Normal operation when the ignition key is off, is for all lights on the Power Gear panel to be off. If the power light is still on, press the power button to shut it off.

When the key is turned on the power light will come on. You cannot shut it off with the key on.

For normal traveling, start the engine, then press the travel button. All jacks will come up, and the air bags will inflate to bring the coach to normal ride height. During this process, the power button and the air will be steady green lights, and the hydraulic and travel green lights will be flashing. When the jacks are fully retracted, the flashing hydraulic light will go out, and the travel light will go steady green. Thus at all times when traveling, you should have on the three green lights at the left side of the panel, only. But just because the green lights have gone steady, indicating that the jacks are up, doesn’t mean you are ready to leave. There is nothing to tell you when the air bags are fully inflated, and the coach is up to normal height. Stepping out and looking at the tires is the only positive way to check. A good hint is when the coach air systems are fully up to pressure. Not waiting for the air & coach to come up could allow the front tires to hit and damage the chassis body.

Note that it is very possible you can drive off with the jacks still down. If you do this, you will get an alarm, and the jacks will go into the “Emergency Retract” mode. Actually this is a fancy term that accomplishes nothing more than pushing the travel button. However, moving with the jacks down could cause severe (read expensive) damage.

When stopping for brief periods, such as lunch or rest stops, I will use the air leveling, if needed. Press the air, then the auto button. It will adjust the air bags to level the coach somewhere near normal running height. This has an automatic sleep/wake up feature, but I never use it as the original air leveling is good for several hours. However, if you want to use air leveling for long term, and to get the steps as low as possible, do this: With engine running, first press AIR, then hold ALL LOWER until the air bags are exhausted, and the coach is at its lowest position. Then press AUTO, and the system will air level from that low position. A problem here is that air leveling will leave the high pressure oil trapped in the bottom hoses (described below). In 2005 (2006 model year) when this system was first installed, air leveling was an option, hydraulic leveling was standard. However air leveling was such a popular option that it soon became standard. Actually only a half dozen or so coaches were ever delivered without air leveling.

For overnight or longer stops, set the jacks by pushing the hydraulic, then the auto button. This will first dump the air bags, then level with the jacks. Due to the programming and sensing circuits, this will always leave the coach a bit higher than necessary. I then go back and manually lower the coach slightly to get the front steps as close to the ground as possible. If still too high, it may be that air was not completely exhausted from the rear air bags. If so, try predumping the air bags by pressing air then holding all lower, before going to hyd and auto. I hate to see a coach perfectly leveled, but so high that you need another portable step to reach the bottom coach step.

Above is all you need for 99% of normal operations. However at the first hint of a problem, it is nice to understand a bit about how the system works and thinks, in order to start troubleshooting.

First thing is that this system is entirely different from previous leveling systems, such as the Equalizer used prior to the 2006 year models. This system has power up, as well as power down jacks. No springs. This means each jack cylinder has 2 hydraulic hoses, one at the top to lower the jack, and one at the bottom to raise the jack. You can look at the pump/reservoir and count 8 hoses attached.

Also the jacks have no limit switches or other device to tell when it is fully retracted for travel. It is done by sensing the system pressure. On the side of the pump is a pressure switch set to 1400 psi. When you hit the travel button to raise the jacks, the system will open all the top hoses to dump oil back to the reservoir, and connect all the bottom hoses to the pump discharge (high pressure side). Pushing all the jacks up takes a very modest pressure. However when
they reach the full up position, and stop, the oil will now have nowhere to go, and the pressure rises rapidly. When it reaches 1400 psi the switch will close, which shuts off the pump and turns the flashing green lights to steady on. The jacks are now ready for traveling. The only thing holding them up is the 1400 psi pressure in the bottom lines. If the pressure drops below 1400 for any reason, the switch will restart the pump to restore the proper pressure. Of course the operator will get a warning of this happening.

Everyone should be fully aware of how this works, and how it sounds. A lot of trouble shooting can be done with this simple test: With the coach leveled hydraulically, and the engine running, hit the travel button, and immediately step out and open the bay door that houses the pump. You should hear the pump running, and see all 4 jacks slowly coming up. The rear jacks, being closer to the pump will come up first. When they reach the top you will hear a definite change in the pump sound because it must now send all of its oil discharge to only half the number of jacks, and further away. It takes a bit more pressure to do this. When the front jacks reach the top, there will be no place for the oil to go, and the pressure will rise rapidly, which will be very easy to hear. The pump should then stop within a couple seconds. Once you have seen this done, any changes will be obvious, and help solve the problem.

The sequence for leveling is also very important for you to understand. After pressing Hyd & Auto, the system will first dump all air bags. Then put down the 2 jacks on one side. When these 2 jacks hit ground, it will tilt the coach slightly in the opposite direction, and the red lights may come on, and those jacks stop. It will then put the other side jacks down. When they are solidly on the ground the coach will tilt back to straight, and the red lights will go out. If you started with the coach unlevel, the red light pattern may be different, but the operation will be the same. This is a great feature as it will take all stresses (twist) out of the chassis. If necessary, the system will continue to make small adjustments until the coach is straight and level.

Oil Level: The oil level in the reservoir should be checked on occasion. This must be done with the jacks fully retracted. If the jacks are down, you will get a false low reading. When pulling the dip stick, there should be an inch of oil on the stick. Always clean around the dip stick before removing. Don’t want to get any dirt or contaminants into the hydraulic system. Please note that there are no alarms, level switches, or other warnings of low oil level (until you burn up the pump!!).

Speaking of dirt or contaminants, please notice there are no filters in this system. Guess the design engineer missed that day in school!! I am certainly not going to re-design the system, so to compensate I change the oil twice as often as recommended. I would like to say twice a year, but at least annually. And be extra careful not to get any dirt/contaminants into the system when doing so.

Another pet peeve of mine is that there is (are) no relief valve(s) protecting the hoses in the system. When you are traveling, there is 1400 psi trapped in all the bottom hoses and the bottom side of all hydraulic cylinders. They are closed off by the solenoids at the pump, and the jacks being fully up against the stops. This is fine, they are made for that. And you need that when running to be sure to hold the jacks up. But when you shut down, that pressure is still trapped there. If the ambient temperature goes high, it is possible the heating and expanding oil could send the pressure sky high, and damage the weakest link, which would be the hoses. After parking, the hydraulic leveling system will immediately dump that high pressure in the bottom hoses, and put just enough pressure in the top hoses to move the jacks down and level the coach. If for some reason you are not using hydraulic leveling, do this: press Hydraulic and All Corners Raise briefly. This will dump that pressure from the bottom hoses, and move the jacks off that hard up against the top position.

Unstraight leveling. A frequent complaint is: the system works, but leaves the coach crooked. Here is how to reset the system level sensor: (Sometimes called “Zero Set”)
1) Using hydraulic or air, and manual, level the coach. Contrary to most opinions, any special leveling devices are totally unnecessary. I use a 1” diameter bubble level set on the shelf next to the steering wheel. Works fine.

2) Ignition on, and all lights on the Power gear panel off, except the power light.

3) Press and hold the “All Corners Raise” + “All Corners Lower” for about 10 seconds until the Auto & Manual lights flash. Then release.

4) Press Front Left Lower. The system is now re-set to level.

Twist: You may see the twist light sometimes. This is a real twist in the chassis, usually caused by unlevel ground. If in automatic leveling, the system will immediately move the jacks in a direction to remove the twist, and continue leveling from there. If in manual mode, the system will not allow you to move any jack in a direction that would increase the twist. You can still move any jack in the direction that will reduce the twist, and then continue leveling.

Another not too common problem is when you have some sort of glitch in the system that turns on the “Fault” red light, and nothing you do will make it work again. To see what caused the fault, press the right rear Raise + Lower. Look very carefully at the light display and write down what is showing; or take a picture. See the instruction book for an explanation of what the lights mean. To reset the system, hold the Power button down about 10 seconds, until the lights blink.

Sometimes the “Slope” light will come on and prevent leveling. Mine does it every time I park in my drive. Yes it is on a slope. I have found that turning the system off, then back on will allow it to work.

Another caution I like to remind everyone about is allowing the system to raise the tires off the ground. This is generally not recommended. Less of a problem on the front, but if you raise the rear drive axle tires off the ground, you now have no parking or emergency brakes. Unlike the service brakes, which work on all wheels, the parking, or emergency brake is only on the drive axle. Don’t do it!

As always, comments and questions are welcome. Any uncertainties, or questions you may have, please send me an email. Your comments are the only way I know how to continue writing things that are helpful and understandable. And, like this, I try to address common or reoccurring problems, or other areas of confusion.

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