

Mounting the Power Socket

1. Verify the parts of the **Semi/Tractor Charge Line Kit** (Figure 1).

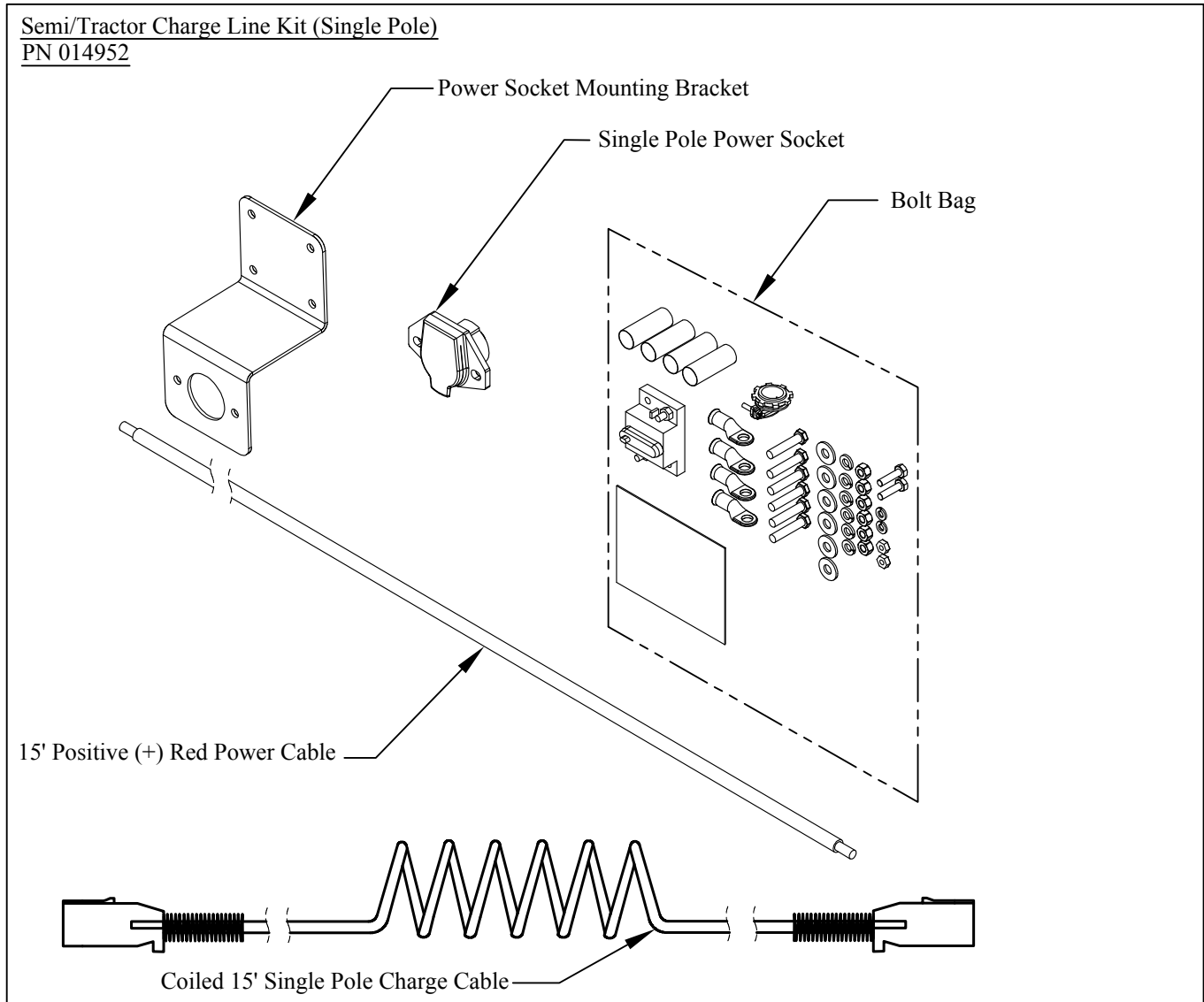


Figure 1: Part Identification.

Mounting the Power Socket (Continued)

Note: Check for obstructions before drilling in the next steps.

1. **Select** a location on the lower, driver's side, rear wall of the tractor cab to mount the power socket mounting bracket.
If there is not a suitable location on the tractor cab, it may be necessary to mount the power socket mounting bracket to a frame crossmember near the rear wall of the tractor cab (Figure 2).

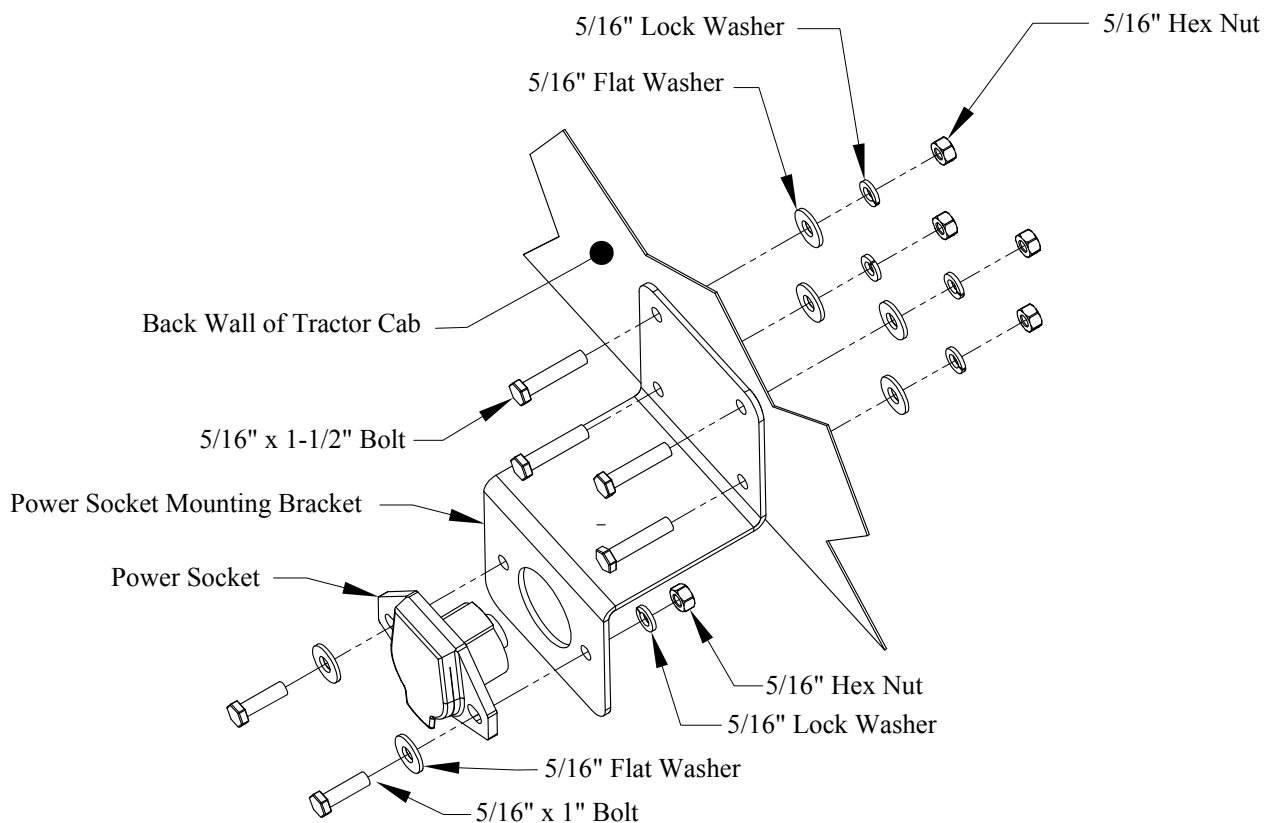


Figure 2: Power Socket and Bracket.

2. **Drill** four 11/32" holes for the power socket mounting bracket using the holes in the bracket as a guide (Figure 3).

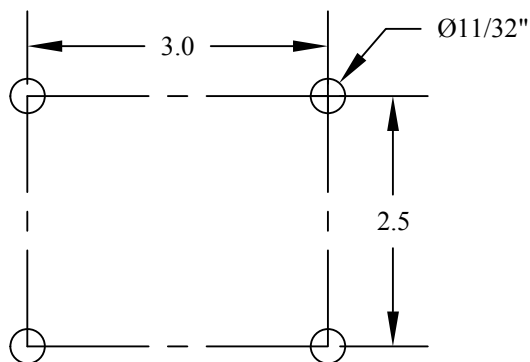


Figure 3: Power Socket Mounting Bracket Hole Dimensions.

3. **Fasten** the power socket mounting bracket to the tractor using the supplied 5/16" x 1-1/2" bolts, flat washers, lock washers, and nuts (Figure 2).
4. **Fasten** the power socket to the power socket mounting bracket using the supplied 5/16" x 1" bolts, flat washers, lock washers, and nuts (Figure 2).

Installing the Strain Relief and Circuit Breaker

Note: Check for obstructions before drilling in the next steps.

1. **Disconnect** the negative (-) battery cable from the tractor battery.
2. **Drill** a $\text{Ø}1\text{-}1/8\text{'}$ hole in the tractor's battery box to mount the provided strain relief (Figure 4).
3. **Install** the strain relief in the tractor's battery box with the strain relief nut on the inside of the tractor's battery box (Figure 4).

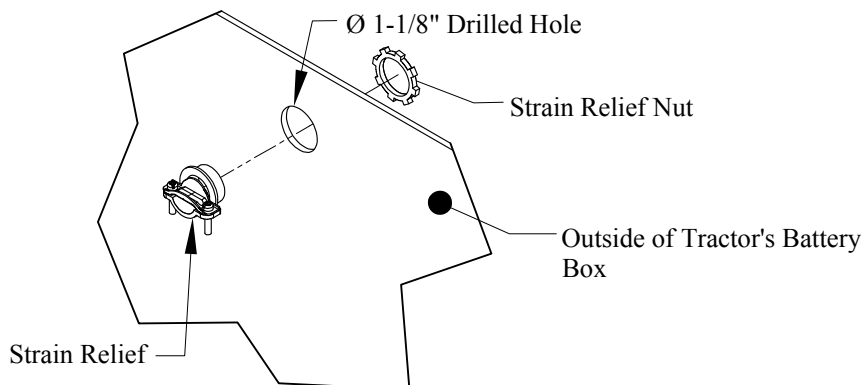


Figure 4: Strain Relief.

4. **Locate** and **Mark** a place inside the tractor's battery box for the circuit breaker to be mounted.

Note: When selecting a location to mount the circuit breaker, be sure to leave enough room for the power cables to be installed so that the circuit breaker can easily be reset.

5. **Drill** two $\text{Ø} 9/32\text{'}$ holes in the tractor's battery box to mount the circuit breaker (Figure 5).
6. **Mount** the circuit breaker to the inside of the tractor's battery box using the supplied $1/4\text{'}$ x 1' bolts, lock washers, and nuts (Figure 5).

Note: Be careful to not over-tighten and crack the circuit breaker base.

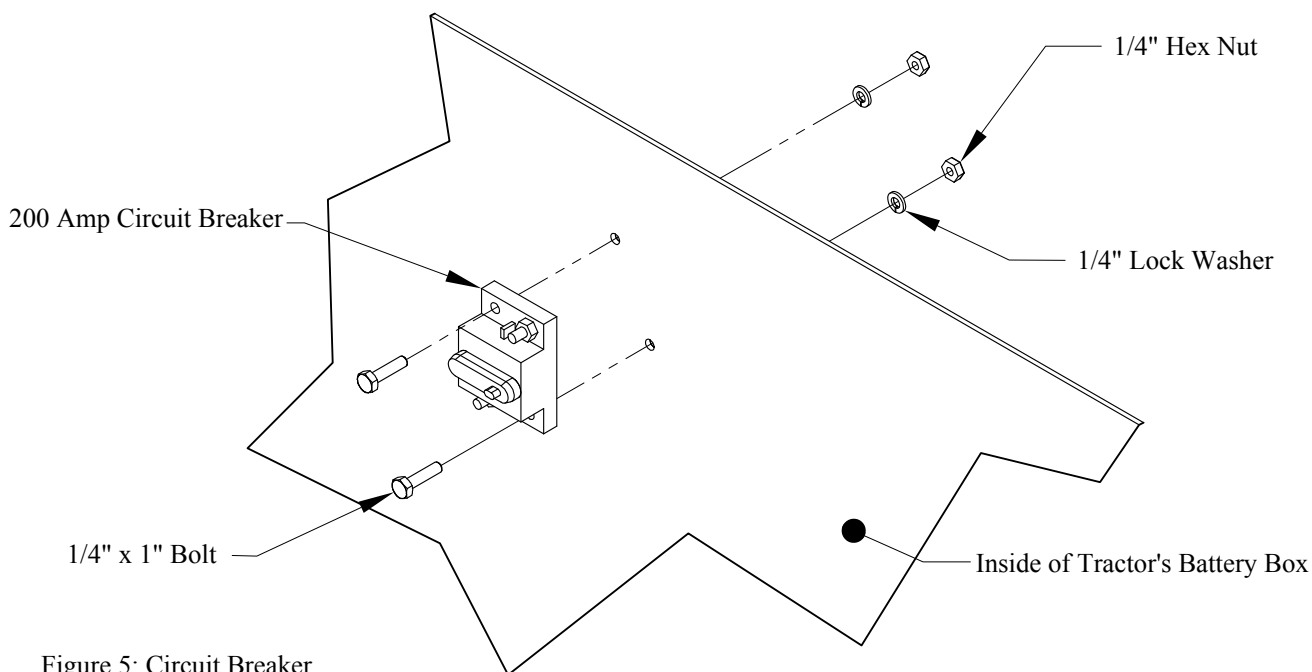


Figure 5: Circuit Breaker.

Installing the Power Cable

Note: Follow the *Tommy Gate Recommended Electrical Wiring Guidelines* when performing all procedures in this section.

Note: The Semi/Tractor Charge Line Kit is intended for 12 volt battery systems only.

1. **Verify** that the negative (-) battery cable is still disconnected from the tractor battery.
2. **Install** a copper lug on one end of the 15' positive (+) power cable.
3. **Attach** the provided positive (+) power cable to the terminal of the backside of the power socket.
4. **Route** the power cable along the tractor's frame and to the tractor's battery box.
5. **Secure** the power cable to the tractor's frame.
6. **Loosen** the two screws on the strain relief .
7. **Carefully Route** the power cable through the strain relief on the tractor's battery box.
8. **Cut** the power cable to a length required to connect to the AUX. terminal of the circuit breaker.
9. **Install** a copper lug on the end of the power cable.
10. **Connect** the power cable to the AUX. terminal of the circuit breaker.
11. **Secure** the power cable in the strain relief by tightening the two screws.
12. **Cut** the remaining positive (+) lead long enough to reach from the BAT. terminal on the circuit breaker to the tractor's positive (+) battery terminal.
13. **Install** copper lugs on each end of the power cable that was cut in the previous step.
14. **Connect** one end of the power cable to the BAT. terminal on the circuit breaker.
15. **Connect** the other end of the power cable to the tractor's positive (+) 12 volt battery terminal.
16. **Verify** the wiring of the Semi/Tractor Charge Line Kit (Figure 6).

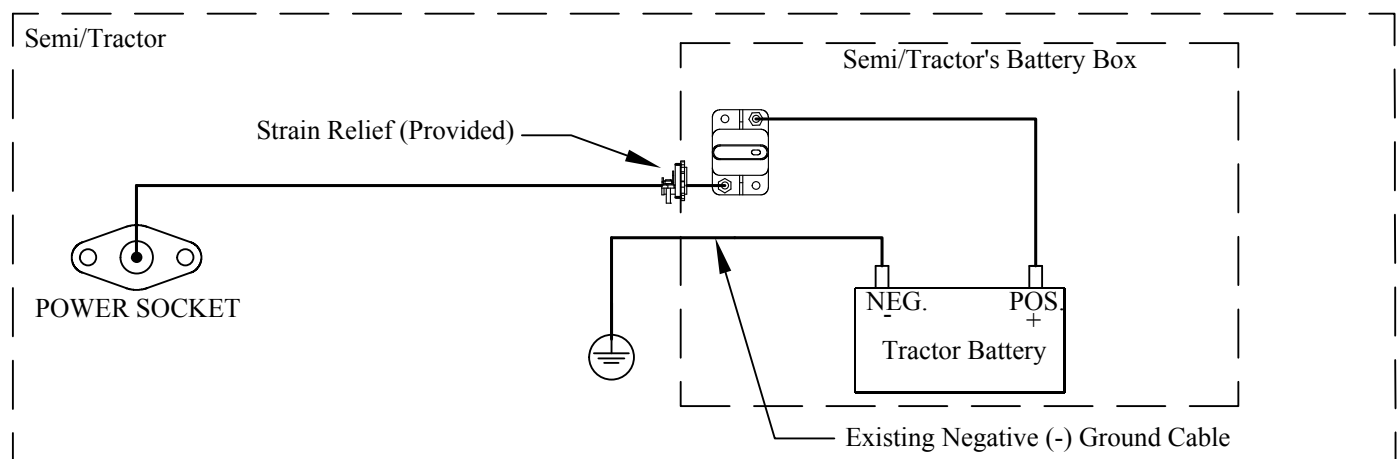


Figure 6: Semi/Tractor 12V Charge Line Wiring Diagram .

Installing the Power Cable (Continued)

17. **Reconnect** the negative (-) battery cable to the negative (-) terminal of the tractor battery.
18. **Connect** the coiled 15' single pole charge cable to the power socket on the tractor (Figure 7).
19. **Connect** the other end of the coiled 15' single pole charge cable to the power socket on the trailer (Figure 7).

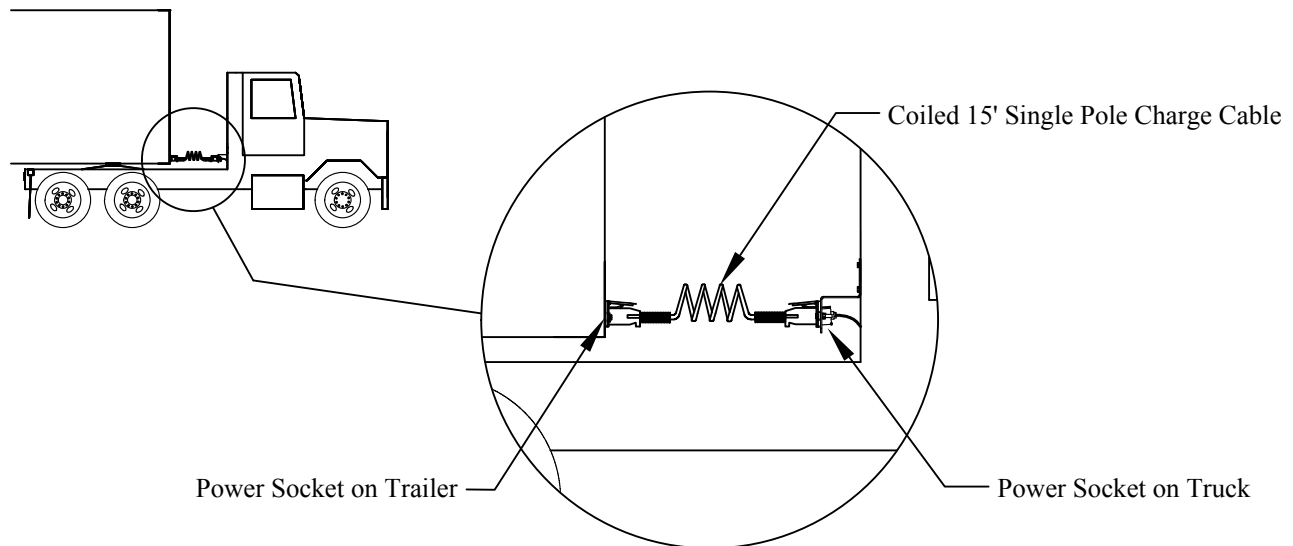


Figure 7: Single Pole Charge Line.

WIRE ROUTING

- (1) When routing wires, avoid heat (above 180°F), abrasion, vibration, metal edges, screws, and trim fasteners. If such routings are not possible, protective devices must be used. If wires must cross a metal edge, the edge should be covered with a protective shield and the wiring fastened within 3 inches on each side of the edge.
- (2) Grommets must be used where wires pass through holes in sheet metal, castings, and / or frame rails. Do not bend wires in a radius smaller than 10 times the wire diameter.
- (3) Routing wires into areas exposed to wheel wash should be avoided. If this cannot be avoided protective shields are required to protect the wires from stones, ice, salt and water damage. Provide a drip loop to prevent moisture from being conducted into switches, relays, circuit breakers, and fuses.
- (4) Wires should be supported every 18 inches with plastic zip ties or rubber-lined clips.
- (5) Wires must be routed to clear moving parts by at least 3 inches unless positively fastened or protected by a conduit. If wiring must be routed between two members where relative motion can occur, the wiring should be secured to each member, with enough wire slack to allow flexing without damage to the wire.
- (6) Maintain at least a 6 inch clearance from exhaust system components. If this is not possible, high temperature insulation and heat shields are required. Existing OEM heat shields, insulation, and wire shielding must be maintained.
- (7) Do not route or attach electrical wires to fuel lines. Route electrical wires at least 1-1/2 inches away from the engine.

BATTERY, WIRE, TERMINALS, AND CONNECTORS

- (1) Wire attachments at the battery must be protected from tension loads so there is no undue strain on the battery terminals. Wires should be routed down rather than horizontally from the terminals with no sharp bends adjacent to the connections.
- (2) Battery power for your Tommy Gate should come directly from the battery or approved connection point through the supplied circuit breaker or fuse. The circuit breaker or fuse should be installed as close to the battery as possible.
- (3) Avoid splicing power cables. If splicing is necessary, the most durable splice joint will be bare metal barrel crimped, flow-soldered and covered with adhesive lined heat shrink tubing. Strip the wire ends making sure that individual conductor strands are not damaged. Use only rosin core solder, proper crimping tools, and wire with a gauge at least equivalent to the circuit being lengthened. Do not use electrical tape.
- (4) Battery cable terminals will be bare metal barrel crimped or flow-soldered and covered with adhesive lined heat shrink tubing.
- (5) Use wire connectors with locking features such as positive locking, inertia locking, bolt together, and soft mold-over with locking external retainers.

GENERAL

- (1) All frame contact areas must be wire brushed to bare metal, free of paint, dirt, and grease. Frame connections must be made using hardened flat washers under the bolt head and lock nuts. Corrosion preventive grease or compound is to be applied to the terminal area of the frame connection.
- (2) Frame cross members are not recommended as part of the ground return.
- (3) All circuit breakers and fuses should be located in one easily serviceable location with a means provided for identification of circuit function and current rating. If possible, avoid putting circuit breakers or fuses in the vehicle cab.
- (4) Before welding to the chassis disconnect the battery. Also disconnect the power train, engine, valve, and transmission control modules.
- (5) Do not alter vehicle ignition, starting, and / or charging systems. Do not reroute engine compartment wiring.
- (6) Full copper circuitry and standardized polarity grounds are recommended.
- (7) Never increase the rating of a factory installed fuse or circuit breaker.
- (8) Disconnect the battery negative (ground) wire prior to any vehicle modification.

Following the above guidelines will provide you with years of trouble free service. Failing to incorporate the above guidelines may result in a voided warranty. Non-compliance with the guidelines above may result in a failure of electrical components, shutdown of engines, loss of backup brake systems, and the possibility of fire.