

STQ CC0 36VK SPEED KIT For 36-volt Club Car 1995-2005 DS Model Installation Instructions



Thank you for purchasing our exclusive STQ CC0 36VK Speed Kit. We take great pride in our products and feel certain that this kit will offer you many years of trouble-free service. We ask that you take a moment to read these instructions completely before beginning your installation. Familiarity with the parts and an understanding of the procedures will ensure that your installation goes smoothly and safely. Additionally, it will give you an opportunity to determine if your cart might have any damaged, corroded, or missing parts which will need replacing prior to using your new speed kit.

About This Speed Kit

This speed kit is designed specifically for Club Car DS 36 volt electric golf carts. If you are unsure of your golf cart type, please see our catalog or contact our technical department, toll free a 1-888-444-9994, or online at www.buggiesunlimited.com. During the installation of this kit you will be upgrading four major electrical components from your golf cart, with four high performance components in our STQ CC0 36VK Speed Kit. These parts are: the motor, the speed controller, the solenoid, and the forward reverse assembly. All of your electrical connections will be made between these components and the battery group. You should allow about 4 hours for installation.

Parts Included In Our Kit

- 1) High Performance electric motor.
- 2) 488/727 amp speed controller.
- 3) High Performance electric solenoid.
- 4) 4 gauge Club Car cable kit including:
 - a) 2 red coded cables.
 - b) 1 blue coded cable.
 - c) 1 white coded cable.
 - d) 1 orange coded cable.
 - e) 1 green coded cable.
 - f) 6 black coded cables.
 - g) 1 brown coded cable.
- 5) Bridge Resistor.
- 6) Resistor kit.
- 7) Jumper lead.
- 8) Hardware kit.



Tools And Materials Required To Install Kit

- 1) SAE socket set, with ratchet and 3" and 6" extensions.
- 2) SAE combination wrench set & (extra) 1/2" wrench.
- 3) #2 Phillips and flat tip screwdrivers.
- 4) Wire cutters & wire crimpers.
- 5) Drill & 5/16" drill bit.
- 6) Heavy weight grease.
- 7) Safety goggles/glasses.



Additional Tools Which Make The Job Better And Faster

- 1) Battery Carrying Strap. Part # BTA UNV 1001.
- 2) Battery Terminal Protector Spray. Part # MNT UNV 0512.
- 3) Battery Terminal Re-Facer. Part # TLS UNV 6002.
- 4) Electronic Multi-meter. Part # MET DIG OHM.
- 5) Small Box of Baking Soda. Local store purchase.



A Note Before Starting

Throughout this installation, we will be discussing the connection of #4 heavy gauge cables to several different electrical components. Some cables will be attached to threaded lugs or "posts", and others will be attached to flat bus bars. An understanding of each of these cable connections is important. Let's first cover the threaded lugs. You will notice these lugs utilize a set of double nuts to hold the cable terminal firmly in place. Typically, a cable terminal and a washer will be sandwiched between these two nuts. An open-end wrench of the appropriate size should be held on the bottom nut, while use of an opposing wrench relieves the threaded lug of excessive stress and eliminates the possibility of damaging the seals at the base of these lugs. Failure to use the opposing wrench technique on double-nutted lugs can permanently damage the component. You will also want to use the opposing wrench technique when making connections at the flat bus bars, but care should also be given to avoid twisting or bending the bars. Again, these seals at the base of the connection points are fragile and subject to damage, if handled improperly. Seal damage at these electrical contact points will void the warranty for that component.

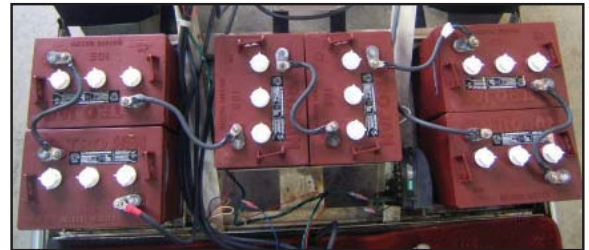
Caution: During this installation it is advised to wear eye protection at all times. It is highly recommended jack stands and lifting devices be used as required.

Preparation:

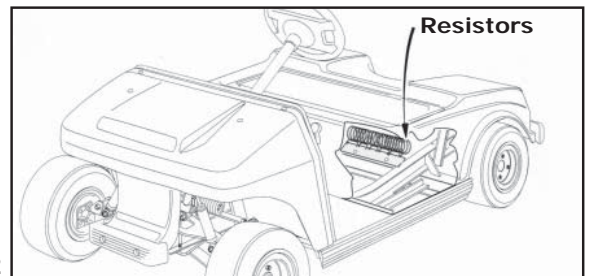
1. Remove the seat by grasping the seat handles and rotating the seat forward and lifting the seat from the hinges. (See Figure 0)
2. Disconnect the batteries. All wires connecting the batteries together at this time should be 6 gauge. Remove all of the existing 6 gauge power cables (See Figure 1.1) and speed resistors (See Figure 1.2).
3. It will be much easier to perform the conversion, if the batteries are removed. This is also a good time to clean and service the batteries and battery tray. One small box of baking soda and a gallon of water, with a small amount of soap, works best for this task. Using a paint brush, while the battery lids are in place, wash the tops of the batteries and the frame. Do this in an area that you don't mind getting stained, and wash off the areas with clean running water. After they dry, reface the posts and dispose of any waste in a proper manner.
4. If you have a pre-existing controller, it will need to be discharged at this time. You will need to use a flat bladed insulated screwdriver and short the connection between "B-" and "B+". Do this by using the screwdriver to bridge these two bus bars on the controller. This will cause a spark, but do not be concerned as this is normal. (See Figure 2)
5. Remove the Solenoid; it will not be reused. See identification picture to identify a solenoid. (See Figure 3)
6. Proceed in removing the drive motor. The existing cables should have been removed in step 2. Using a jack, lift the car and place jack stands under the axles in order to hold the car safely. Remove the four bolts that hold the motor in place and continue to remove the motor; using a pulling and wiggling motion. The motor will fall quickly and weighs about 60 pounds, so be prepared for the sudden drop. (See Figure 4)
7. Be sure to clean all areas that will receive new parts before beginning installation. (See Figure 5)



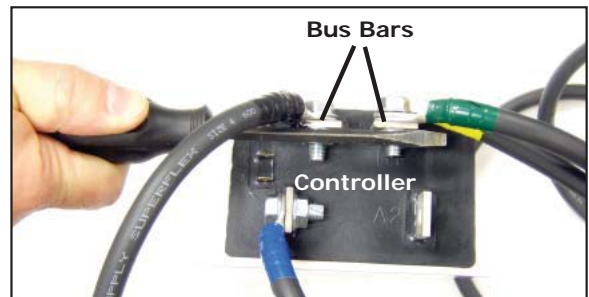
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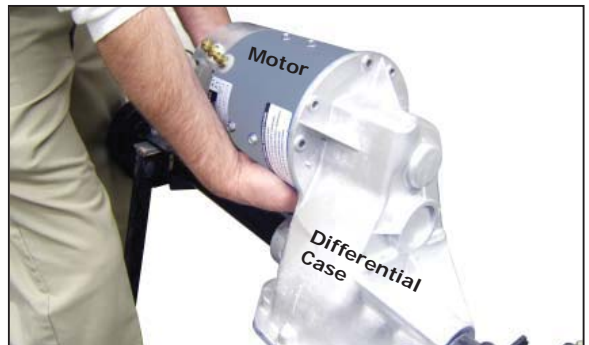
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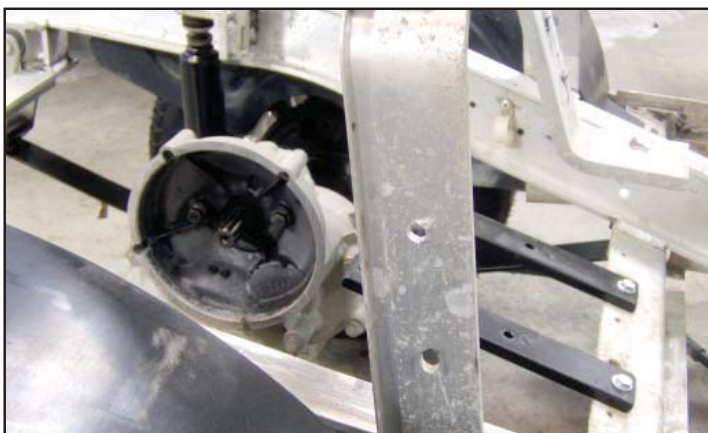
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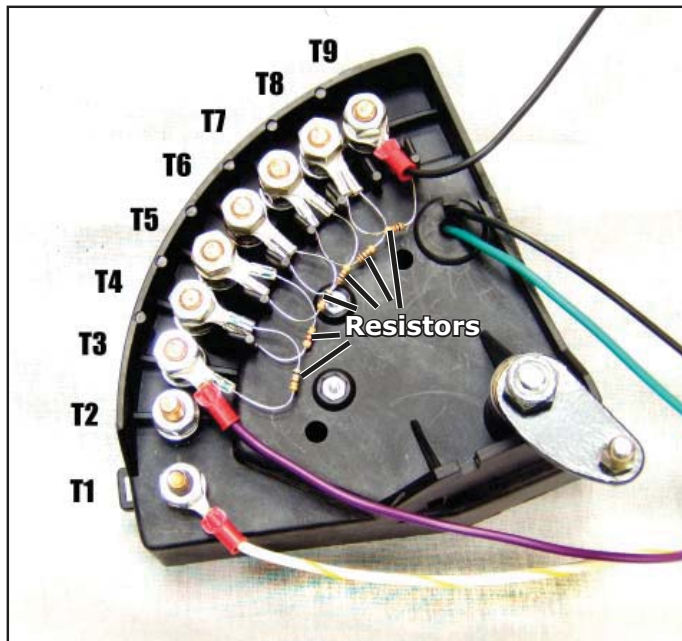
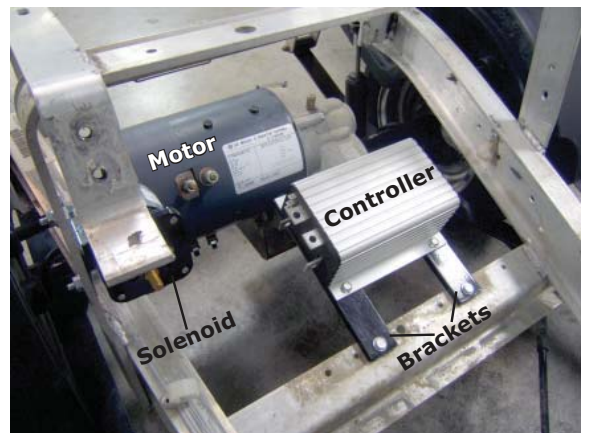
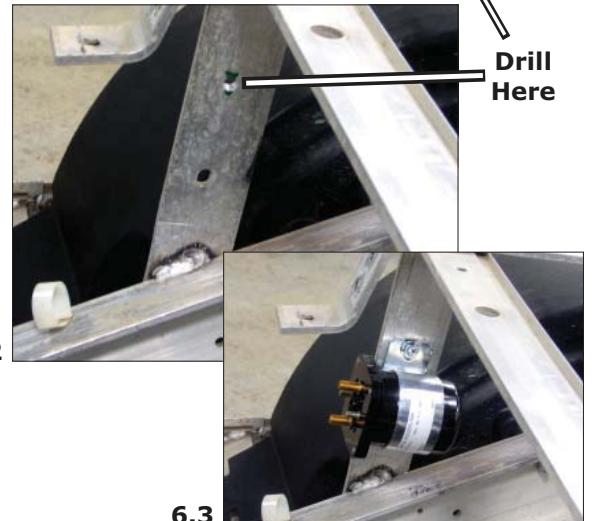
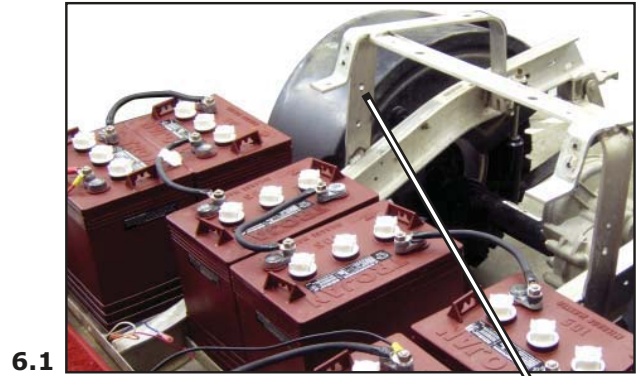
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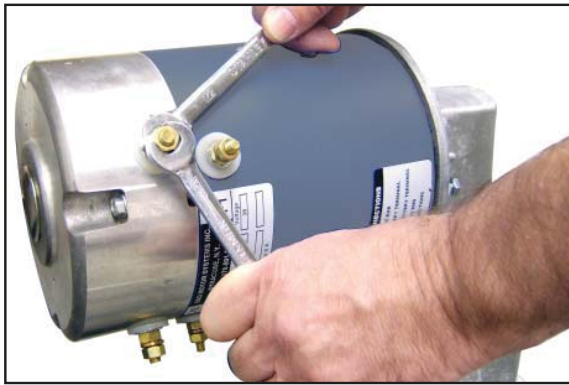
Installation:

1. For easier identification and to assist in the completion of these instructions, lay out all the parts in an organized manner before you begin.
2. While wearing safety glasses, set the solenoid on the passenger side rear body vertical weldment and drill a second hole with a 5/16" bit. Using the provided hardware, proceed in mounting the solenoid. (See Figure 6.1, 6.2 & 6.3)
3. Before mounting the motor, lubricate the splines, but not the end of the motor shaft with quality heavy-weight grease, available at any auto parts store. Lifting the new motor up, slide it onto the shaft inside the motor mount housing. With some gentle back and forth movement and pressure toward the housing, the motor should mount up to the housing with little effort. Align the mounting holes of the housing and the mounting holes of the motor by rotating the motor slightly. Observe a rotating or criss-cross pattern as you tighten the mounting bolts, to ensure that the motor is not binding or stressed. Tighten securely, but avoid over tightening. (See Figure 7)
4. Mount the controller to the two brackets, leaving the hardware loose. (See Figure 8). Place the controller assembly into the inside pre-drilled holes where the old resistor assembly was previously mounted. At this time, tighten all the bolts.
5. Following the step pattern displayed in Figure 9, install the speed input resistors onto the V-glide. Begin at the top and connect as follows toward the bottom terminal:

- Terminals 9 and 8 connect with a 1500 OHM resistor.
- Terminals 8 and 7 connect with a 1500 OHM resistor.
- Terminals 7 and 6 connect with a 1000 OHM resistor.
- Terminals 6 and 5 connect with a 980 OHM resistor.
- Terminals 5 and 4 connect with a 400 OHM resistor.
- Terminals 4 and 3 connect with a 100 OHM resistor.
- Terminals 2 and 3 connect with a 0 OHM resistor.

Install the small 16 gauge wires to the appropriate terminals as per Figure 9. The purple wire connects to Terminal 3, the white wire connects to Terminal 1, and the black wire connects to Terminal 9.





Opposing Wrench Technique

6. The next step is putting the power cables on the cart; please be sure to complete the following instructions step-by-step in order to ensure proper electrical connections.

Note: All cables are black. The “marker” of a cable simply refers to the color of the tape at the end of each cable.

The pre-charge resistor connects Solenoid large post #1 to Solenoid large post #2. (See Figure 10)

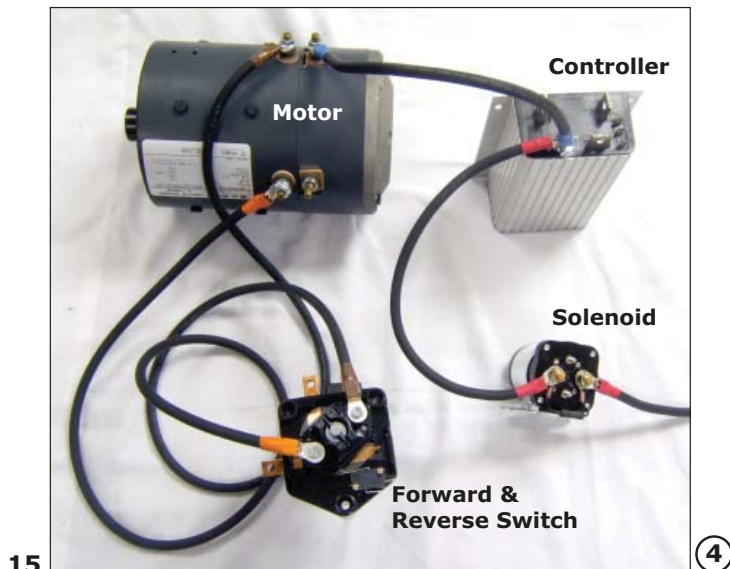
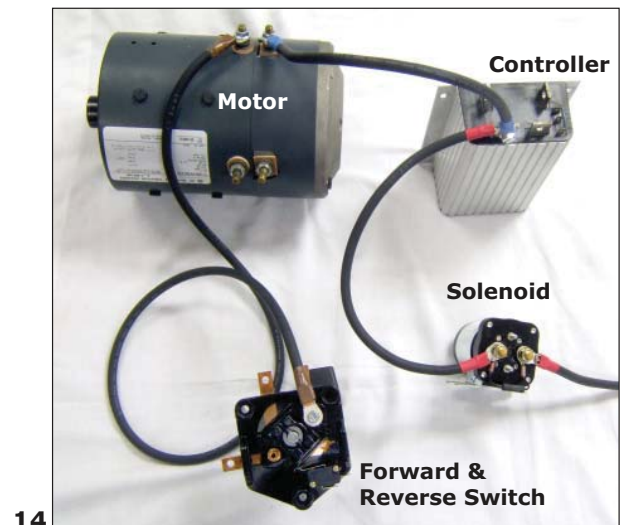
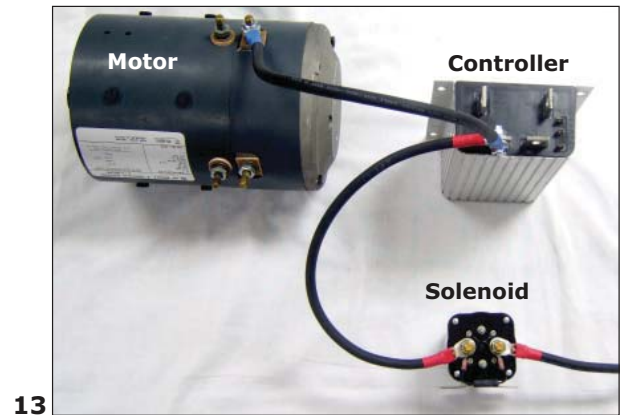
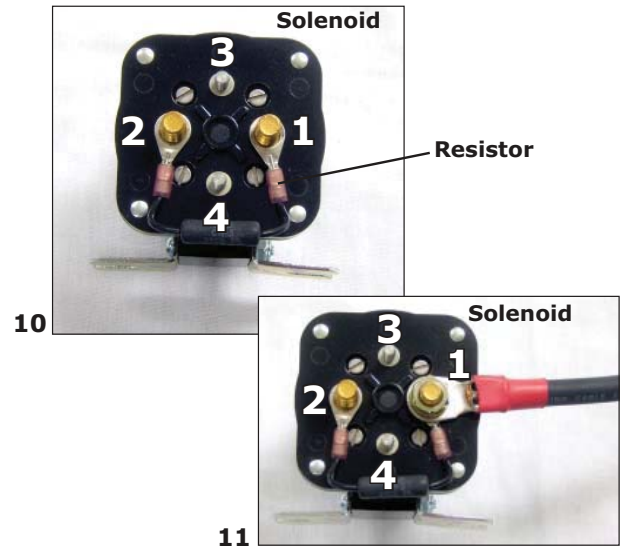
The 30” RED marker cable connects to Solenoid large post #1 (See Figure 11) and is the main positive connection to Battery #1 positive post. Do NOT connect anything to the battery at this time.

The 15” BLUE marker cable connects to “A1” (denoted) on the motor and is connected to “B+” on the controller. (See Figure 12)

The 16” RED marker cable connects to Solenoid large post #2 and to “B+” on the controller. (See Figure 13)

The 43” BROWN marker cable connects to “S2” on the motor (See Figure 14) and to the left hand moving contact on the forward/reverse assembly.

The 43” ORANGE marker cable connects to “S1” (See Figure 15) on the motor and the right hand moving contact on the forward/reverse assembly.



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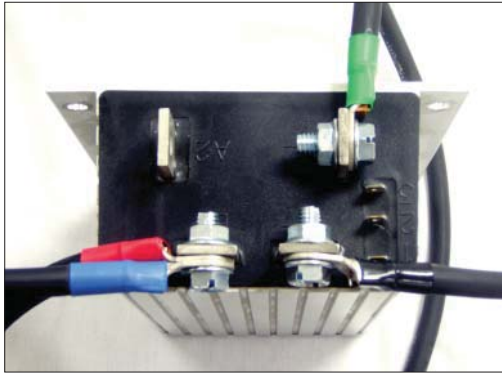
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The 40" WHITE marker cable connects to the forward/reverse bottom terminal. Before adding the white cable to the forward/reverse assembly, add the jumper connection between this terminal and the terminal beside this connection (See Figure 16). The other end will connect to "A2" on the motor.

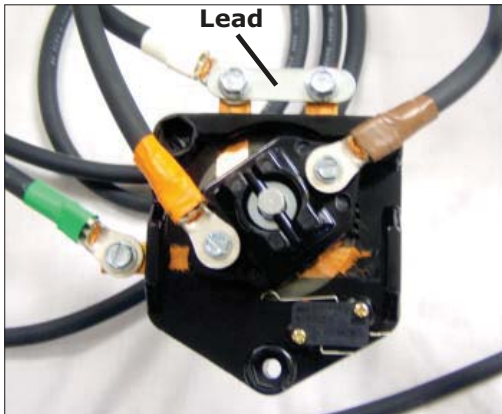
The 46" GREEN marker cable connects to "M-" on the controller (See Figure 17) and to the upper right hand solid terminal on the forward/reverse assembly.

The 44" BLACK marker cable connects to "B-" on the controller (See Figure 18) and to the #6 battery negative post.

DO NOT CONNECT TO BATTERY #6 AT THIS TIME.



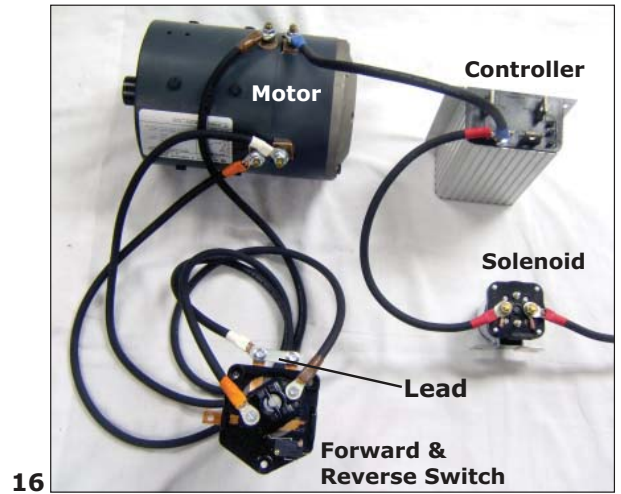
Close-up of Controller



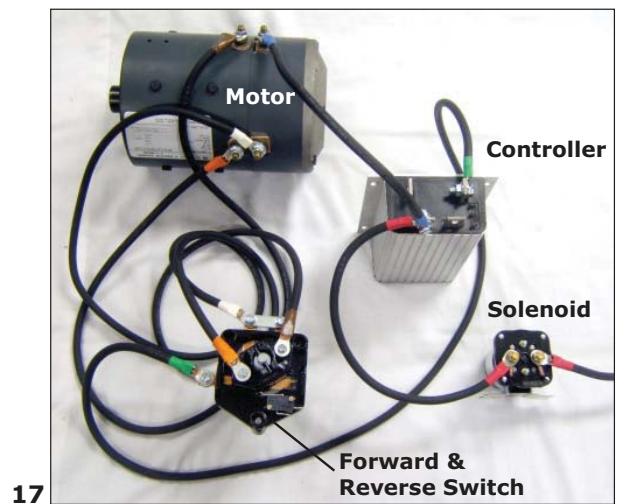
Close-up of Forward & Reverse Switch



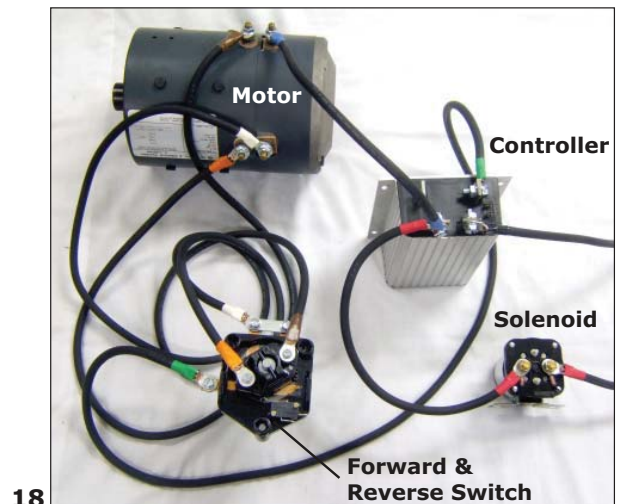
Close-up of Motor



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See Page 8 For a Diagram of the Heavy Gauge Wiring

7. Before starting the activation wiring make sure all pre-existing wiring except the two wires that are routed to the key switch are removed (See Figure 19). Depending on the year of the cart, the color of the wiring and the number of wires routed to the key switch may vary. 1986 to 1993 vintage carts will have only two wires routed to the key switch. One is Blue and the other is red or green. 1994 to present carts will have Red, Blue, Orange and White wires routed to the key switch area. Again, we are only using the Red and Blue wires. Tape up the Orange and the White wires. It must be understood that 1986 to 1993 carts used a negative circuit through the key switch and from 1994 to present a positive circuit was used through the key switch. We will be using a positive circuit through the key switch for this conversion.

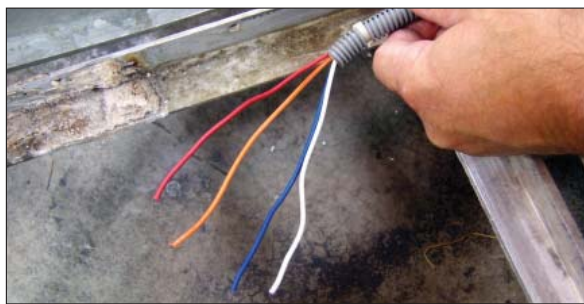
8. **Solenoid:** Connect the 10 amp in-line fuse to battery positive at the #1 terminal connection on the Solenoid (Red Wire). Connect the two Blue wires to terminal #3 and connect the Green wire to terminal #4. (See Figure 20)

9. **Controller:** Connect the Black wire with the 5/16" lug to B- on the controller. Connect the Blue wire from the solenoid #3 post to Pin #1 on the controller. Connect the orange marker harness White wire to Pin #2 and the Black wire to Pin #3 on the controller. (See Figure 21)

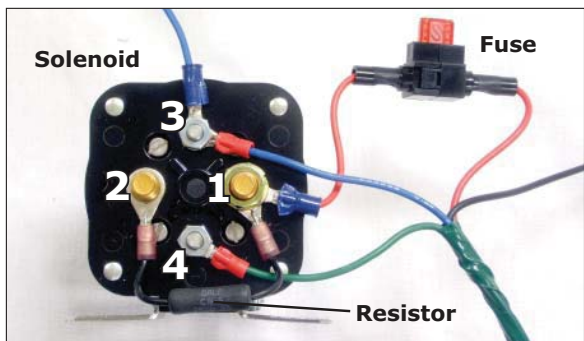
10. **V-Glide:** Route the two harnesses you just installed along the passenger side I-Beam to the V-Glide. Connect the White wire from the orange marker harness to Pin T1. Connect the Black wire to T9 (See Figure 9). You will notice in the kit a Purple wire, connect purple to the battery negative at the charging receptacle. (See figure 23) Connect the Green Harness Black wire to the Black wire on the V-Glide start switch. Connect the Green wire to the V-Glide Green wire start switch (See Figure 22).

11. **Forward and Reverse Switch:** Connect the Blue wire from the Green Harness to the bottom terminal on the forward and reverse switch. From the top terminal connect the single Blue wire and connect it to the Blue wire from the key Switch. Connect the Red wire from the Green Harness to the Red wire routing to the Key Switch (See Figure 24). This completes the activation wiring.

See Page 9 For a Diagram of the Activation Wiring

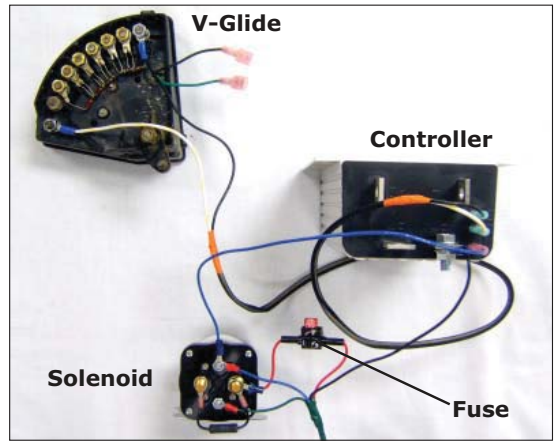


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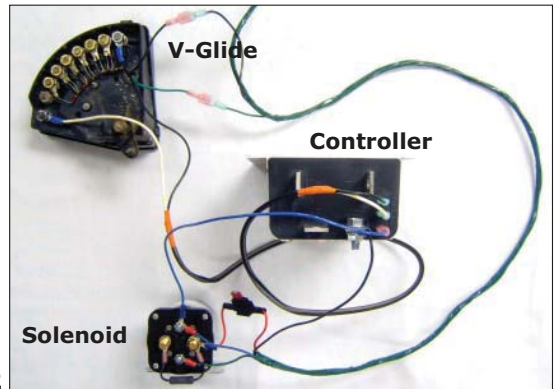


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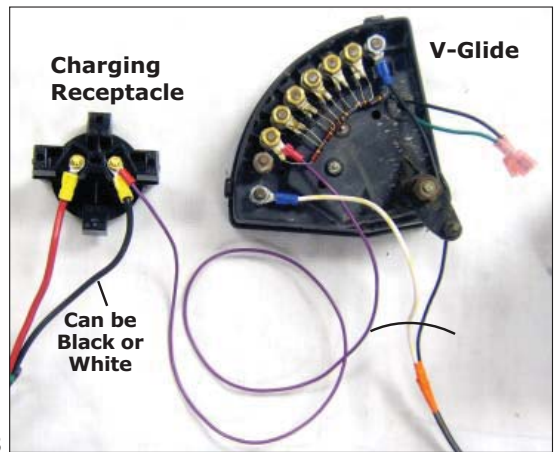
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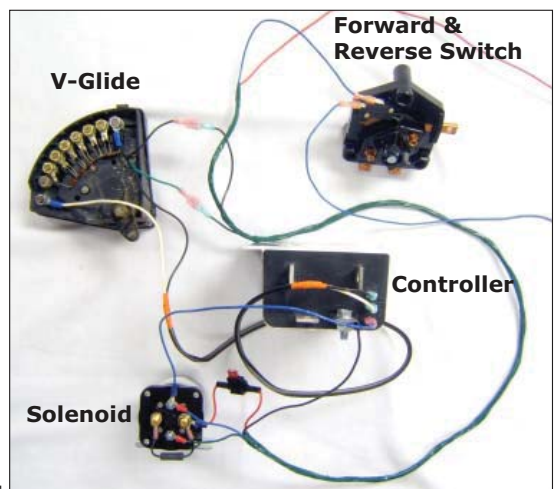
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Final Battery Cable Connections

1. It is now time to install the batteries. Using a Carrying Strap (part# **BTA UNV 1001**) or similar tool; install the batteries and Hold Downs (See **Figure 25**). Care must be taken not to scratch the body and make sure the battery seats all the way in the proper spot. (See **Figure 27**)
2. After all wiring and cable connections have been made and are in correct areas of connection, the battery connections can now be made. Connect the Red 30" coded cable to #1 battery positive post (See **Figure 27**). Also on the same terminal connect the Red 12 gauge charging receptacle lead (See **Figure 26**). Torque the mounting nut to 90 to 110 inch pounds.
3. Connect the 44" Black coded cable to the negative post of #6 battery (See **Figure 27**). Also on the same terminal connect the White and or Black 12 gauge charging receptacle lead (See **Figure 26**). You may notice some light arcing at the point of contact. This is normal and merely indicates the pre-charge of the capacitors in the controller. **Note: A very heavy arc will indicate wiring problems and the wiring will need to be rechecked.** Torque the mounting nut to 90 to 110 inch pounds.
4. After the final connection is made (cart still on jack stands), place the cart in the forward position and with the key switch on; push on the accelerator. The cart should now run in the slow mode and as you accelerate the speed should gradually increase to full speed. **NOTE: DO NOT REVERSE DIRECTION WITHOUT COMPLETELY STOPPING FIRST!** Now operate the car in reverse mode and make sure the slow to high speed is obtained. If all tests well, let the cart back down on the ground and test drive the cart. Install all removed accessories such as rear seats and inspection covers. Make sure all cables are tie strapped to solid areas as not to rub or bind on any moving parts. Spray cote the battery connections to prevent corrosion (part# **MNT UNV 0512**).

INDEMNIFICATION AND INSURANCE AGREEMENT

High speed motor installation should be performed by a professional. The high speed motor purchaser assumes sole and entire responsibility for, and shall indemnify and save harmless Mattison Avenue Corporation (d.b.a. Buggies Unlimited), from any and all claim, liability, responsibility, and damage, or any costs or expenses resulting from any loss of life or injuries or claimed injuries to persons or property that may be sustained in connection with the use of any product before or after purchase, including but not limited to high speed motors. The high speed motor purchaser also shall indemnify Mattison Avenue Corporation (d.b.a. Buggies Unlimited) and save Mattison Avenue Corporation (d.b.a. Buggies Unlimited) harmless with respect to any and all liability that may be incurred.

Golf carts are recommended for use only by those aged 16 and older. Golf carts can be especially hazardous to operate. Always remember that riding and alcohol/drugs don't mix. Never ride on public roads. Never carry more than two passengers (except shuttles and trams). Never engage in stunt driving. Avoid excessive speeds and be particularly careful on difficult terrain. Buggies Unlimited reserves the right, at any time, to discontinue or change specifications, prices, designs, features, models or equipment without notice and without incurring any obligation.

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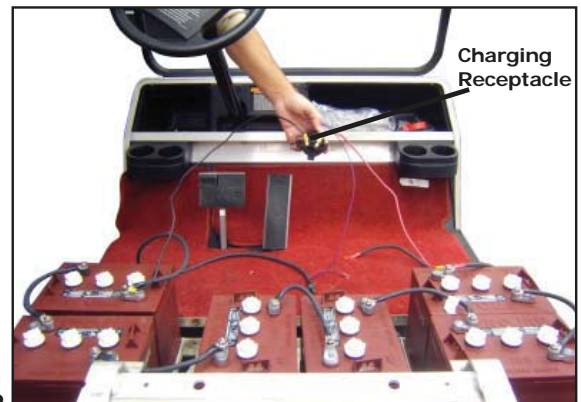
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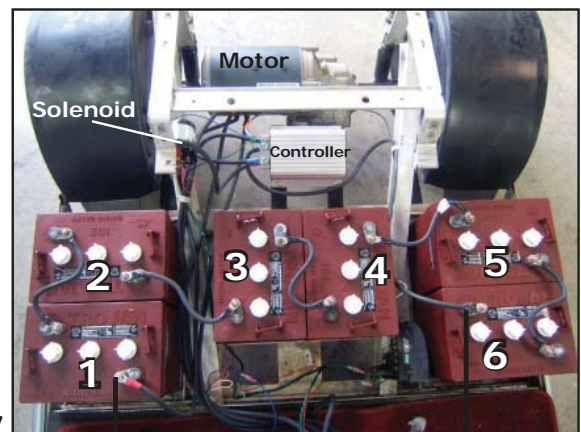
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Shown on EZGO Model



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Charging Receptacle



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Positive

Negative

Motor

Solenoid

Controller

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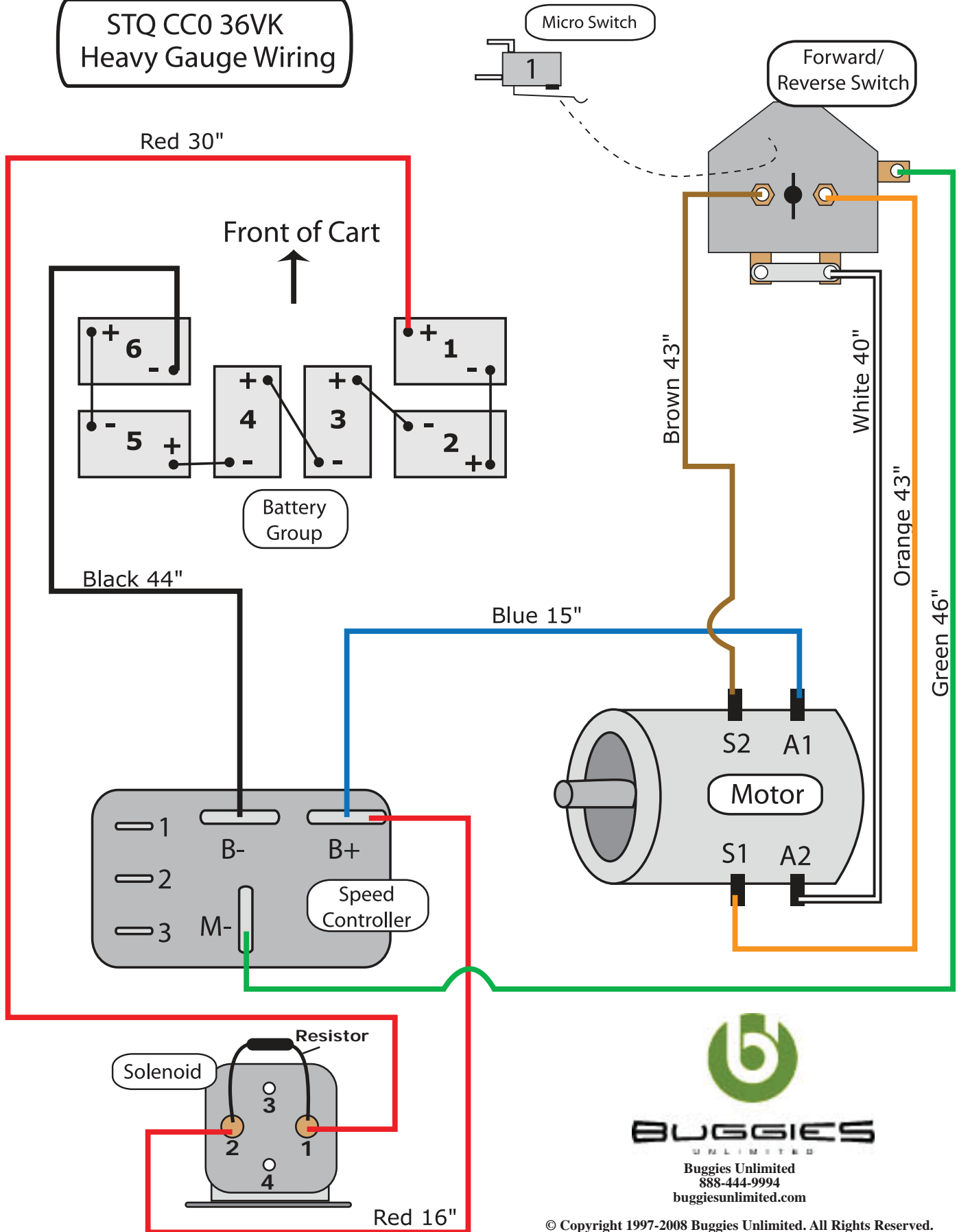
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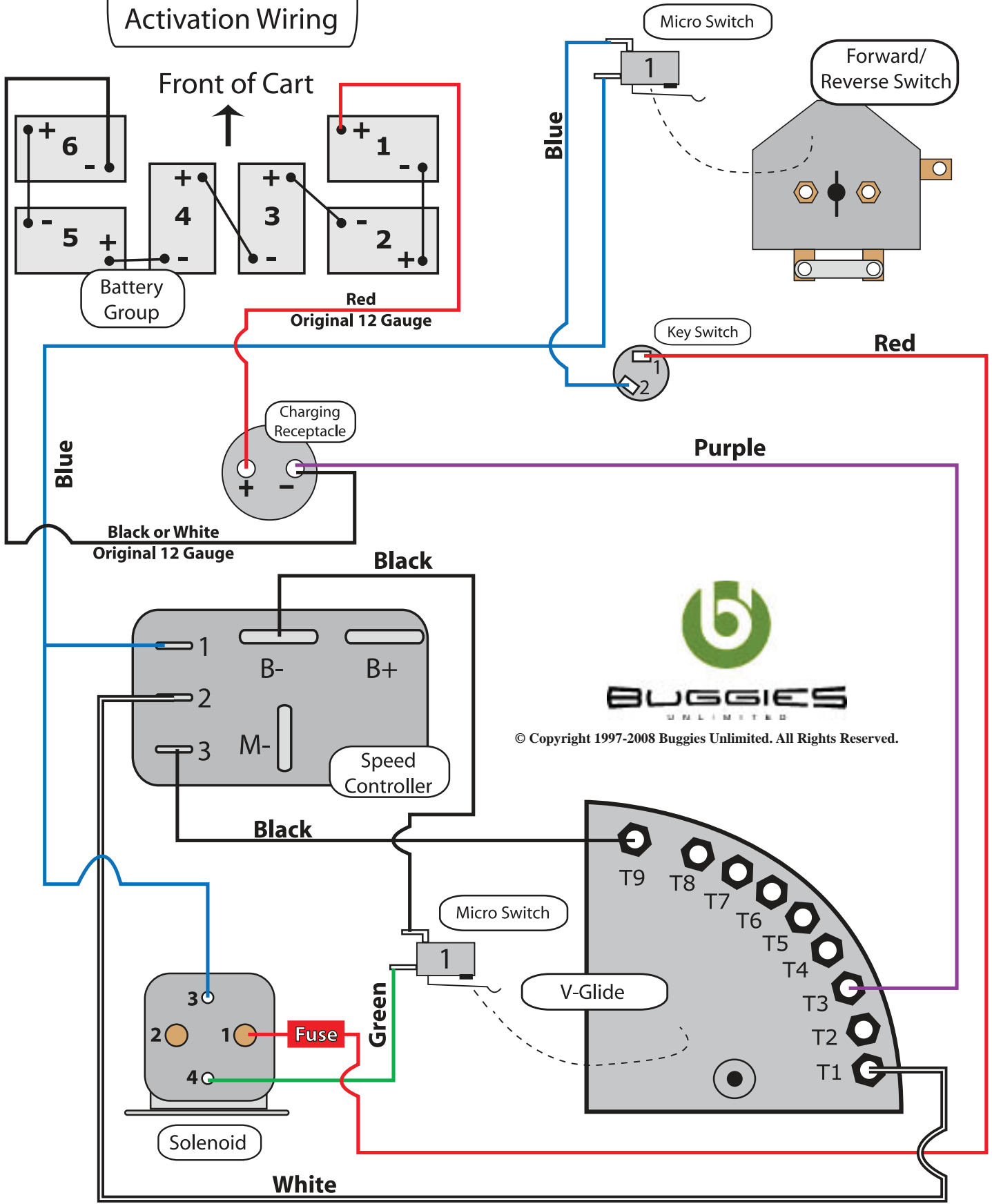
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STQ CC0 36VK
Heavy Gauge Wiring



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STQ CC0 36VK
Activation Wiring



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