

X013

Version 04.25



BIGFOOT

HYDRAULIC SYSTEMS

AKC & AKQ LEVELING SYSTEM

OPERATION MANUAL

Bigfoot Leveling Systems
305 US-131 South • White Pigeon, MI • 49099
(800)752-9815 • bigfootleveler.com

United States Patents
#10093286 #10759396 #10821944

AKC & AKQ Control Panel

This Bigfoot control panel contains an accelerometer for automatic leveling operation and needs to be properly installed, programmed and calibrated before use.

AKC refers to systems with one “central” pump, AKQ refers to our “quad” pump systems.

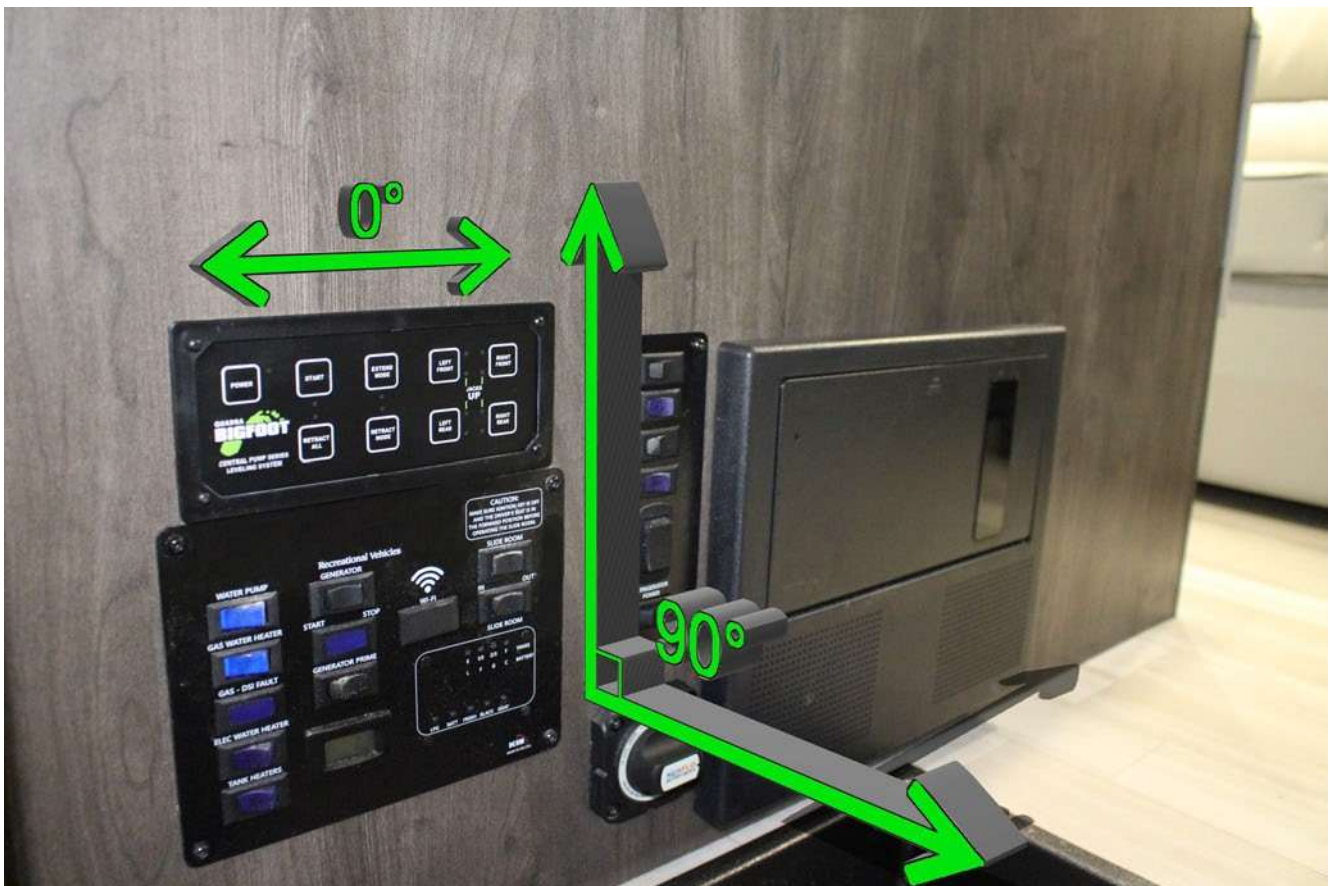
ATTENTION:

Improper installation and calibration could result in system and/or vehicle damage.

Control Panel Installation

Step #1. Mount Panel

1. Plug the wiring harness into the rear of the control panel (14-pin and 6-pin plugs).
2. Place bezel on front of the control panel and proceed to mount with four #4 screws into vertical wall/cabinet directly facing the front, rear, left or right side of the vehicle. Panel must be mounted with face perpendicular to floor plane and as close to level horizontally as possible.

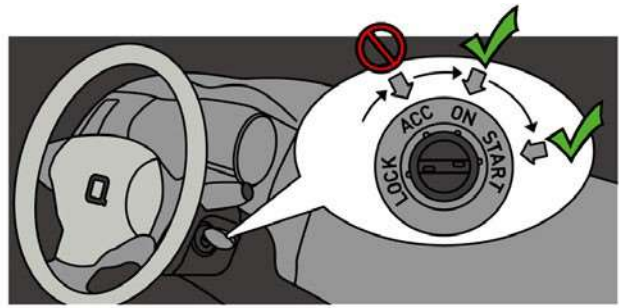


***Control panel cannot be mounted on an angled surface or tethered.**

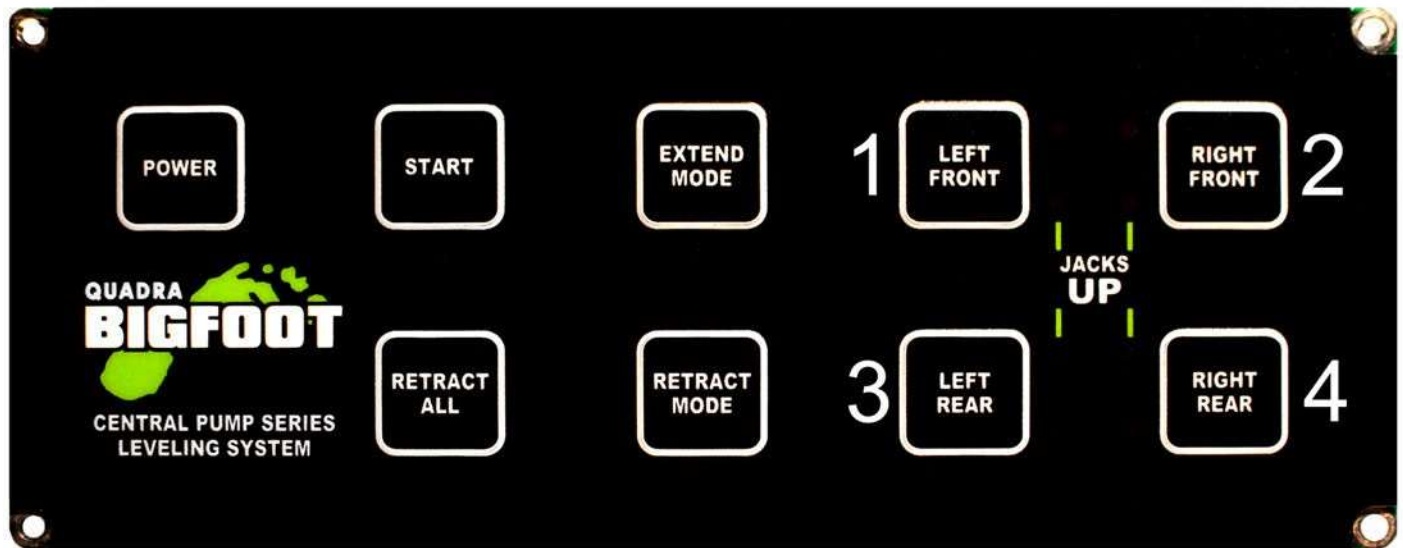
Step #2.A. Control Panel Orientation

The default orientation of mounting shall have the front of the switch panel facing the front of the vehicle. This is defined as orientation 1.

Alternative mounting orientation can be set up manually by the following steps:



1. Turn vehicle ignition to the ON/RUN or START position.
2. Press and hold LEFT FRONT and RIGHT FRONT buttons for 3 seconds. Amber LED lights next to each of the front buttons will start flashing at 1 second intervals.
3. Select and press the button (LF,RF,LR,RR) that corresponds to the direction the control panel is facing using the figures below. A green LED will illuminate to indicate the panel's orientation setting.
4. If you have a Quad system, the mounting mode of the control panel can also be changed from vertical to horizontal by selecting the EXTEND or RETRACT mode and will be indicated by an amber LED. (See p. 16)
5. Once you have selected the appropriate orientation, turn the vehicle ignition to the OFF position. The control panel orientation is now set.



Step #2.B. Control Panel Orientation (Continued)

For AKQ four pump system only, AKC central pump systems skip to Step #3.

When setting the orientation using the procedure outlined on the previous page, the mounting mode of the control panel can also be changed by selecting the EXTEND or RETRACT mode during the process and will be indicated by an amber LED.

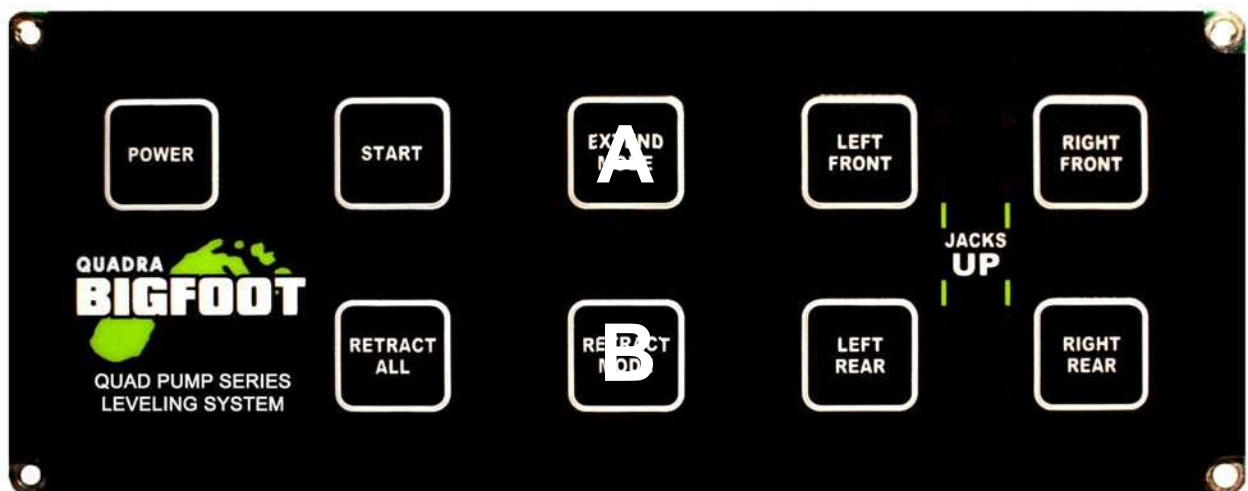


Control Panel Mode 'A'

- This setting is for installations on vertical surfaces, such as walls, cabinets, etc.

Control Panel Mode 'B'

- This setting is for installations on horizontal surfaces, such as the driver side console or armrest.



Step #3. Calibrate Level Program

1. Panel on, enter EXTEND MODE to manually level the vehicle.
2. Press & hold both RIGHT FRONT and LEFT FRONT buttons until cylinder makes contact with the ground and starts to lift the coach, then release. Do the same with the RIGHT REAR and LEFT REAR buttons.
3. Now that all four cylinders are firmly on the ground, find the low end of the vehicle (front to rear) and raise the corresponding pair until the vehicle is level front to rear. Now check left to right, raise the low side pair or individually raise the low corner in small increments to get the vehicle level side to side. The key is to use as little as stroke as possible, and may need to have the nose slightly lower than the rear on some vehicles depending on ground clearance, cylinder travel, etc.
4. Exit EXTEND MODE once the vehicle is level.
5. Turn the vehicle ignition to the ON/RUN or START position.
6. Press and hold RIGHT FRONT button for 3 seconds, the RIGHT FRONT amber LED will start flashing at an interval of 1 second, you have now entered calibration mode for level program, release button.
7. Press and hold RIGHT FRONT button again for 3 seconds to confirm calibration and release. Wait five seconds to see all four green LED's flash once to indicate the calibration is completed.*
8. Turn ignition off, and press RETRACT ALL, panel is now calibrated.

**If both green and amber LED's next to the RIGHT FRONT button flash instead, this means the vehicle position is greater than 7 degrees different than the panel and cannot be stored. Re-level the vehicle or re-mount the panel, etc.*

System Operation

Automatic Leveling

1. With ignition key off, press POWER if the panel is not on already.
2. Press START, make sure there is no movement in the vehicle/trailer during this process. When the process is finished an audible alarm will sound with a single beep and the START LED will flash ten times after a successful level program is completed.

If the jack LED's on the right side of the panel flash instead and there is no audible beep, the system may have stroked out or timed out. This means there was not enough stroke in the cylinders to level where you are parked, OR someone moved in the vehicle/trailer during the process, OR the program ran out of time to level (cylinders to slow/low voltage/to much cylinder travel to reach ground/frame twist caused poor movement reading/etc.).

3. Press POWER to shut it off or wait 5 minutes for the panel to power off automatically.

Retract the cylinders

1. Press POWER, make sure the ignition is off.
2. Press RETRACT ALL, the pump will start retracting all four cylinders simultaneously, they may not all come up at the exact same time = this is normal. The pump will shut off once all four limit switches (found on each cylinder) are made which signals to the control that all four cylinders are safely retracted. The JACKS UP LED's will light up once this is done.

Before leaving it is recommended to visually inspect each cylinder to make sure they are indeed 100% retracted. If this is not the case, use the manual control RETRACT MODE, if they are all retracted you are safe to travel.

Retract each cylinder in “retract mode”

1. Press RETRACT MODE, you are now in retract mode, LED will come on, you do not have to hold button.
2. Press and hold the cylinder button you want to retract, Example press and hold LEFT FRONT to retract the driver front cylinder.

This mode bypasses the limit switch so the pump will only stop retracting when you release the button. In low voltage situations, you may use this mode as well to get the cylinders retracted.

Extend each cylinder in “extend mode”

1. Press POWER if the panel is not already on, in this mode the ignition needs to be in the off position.
2. Press EXTEND MODE, you are now in extend mode, LED will come on, you do not have to hold button.
3. Press and hold the cylinder button you want to extend. Example, press and hold LEFT FRONT to extend the driver front cylinder.

NOTE: It is recommended to lift the vehicle/trailer in pairs to avoid damage to the vehicle, frame or RV body.

For example, if you wanted to raise the front end of the vehicle/trailer up, you would press and hold LEFT FRONT & RIGHT FRONT buttons until you reach the desired height and release the buttons. Same for the rear, left or right side of the vehicle/trailer. It is also recommended when raising an end of a vehicle so much where the tires leave the ground, to only operate the corresponding cylinder pairs. Example, if you were to lift the front tires off the ground with the front cylinders, do not operate the rear cylinders (leave them in retracted position). Same concept for the rear, left, right sides, however please note most vehicle manufacturer's never recommend lifting the rear tires off the ground, do so at your own risk.

AKC & AKQ Control Panel LED Codes

LED Code	Description	Solution
Power LED flashing at 1 second intervals	Low Voltage Battery voltage dropped below 9.5 volts for 8 seconds.	Press the Power button - code will clear when voltage increased above 9.7 volts. Check batteries and replace if necessary.
4 LEDs flash 10 times (LF, RF, LR, RR)	Stroked-Out System was unable to reach level, 1 or more cylinders fully extended.	Make sure there is no movement inside the vehicle while auto-leveling, even small movements can disturb the leveling process. Relocate vehicle to a more suitable terrain if extreme or add blocks where needed.
All amber LEDs flash 10 times	Timed-Out Auto leveling or retracting took longer than 150 seconds.	Make sure there is no movement inside the vehicle while auto-leveling, even small movements can disturb the leveling process. Possible limit switch or clevis pin issue if occurring during retraction. Inspect and replace if necessary.

System Maintenance

For most Bigfoot landing gear and leveling systems...

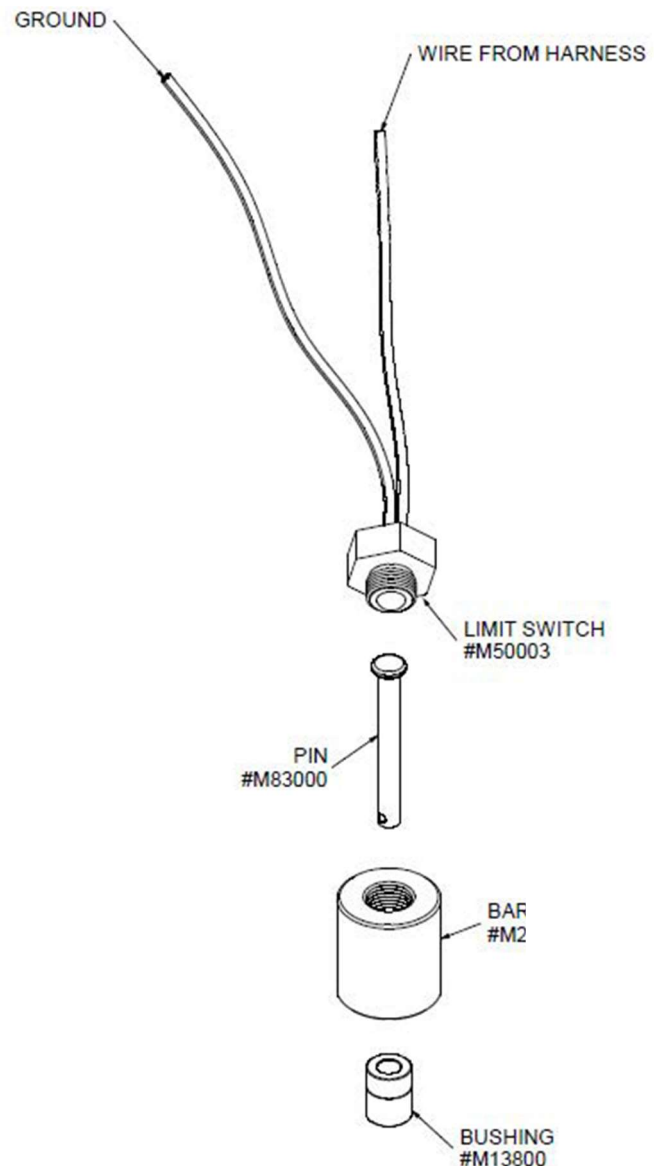
#1. Check the power supply to the Bigfoot system, RV house batteries, diesel chassis battery, trailer battery, etc. Test the voltage under load by using a volt meter and test your voltage with the system pump operating, if this drops below 10-11 volts, you may need to look into replacing the battery or batteries. If voltage is good under load, you may need to replace or check other connections on the pump assembly, including the power wire (connected to copper strip) and the ground from the pump to the frame. Our pumps ground at the solenoid mounting flange and contact between the pump steel housing and the frame it is bolted to, and has a 10 ga. cable that connects the tank body to the frame, typically only 3-6 ft long.

#2. Inspect and maintain the limit switches (if equipped) for each cylinder. See diagram on the right to identify the limit switch. These can be removed with a 7/8" wrench. To pro-long the life of the switch, remove and apply di-electric grease on the ball itself and the limit pin. These are normally closed switches and are tied to your "All Up" indication, Retract function, and ignition safety alarm on your panel (if equipped).

#3. Check for fluid leaks on the ground, footpad, hose, fittings, etc. Our systems use ATF so the fluid should be red in color. If leak is found, locate the origin and check fluid level inside the pump assembly, fluid level should be between 1-1.5" below the top of the reservoir, central pump 4pt systems can be 1.5-2" below the top.

#4. If your cylinder chrome shaft/rod is exposed (not a square jack), spray dry teflon spray on the shaft when leaving for long period of time, more frequently if by the ocean or salty environment.

#5. After a few uses, check all the hardware for cylinder mounting and pump mounting, re-torque to proper specs to make sure the bolts did not come loose. 3/8" & 7/16" hardware to 70 ft/lbs., 1/2" hardware to 100 ft/lbs., if bolt-on system, note any frame or bracket deformation prior to reaching full torque spec. (some deformation is OK, as long as the structure & function of component is still intact).



Troubleshooting

Most tech support common calls

Most issues we receive are power related. Always check power and ground wire connections first. Check power level of battery under load (place volt meter on battery then press and hold RETRACT ALL on control to see if voltage drops).

Alarm going off with engine on

Typically this means one of the cylinder limit switches sent the signal to the controller that it was “up” before it was 100% retracted (footpad tight to bottom). So when you hit a bump or vibration while driving, this caused the limit switch pin to loose contact and sound the alarm. First visually inspect and make sure they are all retracted, then do the following: *Enter RETRACT mode, then press and hold each cylinder button individually for a few seconds, listen for pump change tone or JACK UP LED’S to come on.*

System will not operate with engine on

Our systems are NOT designed to extend with the engine on for safety. They will also not automatically retract when the engine comes on.

Cylinders not lifting or holding pressure

This means there is more than likely air in the system (not bleed during installation). Two methods, easy method is to enter manual mode and completely extend all four cylinders to full extension and leave for an hour, then retract, wait another 30 minutes before operating again.

***Attention:** If you have a Bolt-on System do not lift rear wheels off the ground. Bolt-on Systems should only be bled using the **secondary air bleeding process**.*

If this does not fix the issue then the **secondary bleeding procedure** must be done, see below for instruction.

Cylinder will not operate, extend or retract

Attempt to bleed system first, verify that it will not operate in either direction. Then check all wires at the leveling sensor to make sure they are inserted properly in the plug at the back of the sensor (wires may be loose in connector). If this is all good, then the corresponding valve/coil may be defective, in tank assembly check valve ground wire (to solenoid mounting bolt) and wire connection to wiring pigtail. If valve bad, part #M35008, take care replacing do to ease of crushing valve assembly on re-installation.

Secondary air bleeding process

If there is still air in the system, a more strategic method may be required. Loosen all four extend hose fittings (15mm wrench) on the jacks (located near the top of each cylinder), enough that fluid and air can escape. Enter manual mode on panel (press and hold MANUAL for 3 seconds until light comes on). Press and hold each cylinder until solid fluid comes out of each fitting. Tighten fittings and repeat for retract hose fittings to ensure all air is out, to retract cylinders in manual mode, press each cylinder and the RETRACT button simultaneously. Re-tighten all fittings and clean up mess. This method can also be done by placing each line in a bucket to minimize mess afterwards. *In some instances, the front jacks may need to be dis-mounted from underneath the cab to access the top extend ports during the bleeding procedure.*

If power light flashes and panel shuts off

This means the control is receiving less than 9.5v from your house batteries, please check and charge your batteries and try again. If you need to leave, see retracting in “retract mode”.

Warranty Guide



Owner must activate warranty! Via Phone or Website

OEM Installed Quad/Central Pump Systems: 1 year parts and labor

Automatic Leveling Systems: Lifetime Cylinders, 1 year parts and labor

*Should the product be defective due to workmanship and/or material flaws,
we will repair/replace the defective material.*

Core charges may be applied and refunded on certain components.

Bigfoot is NOT responsible for:

- Freight on warranty parts.
- Replacing footpads, bolts, loose or bent brackets or fluids lost as a result of failure to maintain the system, Ex. loose/missing footpads, loose mounting brackets/hardware from not re-torquing after initial use, etc.
- Damages caused by abuse, misuse, negligence, misapplication, error of operation, accidental or purposeful damage or faulty installation, including but not limited to hoses, fittings & wiring components. Example, bent limit switch pins from hitting ground while driving, missing SnapPads, operating system with rear tires off the ground, modification to system, etc.
- Liability for loss to the vehicle, or apparatus or property, loss of time, manufacturing costs, labor, material, loss of profits, consequential damages (direct or indirect).
- For transportation to and from a service center, onsite service calls to or from the customer, damage from road hazard, loss of salaries, commissions, lodging, towing charges, bus fares, car rentals, fuel expense, telephone charges, inconvenience compensation while repairing or replacing a defective part or material.

This warranty voids all previous issues, regardless of provided manual version. Effective date: **7/1/2025**

**Owner must register within 30 days from the date of purchase to
activate warranty. Call or online at bigfootleveler.com**

Prior to any work being done an **authorization number must be obtained** by calling
269-483-9633 for Warranty Parts or Service Labor. For full warranty transcript just contact us!

Service labor based on a flat rate schedule determined by Bigfoot for authorized work performed will be reimbursed.
This will eliminate much diagnostic time and avoid refusal of unauthorized claims.
Many problems may be resolved by contacting a Bigfoot service representative
or visiting our support documentation on our website.

Write down your system serial number here _____

Serial # located on the white sticker on the system controller or call us, starts with # 8.....