



Troubleshooting Guide for Jacks “Down” LED Lights

Equalizer Systems Auto-Level systems manufactured after 2005 feature a pressure switch system that monitors the retracted state of leveling jacks and any hydraulic slide-outs. The “Jacks Down” LED lights alarm can be an indication of a loss of system retraction pressure. This retraction pressure holds the leveling jacks stowed and the slide-out rooms closed.

Note: A system that experiences alarming when the unit is being driven should be addressed in the following manner:

- 1) Stop (in a safe manner). **Do not press the “All Retract” button when traveling.**
- 2) Turn the power to the keypad “ON” and press the “All Retract” button. The pump should cycle ON and pressurize the system causing the jack position LED to turn OFF.
- 3) Visually confirming that the jacks and hydraulic slide-outs (if equipped) are fully retracted.
- 4) If the alarm repeats during the same travel period (or within 24 hours), seek immediate attention.

To properly diagnose the alarm, it is critical the following items be checked to determine that an issue does indeed exist or if there is an error in operating the system or system damage:

- ✓ No external fluid leaks. Any external leak needs to be addressed prior to proceeding.
- ✓ The fluid level in pump reservoir is filled to the proper level. Low fluid level could lead to air ingestion by the system. Generally, proper fluid level is that the reservoir is filled to the top of the upper horizontal accent ridge on the reservoir tank when the leveling jacks and slide-outs are fully retracted.
- ✓ The alarm occurs within 24 hours of the last system operation (“All Retract” command). Due to temperature changes and other factors, only alarming that occurs within 24 hours of the last “All Retract” command are to be considered to be a potential issue.
- ✓ Power to the leveling controller is not being interrupted. Power to the controller can be routed, depending on the coach manufacturer, through a remote battery disconnect switch or a physical battery disconnect. If power is interrupted to the Auto-Level Controller, the controller will automatically default to a “jacks down” alarm mode. This alarm default is a safety feature and is normal.
- ✓ In the course of operation, the hydraulic slide-outs (if equipped) are to be retracted before the jacks. Retracting the jacks after the slide-outs ensures full retraction pressure in the system is reached. If jacks are retracted before the slide-outs, false alarming could occur.
- ✓ It is critical that any hydraulic cylinder (jack or slide-out) that has drifted from the stowed position be noted and relayed to Equalizer Systems as part of the diagnosis.

For clarification of any of these mentioned items. Please contact Equalizer Systems Technical Support at (800)846-9659.

Troubleshooting

Step 1: Bleed the hydraulic system

The leading cause of this condition is trapped air. In most cases, bleeding the hydraulic system will resolve the issue.

Bleed the leveling system.

- On a hard level surface, run the leveling jacks to full extension. Extend all jacks until they touch the ground. Using the DOWN▼ jack buttons, a little at a time, alternate extending the front jacks and the rear jacks. Try to lift the coach as evenly as possible to avoid undue stress. When the jacks get to full extension, the sound from the pump will change pitch. This means the pump is in bypass or over pressure relief mode.

Note: This procedure will lift the unit off the wheels. Make sure to extend the jacks evenly to avoid damaging the unit.

- One at a time press and continue to hold each of the DOWN▼ jack buttons. Hold the button running the pump in bypass for 10-15 seconds. Do this for all four jacks.
- Allow the fluid in the reservoir tank to settle: 15-20 minutes.
- Retract the jacks. Use either the UP▲ jack buttons or the RETRACT ALL button.
- Once retracted, one at a time press and continue to hold each of the UP▲ jack buttons. Hold the button, running the pump in bypass for 10-15 seconds. Do this for all four jacks.
- Allow the fluid in the reservoir tank to settle: 15-20 minutes.
- Repeat this process.

Bleed the Slide-Out circuits.

- Fully extend each slide-out.
- With the slide-out fully extended, continue to hold the extend button for 10-15 seconds.
- Allow the fluid in the reservoir tank to settle: 15-20 minutes.
- Fully retract each slide-out.
- With the slide-out fully retracted, continue to hold the retract button for 10-15 seconds.

An indication that bleeding the system has been successful is that the fluid in the reservoir tank is foamed. This means that air has been removed from the system.

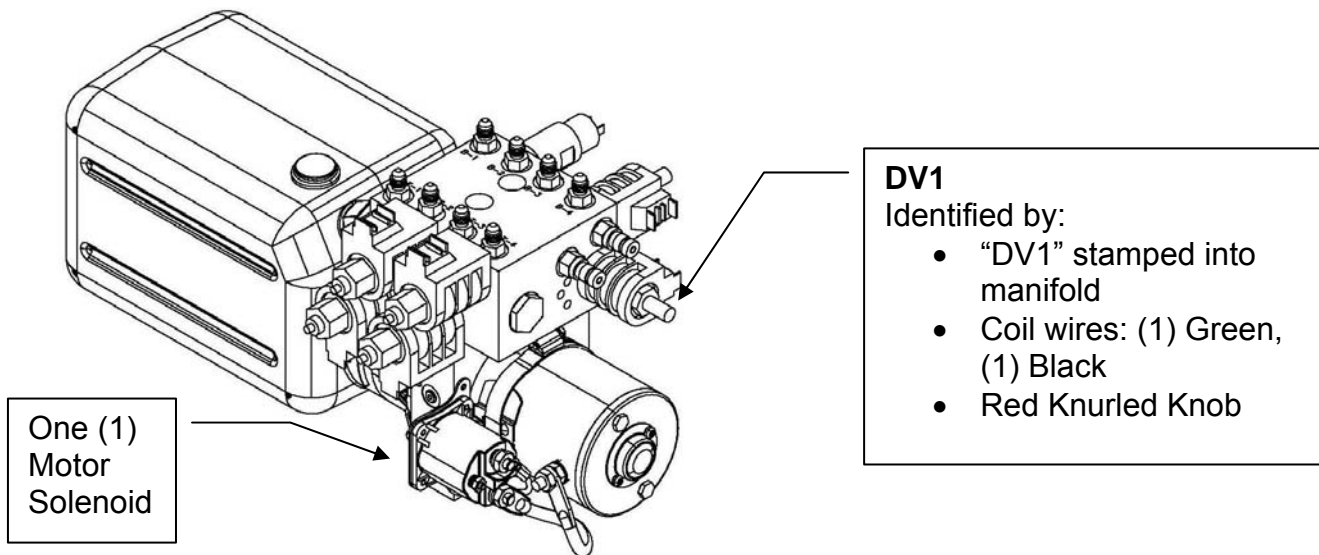
If bleeding does not resolve the issue, perform the following test, gather all the requested information and contact Equalizer Systems help desk at (800)846-9659 ext 339.

Step 2: Perform Hose Routing Test

This section outlines the test procedure for assuring proper hydraulic hose connections. Proper hose connections are critical to system operation to ensure full retract path pressure. Identify the type of pump assembly the unit, either Unidirectional or Bi-rotational, and perform the appropriate test.

Unidirectional

Note: This guide only applies to coaches equipped with a unidirectional pump assembly.



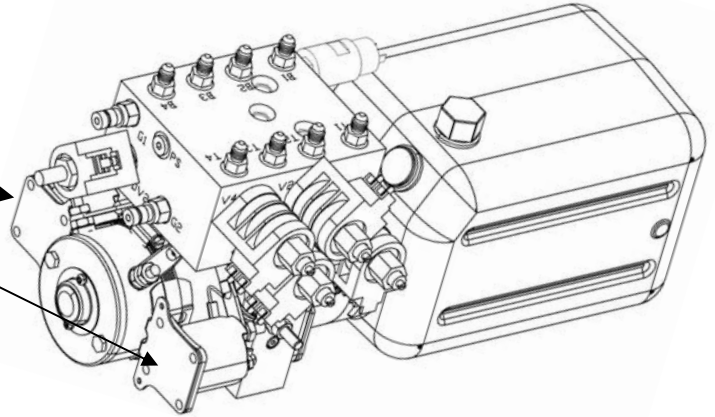
- 1) Run all slide-outs to a one-half extended position.
- 2) Manually open valve labeled as DV1 on the power unit manifold. This valve will be equipped with red manual override knob. To shift the valve: pull out on the knurled knob and then rotate the knob $\frac{1}{4}$ turn to hold in the open position. This operation must be done by hand: No Tools!
- 3) Individually operate each slide-out via its wall switch. If the valve has been properly shifted, each slide-out will only run in one direction. It will not matter what direction the wall switch is pressed. Take note of the only direction each slide-out will move: either **Extend** or **Retract**.
- 4) After testing, return DV1 to the normal operational position. Rotate the red knurled knob on DV1 until it "snaps" back into the "IN" position.
- 5) Record your results and report to the Equalizer Systems Help Desk.

Note: Depending on the model of unit being tested, slide-outs, even properly plumbed, may operate in different directions. This makes it very important to consult with the Equalizer Systems Help Desk before making any plumbing changes.

Bi-rotational

Note: This guide only applies to coaches equipped with bi-rotational pump assembly.

Bi-rotational Pumps are identified by two (2) motor solenoids attached to the electric motor.



- 1) With all leveling jacks retracted, run all hydraulically operated slide-outs to the one-half extended position.
- 2) Manually open cartridge valves for slide rooms on the pump manifold. These will be the valves located in the V-5, V-6, V-7, V-8, etc. positions (V-1 through V-4 are for the leveling jacks). The valves are opened by turning the stem screw all the way clockwise until lightly seated (approximately 2-3 turns).
- 3) Press the UP arrow key on the leveling system key pad corresponding with the left front leveling jack to manually retract the left front jack (even though it is already retracted). Do not press the **ALL RETRACT** button.
- 4) Note which direction each individual slide operates (**EXTEND** or **RETRACT**). Smaller/lighter slides may operate before the heavier ones. Once the lighter slide(s) reach the limit of their travel, the larger slides will begin to move.
- 5) Record your results and report to the Equalizer Systems Help Desk.
- 6) When finished testing, make sure to return valves to operating position.

Note: Depending on the model of unit, slide-outs, even properly plumbed, may operate in different directions when tested. This makes it very important to consult with the Equalizer Systems Help Desk before making any plumbing changes.

Step 3: Gather Coach and System Information

Please gather the following information and call Equalizer Systems.

Coach Info:

- Year
- Model
- Floor Plan
- Unit Serial Number- Note this is usually not the VIN

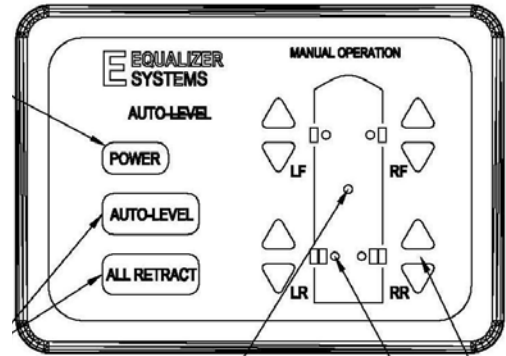
Leveling System:

- Pump assembly model number: Starts with a S10.....
- Leveling controller part number and software version data (see following illustrations)
- Keypad part number and software version data.
- Pressure Switch Type: Old or New? (see following illustrations)

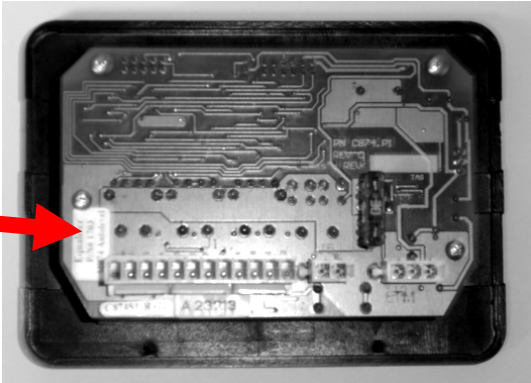
How to find Auto-Level Controller part number

Old Platform Style

Three (3) vertical buttons on the left side of the panel identify “Old” Platform Controllers. This style integrates controller and Keypad into one unit.

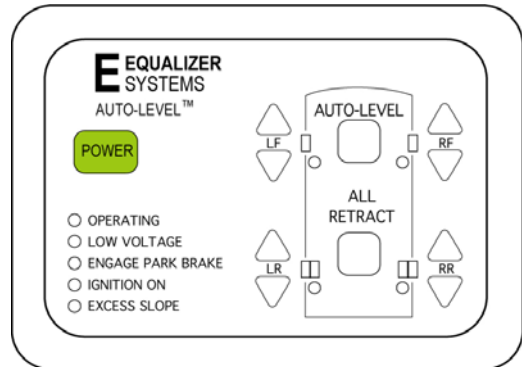


The part number is located on a white label adjacent to the 12-pin harness connector.



New Platform Style

Five (5) vertical LED lights on the left side of the Keypad identify “New” Platform Controllers.



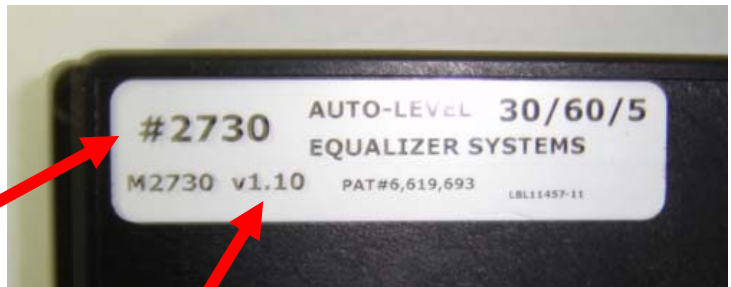
The controller is a remotely mounted box. Usually located between the main frame rails and between the axles. The controller box is approx. 9x5x1.5 inches.



The part number and version code are included on the label.

Part Number

Version Code



Pressure Switch Identification



New Style Pressure Switch

- Equalizer Systems Part Number 2047
- Approx. 1.75 inches in diameter
- Black plastic outer case construction
- Two threaded studs for wire attachment.
- Backwards compatible with old switch.



Old Style Pressure Switch

- Approx. 1.25 inches in diameter
- Half gold metal, half black plastic outer case construction
- Two spade connectors for wire attachment.
- Obsolete