

EQUALIZER

SYSTEMS

A DAYS COMPANY

AUTO-LEVEL

Operation and Warranty Guide



ENTEGRA

COACH®

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Important Warnings and Precautions

WARNING

READ ENTIRE INSTRUCTIONS AND ALL PRECAUTIONS PRIOR TO INSTALLING, USING, OR TROUBLESHOOTING THIS EQUIPMENT

The system operates using hydraulic fluid under high pressure. Extreme fluid pressure can be present even if the system is not operating. System forces and pressures can cause severe injury or death if used improperly or modified. Service work should only be performed by trained technicians.

Do not attempt to operate any portion of the hydraulic systems when the vehicle is in motion.

Visually confirm that all leveling jacks are retracted prior to travel.

Make sure there are no obstructions in the extend or retract paths of the jacks or slideouts.

Do not use the leveling jacks to lift the unit to perform any kind of service work or to change tires. The system is designed as a leveling and stabilizing system and is not meant to lift the coach off the ground.

Do not go under vehicle when leveling jacks are extended.

Do not operate any system functions while anyone is under the coach.

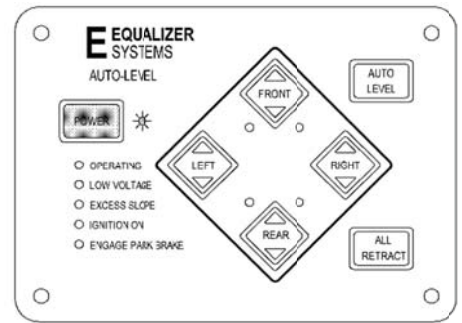
Do not allow excessive motion in the coach during the AUTO-LEVEL operation. This could cause the system to level improperly.

Modification of any factory-supplied item may result in the denial of all warranty claims. Call Equalizer Systems Technical Support prior to any modifications.

Do not attempt any technical repairs without first consulting the troubleshooting guide in this manual and/or calling Equalizer Systems Technical Support at (800) 845-9659. Failure to do so may result in denial of warranty claims.

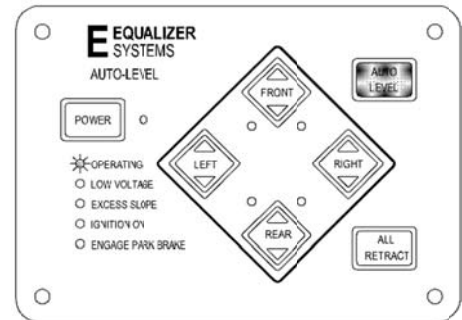
AUTO-LEVEL Operation- Keypad # 3103 Starting Date- Approximately January 2012

- **Power On:** Press and release the POWER button to engage power. All LED's on the panel will come on then most will go out. The LED next to the POWER button should be lit RED when power is on. The ignition key will need to be in the off position and the park brake will need to be set to extend the jacks. If you attempt Auto-Level or manual extend you will hear a "deny" tone if the key or park brake is in the improper position.



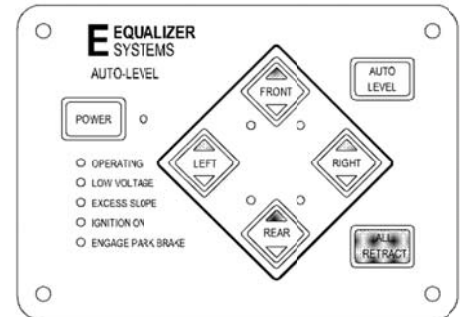
- **AUTO-LEVEL:** Press the AUTO-LEVEL button and release. The system will send out a continuous series of beeps, the 'OPERATING' LED will flash RED to let you know AUTO-LEVEL is operating and will automatically level the coach. When completed, the keypad will signal a successful level with a dual-level tone. Press and release the POWER button. Note: The keypad may be left on once level has been achieved. The keypad will enter "sleep mode" after five minutes of inactivity.

Note: The jacks down LED lights must be off for Auto-Level to function. If needed, press the ALL RETRACT button to clear and then Auto-Level should function.



- **Retracting the Jacks:** To retract all jacks simultaneously, press and release the All RETRACT button. All jacks will automatically retract and return to stowed position. The pump will run in retract mode until all of the jacks are fully stowed (plus an additional 5 seconds) up to a maximum of 60 or 90 seconds). This is the proper method for retracting the jacks prior to travel. You may stop the ALL RETRACT by pressing any button on the keypad. Jacks may be retracted in pairs by using the UP ▲ button for each end or side for leveling purposes however the ALL RETRACT must be used to fully stow the jacks prior to travel. The jacks down LED's will turn off, indicating the jacks are in the "stowed" position.

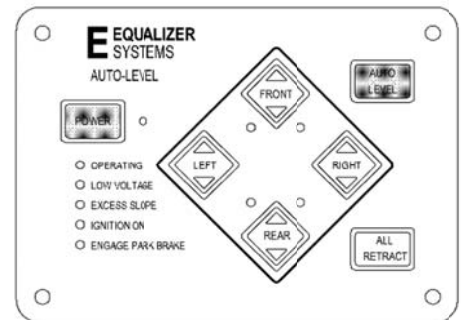
- **Power OFF:** Press and Release the Power Keypad Button



SETTING THE NULL, "LEVEL POSITION"

- **Setting the Null:** The Null or "level position" has been preset from the factory. However, if the coach is not level following an attempt to AUTO-LEVEL, the Null is easy to reprogram. To set the Null, push and release the POWER keypad button to engage power. The LED next to the POWER button should be lit RED when power is on. Level the coach by deploying jacks manually (using the DOWN ▼ keypad buttons, extend jacks until the coach is level), or by simply parking the coach on a level site. You do not need to have jacks deployed to set the Null. Use a bubble level on a flat surface in the center of the coach as a reference. Once the coach is level, turn the POWER off at the panel. Depress and hold the AUTO-LEVEL keypad button. Continue to hold the AUTO-LEVEL button and press then release the POWER button, and listen for a series of beeps. After the panel has beeped 5 to 6 times, release the AUTO-LEVEL button (the keypad will continue to beep as long as the AUTO-LEVEL button is held). The new Null has been set and the system will maintain this setting. Press and release the ALL RETRACT button to retract the jacks to the stowed position.

*Visually confirm all jacks are retracted prior to travel.

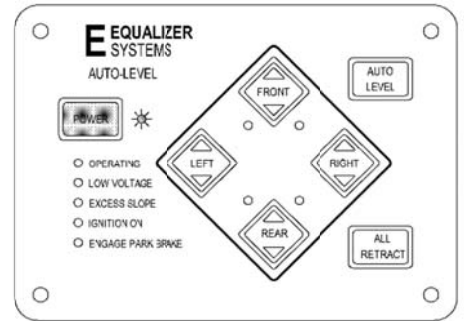


Note: There are specific instances when manual extension of one (or more) jack is inhibited (deny tone when DOWN ▼ is depressed). This situation is caused by the 'anti-twist' protocol in the software contained in the controller. Simply stated, the 'anti-twist' protocol denies jack extension if the system senses that a specific corner of the coach is approximately 3 degrees higher than the rest. You will be able to extend other jacks to overcome the slope. *If the system incorrectly senses excessive slope, this can be overcome by re-setting the Null. This will allow manual extension of all jacks. Remember to re-set the Null after manually leveling the coach.*

Manual Operation- Keypad # 3103

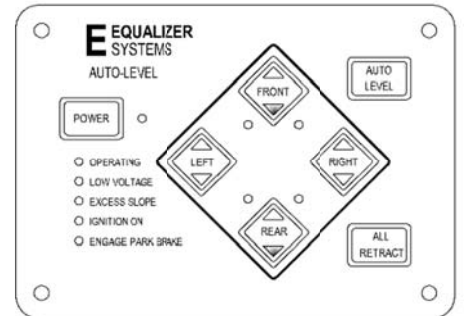
Starting Date- Approximately January 2012

• **Power On:** Press and release the POWER keypad button to engage power. All LED's will come on then most will go out. The LED next to the POWER button should be lit RED when power is on. The ignition key will need to be in the off position and the park brake will need to be set to extend the jacks. If you attempt to extend jacks by pressing the DOWN ▼ keypad buttons or all jacks with the AUTO-LEVEL button, you will hear a "deny" tone from the keypad if the ignition key and or park brake is in the improper position.

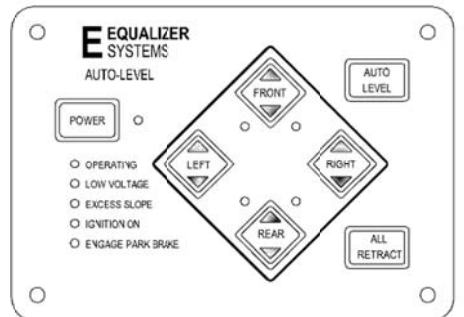


• **Planting the Jacks:** The jacks will be extended in pairs Fronts or Rears or Left or Right Using the DOWN ▼ (extend) keypad buttons, extend the jacks until they contact the ground (this is referred to as "planting" the jacks). As you extend each pair of jacks the corresponding LED jack status lights will come on to indicate jack(s) are out of the "stowed" position. Jacks will be operated in pairs. Extend and plant the front jacks first. Then extend and plant the rear jacks. Only after planting the fronts and then the rears, should side to side corrections (leveling) be attempted. This process will stabilize all four corners and minimize twist prior to the leveling process.

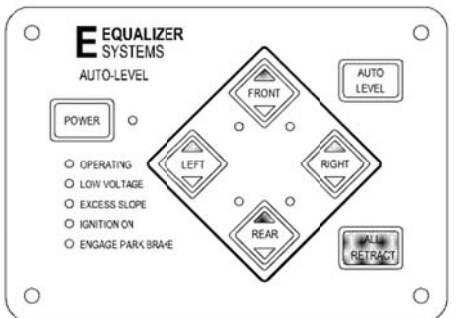
Do not manually over extend jacks. This may cause unwanted stress on the coach or the jacks.



• **Leveling the Coach:** Use a bubble level on a flat surface in the center of the coach as a reference. Level the vehicle by using DOWN ▼ (extend) or UP ▲ (retract) keypad buttons until the vehicle is level. Front to rear then side to side. Jacks will be operated in pairs. Do not attempt to lift the vehicle tires off of the ground. Only lift (extend) enough to level and stabilize the unit. Once level, press and release the POWER button to turn off the keypad. Note: The keypad may be left on once level has been achieved. The keypad will enter "sleep mode" after five minutes of inactivity.



• **Retracting the Jacks:** To retract all jacks simultaneously, press and release the ALL RETRACT button. All jacks will automatically retract and return to stowed position. The pump will run in retract mode until all of the jacks are fully stowed (plus an additional 5 seconds- up to a maximum of 60 or 90 seconds). This is the proper method for retracting the jacks prior to travel. You may stop the ALL RETRACT by pressing any button on the keypad. Jacks may be retracted in pairs by using the UP ▲ button for each end or side for leveling purposes. However, the ALL RETRACT must be used to fully stow the jacks prior to travel. The jacks down status LED lights will turn off, indicating the jacks are in the stowed position.



• **Power OFF:** Press and release the POWER keypad button.

Visually Confirm all Jacks are Retracted Prior to Travel

There are ten (10) LED indicators on the AUTO-LEVEL keypad. The functions of these LED's are detailed below.

Keypad Indicator LED's

During typical operation, the LED's on the bottom left hand corner of the keypad should NOT be illuminated. The only LED that should light is the 'OPERATING' LED, which should flash during operation.

'POWER' LED	ON Red when power is ON OFF when power is OFF FLASH every 5 sec. In Sleep Mode
'JACK' LED (4 each)	ON Red when jack(s) are deployed OFF when jack(s) are stowed
'OPERATING' LED	ON Red w/ Auto Level or All Retract OFF when keypad is idle or 'sleeping'
'LOW VOLTAGE' LED	ON Red when voltage is below 10.5 volts dc OFF when voltage is above 10.5 volts dc
'ENGAGE PARK BRAKE' LED.....	ON Red when park brake is not set OFF when park brake is set.
'IGNITION ON' LED	ON Red when ignition is in the ON position OFF when ignition is OFF
'EXCESS SLOPE' LED	ON Red following an Auto Level attempt, if system cannot overcome slope OFF when slope is not excessive

Note: If the LOW VOLTAGE, ENGAGE PARK BRAKE< IGNITION ON or EXCESS SLOPE LED's illuminate, an "error" condition is present and must be corrected prior to operating the jacks.

Helpful Hints

Your coach is equipped with an air suspension.

The air suspension is deflated when the auto-level button is pressed and re-inflated when the all retract button is pressed. The re-inflation requires that there is air pressure available to inflate the air suspension when the all retract button is pressed. So it is recommended that the engine be started and air pressure allowed to build prior to pressing all retract to assure that air is available to inflate the air suspension.

Your leveling system is equipped with an override option.

See the section on override. This is to allow you to get the jacks retracted in the event of electrical failure. It is recommended that you review and understand this procedure prior to its need rather than to learn the procedure in difficult environments.

Automatic functions.

You may stop automatic functions (auto level or all retract) at any time by pressing any button on the keypad. If auto level is in process and the ignition key is turned to the engine run position or the park brake is released auto level will stop and the warning beeper will come on and the jacks down status lights will flash.

Movement during auto level.

Excessive movement in or of the coach during the auto level process may result in the system not leveling properly. Examples of this are strong winds that rock the coach during the auto level process or getting out of the coach causing a rocking during the leveling process.

Proper Voltage.

The auto level system is a micro processor controlled system that requires adequate voltage and a permanent chassis ground. Low voltage and or poor connections can prevent the operation or stop the operation in process.

Unit storage.

If the unit is stored for more than 24 hrs. with the jacks retracted it is possible that the jacks down status lights will come on when the key is turned to the engine run position. Simply press the all retract button to clear the lights and the warning buzzer.

Maintenance Items

Maintain the reservoir fluid level to a minimum $\frac{3}{4}$ full when the jacks are fully retracted. Use automatic transmission fluid that meets a Dexron specification, the use of the "multipurpose" automatic transmission fluid is fine.

Change the fluid in the reservoir if it shows signs of contamination, debris or water.

The cylinder rods may be cleaned and protected by using WD-40 or equivalent.

Proper maintenance of the vehicles batteries and electrical system is important for proper system operation. Proper voltage and grounding is critical. Follow the battery and coach manufactures guidelines for proper care and maintenance.

Additional Maintenance items and Troubleshooting items may be found on the web site www.equalizersystems.com

Override procedure

The leveling system is equipped with an override option to allow for the retraction of the jacks if the electrical system has faulted. Generally if the fault is weak or dead batteries it is best to charge the batteries and operate the system normally. The procedure requires a 1/8 inch Allen wrench and an electric drill (recommended 2000 rpm) with a 7/16 hex driver.

1. Locate and access the pump/manifold assembly. Generally it will be located behind a plastic shield in one of the forward storage compartments.
2. On the side of the manifold there are 4 individual cartridge valves (one for each jack leg). There is an Allen (1/8 inch) screw recessed in the center of the end of the valve stem. Using a 1/8 inch Allen wrench turn the screw(s) in Clockwise approximately 2 turns until they stop. All 4 may be selected or just the ones that are for the jack(s) that are needing to have the override performed on. (See Drawing)

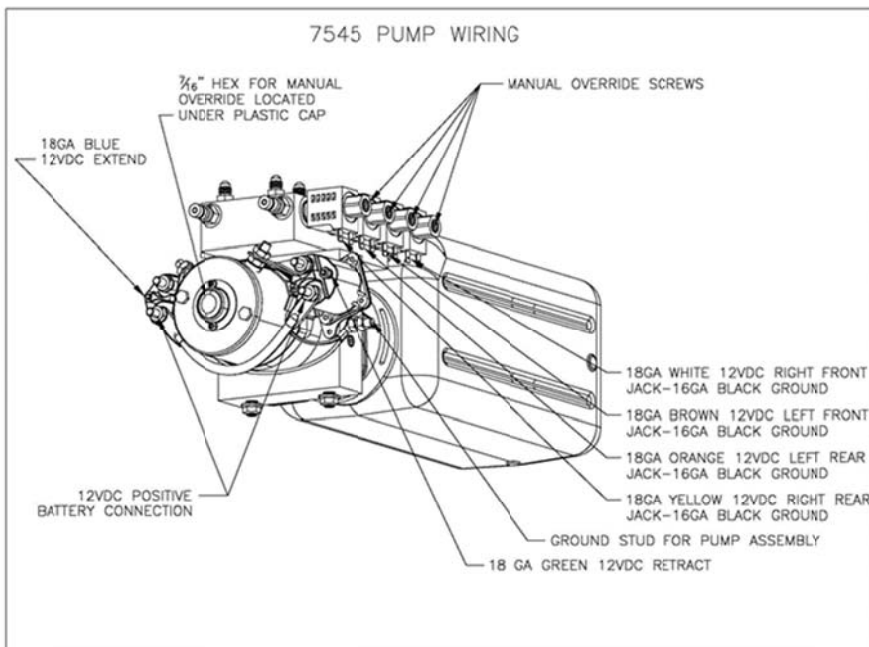
Note: some units may have a single valve on the opposite side (retract) of the manifold, if so it must have the screw turned in as above.

3. Locate the plastic plug at the end of the motor use a small screw driver to pry out the plug. This will expose the motor override hex. Using a drill with a 7/16 hex drive bit run the drill in the **Counter-Clockwise** direction to retract the jack(s) until they are fully retracted. Re-install the plug when completed. (See Drawing)

Hint: If the pump motor will run from the Keypad using the drill may not be needed. Simply press the all retract after step 2.

4. When the jack(s) are fully retracted return all of the override screws (item 2 above) to their original out counter-clockwise position.

Important failure to return the valves to the out (counter-clockwise) position may result in the jacks "Drifting" from the stowed position.



Equalizer Systems Limited Warranty Policy

RV or Vehicle Manufacturer Installed Systems or Components:

1. Only warranty claims with prior written or verbal authorization from Equalizer Systems will be recognized, all other claims will be denied.
2. Equalizer Systems warrants slide out and leveling system components for a period of **two years** from the date of original sale of the vehicle. This warranty covers defects in material and workmanship only. Equalizer Systems is not liable for any damage due to abuse, neglect, misuse, negligence, misapplication, error of operation, accidental or purposeful damage or damage due to an “act of God” such as, wind or rain damage, flood, lightning or other natural occurrence of the like. Equalizer Systems limited warranty is applicable to the Equalizer Systems components only and does not apply to the vehicle, apparatus or property to which it is attached. Warranty parts will be shipped at no charge if the repair is authorized by an Equalizer Systems representative. Purchased components used in authorized warranty repairs will be reimbursed at the original purchase price.
3. Labor and freight expenses due to warrantable parts defects or workmanship will be reimbursed for a period of **one year** from the date of original sale of the vehicle. Freight expenses will either be prepaid by Equalizer Systems or reimbursed at the UPS Ground rate only. Any additional shipping charges or requirements are the obligation of the vehicle owner or service center performing the warranty repair. The owner or service center’s obligation may include overseas shipping charges, border fees, brokerage fees and any other additional fee of the like.
4. Warranty labor will be reimbursed only for claims that have prior written or verbal authorization from an Equalizer Systems representative. Warranty labor compensation is required to correspond with the “Warranty Parts Replacement Time Guideline” published by Equalizer Systems. Any warranty repair not listed on this guideline will require prior authorization from an Equalizer Systems representative. A reasonable time allowance will be determined by the Equalizer Systems representative. Any warranty repair that is not listed on this guideline that is performed without prior authorization will be denied without exception. Time associated with learning about the repair or excessive diagnostic and installation time will not be reimbursed. Warranty labor will be reimbursed at the authorized service center’s published shop rate if the rate is reasonable for that region. Overtime labor will not be reimbursed without exception.
5. Labor, parts and freight credit (if applicable) will be sent after the parts are tested and the warranty claim is validated. Returned parts that are found to be in normal operating condition are not warrantable and will be charged to the owner or service center. Equalizer Systems reserves the right to charge back the service center for labor claim payments previously submitted if the installation of the warranted part is found to be inadequate at a later date.
6. Claims will be denied if the date submitted is greater than 30 days from the repair date.
7. Prior authorization is required before parts may be sent back to Equalizer Systems. A Return Authorization Number is required for items to be accepted.
8. Complete systems are not warranted unless authorized by an Equalizer Systems representative. There are absolutely no exceptions to this clause.

9. Consideration should be taken regarding the location and protection of Equalizer Systems' components prior to installation. Please reference our installation manuals for recommended locations and maintenance, or visit www.equalizersystems.com for more information. The failure of any Equalizer Systems' component due to extreme environmental conditions, improper installation, or lack of maintenance will not be covered under warranty.

10. Warranty coverage for parts or systems sold by non-authorized resellers (such as live or internet auctions) will be at the discretion of Equalizer Systems.

11. This warranty begins upon the original sale date of the vehicle and is transferable, with limitation, to subsequent owners upon furnishing the original sale date of the vehicle and proof of purchase. Only the remainder of the two year parts warranty is applicable. Warranty labor and freight are only applicable to original owner of the vehicle.

12. Equalizer Systems is not liable for loss of time, manufacturing costs, labor, material, loss of profits, direct or indirect damages incurred by the vehicle manufacturer.

13. Excessive warranty labor resulting from inadequate access to the Equalizer Systems product will not be reimbursed.

14. Equalizer Systems will not pay a markup on warranty parts unless required by law.

15. Travel expenses, hotel, telephone, fuel or any other expenses of the like are not covered under warranty.

Replacement Parts:

1. Replacement parts are warranted under the same guidelines listed above for the remainder of the original warranty or 90 days, whichever is longer. Proof of warranty repair date and original vehicle purchase date are required.

No additional warranties, expressed or implied, are authorized by Equalizer Systems

This warranty voids all previous issues. Questions concerning this warranty should be directed to:

Equalizer Systems
P.O. Box 668
Elkhart, IN 46515
(800) 846-9659
(574) 266-6083 fax

Effective: January 1, 2010

To activate your warranty, please visit our website at <http://equalizersystems.com/service/activate-warranty>