ALLTRAX
www.alltraxinc.com
Phone: 541-476-3565 Fax: 541-476-3566

Installation Guide: Yamaha G19 with DCX

Tony Thorne
Dir OEM Services
ALLTRAX Inc.

December 18th, 2006

YAMAHA G19 INSTALLATION GUIDE

The following steps describe the installation of the Alltrax, Inc. DCX controller in a Yamaha G-19 golf car. Refer to the **Yamaha schematic (Doc100-052)** and the picture supplied with these instructions during installation.

CAUTION: The installation must be performed by a qualified golf car technician, or trained in the craft. Use caution when working on battery power vehicles and observe the hazards and safety precautions. Use safety glasses. Elevate drive wheels prior to testing any electric vehicle.

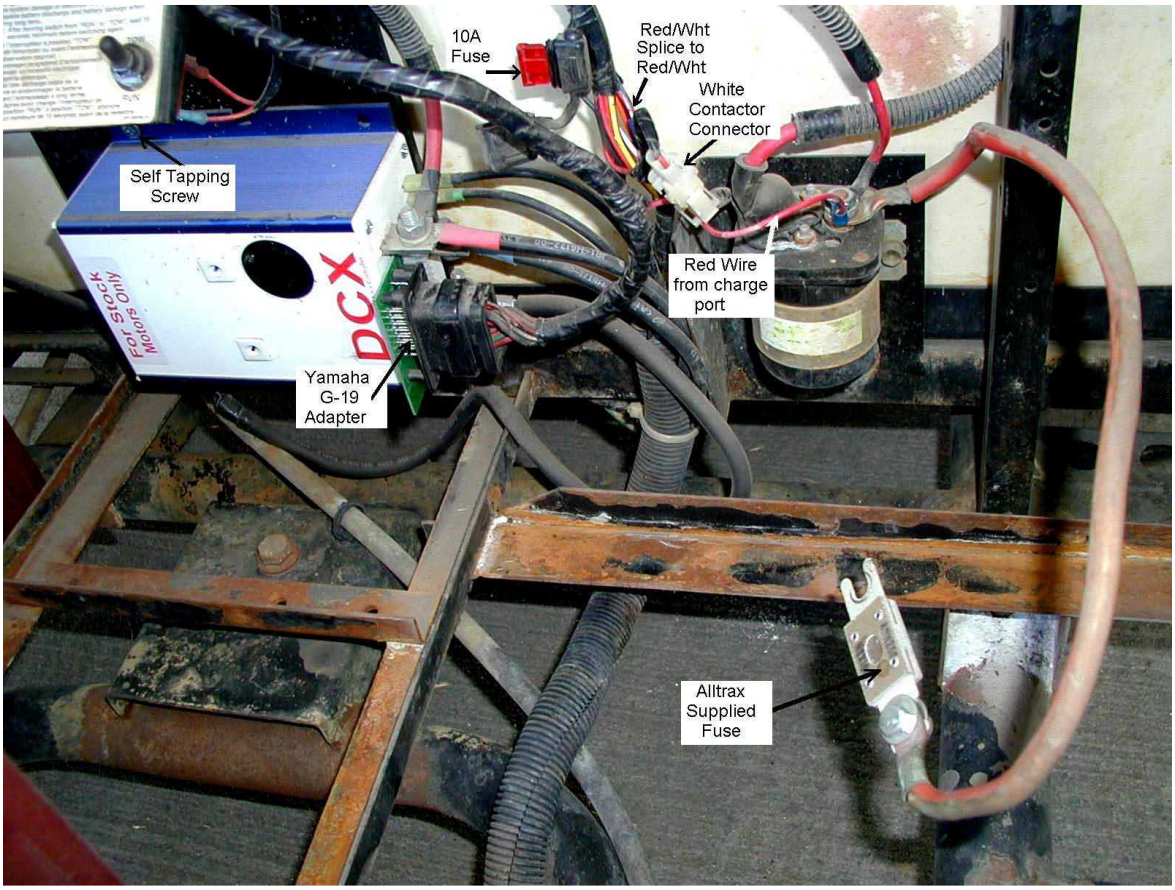
Procedures:

1. Remove the two center and the two passenger side batteries from the car.
2. Remove the old controller.
3. Cut off the Ring terminals from the GREEN and BLACK Field wires and replace with female blade connectors.
4. Cut the Small 18AWG RED wire connected to the charge port. Leave this wire as long as possible from the wiring harness. Relocate the wiring harness toward the passenger side of the car.
5. Attach a 5/16 ring terminal to the red wire coming from the wiring harness that was cut in [Step 4] and attach it to B+ terminal of the contactor coming from the battery pack .
6. Replace the ATC 3A fuse located in the BLACK rubber fuse holder with the supplied ATC 10A fuse.
7. Splice the supplied RED/WHITE wire into the harness procedure:
   a. Remove the RED/WHITE wire off solenoid. Tape up the end of the wire. Install the supplied RED/WHITE on the same terminal of the solenoid.
   b. Remove approximately two inches of tape from the wiring harness below the BLACK Rubber fuse holder.
   c. Locate the RED/WHITE wire in the bundle and splice the supplied RED/WHITE wire from the solenoid into it with a BLUE Butt connector supplied.
   d. Tape the wiring harness back up to protect the wires and the connections.
8. Mount the Alltrax controller with the bus bars facing the passenger side using two self tapping screws; one in the lower right hand (looking from top of controller) mounting hole - and the other in the upper left side mounting hole.
9. Connect the two FIELD wires; GREEN wire to F1 and BLACK wire to F2.
10. Connect the B+ cable from Output Side of the contactor and the Motor A2 cable to the controllers B+ bus bar. Note that BOTH the motor's A2 terminal and Battery +from the soleniod must to go to the Controller B+.
11. Connect the Motors A1 cable to the controller's M- bus bar.
12. Plug the G-19 adapter circuit board onto the Alltrax controller and secure with the screw provided. Plug the cable harness plug into the G-19 adapter.
13. Replace the old battery cable from the Battery Pack Negative terminal to the controller's B- bus bar with the longer one supplied.
14. Replace the batteries and install the Fuse provided with the controller between the Battery Pack Positive terminal and the Cable going to the contactor Input.
15. Double check all the wiring.
16. Set the Tow/Run switch in the "Run" position.
17. Verify the forward and reverse slowly while still on jacks to verify controller operation and field windings are correct (forward goes forward).

The adapter circuit board plugs onto the front the DCX using one of the mounting screws supplied. Do not over tighten.The small plastic washer goes between the PCB and the controller

The circuit board is covered with a sticky conformal coating substance – do not remove this material.

Installation Picture:



Alltrax reserves the right to change documentation without notice.

Alltrax makes no warranty as to the accuracy, sufficiency, or suitability of any technical or other information provided.

For Technical Assistance, please call 541-476-3565

ALLTRAX, Inc., 1111 Cheney Creek Rd. Grants Pass, OR 97527 541-476-3565

ALLTRAX Inc., Company History:

The company founder developed our core technology at the race track for high power electric vehicles. Throughout the 90's, the market demanded robust and high performance electronic controllers. In 2001 ALLTRAX was formed based on the E-race car developed technology.

Today, Power Conversion Engineering (PCE) is the research and development arm and ALLTRAX provides the industry a powerful and robust controller to meet all your recreational, industrial, and commercial electrical vehicle needs.

For more information please go to http://www.alltraxinc.com

"The company was founded at the track"