

QUADRA

BIGFOOT

HYDRAULIC LEVELING SYSTEMS

800-752-9815



Quad Pump Auto System Installation/Owner's Manual

QUADRA MANUFACTURING
BIGFOOT LEVELING SYSTEMS

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Programming the System

Turn panel/system on and let system run through its diagnostic mode. Lights will flash clockwise around the green foot.

When the lights stop flashing, push the button labeled "FRONT" 5 times. 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.

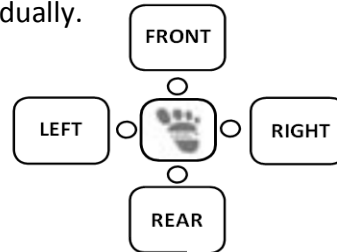
At this time you can operate each corner or pair of levelers individually.

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 possible.

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. If you do not want to store a new program, simply retract jacks in manual mode to avoid changing the original program (press and hold RETACT & jack button)



Operating the Auto/Manual Control Panel

Make sure your key is not in vehicle ignition.

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, press and hold the RETRACT button & the jack button.

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.

Mounting the Tank Assembly

Look at the “Medium Tank Assembly” diagram on the next page...

- The tank assemblies can be mounted anywhere on the frame, but are usually attached to the “cylinder bracket” using extra bolts (supplied 1.5” full threaded bolts). Drilling the frame to mount the tank is another method, others use storage boxes, just keep in mind that our tank assemblies **are weatherproof!**
- Mount the pump using a minimum of two 7/16” bolts, nuts & lock washers.
- The three sided plastic tank cover will need to be trimmed to your liking around the hydraulic lines or wiring. Fasten the tank cover with at least two self-threading screws, be careful not to puncture the plastic reservoir. This should be done later on in the assembly so don’t bother with it now.
- In the event the Tank Assembly **is not** attached or mounted to steel; it is necessary to attach an auxiliary ground from tank assembly’s motor ground location (black wire to ¼” bolt) to the bare metal area on vehicle frame (sometimes with heavily powder coated frames this procedure is required for best system performance). If tank Assembly **is** mounted to steel, the ground is typically reached through the tank body, mounting bolts and frame of vehicle.

Mounting the Cylinders

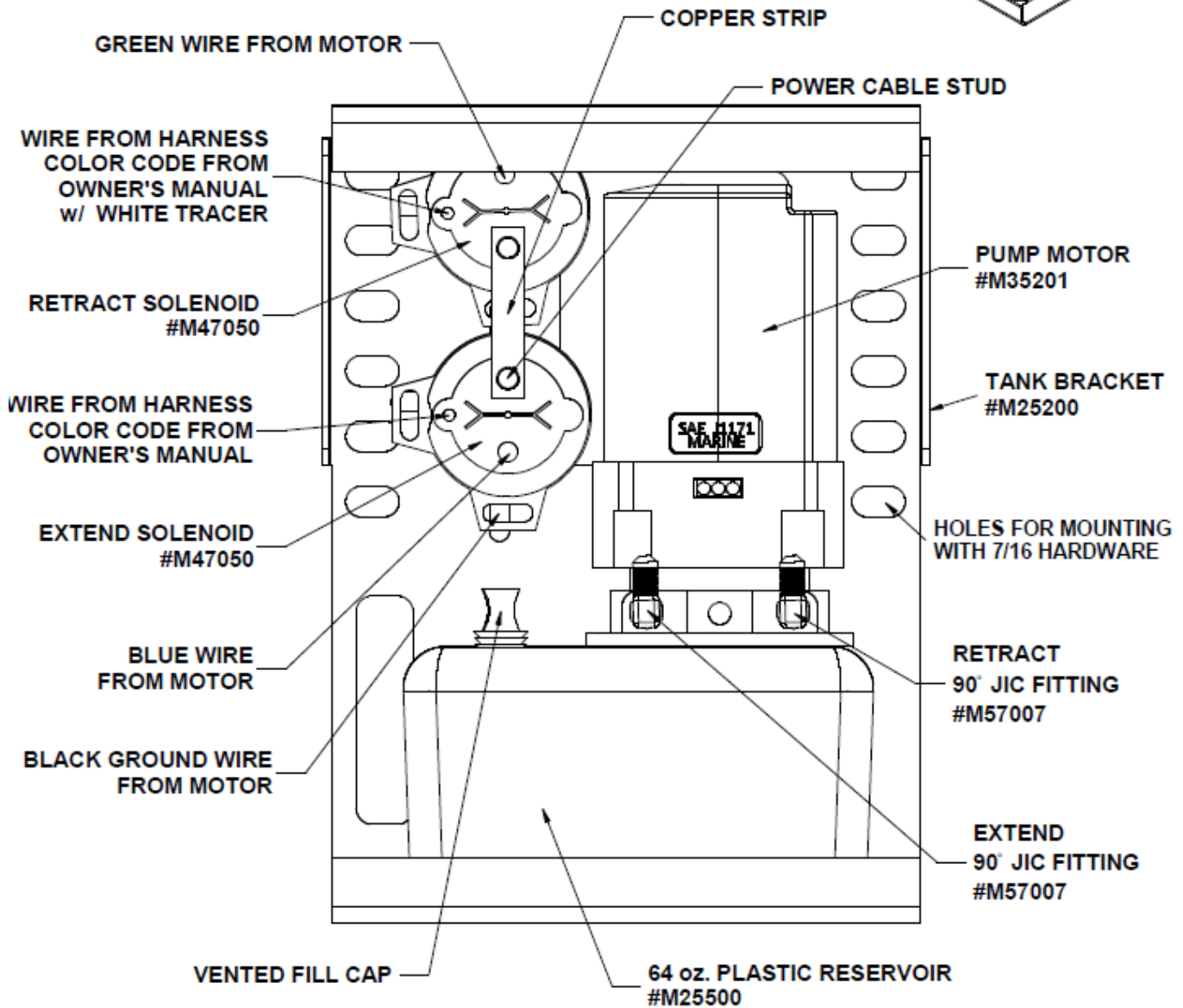
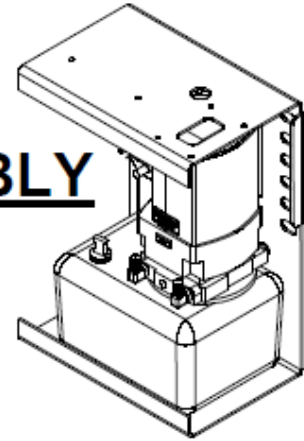
Look at the “Cylinder Assembly” diagram on the next few pages...

- Remove port plugs with 3/16” allen wrench, there are two extend ports, choose only one side.
- Install supplied JIC elbow fittings to the top and bottom ports with a 9/16” wrench.
- Attach the cylinder to the weld-on bracket with supplied 7/16” grade 8 hardware, systems with 12k jacks (2 7/8” diameter) require four bolts, 17k and 24k jacks (3 3/8” & 3 7/8”) require six bolts at minimum per jack. Tighten to 70 ft-lbs, using a 5/8” wrench on bolt head and 11/16” socket on nut end.
- Set cylinder with bracket on frame in pre-selected location, (check pages later in booklet for typical locations) verify proper ground clearance (Class A/B/C motorhomes should have between 7-9” of ground clearance, Class 8 truck/motorhomes should have 9-12”) set the cylinder level from side to side and front to back then proceed to welding. Make sure there is adequate penetration and get as much weld as possible to the frame, if mounting on the inside rail or if your kit came with a cross-member (for the rear jacks) it is required that you install the cross-member.
- Next attach foot pad with ¾” thin jam nut using a 1 1/16” socket, there should be around two threads visible, foot will not be tight when the cylinder is at all extended, it tightens against the cylinder tube when retracted.
- Place ¼” pin in limit switch barrel then insert threaded limit switch assembly with 7/8” wrench.
- After all welding is taken place, recommended paint the exposed weld and bare steel bracket to prevent rust.
- After mounting the cylinders, it’s time to plumb the system. **Check out the “Medium Tank Assembly” diagram on the next page.** Start by running one hydraulic line at a time to avoid crossing lines. Attach the hydraulic line to a port from the diagram and route it to the corresponding port on the cylinder. Verify that the fittings are tight before moving along.

MEDIUM TANK ASSEMBLY

#M26850

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

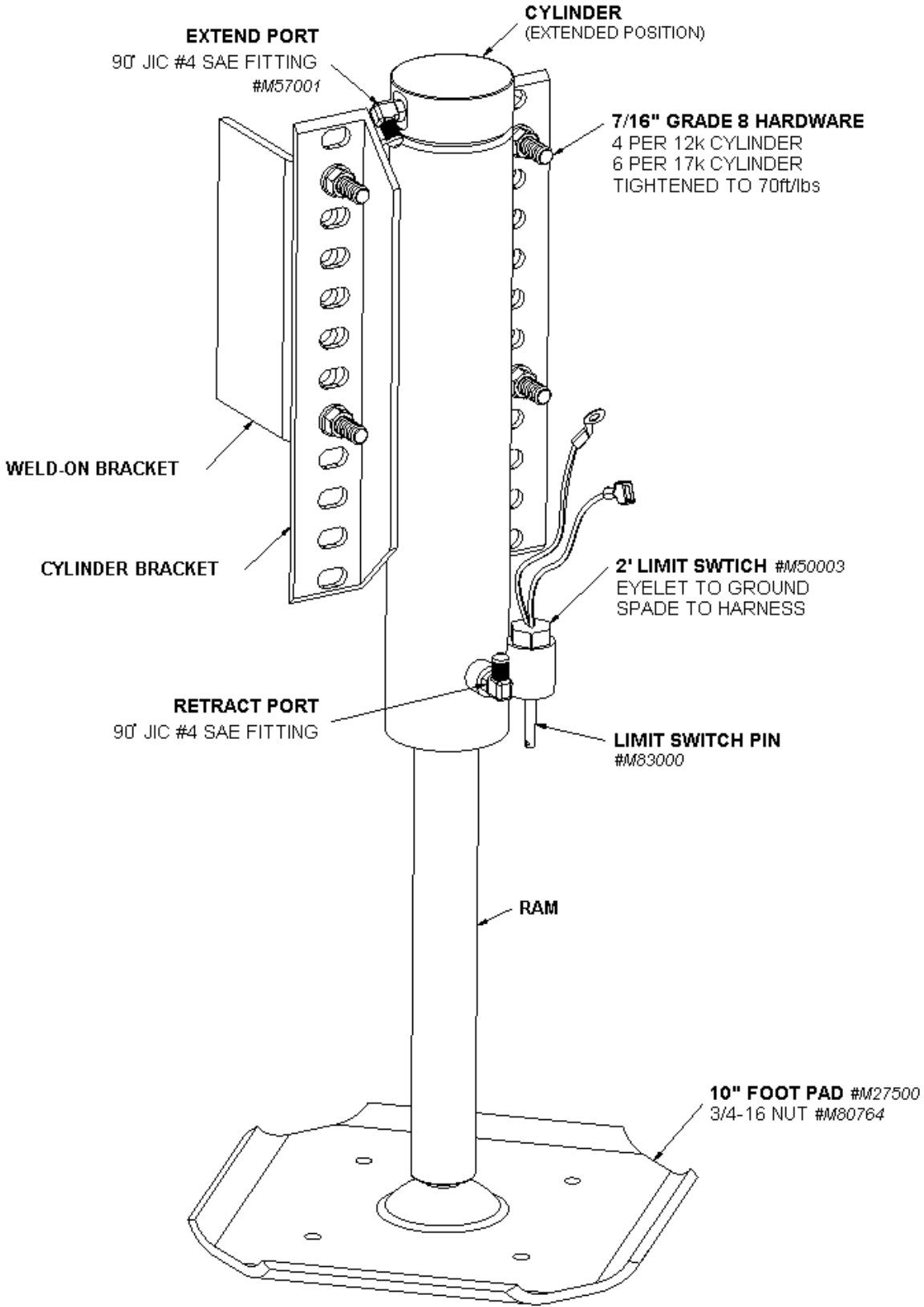


4 PT WIRING HARNESS COLOR CODE DIAGRAM:
 LEFT FRONT: GREEN/WHITE & GREEN
 RIGHT FRONT: BLUE/WHITE & BLUE
 LEFT REAR: GREY/WHITE & GREY
 RIGHT REAR: BROWN/WHITE & BROWN

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

CYLINDER ASSEMBLY

Cylinders, Mounting locations & Bracket styles vary from application to application. Feel free to call Quadra Mfg. or visit our website for more information on your system.



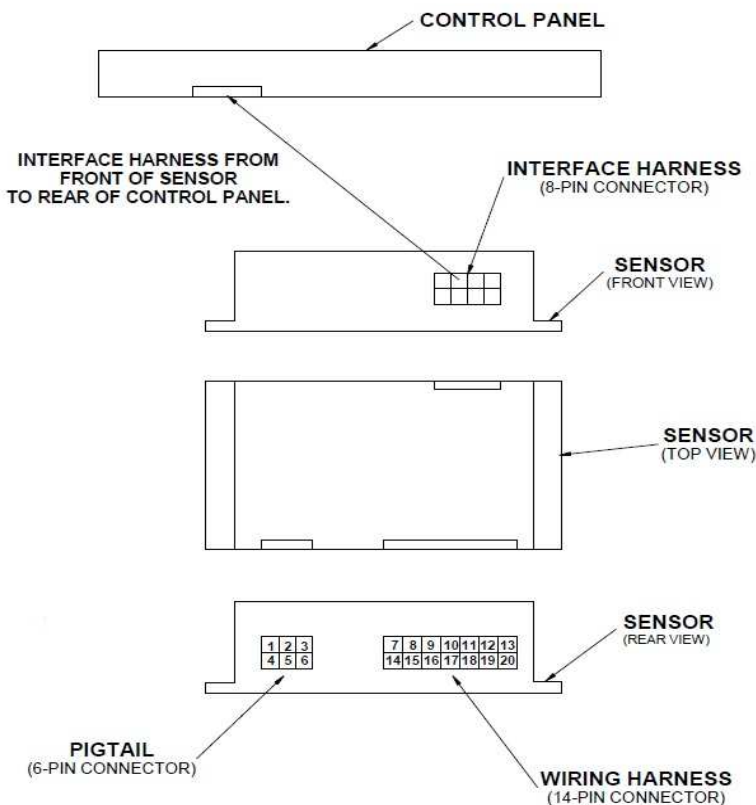
ELECTRICAL AND FINAL PREP

Installing the breaker: If this is a trailer installation, they usually have the battery mounted on the front of the trailer in a box, if this is a motorhome installation, system will utilize the house batteries not vehicle battery. Install the 120 amp breaker in-line somewhere between the jack and the battery, usually in battery box.

Hooking up the breaker: Attach the corners of the supplied battery cable harness to each tank assembly's lower solenoid post (with the copper strip) and route to the lead of the harness to the house batteries. Cut the cable at chosen breaker location to insert the in-line breaker (additional battery lugs are supplied). Attach the one end of the cut cable to the AUX stud on the breaker, attach the other end of the cut cable to the BAT stud on the breaker. The final end attaches to the POSITIVE terminal on the house battery. (DO NOT CONNECT TO THE BATTERY UNTIL THE REST OF THE INSTALLATION IS COMPLETE)

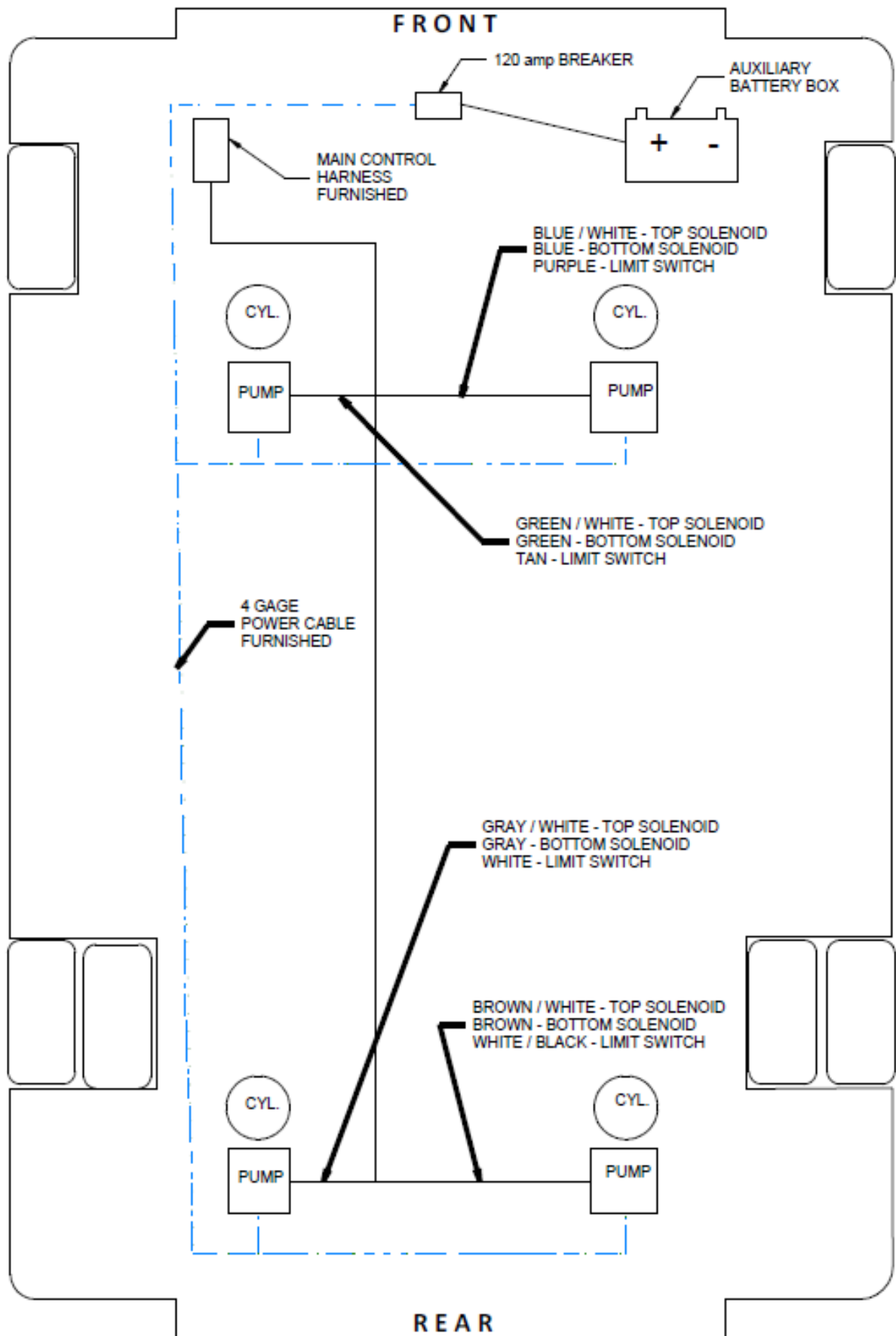
Installing the main wire harness and the battery cable harness: The main wire harness will have three wires for each corner: One wire goes to the limit switch (has spade connector) (the limit switch has two wires coming from it, the wire with the eyelet goes to ground, the spade connects to harness). 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).



Installing the Sensor & Panel: Fasten the sensor to a secure structure (usually the floor) 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.

MAIN WIRE HARNESS DIAGRAM



Final Step.... Bleed the System!

All that is required on “quad pump” systems is to enter “Manual mode” on your panel, Run all four jacks to full extension (you will hear the pumps whine), leave the system for 15 to 30 minutes, then retract the system.

Troubleshooting

If your **ALL UP** light is not coming on and you hear the **buzzing sound from your panel** it might be a limit switch on one of the jacks. Sometimes all you have to do is get a “vacuum cap” for the ¼” diameter pin to help the limit switch mechanism mate and complete the circuit, if this doesn’t work you could have a bad limit switch. Or it could be one of the foot pads are loose, remove ¾” nut & re-tighten with impact wrench.

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.

What Hydraulic Fluid do I use?

Automatic Transmission Fluid (ATF): Dexron II, Dexron III, ATF+4, Mercon, Mercon V

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. Battery’s 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.

Must un-plug/re-plug the interface cable to clear code on panel regardless.

Cylinders won’t retract...

Broken/crushed limit switches, bent or broken clevis pins (especially rear jacks on fifth wheel)

Limit Switch barrels mounted too low, 1” is bad, 1 ½” is good (Manufacturing defect).

Need new Limit Switches, Clevis pins & Limit Switch Washers (one of each per cylinder).

Cylinders “creep” down when not in use... Check fluid level, OR Bleed the system, OR Pump valve failure.

Cylinders make loud “squeaking” noise while operating... Spray rams with Teflon spray (or 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... replace/return cylinder OR seal kit

Warranty Guide

4pt Automatic Systems: Lifetime Cylinders, 2 years parts and 1 year 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 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, 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. Effective date: 9/1/11

**OWNERSHIP MUST BE REGISTERED WITHIN 30 DAYS FROM THE DATE OF PURCHASE TO
ACTIVATE WARRANTY.**

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.

Credit card payment arrangements at time of order will be nullified upon our receipt of your defective parts. **All returned parts need to have the repair authorization number** and be received within 30 days of original order to avoid charges.

Provide the system serial number here _____.

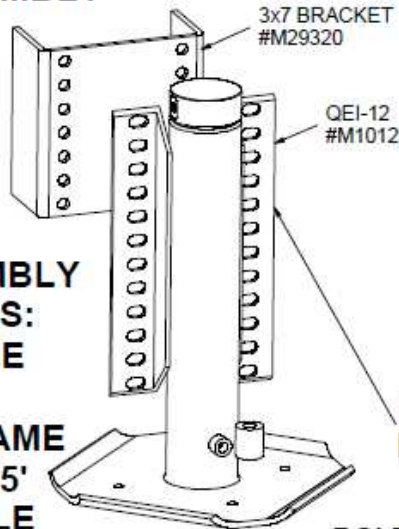
Emergency Service

For afterhours emergency service please call our normal office number
269-483-9633 and follow the instructions.

Typical Mounting Locations

Example shown: Ford E-450 Chassis

FRONT ASSEMBLY UNDER CAB



REAR ASSEMBLY TWO OPTIONS: INSIDE FRAME RAIL OR OUTSIDE FRAME RAIL WITHIN 5' OF REAR AXLE

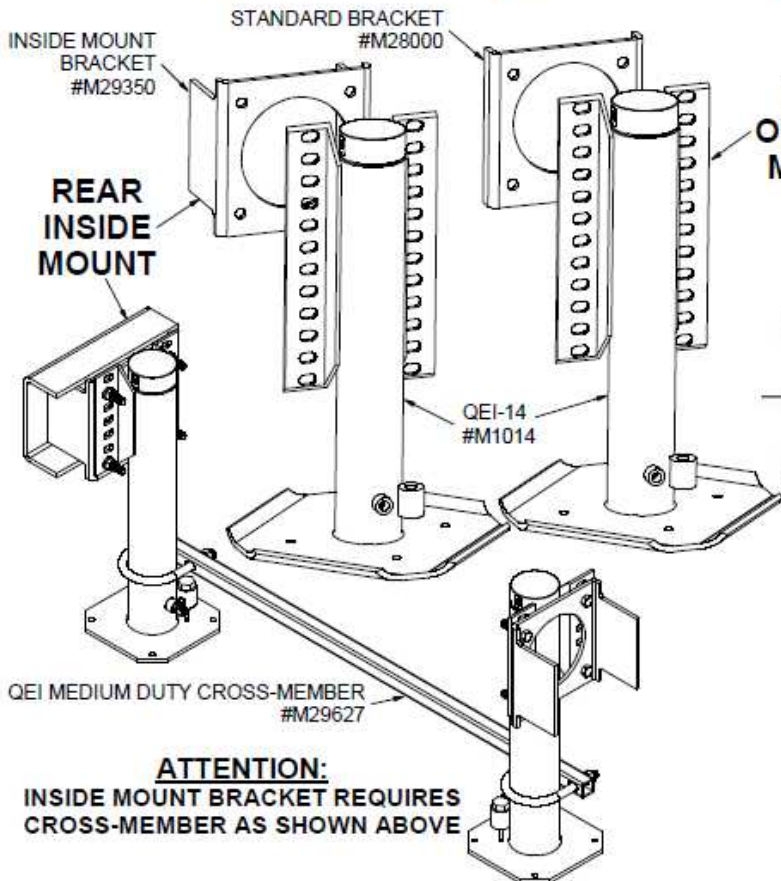
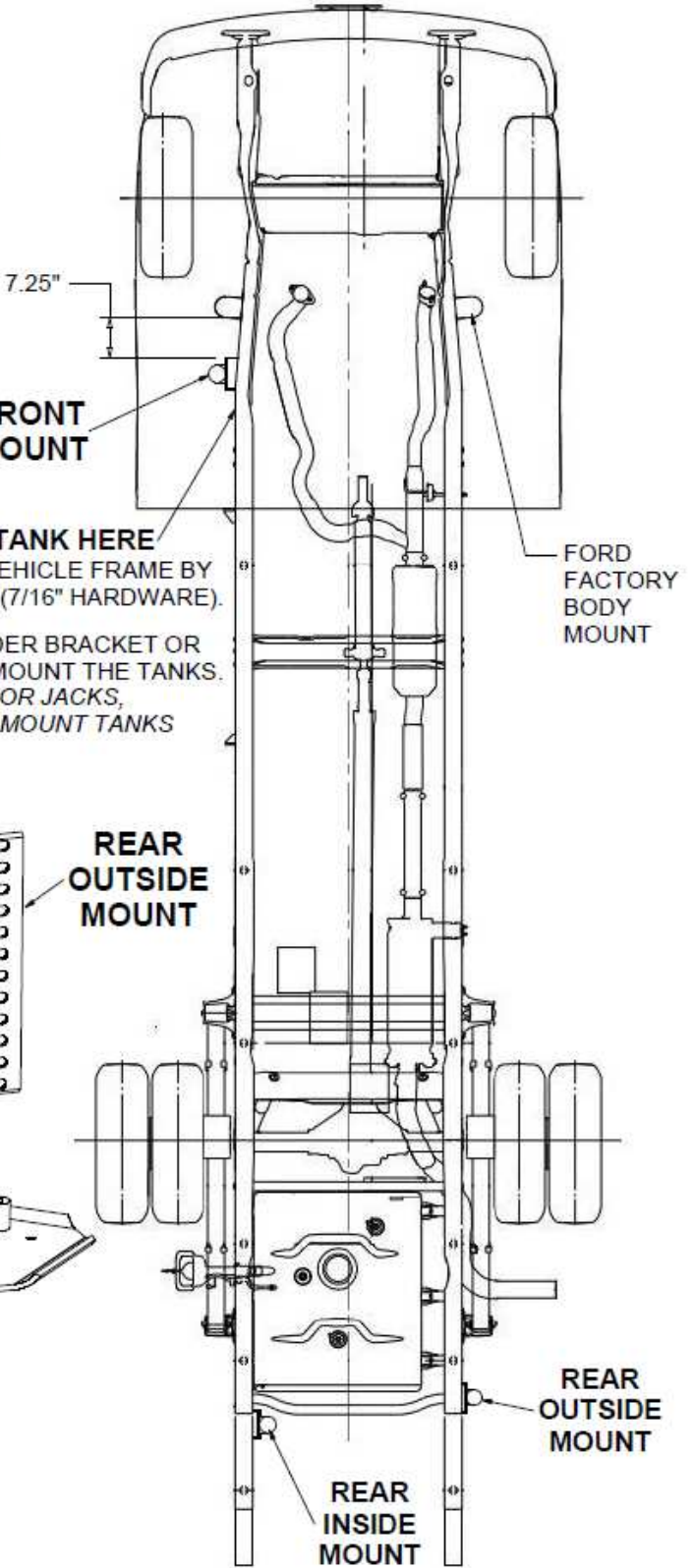
FRONT MOUNT

BOLT TANK HERE

FRONT TANK ASSEMBLIES CAN BOLT DIRECTLY TO VEHICLE FRAME BY UTILIZING FACTORY HOLES OR DRILLING NEW HOLES (7/16" HARDWARE).

REAR TANKS MAY BE BOLTED DIRECTLY TO CYLINDER BRACKET OR USE THE OTHER BRACKETS SUPPLIED WITH KIT TO MOUNT THE TANKS.

EXAMPLE: USED INSIDE MOUNT BRACKETS FOR JACKS, USE REMAINING OUTSIDE MOUNT BRACKETS TO MOUNT TANKS



ATTENTION:

INSIDE MOUNT BRACKET REQUIRES CROSS-MEMBER AS SHOWN ABOVE