



(800) 846-9659

CONVERSION TO SMART LEVEL VEHICLES EARLIER THAN 2007

These instructions cover the replacement of early Equalizer/EQ Systems Auto Level and manual control panels used years 2007 and earlier. These older control panels can be identified by a 12-pin single row connector at the lower back side of the panel. Part #s for these are (but not limited too) 1703, 1702, 1612, 1613, 1632, 1668, 1934, 1978, 2057, 2058, 2086, 2795, 2795B.

These older control panels and their level sensors are no longer available. The wiring harnesses used with these are not compatible with the new Smart-Level control.

Systems manufactured in 2003 through 2006. May have 1/8-inch hydraulic lines which are not compatible with the new Smart-Level due to pressure monitoring. Thus, these need to be changed to 1/4 inch. The customer will need to provide needed lengths if this is the case.

Coaches manufactured prior to 2002 will have pump and manifold assemblies that are/may not be compatible with the new controls, and most parts are not available for these units. Thus, the complete system is deemed to be obsolete. In these instances, the complete system will need to be replaced.

These control conversions will not solve power supply or pump and manifold issues.

Conversion Process

This document covers the conversion of EQ Systems control systems that used the original auto level with the “remotely mounted sensor and the manual only panels used years 2001 through 2007 over to the newer Smart-Level control. Basically, the control panel will be changed out to the new Smart-Level control panel, and a new wire harness will be installed from the Smart-Level control panel to the pump assembly. There are several differing Smart-Level control panels and wire harnesses depending on the application.

The new Smart-Level control panel has nothing to do with the control of the slides however it is important that the hydraulic slides (if present) do work as if they do not, it would indicate that there is perhaps an issue with the pump assembly.

The new Smart-Level control panel may or may not fit into the same hole as the original. The level sensors are located inside of this panel as all the output commands to the pump and manifold assembly for the jacks. This replaces both the original control panel and the “remotely” mounted sensor which can be located on the underside of the main floor between the frame rails mid coach. Also, most of these early units used leg switches which are not used with the Smart-Level control.

Remove the Original Control Panel

There will be a single row 12 pin connector at the back of the original control panel, this harness/connector will not be used with the new Smart-Level. On Auto Level panels there will be a 3-pin connector near the bottom of the panel, this is for the sensor that will not be used with Smart-Level. A power wire or a two-pin power and ground connector will be present. None of these will be used with the new Smart-Level panel. All of these may be removed or taped up and abandoned. There will be a breakout of the harness with the chassis interface wires. Locate these as the chassis side will be connected to the new Smart-Level harness later.

The New Smart-Level Harness Needs To Be Run From The Control Panel Mounting Area To The Pump Assembly

The end of the harness with the two row 12 pin and the 3-pin connector wires goes to the new Smart-Level control panel mounting area. The end with the 3 row 9 pin and the 2 pin connectors go to the pump assembly. The harness should be routed away from high heat sources such as exhaust components and kept away from moving items such as suspension parts or the drive shaft. The harness should be “tied in place” with the use of loom champs or tie wraps.

Interface Connections

If there was a 2-pin connector at the J5 connector of the original control panel remove the connector and connect the orange wire to the grey wire (new harness) and the white wire to the purple wire (new harness). If there was no connector connected to the J5 ignore the grey and purple wire. This connector and these connections will only be present on a Diesel Pusher Motor Coach. And are for air suspension deflate and inflate.

The Pink wire is the ignition-on input. Connect this wire to the wire from the chassis that was connected to the Pink or Red from the original harness. (See item 2 above). This connection is mandatory- It is absolutely required. Check this connection using a digital meter to be sure, that it is "Hot" 12V DC positive when the key is in the engine run position.

The Black/Yellow trace wire is the Park Brake feed. Connect it to the Black or Black/Yellow wire from the original harness or take it to a solid chassis ground. If this is not done the engage park Brake light will be on and extend function may not operate

Control Panel Connections and Mounting

After the interface connections are made the new harness may be connected to the Smart-Level control panel. There are two connectors, the 12 pin and the 3 pin. Verify that all wires are secure and that the housing latches are in place. Then mount the control panel. The panel will also have a 4-pin connector it is not used for this application.

The new Smart-Level control panel will need to be mounted using the supplied bezel with 4 screws (not provided). Do not use screws that are larger than the hole size in the panel corners. The panel must be mounted to a solid fixed surface that reacts/responds well with the coach as the level sensors are in the panel. The panel may be mounted vertically or horizontally but not right at 45 degrees or at an angle like in a corner

Replace the Pump Harness the New One Is In 3 Parts

Install the new power and ground feed to the pump.

There may or may not be one originally. This is the power and ground for the new Smart-Level control panel. This is a supplied two wire harness. The black wire connects to the pump ground stud. The yellow wire (or red) connects to the battery terminal connection on the motor solenoid. The connector is mated to the two-pin connector (Red and Black) on the new wire harness coming from the Smart-Level control panel.

Replace the pump harness. This harness feeds the manifold valves and the motor solenoid the colors should all be same as the original. (If not refer to the owner/installation manual for drawing showing correct wire placement). The Yellow with Black trace wire goes to the pressure switch which is installed next.

A new grounding harness is supplied to ground all the valve coils and the pressure switch. Each coil and the pressure switch receive one of these connections. The eyelet goes to the pump ground stud.

Note the ground stud is located in the center section that separates the motor from the reservoir. The stud on the motor is not a ground.

Valve Coil Color Code wire connections

V1 Brown Left Front Jack

V2 White Right Front Jack

V3 Orange Left Rear Jack

V4 Yellow Right Rear Jack

V5 Green/stripe Slide #1 (if present)

V6 Purple/stripe Slide #2 (if present)

Motor solenoid solid blue

Valve DV 1 solid green

Valve DV 2 solid blue

Install the New Pressure Switch Into the Pump Manifold

On units with a pressure switch

Simply remove the original one and install the new one in the same port.

On units without a pressure switch

Locate a port on the retract side of the manifold that is not currently used. Generally, this port will be stamped with a "B" followed by a number. Remove the plug

and install the pressure switch. Also, a Port marked PS or G1 may be used.

A 90-degree fitting has been included and may be used to install the pressure switch. If none of these ports are available for use, then the use of a TEE fitting will be used (included in the kit) to connect two of the retract side hoses (B side of the manifold) together. This will free up one of the retract side ports to install the pressure switch.

One of the terminals on the pressure switch will be connected to the pump ground stud using the supplied harness. The other terminal will be connected to the Yellow with Black trace wire of the new pump harness

On systems that did not have a pressure switch; They will have jack leg switches that will not be used with the new system. Remove these leg switches. The harnesses that feed each leg switch will not be used they can be removed or tied up out the way.

Connect the Harness

The new harnesses at the pump should connect to the new Smart-Level harness with the mating 9 pin connectors. The wire colors should match up going through the connectors. The 2 pin connectors should mate up with black mating to black. The red will mate to the fused red or yellow wire.

The control panel should now power up and operate from the manual up and down buttons (ignition off and part brake engaged).

Prior To Attempting Auto Level, the Control Panel Needs To Be Programed. See Instructions for Panel Programing.

On systems that have 1/8-inch I.D. hydraulic lines

Replace the hose assembly's that connect from the pump assembly to the jacks.

These are not included in the conversion kit.

The customer will need to provide the lengths needed used on the coach so that part #s and pricing may be provided.

In addition to the 8 needed hose assemblies the following adaptor fittings are needed.

1124 (4), # 1403 (4), # 1190 (4)

There is a kit # 7440A that includes all needed hose assemblies and adaptor fittings suitable for use on Class A diesel pusher units such as Travel Supreme

where the pump is near the front or others where the pump is near the front or near the rear.

This is required as the new control system is not compatible with the original 1/8-inch ID hose that was used on many coaches from 2003 through 2006. Also, the upper jack fittings must be replaced with the ones in the kit. Prior to disconnecting the hose and fittings the area should be cleaned to prevent debris from entering the pump/manifold or jack cylinders. The pressure in the lines can be lowered to a minimum by slightly extending all 4 jacks so that they are not in the retracted position nor are they supporting the vehicle weight. The original hose assemblies should be blown out or closed off as they are full of fluid, they may be removed or abandoned (left in place).

The hose assemblies should be routed and secured in such a manner to keep them away from items that could chaff them or cause damage from heat such as moving items or high heat sources such as engine or generator exhaust. The use of loom clamps or tie wraps and protective wraps may be used (not supplied in kit). **It is imperative that the hoses be correctly connected to the manifold per the manifold sticker or the chart/drawing in the owner's manual. The use of the color-coded stickers for the hose assemblies will help in making the proper connection.**

Manifold Stamp Color Code Jack Leg Connection

T 1 Brown Solid Left Front Top

T 2 White Solid Right Front Top

T 3 Orange Solid Left Rear Top

T 4 Yellow Solid Right Rear Top

B 1 Brown Stripe Left Front Bottom

B 2 White Stripe Right Front Bottom

B 3 Orange Stripe Left Rear Bottom

B 4 Yellow Stripe Right Rear Bottom

Purge Instructions For Units That Have Had Hose Assemblies, Jacks or Pump Assembly Changed

1. Park on a level spot

Check the fluid level. When the jacks are retracted the fluid level should be 1" away from the top of the tank. If it is not, then add fluid. The fluid we use is Dexron Automatic Transmission fluid. It does not matter which Dexron 3, 4, 5 or Dexron Mercon. Multipurpose ATF may also be used.

2. Turn on your touch pad/control panel.

3. Push and hold the down arrow for the front jacks and continue to hold it till the front of the coach is off the ground and the pump changes pitch or noise. Continue to hold the button for 5 seconds after the pump changes pitch.

4. Push and hold the down arrow for the rear jacks and continue to hold it till the rear of the coach is off the ground and the pump changes pitch or noise. Continue to hold the button for 5 seconds after the pump changes pitch.

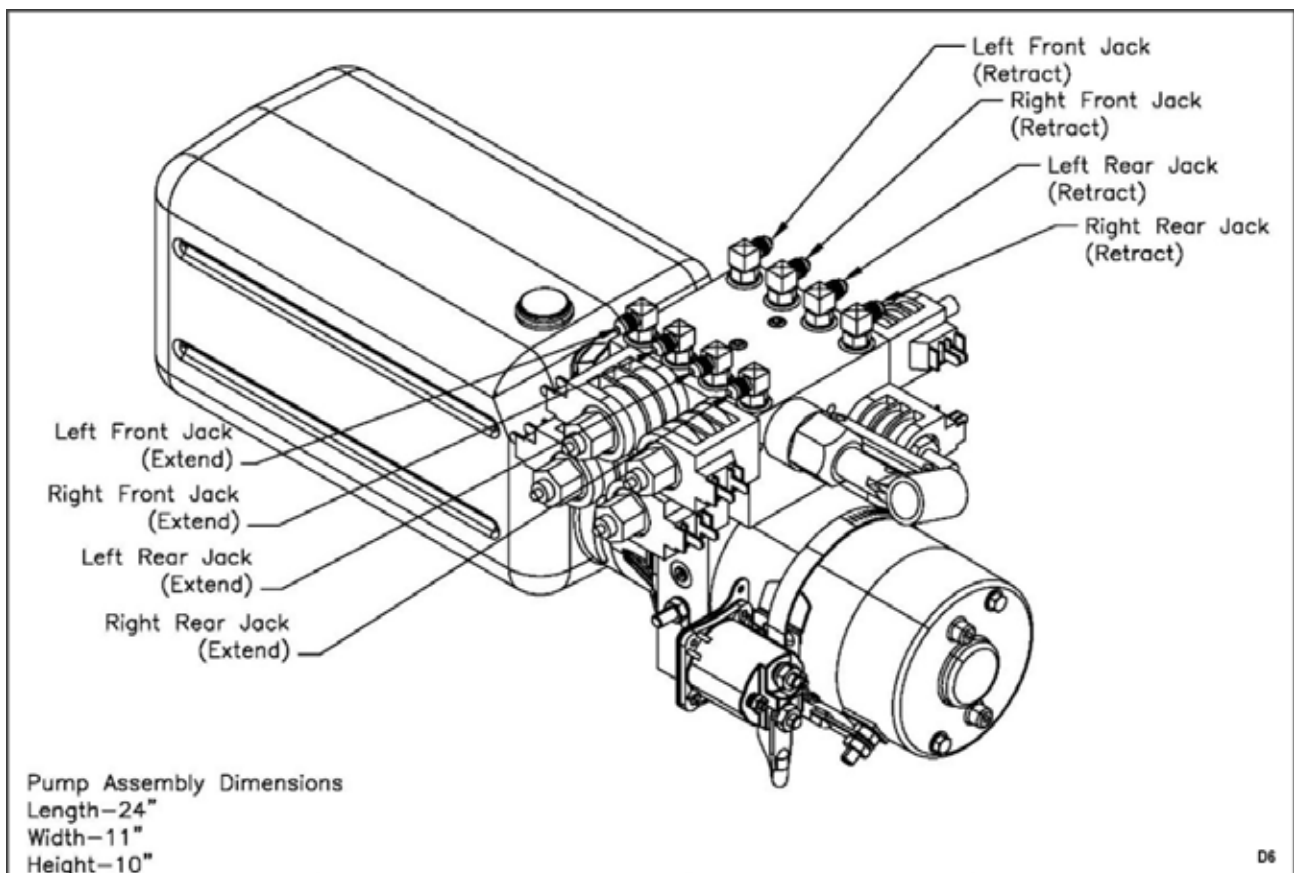
5. Wait 15 minutes

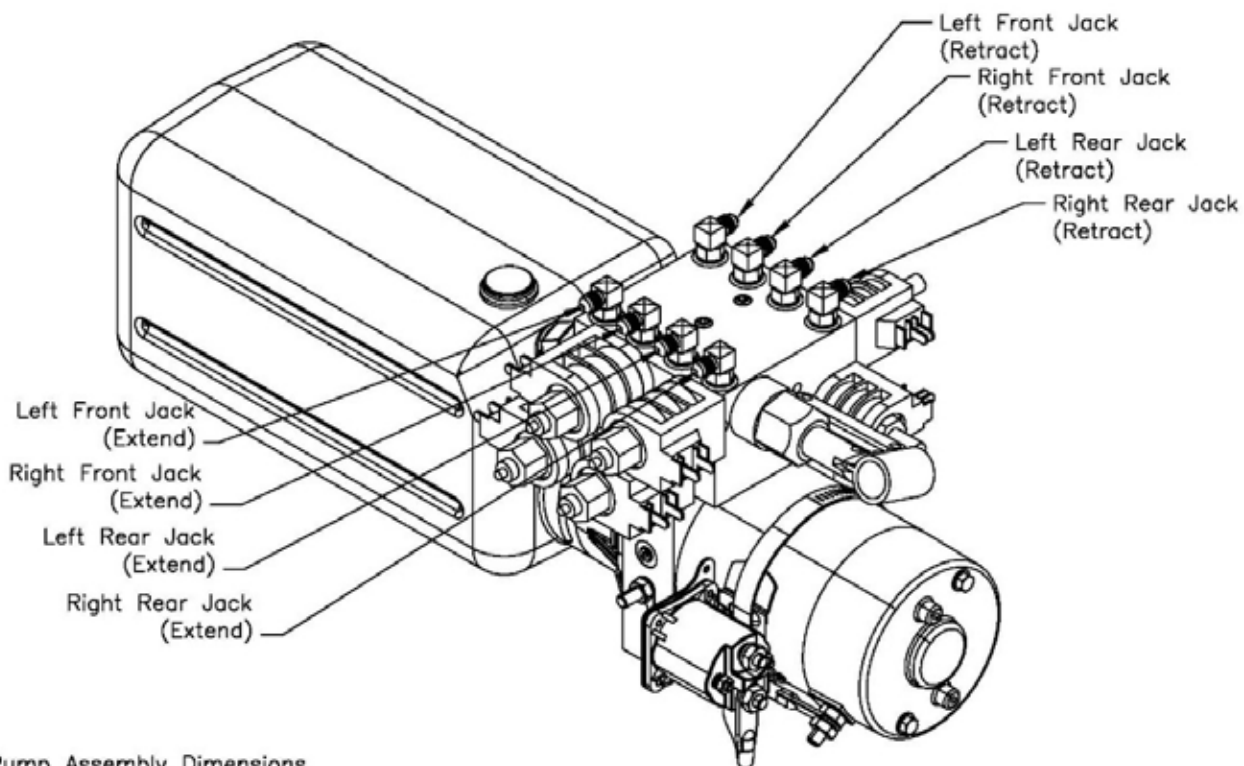
6. Push the All Retract button

7. Wait 15 minutes

Check the fluid level. When the jacks are retracted the fluid level should be 1" away from the top of the tank. If it is not, then add fluid. The fluid we use is Dexron Automatic Transmission fluid. It does not matter which Dexron 3, 4, 5 or Dexron Mercon. Multipurpose ATF may also be used.

8. Repeat steps 4 through 7 two more times.





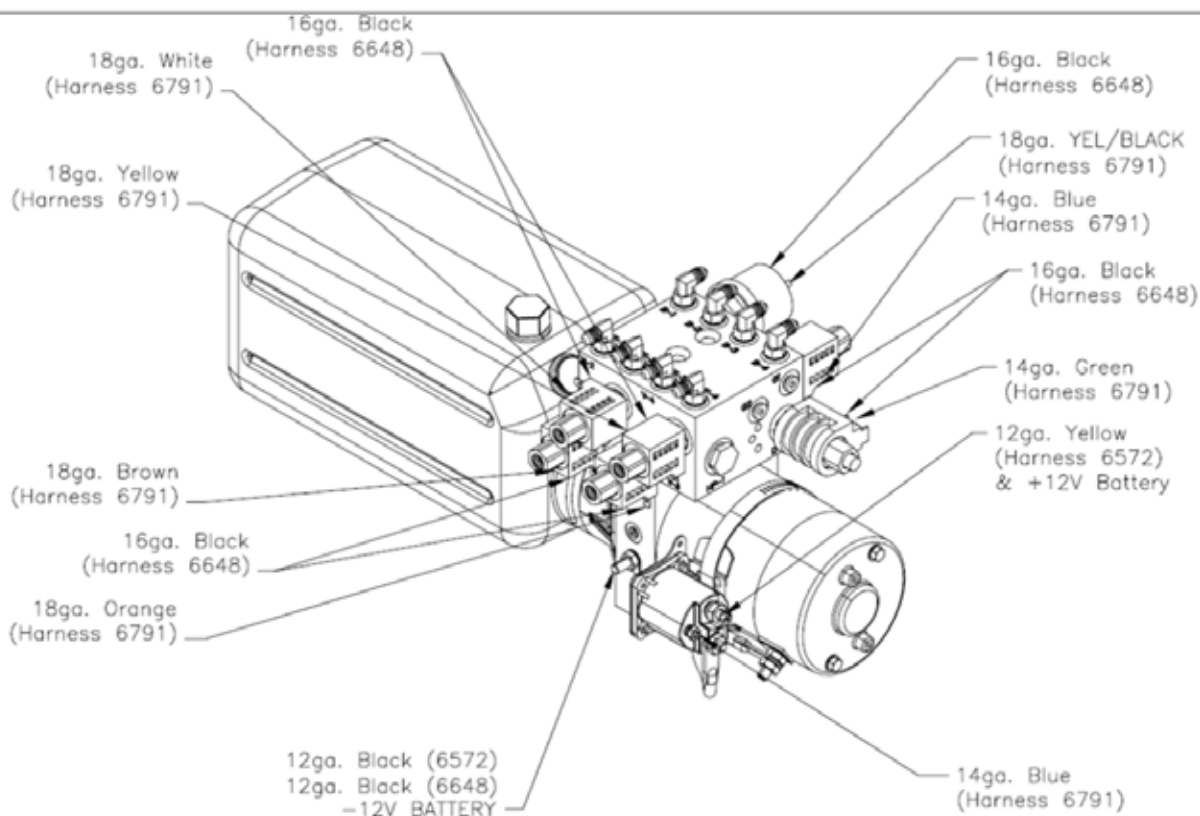
Pump Assembly Dimensions

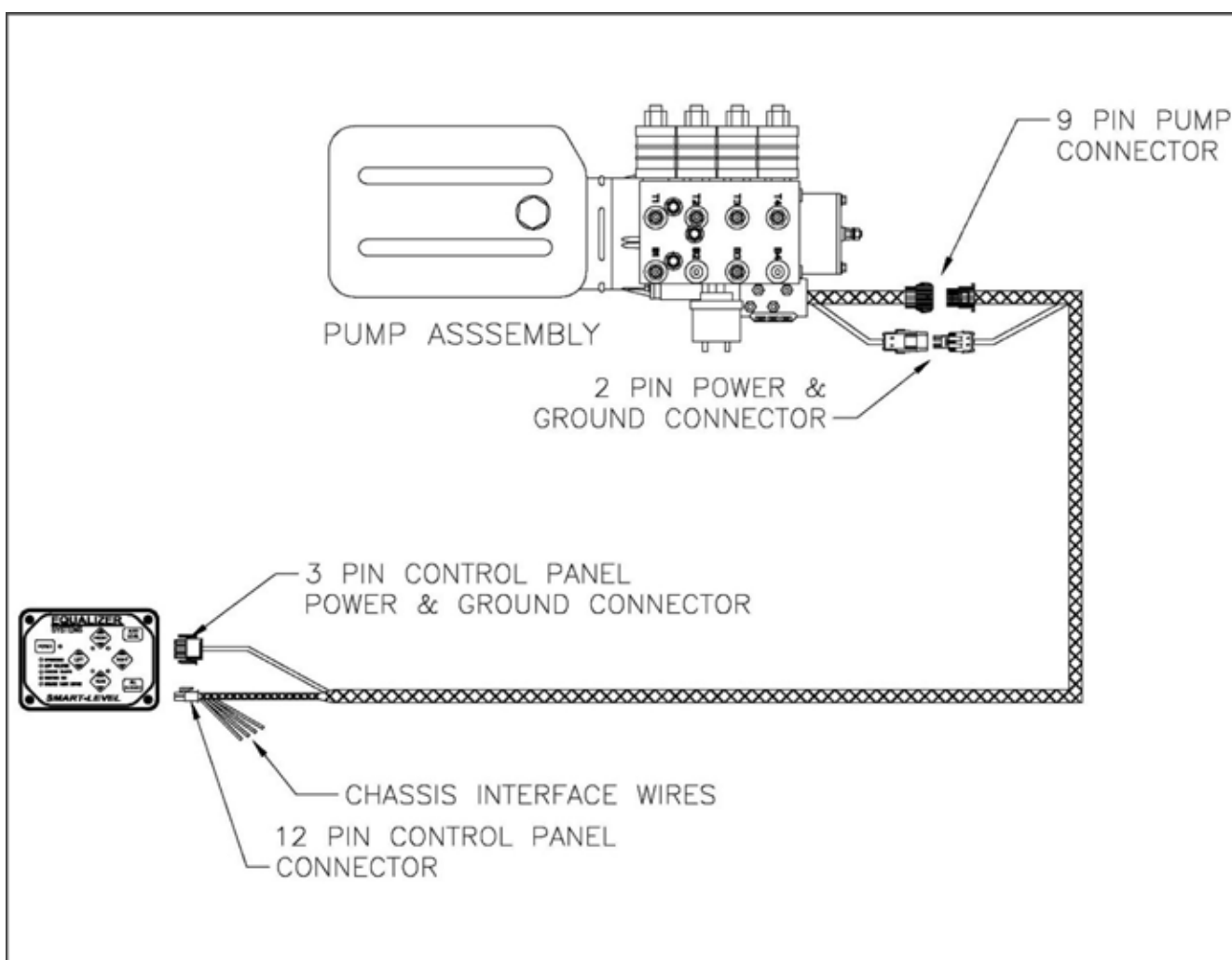
Length—24"

Width—11"

Height—10"

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EQ SMART-LEVEL CONTROL PANEL PROGRAMMING

May 2023

After the system is fully installed the control panel must be programmed for operation. Failure to do this will result in a failed or improper Auto Level. There are two program settings that must be programmed in the following order - 1) Orientation and 2) Null.

Step 1 - Orientation Setting

- This process cannot be completed until after the system has been connected to power and the control panel has been mounted and all electrical harness connections have been completed.
- This process teaches the control panel where the front of the vehicle is and how the control panel is mounted (vertical or horizontal). If this process is not performed correctly the processor will not know where the front of the vehicle is.
- It is possible that without doing this process it may work on a level floor/shop environment however when at locations where the system needs to operate specific legs for leveling it very likely will operate the improper legs.
- Once this process is properly completed the setting will be “retained” in the control panel and should not ever need to be performed again unless the control panel is replaced or moved to a different location.
- With the control panel off, press and hold the ALL RETRACT button, then while holding it press the POWER button, then release both buttons. The power light will start blinking and you will hear a rhythm beeping, and the 4 jacks down indicator lights will be on.
- Next the orientation is selected by pressing one of the manual control arrows. The exact specific one is determined by how the panel is mounted (see examples below). You will select an up arrow if the panel is mounted vertically and down arrow if it is mounted horizontal. The specific one is the one that most relates to the front of the coach.

Examples

- If the panel is mounted vertically inside the vehicle so that when you are looking at it, you are also looking at the inside of the front of the vehicle. You would push the UP ARROW for the front jacks.
- If the panel is mounted vertically inside the vehicle so that when you are looking at it, you are also looking at the inside of the rear of the vehicle then you would press the UP ARROW for the rear jacks.
- If the panel is mounted vertically on the vehicle so that when you are looking at it, you are also looking at the side of the vehicle then you would press the UP ARROW for the left or right jacks depending on which is the closest to the front of the vehicle.

EQ SMART-LEVEL CONTROL PANEL PROGRAMMING

Step 2 - Setting the Null

Null is the term used to indicate the levelness of the coach. A Null setting should have been performed by the installer. If the coach is not level following an attempt to Auto Level, you will need to level the coach and reset the null.

Use a bubble level on a flat surface in the center of the coach as a reference. You do not need to have the jacks deployed to set the null.

- To set the null, first press the POWER button on the keypad to activate the unit. The LED light next to the Power button should be lit RED when the power is on.
- Level the coach by deploying jacks manually, or by simply parking the coach on a level site. Once the coach is level, turn the POWER off at the panel.
- While holding down the AUTO LEVEL button, press and release the POWER button. This should cause the keypad to make a series of beeps.
- After the Keypad has beeped 5 to 6 times, release the AUTO LEVEL button and you will get a confirmation beep. (The Keypad will continue to beep if the Auto Level button is held) The new null has been set and the panel will store/remember this setting.
- Press and release the ALL RETRACT button to retract the jacks to the stowed position.

Note: if you are not clear on this process please check our website for videos and/or call EQ Systems for assistance.

EQ SYSTEMS QUICK START OPERATION

EQ SMART-LEVEL

Park coach, set the brake, and turn off the ignition.*

Press the **POWER** button on the **EQ SMART-LEVEL KEYPAD/EQ SMART-LEVEL APP** to turn the system on.

If the four lights are lit in the center of the keypad, press **ALL RETRACT**.

After the four lights go out press **AUTO LEVEL**. During the leveling process the keypad will beep.

Allow **EQ SMART-LEVEL** system to run in the auto mode until all jacks are finished adjusting.

At this time you will hear two beeps indicating you are level and the process is complete.

Press the **POWER** button on the **EQ SMART-LEVEL KEYPAD/EQ SMART-LEVEL APP** to turn the system off.

*Note: The leveling system on your coach may require the ignition on and the engine running. Refer to the operation manual per manufacturer.

RETRACTING LEVELING SYSTEM

When you are ready to move your coach, press the **POWER** button and then press the **ALL RETRACT** button.*

When all jacks are fully retracted, the four lights will go out and the beeping will stop. Once you're finished, press power to turn off.

Visually inspect to be sure that all jacks are fully retracted prior to travel.

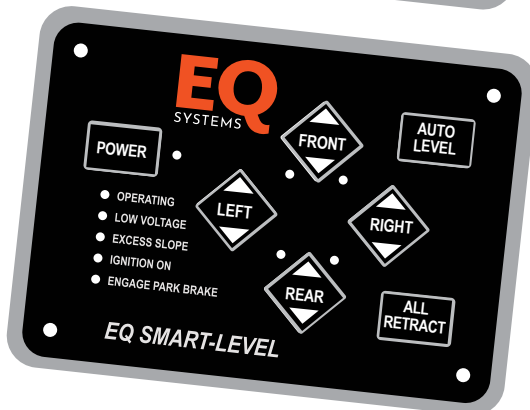
*Note: If your coach is equipped with air ride suspension you will need to start your coach engine and build air pressure before retracting to ensure that the suspension will air up.

BLUETOOTH OPERATION

- If the face of your keypad indicates that your controller is compatible with a bluetooth device, download the EQ Smart-Level app in the Android or Apple app store.
- If your keypad does not indicate compatibility, your Bluetooth connectivity may be done through your multiplex system.
- When downloading the app, make sure your Bluetooth setting is turned on or the app will not connect to your coach.
- Once the app is downloaded please follow the instructions above to level your coach.

PREVENTATIVE MAINTENANCE

- Make sure that all battery and electrical connections are tight and free of corrosion.
- Verify that the batteries are good and properly charged.
- Depending on how often the jack shafts are exposed to the outdoor elements, it is good to keep them coated with a silicone based lubricant.
- Do not use grease or any other lubricant that stays wet.
- In the event that it is necessary to add fluid to the reservoir, use a good quality automatic transmission fluid (Dexron).



FOR RECALIBRATION/SETTING THE NULL

please view the video in the Support section of our website.



FOR MANUAL OVERRIDE OF THE RETRACT FUNCTION

please view the video in the Support section of our website.



(800) 846-9659

For a complete operation and troubleshooting manual or to activate your warranty please visit **EQSYSTEMS.US**