



PULLTARPS



WIRING INSTRUCTIONS

40 Amp Electrical Switch Assembly Enclosed

514-0103

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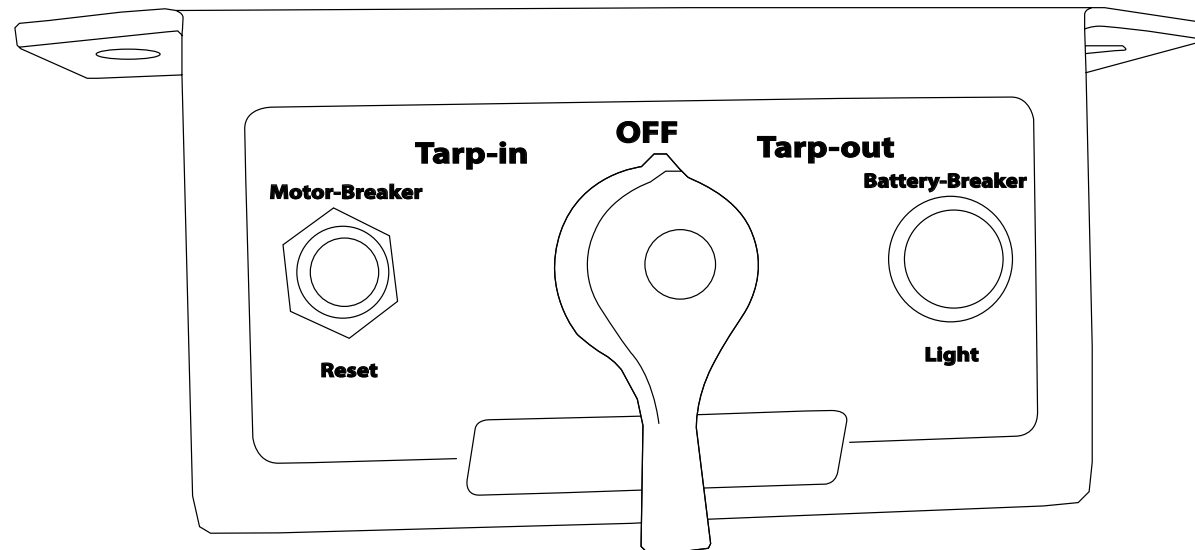
[PDF: Smart Switch Basic Kit](#)



[PDF: 25 AMP Switch Kit](#)



[Web: Smart Switches](#)



Document #: 607-0058
Revised: 05/22/25 WLH

DURING INSTALLATION, SOME FABRICATION MAY BE REQUIRED.



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SAFETY & SYSTEM REQUIREMENTS



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Safety Requirements



Failure to comply with requirements outlined in this document may result in serious injury or property damage.

The following requirements shall be met when installing or servicing electrical components in Pulltarps Automated Tarp Systems:

- All connections to vehicle battery systems, vehicle battery chargers, and external power supplies shall be disconnected during all installation procedures.
- Prior to installing wiring on positive terminals, check voltage on all wires and connection points using a voltmeter.
- The following personal protective equipment shall be worn at all times while installing components:
 - » Safety Glasses or Prescription Glasses with Side Shields.
 - » Steel or Composite Toe Protective Shoes.

Tools and Equipment Required for Installation

The following tools are required for installation of electrical components

- Torque Wrench with range between 50 to 150 in.lb.
- Nut Driver Set.
- Wire Cutters up to 2AWG size wire.
- Wire Insulation Stripping Tool for wire size range from 2 to 8 AWG.
- Wire Insulation Stripping Tool for wire size range from 16 to 18 AWG.
- Wire Terminal Crimping Tool for wire size range from 2 to 8 AWG.
- Wire Terminal Crimping Tool for wire size range from 16 to 18 AWG.
- Heat Gun for application of heat shrink insulation.
- Multi-meter with DC voltage measurement capability.
- Zip Ties.
- Vehicle Chassis Wiring insulated c-clamps capable of carrying 2 to 8 AWG wiring.



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Switch Requirements

Momentary Rocker Switch and Rotary Switch



Pulltarps Rocker and Rotary switches contain hot-at-all-times connection at the center terminal of the switch. No exterior installation of the rocker or rotary switch is permitted. Contamination from an outside environment may connect the switch center input to the command line, resulting in unexpected movement of the tarp system.

- Use only a Pulltarps supplied Rocker Switch or Rotary Switch with the motor reversing relay.
- Switch terminals shall be protected from contact with conductive materials.
- Switch harness shall be fully insulated.
- Switch spade terminal connections shall be fully seated, preventing exposed conductive surfaces.
- Rocker switch shall be installed such that the switch labels read from left to right.

Gear Motor Installation Requirements

- Gear Motor shall be mounted using all mounting locations provided.
- Electric Motor connections shall be fully coated in dielectric grease.
- Electric motor connection torque requirement: 15 to 22 in.lb.
- To prevent terminal damage - **Do not exceed 25.5 in.lb.**



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Vehicle Battery Connection Requirements

Main Power to Pulltarps System

- Source Voltage Line to Motor Reversing Relay shall be connected directly to the vehicle battery system.
- The Source Voltage Line shall include an in-line Pulltarps supplied circuit breaker. The circuit breaker shall be no greater than 12 inches from the positive terminal of the vehicle battery system.
- Main Power and Ground Connection through a power distribution box are forbidden.

Main Ground to the Pulltarps System

- Ground line to the Motor Reversing Relay shall be connected directly to the negative terminal of the vehicle battery system.
- Battery terminals shall be coated with dielectric grease to prevent corrosion.
- Appropriate ring terminal or battery terminal at the vehicle battery connection are required.

System Circuit Breaker Requirements

- The breaker shall be installed on the main positive wire within 12 inches of the positive terminal of the vehicle battery system.
- Circuit Breaker shall be mounted on a vertical surface with the input and output wires entering and exiting from the sides. This is the only approved installation orientation for the circuit breaker.
- Terminals of the circuit breaker shall be no less than 2 inches from any surface on the vehicle in all directions.

Control Box



Failure to properly follow all requirements may result in present or future property damage. Pulltarps Motor Reversing Relays contain a hot at all times connection to the vehicle battery system. Care must be taken to prevent contact between battery supply terminals and conductive surfaces of the chassis



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TOOLS & PARTS





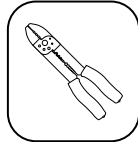
WIRING INSTRUCTIONS

40 Amp Electrical Switch Assembly Enclosed

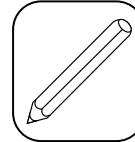
Recommended Tools



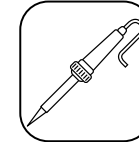
Safety Glasses and Gloves



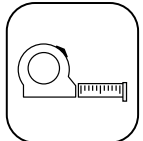
Wire Cutters / Insulation Stripping Tool



Pencil or Marker



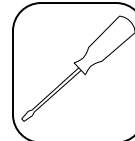
Soldering Iron



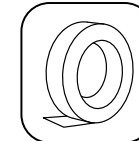
Tape Measure



Adjustable Wrench



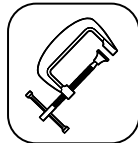
Flathead Screwdriver



Electrical Tape



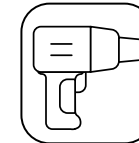
Zip Ties



Insulated C-Clamp



Torque Wrench



Heat Gun



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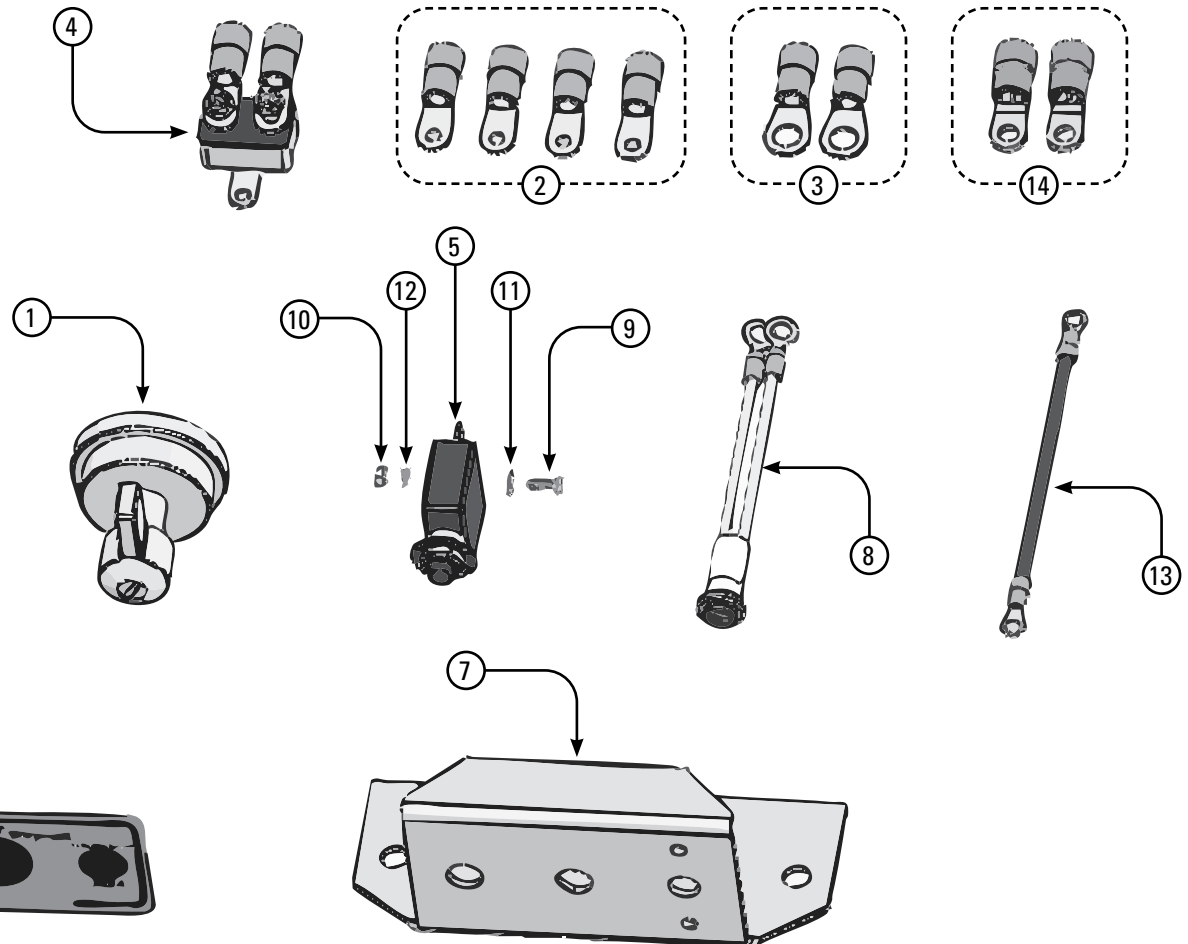
40 AMP Electrical Switch Assembly / 514-0103

| ITEM | PART # | DESCRIPTION | QTY |
|------|----------|---|-----|
| 1 | 514-0107 | Elect. Switch 3 Pos. Momentary 50 AMP | 1 |
| 2 | 514-0307 | Connector 6 GA #10 Stud Vinyl Insulated | 6 |
| 3 | 514-0309 | Connector 6 GA w/ 3/8" Hole | 2 |
| 4 | 514-0408 | 50 AMP Type II Breaker Non Cycle | 1 |
| 5 | 514-0406 | 40 AMP "Push to Reset" Breaker | 1 |
| 6 | 517-0213 | 12 V Label Elect. Switch Bracket | 1 |
| 7 | 514-9909 | Bracket for Arm System Switch | 1 |
| 8 | 514-9956 | Red Lamps - 10 V Assembly #10 Ring | 1 |
| 9 | 503-9901 | 4-40 x 3/8" Machine Screw P-Pan | 1 |
| 10 | 504-9901 | #4-40 Nut | 1 |
| 11 | 505-9902 | #4 Flat Washer | 1 |
| 12 | 505-9903 | #4 Lock Washer | 1 |
| 13 | 514-9952 | Black 10 GA Jumper w/ # 10 Eyelets | 1 |
| 14 | 514-0308 | Connector 6 GA Lug w/ 1/4" Hole | 2 |
| 15 | 607-0058 | ESW3A Electrial Switch (Not Shown) | 1 |

REV. 11/29/16 RDS

| REV. | DESCRIPTION / INITIAL RELEASE | DATE | QTY |
|------|--|----------|-----|
| A | Replaced 514-0405 | 11/22/09 | TT |
| B | Added 504-9901, 505-9902, 505-9903, & 503-9901. Replaced 514-9951 w/ 514-9956 per ECN 3537. | 11/26/12 | RHH |
| C | Replaced 514-9922 w/ 514-9952 | 11/29/16 | JK |

REVISIONS



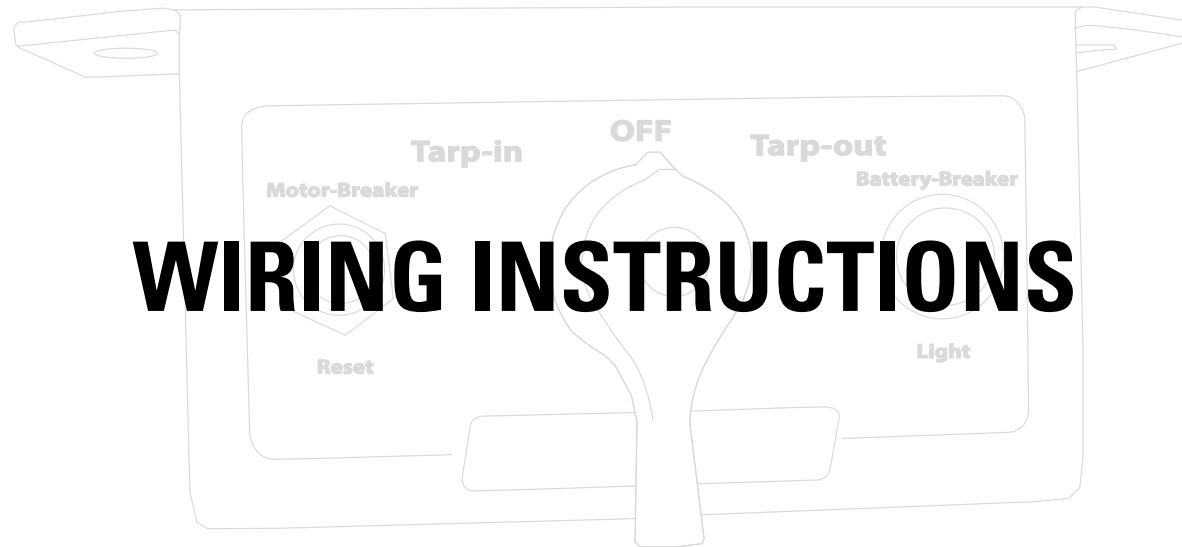


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Connecting Switch Panel to Motor

Step 1: The switch panel (514-0103) comes assembled (Fig. 1).

Fig. 1

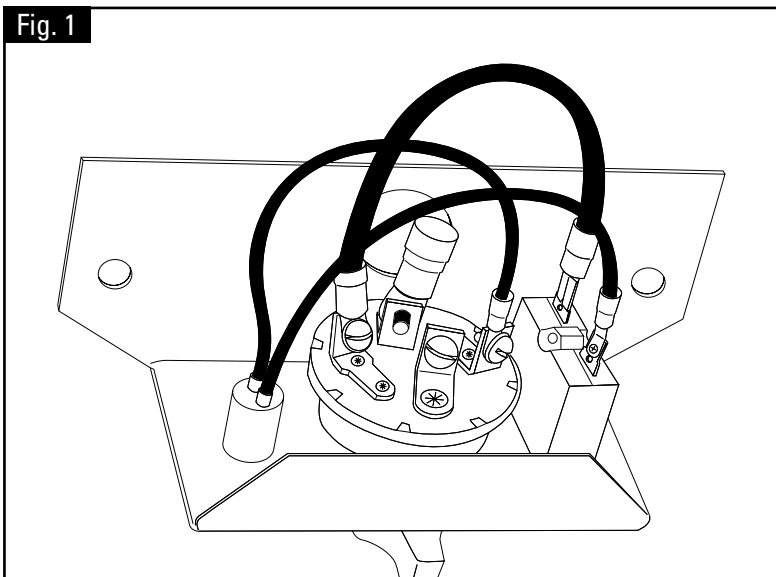
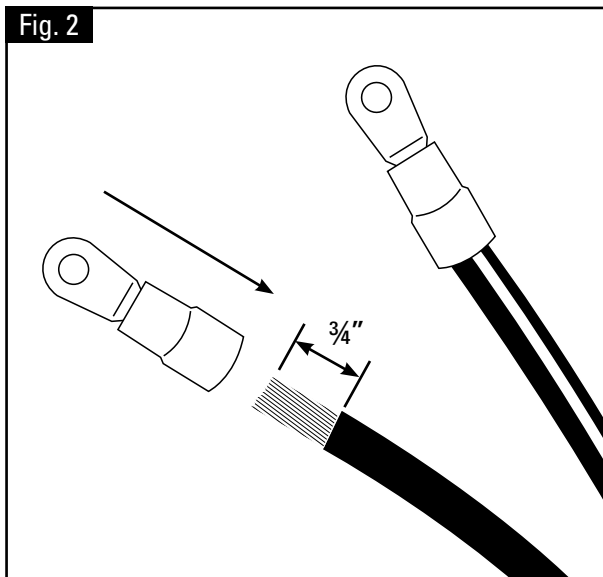


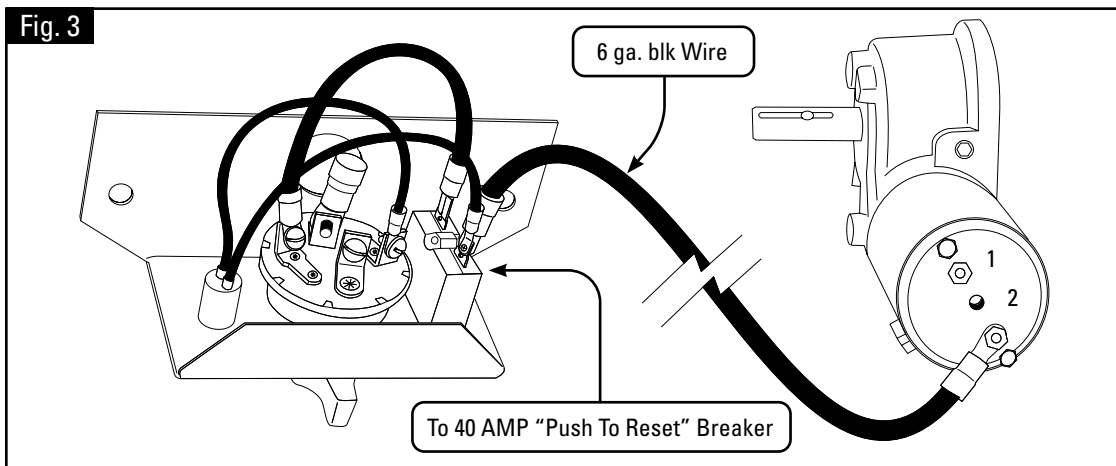
Fig. 2



Step 2: Attaching The Connectors

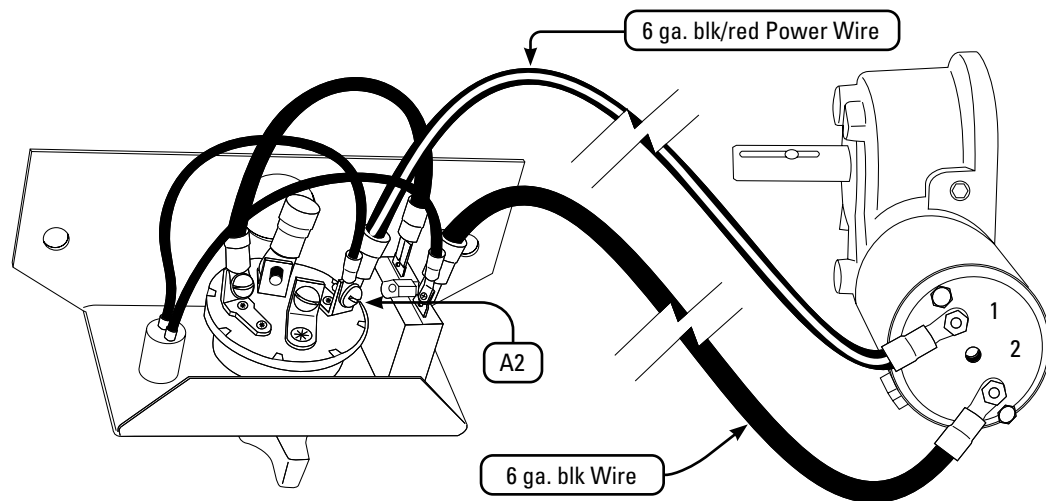
Strip the ends of the 6 ga. wire approximately 3/4" and attach the light blue connectors (Fig. 2) using a pair of wire crimpers. The dark blue connectors will be used on the battery.

Fig. 3



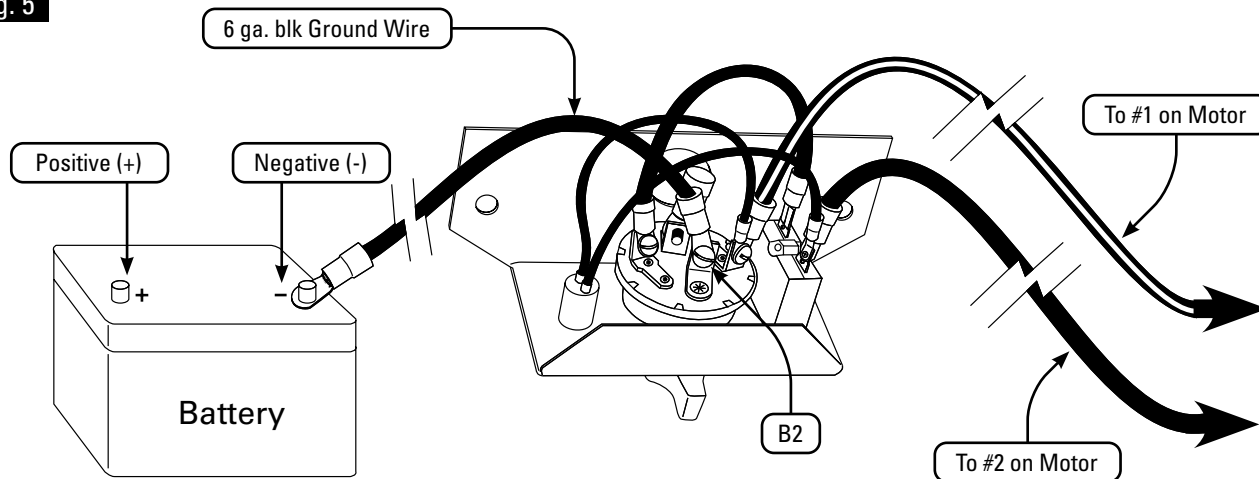
Step 3: Wiring The Motor

Run the 6 ga. black wire from the #2 terminal on the motor to the 40 AMP "Push To Reset" breaker on the switch panel as (Fig. 3).

**WIRING INSTRUCTIONS****40 Amp Electrical Switch Assembly Enclosed****Wiring the Motor and Ground Wire to Battery****Fig. 4****Step 4: Wiring The Motor**

Run the 6 ga. black / red wire from the #1 terminal on the motor to A2 (Fig. 4).

(A2 is also labeled on the switch panel)

Fig. 5**Step 5: Running The Ground Wire To The Battery**

Run the 6 ga. black wire from B2 on the switch to the negative terminal on the battery (Fig. 5).

(B2 is also labeled on the switch panel)

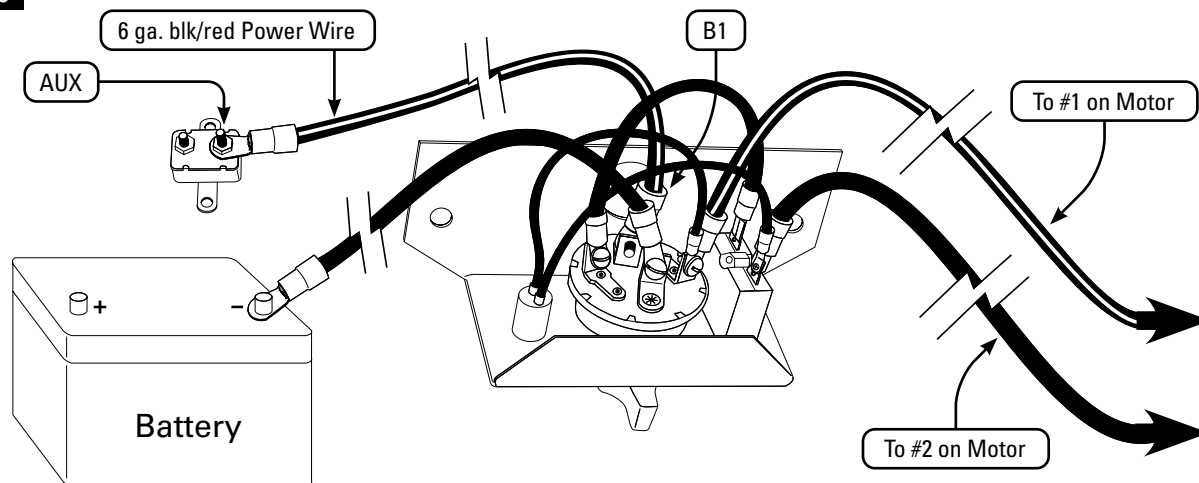


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Wiring the Motor and Ground Wire to Battery

Fig. 6

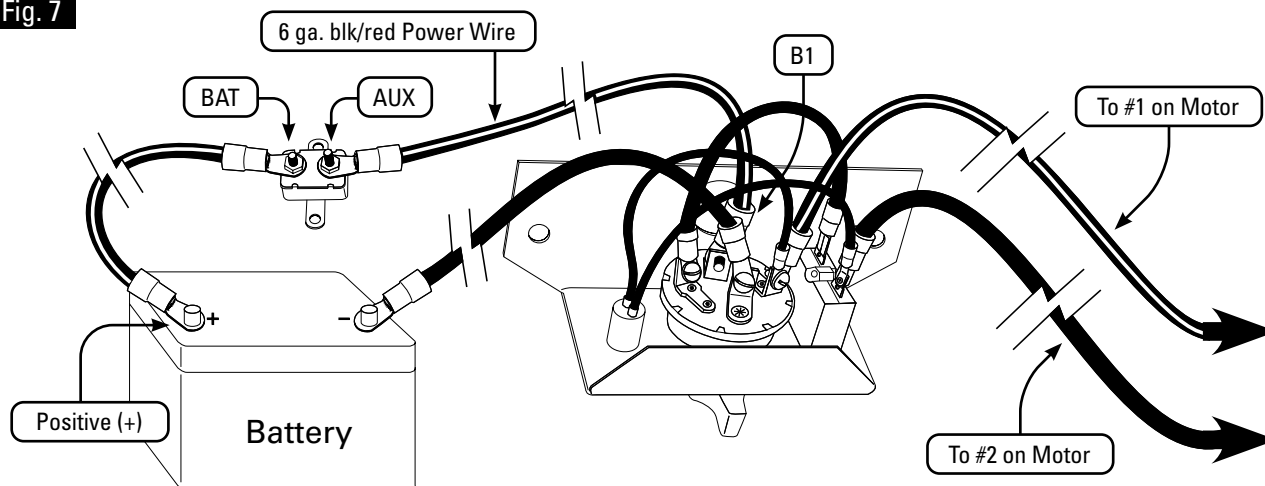


Step 6: Wiring The 40 Amp "Non Cycle" Breaker

Run the 6 ga. black / red wire from B1 on the switch panel to the AUX terminal on the 40 amp "Non Cycle" breaker (Fig. 6).

Note: The large hole on top of the switch is for easy access to the B1 screw.

Fig. 7



Step 7: Wiring The 40 Amp "Non Cycle" Breaker

Run the 6 ga. black / red wire from BAT on the 40 amp "Non Cycle Breaker" to the positive terminal on the battery (Fig. 7).



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Plug Assembly

Step 8: Assemble the Quick Disconnect (Fig. 8, 9, & 10).

Option #1, Plug Assembly - Part # 514-0505.

Fig. 8

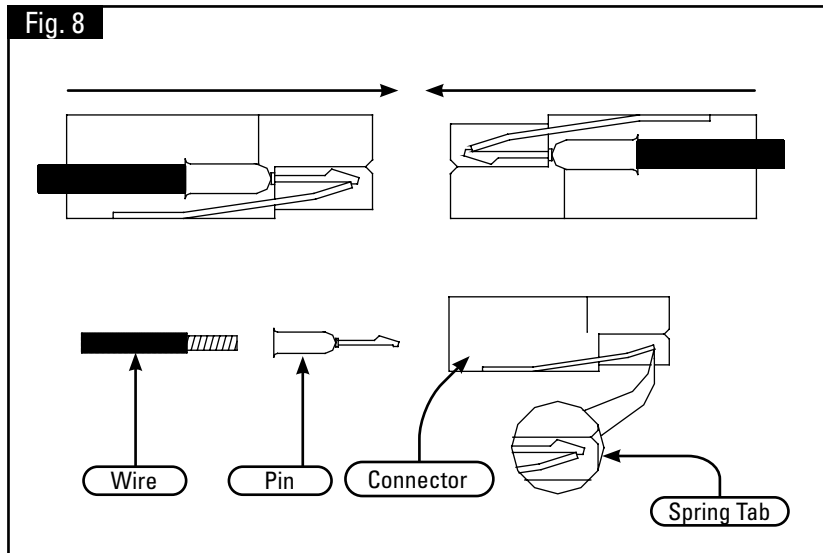
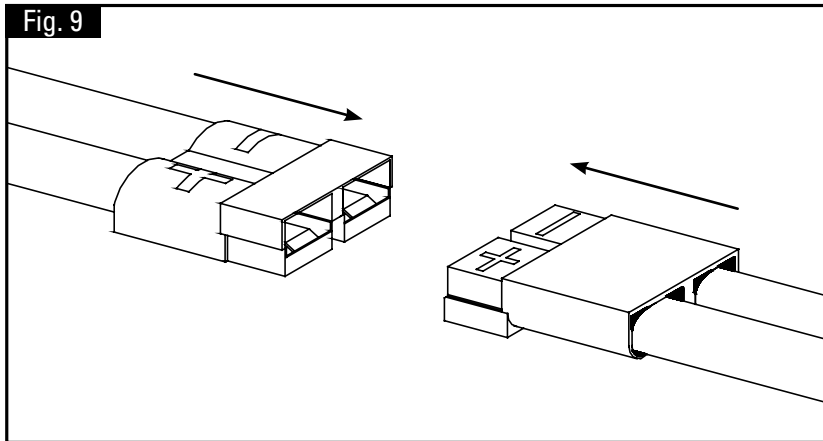


Fig. 9



Option #2, Plug Assembly - Part # 514-0501.

Fig. 10

