



**LCI AUTO ELECTRIC
LEVELING (EU)**

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

With the push of a button, the LCI Auto Electric Leveling System levels and stabilizes a caravan quickly and accurately, enhancing the overall camping experience. It can take up to an hour to get a typical caravan leveled with manual leveling jacks, chocks and wedges. The LCI Auto Electric Leveling System saves the owner time by leveling and stabilizing the caravan in a matter of minutes. It also prevents annoying rocking and swaying of the caravan at the campsite.

Features

- Saves time setting up the caravan at the campsite
- Both fast and accurate automatic electronic leveling
- Includes an automatic hitch recognition function

Safety Information

NOTE: Lippert Components recommends that the following installation procedures should only be performed by qualified and trained personnel. Please read all Safety Information and instructions prior to starting this procedure. Lippert Components also recommends the use of appropriate Personal Protective Equipment (PPE) while performing any portion of this installation.

WARNING

Failure to act in accordance with the following may result in death, serious injury, caravan damage, or voiding of the component warranty.

The use of the Electric Leveling system to support the caravan for any reason than which it is intended is prohibited by Lippert's limited warranty.

The Electric Leveling system is designed as a "Leveling" system only and should not be used to provide service for any reason under the caravan, such as changing tyres or servicing the leveling system unless jack stands have been securely positioned at all four corners of the caravan.

CAUTION

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

NOTE: The images in this manual are designed to illustrate the installation procedure only and may not represent the exact caravan being worked on. The appearance of some components may vary caravan to caravan.

Caravan Weight Rating

The Auto Electric Leveling System has a maximum Gross Vehicle Weight Rating (GVWR) of 4536 kg (10,000 lbs).

WARNING

Exceeding the Maximum Gross Vehicle Weight Rating of 4536 kg (10,000 lbs) could cause serious injury or property damage.

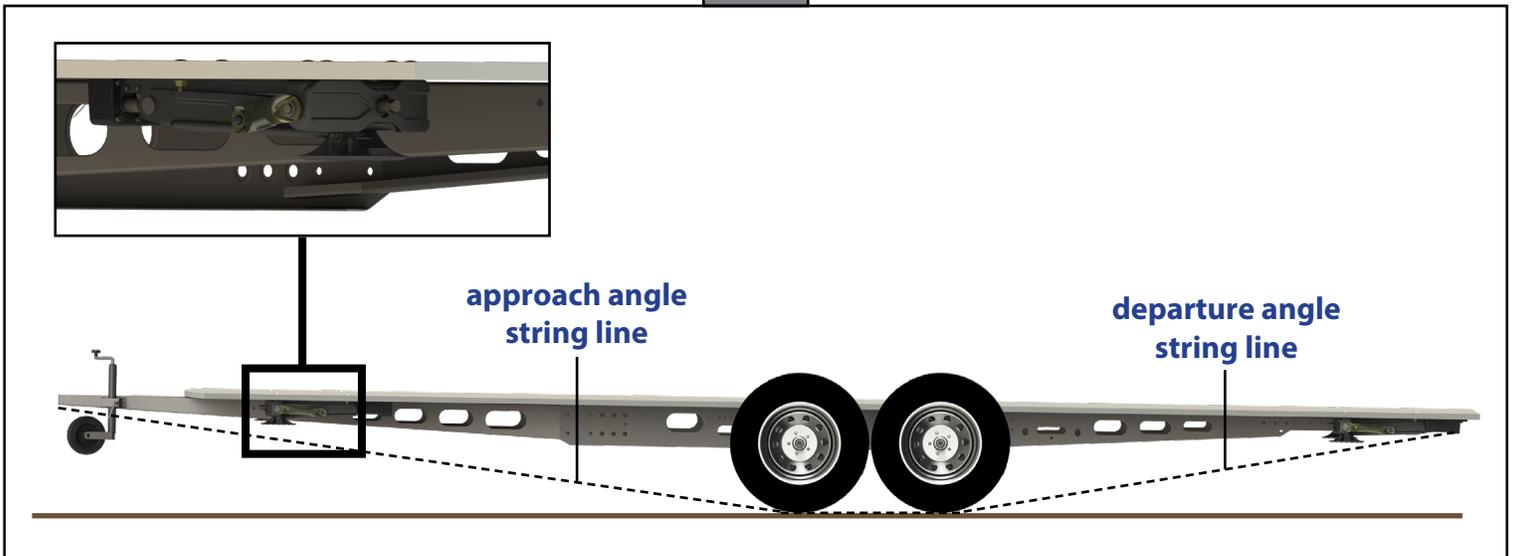
Resources Required

- Cordless or electric drill or screw gun
- Appropriate drive bits
- Ratchet
- Appropriate sockets
- Open end wrenches
- String
- Silver or white paint or permanent Marker
- 2 Clamps
- Hydraulic floor jack (optional)

Measuring Departure and Approach Angle

Departure and approach angles are measured by running a string line from the meeting point of the tyre and ground up at an angle to the lowest point on the front or rear of the caravan. These string lines are shown as dotted lines (Fig. 1).

Fig. 1



NOTE: C-Jacks shown for reference only to mark proper locations.

NOTE: The final location should be as close to the front as possible, as determined by OEM and LCI Engineering, staying within the approach angle (Fig.1).

NOTE: Locate behind the rear axle as determined by OEM and verified by LCI Engineering, staying within the departure angle (Fig.1).

NOTE: Before checking ground clearance make sure the caravan is level front to back.

Installation

⚠ WARNING

The caravan must be supported per manufacturer specifications before working underneath. Failure to do so may result in death or serious injury.

C-Jack Installation

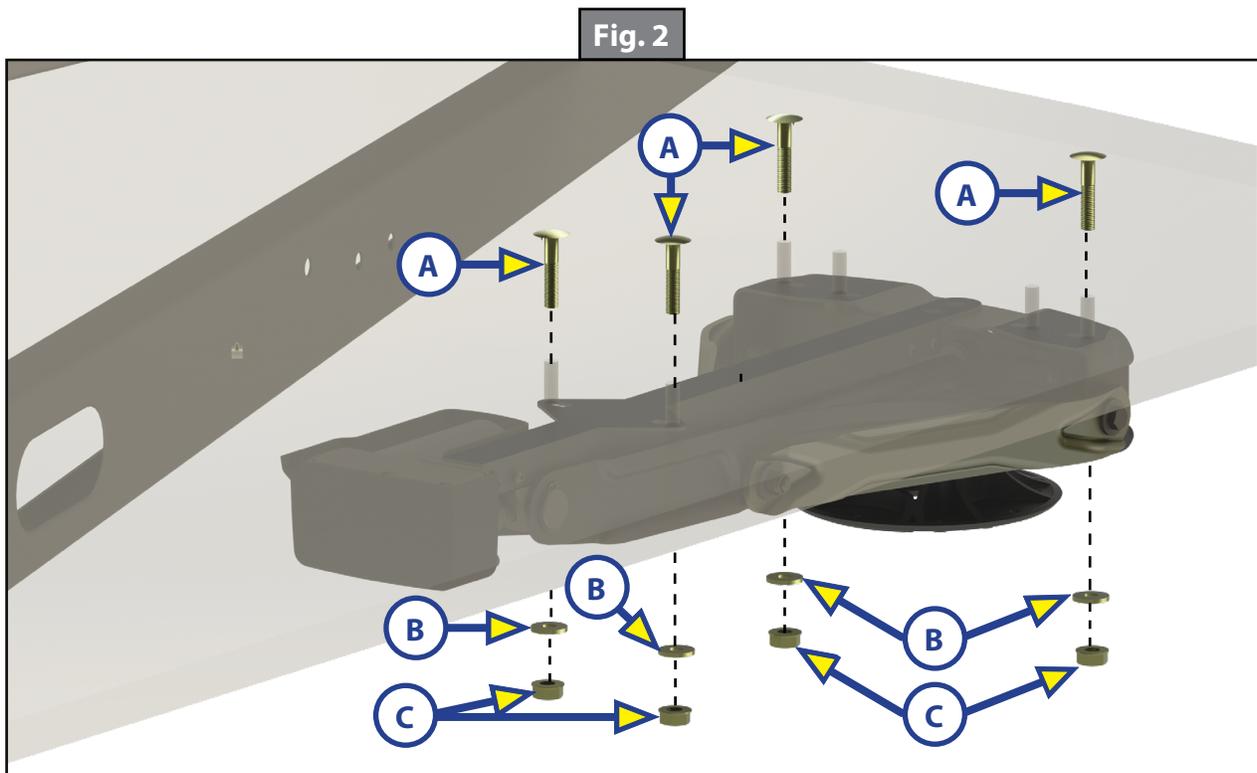
NOTE: Make sure the floor has the proper support structure before starting the installation.

1. For all four C-jack locations, align the C-jack mounting holes with the holes of the floor (Fig. 2).

NOTE: Use the optional aid of a hydraulic floor jack to assist in holding the C-jack in place or manually open the C-jack so that the foot pad is touching the ground. See the "Manual Override" section in "Troubleshooting" to fully extend the C-jack.

2. Insert four M8 bolts (Fig. 2A) through the mounting holes, two at the footpad end (one on each side of the footpad) and two on the motor end.
3. Secure the bolts with a flat washer (Fig.2B) and a nylon locking nut (Fig. 2C). Torque to 31 Nm (23 ft-lbs).
4. Connect the 3-pin Deutsch Connector to the C-jack motor wires and run the harnesses to the compartment where the controller will be mounted. (See "Installing the Controller" section.)

NOTE: LCI recommends zip tying the harnesses tight against the front jack motors to prevent damage to the harnesses.

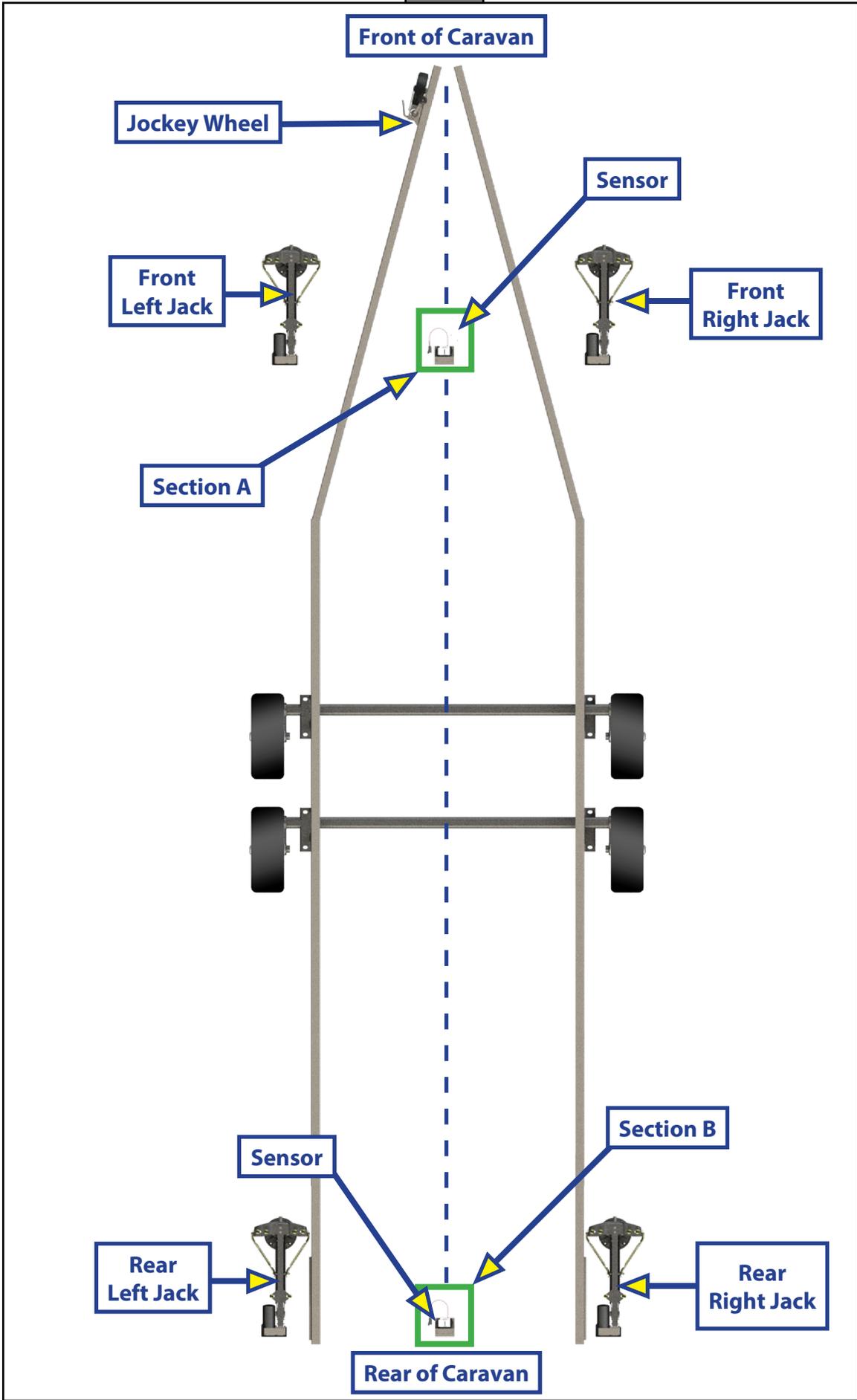


Determining the Mounting Position and Installing Leveling Sensors

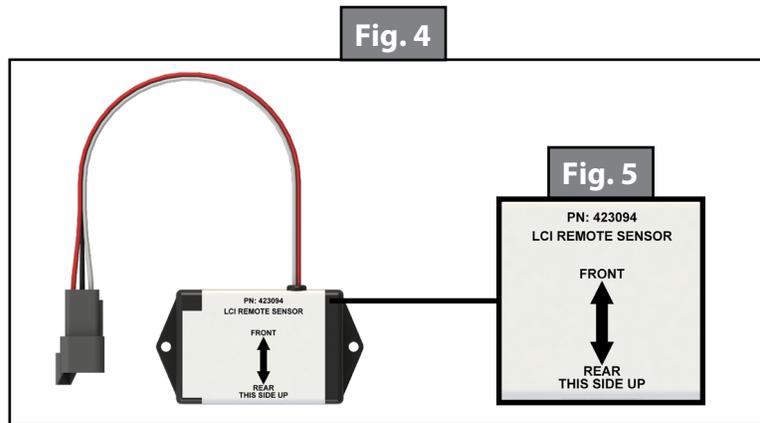
Installing Leveling Sensors

The leveling sensors have a limited mounting area for proper performance. The front sensor must be within 91 cm (36 in) from the front of the caravan as signified by section A in (Fig. 3). Make sure that the front sensor is mounted even with the motor end of the front leveling jacks. The rear sensor must be even with the motor end of rear leveling jacks, as signified by section B (Fig. 3). Both the front sensor and the rear sensor must also be mounted in line with the center of the frame, as signified by the dotted blue line (Fig. 3).

Fig. 3

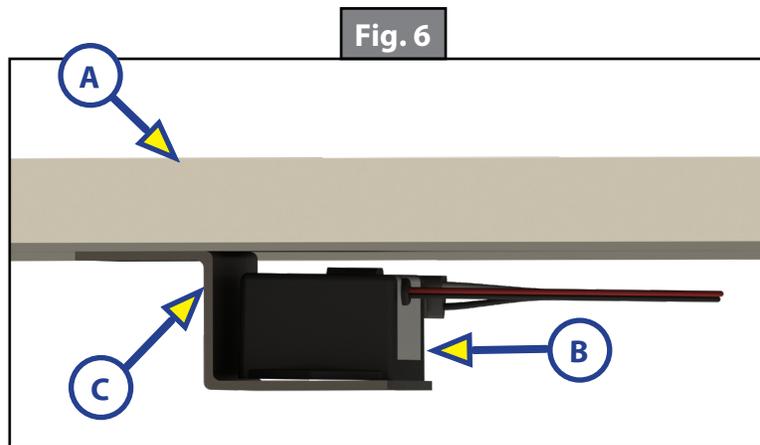


The Leveling Sensors (Fig. 4) must be oriented on the mounting surface with the arrows on the top of the sensor pointing in the correct direction (Fig. 5). See sections A and B (Fig. 3) for location clarification.



NOTE: The following process will be repeated for both sensor installations.

1. Dry fit the mounting plate (Fig. 6C) and the leveling sensor (Fig. 6B) to the mounting surface (Fig. 6A).

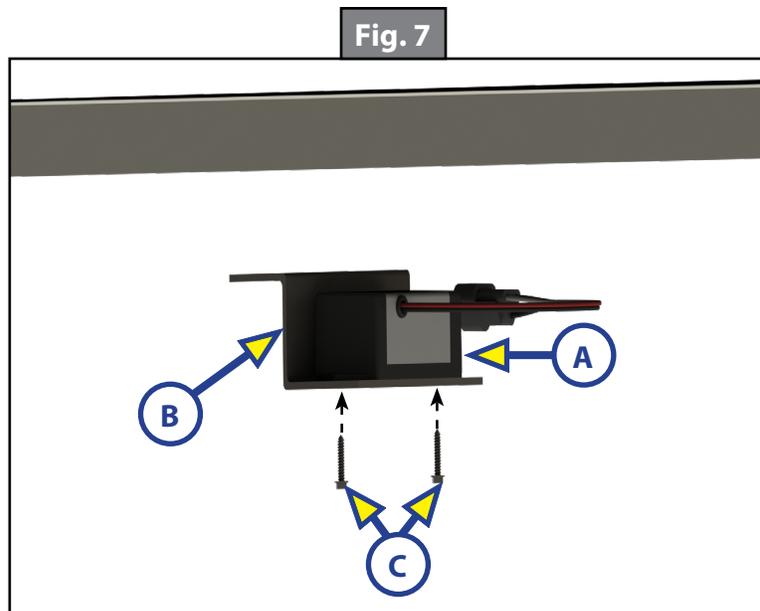


NOTE: Ensure there is a space between the sensor and mounting surface so the wire harness is not pinched.

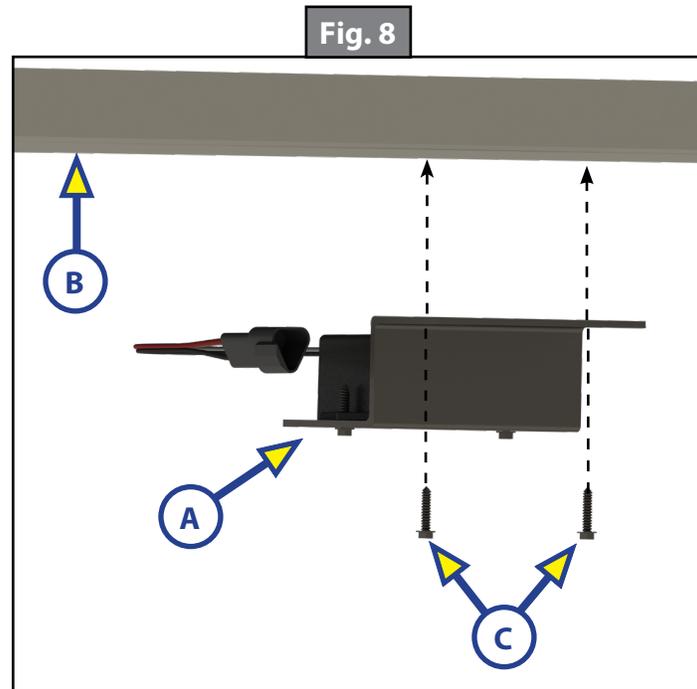
NOTE: The wire harness must be pointed toward the front of the caravan. Orientation is imperative for the correct operation of the leveling system.

2. Attach the sensor (Fig. 7A) to the mounting plate (Fig. 7B) using two M24 x 3 screws (Fig. 7C).

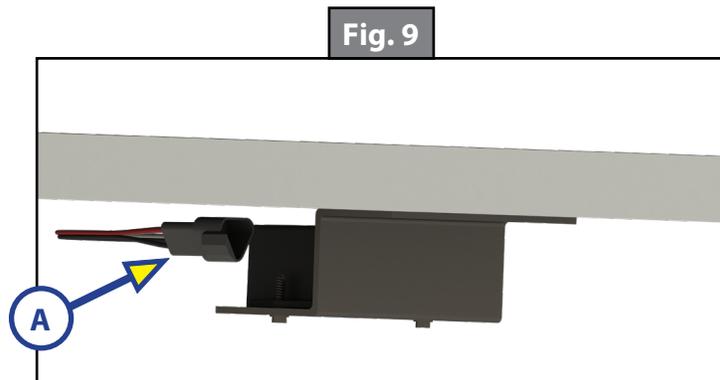
NOTE: To avoid cracking the mounting sensor side housing, do not over-tighten the screws.



3. Attach the mounting plate and sensor assembly (Fig. 8A) to the mounting surface (Fig. 8B) using two M24 x 3 screws (Fig. 8C). Ensure that the plate is centered side to side on the mounting surface and that the sensor is oriented properly. See (Fig. 3) sections A and B for location clarification.



4. Connect the sensor harness to the 3-pin Deutsch Connector on the sensor (Fig. 9A) and run the harness through the frame and up to the compartment where the controller will be mounted.

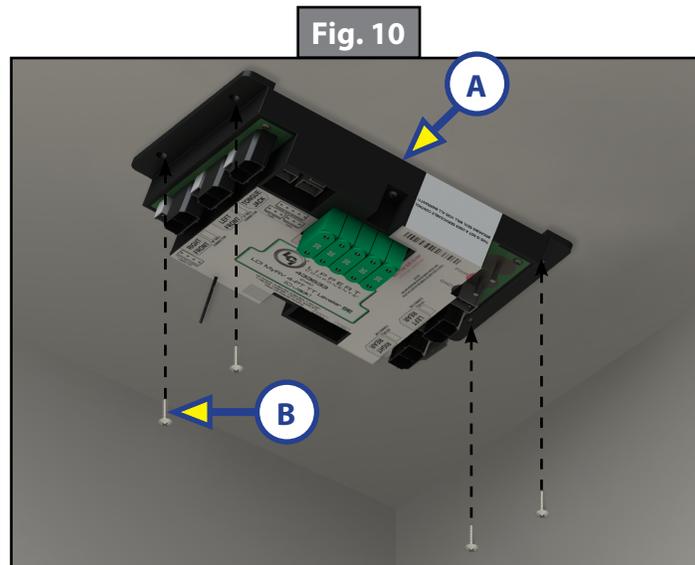


Installing the Controller

NOTE: Prior to starting this portion of the installation, double check that all of the harnesses are properly and securely connected to the leveling jacks and leveling sensors.

NOTE: The compartment where the controller will be installed must be protected from the elements and the controller must be installed in compliance with Gas Codes, as the controller connections are not spark-proof.

1. Using four M24 x 3 wood screws (Fig.10B), attach the controller (Fig.10A) to the compartment wall, ceiling or to the topside of the floor.

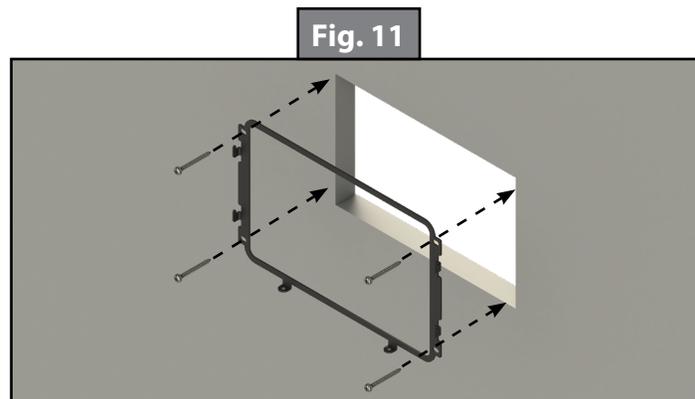


2. Attach the power and ground harnesses to the corresponding posts on the controller with the provided keys nuts and then connect the harnesses to the correct posts on the caravan battery.
3. Connect all jack harnesses to the appropriate connectors on the controller (see the "Wiring Diagram" section).

Installing the Touch Panel/Pad

OneControl Touch Panel

1. Determine where to mount the OneControl Touch Panel. The touch panel can be mounted anywhere inside the caravan or caravan compartment. The mounting location must be watertight. The typical location for the touch panel is near the entry door.
2. Dry fit the mounting bracket where the controller will be located.
3. Cut a hole in the wall of the compartment using the inside opening of the bracket as a guide. Use the bracket to trace where the cut-out should be located. The top and bottom horizontal cuts should be parallel to the floor of the caravan or caravan compartment.
4. Secure the mounting bracket with the four provided M6 pan head Phillips sheet metal screws (Fig.11).

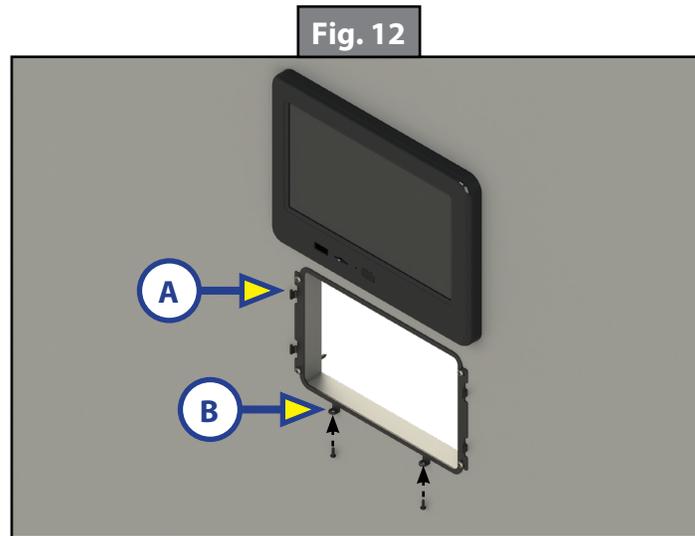


5. Feed the touch panel harness (signal to the touch panel) and canbus power connector (power to the touch panel) through the bracket and run to the compartment where the controller is mounted. Plug the harness and canbus power connector into the appropriate connectors on the controller (See the "Wiring Diagram" section.)

NOTE: It is recommended to wire the canbus power connector to the controller. The canbus power connector **MUST** be powered from a fused power source. Failure to provide circuit protection could cause damage to the system.

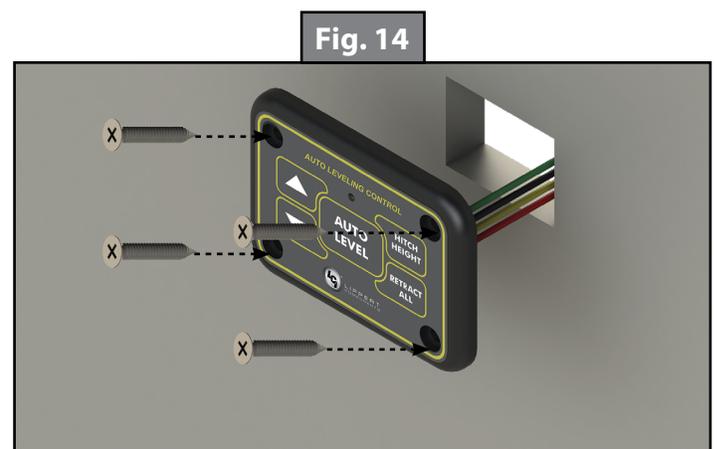
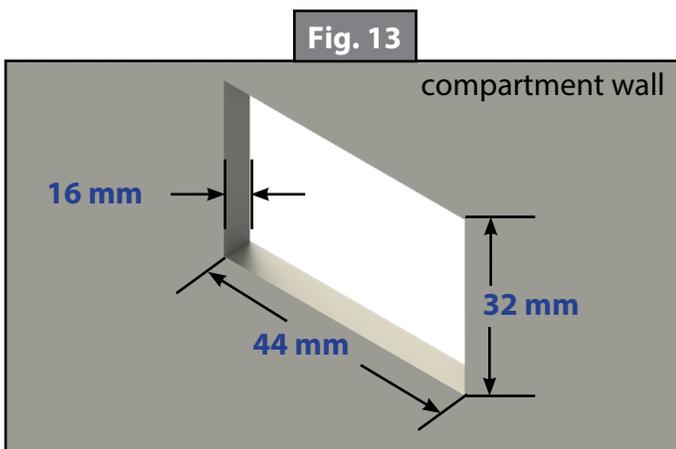
NOTE: This system requires two terminating resistors: one at the controller and one on the back of the OneControl Touch Panel.

6. Insert the touch panel into the mounting bracket. Align the four slots on the back of the OneControl Touch Panel with the four tabs (Fig.12A) on the mounting bracket. Gently push the OneControl in and then slide down. The mounting bracket has two screw mounting tabs on the bottom (Fig.12B) Secure the touch panel into the screw mounting tabs using the two provided pan head phillips sheet metal screws.



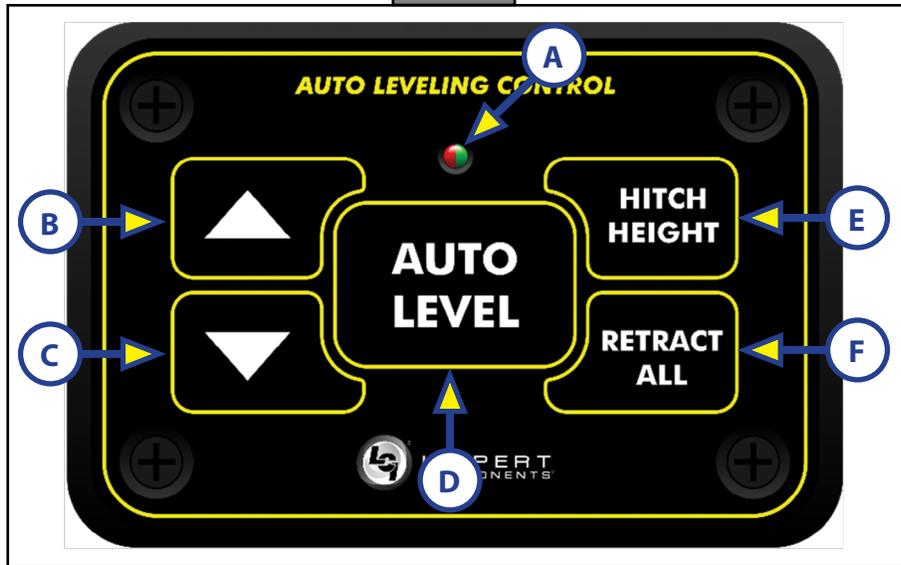
Auto Leveling Control Touchpad

1. Determine where to mount the Auto Leveling Control Touchpad. The touchpad should be mounted on the exterior of the caravan on the "corner" of the caravan where three of the four jacks can be seen during operation.
2. Cut a hole in the desired location 44 mm wide by 32 mm high and have a depth of 16 mm (Fig.13) so the top and bottom horizontal cuts are parallel to floor of the compartment or floor of the unit.
3. Plug the touchpad harness into the connector on the back of the touchpad to ensure that the product is functional before mounting.
4. Feed the touchpad harness through this hole and run it to the compartment where the controller is mounted (Fig.14). Plug the harness into the appropriate connector on the controller.
5. Attach the touchpad with four M24 x 3 wood screws (Fig.14A).



Auto Leveling Control Touchpad

Fig. 15



Callout	Description	
A	Red/Green LED - Indicates the status of the system.	
B	Up Arrow	To turn on the touchpad, press the Up and Down arrow buttons at the same time.
C	Down Arrow	
D	Auto Level Button - Places leveling system into auto level mode.	
E	Hitch Height Button - Initiates the Hitch Recognition feature.	
F	Retract All Button - Places leveling system into full retract mode.	

Auto Leveling Control Touchpad LED Indicator	
What is Happening?	Why?
Off	Touchpad is locked.
Solid Green*	Touchpad is active.
Blinking Green*	Jacks are moving.
Solid Red	Low battery.
Blinking Red	Error - Refer to OneControl® Touch Panel screen for the specific error, then consult the Error Codes chart for additional information.
Red and Green blinking at the same time*	System is waiting for user input to proceed with an Auto Function.
* NOTE: Some systems may not have the green LED available.	

Operation - Auto Leveling Control Touchpad

⚠ WARNING

Make sure to park the caravan on solid and level ground. Prior to operation, clear all jack landing locations of debris and obstructions. The locations should also be free of surface depressions and moisture. When parking the caravan on extremely soft surfaces, utilize load distribution pads under each jack.

⚠ WARNING

To avoid injury people and pets should not be moving around inside the caravan or close to the outside of the caravan when the leveling system is operated. Never lift the caravan completely off the ground. Lifting the caravan so the wheels are not touching the ground will create unstable and unsafe conditions.

Basic Touchpad Operation

To turn on the touchpad, press both UP and DOWN arrows (Figs. 15B and 15C) at the same time. The green indicator LED (Fig.15A) will turn on.

NOTE: Some systems may not have the green LED available.

NOTE: If the Auto Leveling Control touchpad does not activate, check that the OEM-installed isolator key similar to Figure 16 is in the ON position. The key could be installed in various locations on the caravan.

Fig. 16



Unhitching From Tow Vehicle

NOTE: Prior to unhitching from the tow vehicle, make sure the caravan is parked on a safe surface and chock the tyres of the caravan. Set the parking brake.

NOTE: Make sure that the jockey wheel is pinned securely in place.

1. Disconnect any wires or chains that may be equipped between the tow vehicle and the caravan. Unlatch the coupler.
2. Disconnect the caravan wire connection at the tow vehicle, if not previously completed.
3. Deploy the jockey wheel and extend the coupler off of the hitch ball.

CAUTION

The Auto Level and Auto Retract features are available from the Auto Leveling Control Touchpad or the OneControl Touch Panel. There will be pauses at certain sequences utilizing the Auto Leveling Touchpad that the OneControl Touch Panel will display. Users unfamiliar with these features may want to become familiar utilizing the OneControl Touch Panel initially. The instructions below will explain in detail how to operate the system with the Auto Leveling Control Touchpad.

1. Prior to auto leveling, make sure the caravan is unhitched from the tow vehicle and the tow vehicle is parked a safe distance away from the caravan.
2. Press both UP and DOWN arrows (Figs. 15B and 15C) at the same time if the green indicator LED is not on.
3. Press AUTO LEVEL (Fig. 15D). The red LED light on the touchpad will begin to flash, verifying that the caravan should be completely unhitched from the tow vehicle and the towball should be manually lowered approximately 3" (76 mm) below level.
4. After verifying that the caravan has been completely unhitched and the towball has been lowered, press AUTO LEVEL again. As a safety precaution, the Auto Leveling system will pause and the red LED will continue to blink. The system checks that all jacks are retracted and the towball is in the proper position. Press AUTO LEVEL to continue.
5. When the Auto Level sequence begins:

NOTE: Once the automatic leveling cycle has been started, it is important that there is no movement in the caravan until the caravan has completed the leveling process. Failure to remain still during the leveling cycle could have an effect on the performance of the leveling system.

NOTE: Pressing any button during an Auto Level sequence will abort the auto leveling cycle.

- A. Front jacks will extend until movement of the caravan is sensed.
- B. The red LED will start blinking and the system will stop. Verify the jockey wheel is fully retracted, and if applicable swing the jockey wheel up. Press AUTO LEVEL again.
- C. Rear jacks will extend and ground.
- D. Caravan will level front-to-back and then side-to-side.
- E. The Auto level sequence will ground all jacks to ensure all foot pads are on the ground.
- F. The Auto Leveling sequence is complete when the indicator light turns solid green.

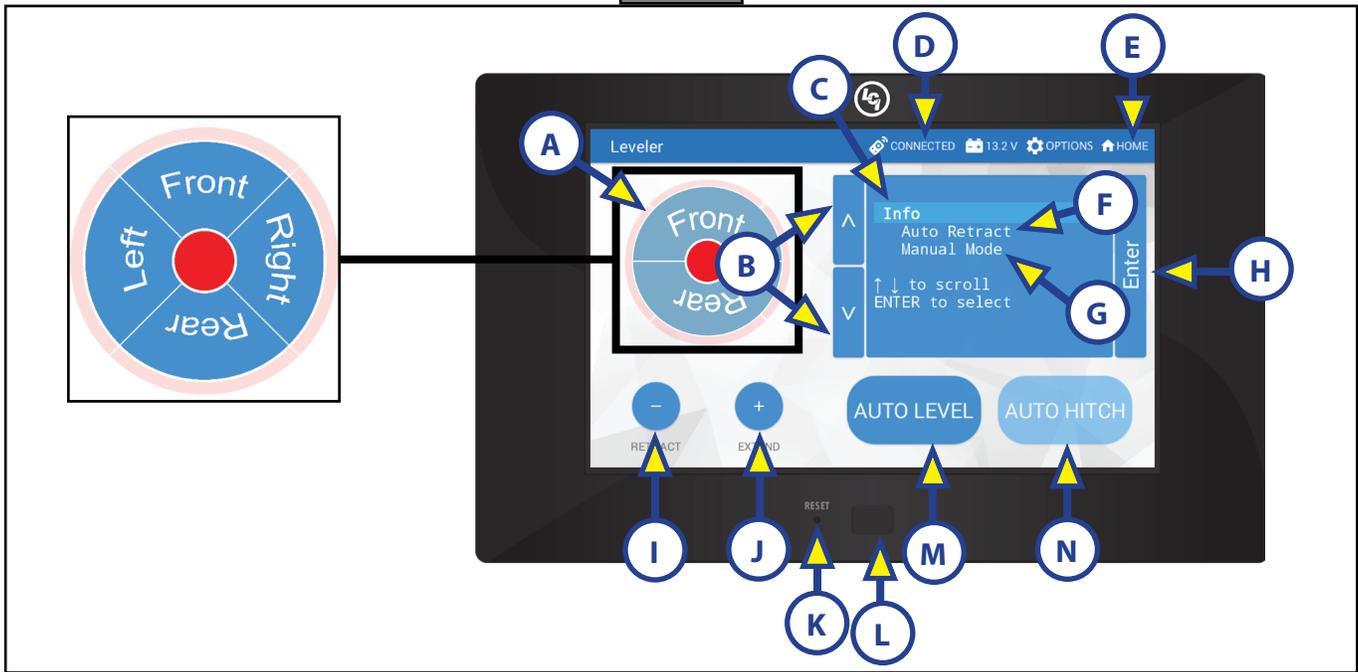
NOTE: If the AUTO LEVEL sequence does not perform as described above, locate the OneControl Touch Panel to place the system in Manual Mode. Test that the jacks operate correctly by pushing their corresponding buttons on the OneControl Touch Panel, for example, FRONT button operates only the front jacks, etc. See Operation - OneControl Touch Panel.

Auto Retract

1. To turn on the Auto Leveling Control touchpad, press both UP and DOWN arrows (Figs. 15B and 15C) at the same time. The green indicator LED (Fig. 15A) will turn on.
2. Press RETRACT ALL (Fig. 15E).
 - A. The system will pause and the red LED will start flashing until the manual jockey wheel has been lowered. If equipped, unlock the swing nut and move the jockey wheel shaft to the desired position then relock the swing nut. Then crank the jockey wheel to within 3" (76 mm) off the ground. Press RETRACT ALL again.
 - B. Rear jacks will retract.
 - C. The system will pause again and the red LED will start to flash. At this point, extend the jockey wheel down to touch the ground. Press RETRACT ALL again.
 - D. The front jacks will retract.
3. Back the tow vehicle into position to align the tow vehicle hitch and caravan coupler with each other.
4. Retract or extend the jockey wheel until the coupler sets into position on top of the tow vehicle hitch.
5. Latch the tow vehicle hitch and connect any wires or chains that may be equipped between the tow vehicle and caravan.

OneControl Touch Panel Diagram

Fig. 17



Callout	Description
A	Jack Buttons - Select Front, Rear, Right and Left jacks to be operated depending on mode. Jacks available to be operated will be highlighted in blue.
B	Up and Down Arrows - Scrolls through options on screen.
C	Info - Displays system information, e.g. angle, jack stroke or software version.
D	Connected Icon - Press 6 times to program zero point/ wireless configurations.
E	Home Icon - Returns screen to home page.
F	Auto Retract - Enters Auto Retract mode to retract all jacks.
G	Manual Mode - Enters Manual Mode to manually operate jacks.
H	Enter - Push to select various modes.
I	Retract - Retracts jacks in several modes. Jacks available will be highlighted in blue.
J	Extend - Extends jacks in several modes. Jacks available will be highlighted in blue.
K	Reset - Resets to factory default.
L	Power Button - Turns touch panel on and off.
M	Auto Level - Starts the Auto Level sequence.
N	AUTO HITCH - N/A with manual jockey wheel.

Operation - OneControl Touch Panel

⚠ WARNING

Make sure to park the caravan on solid and level ground. Prior to operation, clear all jack landing locations of debris and obstructions. The locations should also be free of surface depressions and moisture. When parking the caravan on extremely soft surfaces, utilize load distribution pads under each jack.

⚠ WARNING

To avoid injury people and pets should not be moving around inside the caravan or close to the outside to the caravan when the leveling system is operated. Never lift the caravan completely off the ground. Lifting the caravan so the wheels are not touching the ground will create unstable and unsafe conditions.

Basic Jack Operation In Start-Up Mode

To reach Start-up Mode (Fig. 17) for leveling:

1. Power on the OneControl Touch Panel (Fig. 17L).

NOTE: The screen will open to OneControl with access to various functions (Fig. 19), including leveling.

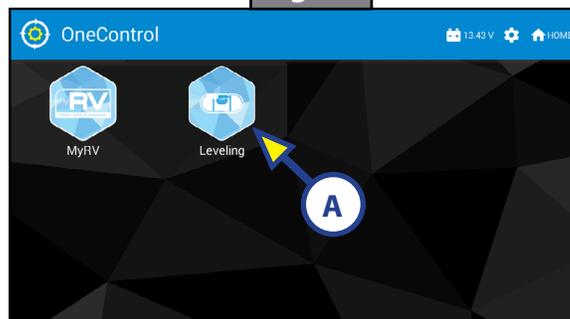
NOTE: If the LEVELING icon is not on the OneControl screen, check that the OEM-installed isolator key similar to Figure 18 is in the on position. The key could be installed in various locations on the caravan.

Fig. 18



2. Press the LEVELING icon (Fig. 19A).
3. The screen will show the system menu (Fig. 17) for Start-up Mode. Front and rear jacks cannot be operated in Start-up mode.

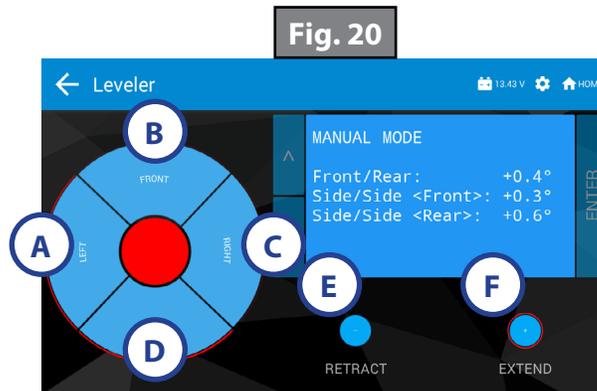
Fig. 19



Basic Jack Operation In Manual Mode

To reach Manual Mode (Fig. 20) for leveling:

1. While in Start-up Mode (Fig. 17), use the arrows (Fig. 17B) to scroll to Manual Mode (Fig. 17G). Press ENTER (Fig. 17H).
2. Front and rear jacks can be operated in Manual Mode.



OneControl Touch Panel in Start-up and Manual Modes

Start-Up Mode Features

1. The AUTO LEVEL (Fig. 17M) button will start the auto leveling sequence.
2. Use the UP or DOWN arrow (Fig. 17B) buttons to cycle through the menu screen options:
 - A. **Info:** Scroll to "Info" (Fig. 17C) and press ENTER (Fig. 17H) button to display system information, e.g., angle, jack stroke or software version.
 - B. **Auto Retract:** Scroll to Auto Retract (Fig. 17F) and press ENTER button to start the Auto Retract sequence, which will retract all jacks.
 - C. **Manual Mode:** Scroll to Manual Mode (Fig. 17G) and press ENTER button to start Manual Level operation.

Manual Mode Features

NOTE: Upon entering Manual Mode, a tutorial on operating the jacks will appear on the screen. Press "OK" to clear the tutorial. To delete the tutorial, click the "Don't show this again" box in the bottom right of the screen.

1. Press EXTEND (Fig. 20F) or RETRACT (Fig. 20E) then FRONT (Fig. 20B) to operate front jacks.
2. Press EXTEND or RETRACT then REAR (Fig. 20D) to operate rear jacks.
3. Press EXTEND or RETRACT then RIGHT (Fig. 20C) to operate right jacks.
4. Press EXTEND or RETRACT then LEFT (Fig. 20A) to operate left jacks.

NOTE: To operate jacks individually, press EXTEND or RETRACT then press the LEFT (Fig. 20A) or RIGHT (Fig. 20C) button while simultaneously pressing the FRONT (Fig. 20B) or REAR button (Fig. 20D), depending on which jack needs to be operated.

NOTE: The jacks normally operate in pairs. If at any time in manual mode the jacks operate individually, the Twist Protection Prevention System has been activated to prevent frame twist. The OneControl Touch Panel or OneControl App will display "Relieving frame twist." The jacks will resume operating in pairs when the potential frame twist has been relieved.

Unhitching From Tow Vehicle

NOTE: Prior to unhitching from the tow vehicle, make sure the caravan is parked on a level surface and chock the tyres of the caravan.

NOTE: Make sure that the jockey wheel is pinned securely in place.

1. Disconnect any wires or chains that may be equipped between the tow vehicle and the caravan. Unlatch the caravan coupler.

NOTE: If using the OneControl Touch Panel and the hitch is not visible, a second person will be needed to monitor the operation of the unhitching process.

2. Disconnect the caravan wire connection at the tow vehicle, if not previously completed.
3. Deploy the jockey wheel and extend the coupler off of the hitch ball.

Auto Leveling

1. Prior to auto leveling, make sure the caravan is unhitched from the tow vehicle and the tow vehicle is parked a safe distance away from the caravan.
2. Press the "ON/OFF" button (Fig. 17L) if the OneControl Touch Panel is not on. The screen will open to the OneControl menu with access to various functions. Press the leveling icon (Fig. 19A) to bring up the Leveler screen.
3. Press the AUTO LEVEL button (Fig. 21A) on the Leveler screen. This will bring up a reminder screen (Fig. 22) to verify that the tow vehicle has been unhitched and the towball has been lowered approximately 3" (76 mm) below level. Press ENTER when those procedures have been completed and verified.

Fig. 21

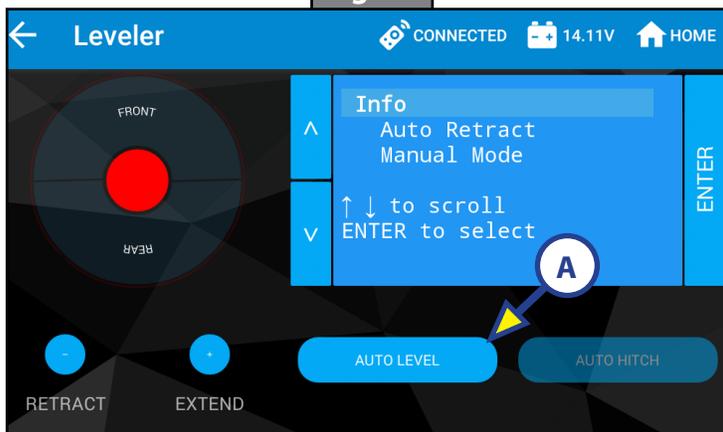
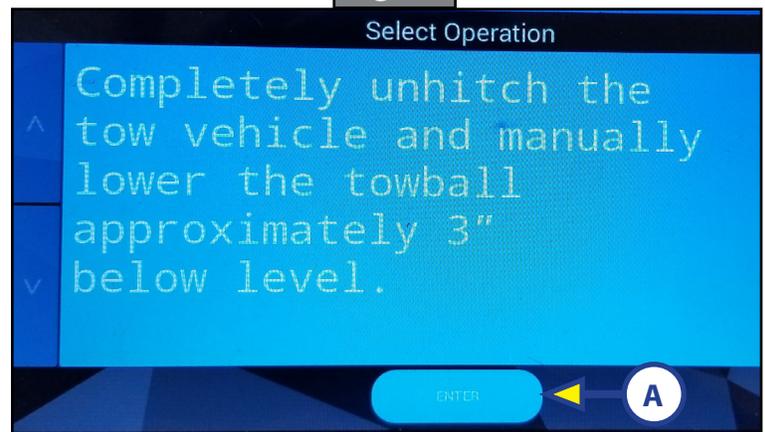
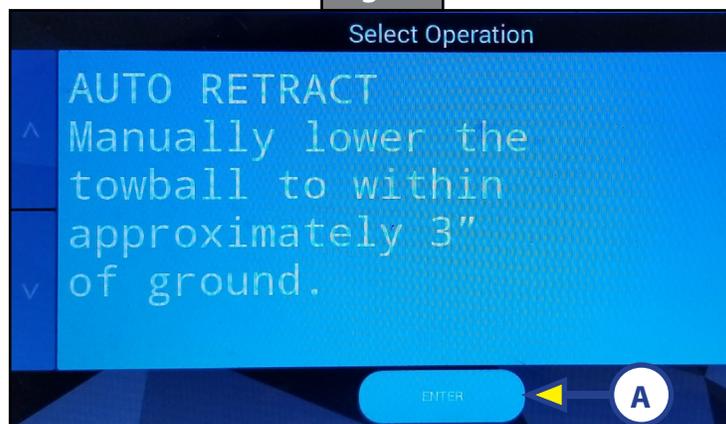


Fig. 22



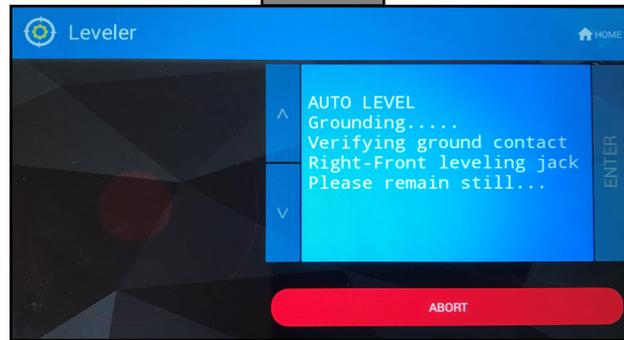
4. As a safety precaution the Auto Leveling will pause and a screen confirming that the towball has lowered to within 3" (76 mm) of ground will appear (Fig. 23). The system checks that all jacks are retracted and the towball is in the proper position. Press ENTER (Fig. 23A) to continue.

Fig. 23



5. The Auto Leveling process will now begin with the grounding of the front jacks, until movement of the caravan is sensed (Fig. 24).

Fig. 24



NOTE: Once the automatic leveling cycle has been started, it is important that there is no movement in the caravan until the leveling process is complete. Failure to remain still during the leveling cycle could have an effect on the performance of the leveling system.

NOTE: Pressing any button during an Auto Level sequence will abort the auto leveling cycle.

6. After the front jacks are grounded, the system will stop to verify that the jockey wheel has been fully retracted, and if applicable, swing the jockey wheel up. Press ENTER (Fig. 25A) again.
7. Rear jacks will extend and ground (Fig. 26).

Fig. 25

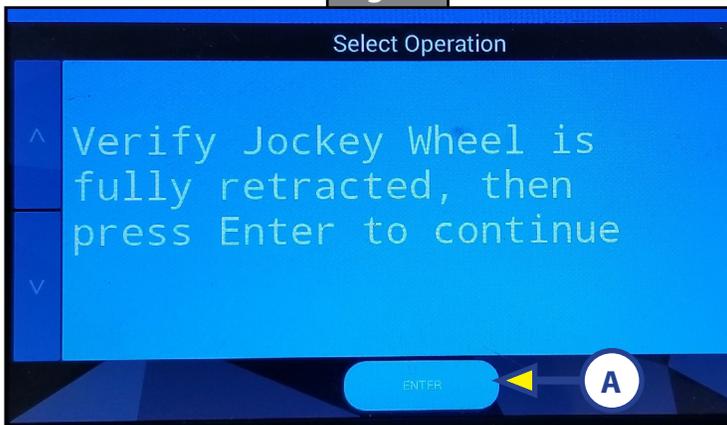
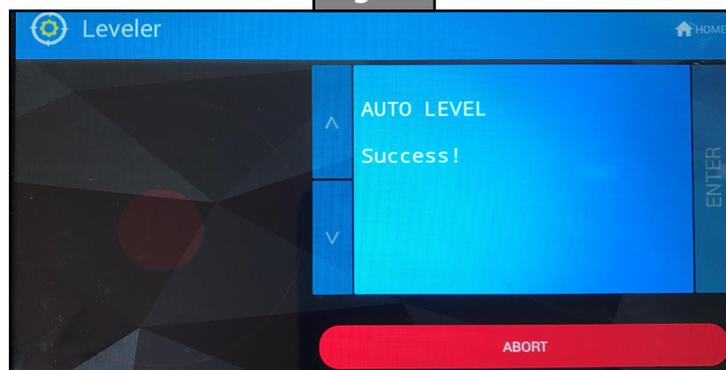


Fig. 26



8. The caravan will now level front-to-back then side-to-side.
9. Auto Level sequence will ground all jacks to ensure all foot pads are on the ground.
10. The success screen (Fig. 27) will appear when the process is complete.

Fig. 27



NOTE: If the AUTO LEVEL sequence does not perform as described above, locate the OneControl Touch Panel to place the system in Manual Mode. Test that the jacks operate correctly by pushing their corresponding buttons on the OneControl Touch Panel; e.g., FRONT button operates only the front jacks, etc. (See Operation - OneControl Touch Panel in this manual).

Auto Retract

1. Starting at the main Leveler screen (Fig. 28), press the down arrow button to scroll to Auto Retract, then press the ENTER button (Fig. 28A).
2. A reminder screen (Fig. 29) to manually retract the towball approximately 3" (76 mm) will appear. At this time, the manual jockey wheel should be lowered. If equipped, unlock the swing nut and move the jockey wheel shaft to the desired position then relock the swing nut. Then crank the jockey wheel to within 3" (76 mm) off the ground. When that process has been completed, press the ENTER button (Fig. 29A).

Fig. 28

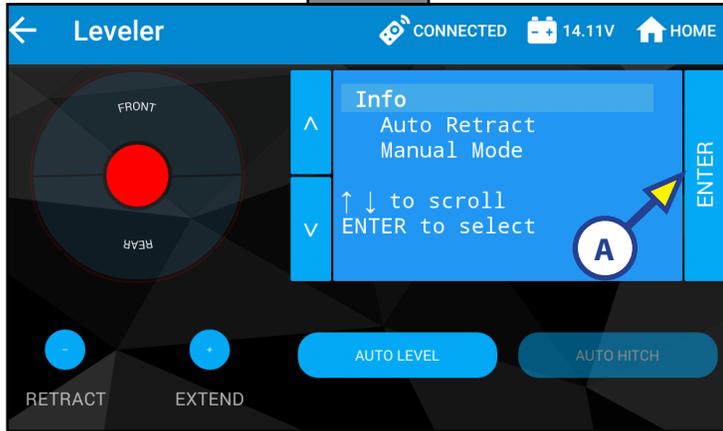
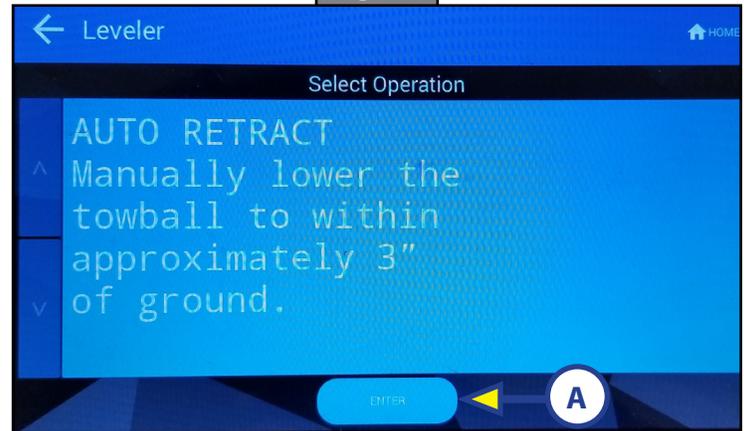


Fig. 29

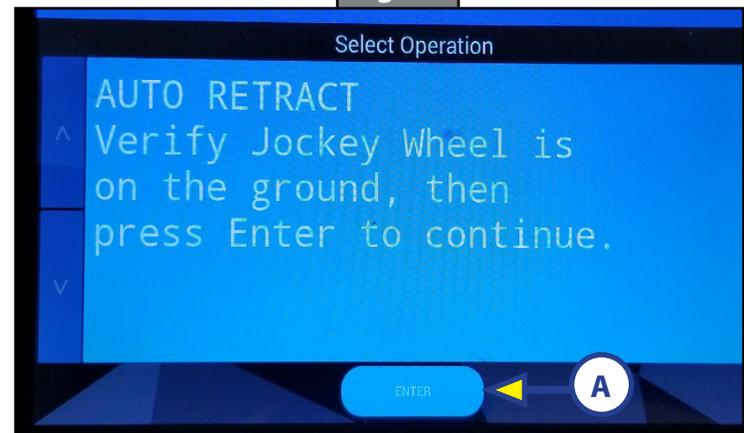


3. The Auto Retract process will now begin with the retracting of the rear jacks (Fig. 30).
4. After the rear jacks are finished retracting, the system will pause to verify that the jockey wheel has been extended to touch the ground. Press the ENTER button (Fig. 31A) when that has been completed.

Fig. 30



Fig. 31



5. Front jacks now begin to retract (Fig. 32). After the front jacks are retracted, the Auto Retract process is complete and the system returns to the main Leveler screen, which will automatically turn off after a minute if it is not used.

Fig. 32



Tyre Change Mode

WARNING

Make sure that the caravan is on level ground and a safe location to work before starting a tyre change procedure.

1. Chock the caravan tyres, both in front and behind, on the side opposite the flat tyre.
2. Make sure the jockey wheel is on stable ground.
3. Loosen the lug nuts on the flat tyre, but do not remove the tyre.
4. Completely unhitch the tow vehicle and manually lower the towball approximately 3" below level.

CAUTION

Always support the caravan with a certified jack stand of acceptable capacity before removing the tyre.

5. See owner's instructions for tyre replacement. When complete, remove the jack stand and follow the instructions for Auto Retract.

Troubleshooting

Red/Green LED Indicator on Auto Leveling Control Touchpad

What is Happening?	Why?
Off	Touchpad is locked.
Solid Green	Touchpad is active.
Blinking Green	Jacks are moving.
Solid Red	Low battery.
Blinking Red	Error - Refer to OneControl Touch Panel screen for the specific error, then consult the Troubleshooting section of this manual to clear the error.
Red and Green blinking at the same time.	System is waiting for user input to proceed with an Auto Function.

Error Display In OneControl Touch Panel

Errors can only be cleared via the OneControl Touch Panel. The only exception is when the Auto Leveling Control Touchpad (Fig.15) was used to abort an auto-sequence. In this case the error can be cleared by pressing any Auto Leveling Control button. To clear an error, correct the issue, then press "OK." If the error is still present, the message will be displayed again.

Error Codes		
Touch Panel Message	What's Happening?	What Should Be Done?
EXCESS ANGLE	Excessive angle reached during auto operation.	Relocate the caravan.
EXCESSIVE ANGLE	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 press ENTER.
BAD CALIBRATION	Sensor calibration values are out of range.	Replace controller.
FEATURE DISABLED	Hitch recognition requested but no hitch height set.	Perform Auto Level sequence to establish hitch height.
	Zero point not set.	Set Zero Point.
LOW VOLTAGE	Battery voltage 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. Relocate the travel trailer.
EXTERNAL SENSOR	Bad connection or wiring from the controller to the leveling sensor.	Replace or repair connection to leveling sensor.
JACK TIME OUT	Time limit 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. Relocate the travel trailer.
	Unable to auto level due to zero point being set incorrectly.	Reset Zero Point.
FUNCTION ABORTED	User has aborted an automatic leveling sequence.	Restart the sequence.
HALL POWER SHORT	Short circuit detected on one or more of the jack hall effect power lines.	Check harness and replace or repair.
CAN'T COMPLETE LEVEL IN THIS LOCATION. PLEASE RELOCATE RV TO FLATTER TERRAIN	The caravan is parked on a steep incline during auto level. The front cannot be leveled and the front jacks are already fully retracted.	Relocate the caravan.

Special Jack Error Codes on OneControl Touch Panel

To Clear the Error Codes Listed Below:

1. Correct or otherwise repair the issue (see the table below).

NOTE: In order to clear the special jack error code the jacks need to be “homed.” In order to “home” jacks, each jack must be able to retract a minimum of 152mm.

2. Extend all jacks to reach the 152mm of minimum retract needed.
 - A. Press “EXTEND” and “FRONT” to extend the front jacks (if required). Refer to “Operation - OneControl Touch Panel”.
 - B. Press “EXTEND” and “REAR” to extend the rear jacks (if required). Refer to “Operation - OneControl Touch Panel”.
3. Press “ENTER” to AUTO RETRACT. The jacks will retract until they reach the hard current limit.
4. The jacks are now “homed” and the special jack error code will be cleared.

NOTE: If the jacks do not retract, an error should display on the touch panel screen. This is typically caused by wiring interruption.

Touch Panel Message	What's Happening?	What Should I Do?
ERROR Left-Front Jack Fault Right-Front Jack Fault Left-Rear Jack Fault Right-Rear Jack Fault	Error at a specific jack (left front, right front, left rear, right rear, tongue). Hall signal issue (open, short, malfunction or loss of communication); open or short circuit between controller and motor.	<ul style="list-style-type: none">• Check voltage at the battery under load.• Check harness connections at controller and at the jack.• Check harness for damage.• Check fuses at controller.• Repair or replace as necessary.

C-Jacks Manual Override

NOTE: For ease of manual override it is recommended to unplug the power harness to the motor prior to performing the manual override procedure.

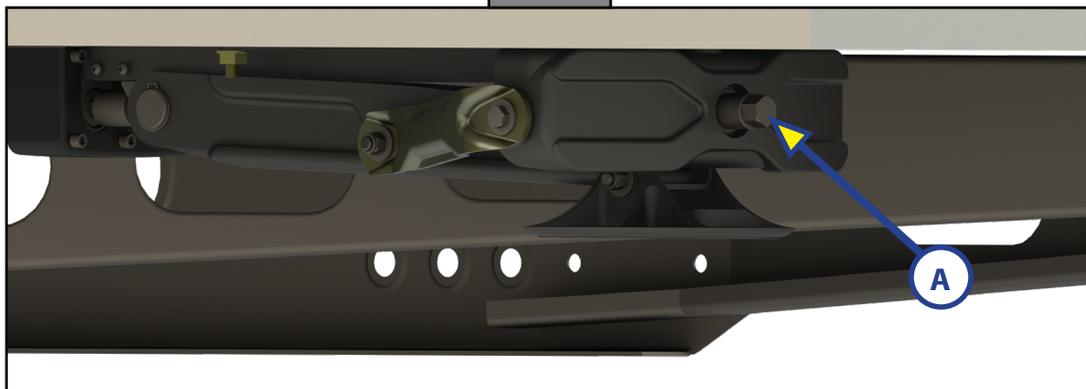
NOTE: Use of a 12-18 volt cordless screw gun or pneumatic screw gun is acceptable to manually override the jacks. Do not use an impact screw gun to perform any of the override procedures, as this may damage the motor. If manual override is necessary there are two options.

Jack Manual Override Nut

Tools needed: 20mm socket wrench

1. Locate the manual override nut (Fig.33A).
2. Place 20mm socket wrench over the manual override nut and turn the override nut until the jack extends or retracts to desired position.

Fig. 33



Zero Point Calibration

The "Zero Point" is the programmed point that the caravan will return to each time the Auto Level feature is used. The "Zero Point" must be programmed prior to using the Auto Level feature to ensure the proper operation of the system. The "Zero Point" feature is available on the OneControl Touch Panel with this system.

NOTE: Images depicted are from the OneControl Touch Panel.

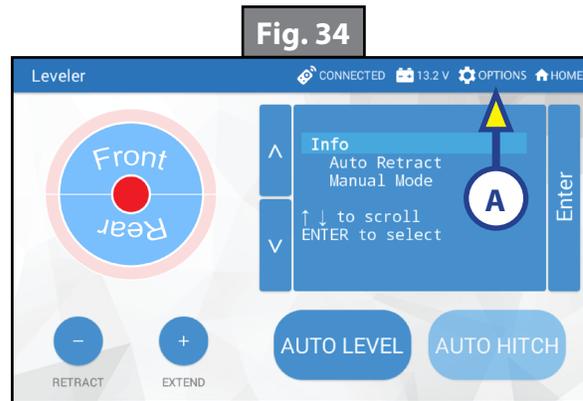
NOTE: Prior to starting this procedure, double check all connections on the controller, jacks, and touch panel.

NOTE: When calibrating Zero Point, the user has full manual control over the jacks. See "Basic Jack Operation - Manual Mode" to adjust to the desired level position. Press the enter button to set.

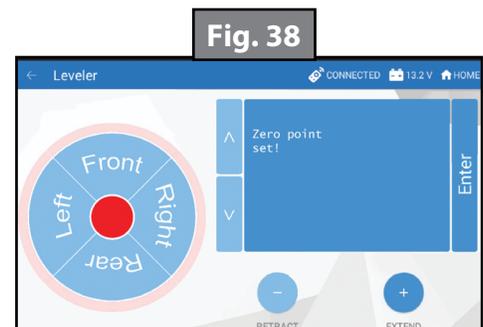
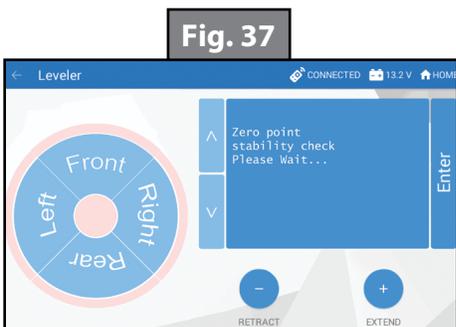
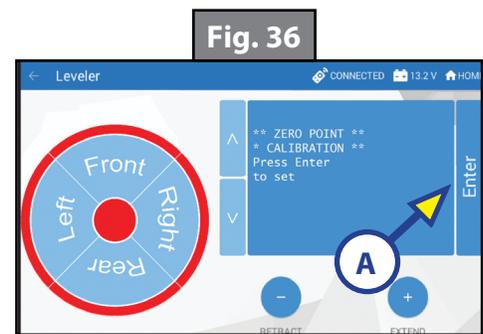
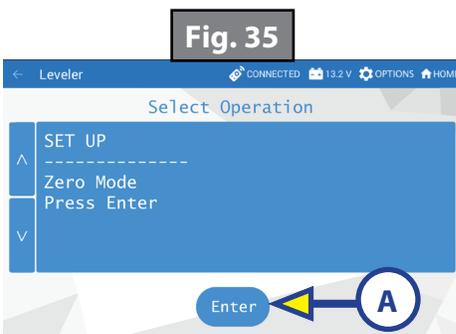
Setting the zero point

The following procedure works from Standard Mode only. (See "Operation OneControl Touch Panel")

1. Press the gear icon with OPTIONS (Fig.34A). Accept the warning message that is displayed.



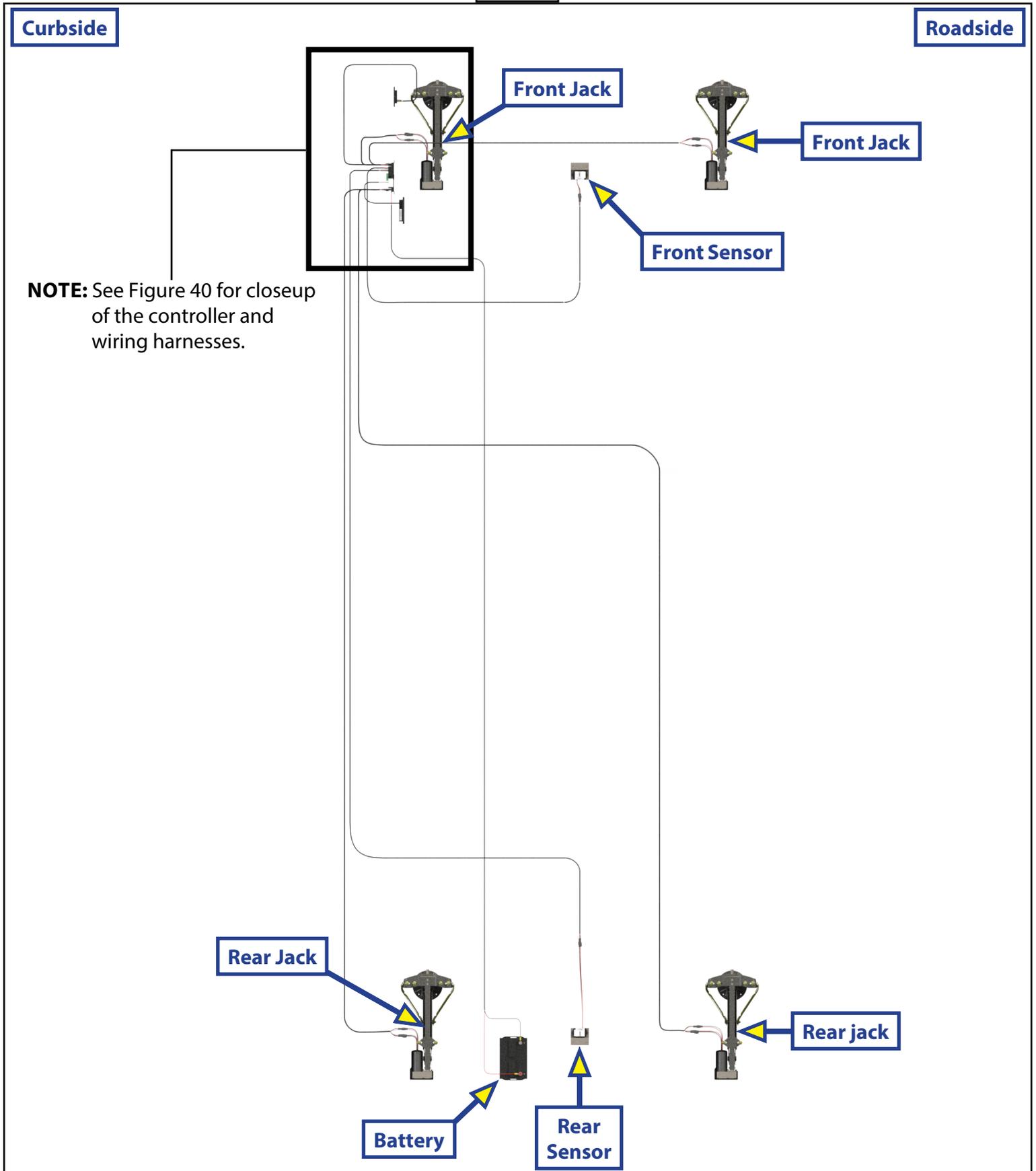
2. The screen will show SET UP: Zero Mode Press Enter (Fig. 35A). Press the ENTER button
3. The touch panel will present options for further leveling of the caravan if needed. The screen will also state "ZERO POINT CALIBRATION - Press Enter to Set" (Fig. 36).
4. Press "ENTER" (Fig. 36A).
5. Screen will show "Zero Point Stability Check . . . Please Wait" (Fig. 37), followed by "Zero Point Set" (Fig. 38).



Wiring Diagram

NOTE: This system requires two canbus terminating resistors: one on the controller and one on the back of the OneControl Touch Panel.

Fig. 39



NOTE: See Figure 40 for closeup of the controller and wiring harnesses.

Fig. 40

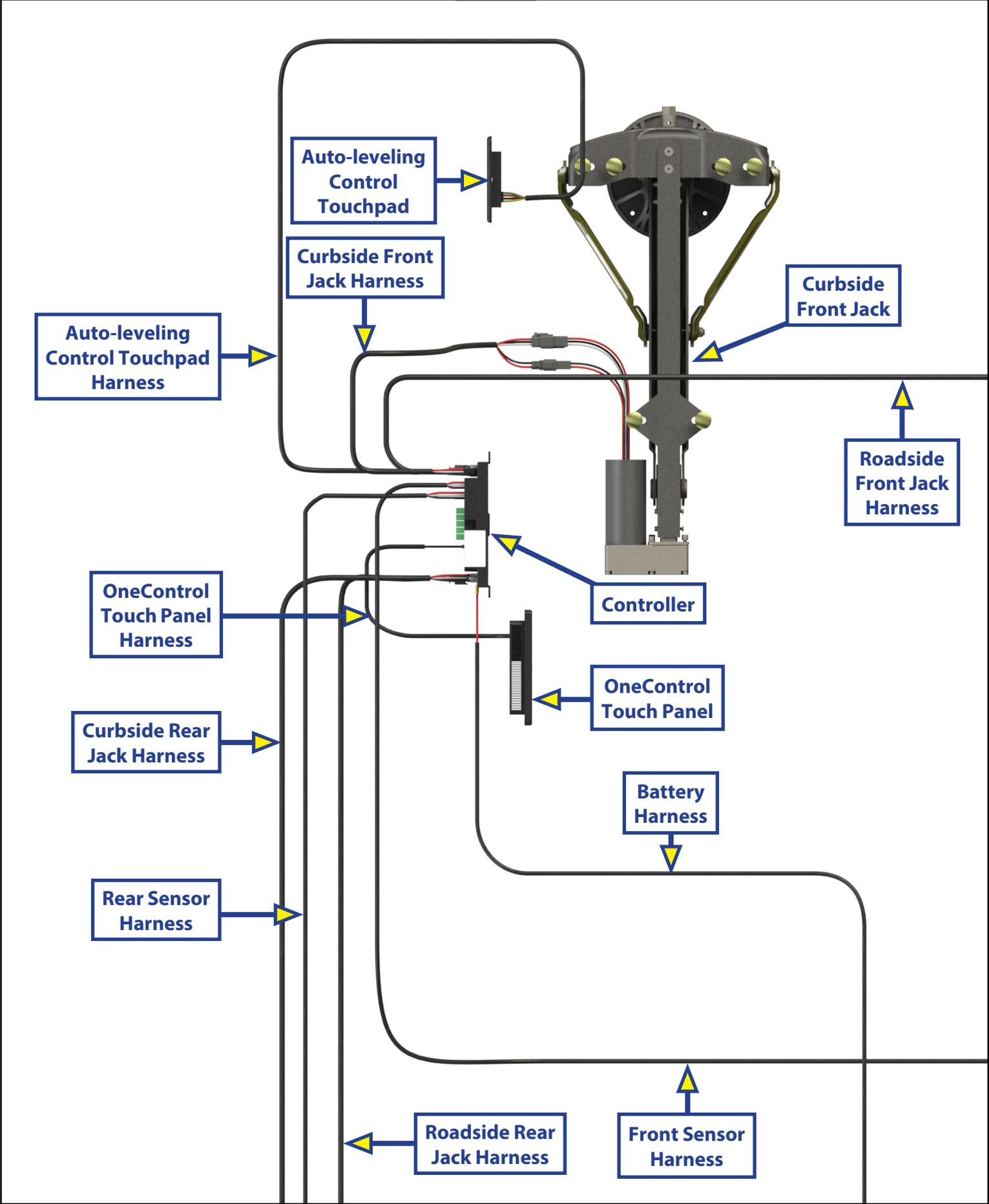
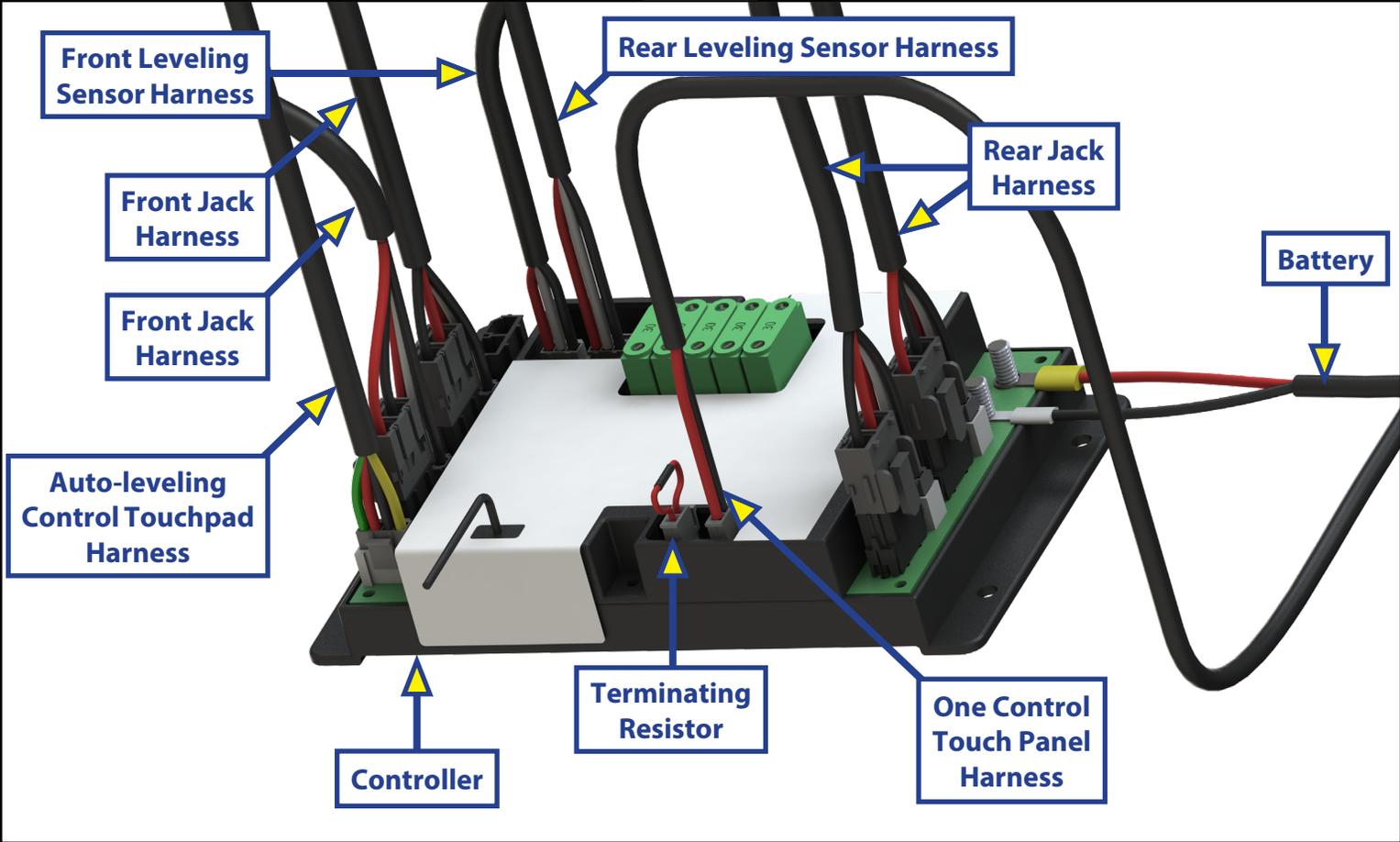


Fig. 41





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