



PATRIOT JACK
SYSTEMS™ LEVELING
OWNER'S MANUAL

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System Information

The Patriot Jack Systems Leveling includes six points of contact utilizing jacks and a multi-valve system. A 12V DC electric motor drives a hydraulic pump that moves fluid through a system of hoses, fittings and jacks to level and stabilize the trailer. Mechanical portions of the leveling system are replaceable. Contact Lippert Components, Inc. to obtain replacement parts.

Additional information about this product can be obtained from [lci1.com/support](https://support.lci1.com/support) or by downloading the free myLCI app. The app is available on iTunes® for iPhone® and iPad® and also on Google Play™ for Android™ users.

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For information on the assembly or individual components of this product, please visit:
<https://support.lci1.com/patriot-jack-leveling-systems>.

Component Description

1. Jacks
 - A. Aluminum leveling jacks, 8K capacity; landing gear, 14K capacity
 - B. Standard 9-inch diameter (63.5 square inch) footpads on a ball swivel for maximum surface contact on all surfaces
2. Motor/Pump Assembly
 - A. Motor, 12V DC
 - B. Hydraulic fluid reservoir, 1.75 gallon capacity
 - C. Solenoid
3. Control valve manifold
4. System Controls
 - A. Touchpad can be operated in manual mode or fully automatic mode
 - B. Pendant switch to independently operate landing gear
 - C. Sensors to detect when trailer is level
5. Fittings and Hoses
 - A. Fittings - High pressure O-Ring Face or JIC - Size 4
 - B. Hose - $\frac{1}{4}$ " I.D., 3000 psi - W.P. Rated

Safety

Please read and study the manual before operating the leveling system. Adhere to all safety labels. This manual provides general instructions. Many variables can change the circumstances of the instructions, i.e., the degree of difficulty, operation and ability of the individual performing the instructions. This manual cannot begin to plot out instructions for every possibility, but provides the general instructions, as necessary, for effectively interfacing with the device, product or system. Failure to correctly follow the provided instructions may result in death, serious personal injury, severe product and/or property damage, including voiding of the LCI limited warranty.

The use of the Lippert Components, Inc. Patriot Jack Systems Leveling to support the trailer for any reason other than which it is intended is prohibited by the Lippert Limited Warranty. The system is designed as a leveling system only and should not be used for any reason to provide service under the trailer, e.g. changing tires or servicing the leveling system.

Lippert Components, Inc. recommends that a trained professional be employed to change the tires on the trailer. Any attempts to change tires or perform other service while the trailer is supported by the leveling system could result in damage to the trailer and/or cause serious injury or death.

⚠ WARNING

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

⚠ WARNING

Failure to follow instructions provided in this manual may result in death, serious personal injury and/or severe product and/or property damage, including voiding of the component warranty.

⚠ WARNING

The trailer **MUST** be supported per manufacturer's recommendations before working underneath. Failure to do so may result in death or serious personal injury, severe product and/or property damage, including voiding of the LCI limited warranty.

⚠ CAUTION

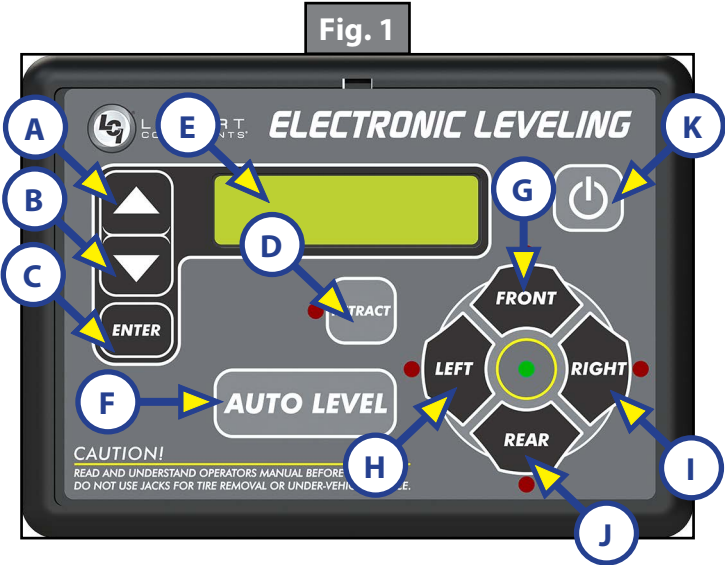
The "CAUTION" symbol above is a sign that a procedure has a safety risk involved and may cause personal injury, product or property damage if not performed safely and within parameters set forth in this manual.

⚠ CAUTION

Always wear eye protection when performing service, maintenance or installation procedures. Other safety equipment to consider would be hearing protection, gloves and possibly a full face shield, depending on the nature of the task.

⚠ CAUTION

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



Callout	Description
A	Up Arrow - Scrolls up through the menu on LCD.
B	Down Arrow - Scrolls down through the menu on LCD.
C	ENTER - Activates modes and procedures indicated on LCD.
D	RETRACT - Places leveling system into retract mode.
E	LCD Display - Displays procedures and results.
F	AUTO LEVEL - Places leveling system into auto level mode.
G	FRONT Button - Activates both front jacks.
H	LEFT Button - Activates left leveling jack(s) in manual mode.
I	RIGHT Button - Activates right leveling jack(s) in manual mode.
J	REAR Button - Activates leveling jacks in manual mode.
K	Power Button - Turns leveling system on and off.

Prior to Operation

The leveling system shall only be operated under the following conditions:

- 1. The trailer is parked on a reasonably level surface.



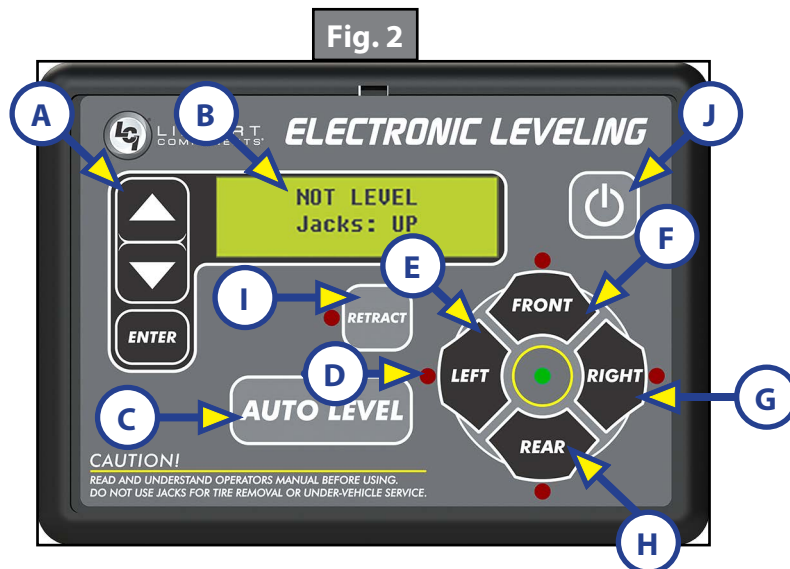
Moving parts can pinch, crush or cut. Keep clear and use caution.

- 2. Make sure all people, pets and property are clear of the trailer while the leveling system is in operation.
- 3. Make sure the battery of the trailer is fully charged prior to attempting to operate the system. The automatic leveling system requires a minimum of 12V DC for operation.

Operation

Basic Jack Operation

1. Landing Gear
 - A. Landing gear can be operated any time the system is on, but not in AUTO MODE. Press the FRONT button (Fig. 1G), so that both the front jacks or landing gear can be extended.
 - B. If the touchpad is put in the RETRACT mode, indicated by the orange illuminated LED next to the RETRACT button (Fig. 1D), the landing gear can be retracted together by pressing the FRONT button.
 - C. The pendant switch can also be used to independently extend and retract the landing gear. See Pendant Switch section.
 2. Leveling Jacks
 - A. The leveling jacks operate when AUTO mode is activated or the touchpad is in MANUAL mode. Once the system is in MANUAL mode, press the REAR button (Fig. 1H) to extend all leveling jacks at the same time.
- NOTE:** MANUAL and AUTO modes can be selected through the LCD menu by using the Up Arrow (UP) and Down Arrow (DOWN) buttons (Fig. 1A or Fig. 1B), then pressing ENTER to select the desired mode.
- B. Press the LEFT or RIGHT buttons (Fig. 1H or 1I) to operate leveling jacks on the left (roadside) or right (curbside) of the trailer.



Unhitching Instructions

Prior to unhitching from tow vehicle, make sure trailer is parked on a level surface and the tires are chocked.

1. Press Power button (Fig. 2J) to turn system on. The LCD screen lights up.
2. The LCD will display NOT LEVEL Jacks: UP (Fig. 2B).

NOTE: Orange arrow lights (Fig. 2D) may come on indicating the current disposition of the trailer.

3. Disconnect any wires or chains that may be located between the tow vehicle and the trailer.
4. Press FRONT button (Fig. 2F) to extend landing gear to lift front of the trailer to take the weight of the trailer off the hitch.
5. Uncouple the connection on the tow vehicle.
6. Pull away the tow vehicle and park it at a safe distance.

Auto Level

1. After unhitching from tow vehicle, press AUTO LEVEL (Fig. 2C).

NOTE: Pressing any button during an automatic sequence will stop the sequence and a "Function

Aborted" error code will occur. Press ENTER to clear the code and then continue the operation or start a new operation.

NOTE: For the hitch recognition feature to function, the auto-level sequence **MUST** be started with the front of the trailer above level.

2. Front landing gear will retract, lowering the front of the trailer below level, stopping, then lifting the front end to level the trailer front-to-back.
3. The left side leveling jacks extend and raise the roadside of the trailer.
4. The right side leveling jacks extend and raises the curbside of the trailer, beginning side-to-side leveling.
5. The front landing gear extend to complete the leveling cycle.
6. Additional left-to-right or front-to-back leveling may occur, if the controller deems necessary.

NOTE: If the auto-level sequence does not happen as stated above, check to ensure manual function works properly in all zones.

Reconnecting to Tow Vehicle (Hitch Recognition)

1. Turn on touchpad.
2. Press the LEFT and RIGHT buttons simultaneously (Fig. 2E and 2G).
3. The front of the trailer will raise to the height where the auto-level sequence was started.

NOTE: If the auto-level sequence was started with the front of the trailer in a below-level condition, the hitch recognition will not function and the LCD will display "Feature Disabled." For hitch recognition to function, the auto-level sequence must be started with the front of the trailer above level.

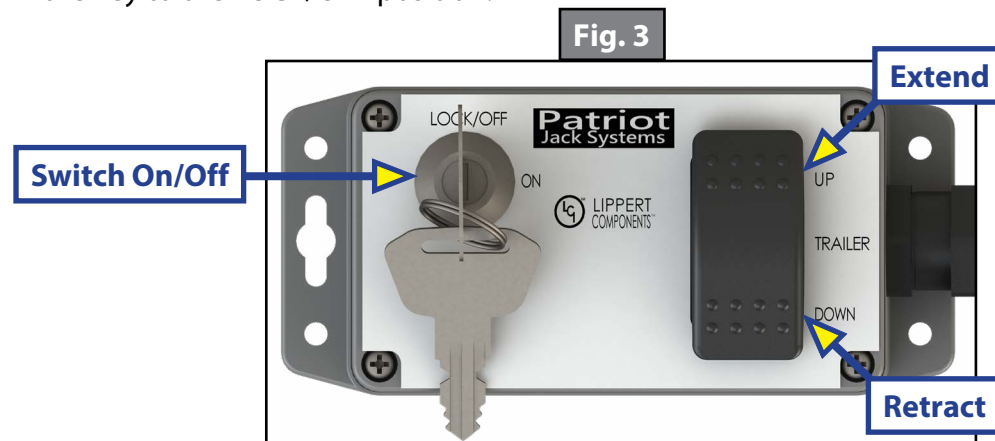
4. Connect tow vehicle and make sure trailer and hitch are connected and locked.
5. Connect any wires or chains that may be equipped between the tow vehicle and the trailer.
6. Press Up Arrow (Fig. 2G) until AUTO RETRACT appears in LCD screen.
7. Press ENTER.
8. System will immediately retract all jacks.

Pendant Switch

The front landing gear can be operated independently by utilizing the pendant switch installed on the front of the trailer. Before operating the landing gear, activate the pendant switch by turning it to the ON position (Fig. 3).

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

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



Troubleshooting

Error Codes

WARNING

Make sure the trailer is supported at both front and rear with jack stands and in accordance with the manufacturer's recommendations to properly support the trailer before performing any service to trailer. Failure to do so may result in death, serious personal injury, severe product and/or property damage.

After working to resolve the issue that led to an error code, press ENTER on the touchpad. If the error is still present, the message will be displayed again. If resolved, the error message will clear.

Error Code Chart		
LCD Display	What Is Happening?	What Should Be Done?
Excess Angle	Controller not properly secured.	Check and secure controller placement.
	Excessive angle reached during auto operation.	Relocate the trailer.
Excessive Angle	Controller not properly secured.	Check and secure controller placement.
	Excessive angle reached during manual operation.	Stop manual operation and reset jacks to a more level state. The code will self clear; there is no need to hit ENTER.
		Relocate the trailer.
Feature Disabled	Front of trailer below level when starting auto level process but only when initiating Hitch Recognition feature.	Push the FRONT button to raise the trailer up to hitch height and connect to tow vehicle.
	Hitch recognition not set.	Set hitch angle.
	Zero Point not set.	Set Zero Point.
Low Voltage	Battery dropped below 9.5V.	Check wiring - repair or replace.
		Test battery voltage under load - charge or replace.
Out of Stroke	Jack has reached maximum stroke length and is unable to lift.	Check disposition of jacks or relocate the trailer.
External Sensor	Bad connection or wiring from the controller to the rear sensor.	Replace or repair connection to rear remote sensor.
Jack Time Out	The time limit is exceeded for the requested auto operation.	Check disposition of jacks.
Auto Level Fail	Unable to auto level due to uneven ground.	Check disposition of jacks and/or relocate the trailer.
	Unable to auto level due to Zero Point being set incorrectly.	Reset Zero Point.
Bad Calibration	Sensor calibration values are out of range.	Replace controller.
Internal Sensor	Internal sensor problem.	Replace controller.
Function Aborted	The user pressed a button on the touchpad during an automatic operation.	Restart automatic operation and then refrain from pressing any buttons on the touchpad.

Manual Override

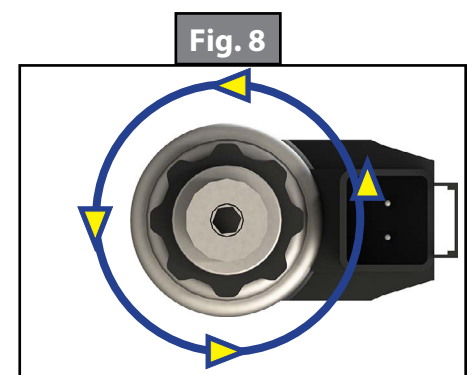
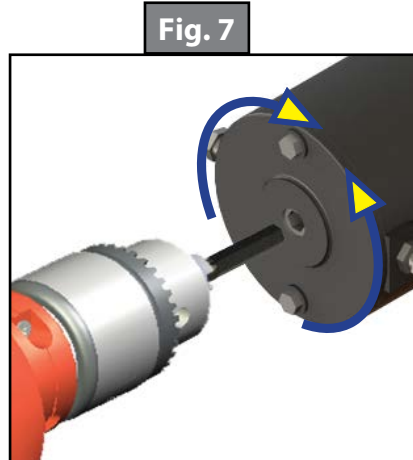
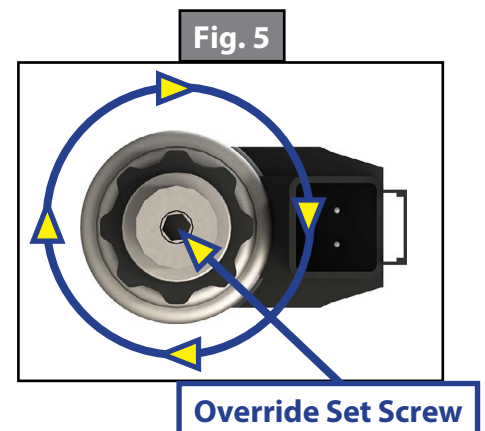
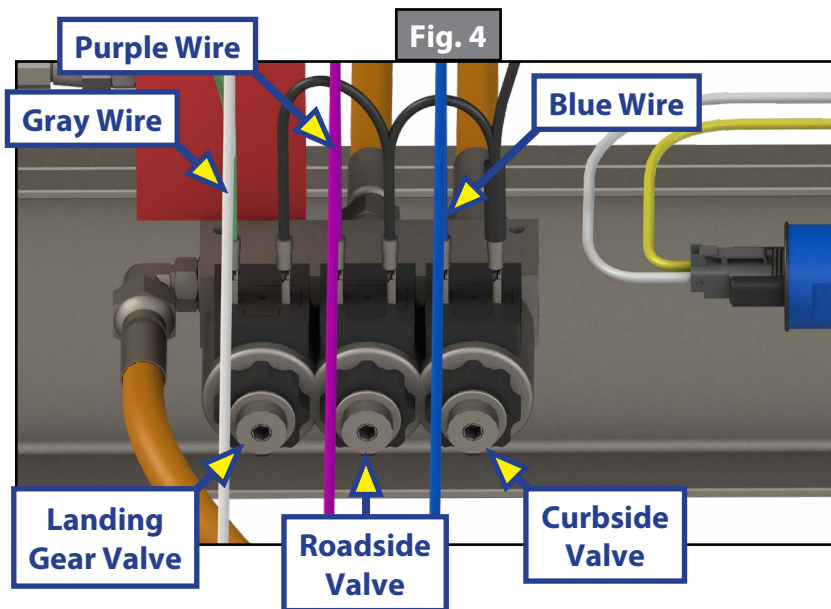
Resources Required

- Cordless or electric drill or screw gun
- $\frac{5}{32}$ " hex wrench
- $\frac{1}{4}$ " hex bit

The leveling system can be manually operated with an electric drill. In the event of electrical or system failure, this manual override method of extending and retracting the jacks can be used.

NOTE: Unhook the hydraulic power unit motor from the main power source (battery) prior to attempting the manual override procedure.

1. Locate the valves that are paired with the landing gear and roadside and curbside leveling jacks to be manually overridden (Fig. 4). Also see Wiring and Plumbing diagrams.
2. Using a $\frac{5}{32}$ " hex wrench, open the three valves by turning the manual override set screw clockwise (Figs. 4 and 5).
3. Remove protective label (Fig. 6) from power unit motor to reveal the manual override coupler.
4. Using an electric drill with a $\frac{1}{4}$ " hex bit, insert the hex bit into the manual override coupler (Fig. 7) to manually operate the system.
 - A. Run the drill forward (clockwise) to retract the landing gear and/or leveling jacks.
 - B. Run the drill in reverse (counterclockwise) to extend the landing gear and/or leveling jacks.
5. After extending or retracting the landing gear and leveling jacks, make sure to turn the manual override set screw on each valve back to the counterclockwise position using the hex wrench (Fig. 8).



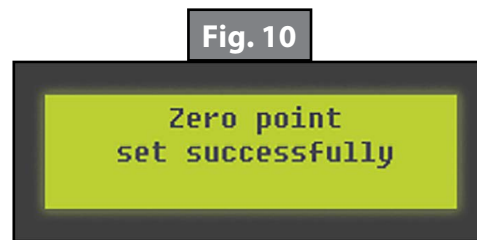
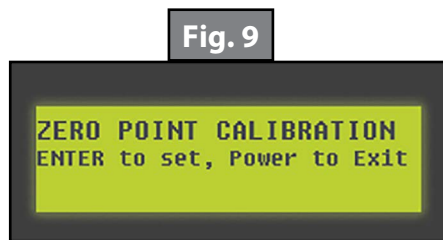
Zero Point Calibration

Zero Point Calibration is the point the leveling system will return to when an auto-leveling cycle is initiated. The Zero Point Calibration was set by the RV manufacturer and verified by the RV dealer before auto-leveling features were available. To set a new Zero Point, do as follows:

1. Run a manual leveling sequence to set the trailer to the desired level point.
2. Activate the Zero Point configuration mode as follows:
 - A. Turn off touchpad.
 - B. Press FRONT button (Fig. 1G) 10 times.
 - C. Press REAR button (Fig. 1J) 10 times.

NOTE: An alarm will sound and the display will read ZERO POINT CALIBRATION; ENTER to set, Power to Exit (Fig. 9).

- D. Press ENTER (Fig. 1C) to set the Zero Point.
3. Screen will then display PLEASE WAIT.
4. An alarm will sound and the screen will display "Zero point set successfully" (Fig. 10).
5. The touchpad will then turn off.



Maintenance

1. Remove dirt and road debris from leveling jacks and landing gear and stabilizer struts (if equipped) as needed.
2. If jacks are down for extended periods, it is recommended to spray exposed jack tubes with a spray lubricant every three months for protection. If the trailer is located in a salty air environment, it is recommended to spray the jack tubes every four to six weeks.
3. Inspect and clean all of the power and electrical connections prior to the first use of the trailer at the start of the traveling season and prior to storing the trailer. If corrosion is evident, clean all corrosion with a wire brush, then apply dielectric grease to the connections.
4. Make sure to turn the manual override set screw on the valve back to the counterclockwise position after extending or retracting the landing gear or leveling jacks.

Hydraulic Fluid

1. Each month, check that the fluid level is within $\frac{1}{4}$ " of the reservoir fill spout lip while leveling jacks and slide-outs are fully retracted.

NOTE: Always fill the reservoir with the leveling jacks and slide-outs fully retracted. Filling the reservoir when leveling jacks and slide-outs are extended will cause the reservoir to overflow into its compartment when the leveling jacks and slide-outs are retracted.

2. Check the color of the hydraulic fluid in the reservoir every 12 months. If fluid is a clear, red color, do not change. If fluid is milky, pink and murky and not clear red in color, drain reservoir and add new fluid. Hydraulic fluid in reservoir should be changed a minimum of every five years.

Fluid Recommendation

Automatic transmission fluid (ATF) with Dexron®III or Mercon®V or a blend of both is recommended by Lippert Components, Inc. For a list of approved fluid specifications, see [TI-188](#). To obtain this Technical Information sheet online, go to <https://support.lci1.com/towable-br-level-up-support-towable-level-up-br-touch-pad>. Then click on the Technical Information Sheets tab. Look for *TI-188: Hydraulic Operation Fluid Recommendation* within the listing.

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

Purging Procedure

WARNING

Do not attempt to purge this system without the front end of the trailer safely supported. Purging the system without properly supporting the trailer could result in death or serious injury.

CAUTION

Use appropriate personal protective equipment (PPE) for the procedure being performed.

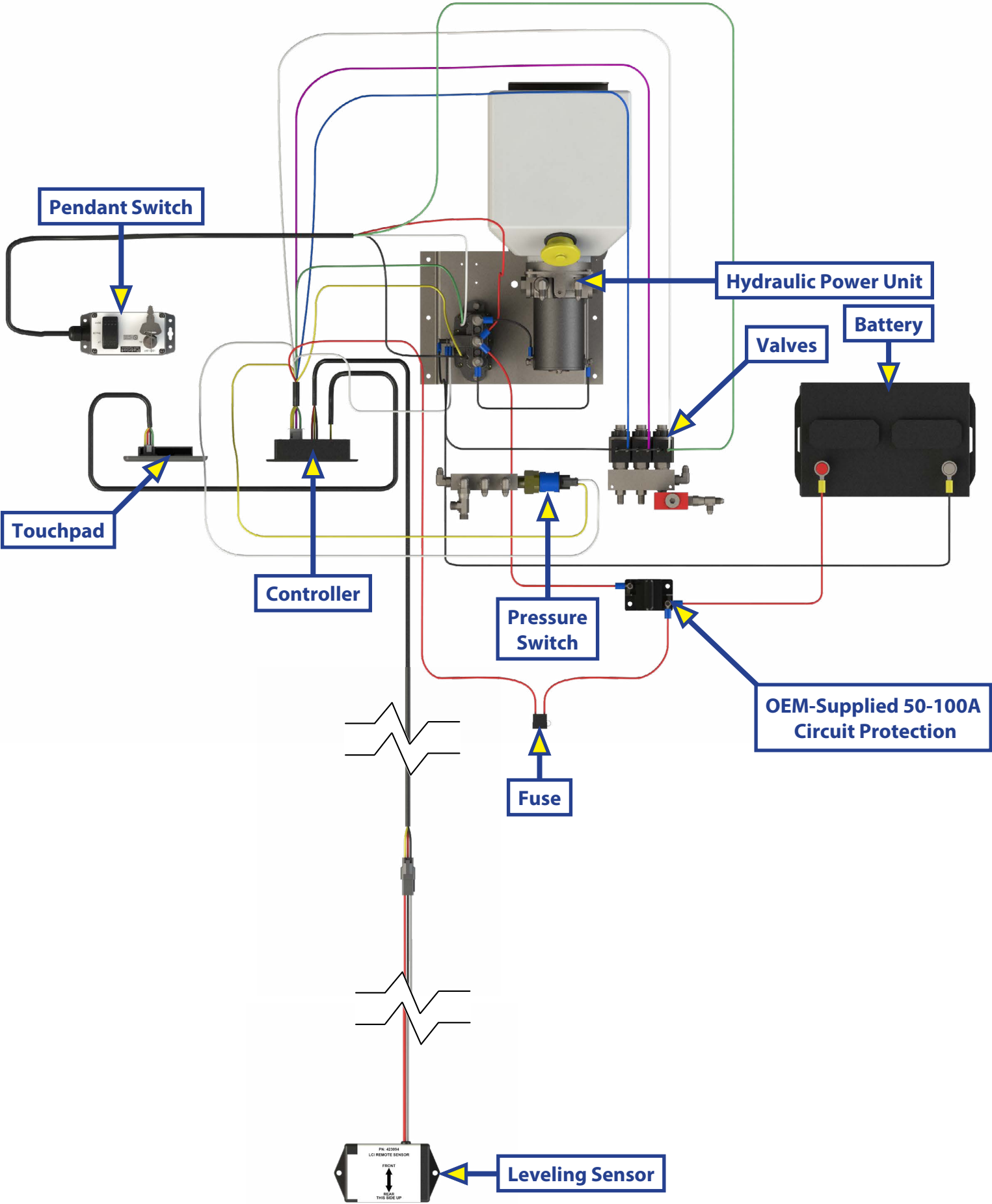
Refer to [TI-118](#), Basic Purge Procedure for Hydraulic Pumps To obtain this Technical Information sheet online, go to <https://support.lci1.com/towable-br-level-up-support-towable-level-up-br-touch-pad>. Then click on the Technical Information Sheets tab. Look for *TI-118: Basic Purge Procedure for Hydraulic Pumps* within the listing.

1. Purging of the hydraulic system should be performed with the trailer coupled to the tow vehicle, a kingpin stand under the pin box or jack stands under the front portion of the frame.
2. Start with all hydraulic components in the fully retracted position, meaning all jacks, landing gear, stabilizers and slide-outs brought back inside the trailer as if it were ready to travel.
3. Find the hydraulic pump location and note the amount of fluid currently in the reservoir. The fluid level should be about $\frac{1}{4}$ " from the top of the reservoir and no more than $\frac{1}{2}$ " from the top.

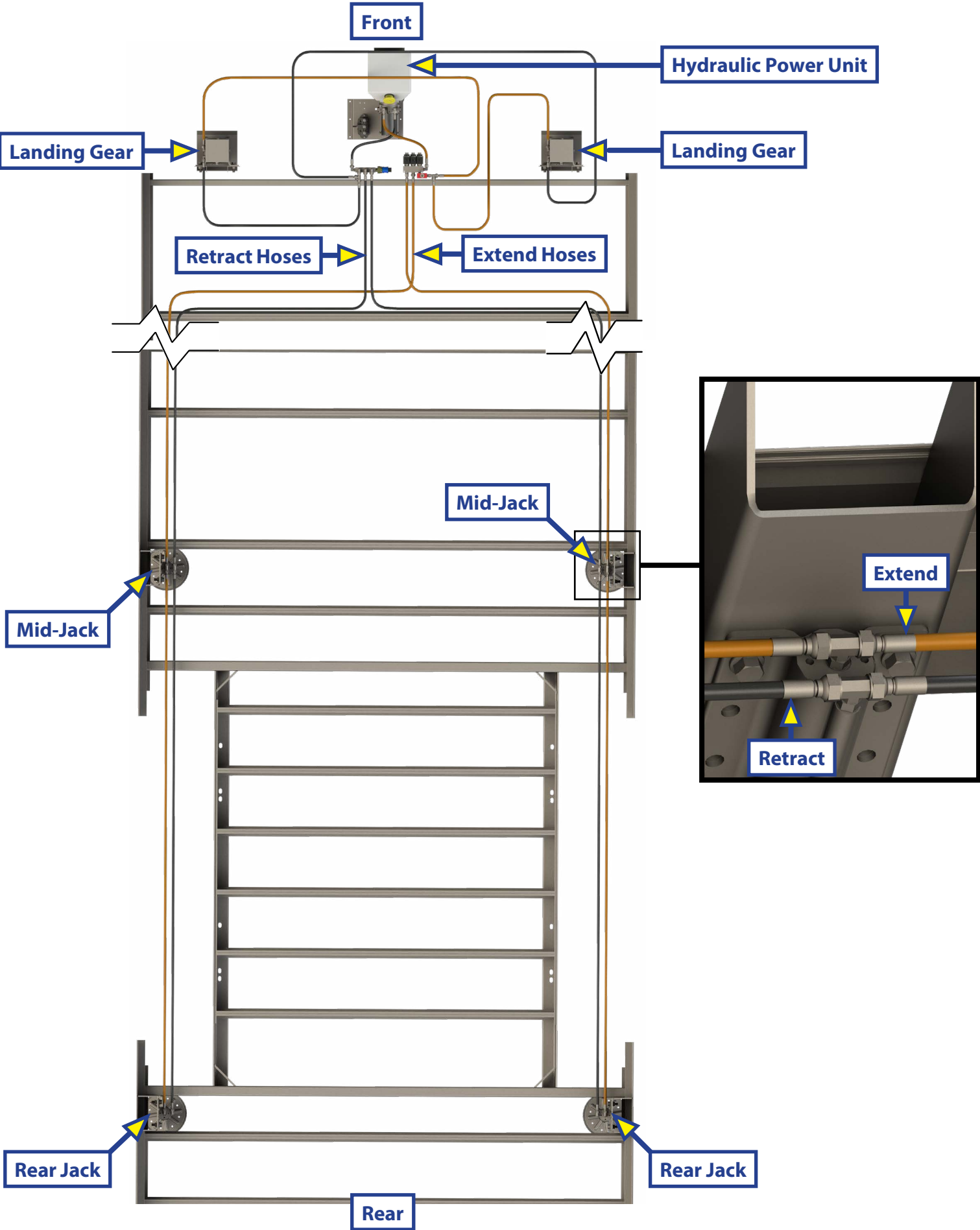
NOTE: When checking the fluid level after ensuring all hydraulic components are retracted, note if there are any bubbles, froth or foam on top of the fluid. This is an indication that air has been pushed back to the reservoir when the hydraulic components were retracted in the last cycle. Wait 15-20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

4. If there is no froth or foam in the reservoir and the fluid is not within $\frac{1}{2}$ " of the top, fill the reservoir to within the level described in step 3.
5. With the fluid level full and no foam in the reservoir, begin cycling the hydraulic system:
 - A. Extend hydraulic landing gear until footpads contact the ground.
 - B. Extend hydraulic leveling jacks to touch the ground.
 - C. Extend any slide-outs, if applicable.
 - D. Retract any slide-outs, if applicable.
 - E. Retract hydraulic leveling jacks.
 - F. Retract hydraulic landing gear.
6. Check the reservoir for foam. If foam is present, see **NOTE** above and repeat steps 4 and 5.
7. Repeat these steps until no foam is present in the reservoir. If no foam is present, the system is purged of air.

Wiring Diagram - System



Plumbing Diagram - 6 Point Leveling





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