



PATRIOT JACK SYSTEMS™
OEM INSTALLATION MANUAL

L I P P E R T
C O M P O N E N T S®

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Introduction

The Patriot Jack Systems™ are three designs for the hydraulic landing gear of gooseneck trailers, including dual jack options with either one valve or two valves and a single jack option. The system features a hydraulic power unit mounted vertically on the roadside jack. Refer to jack rating for system lifting capacity and stroke length. Hoses and pendant switches are provided with the landing gear kit.

WARNING

The “WARNING” symbol above is a sign that an installation procedure has a safety risk involved and may cause death, serious personal injury or severe product or property damage if not performed safely and within the parameters set forth in this manual.

WARNING

Make sure the trailer is properly supported before performing any maintenance or repair work. Follow the trailer manufacturer's recommendations for lifting and supporting the trailer. Failure to do so may result in death or serious injury.

CAUTION

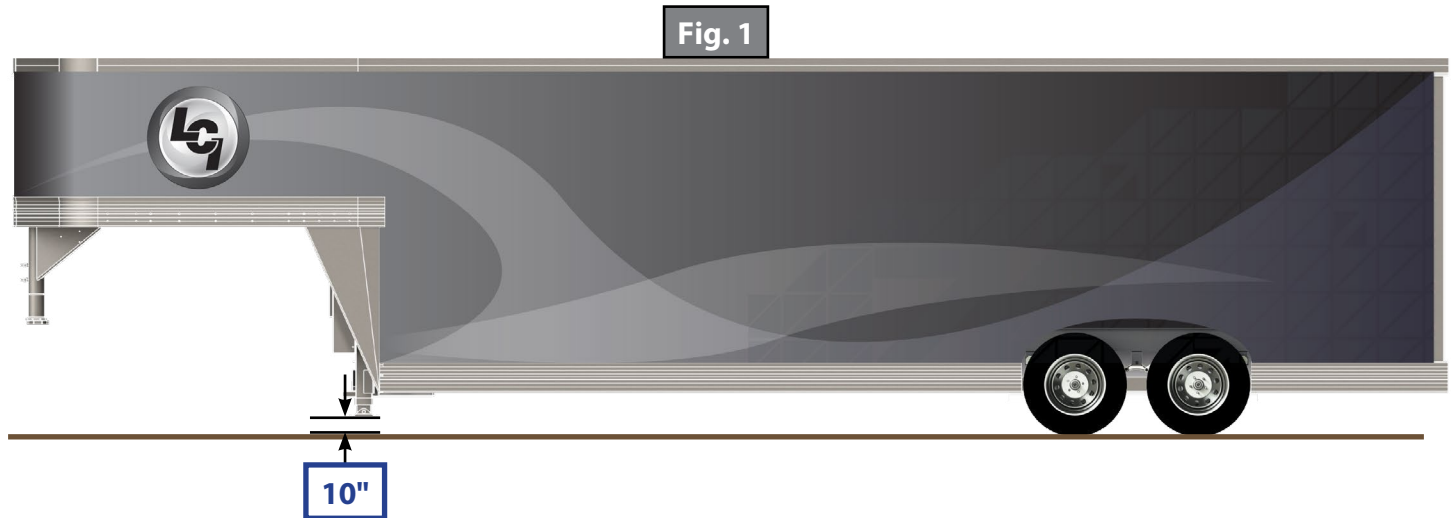
Moving parts can pinch, crush or cut. Keep clear and use caution.

Resources Required

- Cordless or electric drill or screw gun
- 5/32" hex wrench
- Appropriate drive bits
- #8 self-drilling screws
- 1/2" - 20 x 1 1/2" Grade 5 or Grade 8 bolts
- 1/2" - 20 nuts
- 1/2" drive socket or wrench
- Torque wrench
- Battery cable 4 AWG minimum
- 50A to 100A in-line circuit protection
- Battery ground wire
- Automatic transmission fluid Dexron III®

Jack, Switch Installation

NOTE: There must be a minimum of 10" of clearance from the bottom of the footpads to the ground (Fig. 1).



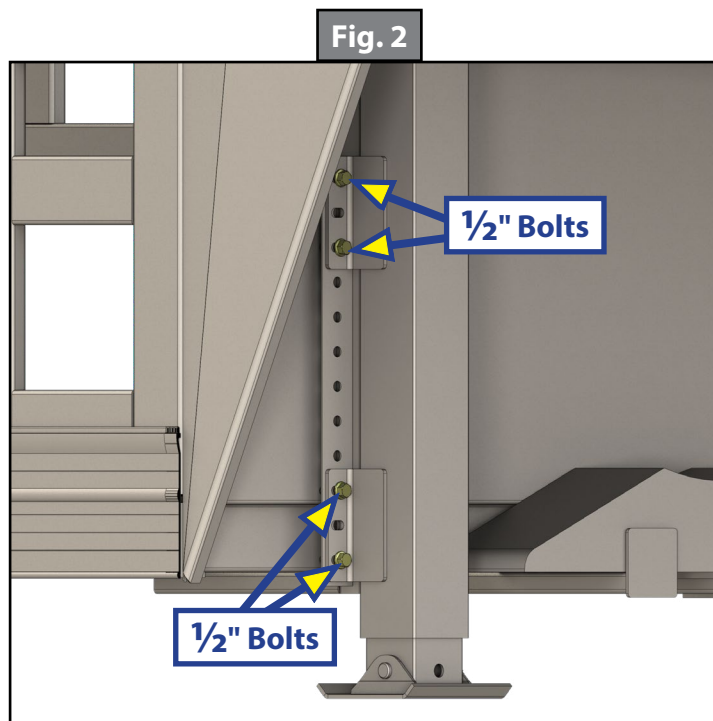
1. Using $\frac{1}{2}$ " - 20 bolts and nuts, attach jacks to mounting brackets on the trailer (Fig.2).

NOTE: LCI recommends a minimum of eight bolts to secure each jack. Four bolts must be used to attach the top brackets, including two on each side of the jack, and a minimum of four bolts are to be used to attach the bottom brackets, including two on each side of the jack. Bolts should be no less than Grade 5 per SAE J429.

2. Torque the bolts to 52-64 ft-lbs if using Grade 5 bolts or 80-90 ft-lbs if using Grade 8 bolts.
3. Determine location for attaching pendant switch to trailer.

NOTE: Switch location should be separate from heat sources and prevent chafing of the harness but remain convenient for the user.

4. Using #8 self-drilling fasteners, attach switch to trailer.

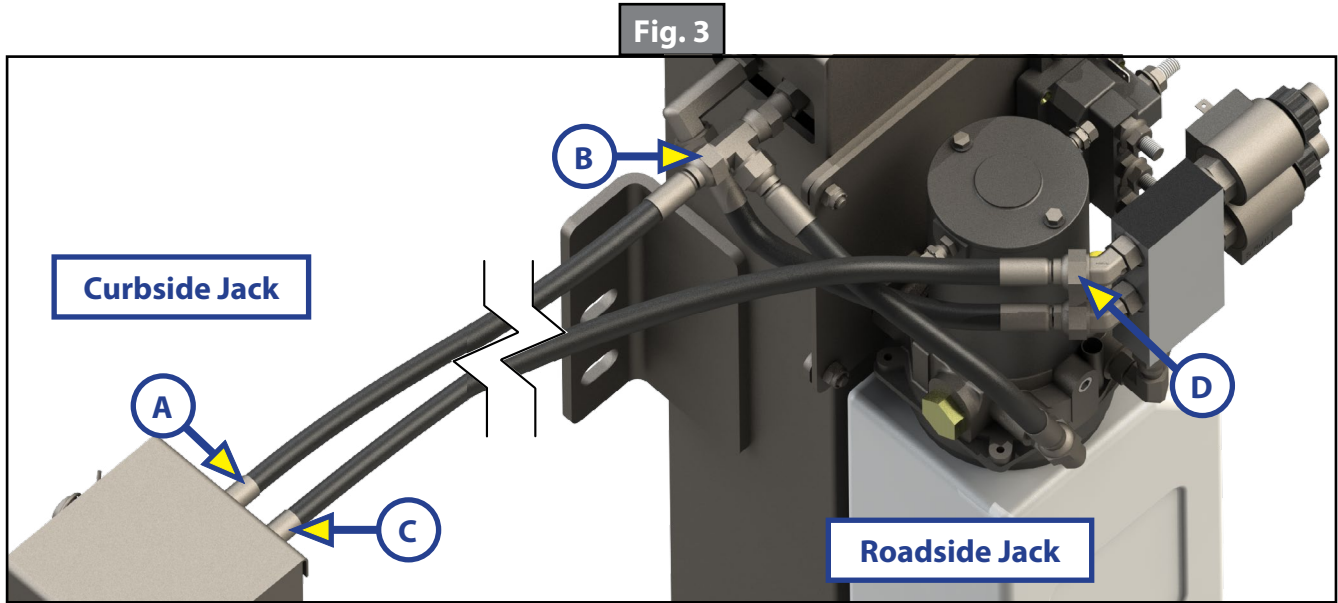


Dual Jack Two-Valve System

Connect Hoses

1. Attach curbside jack's retract hose from the back port (port closest to the frame) (Fig. 3A) to the retract tee fitting on the roadside jack (Fig. 3B).
2. Attach extend hose from the front port on the curbside jack (Fig. 3C) to the extend port on the hydraulic power unit (Fig. 3D).

NOTE: The lengths of the hoses have been shortened and the chassis removed from images for clarity.

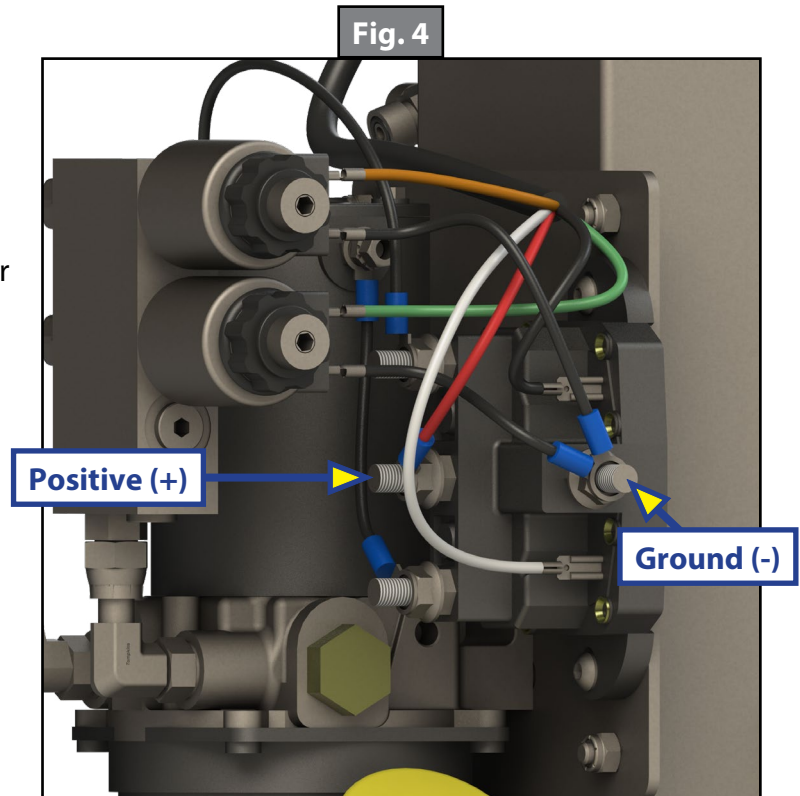


Electrical Connections

NOTE: Minimum wire size is 4 AWG to connect hydraulic power unit to the battery.

NOTE: OEM-supplied in-line circuit protection of 50A - 100A shall be placed between the power supply and the hydraulic power unit. OEM to determine maximum electrical load for circuit protection range, since electrical loads can vary by application. The 10A fuse included in the red wire for the pendant switch only protects the switch. All wiring to conform to RVIA standards.

1. Connect the ground post on the dual polarity solenoid to the negative terminal on the battery (Fig 4).
2. Mount the circuit protection to be placed in line with the power source.
3. Connect hydraulic power unit's positive post (Fig. 4) to the circuit protection, and then connect the battery's positive terminal to the circuit protection.



⚠ CAUTION

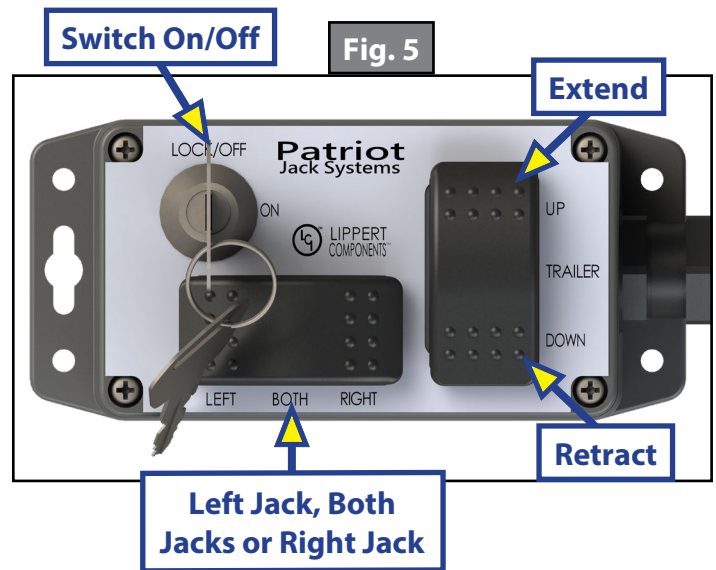
The hydraulic power unit must be filled with automatic transmission fluid prior to operation. See Adding Fluid, Purging Air from System and Fluid Recommendation sections in this manual.

Before operating the jacks, unlock the pendant switch to activate it. (Fig. 5).

NOTE: The jacks can be operated independently or simultaneously.

NOTE: The switch key should always be returned to the LOCK/OFF position after operating the jacks and while towing the trailer.

1. Using the horizontal portion of the pendant switch, press the right side to operate the right jack (curbside); press the left side to operate the left jack (roadside); return the switch to the neutral position to operate both jacks (Fig. 5).
2. Press the vertical rocker switch to extend the jack(s) (TRAILER UP) or retract the jack(s) (TRAILER DOWN) (Fig. 5).
3. Release the switch when either the trailer is level or stabilized or the jacks have been completely retracted.
4. Turn the key to the LOCK/OFF position.

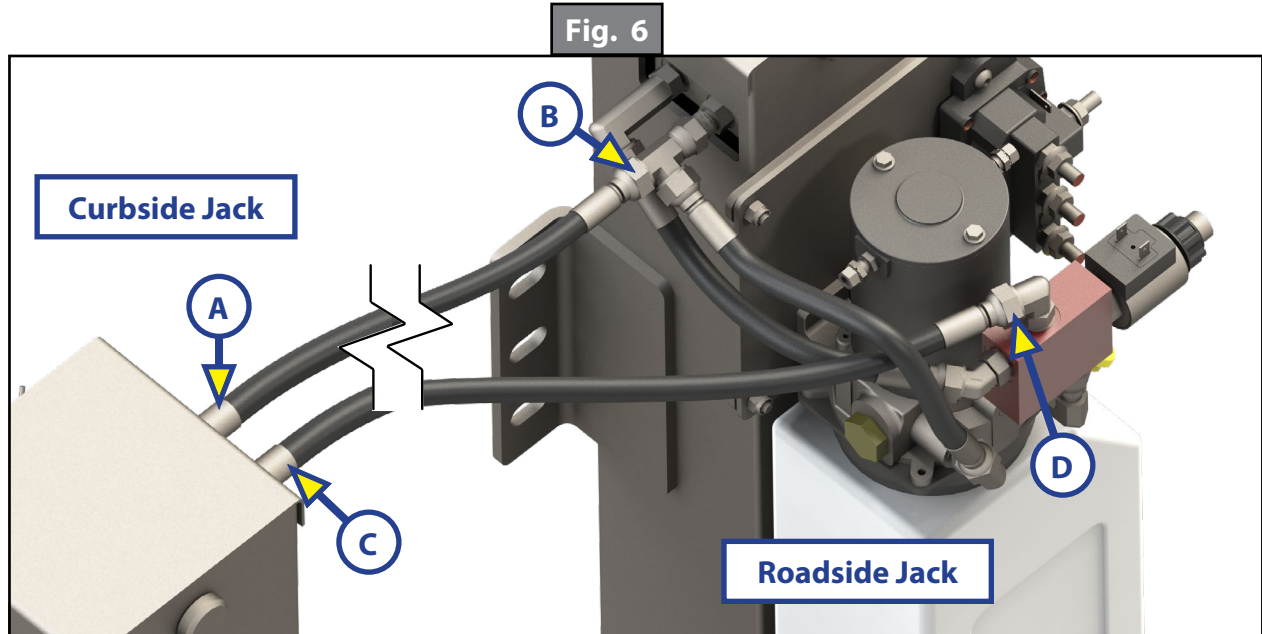


Dual Jack One-Valve System

Connect Hoses

1. Attach curbside jack's retract hose from the back port (port closest to the frame) (Fig. 6A) to the retract tee fitting on the roadside jack (Fig. 6B).
2. Attach extend hose from the front port on the curbside jack (Fig. 6C) to the extend port on the hydraulic power unit (Fig. 6D).

NOTE: The lengths of the hoses have been shortened and the chassis removed from the image for clarity.

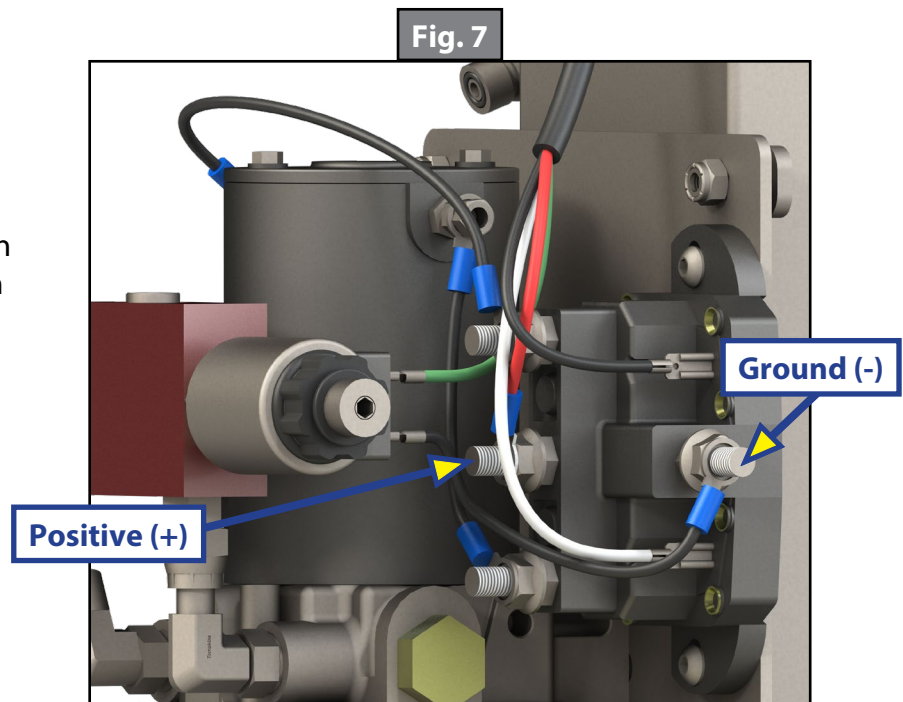


Electrical Connections

NOTE: Minimum wire size is 4 AWG to connect hydraulic power unit to the battery.

NOTE: OEM-supplied in-line circuit protection of 50A - 100A shall be placed between the power supply and the hydraulic power unit. OEM to determine maximum electrical load for circuit protection range, since electrical loads can vary by application. The 10A fuse included in the red wire for the pendant switch only protects the switch. All wiring to conform to RVIA standards.

1. Connect the ground post on the dual polarity solenoid to the negative terminal on the battery (Fig. 7).
2. Mount the circuit protection to be placed in line with the power source.
3. Connect hydraulic power unit's positive post (Fig. 7) to the circuit protection, and then connect the battery's positive terminal to the circuit protection.



Operation of One-Valve System

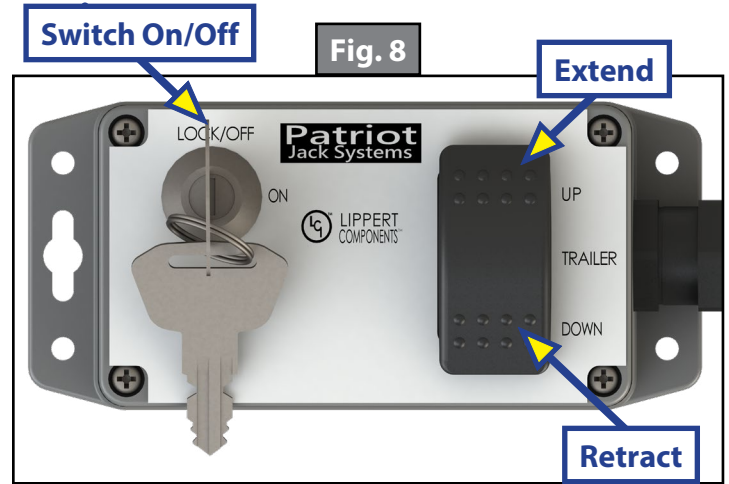
⚠ CAUTION

The hydraulic power unit must be filled with automatic transmission fluid prior to operation. See Adding Fluid, Purging Air From System and Fluid Recommendation sections in this manual.

Before operating the jacks, unlock the pendant switch to activate it. (Fig. 8).

NOTE: The switch key should always be returned to the LOCK/OFF position after operating the jacks and while towing the trailer.

1. Press the rocker switch to extend the jacks (TRAILER UP) or retract the jacks (TRAILER DOWN) (Fig. 8).
2. Release the switch when either the trailer is level or stabilized or the jacks have been completely retracted.
3. Turn the key to the LOCK/OFF position.



Single Jack System

Hoses Installed

1. The single jack option has all hoses installed (Fig. 9).

Electrical Connections

NOTE: Minimum wire size is 4 AWG to connect hydraulic power unit to the battery.

NOTE: OEM-supplied in-line circuit protection of 50A - 100A shall be placed between the power supply and the hydraulic power unit. OEM to determine maximum electrical load for circuit protection range, since electrical loads can vary by application. The 10A fuse included in the red wire for the pendant switch only protects the switch. All wiring to conform to RVIA standards.

1. Connect the ground post on the dual polarity solenoid to the negative terminal on the battery (Fig. 10).
2. Mount the circuit protection to be placed in line with the power source.
3. Connect hydraulic power unit's positive post (Fig. 10) to the circuit protection, and then connect the battery's positive terminal to the circuit protection.

Fig. 9

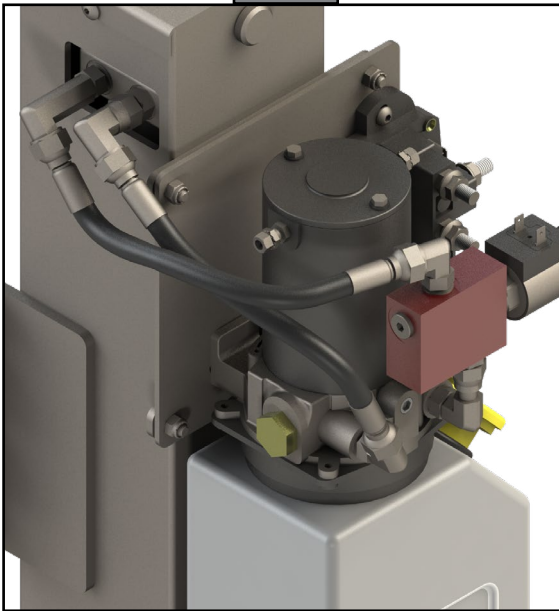
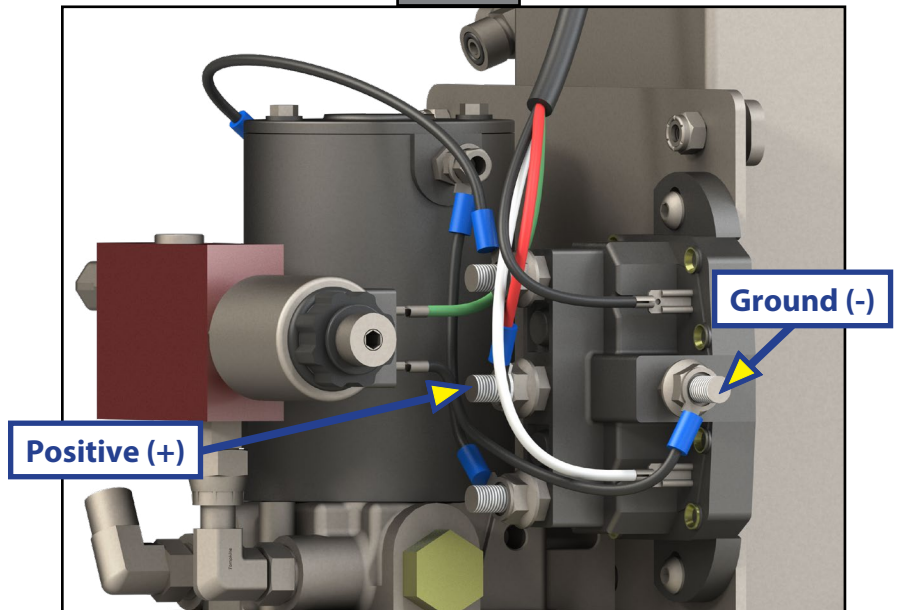


Fig. 10



Operation of One-Valve System

⚠ CAUTION

The hydraulic power unit must be filled with automatic transmission fluid prior to operation. See Adding Fluid, Purging Air from System and Fluid Recommendation sections.

Before operating the jack, unlock the pendant switch to activate it. (Fig. 11).

NOTE: The switch key should always be returned to the LOCK/OFF position after operating the jack and while towing the trailer.

1. Press the rocker switch to extend the jack (TRAILER UP) or retract the jack (TRAILER DOWN) (Fig. 11).
2. Release the switch when either the trailer is level or stabilized or the jack has been completely retracted.
3. Return the key to the LOCK/OFF position.

Switch On/Off

Fig. 11



Adding Fluid, Purging Air From System

NOTE: The hydraulic power unit is shipped with the reservoir dry.

1. Remove motor cover to gain access to the hydraulic reservoir. See Manual Override section for instructions on removal of motor cover.

NOTE: Make sure all hydraulic components are in the fully retracted position, i.e. the trailer is ready for travel. This prevents overfilling the reservoir.

2. Remove the reservoir fill cap.
3. Fill the reservoir to the fill line at the top of the reservoir and replace fill cap.
4. Begin cycling the hydraulic system. Extend jacks until the footpads touch the ground, and then immediately fully retract the jacks.
5. Check fluid level.

NOTE: When checking the fluid level after the hydraulic components are retracted, note if there are any bubbles, froth or foam on top of the fluid. This is an indication that air has been pushed back to the reservoir when the hydraulic components were retracted. Wait 15-20 minutes for the foam to dissipate before beginning the purge process again.

6. If there is no froth or foam in the reservoir and the fluid is not to the fill line, fill the reservoir to the fill line at the top of the reservoir.
7. With the fluid level full and no foam in the reservoir, continue cycling the hydraulic system.
8. Check the reservoir for foam. If foam is present, see **NOTE** after step 5 and then repeat steps 6 and 7.
9. Repeat these steps until no foam is present in the reservoir. If no foam is present, the system is purged of air.
10. Replace reservoir fill cap and reinstall motor cover.

Fluid Recommendation

Type "A" automatic transmission Fluid (ATF) is to be utilized. Lippert Components, Inc. recommends ATF with Dexron III® or Mercon V® or a blend of both.

For a list of approved fluid specifications, see [TI-188](#). Or go to <https://www.lci1.com/stabilization/support-patriot-jack-systems>, click on the Technical Information Sheets tab and then select *TI - 188: Hydraulic Operation Fluid Recommendation* from the listed documents.

NOTE: In colder temperatures less than 10° F, the landing gear may extend and retract slowly due to the fluid's molecular nature. For cold weather operation, fluid specifically formulated for low temperatures may be desirable.

Manual Override for Two-Valve System

In the event of electrical or system failure, the jacks can be operated manually. Unhook the hydraulic power unit motor from the power source prior to attempting the manual override procedure.

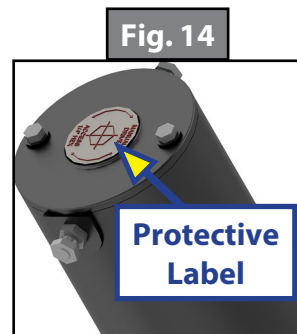
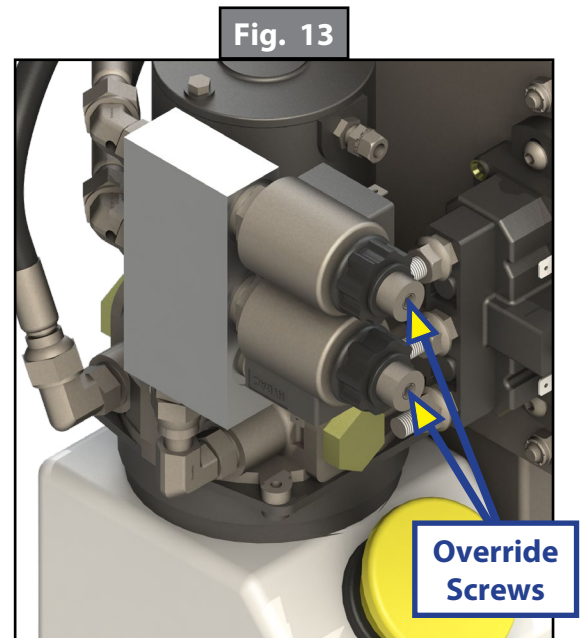
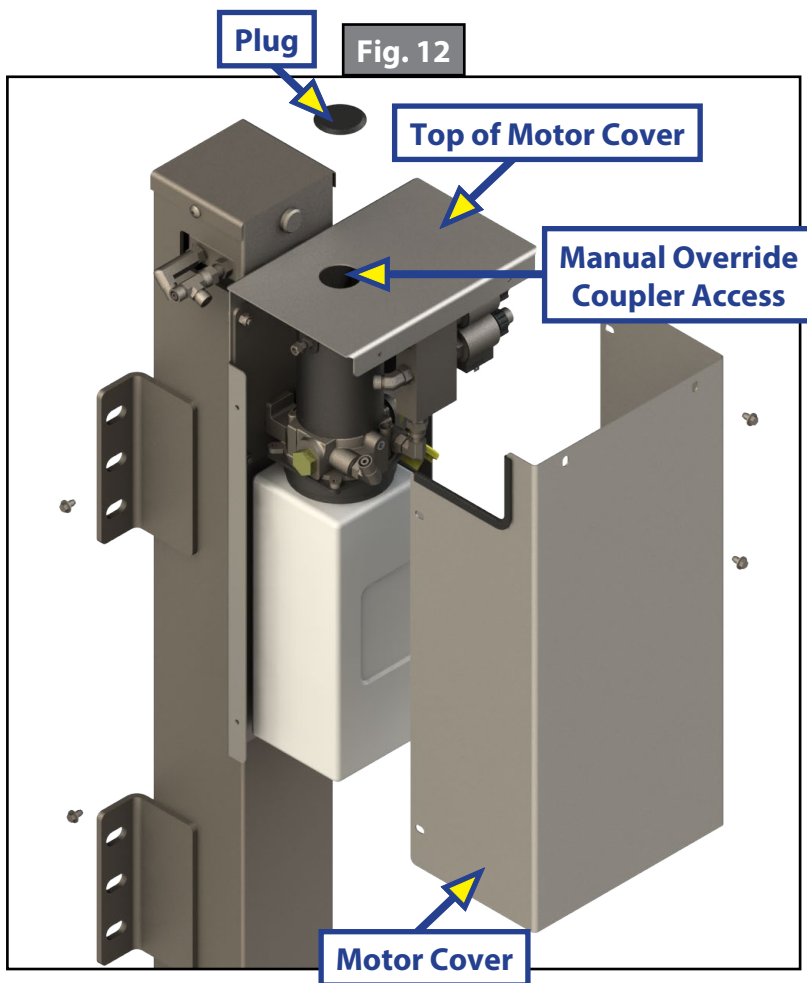
1. Remove six screws around the perimeter of the motor cover and remove cover (Fig. 12).
2. Using a 5/32" hex wrench, open the valve(s) by turning the manual override screw(s) clockwise until it stops (Fig. 13).

NOTE: With the two-valve system, the jacks can be independently extended or retracted. To manually extend or retract the curbside (right) jack, open the top valve. To manually extend or retract the roadside (left) jack, open the bottom valve. To manually operate both jacks simultaneously, open both top and bottom valves.

3. Remove plug from top of motor cover (Fig. 12).
4. Remove protective label from power unit to reveal the manual override coupler (Fig. 14).

NOTE: Top of motor cover and wiring removed for clarity in Figs. 13, 14 and 15.

5. Using a drill with a 1/4" hex bit, insert the hex bit into the manual override coupler (Fig. 15).
 - A. Run the drill clockwise to retract the jacks.
 - B. Run the drill counterclockwise to extend the jacks.
6. After extending or retracting the jacks, make sure to turn the override screw(s) counterclockwise until it stops.
7. Reinstall motor cover and plug.



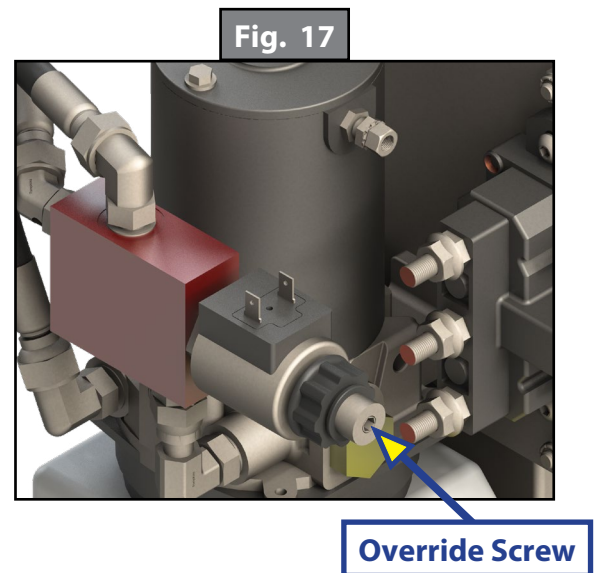
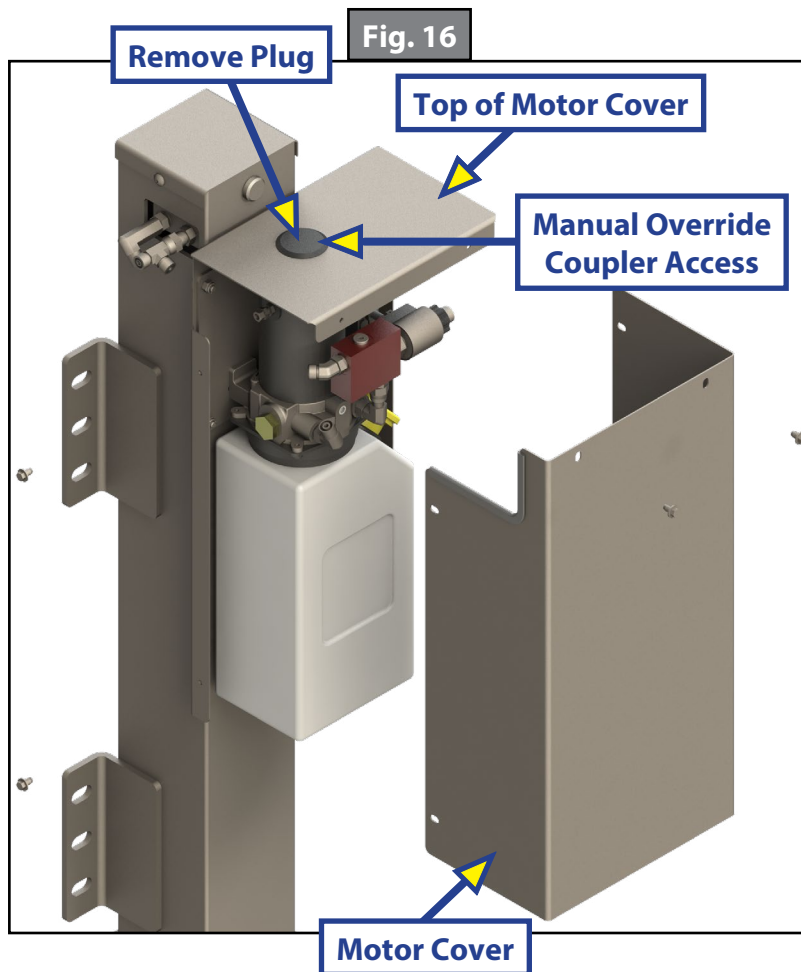
Manual Override for One-Valve Systems

In the event of electrical or system failure, the jacks can be operated manually. Unhook the hydraulic power unit motor from the power source prior to attempting the manual override procedure.

1. Remove six screws around the perimeter of the motor cover and remove cover (Fig. 16).
2. Using a 5/32" hex wrench, open the valve by turning the manual override screw clockwise until it stops (Fig. 17).
3. Remove plug from top of motor cover (Fig. 16).
4. Remove protective label from power unit to reveal the manual override coupler (Fig. 18).

NOTE: Top of motor cover and wiring removed for clarity in Figs. 17, 18 and 19.

5. Using a drill with a 1/4" hex bit, insert the hex bit into the manual override coupler (Fig. 19).
 - A. Run the drill clockwise to retract the jack(s).
 - B. Run the drill counterclockwise to extend the jack(s).
6. After extending or retracting the jack(s), make sure to turn the override screw counterclockwise until it stops.
7. Reinstall motor cover and plug.





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