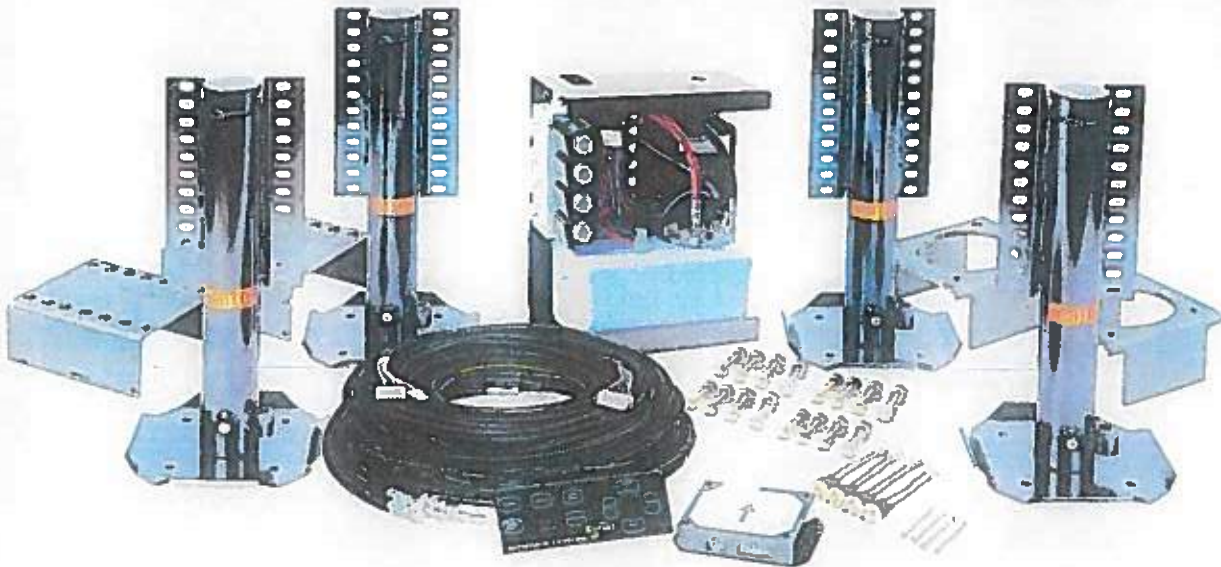


OEM Version #0218



# OWNER'S MANUAL

FOR MOTORHOME AND RECREATIONAL VEHICLE LEVELING & STABILIZING SYSTEMS



**QUADRA MANUFACTURING  
BIGFOOT LEVELING SYSTEMS  
305 US 131 SOUTH  
WHITE PIGEON, MI 49099  
Toll Free 1-800-752-9815  
Fax 269-488-9636**

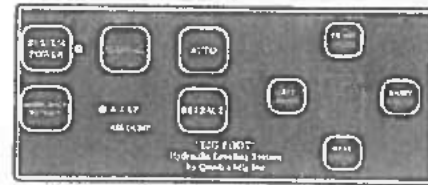
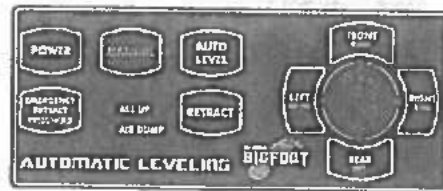
**[www.bigfootleveler.com](http://www.bigfootleveler.com)**



# Automatic Leveling System Controls

## Control Panel Operation...

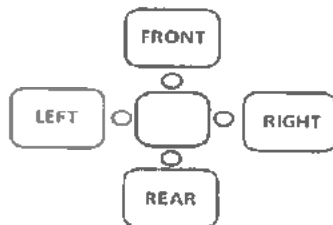
- Make sure the key is out of the vehicle ignition.
- Previous version of panel to the right.



1. Turn panel/system on and let system run through its diagnostic mode. Lights will flash clockwise around the green foot. (System will not operate with the ignition key ON)
2. When the lights stop flashing, it's time to choose your function (MANUAL or AUTOMATIC). If choosing MANUAL, press and hold button until light comes on. For AUTOMATIC, simply press once and release.
3. When in the MANUAL mode, each leveler may be operated individually. FRONT operates right front. RIGHT operates right rear. REAR operates left rear. LEFT operates left front. When using this feature it is important to level the coach by using two levelers at a time or together. For example, right front and right rear, this puts less stress on the frame. To retract individually, press and hold the RETRACT button & the jack button. To retract all, press & hold MANUAL until light goes off, then press RETRACT.
4. When using the AUTOMATIC feature, simply press the AUTO button and then let the system operate itself. It is important at this time that there is NO MOVEMENT IN THE COACH. This process will take 1-3 minutes. To retract the levelers simply turn panel on and press RETRACT.

## Programming the Automatic Leveling System

1. Turn panel/system on and let system run through its diagnostic mode. Lights will flash clockwise around the green foot.
2. When the lights stop flashing, push the button labeled "FRONT" 5 times.
3. Then press the button labeled "REAR" 5 times. Once you have done this ALL lights on panel will begin to flash. This means you have reached in the system what is called 'zero mode'. At this time you can operate each corner or pair of levelers individually.



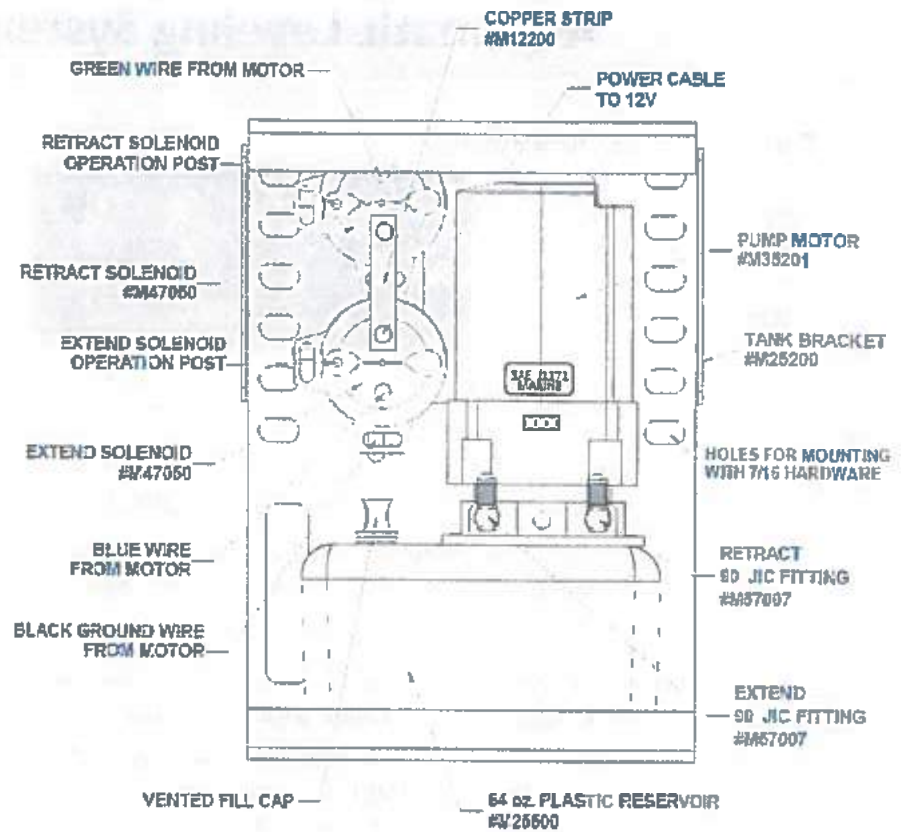
- FRONT indicator operates the right front.
- RIGHT operates the right rear.
- REAR operates the left rear.
- LEFT operates the left front.

Keep in mind the twisting/flexing of the vehicle's frame.  
Try to operate jacks in pairs when all jacks are touching the ground.

Once you have the coach level, you can now store a new program into the system. To do so, press the RETRACT button 3 times. All of the lights except 'Air Dump' will stop flashing (Air Dump will flash 20 times - approximately 20 seconds). Once the green Level light starts flashing, the program is stored. If you do not want to store a new program, simply shut off panel. This will keep the previously stored program.

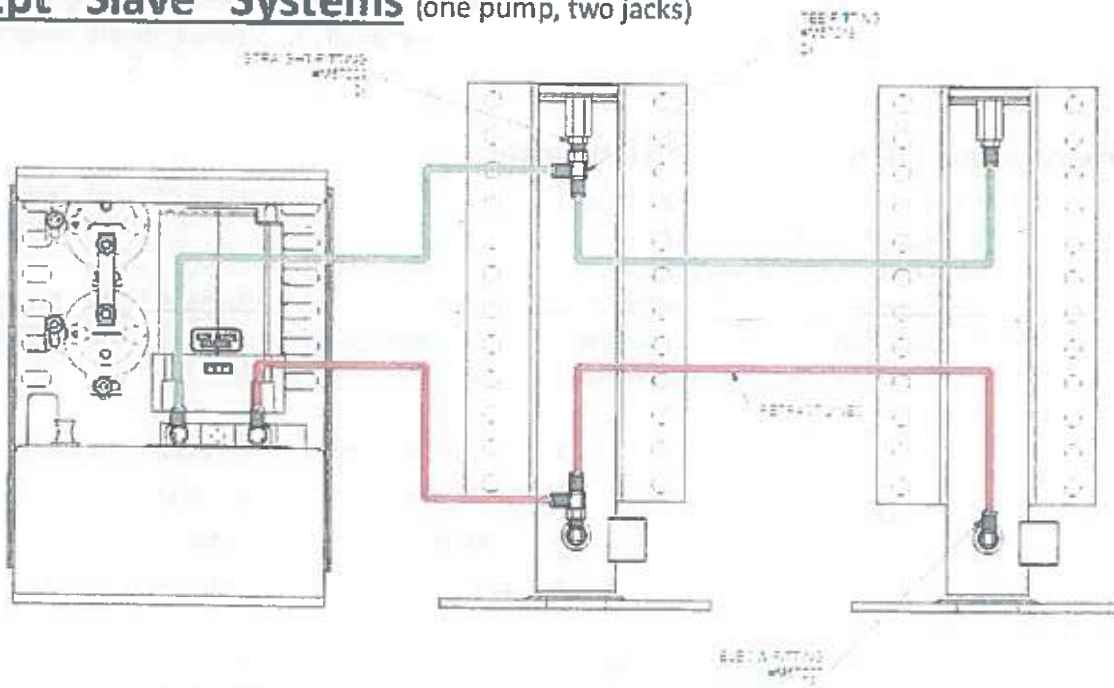
## Rocker Switch Controls

Included is a harness (#M43800) that routes from the tank assembly to the rocker control switch. The red wire is the 12V power, this goes from the power stud on the tank assembly (on copper strip with 5/16" studs from solenoids) to the center post on the switch. The black wire is ground & is not needed for this switch. The grey wire goes from the retract operation post on the retract solenoid to the post labeled "1" on the switch. The blue wire goes from the extend post on the extend solenoid to the post labeled "3" on the switch. The switch is not waterproof & must be installed inside the coach.



## Typical Plumbing

### For 2pt "Slave" Systems (one pump, two jacks)



VERSION #1: (SHOWN) THE "TEE" FITTINGS MOUNTED TO THE DRIVE JACK.

VERSION #2: INCLUDES MOUNTING THE "TEE" FITTINGS TO THE PUMP FITTINGS.

VERSION #3: RUNNING TWO LINES FROM THE PUMP AND PLACING THE "TEE" FITTINGS IN-LINE. THEN RUNNING INDIVIDUAL LINES TO EACH JACK FROM THE "TEE" FITTINGS.

# Cylinder Installation & Assembly

## Mounting the Cylinders

Pre-assemble jack prior to hanging on previously mounted weld-on bracket.

- Attach foot pad with  $\frac{3}{4}$ " thin jam nut using a  $1 \frac{1}{16}$ " socket.
- Remove port plugs with  $\frac{3}{16}$ " allen wrench.
- Install supplied JIC elbow fittings to the bottom & top ports with  $\frac{9}{16}$ " wrench.
- **DO NOT** install the extend hose to the top port on central pump systems yet, this will be done later on in installation (due to the length of hose they must go through a bleeding process).
- Place  $\frac{1}{4}$ " clevis pin in limit switch barrel then insert threaded limit switch with  $\frac{7}{8}$ " wrench.
- For jack locations see diagrams on the following pages, but typically the front jacks should be under the cab and the rear jacks should be within 60" behind the rear axle.
- If it is a weld-on application, make sure the weld-on bracket is level and you get good penetration to the frame with full welds the entire length of the bracket. Sometimes it is easier to mount jack prior to welding by lifting assembly with floor jack, be sure to verify levelness and ground clearance.
- Hang jack using at minimum of four  $\frac{7}{16}$ " x 1.75" grade 8 bolts, hex nuts & lock washers. If you have 17k-lb or larger jacks (3  $\frac{3}{8}$ " diameter or larger) you need a minimum of six bolts per jack. Prior to tightening, verify jack is straight & level using carpenter's level. Tighten with  $\frac{5}{8}$ " wrench on bolt,  $\frac{11}{16}$ " socket on nut, tighten to 70 ft.-lbs. (See Fig. 1)

Fig. 1

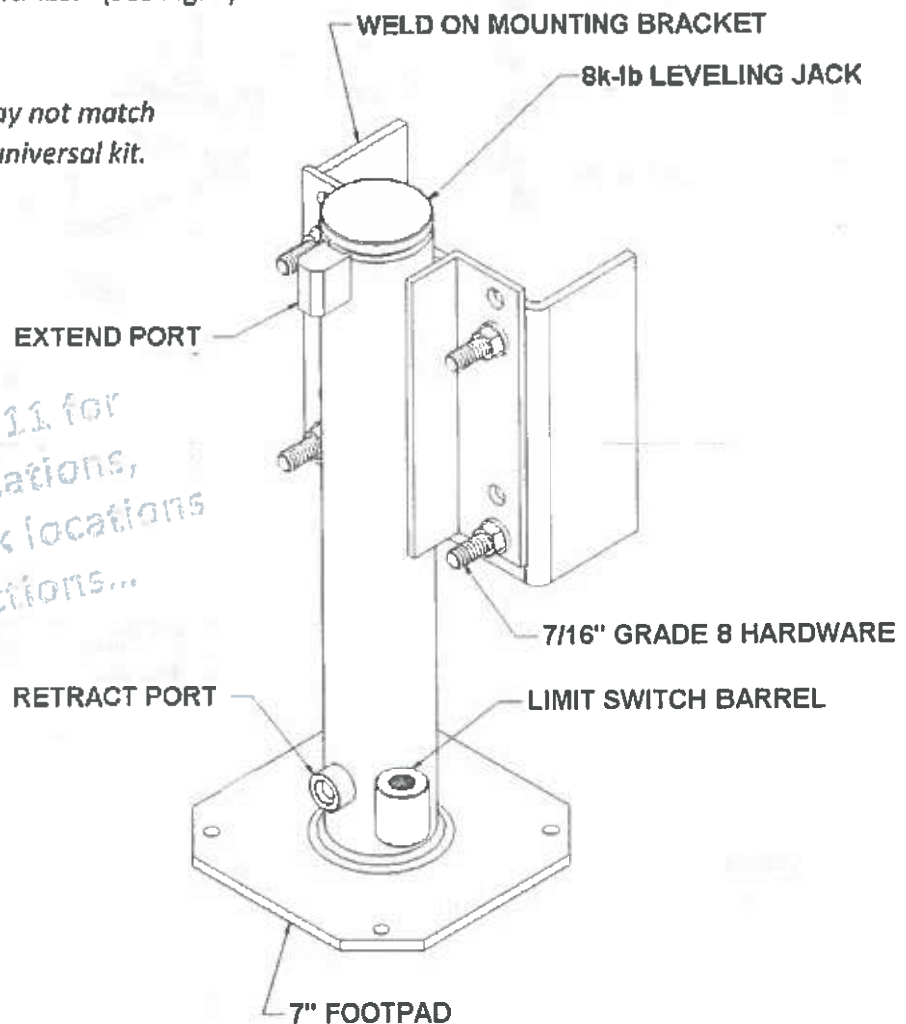
The jack pictured in this diagram may not match the jack for your vehicle specific or universal kit.

Identifying jacks by diameter:

- 2  $\frac{3}{8}$ " = 8k-lb jack
- 2  $\frac{7}{8}$ " = 12k-lb jack
- 3  $\frac{3}{8}$ " = 17k-lb jack
- 3  $\frac{7}{8}$ " = 24k-lb jack

See bottom of page 9 & 11 for possible vehicle modifications, torque specs & typical jack locations and additional instructions...

If mounting the rear jacks between the vehicle's frame rails also called an "inside mount" a crossbrace is required in the installation for structural stability.



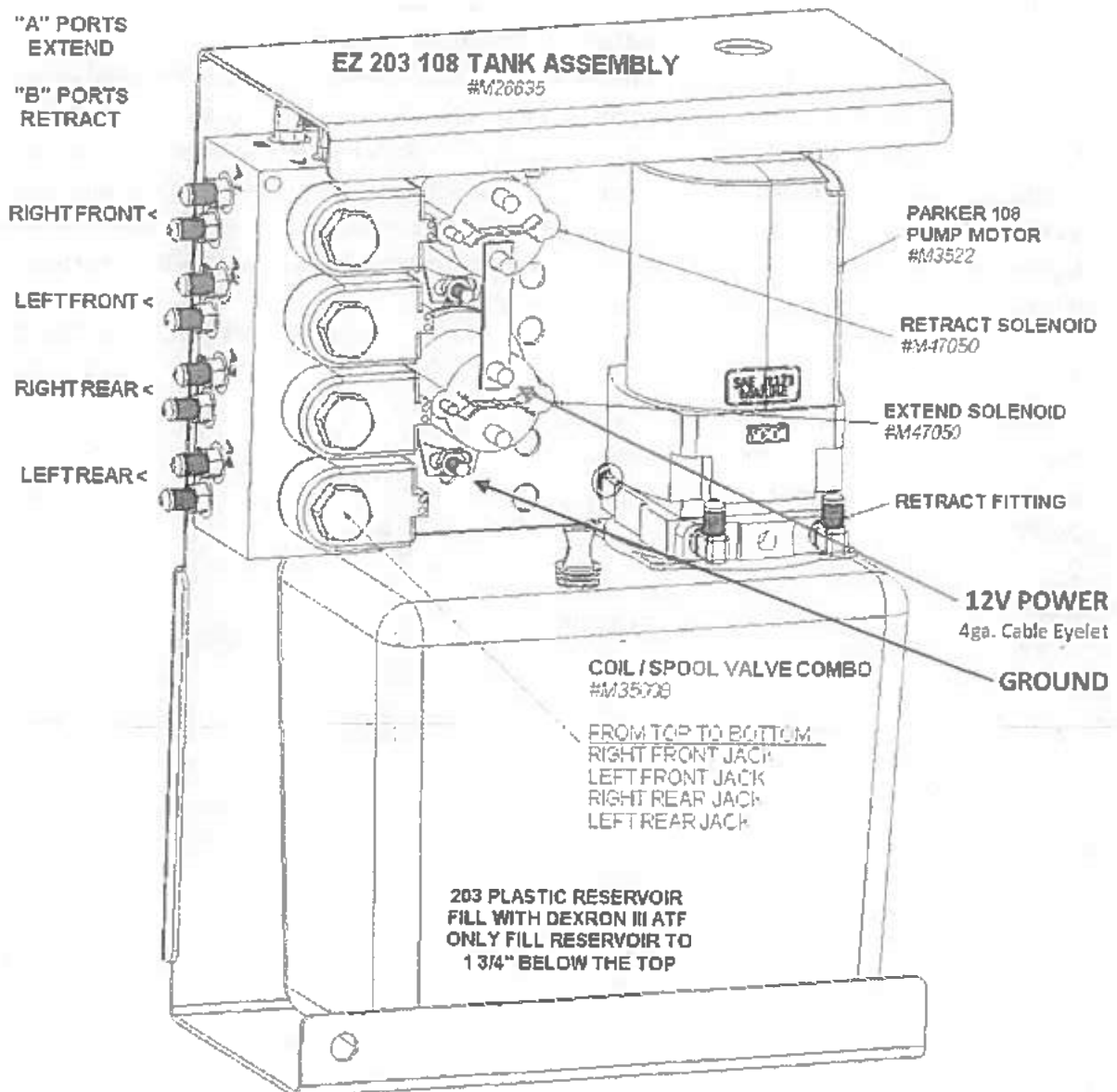
# Vertical Tank Assembly for Central Pump Systems

Tank Assembly will be pre-assembled & pre-wired direct from factory.

- Mount the pump using a minimum of two 7/16" bolts, nuts & lock washers.
- Plumbing is shown in Fig. 2 below, use 9/16" wrench and be careful not to under or over-tighten the hydraulic fittings. Sometimes marking the hydraulic lines with tape may make it easier.
- **DO NOT** install the top extend lines to the jacks themselves yet, this will be done later in installation.
- The main wire harness will plug directly into the 14-pin connector that is pre-wired to the assembly.
- Route the **ground harness** (attached to ground shown below) to a grounded surface on the vehicle frame.
- Finally installing the plastic three sided tank cover, this should be done later on in the assembly.
- The tank cover will need to be trimmed to your liking around the hydraulic lines. Fasten the tank cover with at least two self-threading screws, be careful not to puncture the plastic reservoir.

Fig. 2 "A" PORTS  
EXTEND

"B" PORTS  
RETRACT



Central tank assembly is typically located near the "center" of the unit, Example: In front of rear axle on driver's side frame rail (outside of rail or between rails).

# Horizontal Tank Assembly

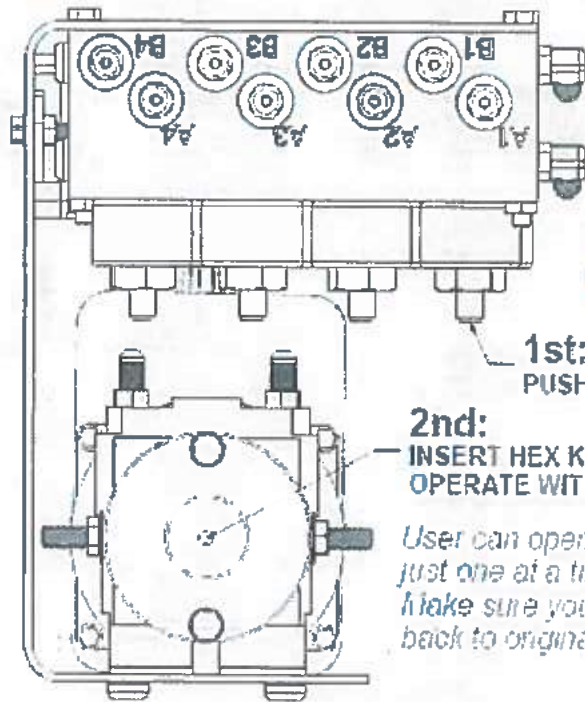
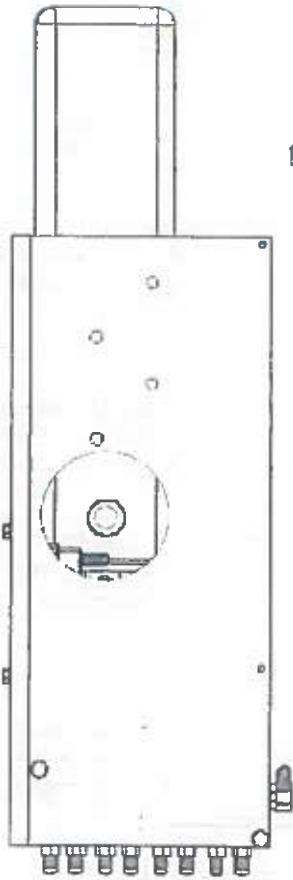
192oz Parker 165 M/O #M26650 CENTRAL TANK ASSEMBLY

Operating Manual Override to retract  
the cylinders in case of power failure.  
Power & Ground locations/installation.

**SAFETY WARNING!**  
MAKE SURE COACH IS  
ON BLOCKS OR BOTTLE JACK (etc.)  
WHILE OPERATOR IS UNDER COACH  
TO RETRACT JACKS MANUALLY!

192 # oz STEEL RESERVOIR (ATF DEXRON III)  
MANUAL OVERRIDE 165 MAGNETIZED BI-DIRECTIONAL MOTOR  
INDIVIDUAL MANUAL OVERRIDE VALVES FOR EACH CYLINDER

VALVES FOR EACH INDIVIDUAL JACK FROM LEFT TO RIGHT (BELOW)...  
DRIVER REAR, PASSENGER REAR, DRIVER FRONT & PASSENGER FRONT



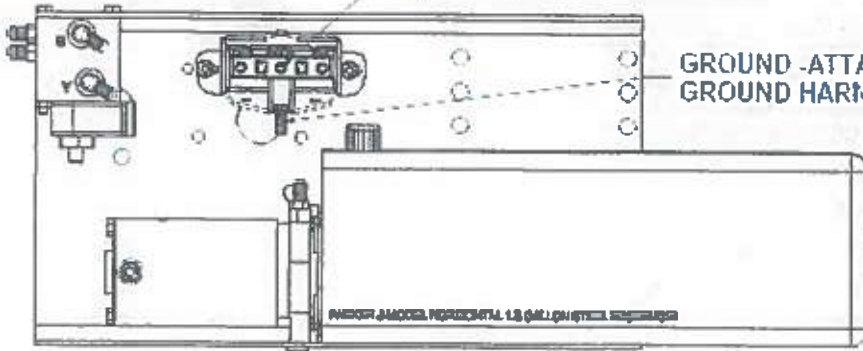
**HOW TO  
MANUALLY  
OVERRIDE**

1st: PUSH EACH KNOB DOWN & TWIST

2nd: INSERT HEX KEY HERE  
OPERATE WITH DRILL

*User can open valve all four valves or  
just one at a time (see callout above).  
Make sure you twist & pull each knob  
back to original position when finished.*

— 12V POWER CABLE HERE -ATTACH TO POSITIVE TERMINAL

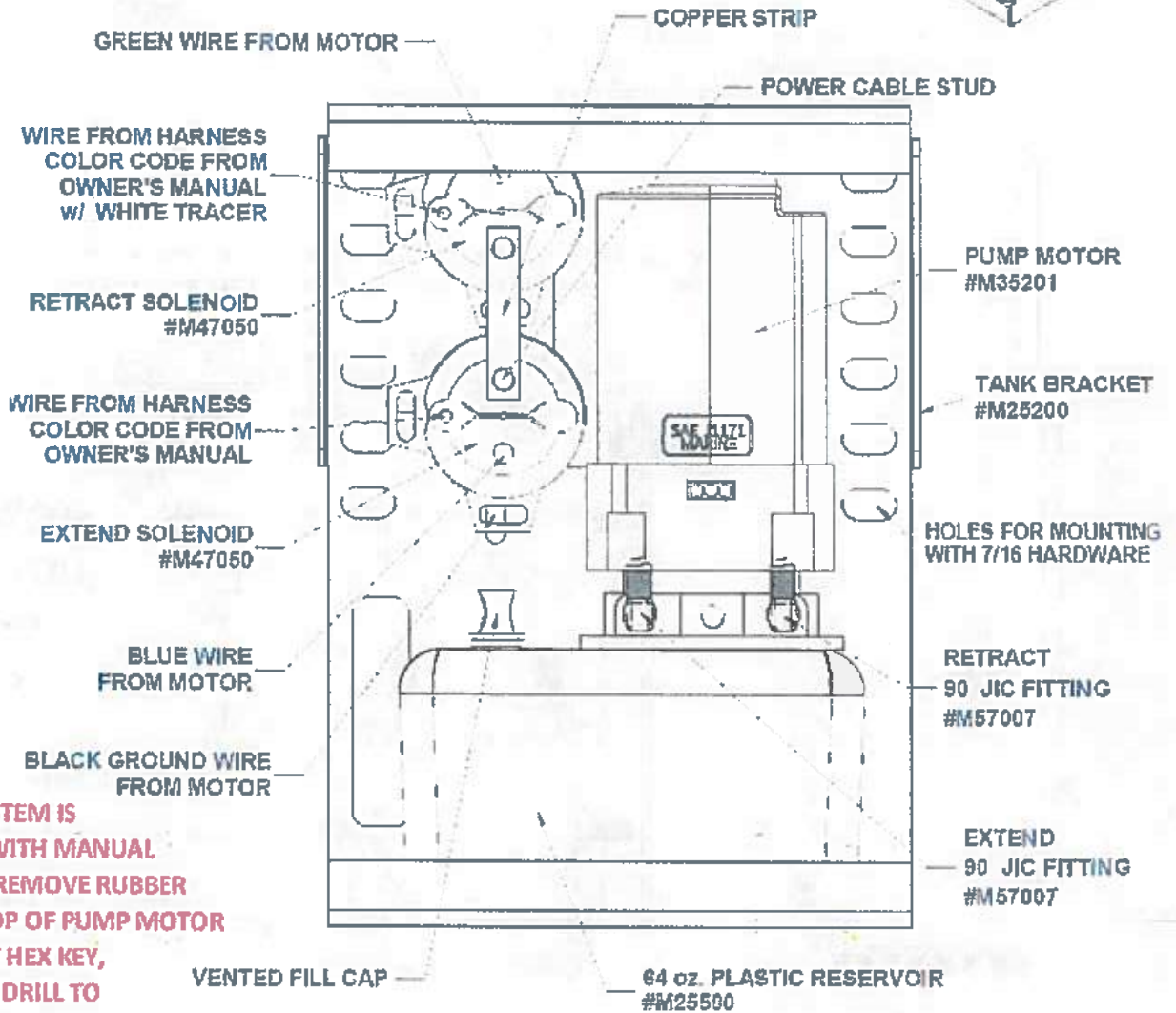
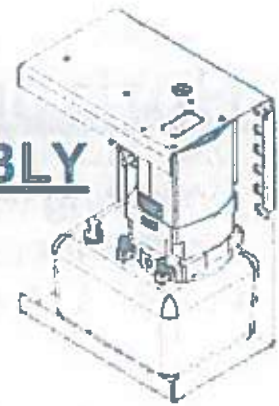


GROUND -ATTACH TO FRAME OR NEGATIVE TERMINAL  
GROUND HARNESS MAY BE PRE-INSTALLED (NOT SHOWN)

# MEDIUM TANK ASSEMBLY

#M26850

OVERALL DIMENSIONS:  
 8" WIDE  
 12.5" TALL  
 5.75" DEEP



**IF YOUR SYSTEM IS EQUIPPED WITH MANUAL OVERRIDE, REMOVE RUBBER PLUG ON TOP OF PUMP MOTOR AND INSERT HEX KEY, TURN WITH DRILL TO OPERATE JACK UP/DOWN**

**4 PT WIRING HARNESS COLOR CODE DIAGRAM:**  
 LEFT FRONT: GREEN/WHITE & GREEN  
 RIGHT FRONT: BLUE/WHITE & BLUE  
 LEFT REAR: GREY/WHITE & GREY  
 RIGHT REAR: BROWN/WHITE & BROWN

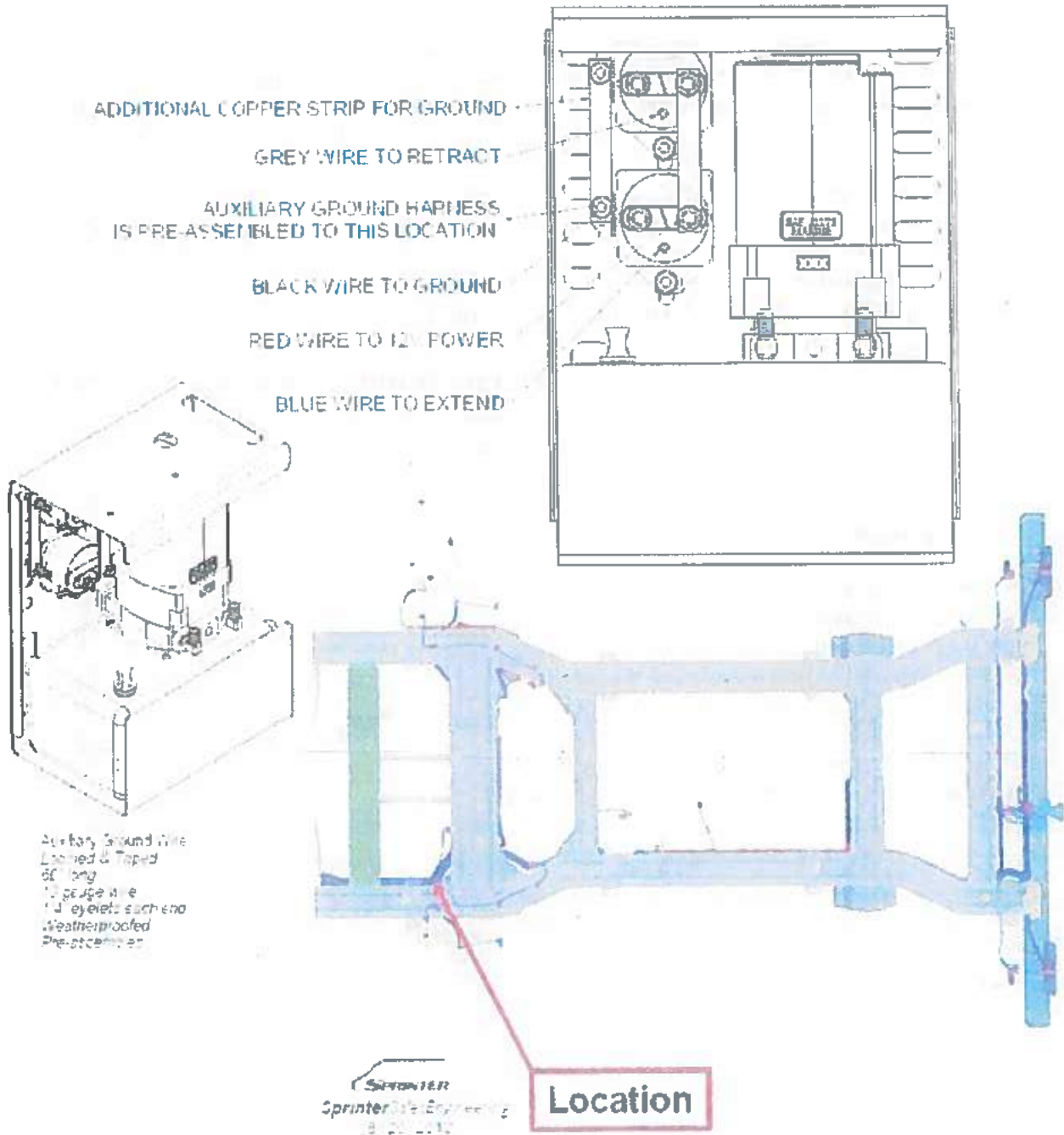
**NOT PICTURED:**  
 TANK COVER  
 (BLACK TEXTURED PLASTIC)  
 #M12002

## Mounting Tank Assemblies (Quad or Central)

Our tank assemblies are weather resistant and must be mounted vertically and can be mounted externally on the vehicle's frame by drilling holes in the frame or welding a bracket, tanks can be mounted to a cylinder bracket or inside a storage box. Use at minimum two 7/16" or 3/8" bolts per tank assembly. Take care when mounting and running hydraulic lines & wiring to avoid moving parts, exhaust, etc.

# Grounding your tank assembly...

Each pump requires 12V power and sometimes an additional ground is required for the pump/motor to operate correctly. This is true for central pump, quad pump and 2pt systems. An auxiliary ground harness (optional) could come pre-wired to the tank assembly, otherwise attach a 10 gauge wire from the location shown below and to a good grounded surface on the vehicle frame or directly to the negative terminal on the battery. At the bottom of this page is a picture of the Mercedes Sprinter (chassis cab) uni-body ground location in front of the rear axle.





## Main Wire Harness –Automatic Leveling & Platinum System

### Installing the 14-Pin Wiring Harness Central Pump Automatic Leveling & Platinum Systems

The harness has two ends with plugs; the “panel” end has a 14-pin connector & a 6-pin. This end will need to route to the control panel’s location (usually near front of vehicle near driver’s seat or in wall of cabinet near service door). The other end will have one 14-pin connector that will plug directly into the tank assembly. The rest of the harness has two wires: Black & Tan, both of these wires plug directly into the Limit Switch that you installed previously onto each jack. Attach the wire harness to the frame rail (usually inside of rail with other wiring) with p-clips or zip ties safely routing away from any moving suspension parts or exhaust (complying with RVIA regulations). Example diagram on next page...

### Installing the 14-Pin Wiring Harness Quad Pump Automatic System

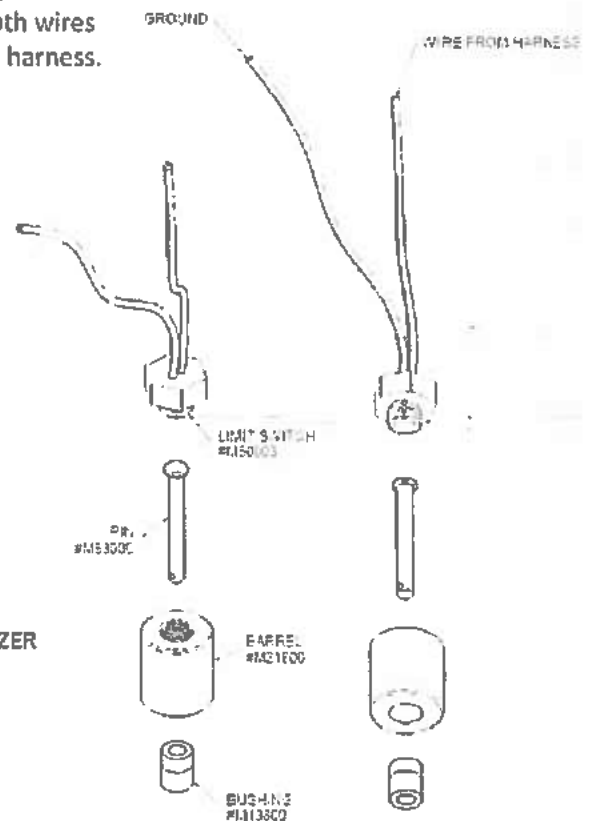
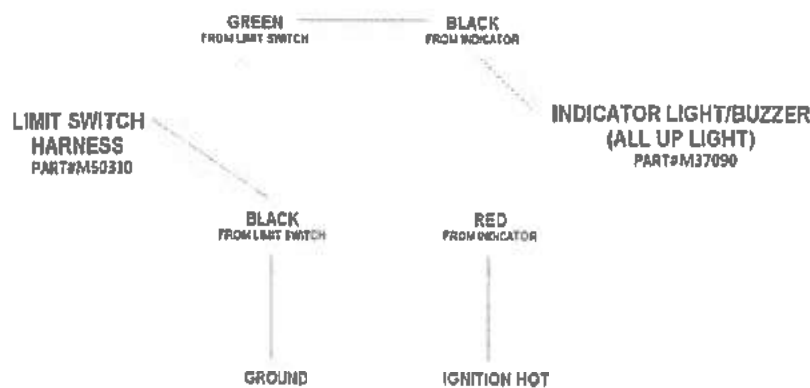
The main wire harness will have three wires for each corner: One wire goes to the limit switch (has spade connector) (the limit switch has two wires coming from it, the wire with the eyelet goes to ground, the spade connects to harness). The other two wires (same color except one has a tracer) have female push-on connectors that plug into the operation posts on each solenoid. The battery harness has eyelets at each corner that attaches to the power stud on the lower solenoid (with the copper strip). See the “Medium Tank Assembly” diagram earlier in the booklet. The main harness lead has a 14-pin connector at the end, this end will need to route to the sensor location. Attach the wire harness to the frame rail (usually inside of driver’s side rail with other wiring) with p-clips or zip ties safely routing away from any moving suspension parts or exhaust (complying RVIA regulations). Example diagram on next page...

## Installing the Limit Switches to the Jacks

Central Pump systems, both wires from limit switch plug into harness.

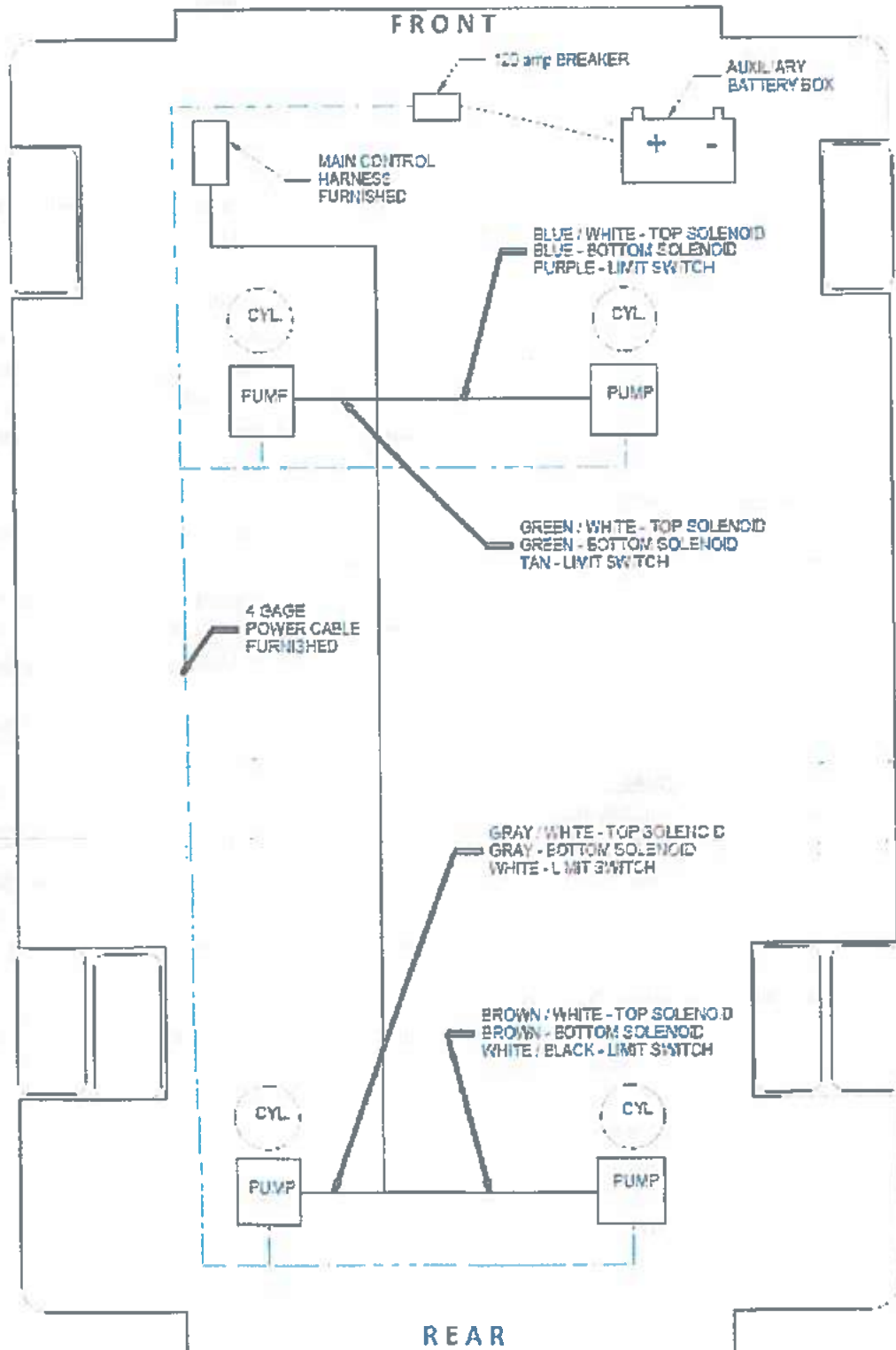
The Wireless System does not have a main wire harness that goes to each jack from the controls, but it does have an optional all-up safety feature complete with limit switches that is routed to each jack. This harness routes to the All-Up indicator that should be mounted near the driver inside the vehicle. The Limit Switch harness has two wires that go to each jack, one green & one black, each wire goes to the wires from the limit switch shown on the right.

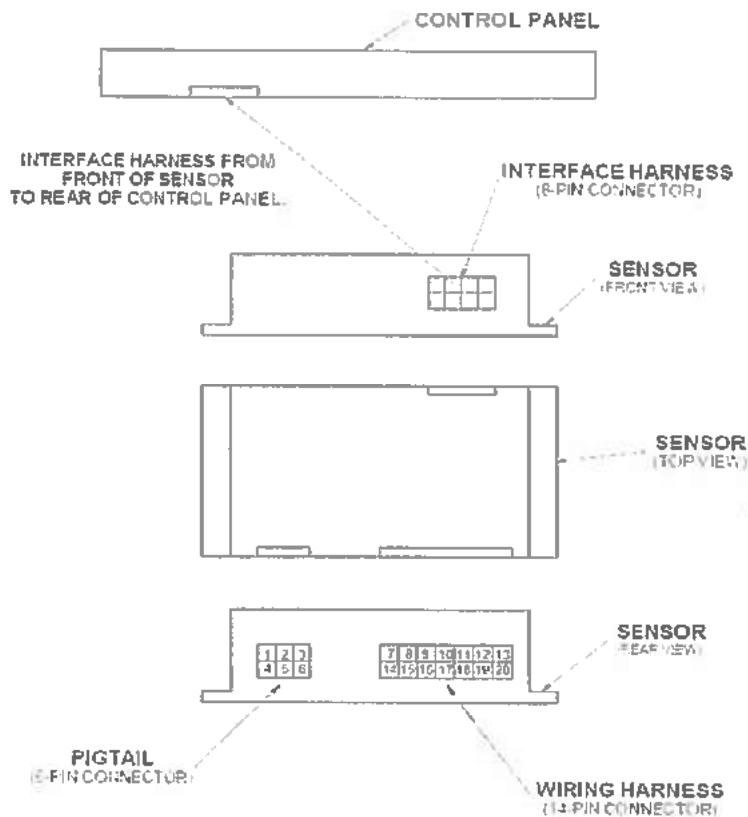
Wiring the lead wire to the all up indicator is shown below.



Example below of routing the Quad Pump Automatic & Manual systems 14-pin wire harness. The Central Pump Automatic & Platinum systems harness is similar except that the leads to each corner or jack have only a tan & black wire that plugs into the limit switch and the end of the harness with the 14-pin connector plugs into the pump while the end with the 14-pin & 6-pin connectors plug into the Automatic's Sensor or Platinum panel. Take care to avoid high heat areas and moving parts.

## MAIN WIRE HARNESS DIAGRAM





Installing the Automatic Leveling Sensor & Control Panel: Fasten the sensor to a secure structure (usually the floor) inside the vehicle (not weatherproof) ensure that it is mounted level and the arrow on top of the sensor is facing the correct way. Plug the 14-pin & 6-pin from the harnesses into the back side. The 6-pin connector only has three wires that need to be hooked up: red, yellow and black. The yellow wire needs to tie into an ignition or accessory hot wire from the vehicle. The red wire needs to attach to a factory fused 12V power source (7.5 amp fuse). The black wire is ground. After doing so attach the interface harness (8-pin connector) to the front of the sensor and attach to the Control Panel. The panel may be mounted on the dash in a safe location or on a panel somewhere on inside the coach, or inside Quadra's optional plastic box assembly with the harness loosely coiled underneath the driver's seat.

#### Installing the Platinum Control Panel

Plug the 14-pin & 6-pin from the harness into the back side. There is a yellow wire coming from the 6-pin that needs to tie into an ignition hot wire from the vehicle. The panel may be mounted on the dash in a safe location or on a panel somewhere on inside the coach, or inside Quadra's plastic box assembly with the harness loosely coiled underneath the driver's seat. **Optional safety feature for Platinum panels**, features an in-line toggle switch to shut power off to the panel to prevent operation while driving down the road from children, etc. Find the red wire from the 6-pin harness that goes to the back of the panel. Cut and splice the included wires to route to the toggle switch that should be located near the Platinum panel for convenience.

#### Battery Cable Installation for Central Pump & 2pt Systems

Supplied will be a 4 gauge battery cable that needs to be cut into two pieces.

- The 1<sup>st</sup> to run from the Solenoid power stud (marked BATT+) to the 80 amp breaker AUX stud.
- The 2<sup>nd</sup> to run from the BAT stud on the breaker to the Positive Terminal on the coach's house battery.

Hooking up the power should be the final wiring step so make sure this is done after all the other electrical work is done for safety. The supplied 80 amp breaker should be securely fastened in the battery box.

#### Battery Harness Installation for Quad Pump Systems

Supplied will be a 4 gauge battery harness that must be ran from the coach's house battery to all four pump assemblies at the solenoid power stud (with the copper strip). For the end going to the breaker read below:

- Mount the 120 amp breaker near the battery (usually in the battery box) cut a piece of the battery harness off that is long enough to reach the battery from the breaker.
- Install the eyelet to the now open end of the battery harness and hook it to the BATT post on the breaker.
- Install the eyelet to the short cut piece and hook that to the AUX post on the breaker and to the positive terminal on the coach's house battery. Hooking up the power should be the final wiring step so make sure this is done after all the other electrical work is done for safety.

Installing the **Manual Control Panel**: Plug the 14-pin harness & 6-pin into back of panel, mount with bezel.

### Installing the **Wireless Receiver**

Mount the Wireless Receiver near the tank assembly, check and plug the wiring connector from the receiver to the tank assembly to make sure it reaches, the Receiver is weatherproof but be aware of possible road debris, clear of exhaust and other moving parts.

## **Central Pump Final Extend Hose Installation & Bleeding the System**

---

During installation of the hydraulic lines, air is internally captured in the hose. Due to this, bleeding the air out of the system is necessary for the system to work properly. This process is done at the end of installation and requires two people and can be messy, so as a warning make sure you are wearing eye protection and have rags ready to use. Make sure all hose fittings are tight on the pump side and the retract side of the jacks. Extend hose fittings should still be un-installed.

- With person #1 running the panel, go into Manual Mode, all jacks should be fully retracted.
  - Person #2 (armed with a 5/8" OR 9/16" wrench, safety glasses, rag and a one gallon container) needs to access the left rear jack and place the un-attached extend hose into the empty container.
  - Now person #1 will extend that left rear jack from the panel (press & hold button).
  - Fluid & air will be spilling out of the port, once a solid stream of fluid occurs, person #1 will release the button on the panel, after fluid stops flowing person #2 should install the hose fitting to the jack.
  - Repeat these steps with the rest of the jacks.
  - After doing so, extend all jacks fully and let stand for 15 minutes.
  - Then retract all the jacks and remove the tank cover and check your fluid level to verify the fluid in the reservoir is around 1 3/4" below the top (ATF Dexron III) do not fill to the top!
- Finally install the tank cover, check that all hardware is tight, the sensor is facing the correct way and is mounted level and the house battery is fully charged.

*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.*

## **Bleeding Quad Pump systems**

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In Manual mode, extend all four jacks to complete extension and leave in this position for 20 to 30 minutes. This pushes all the air out of the lines by weight pressure. After turn panel back on and press Retract.

## **Troubleshooting - Hydraulic Cylinder/Plumbing Related**

---

**What fluid do we use in the system?** Automatic Transmission Fluid Dexron III ATF

**Cylinders running "choppy" ...** Bleed the system, if central pump system, try quad pump method first.

**Cylinders make loud "squeaking" noise while operating...** Spray rams with Teflon spray (dry lubricant).

**Hydraulic fluid on footpad or on ground around cylinder...** Loose fitting or broken hydraulic line.

**Cylinders "creep" down or don't hold pressure when lifting/holding coach...**

- Check fluid level, Check for leaks in hydraulic lines/fittings
- Possibly plumbed backwards... (Bottom port on cylinder tube connects to right port on pump, etc.)
- Relief Valves have failed on pump motor... replace motor/tank assembly
- Hydraulic seal failure, check for oil around bottom of cylinder or welds... replace cylinder

## Troubleshooting – No “All Up” Light

---

**Auto Leveling/Platinum Control:** If the “All Up” light is not coming on and you hear the buzzing sound from your panel when the vehicle ignition is on it might be a limit switch on one of the jacks. After attempting to retract all four jacks from the panel and doing a visual check to verify that the jacks are indeed retracted but the panel has no “All Up” light. The first step is to extend each jack a few inches and individually retract one at a time. Sometimes the foot pad retracts crooked and doesn't fully engage the pin. If that doesn't work, with the jacks fully retracted, press the RETRACT button on the panel and manually pull each limit switch pin up to see if that engages the switch, if the panel shuts the pump off then that limit switch is not engaging properly. To fix this, it could be the foot pad is loose, remove & re-tighten the 3/4” nut with a 1 1/16” socket with an impact wrench. If this does not work you can get a “vacuum cap” at your local hardware store for the 3/4” diameter pin which extends the length of the pin and completes the circuit.

If you have an “All Up” light but your jacks are NOT fully retracted, we call this a false all up light, this means you have a bad limit switch (they can stick in the “passing” position due to build-up of road debris or rust).

To get you out of a jam or to bypass this... Central pump systems: disconnect the wires to the limit switch, and plug the two wires from the harness that usually go to the limit switch and plug them into each other (black & tan wires) this closes the circuit and allows the jack to be retracted. Quad pump systems: connect the colored wire from the main harness and connect it to the ground wire from the limit switch (or to frame).

## Troubleshooting - Continued...

---

(Auto Leveling) If the LEFT & RIGHT lights are flashing that means the program “timed out”, which may mean the coach is on too un-level ground or there was too much movement in the coach during the automatic leveling program. Try again.

If rear jacks are hanging too low to the ground with the jacks retracted fully, check underneath the coach and check to see if the jack can slide up one row of holes. If this can be done, make sure you raise both rear jacks the same height and tighten each mounting bolt to 70 ft/lbs. If your coach is equipped with an airbag system, just increase air pressure slightly to raise the coach.

☞ If a single jack on a central pump system is simply not working properly, the valve or coil to that particular jack might be bad. To replace, simply call or go online to order part number #M35008.

### **Panel won't turn on, system won't run, clicking noise, FRONT & REAR lights flash...**

Battery low, panel won't turn on = coach battery, the system relies on the house battery. The battery needs to be nearly 100% charged for the system to work, it doesn't make a difference if the coach is new, that doesn't mean the battery is fully charged or even good. Batteries don't charge instantaneously, so one can't just expect to hook it up to a charger and the system will work immediately, if the battery is good, then the unit might have a ground issue. **Auto systems must un-plug/re-plug the interface cable to clear code on panel regardless.**

### ***Panel is on, but pump(s) are not working OR solenoids clicking but pump/motor is not running... Auxiliary Ground Cable***

Sometimes required for heavily coated frames, solenoids need a 10 gauge wire to be attached to one mounting stud for both solenoids on each pump assembly (central or quad) that isn't working properly to the vehicle's frame for optimum performance.

## Warranty Guide

**Owner must activate warranty! Via Phone or Website**  
1-800-752-9815 [www.bigfootleveler.com](http://www.bigfootleveler.com)

### OEM Installed Auto Leveling Quad/Central Pump Systems:

*1 Year Cylinder Replacement, Parts & 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.

### Quadra is NOT responsible for:

- Freight on warranty parts.
- Replacing footpads, bolts, or fluids lost as a result of failure to maintain the system (Loose footpads should be tightened at owner's expense).
- 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.
- 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, on-site 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. Effective date: 2/12/2018*

**OWNERSHIP MUST BE REGISTERED WITHIN 30 DAYS FROM THE DATE OF PURCHASE TO ACTIVATE WARRANTY. Do it online at [BIGFOOTLEVELER.com](http://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 Quadra 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 Quadra service representative.

**Provide the system serial number here** \_\_\_\_\_ :

### **EMERGENCY SERVICE**

For after hours emergency service, please call our normal office number  
**269-483-9633** and follow the instructions.

