LCI LEVEL-UP® MOTORHOME

LEVELING (2013-PRESENT)

OWNER'S MANUAL

LIPPERT COMPONENTS®

TABLE OF CONTENTS

Introduction

The LCI Level-Up® Motorhome Leveling system is an electric/hydraulic system. A 12V DC power supply drives a hydraulic pump that moves fluid through a system of hoses, fittings and jacks to level and stabilize the coach.

The use of the LCI Level-Up® Motorhome Leveling System to support the coach for any reason other than which it is intended is prohibited by Lippert's Limited Warranty. The LCI Level-Up® Motorhome Leveling System is designed as a "Leveling" system only and should not be used to provide service for any reason under the coach, such as changing tires or servicing the leveling system.

Lippert jacks are rated at a capacity appropriate for the coach. Each jack has a 9-inch diameter (63.52 inches) footpad on a ball-swivel for maximum surface contact. Optionally, 12-inch diameter (1132 inches) footpads are available.

Each jack is powered from a central 12V DC motor/pump assembly, which includes a hydraulic oil reservoir tank, control valve manifold and solenoid valves. The leveling system is controlled electronically from the driver's seat of the coach. The control panel is mounted in the dash. The system can be operated in a manual mode or a fully automatic mode.

For information on the assembly or individual components of this product, please visit: https://support.lci1.com/motorized-br-level-up.

NOTE: Images used in this document are for reference only when assembling, installing and/or operating this product. Actual appearance of provided and/or purchased parts and assemblies may differ.

Safety

Read and understand all instructions before installing or operating this product. 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.

⚠WARNING

The "WARNING" symbol above is a sign that a procedure has a safety risk involved and may cause death or serious personal injury 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 property damage, including voiding of the component warranty.

⚠WARNING

Lippert Components Inc. recommends that a trained professional be employed to change the tires on the coach. Any attempts to change tires or perform other services while coach is supported by the LCI Level-Up® Motorhome Leveling system could result in death, serious personal injury and/or damage to the motor home.

⚠CAUTION

The "CAUTION" symbol above is a sign that a safety risk is involved and may cause personal injury and/or product or property damage if not safely adhered to and within the 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.

Selecting A Site

When the coach is parked on an excessive slope the leveling requirements may exceed the jack lift stroke capability. If the coach is parked on an excessive slope, the coach should be moved to a more level surface before the leveling system is deployed.

NOTE: EXCESS ANGLE will appear on the LCD screen if the coach is 3.5 degrees out of level front-to-rear or side-to-side. See Touchpad Error Codes chart in Troubleshooting section.

The leveling system **MUST** be operated under the following conditions:

1. The coach is parked on a reasonably level surface.
2. The coach "PARKING BRAKE" is engaged.
3. The coach transmission should be in the neutral or park position.
4. Be sure all persons, pets and property are clear of the coach while LCI Level-Up Motorhome Leveling system is in operation.
5. Clear all jack landing locations of debris and obstructions. Locations should also be free of depressions.
6. When parking the coach on extremely soft surfaces, utilize load distribution pads under each jack.
7. Make sure hands and other body parts are clear of fluid leaks. Oil leaks in the LCI Level-Up Motorhome Leveling system may be under high pressure and can cause serious skin penetrating injuries.

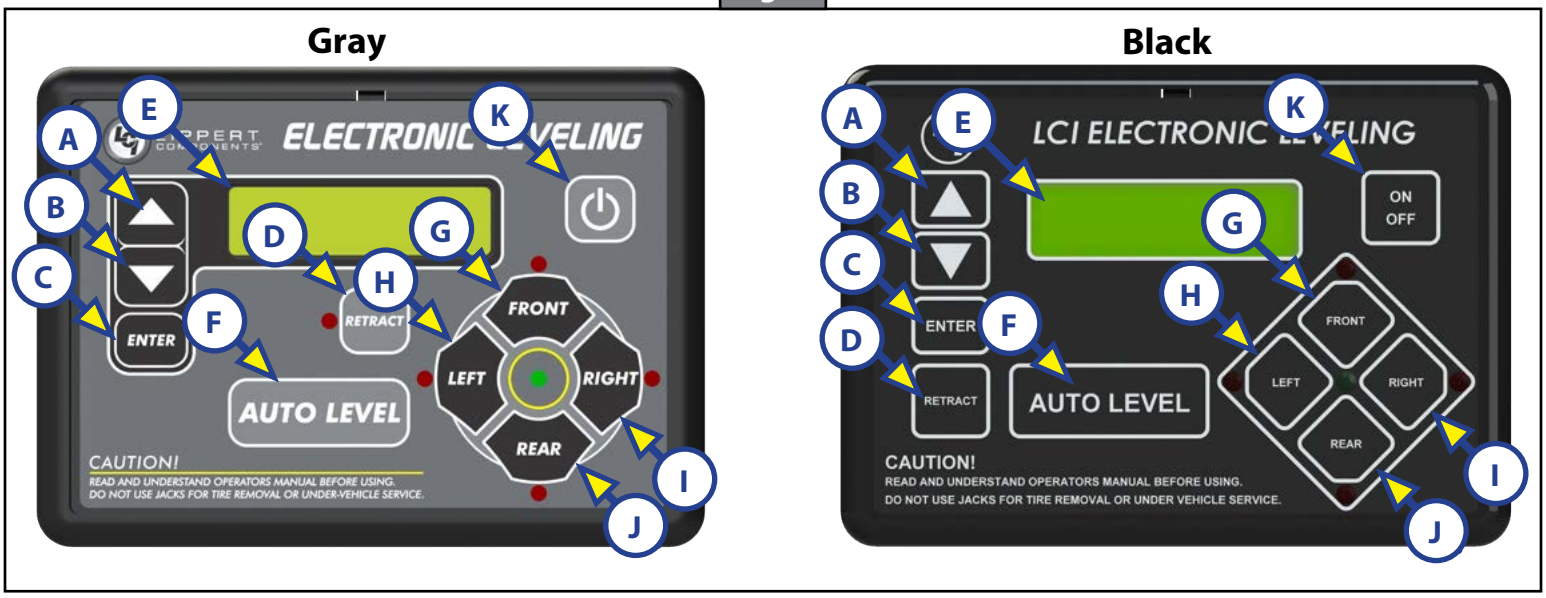
⚠WARNING

Never lift all wheels off the ground. Lifting all wheels off the ground creates an unsafe condition which may result in serious personal injury or death. Make sure unit is supported in accordance with manufacturer's recommendations.

8. Never lift the coach completely off the ground. Lifting the coach so the wheels are not touching the ground will create an unstable and unsafe condition.

Touchpad Diagram

Fig. 1



NOTE: Units manufactured before January 2018 will utilize the black touchpad.

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. - Manual mode ONLY Press and hold for several seconds to activate Auto Retract Function.
E	LCD Display - Displays procedures and results.
F	AUTO LEVEL - Places leveling system into auto level mode.
G	FRONT - Activates both front jacks in manual mode.
H	LEFT - Activates left rear jack in manual mode.
I	RIGHT - Activates right rear jack in manual mode.
J	REAR - Activates both rear jacks in manual mode.
K	Power Button - Turns leveling system on and off.

Operation

Automatic Leveling Descriptive Logic

Grounding: Steps 1-3 describe the process of how the AUTO LEVEL LOGIC extends the jacks to the ground.

1. Depending on which end of the coach is lowest to the ground, the level sensor in the brain will activate the jacks, one at a time on the lowest end first, either front or rear.
   - **A.** Ground lowest side jack first e.g., front passenger side (curbside).
   - **B.** Ground remaining side jack next i.e., front driver side (roadside).
2. Together, both jacks will lift lowest end until level i.e., front of coach will lift briefly until the coach is level.
3. The system will then ground remaining jacks, one at a time e.g., rear jacks.
   - **A.** Ground lowest side jack first e.g., rear passenger side.
   - **B.** Ground remaining side jack next e.g., rear driver side.

Leveling: Steps 4-6 describe the process of how the AUTO LEVEL LOGIC levels the coach after the jacks have been grounded. This process may repeat several times until the coach is level.

4. Front-to-rear
5. Side-to-side
6. Individual

NOTE: Minor adjustments will be made throughout the leveling process to limit or prevent frame twisting.

NOTE: After starting the automatic leveling cycle it is very important that there is no movement within the coach until the unit is level and the green LCI logo light illuminates in the center of the touchpad. Failure to remain still during the leveling cycle may have a negative effect on the performance of the leveling system.

Automatic Leveling Procedure

Coach must be running for LCI Level-Up Motorhome Leveling system to operate.

1. Press the ON/OFF (power) button (Fig. 1K) on the touchpad to turn the leveling system on. The leveling system is now operational and the electronic level lights will activate.
2. Check to see that the Control Pad ENGAGE PARK BRAKE is engaged.
3. Press the AUTO LEVEL (Fig. 1F) button to begin the automatic leveling cycle.
4. Press the ON/OFF (power) button to turn the leveling system off.

Manual Leveling Procedure

When leveling the coach, the coach should be leveled front-to-rear first, then leveled left-to-right.

NOTE: The coach requires 12.7V DC to begin the auto leveling function. If voltage at the power unit is below 12.7V DC, run the engine.

1. Press the ON/OFF (power) button (Fig. 1K) on the touchpad to turn the leveling system on. The leveling system is now operational and the electronic level lights will activate.
2. Press the Down Arrow button (Fig. 1B) to display "MANUAL LEVEL" on the LCD screen (Fig. 1E). Press the ENTER button (Fig. 1C) to set.
3. Press the FRONT button (Fig.1G) until the front jacks contact the ground and lift the front of the coach 1-2 inches.
4. Press the REAR button (Fig. 1J) until the rear jacks contact the ground and lift the rear of the coach. Keep the button depressed until the level indicator displays "LEVEL."
5. Press the LEFT or RIGHT button (Fig. 1H or I).
   - **A.** If the level indicator is towards the left (roadside) of the coach, press the RIGHT button (Fig. 1I).
   - **B.** If the level indicator is towards the right (curbside) of the coach, press the LEFT button (Fig. 1H).
   - **C.** Keep either button (RIGHT or LEFT) depressed until the level indicator displays "LEVEL."

NOTE: The right and left jacks are used to level the coach side-to-side. Pressing the LEFT button on the touchpad will extend both left jacks. Pressing the RIGHT button on the touchpad will extend both right jacks. Jacks always work in pairs; both front jacks, both right side (curbside) jacks, etc.

6. Repeat steps 2-5 if needed.
7. Press the ON/OFF (power) button (Fig. 1K) to turn the leveling system off.
8. Visually inspect all jacks to ensure all footpads are touching the ground. For example, if one of the rear jack footpads is not touching the ground, press the corresponding LEFT or RIGHT button to lower the non-compliant jack to the ground.

Jack Retract Procedures

1. Press the ON/OFF (power) button (Fig. 1K) to turn the leveling system on. The LCD screen (Fig. 1E) will display "JACKS DOWN."
2. Press the Down Arrow button (Fig. 1B) to display "AUTO RETRACT" on the LCD screen.
3. Press the ENTER button (Fig. 1C) to begin automatically retracting the jacks.

NOTE: To stop the jacks from retracting, turn the leveling system off, then back on again by pressing the ON/OFF (power) button twice. Do steps 1-5 of the Manual Leveling Procedure section to manually level the coach. Press the ENTER button to acknowledge.

4. When the "JACKS DOWN" message on the LCD display goes off, press the ON/OFF (power) button to turn the leveling system off.
   - **A.** Do a visual inspection around the coach to verify all jacks are fully retracted.
   - **B.** If all jacks are fully retracted, the coach is ready for travel.
5. To retract jacks while in MANUAL mode:
   - **A.** Press the RETRACT button (Fig. 1D) until it lights.
   - **B.** By pressing any of the jack buttons (Fig.1G-J), the jacks will retract in pairs i.e., pressing the FRONT button makes both front jacks retract in unison.
6. An "auto retract" sequence can also be performed by pressing and holding the RETRACT button (Fig. 1D) for one second.

NOTE: In cold weather operation, always check to make sure all jacks, slide rooms and steps are fully retracted before traveling.

Leveling System Safety Features

1. The leveling system will automatically shut down after four minutes of no operation.
2. Auto leveling cycle cannot be started until all jacks are fully retracted.
   - **A.** Make sure jacks are retracted before attempting to auto level.
   - **B.** The leveling system will automatically perform a full retract of all jacks if jacks are down when there is a request for an auto cycle.
3. The leveling system will refuse any operation when a low voltage condition is present.
4. The leveling system will automatically sound an alarm and retract all jacks if the PARK BRAKE is disengaged and jacks are not retracted with any change in sensor readings.

NOTE: When the leveling system is in alarm mode, only the "retract all jacks" feature is available.

5. If the "WAIT" message displays in the touchpad's LCD screen (Fig. 1E), this indicates the status of Air/Auxiliary features.

NOTE: The touchpad's LEDs blink differently when in special controller modes e.g., error, alarm, configuration. Recognizing these modes is important i.e., Excess Angle LED blinks whenever the Y-axis (vehicle length) is over five degrees from the programmed level point.

Low Voltage Signal

1. The vehicle requires 12.7V DC to operate in the AUTO mode.
   - **A.** If the voltage is too low, the touchpad's LCD screen (Fig. 1E) will display "LOW VOLTAGE."
   - **B.** If voltage drops below 12.7V DC, the leveling system will only operate in manual mode and continue to display "LOW VOLTAGE."
2. If voltage drops below 9.5V DC during automatic or manual operation "LOW VOLTAGE" will appear in the LCD screen and the leveling system will stop operating.

Automatic Safety Shutoff

The touchpad will automatically turn off after four minutes of inactivity. To reset the leveling system, the coach ignition must be turned off, then back on and the ON/OFF (power) button (Fig. 1K) must be pressed.

Drive Away Protection System

If the coach's ignition is in the “RUN” position, jacks are down and the operator releases the parking brake, all indicator lights will flash and the alarm beeper will activate. The system will then automatically retract the jacks until the jacks are fully retracted or the operator resets the parking brake.

The power unit will also operate to keep the jacks retracted in the event the leveling system loses pressure as the coach is being driven.

“Jacks Down" Alarm

The leveling system is designed to sound an alarm and illuminate the touchpad in the event of two possible scenarios:

1. A retract hose leak.
2. The pressure holding the jacks in the retracted position falls to approximately 1500 psi, which activates the alarm. If the alarm sounds and the touchpad illuminates and flashes while driving the vehicle:
   - **A.** Immediately find an area to safely pull the vehicle off of the roadway.
   - **B.** Set the PARKING BRAKE.
   - **C.** Inspect all jacks, hoses and valves for leaks.
   - **D.** If no leaks are observed:
     - **I.** Turn leveling system touchpad on.
     - **II.** Press RETRACT button (Fig. 1D).
     - **III.** Wait until “JACKS DOWN” light and alarm turn off.
     - **IV.** Inspect jacks. If jacks are retracted and no leaks are observed, vehicle can be driven.
   - **E.** If system is leaking or alarm does not subside after applying step 2, disconnect wires from pressure switch and proceed immediately to a service center.

NOTE: The pressure switch is a blue and gold colored valve located on the power unit manifold identified by the spark proof style connector with yellow and black wires. See figure 5.

NOTE: For prolonged travel to the service center, periodically stop and check the disposition of the leveling jacks to make sure they are not extending.

For Diesel Units with Air Bag Suspensions ONLY:

The leveling control will automatically detect an air bag system. If the unit does not use air bags, the touchpad LCD screen will display “NO” for air bag control. If the LCD screen reads "NO," but an air bag system is present on the unit:

1. Confirm harness is connected properly.
2. Run the auto level function.
3. Recalibrate the Zero Point.
4. If the air bag system is still not being detected, contact the OEM for more information.

User Alarm Mode

If the alarm system detects that the park brake has been disengaged while at least one jack is not fully retracted and the sensor value changes in any axis more than the predefined amount, the touchpad will signal this error to the user.

When in alarm mode:

1. All LEDs will flash.
2. The buzzer alarm will beep.
3. The status LEDs will show the current leveling system status.
4. The leveling system will begin retracting all jacks.

NOTE: No other leveling system features will be available when in alarm mode.

Level Zero Point Calibration

Before auto leveling features are available, the Level Zero Point must be set. This is the point to which the system will return when an auto leveling cycle is initiated.

To set the zero point (controller module must be fully secured in production-intent location), first run a manual leveling sequence to get the vehicle to the desired level point. Then activate the Level Zero Point configuration mode by performing the following sequence:

1. Turn touchpad off.
2. Press the FRONT button (Fig. 1G) 10 times.

NOTE: On Winnebago coaches, press the FRONT button five times.

3. Press the REAR button (Fig. 1J) 10 times.

NOTE: On Winnebago coaches, press the REAR button five times.

4. A tone will sound and the LCD screen display (Fig. 1E) will read "ZERO POINT CALIBRATION."
5. Press the ENTER button (Fig. 1C) to set the zero point.
6. The LCD screen will then display "Zero Point Stability Check" and "PLEASE WAIT."
7. A tone will sound and the LCD screen display will read "ZERO POINT SUCCESSFUL."
8. The touchpad will then turn off.

Manual Override

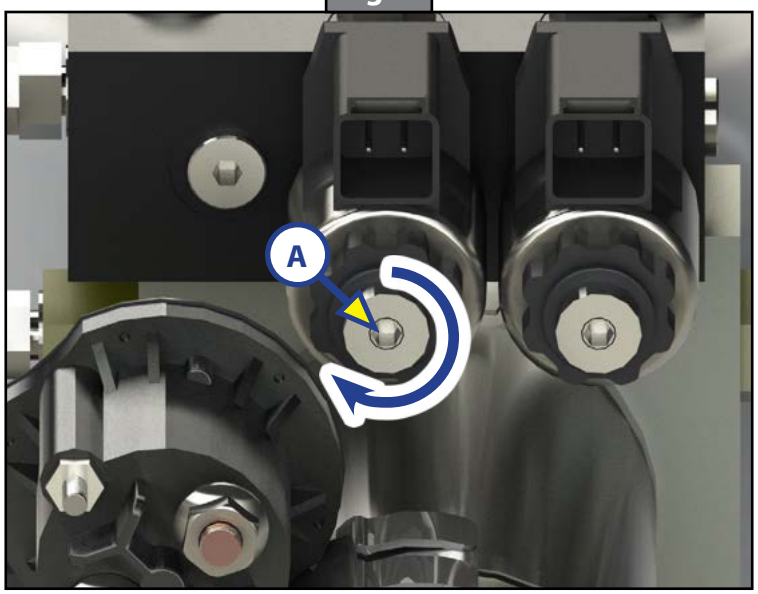
Manual Override - Jacks

The leveling system can be run with auxiliary power devices like cordless or electric power drills. In the event of electrical or system failure, this manual method of extending and retracting the jacks can be used. A standard hand-held drill is all that is required.

To manually extend or retract jacks, do as follows:

1. Insert a 5/32" hex wrench into the adjustment end of the valve (Fig. 2A).
2. Turn the hex wrench on the valve clockwise (Fig. 2) to allow the jacks to be extended or retracted.
3. Remove the hex wrench from the valve.

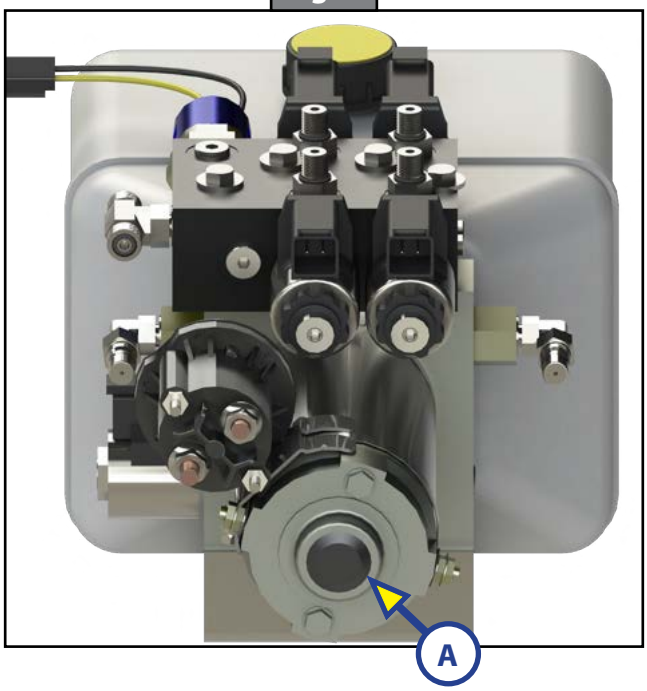
Fig. 2



Clockwise for Manual Override

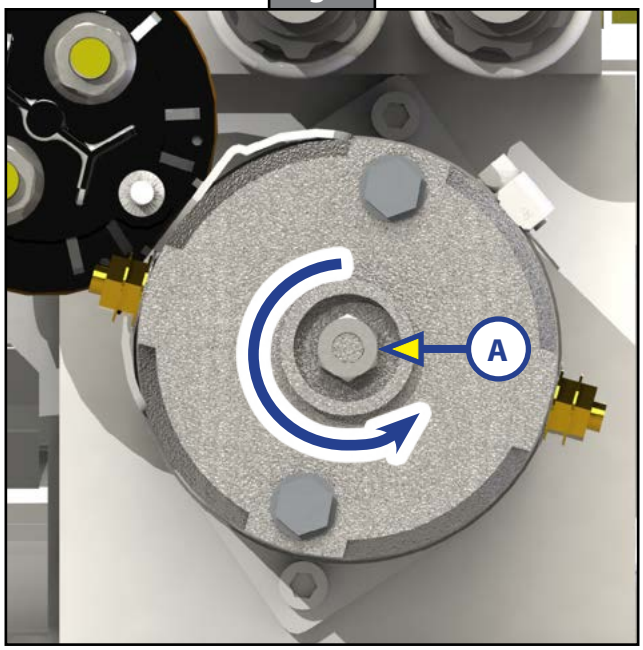
4. Remove the plastic cap (Fig. 3A) from the end of the motor.
5. Disconnect or shield power cables on the motor.

Fig. 3



6. Using a ½" socket and auxiliary drive device, e.g., cordless or electric power drill, insert ½" socket onto the coupler (Fig. 4A).
7. Run drive device in reverse (counterclockwise) to retract jacks (Fig. 4)—forward (clockwise) to extend jacks.

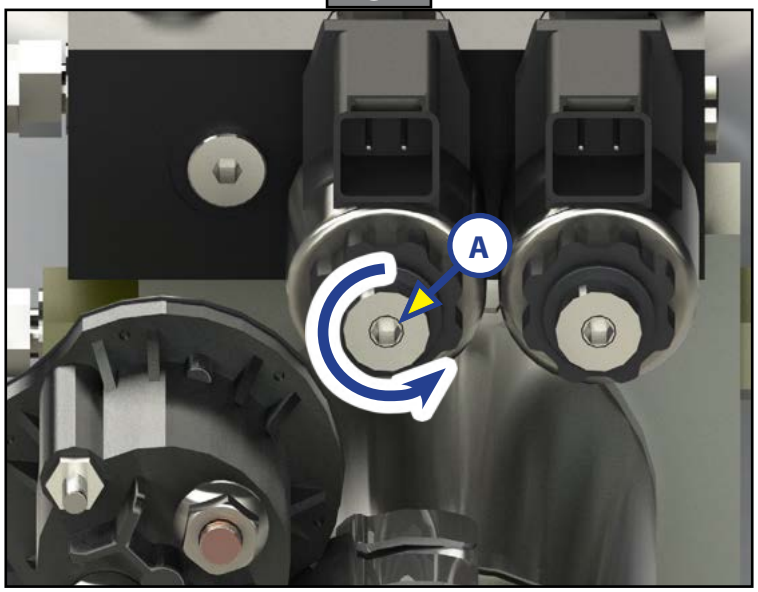
Fig. 4



Run Counterclockwise to Manually Retract Jacks.

8. After the jacks have been fully extended or retracted, remove the 1/2" socket and drill from the motor's coupler.
9. Reinsert the 5/32" hex wrench into the valves' manual override adjustment (Fig. 5A).
10. Turn the valve's manual override completely counterclockwise (Fig. 5) until the adjustment no longer turns, thus completely closing the valves.
11. Do not over-tighten override set screws, as this can damage the valves.

Fig. 5



Counterclockwise for normal operation

Troubleshooting

For leveling system concerns, refer to the Leveling System Troubleshooting Chart.

Error Mode

Leveling System Troubleshooting Chart		
What Is Happening?	Why?	What Should Be Done?
System will not turn on and On/Off indicator light does not illuminate.	Coach ignition not in RUN position.	Turn ignition to RUN position.
	Parking brake not set.	Set parking brake.
	Controls have been on for more than four minutes and have timed out.	Turn ignition OFF and then back ON.
Control panel turns on but turns off when jack button is pushed or displays "Low Voltage."	Low voltage on battery.	Start coach to charge battery.
Control panel turns on, coach will not auto level, "Jacks Down" displayed, jacks are retracted.	Low fluid level.	Change fluid level in reservoir. If fluid is low, add fluid to 1/2" from top of reservoir with jacks retracted. If JACKS DOWN light remains on, call Lippert Service.
Jacks will not extend to ground, pump is running.	Little to no fluid in reservoir.	Add fluid as recommended.
	Leg valve is inoperative.	Clean, repair or replace.
	Electronic signal is lost between control and leg valves.	Trace wires for voltage drop or loss of signal. Repair or replace necessary wires or replace touchpad.
Any one or two jacks will not retract.	Hose damaged or unconnected.	Replace with new hose or reconnect hose.
	Valve inoperative.	Replace inoperative valve.
	Electronic signal is lost between control and solenoid.	Attempt to retract jacks in MANUAL mode. If successful, replace touchpad. If not, test for voltage drop between touchpad and leg valve. Repair bad wiring or replace defective board or valve.
"Jacks Retracted" does not display when all jacks are retracted.	Low fluid level.	Add fluid as recommended.
	Retract press switch inoperable.	Check connection or replace.
Alarm sounds and "Jacks Down" light starts flashing while traveling, jacks are fully retracted.	Low fluid level.	Add fluid as recommended.
	Retract press switch inoperable.	Check connection or replace.
Jack bleeds down after being extended.	Valve Manual Override open.	Close override.
Touchpad powers up, screen displays "Low Voltage."	Engine not running.	Start coach engine.
No power to touchpad.	Tripped circuit breaker.	Reset.
	Ignition not ON.	Turn ignition ON.
Auto level function does not finish.	Error code "Unable to Finish Leveling."	Move coach to a more level site.

All normal functions will be disabled when the system is in Error Mode.

1. Auto Level can only commence if running voltage is 12.7V DC or above.
2. Auto Level operation will halt if running voltage drops to 9.5V DC.
3. Manual Level operation can be performed at all running voltages above 9.5V DC.

If an error occurs before or during operation, the error will be displayed in the LCD screen (Fig. 1E) and an alarm will sound. To reset all error or service displays, press RETRACT and ENTER buttons (Fig. 1D and C) at the same time. Refer to Touchpad Error Codes chart.

Excess Angle

Touchpad Error Codes	
Error Text	Description
Excess Angle	Excess slope for auto leveling.
Feature Disabled	Control not zeroed.
External Sensor	Remote sensor short or disconnected.
Out of Stroke	Check campsite for even, level ground and turn engine on - Check battery voltage under load.
Low Voltage	Turn engine on - Check battery voltage under load.
Function Aborted	Panic stop.
Jack Timeout	Auto mode/Retract timeout.
Auto Level Fail	Unable to level.
Not Configured	Control not zeroed.
Zero Not Set	Control not zeroed.
Battery Voltage	Turn engine on - Check battery voltage under load.
Apply Park Brake to Auto Level	Set parking brake.
Unit has retracted for longer than 50 seconds	Retract timeout, return leveling jacks for service. Latched retract mode.
Unable to Finish Leveling	Move coach to a more level site.
Check Wiring	Touchpad is powered, but not communicating with the controller. Check pin 1 and 2 of touchpad harness.
Caution, Excess Run Time	Pump run too long in manual mode.
Latched Retract/Service	Check for leaking jack hose or fitting, reset by pressing retract and enter at the same time.

1. The control will not operate at extreme slopes i.e., 3.5 degrees front and rear and 3.5 degrees side-to-side.
2. If the coach indicates “EXCESS ANGLE” or “JACKS STROKED OUT“ during an auto level cycle, move the coach to a more level spot.

Maintenance

1. For optimum performance, the system requires full battery current and voltage. The battery must be maintained at full capacity.
2. Check the terminals and other connections at the battery, the controller, and the jacks for corrosion and loose or damaged connections.
3. Remove dirt and road debris from jacks as needed.
4. If jacks are down for extended periods, it is recommended to spray exposed leveling jack rods with a silicone lubricant every three months for protection. If the unit is located in a salty environment, it is recommended to spray the rods every 4-6 weeks.

Fluid Recommendation

⚠ CAUTION

Do NOT use ATF Type E fluid. Type F ATF is NOT compatible with LCI hydraulic system seals. Seals will not work properly.

Automatic transmission fluid (ATF) with Dexron III® or Mercon V® is recommended by Lippert Components Inc.

NOTE: Dextron and Mercon can be safely combined in the reservoir.

The leveling system is pre-filled, primed and ready to operate direct from the manufacturer. Type "A" Automatic Transmission Fluid (ATF) is utilized.

In colder temperatures, less than 10 °F, the leveling 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. For a list of approved fluid specifications, see TI-188.

Or go to https://support.lci1.com/motorized-br-level-up/, click on the Technical Information tab, then select *TI - 188: Hydraulic Operation Fluid Recommendation* from the list of documents.

Component Description

Aluminum Jacks

Feature	Figure 6 - 433458	Figure 7 - 433464	Figure 8 - 433472
Capacity	8000 lbs	14,000 lbs	20,000 lbs
Stroke	15.00 inches	15.13 inches	16.00 inches
Bore	2.00 inches	2.50 inches	3.00 inches
H	21.375 inches	21.50 inches	23.063 inches
Rod Diameter	1.50 inches	1.875 inches	2.25 inches
Footpad	9-inch Standard		
	12-inch Optional (P/N 117238)		

Fig. 6

Fig. 7

Fig. 8

Hydraulic Power Unit

See figures 9 and 10 for hydraulic power unit feature identification and the following:

- Fittings - High Pressure O-Ring Face - Size 4
- Hose - ¼" I.D. 3000PSI - W.P. Rated

NOTE: Fittings are labeled with port assignments found stamped into the manifold for easy identification.

Fig. 9

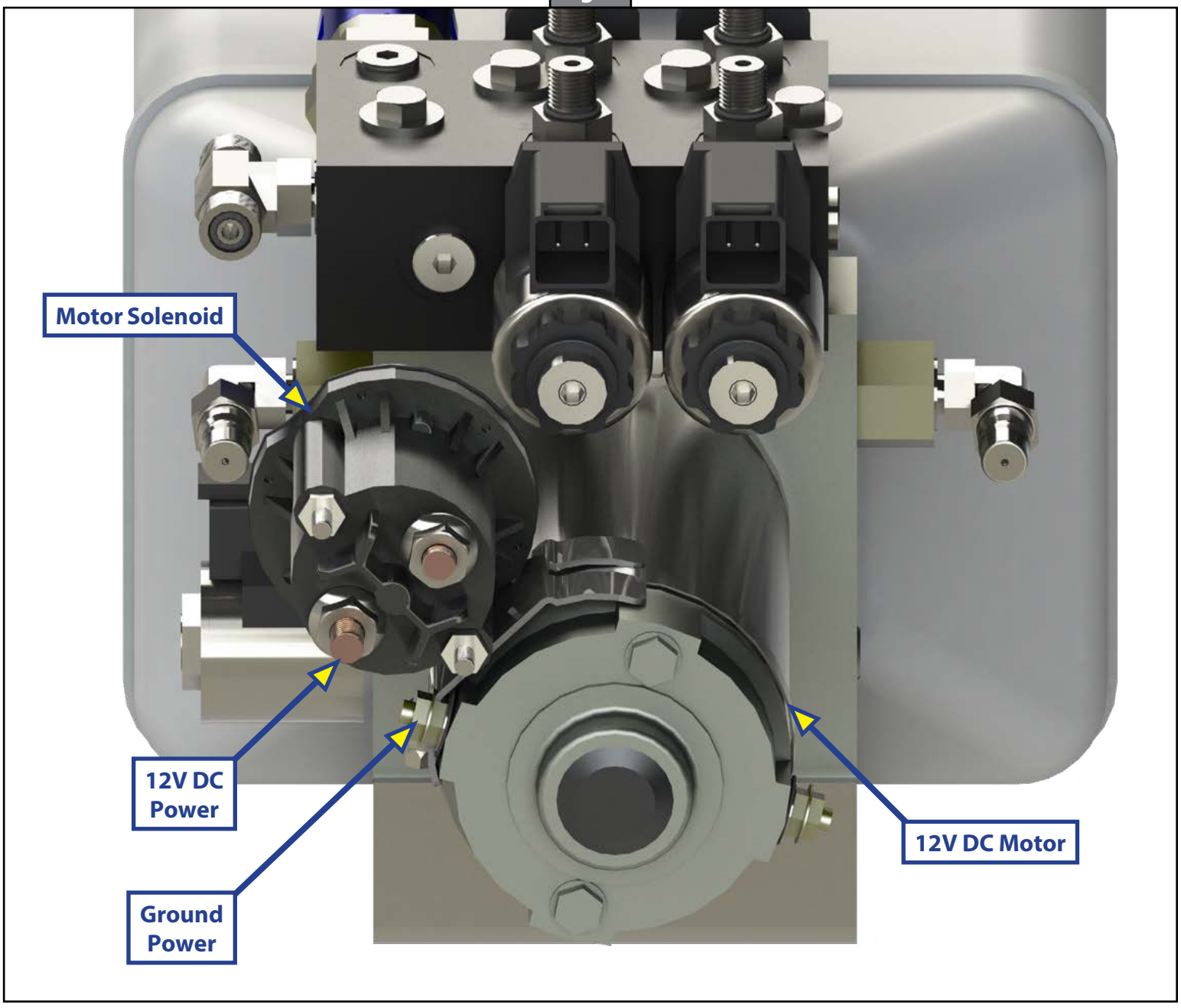
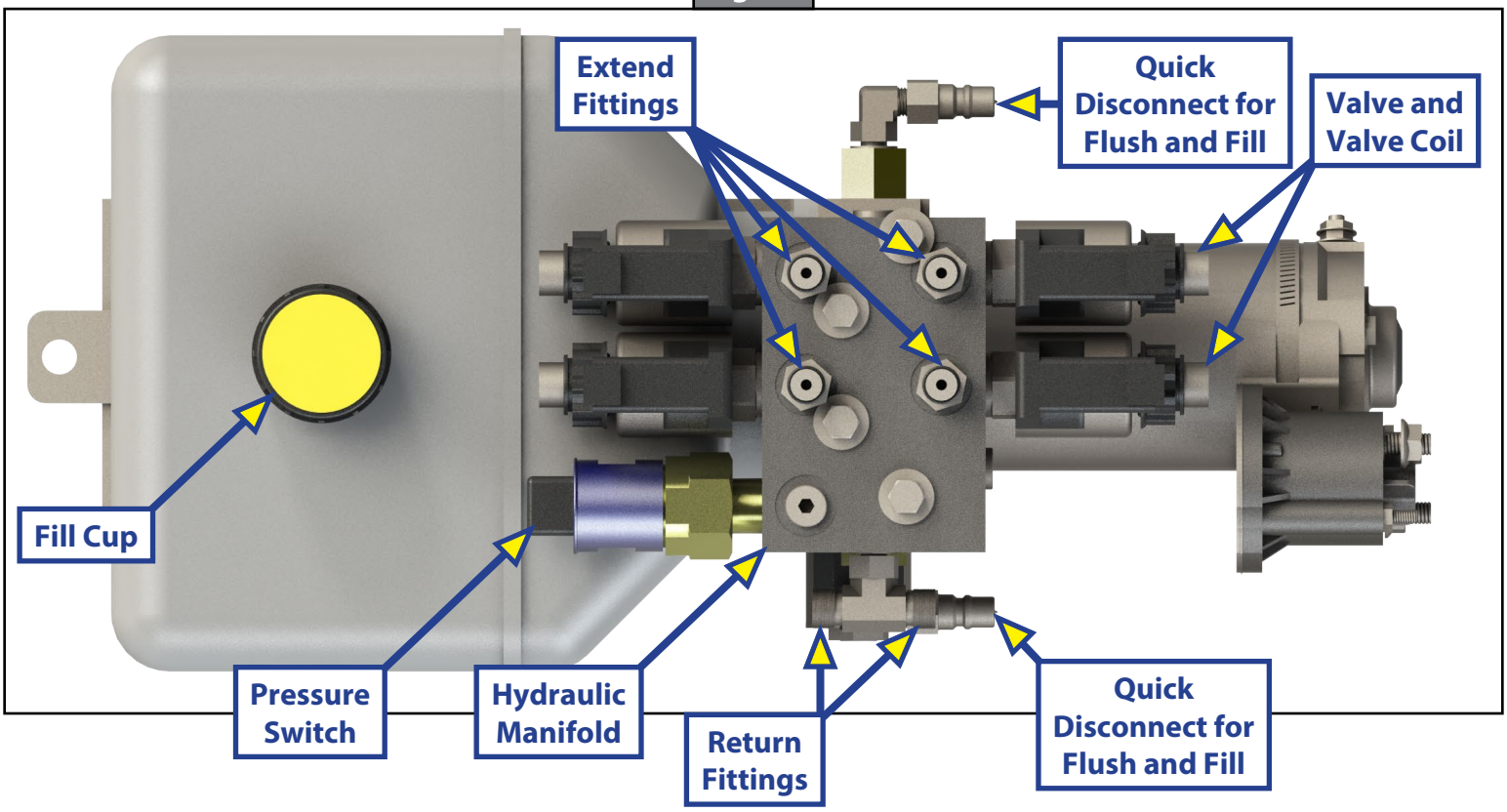


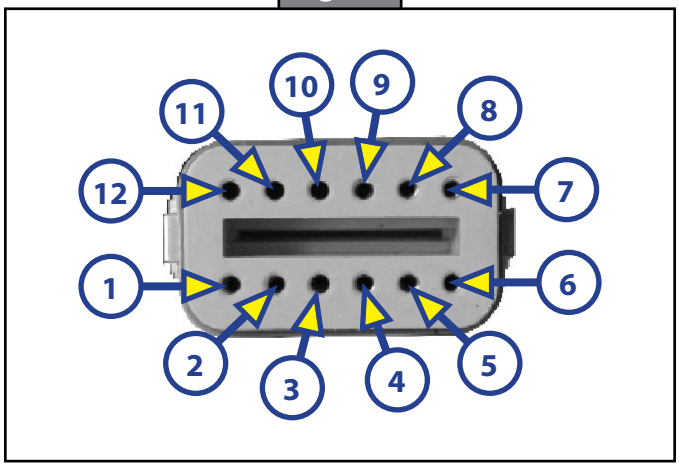
Fig. 10



12-Pin Wire Harness

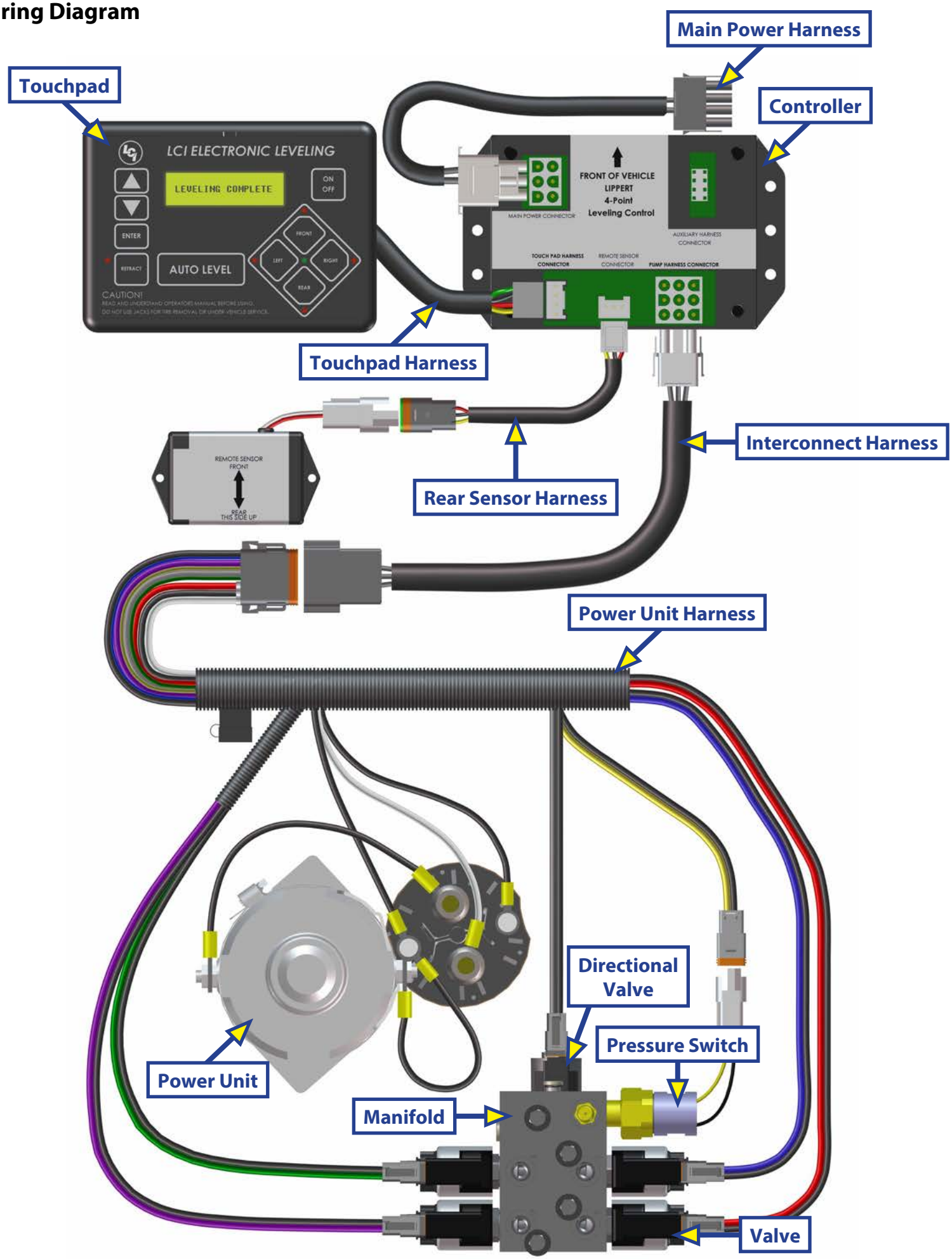
See figure 11 for 12-Pin wire harness pin locations and definitions.

Fig. 11

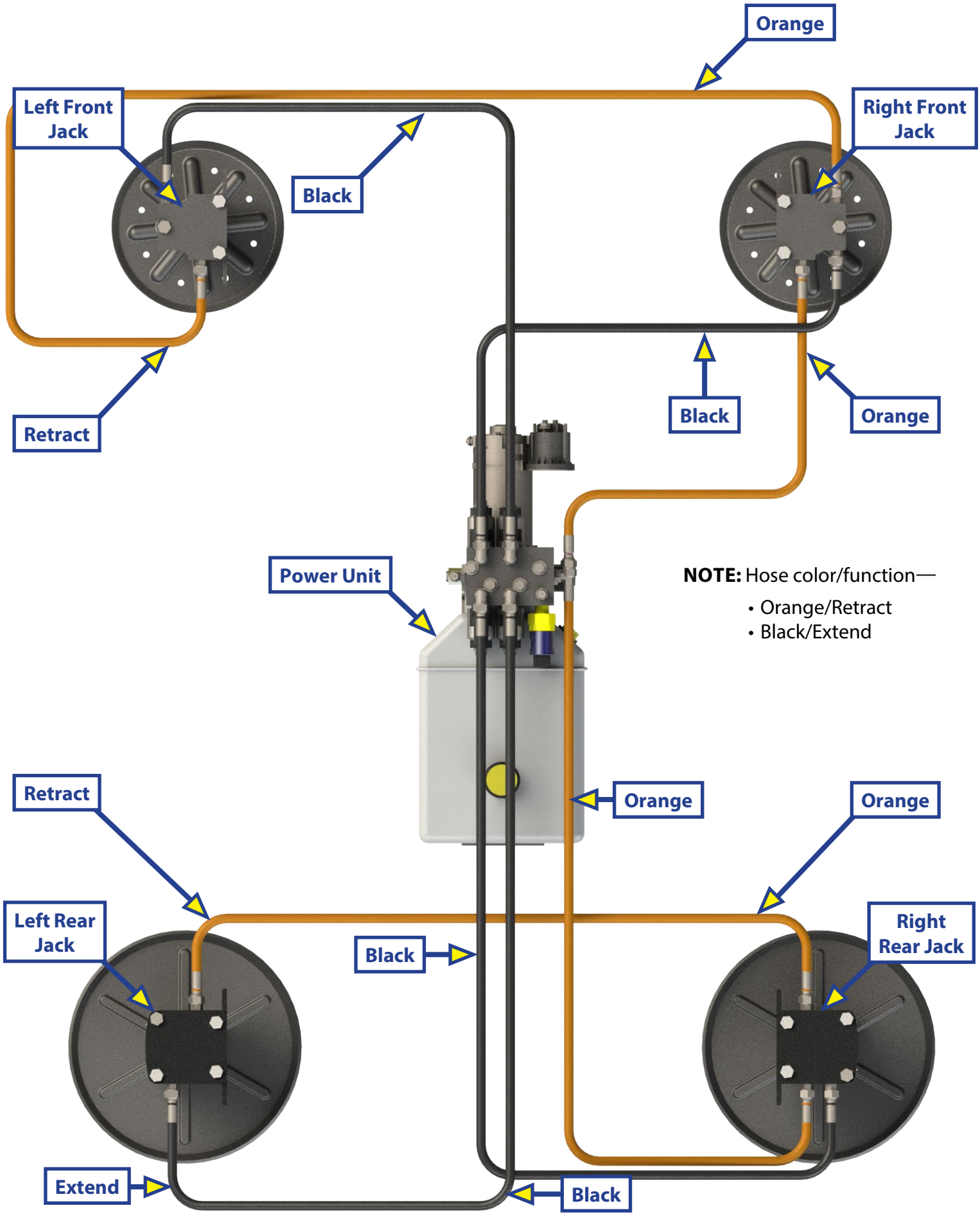


12-Pin Wire Harness Pin Definitions					
Pin #	Color	Function	Pin #	Color	Function
1	White	Chassis Power	7	Brown	Ground
2	Black/White	Pump Solenoid	8	Purple	Curbside Front Valve
3	Red	Curbside Rear Valve	9	Gray	Pump Solenoid
4	Green	Roadside Front Valve	10	— — —	Aux
5	Yellow	PSI Switch	11	— — —	Aux
6	Blue	Roadside Rear Valve	12	— — —	Aux

Wiring Diagram



Hydraulic Plumbing Diagram



LIPPERT COMPONENTS®

Please recycle all obsolete materials.

For all concerns or questions, please contact
Lippert Components, Inc.
Ph: (574) 537-8900 | Web: lci1.com | Email: customerservice@lci1.com