



(800) 846-9659

CONVERSION TO SMART-LEVEL

FLEETWOOD/AMERICAN COACH 2004-2005

These instructions cover the replacement of early Equalizer/EQ Systems Auto Level control panels used years 2004 and 2005 on Fleetwood/American diesel pusher coaches. 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 to) 1703, 1934, 1978, 1978FW and 1285.

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.

These systems used 1/8-inch hydraulic lines which are not compatible with the new Smart-Level control due to pressure monitoring. Thus, these need to be changed to 1/4 inch. The conversion kit for these coaches includes the hose assemblies and fittings. See the section on replacing hose assemblies.

Conversion Process

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.

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, these early units used leg switches which are not used with Smart-Level control. These leg switches should be removed from the jacks to prevent future confusion. The harness for the leg switches can be tied up and abandoned or removed.

The new Smart-Level control panel will need to be mounted using the supplied bezel with 4 screws (not provided). 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 at 45 degrees or at an angle like in a corner.

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. Also, 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 single power wire or a two-pin power and ground connector will also 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 somewhere down from these connectors. 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.

If there was a 2-pin connector at the J5 connector of the original control panel remove the connector and connect the Grey wire to the orange wire (chassis) and the purple wire to the white wire (chassis). This J5 connection will only be present on the hydraulic only systems they are for deflating and inflating of the air suspension. Note on orange and white wires, these are Equalizers colors, the Fleetwood colors may not be the same. On the new Smart-Level harness the gray wire is deflate and the purple wire is inflate.

If the system is the combination HYD/Air leveling system the deflate and inflate wires will be connected to the breakouts from the air leveling harness which is the upper 10 pin connector of these control panels. See the section on the Hyd/Air leveling for more info on this.

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. This connection is mandatory; it is absolutely required. Check this connection using a digital meter to verify that it is “Hot” 12V DC positive when the key is in the engine run position. This provides for a jack down warning and extend disable during driving.

The Black/Yellow trace wire is the Park Brake feed. Connect it to the Black or Black/Yellow wire from the original harness chassis side connection or take it to a solid chassis ground. Some coaches during this time frame did not connect to the park brake but simply took it to ground. If this is not done the engage park Brake light will be on and extend function may not operate. 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
Take photos of the original for reference

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. Note that the pump ground stud is located on the center section separating the motor from the reservoir. The stud on the motor is not a ground. The yellow or red fused wire connects to the battery terminal connection on the motor solenoid. The connector will be mated to the two-pin connector (Red and Black) on the new wire harness coming from the Smart-Level control panel.

Replace the ground harness, The eyelet goes to the pump ground stud. Note that the pump ground stud is located on the center section separating the motor from the reservoir. The stud on the motor is not a ground. The new ground harness has an additional lead for the new pressure switch. Each manifold valve coil will receive one each of the leads.

Replace the pump harness. This harness feeds the manifold valves and the motor solenoid. The colors should all be same as the original. The yellow/black trace wire goes to the pressure switch which is installed next. The 9 pin connector mates with the new smart-level harness.

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

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 leads on the pressure switch will be connected to a lead of the new ground harness and the other lead will be connected to the Yellow/Black trace wire in the new pump harness.

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.

Prior to attempting auto level, the control panel needs to be programed. See instructions for panel programing.

Replace the Hose Assembly's that Connect from the Pump Assembly to the Jacks

This is required as the new control system is not compatible with the original 1/8 inch ID hose that was used on these coaches. 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).

A. The kit contains 8 new hose assemblies (2 for each jack). The shorter ones are for the rear jacks and the longer ones are for the front jacks. 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 connections.**

B. The kit contains 4 fittings (restrictor type) that need to be installed into the upper port of the jack leg.

C. The kit also includes 4 new 90-degree O ring fittings for the bottom port on the jack.

After replacing the hose assemblies, a full extension and retraction will need to occur 3 times to purge the air introduced by changing the hose assemblies.

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

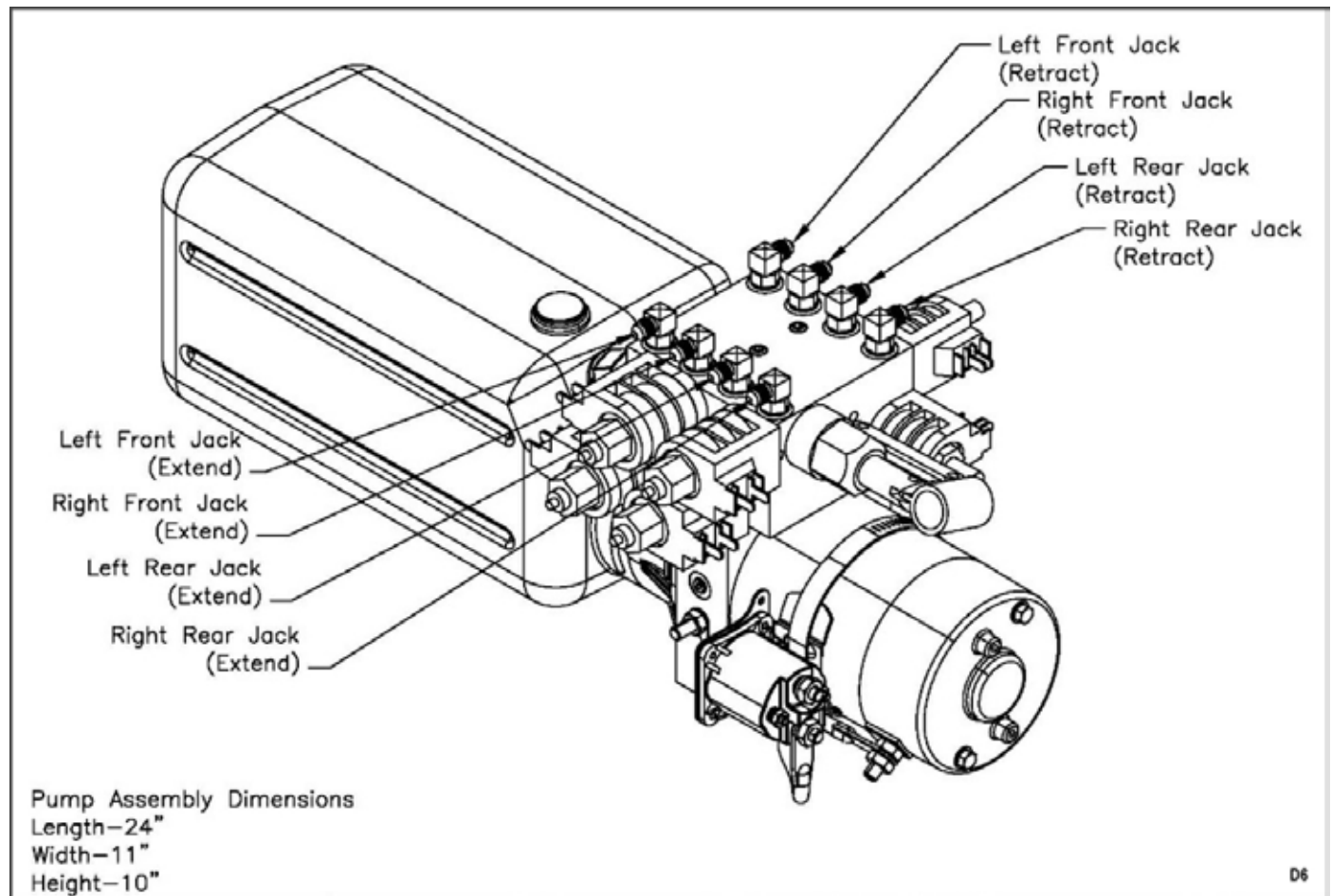
T 4 Yellow Solid Right Rear Top

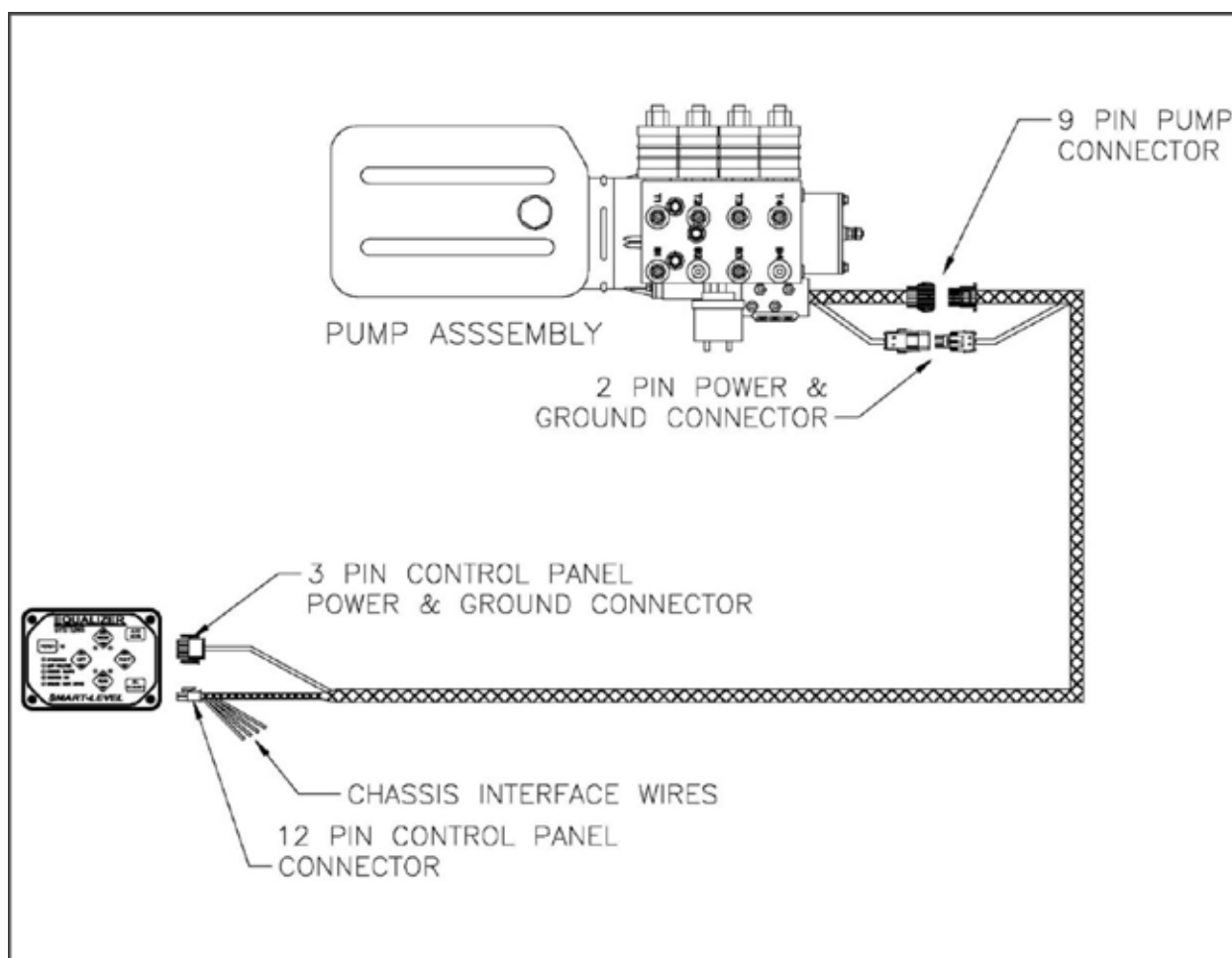
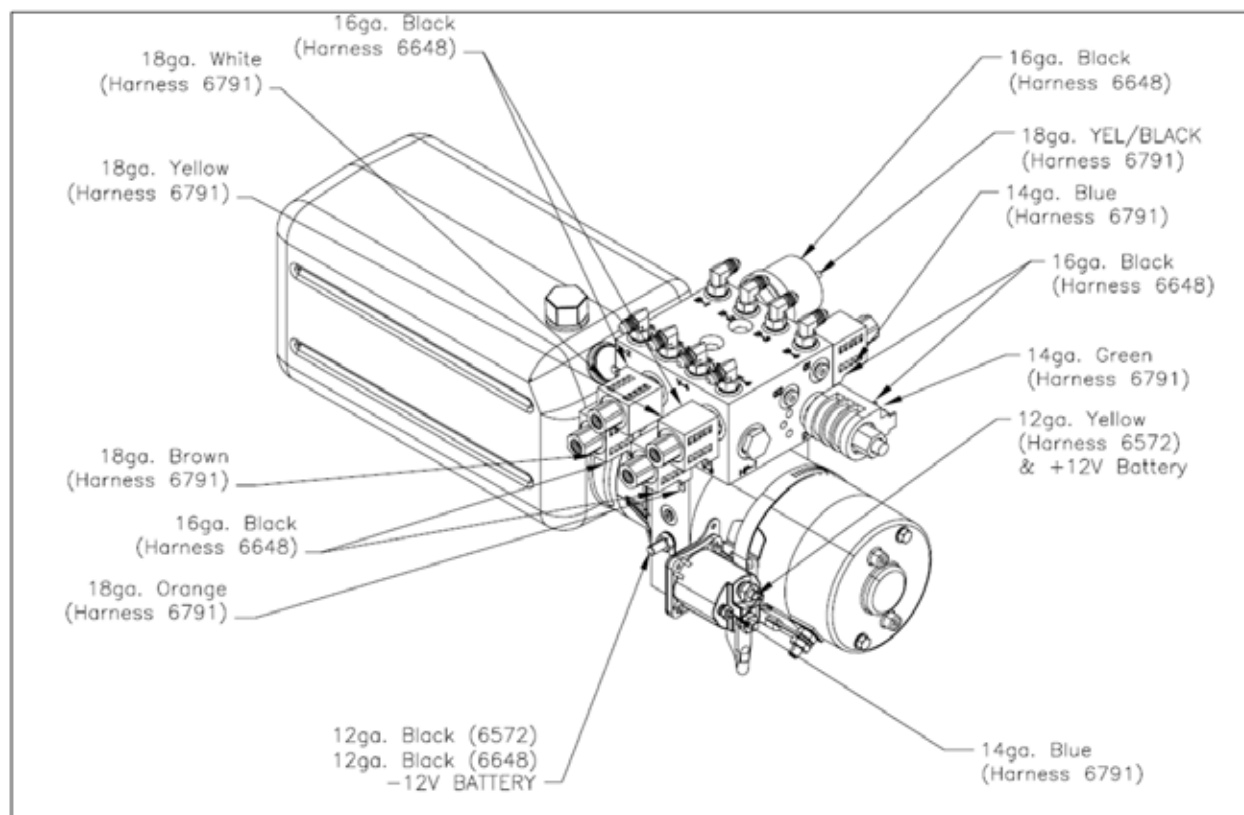
B 1 Brown Stripe Left Front Bottom

B 2 White Stripe Right Front Bottom

B 3 Orange Stripe Left Rear Bottom

B 4 Yellow Stripe Right Rear Bottom







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EQ SMART-LEVEL CONTROL PANEL PROGRAMMING

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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.

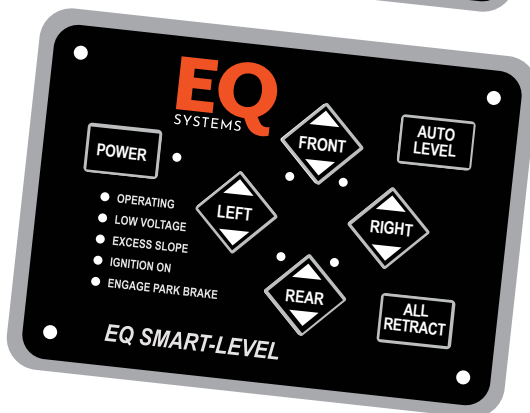
*Note: If your coach is equipped with air ride suspension you will need to start your coach engine and build air pressure before retracting to ensure that the suspension will air up.

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**

Last

Equalizer Systems Air/Hydraulic Leveling Systems # 8187 and 8209 3-23-16

This is to address the Air/Hyd. systems sold to Fleetwood/American coach for model years 2004 and 2005

The information contained in these documents is the only information available. Equalizer, Sales and Service personnel do not have any other info available, they will only be able to provide these documents.

Note: Not all Fleetwood/American units used the Air/Hyd. system. This only addresses the Air/Hyd. systems and does not apply to hydraulic only systems.

These systems have been discontinued and are considered obsolete since year 2008.

These systems can be identified by the presence of a button for Air and HYD on the panel or panel part #s 1978, 1978FW and 1285.

The major components of the Equalizer Systems air leveling system are no longer available for replacement

In the event of a failure of one of the air components the air leveling system will need to be abandoned/bypassed. See the following instructions for the process of bypassing the air leveling system. Miscellaneous items such as airlines and air fittings may be sourced at a local source such as a hose/fitting supplier or a truck/chassis repair center.

The bypass/removal of the Equalizer Systems air leveling components will return the air suspension to its original chassis manufacturers control of the air suspension.

Equalizer Systems Air/Hydraulic System

Air component bypass instructions

Note: When disconnecting airlines caution that they may be under high air pressure.

Air compressor/air tank:

1. Disable the electric feed to the air compressor by disconnecting the electrical plug connector near the air compressor. Disconnect the air line from the compressor output. The compressor may be removed or abandoned.
2. There are three airlines attached to the air tank.
 - A. One of them is the feed from the compressor (disconnected above) if physically removing components disconnect this.
 - B. One of the airlines goes to the air leveling control valves. This may be removed or just abandoned.
 - C. One of the lines comes from the chassis air tank. This must be disconnected and plugged preferably at its chassis supply source.

Air leveling valves EQ part # 1979, 7009, and 7162 there are 4 per coach:

1. Disconnect the wire harness connector at each (4) air leveling valve. The harness may be removed or abandoned in place.
2. There are 4 airlines at each valve.
 - A. Disconnect Lines HS (height supply) and B (Bag) HS and B is stamped into the body of the air leveling valves. Using the correct size airline coupler (DOT) connect these lines together.
 - B. Disconnect the line S (supply from the tank) and plug it. The airline may be removed or abandoned.
 - C. The final airline/port is an exhaust it may be abandoned.

Notes:

On Fleetwood/American coaches the air leveling valves will be located outside of the frame rails one near each corner/inside the wheel wells. The air tank/compressor is located in the front driver side compartment.

It is recommended the major components (compressor, tank, and valves) be physically removed from the coach to prevent future confusion. Airlines and harness assemblies may be abandoned or removed at the desire of the customer.

Additional info regarding the identification of parts and connections may be found in the original Owners/Installation manual for the Fleetwood Hyd/Air https://eqsystems.us/wp-content/uploads/2019/08/Air-Hydraulic_Auto-Level_Operation_Troubleshooting_Guide.pdf