A Safe Fleet Brand

Trailer Plug Kit Installation Guide

Installation Requirements and Instructions for Trailer Plug Kit (12860 & 12760)

1 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 Roll Rite 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

2 Tools and Equipment Required for Installation

The following tools are required for the installation of a Trailer Plug Kit

- Wire Cutters of appropriate size for cutting up to 2AWG size wire
- Wire Insulation Stripping Tools appropriate for stripping wire size range from 2 to 8 AWG
- Multi-meter with DC voltage measurement capability
- Flat blade and Phillips head screwdriver
- Tie Straps
- Vehicle Chassis Wiring insulated c-clamps capable of anchoring 2 to 8 AWG wiring

3 Vehicle Battery Connection Requirements

3.1 Main Power to Roll Rite System

- The Voltage Line to Motor Reversing Relay shall be connected directly to the vehicle battery system.
- The Voltage Line shall include an in-line Roll Rite supplied manually resettable circuit breaker. The circuit breaker shall be no greater than 6 inches from the positive terminal of the vehicle battery system
- Main Power and Ground Connection through a power distribution box are forbidden

3.2 Main Ground to the Roll Rite 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
- An appropriate ring terminal or battery terminal is required to be used at the vehicle battery connection.

⚠ CAUTION

- ***Failure to properly follow all requirements may result in present or future damage to your Roll Rite Tarp System and its components.***
- ***Care must be taken to prevent contact between battery supply terminals and conductive surfaces of the chassis.***
- ***Care must be taken to ensure proper Battery Power polarity is maintained when connecting electrical power to the Roll Rite Tarp System***
- ***Care must be taken to ensure Battery Power connections meet the following:***
  - ***Connected only with the supplied fasteners to the correct torque (when specified) to prevent a loose, high-resistance connection***
  - ***Strain relieved to prevent wire torque and vibration from loosening connection***

- **Failure to comply may result in excessive heat in the connection due to high resistance**

4 Installation

Determine if your plug set is a Vertical Plug Set or a Horizontal Plug Set for reference in using the following illustrations.

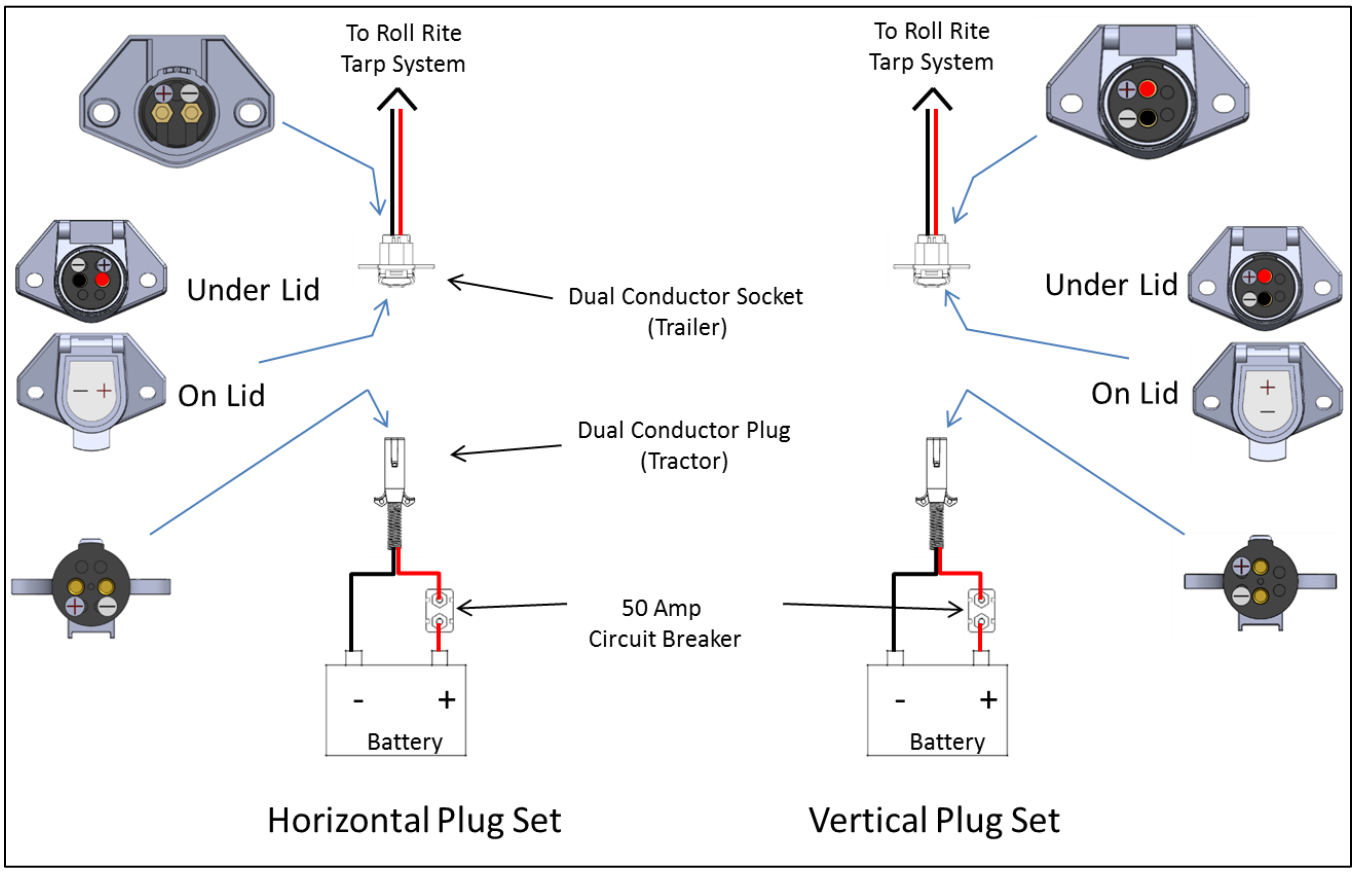


Figure 1: Plug Set Wiring Diagram

4.1 Trailer Side

- Determine a suitable location for the Dual Conductor Socket in your plug set kit.
- Route Battery Cable wiring from Roll Rite Tarp controls to Dual Conductor Socket. Take care to properly secure the wiring to prevent excessive motion do to vibration\operation.
- Strip approximately 5/8" of insulation off of both Battery Cable Power (+) and Ground (-) conductors.
- Insert stripped copper wire into appropriate socket terminal taking care to ensure correct polarity as shown in **Figure 1** and **Figure 2.**

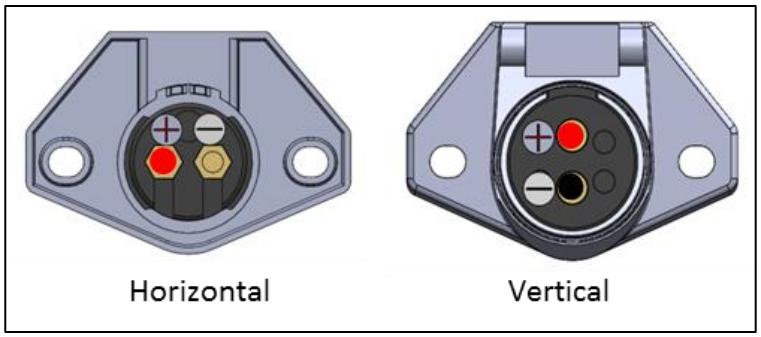


Figure 2: Dual Conductor Socket (back side)

- Pay particular attention to Plug terminal labelling to ensure Battery (+)/POS and Ground (-)/NEG are correct as shown in **Figure 3**.
- Tighten the Set Screws securely on the bare copper wire to ensure good electrical contact.

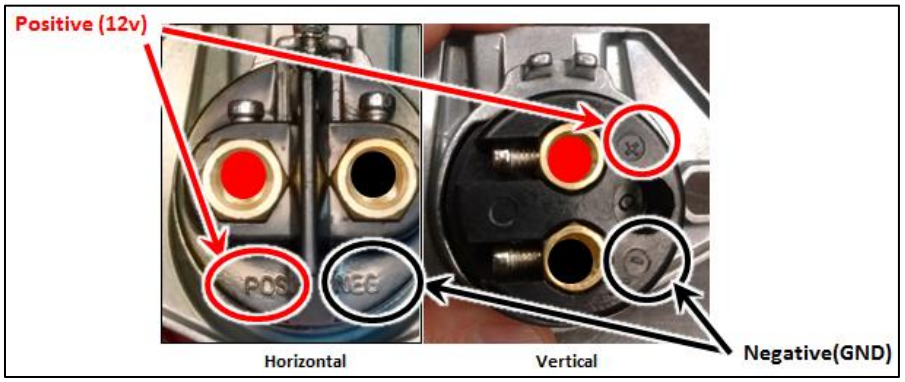


Figure 3: Dual Conductor Socket Terminal Labelling

4.2 Tractor Side

- Route Battery Power (+) wiring from the system circuit breaker and Ground (-) wiring from Battery Ground terminal to the Plug Set Socket connector according to **Figure 1**. Take care to properly secure the wiring to prevent motion do to vibration\operation. **DO NOT MAKE CONNECTIONS WITH BATTERY AT THIS TIME**
- Disassemble Dual Conductor Plug as shown in **Figure 4**.

Figure 4: Dual Conductor Plug Disassembled

- Route Battery Wiring through wound wire strain relief
- Strip approximately 5/8” of insulation off of both Battery Cable Power (+) and Ground (-) conductors.
- Insert stripped copper wire into appropriate socket terminal taking care to ensure correct polarity as shown in **Figure 1** and **Figure 5**.
- Pay particular attention to Plug terminal labelling to ensure Battery (+)/POS and Ground (-)/NEG are correct as shown in **Figure 5**.

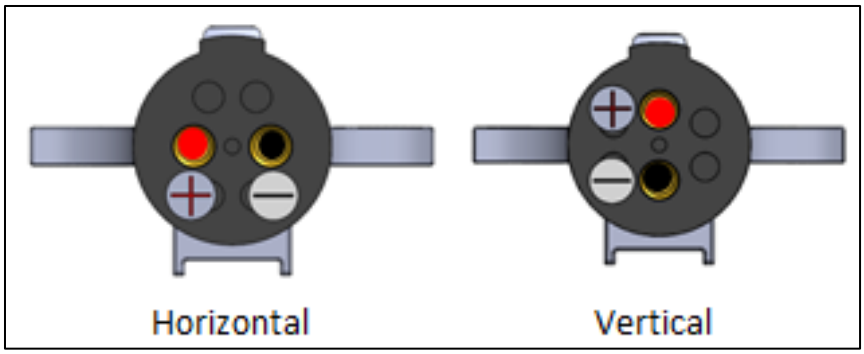


Figure 5: Dual Conductor Plug (back side)

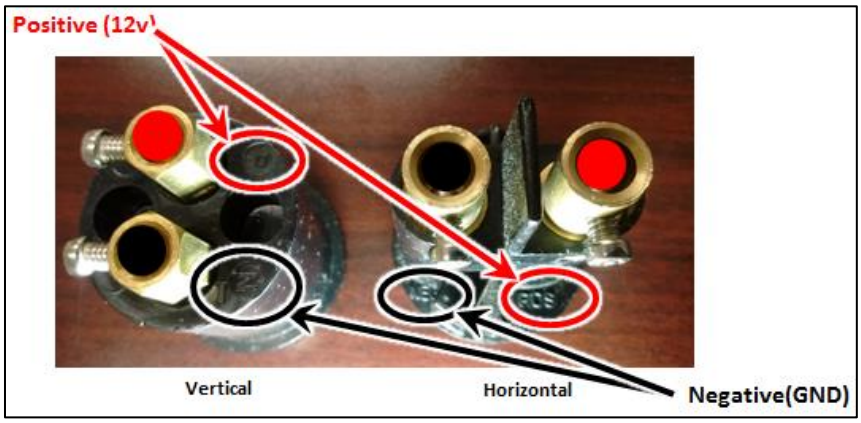


Figure 6: Dual Conductor Plug Labelling (back side)

- Re-assemble the Dual Conductor Plug. Be sure to tighten the cable clamp screw at the base of the wound wire strain relief.

5 Verify Installation

Step 1: Choose the appropriate one of the four system types shown in Figure 7.

1. Mechanical Relay with Rocker or Rotary Switch Block Diagram
2. Mechanical Relay with RF Switch
3. Solid State Relay with Rocker or Rotary Switch
4. Solid State Relay with RF Switch

Step 2: Check VOLTAGE [V] and CONTINUITY [Ω]

On the vehicle check all ***Power*** ✚ and ***Ground*** ▬ connections between vehicle battery and Motor Controller.
Use the Figure 7: System Block Diagrams as a guide, checking the wiring in the direction of left to right.
Check each wire for proper continuity **[Ohms Ω < 0.2]** when disconnected.
Check the points indicated in **1** through **4** for voltage when the wires are connected to the Battery but before making connections with the system relay controls. Take special care to ensure proper polarity for all voltage tests.

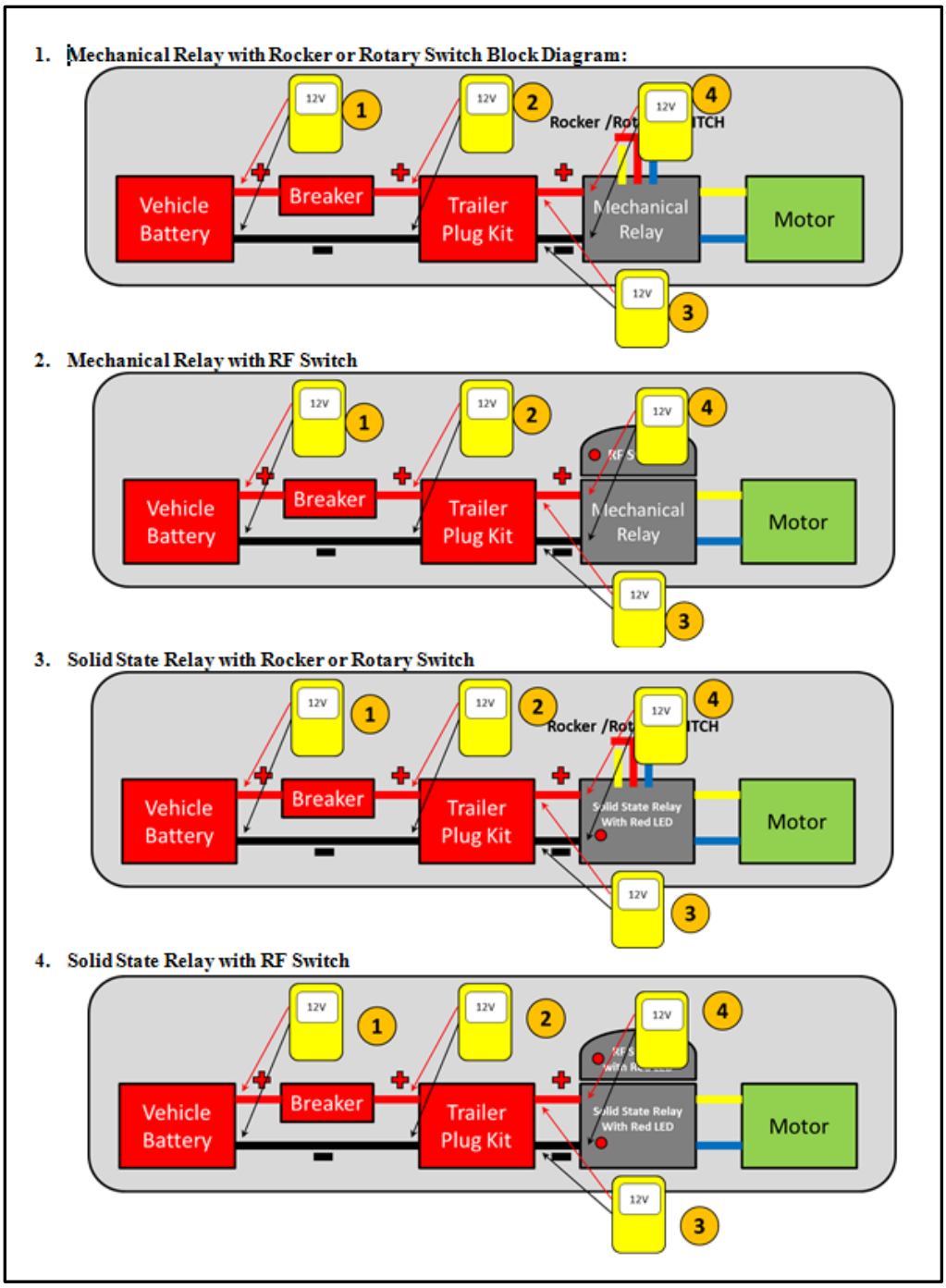
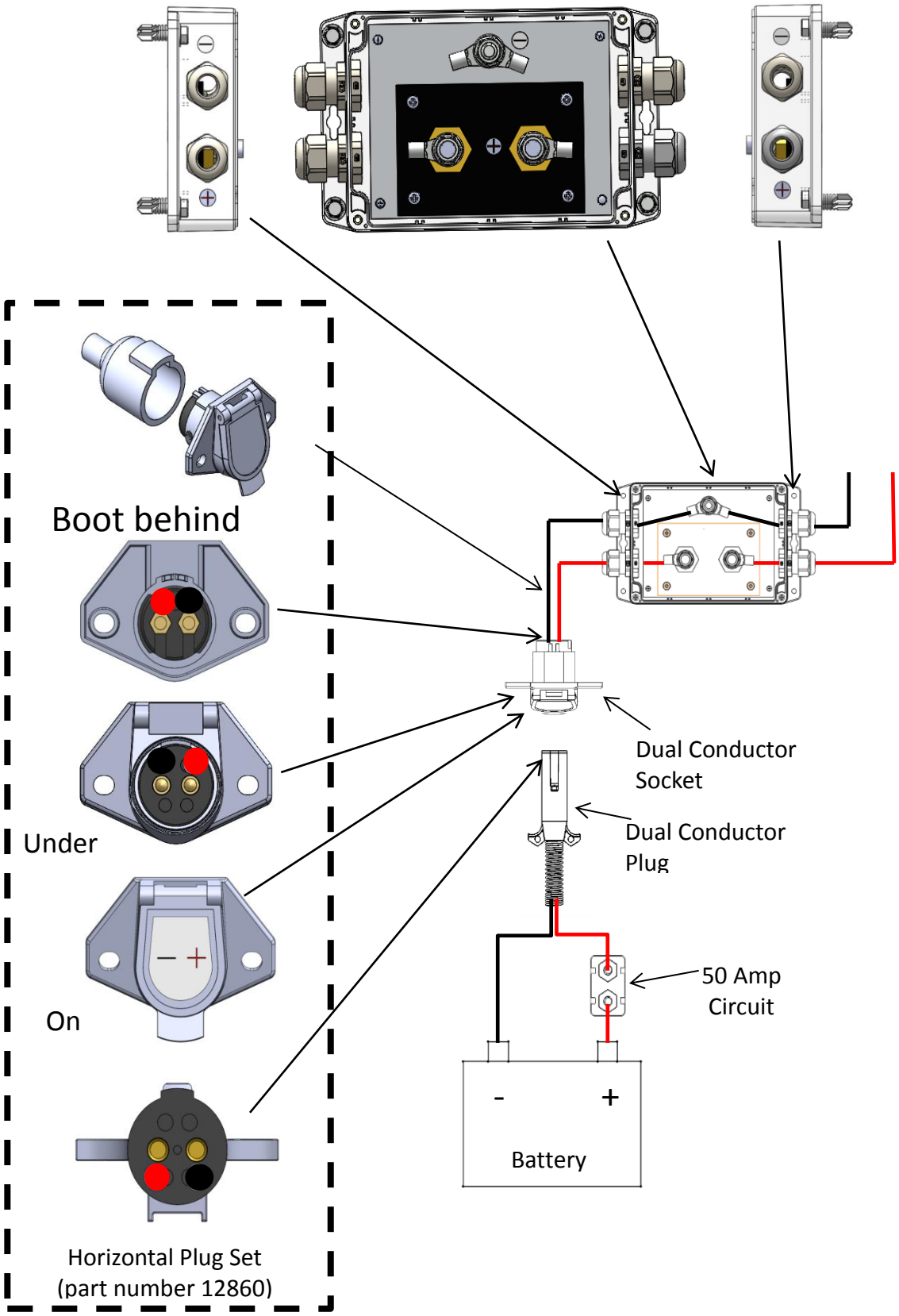


Figure 7: System Block Diagrams with Voltage Measurement Points

Tip: while moving the probe from left to right, we are checking that voltage is present through all connections. If voltage is lost at any point from 1 to 4 when moving from left to right, it should remain lost for all points to the right of the issue.

5.1 Horizontal Plug Set



5.2 Vertical Plug Set