega$  and  $1\Omega$ .
- With your motor disconnected, measure F1 to F2. This must measure BETWEEN  $1\Omega$  and  $2\Omega$ .
- With your motor disconnected, measure A1 to F1. This must measure OPEN.
- With your motor disconnected, measure F1 to motor case. This must measure greater than  $5M\Omega$ .

### **CHECK MAIN SOLENOID:**

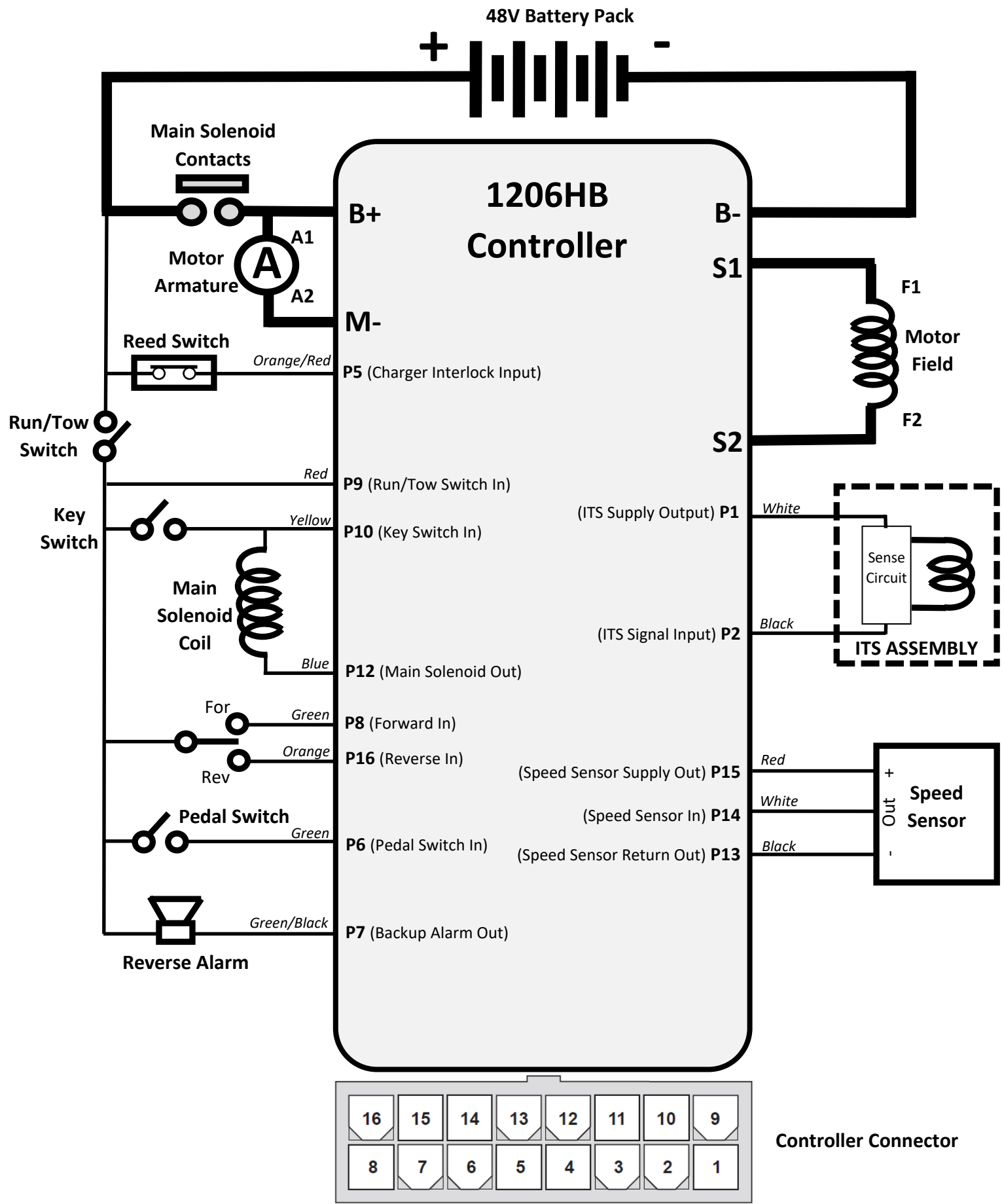
- Disconnect all wires from the main solenoid.
- Set your VOM to RESISTANCE ( $\Omega$ ).
- Measure the solenoid coil. This must measure NO LESS than  $100\Omega$ .
- Connect VOM leads to the main solenoid lugs.
- Attach jumpers from main battery positive and negative to the coil (small terminals).
- Meter must jump from infinity to LESS THAN  $.3\Omega$ .
- Remove jumpers and reconnect solenoid wiring from the harness. (If suppression diode is present, the non-banded side must go to the blue wire – pin 12 from controller.)

### **CHECK THE CART WIRE HARNESS:**

- Check the connectors on the wire harness for corrosion, loose, broken, burnt or missing pins.
- Repair or replace pins as necessary.

**IF ANY OF THE ABOVE ITEMS ARE NOT WITHIN THE SPECIFIED RANGES THE CONTROLLER WILL FAIL.  
THESE ITEMS MUST BE CORRECTED BEFORE THE CONTROLLER IS INSTALLED OR WARRANTY WILL BE VOID.**

It is recommended to replace your solenoid at the time of controller replacement. FSIP now stocks popular replacement White Rodgers solenoids for your convenience.



# E-Z-GO TXT Troubleshooting Sequence

## FOR SAFETY, ALWAYS LIFT THE DRIVE WHEELS OFF THE GROUND WHEN TROUBLESHOOTING!

ALL TESTS ARE CONDUCTED WITH RUN-TOW/MAINTENANCE SWITCH IN THE RUN POSITION AND WITH A GOOD BATTERY PACK VOLTAGE MEASUREMENT. ALSO, THE CONNECTOR MUST BE ATTACHED TO THE CONTROLLER WHEN MAKING THESE CHECKS. YOU WILL NEED TO 'BACK PROBE' THE PINS FROM THE WIRE SIDE OF THE CONNECTOR. USE A PAPERCLIP IF NECESSARY.

Attach voltmeter negative (-) lead to main battery – for the following tests

Use the following sequence when checking individual pins (don't skip steps). **If you find a fault, do not move on to the next step until the fault is corrected:**

- Measure the voltage at the main battery positive post (let's call it Pack Voltage)
- Pin 5 With charger disconnected**, must be Pack Voltage
  - If not pack voltage, check wiring and reed switch in charger receptacle for a damaged/open condition
- Pin 9** Must be equal to Pack Voltage
  - If not Pack Voltage, check wiring, Run-Tow/Maintenance Switch for an open condition
- Pin 10 With Key Switch Off**, must be equal to 0 volts
  - If not 0 volts, check Key Switch for a shorted condition
- Pin 10 With Key Switch On**, must be Pack Voltage
  - If not Pack Voltage, check Key Switch for an open condition
- Pin 10** Must be Pack Voltage
  - If not Pack Voltage, check wiring and solenoid coil (small terminals) for an open condition
- Pin 8 With F/R Switch in Reverse**, must equal 0 volts
  - If not 0 volts, check wiring and F/R Switch for a shorted condition
- Pin 8 With F/R Switch in Forward**, must equal Pack Voltage
  - If not Pack Voltage, check wiring and F/R Switch for an open condition
- Pin 16 With F/R Switch in Forward**, must equal 0 volts
  - If not 0 volts, check wiring and F/R Switch for a shorted condition
- Pin 16 With F/R Switch in Reverse** must equal Pack Voltage
  - If not Pack Voltage, check wiring and F/R Switch for an open condition
- Pin 7** Must equal Pack Voltage
  - If not Pack Voltage, check wiring and Reverse Alarm for an open condition
- Pin 6 With Pedal Up**, must equal 0 volts
  - If not 0 volts, check wiring and Pedal Switch for a shorted condition
- Pin 6 With Pedal Down**, must equal Pack Voltage
  - If not Pack Voltage, check wiring and Pedal Switch for an open condition
- Pin 1** Must equal 13 to 15 volts
  - If not 13 to 15 volts, disconnect the wire from the ITS terminal and recheck. If voltage returns to 13 to 15 volts, replace the ITS. If voltage does not return to 13 to 15 volts, inspect the connector pin for being burnt or corroded. If clean, controller may be defective.

*Continued on next page ...*

- Pin 2** *With Pedal pressed to the point of solenoid click*, must equal 1.0V +/- .3V when the solenoid clicks
  - *If not 1.0V +/- .3V when the solenoid clicks, replace the ITS*
- Pin 2** *With Pedal Fully Down*, must equal 2.7V +/- .5V
  - *If not 2.7V +/- .5V with pedal fully pressed, replace the ITS*
- Pin 13** Must equal 0 volts
  - *If not 0 volts, harness and/or harness connector is defective, check wiring*
- Pin 15** Must equal 13 to 15 volts
  - *If not 13 to 15 volts, check wiring and check with Speed Sensor removed – if voltage returns to 13 to 15 volts, replace Speed Sensor*
- Pin 14** *While slowly turning the drive wheel*, must toggle between 0 volts and approximately 5 volts
  - *If not toggling, check wiring and if necessary replace Speed Sensor and/or magnet*

## Helpful Hints

- DO NOT UNDER ESTIMATE THE IMPORTANCE OF MOTOR RESISTANCE CHECKS AND MAIN SOLENOID CHECKS. MANY CART ISSUES ARE CAUSED BY BURNT/DAMAGED BRUSHES THAT WILL BE FOUND AS PART OF THE ARMATURE RESISTANCE CHECK. ALSO A SHORTED ARMATURE AND FIELD WITHIN THE MOTOR WILL DAMAGE THIS CONTROLLER.**

Flight Systems Industrial Products also offers the following Technical Support options ...



Troubleshooting Manuals / Codes  
[www.fsip.biz/TroubleshootingManuals.html](http://www.fsip.biz/TroubleshootingManuals.html)



Live Tech Support Chat  
[www.fsip.biz](http://www.fsip.biz)



Technical Support Forum  
[fsip.websitetoolbox.com](http://fsip.websitetoolbox.com)



Frequently Asked Questions  
[www.fsip.biz/FAQ.html](http://www.fsip.biz/FAQ.html)

Phone Support  
 1-800-333-1194 (Option 4)

**PRE-INSTALLATION  
 INSTRUCTIONS MUST BE  
 FOLLOWED OR WARRANTY  
 WILL BE VOID**

**IMPORTANT!**  
**2010+ E-Z-GO TXT**  
**TROUBLESHOOTING INFORMATION**  
**INCLUDED IN THIS PACKET**