BIGFOOT HYDRAULIC SYSTEMS


# FORD BOLT-ON INSTALLATION & OPERATION

# USER MANUAL

A1 Automatic(AKC), Platinum and 2 Point Systems

## Ford Transit 350HD

- 2013-19 Chassis Cab/Cutaway Class-C
- 2020+ AWD, Gas & Diesel Chassis Cab/Cutaway

## Ford E-350 & E-450

- 2013-19 Chassis Cab/Cutaway Class-C
- 2020+ AWD, Gas & Diesel Chassis Cab/Cutaway
- 1992+ Chassis Cab/Cutaway Class-C

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800•752•9815 bigfootleveler.com

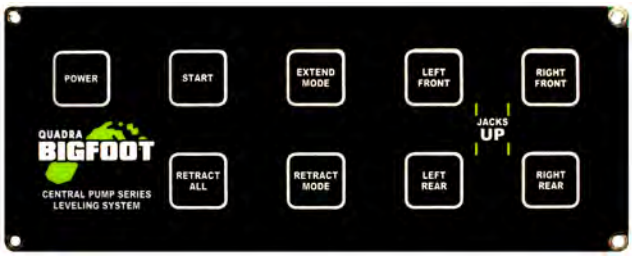
***United States Patents***
#10093286 #10759396 #10821944


This manual provides general instructions. Many variables can change the circumstances of the instructions, i.e., the degree of difficulty, operation and ability of the individual performing the instructions. This manual cannot begin to plot out instructions for every possibility, but provides the general instructions, as necessary, for effectively interfacing with the device, product or system. Failure to correctly follow the provided instructions may result in death, serious personal injury, severe product and/or property damage, including voiding of the Quadra warranty.


- Failure to follow instructions provided in this manual may result in death, serious personal injury and/or severe product and property damage, including voiding of the component warranty.
- During operation of our systems, the vehicle or trailer tires should maintain contact with the ground - moving to a more level area may be required.
- During servicing make sure that the coach is supported according to the manufacturer's recommendation and not our systems, as it is not intended to be used for any work or persons under the vehicle. Lift the coach by the frame and never the axle or suspension. Do not go under the coach unless it is properly supported. Unsupported coaches can fall causing death or personal injury or product or property damage. Use proper personal protective equipment.


- Always wear eye protection when performing service, maintenance or installation procedures. Other safety equipment to consider would be hearing protection, gloves and possibly a full face shield, depending on the nature of the task.
- Moving parts can pinch, crush, or cut. Keep clear and use caution.

**1st Identify your leveling system…** **Then follow the manual by looking for titles of your specific system. Start with mounting the cylinders, then tank assembly, install hydraulic hose and wiring harnesses, electrical controls, finally hook to battery, test and bleed lines.**




## A1 Automatic (AKC) System

- Automatically levels the vehicle with supreme precision
- Central Pump System
- Manual operation feature
- Individual Jack-up Indicators
- Ignition safety feature
- Lifetime warranty on cylinders


## Platinum System

- Automatically deploys all four jacks to level the vehicle from front to rear
- Central Pump System
- Manual operation feature
- All-up & Ignition safety feature
- Lifetime warranty on cylinders


## 2 Point Stabilizing Systems

- Wireless, Rocker & Dual Controls

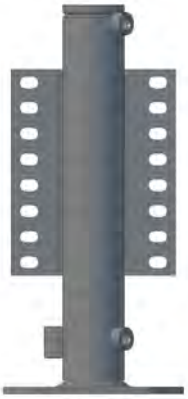
# CYLINDER IDENTIFICATION

8k-13TF

Transit
Front

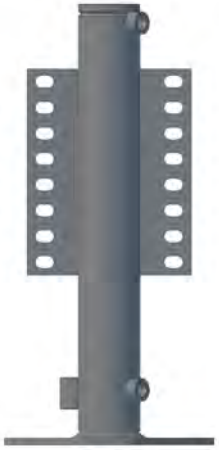
8k-13TR

Transit
Rear



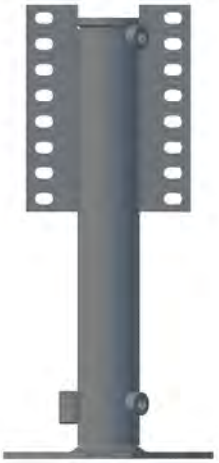
8k-11

E-350 / E-450
Front



8k-13F

E-450
Front



8k-13R

E-350 / E-450
Rear

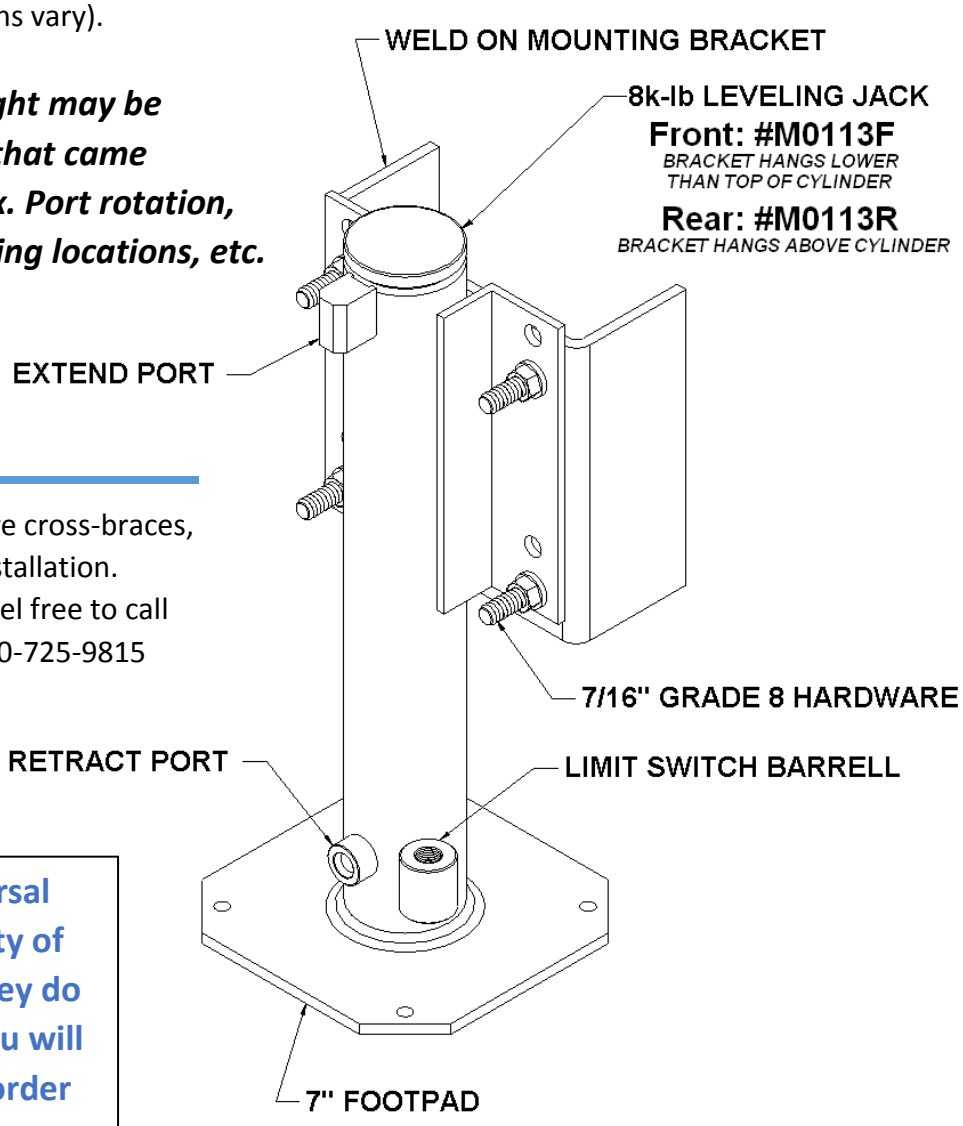
# General Cylinder Installation & Assembly

## Mounting the Cylinders

Pre-assemble jack prior to hanging on vehicle in specified location.

- Attach foot pad with ¾" thin jam nut using a 1 1/16" socket and impact. **Clockwise ONLY, do not reverse.**
- Remove port plugs with 3/16" allen wrench.
- Install supplied JIC elbow fittings to the bottom & top ports with 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), unless noted otherwise.
- Place ¼" clevis pin in limit switch barrel then insert threaded limit switch with 7/8" wrench (see wiring section later on in booklet).
- 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.
- Hang jack using at minimum of four 7/16" or two to four 1/2" Grade-8 bolts, hex nuts & lock washers.
- Typical cylinder ground clearance (ground to bottom of footpad) should be between 6" and 9" for optimum lift and road clearance (applications vary).

***The cylinder shown to the right may be different from the cylinders that came in your vehicle specific kit, Ex. Port rotation, length, bracket style, mounting locations, etc.***




If your kit came with ¾" square cross-braces, they are required for installation.
If you have any questions feel free to call Quadra Manufacturing 800-725-9815

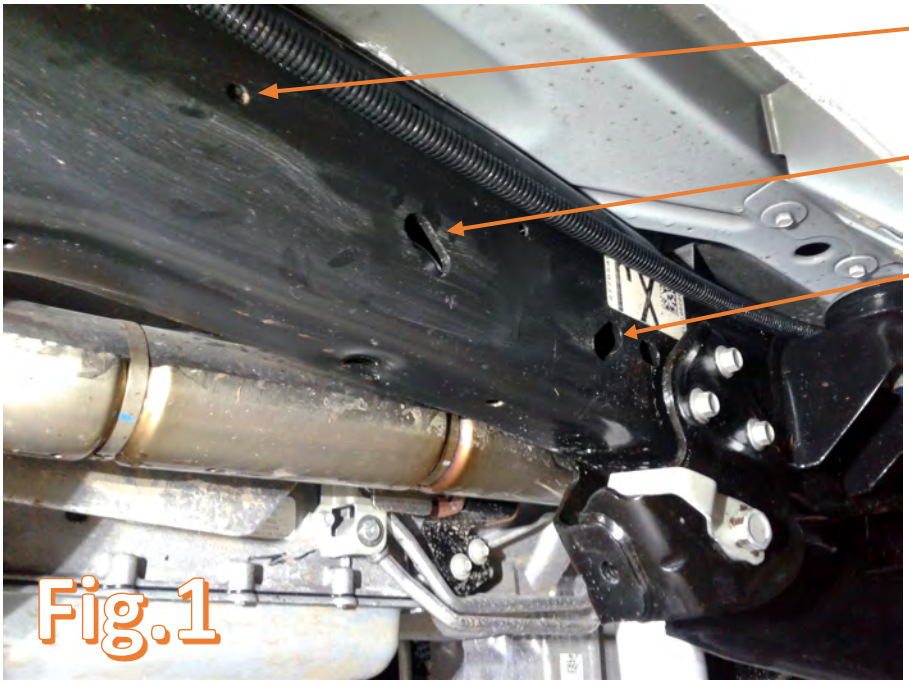
**Hydraulic lines are universal lengths and fit the majority of applications, however if they do not fit your exact model you will need to call and place an order for longer lines.**

# FORD E-350 & E-450 CHASSIS CAB

## FRONT CYLINDER MOUNTING

**Additional drilling to frame may be required on pre-2008 Ford frames, or to increase attachment strength to vehicle.**

Shown in **Fig.1,** underneath the cab is the passenger side front jack location, just behind front axle…



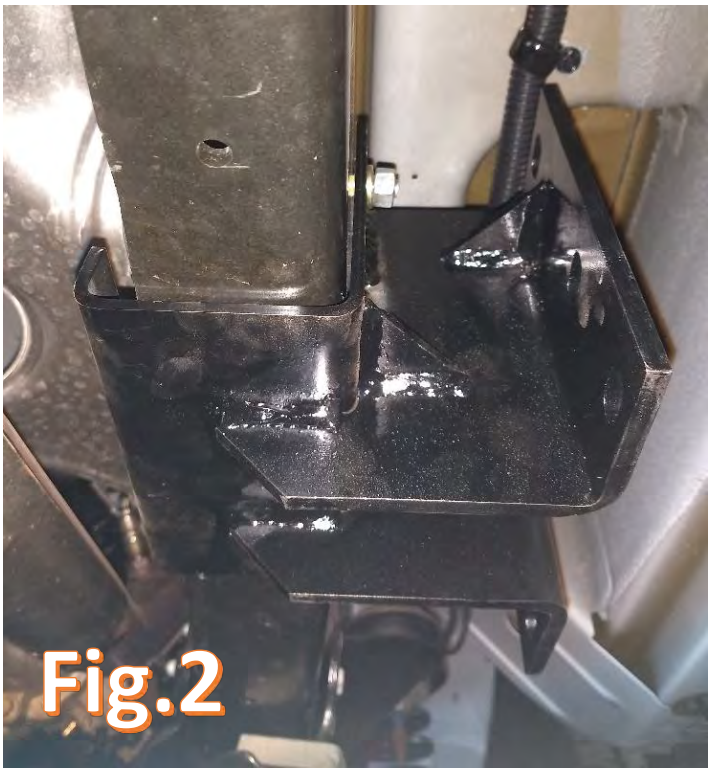

Locate 3/8” hole towards rear of 2nd slot. (Use this hole for the front bracket)

Locate 2nd slot after 1st slot towards rear. (Use this slot for the front bracket)

Locate 1st slot after suspension bracket. (For reference, Not using this slot)

**Fig.2** Passenger front mounting bracket shown fastened with 3/8” hardware (perspective facing front of vehicle). NOTE: Bracket surface is tight to bottom of Ford frame for proper lifting surface, and straight before tightening to 50 ft/lbs.

**Fig.3** Passenger front mounting bracket Shown fastened with 5/8” hardware (perspective facing rear of vehicle). NOTE: Bracket surface is tight to bottom of Ford frame for proper lifting surface, and straight before tightening to 80 ft/lbs.




# FORD E-350 & E-450 CHASSIS CAB

FRONT CYLINDER MOUNTING CONTINUED…

Passenger front shown with 8k13 #M0213F cylinder (perspective facing rear of vehicle). Note how cylinder is mounted above the frame in a “pocket” of the Ford body for higher ground clearance. Fasten cylinder to front mounting bracket with a minimum of four supplied 7/16” Grade-8 bolts 1.75” long with nuts and lockwashers. Make sure cylinder is straight and level, proceed to tighten bolts to 70 ft/lbs.

Front cylinder on Ford chassis: Angle bracket is 2.5” below to top of the cylinder.

Rear cylinder on Ford chassis: Angle bracket is ½” above the top of the cylinder.

# FORD E-350/E-450

MOUNTING REAR CYLINDERS


## Drilling to the Ford frame (not on the frame extension)

Fig.1. Locate the first Ford cross-member (between the frame rails) after the rear axle's rear leaf spring perch bracket. Hold the rear inside mount bracket (#M29352) up to the frame as shown. Ensure the bracket is tight to the flanges of the Ford frame for structural support. Rear cylinders should always be within 60" from the rear axle. Care to not interrupt departure angles when placing rear cylinders. Departure angle, imagine placing string from center of rear tire making contact with the ground and the furthest and lowest point of the vehicle (typically hitch receiver or bottom of rear bumper). Always position as close to rear axle as possible and up high enough to not interfere with departure angle.

Fig.2. Mark the holes as shown on the frame rail. Four holes are required per bracket. Do this for both sides.


Fig.3. After all eight holes (four on each side) are marked, set brackets aside. Using a center punch and smaller drill bits to start, proceed to drill all holes through the Ford frame up to a minimum diameter of 7/16" (.44") or maximum diameter of 31/64" (.48") for the supplied 7/16" Grade-8 hardware.

Attach the rear cylinder to the inside mount bracket using the supplied 7/16 x 1.5" bolts, lockwashers and nuts (two per leg) use the bottom holes of the bracket and whichever cylinder holes near the bottom you believe will work for your vehicle height (you can hold both up to check ground clearance and departure angles). Tighten the 7/16" x 1.75" bolts down to 70 ft/lbs. Now place the assembly up to the frame and insert the four supplied 7/16" x 5" bolts through the frame holes and into the bracket and cylinder assembly. When cylinder is straight and level and ground clearance is checked, tighten to 70 ft/lbs. Do the same to both sides.


If mounting the rear cylinders directly to the outside of the frame, follow same basic procedure and mark holes in the frame though the cylinder's holes at correct height and position, drill holes and utilize at minimum four 7/16" Grade-8 bolts per cylinder and tighten to 70 ft/lbs. Make sure the supplied cross-brace is used when mounting the cylinders between the frame rails.

## Welding to the Ford frame (not on the frame extension)

Locate the proper bracket location on the frame for test fit. Bolt the cylinder to the weld-on bracket (70 ft/lbs.) and test fit again, verify proper ground clearance, take care not to interfere with departure angle and place cylinder as high as possible for best ground clearance. Recommended to mount the cylinder to the bracket prior to welding the bracket to the frame. When it is time to weld, use floor jack or a partner to hold the jack in place, at the proper height, and straight and level before welding. Put as much vertical surface weld on as possible (Ford recommends not to weld to horizontal flanges to avoid any new model frame warranty issues). Make sure cross-brace is installed when mounting between the frame rails.

## Attention:

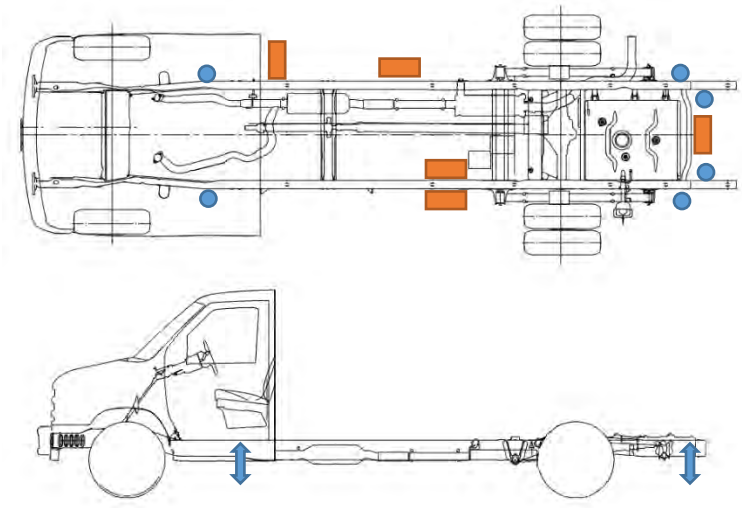
Modification to your RV or vehicle's storage boxes, body, floor, exhaust, interior, relocation of components, etc., may be required for the system installation. Longer or shorter hose lengths, extension of wiring, additional hardware, modifications or custom brackets or methods of attachment to the vehicle frame may be required for your particular installation…

Not all RV's are manufactured equally.

## Ford E-350/E-450

### Possible Cylinder Locations (Blue)

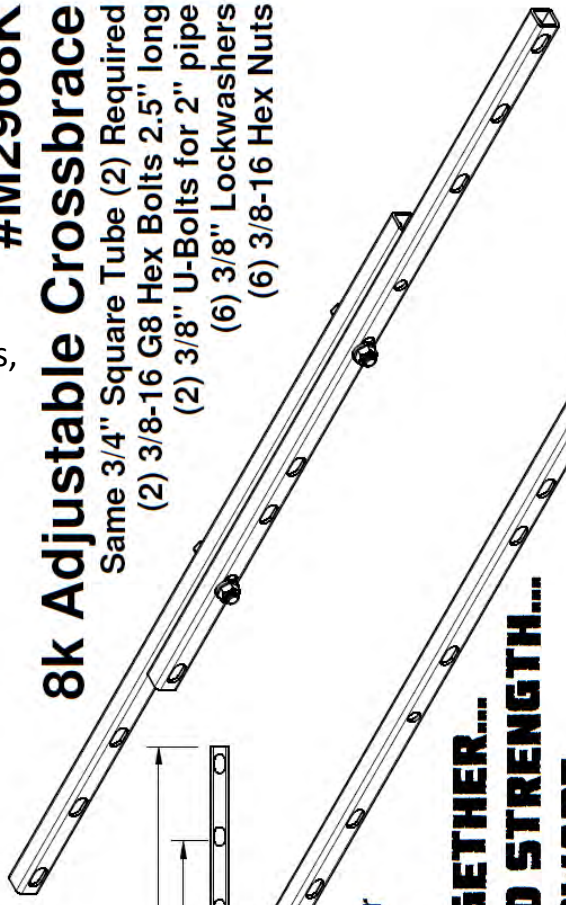
### Possible Pump Locations (Orange)

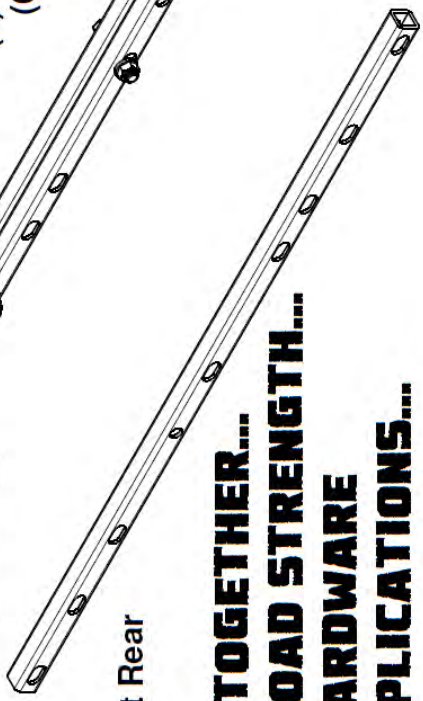


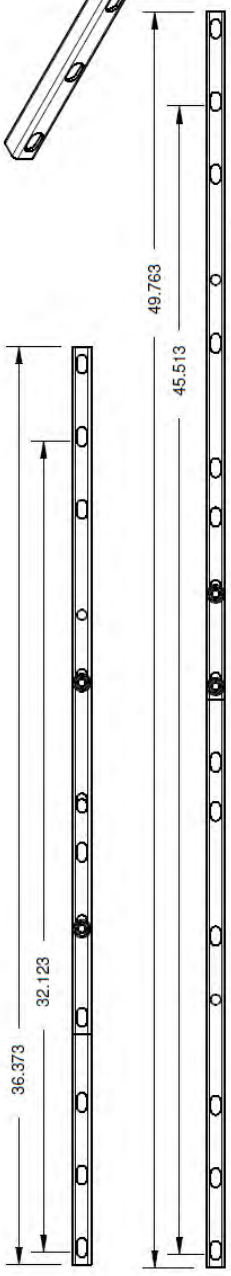
#M2968K

8k Adjustable Crossbrace

Same 3/4" Square Tube (2) Required
(2) 3/8-16 G8 Hex Bolts 2.5" long
(2) 3/8" U-Bolts for 2" pipe
(6) 3/8" Lockwashers
(6) 3/8-16 Hex Nuts



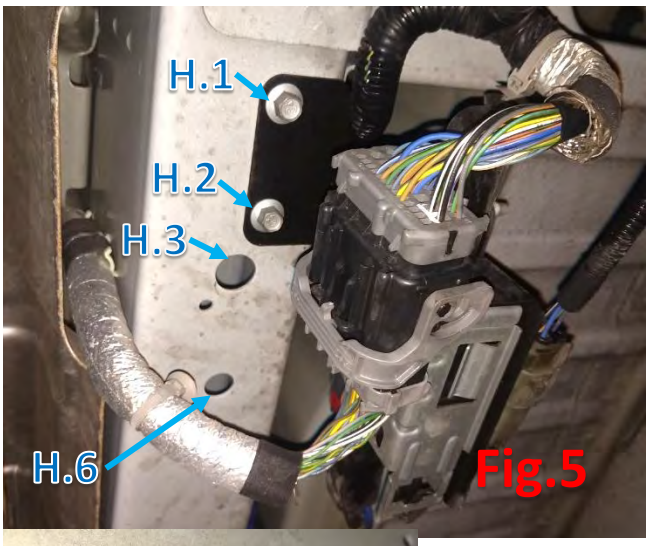




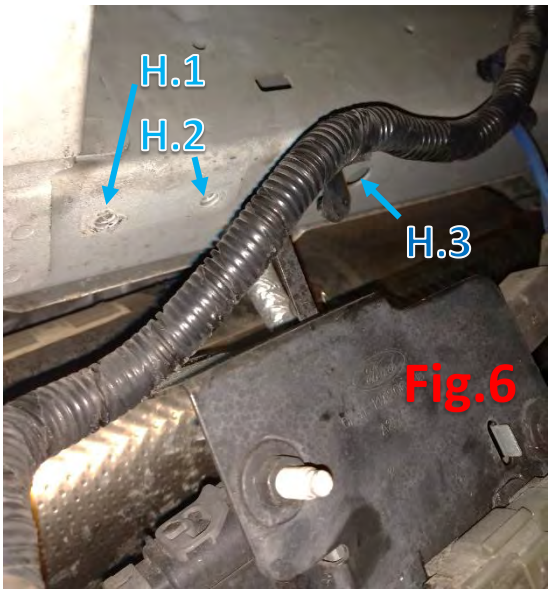

Applications:
Ford E-450 Inside Mount Rear, Chevy 4500 Inside Mount Rear,
Sprinter Channel Front, Sprinter Channel Staggered/Inside Mount Rear
Sprinter Universal 4pt 8k15 Rear (replaces crossplate)

**-BOLTS PASSENGER & DRIVER CYLINDERS TOGETHER…**
**-ADDS STABILITY AND ADDITIONAL SIDE LOAD STRENGTH…**
**-DRILLING MODIFICATION OR DIFFERENT HARDWARE MAY BE REQUIRED BASED ON CERTAIN APPLICATIONS…**

# FORD TRANSIT 350HD (DIESEL) FRONT CYLINDER BRACKET PREP




Locate “Front Nox Module” located on passenger front cylinder location under cab’s passenger seat shown in Fig.5. Remove two 8mm bolts with 10mm socket (keep bolts), unclip all plastic rivets releasing the cables from the frame (Fig.6), then slide “mounting tab” from hole in frame as shown in Fig.7, so module hanging near exhaust. Locate exising holes in frame labeled H.1, H.2, H.3, as these holes will be utilized to mount cylinder bracket.

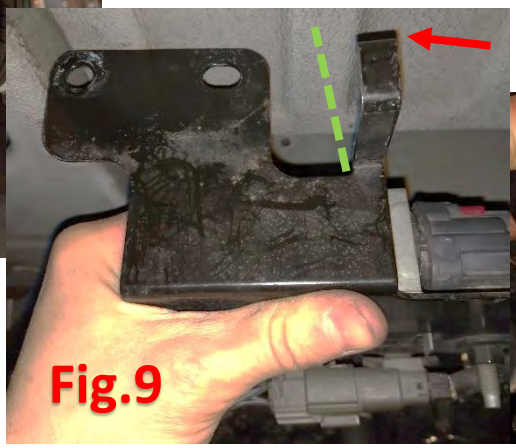


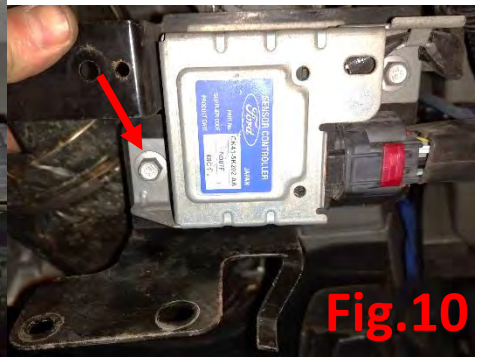


On the driver side, locate the DEF tank, and the rear tank strap 8mm bolt Fig.8. Place a jack under the DEF tank for support and remove said bolt with 10mm socket (keep bolt). Locate holes H.4 & H.5 as these holes will mount the cylinder bracket.


See Fig.9, locate “mounting tab” as mentioned in Fig.7. This part needs to be bent so it roughly lines up with green line in Fig.9. You can do this by tapping tab with small hammer from direction shown in arrow. This will come in to play when the module is mounted to the cylinder bracket itself.

Fig.10, Remove bolt from module and keep for later use.

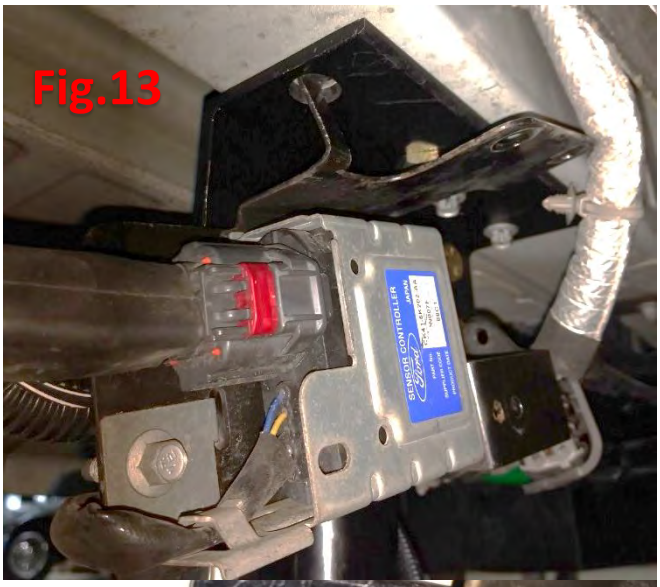


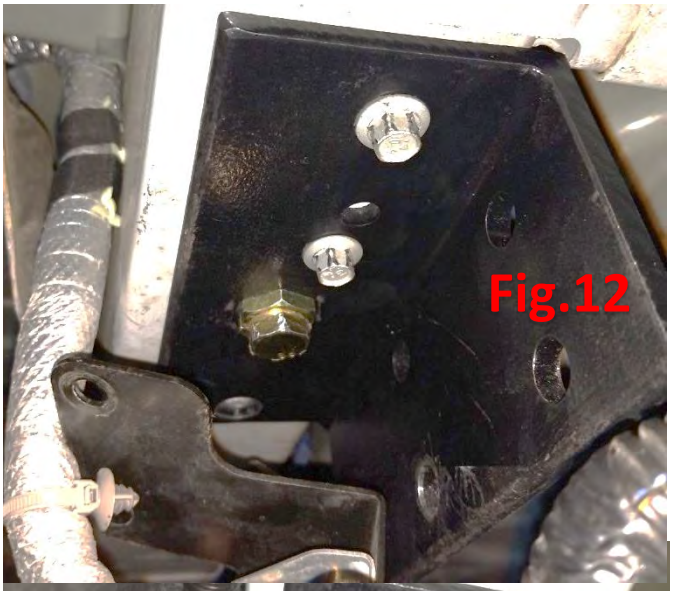



# FORD TRANSIT 350HD (DIESEL) FRONT CYLINDER BRACKETS

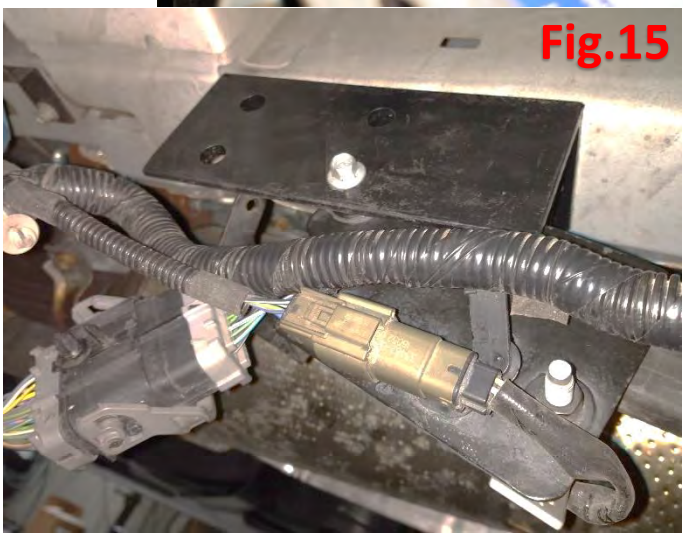
Driver side, place bracket under frame as shown in Fig.11, then re-install bolt and tank strap into hole H.5 in frame sandwiching bracket to frame. Make sure 11/16" hole is lined up prior to tightening (do not strip thread). Now insert 11/16" BlindBolt into hole H.4, use 7/8" wrench (easier with thin wrench) and 11/16" socket (DO NOT USE A WASHER WITH BLINDBOLTS), make sure bracket is straight with frame and tighten BlindBolt (roughly 80-90 ft/lbs.).

Passenger side Fig.12, place bracket to frame similar to driver side, install both 8mm bolts that originally mounted module bracket to frame into holes H.1 & H.2, make sure bracket is straight with frame and 11/16" hole is lined up with hole H.3. Install 11/16" BlindBolt into hole H.3 using same method as above. Now place module in place as shown in Fig.13, "mounting tab" will slide inside hole H.6 and bracket. The bolt previously removed from the module will now be inserted through cylinder mounting bracket (Fig.15) into module mounting bracket (welded nut), fasten tight once "mounting tab" is inserted properly with tension (Fig.13 & Fig.14).





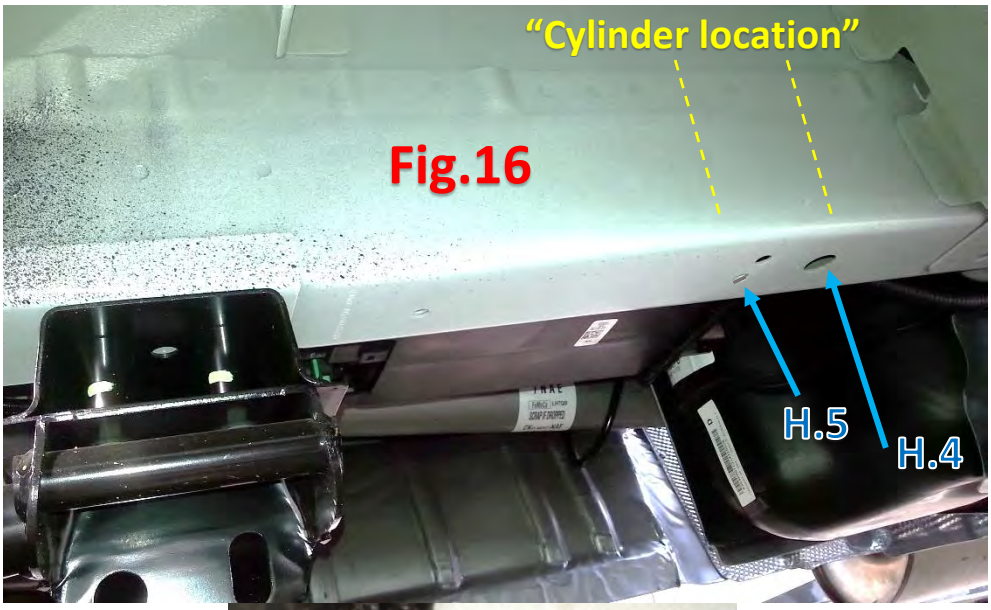



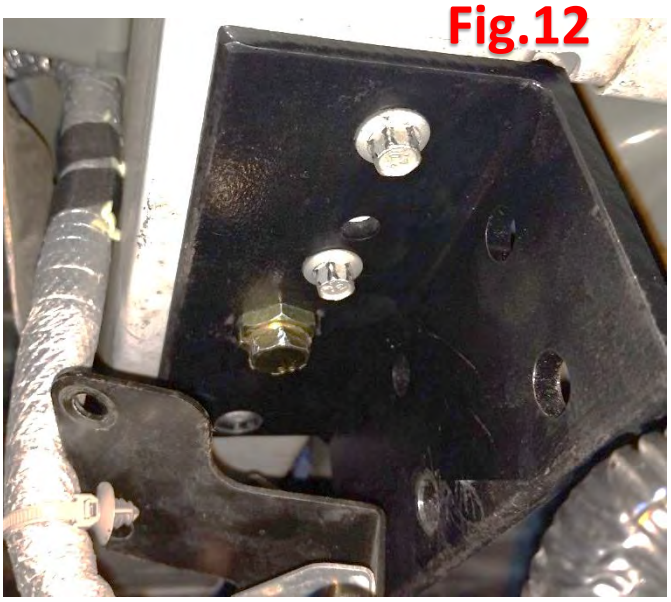
# FORD TRANSIT 350HD (GAS) FRONT CYLINDER BRACKETS

Driver side Fig.16, locate holes H.4 (11/16”) & H.5 (sleeved roughly 5/16”). Place bracket under frame as shown in Fig.11 with vertical face of bracket facing outside of vehicle where cylinder will mount in “cylinder location” in Fig.16. Insert 8mm thread forming bolt into hole H.5. Make sure 11/16” hole in bracket is lined up to H.4 prior to tightening, DO NOT strip or overtighten thread forming bolt when installing into H.5 hole. Now insert 11/16” BlindBolt into hole H.4, use 7/8” wrench (easier with thin wrench) and 11/16” socket (DO NOT USE A WASHER WITH BLINDBOLTS), make sure bracket is straight with frame and tighten BlindBolt (roughly 80-90 ft/lbs.). OPTIONAL: Install 2nd BlindBolt in bracket hole H.7 (Fig.11), drill into frame with 11/16” bit, install BlindBolt same method as mentioned previously. Since this is an optional part , must call to order part #M80660, this is not required for installation or standard leveling conditions, it is recommended for extreme leveling conditions, heavier loaded vehicles, etc. for additional strength.

Passenger side Fig.12, place bracket to frame similar to driver side, install both 8mm bolts into bracket and holes H.1 & H.2, make sure bracket is straight with frame and 11/16” hole is lined up with hole H.3. Install supplied 11/16” BlindBolt into hole H.3 using same method as above.

**Make sure mounting brackets are straight, with vertical surface of the mounting bracket to the outside of the vehicle.**



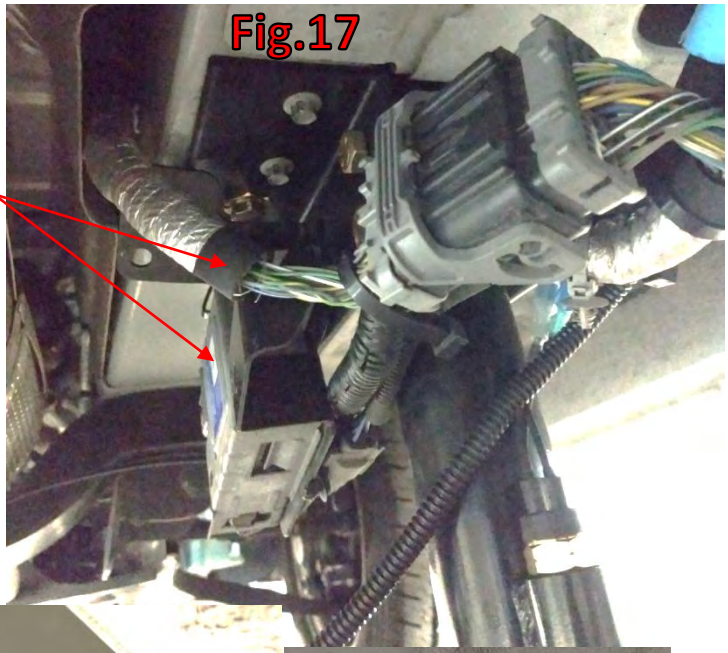



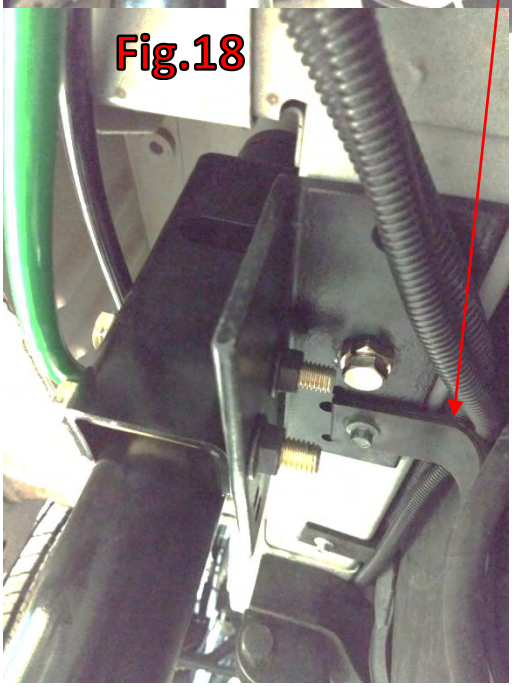

# FORD TRANSIT 350HD (GAS/DIESEL) FRONT CYLINDER INSTALL

See page 12 for cylinder identification or Fig.19. With brackets in place and tight to frame, mount cylinders to bracket as shown. For passenger front, see Fig.4 & Fig.20. Note how cylinder fits tight into pocket between step well and frame, towards very rear of pocket, cylinder ports will face front of vehicle. Install fittings (elbows, 9/16" wrench) and passenger front extend hose (should be 9ft green hose) with 15mm wrench. Do not overtighten, hand tighten, then ¼ turn. You can verify hose length will work to pump location (see page regarding pump mounting for details). Cylinder will mount to bracket with bottom two holes and two 1/2" x 4" long hex bolts and locking nuts, make sure cylnder is as straight as possible, then tighten to 100 ft/lbs.
Now that cylinder is attached, zip tie harnesses connected to the "Ford Nox Module" to the cylinder, cylinder bracket, etc.; provide as much clearance from the exhaust as possible to avoid heat damage to wiring harness (Quadra is not responsible for any wiring/electrical components related to customer installation), Fig.17.

Driver side front, Fig.18, this cylinder will be slightly forward of passenger side, mount using same bottom holes in cylinder and same 1/2" x 4" hardware as above, straighten cylinder then tighten.


"GAS chassis"
Ignore following:
Module & harness
8mm bolt
Fuel tank strap



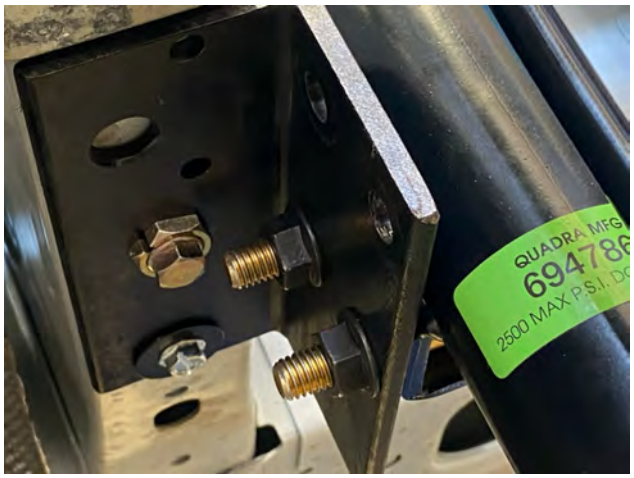





# Alternate Front Passenger Installation

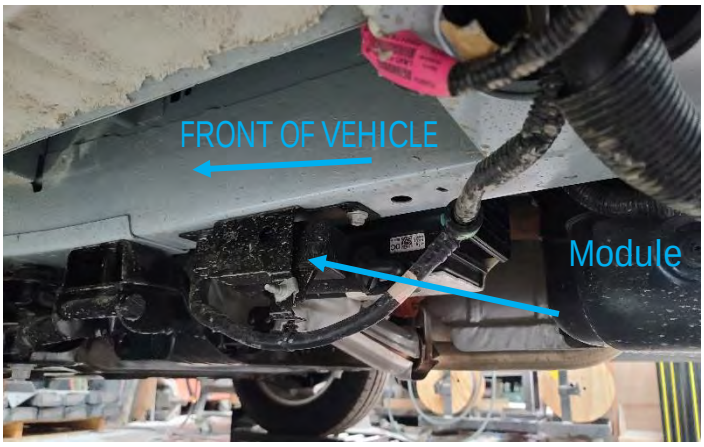
• Due to the limited amounted of space for the installation of the front passenger cylinder in front of the chassis cross-member, it may be preferable to relocate the cylinder to the rear of the chassis cross-member. (*As seen below*)

• As this alternate installation method gives the front jacks a staggered or diagonal layout, the cross-brace will not be able to be installed.




# FORD TRANSIT 350HD (2020 GAS AWD) FRONT CYLINDER INSTALL

The “Ford Module” for the AWD is shown on the right, on the driver side frame rail.



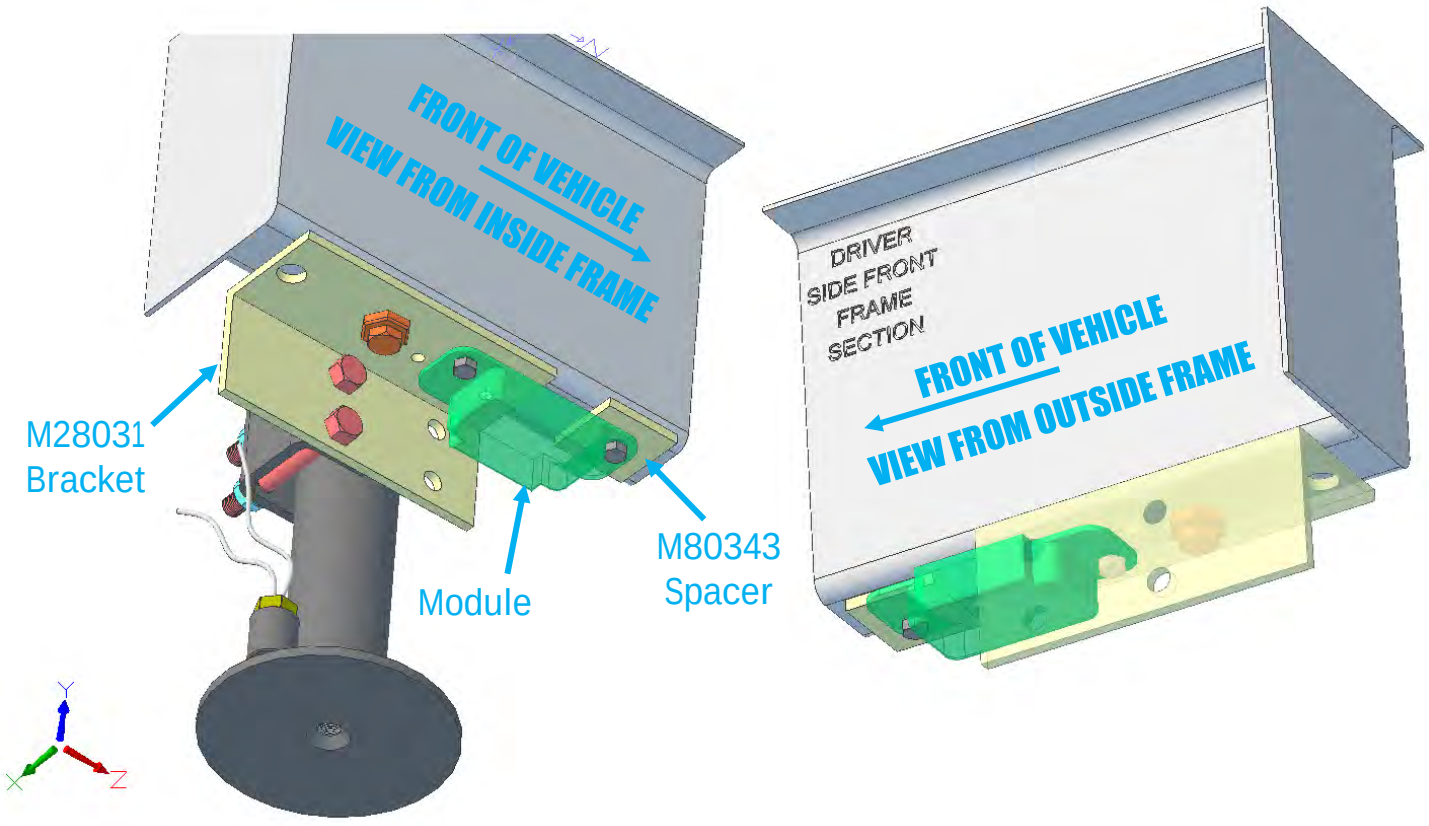

Remove the module with the two M8 self-threading bolts (set aside).

Place M28031 bracket on frame for mounting (follow instructions pages 8-11). This procedure is similar to the step in page 11, Fig.18 in the manual with the fuel tank strap for Diesel chassis.

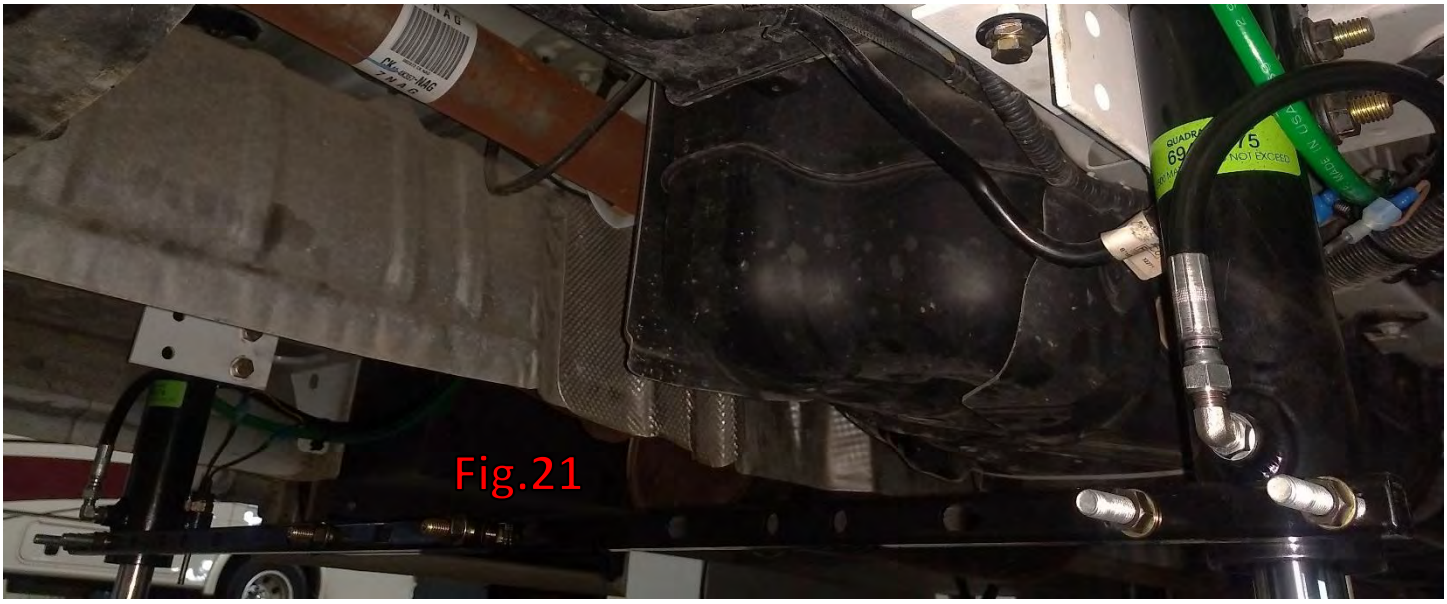
After bracket is installed with blind bolt, remove M8 bolt again in order to re-install the module.

Using the M80343 spacer for the front bolt, re-install the module with the two M8 bolts as shown below.

If there is interference between the module and the vertical inside face of the M28031 bracket, open holes for the M8 bolts in the module or the M28031 bracket so it can be installed.

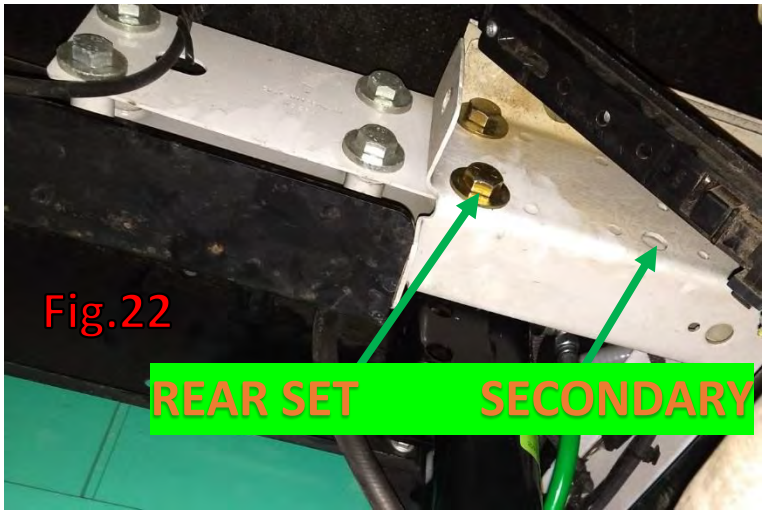


# **FORD TRANSIT 350HD** MOUNTING FRONT CROSSBRACE




See page 7: ATTACH CROSSBRACE AFTER BOTH JACKS INSTALLED USING 9/16" DEEP SOCKET & WRENCH. SQUARE TUBE & U-BOLTS WRAP UNDER FITTING AND LIMIT SWITCH BARREL JUST ABOVE THE FOOTPAD. FIND TWO HOLES IN CENTER OF UNIVERSAL TUBES THAT LINE UP, INSTALL TWO 3/8" X 2.5" BOLTS, LEAVE ALL HARDWARE LOOSE UNTIL ALL BOLTS ARE IN PLACE, TIGHTEN UNTIL SQUARE BRACE STARTS TO CRUSH.

# **FORD TRANSIT 350HD** MOUNTING REAR CYLINDERS




LOCATE FRAME EXTENSION LOCATION ABOUT 3-4FT BEHIND REAR AXLE, JUST REAR OF THE REAR LEAF SPRING MOUNT (Fig.26). CYLINDERS CAN UTILIZE EXISTING HOLES IN THE FRAME, AND CAN BE MOUNTED ON THE OUTSIDE OR INSIDE FACE OF THE FRAME, OR ONE OR THE OTHER. THERE ARE TWO SETS OF HOLES TO LOOK FOR ON THE FRAME NEAR THE FRAME EXTENSION:

#1: REAR SET OF HOLES IS FURTHEST TO REAR NEAR FLANGES, HAS HOLES ALREADY IN FRAME. CYLINDER HOLES LINE UP WITH FITTING SIDE OF CYLINDER FACING FRONT. SEE Fig.22-Fig.24.

#2: SECONDARY SET OF HOLES JUST IN FRONT OF THAT, THE HOLES ARE ONLY DRILLED THROUGH THE EXTERIOR SHELL OF THE FRAME AND YOU MUST FINISH DRILLING THE INSIDE SHELL OUT (THIN MATERIAL, DRILL BOTH SIDES OF SHELL) USE A 17/32" DRILL BIT. CYLINDER TO BE ROTATED SO FITTINGS FACE THE REAR. SEE Fig.25-Fig.26.

MOUNT WITH TWO 1/2" X 6.5" BOLTS, FLAT WASHERS & LOCKNUTS PER CYLINDER (LONGER BOLTS MAY BE REQUIRED IF DIFFERENT FRAME EXTENSION THAN SHOWN). MAY HAVE TO USE SPACERS TO CLEAR CERTAIN ITEMS ON VEHICLE, MAX SPACER THICKNESS = 3 WASHERS OR 3/16". TIGHTEN BOLTS TO 100 ft/lbs.

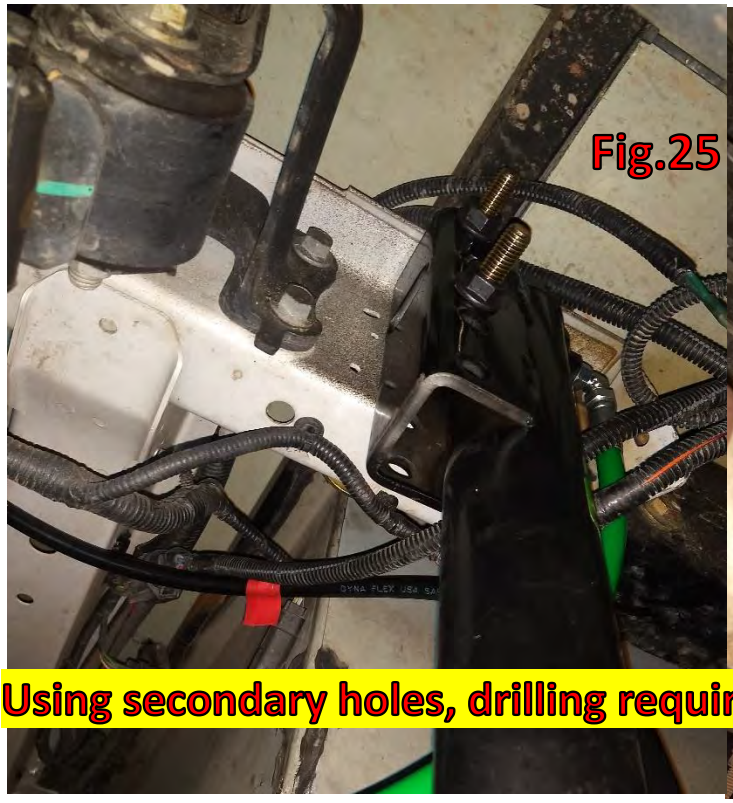
**Rear crossbrace may be required if used spacers on cylinders, heavy duty vehicle or extreme leveling environment. Call to order #M2968K.**

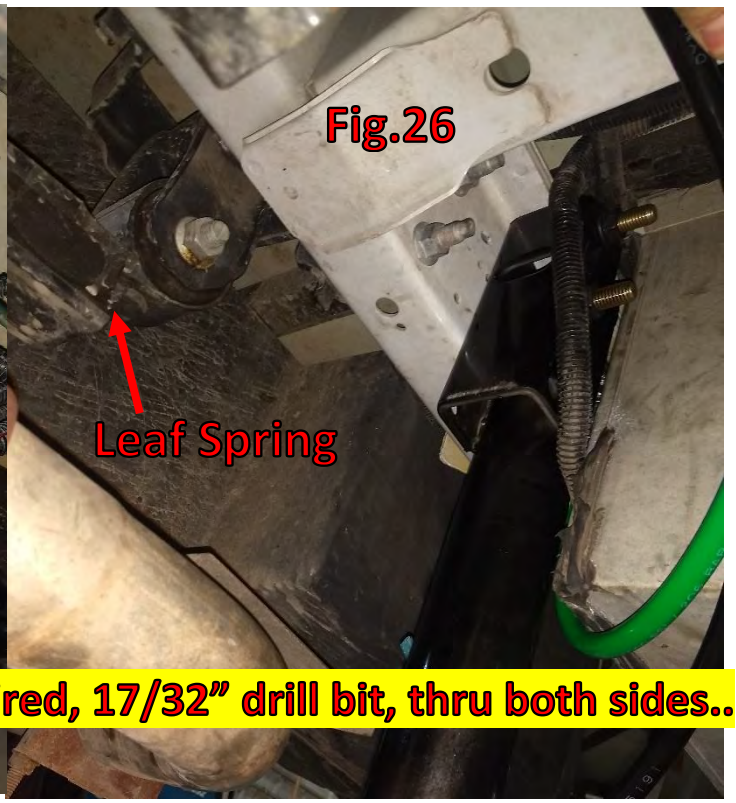
# FORD TRANSIT 350HD MOUNTING REAR CYLINDERS CONTINUED…



Note Fig.23,
Cylinder has spacers between frame & cylinder for clearance between cylinder and plumbing near bottom of cylinder in pic.

HYDRAULIC LINES:
Rear cylinders use 9’ long hose, fronts will use 12’ long hose, These are typical, every applicaton is different and may require different lengths, must call to order.



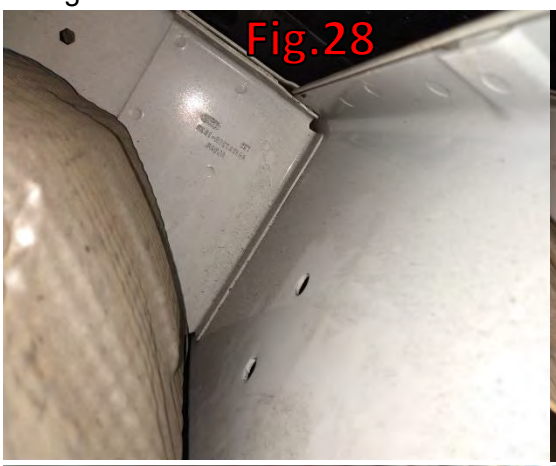



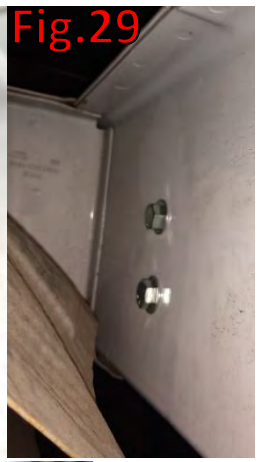

**Using secondary holes, drilling required, 17/32” drill bit, thru both sides..**

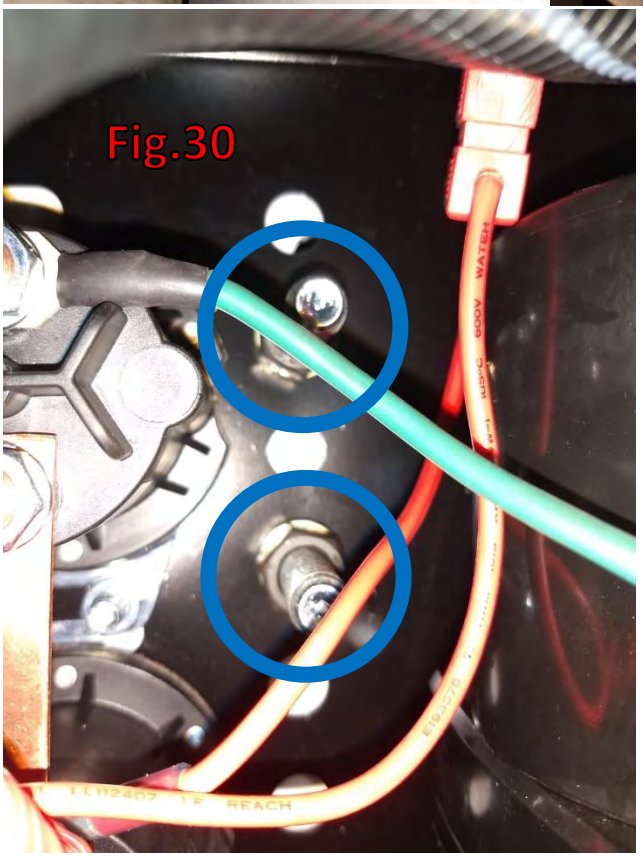
**Rear crossbrace may be required if used spacers on one or both cylinders, heavy duty vehicle or extreme leveling environment. Call to order crossbrace #M2968K.**

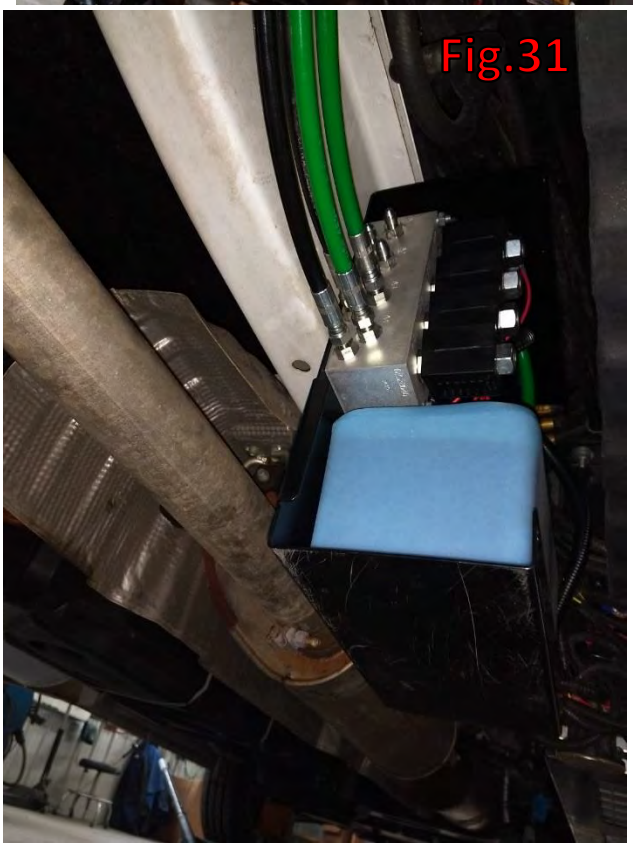
# FORD TRANSIT 350HD MOUNTING PUMP ASSEMBLY OPTION #1

Identify Fig.27 for pump location, pump will be mounted on outside of frame rail on passenger side in front of rear axle. Pump will be bolted directly to frame using two existing holes in the frame near exhaust shown in Fig.28. Run both 7/16” x 4” full threaded bolts thru frame as shown in Fig.29, and thru pump assembly in Fig.30 & Fig.31. Tighten once pump assembly is straight. IMPORTANT: See page 18 for pump assembly diagram, information and fill reservoir prior to mounting.


**Fill reservoir prior to mounting!**

# FORD TRANSIT 350HD MOUNTING PUMP ASSEMBLY OPTION #2

LOCATE FUEL TANK ON DRIVER SIDE FRAME BEHIND CAB AS SHOWN IN PICS BELOW, PUMP CAN UTILIZE EXISTING HOLE FRAME AT REAR OF TANK TO MOUNT TO FRAME. (Gas chassis shown below)

ONCE HOLE LOCATED, INSERT 7/16" X 4" FULL THREADED BOLT INTO FRAME FROM INSIDE AND HOLD PUMP ASSEMBLY UP IN PLACE, SLIDE BOLT THROUGH ONE OF THE MOUNTING HOLES IN THE CENTER OF THE ASSEMBLY, MOUNT AS HIGH AS POSSIBLE, MOST GROUND CLEARANCE, SEE Fig.30 HOLE REFERENCE. INSTALL NUT AND LOCKWASHER ON BOLT INSIDE PUMP ASSEMBLY (11/16" SOCKET AND EXTENSION OR WRENCH).

TWO OPTIONS FOR SIDE HOLES: #1 INSTALL TWO HEAVY 5/16" SELF-TAPPING SCREWS (1/2" SOCKET) AS SHOWN IN Fig.33 OR DRILL HOLE IN FRAME (1/2" DRILL BIT), CHECK CLEARANCE OF FUEL TANK BEFORE DRILLING AND UTILIZE 2ND 7/16" X 4" FULL THREADED BOLT SUPPLIED, BOLT USING SAME METHOD AS ABOVE.

IF THIS LOCATION IS NOT OPEN ON YOUR RV, YOU WILL HAVE TO FIND ANOTHER LOCATION, POSSIBLY IN OPEN AREA SHOWN BELOW BEHIND FUEL TANK ON INSIDE OR OUTSIDE OF FRAME, DRILLING WILL BE REQUIRED TO MOUNT. PUMP ASSEMBLY CAN BE MOUNTED ANYWHERE UNDERNEATH VEHICLE AWAY FROM MOVING PARTS OR EXHAUST. OTHER LOCATIONS TO CHECK: FASTENED TO BACK OR SIDES OF ENTRY STEP FRAME, STORAGE BOXES, RV SUBFRAME. LONGER HOSE LENGTHS OR HARDWARE MAY BE REQUIRED TO INSTALL PUMP IN NEW LOCATION WHICH ARE NOT INCLUDED IN THE KIT. PUMP MUST BE MOUNTED VERTICALLY.



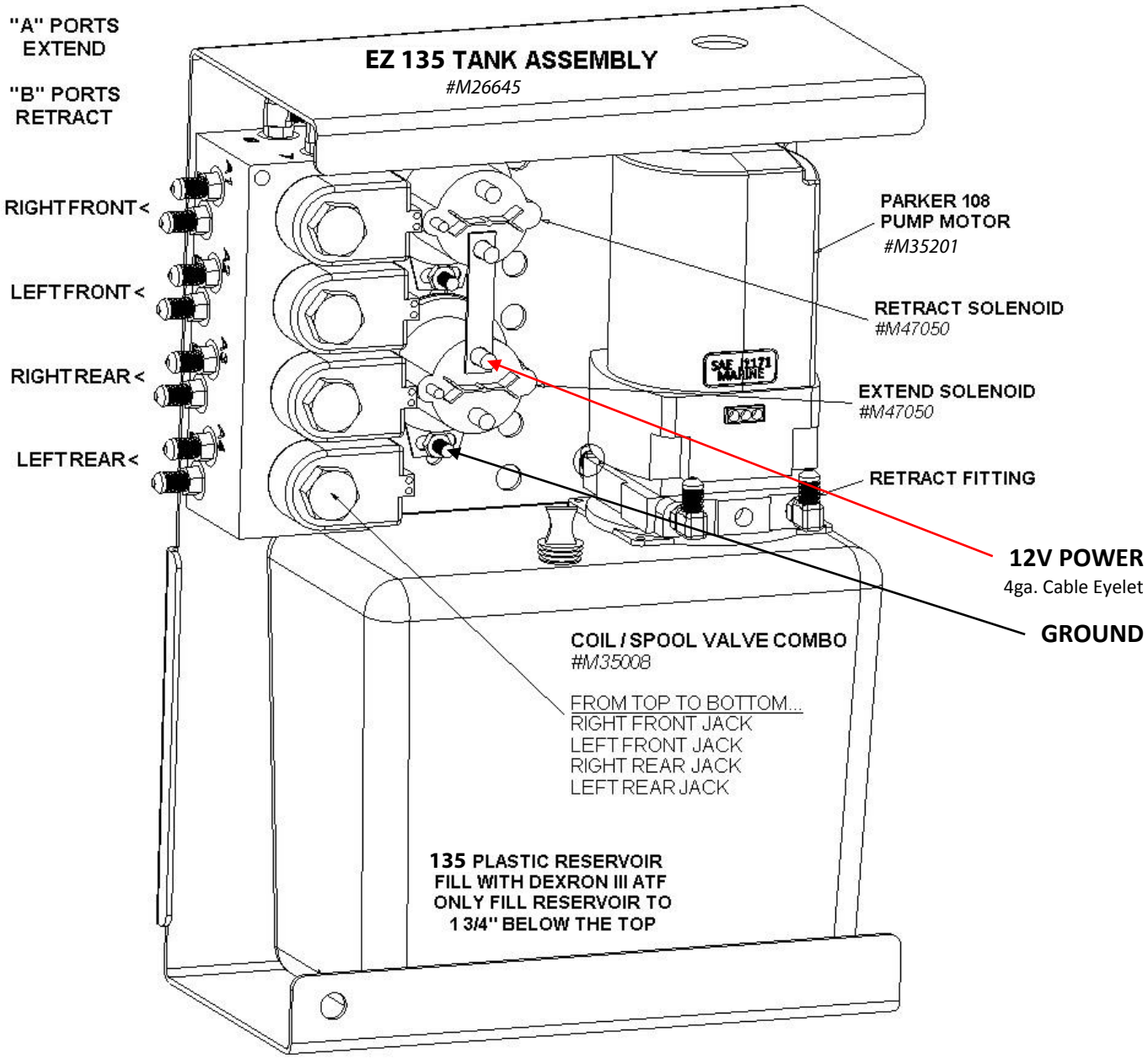
**Fill reservoir prior to mounting!**

# 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 connecter that is pre-wired to the assembly.
- Route the ***ground cable*** (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.

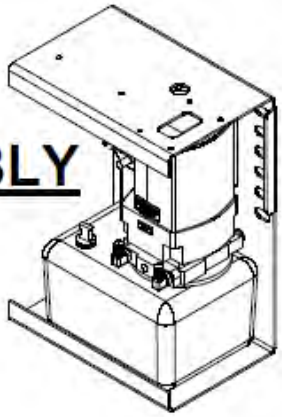
*Fig. 2*



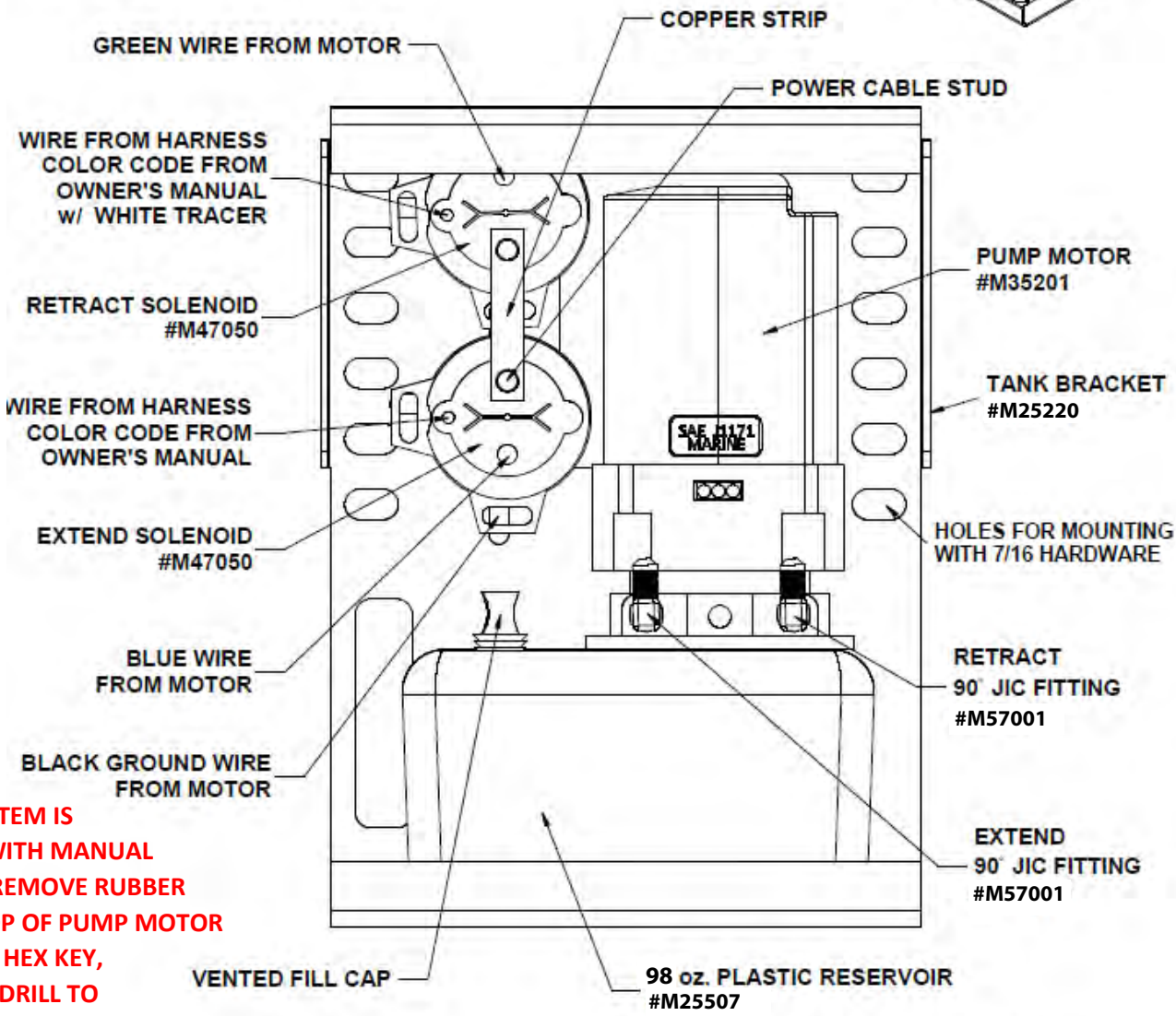

Central tank assembly is typically located near the “center” of the unit, Example: In front of rear axle on driver side frame rail (outside or between rails). Can be mounted to existing boxes, sub-frame, etc.

# MEDIUM TANK ASSEMBLY

#M26850



OVERALL DIMENSIONS:
9" 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**

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

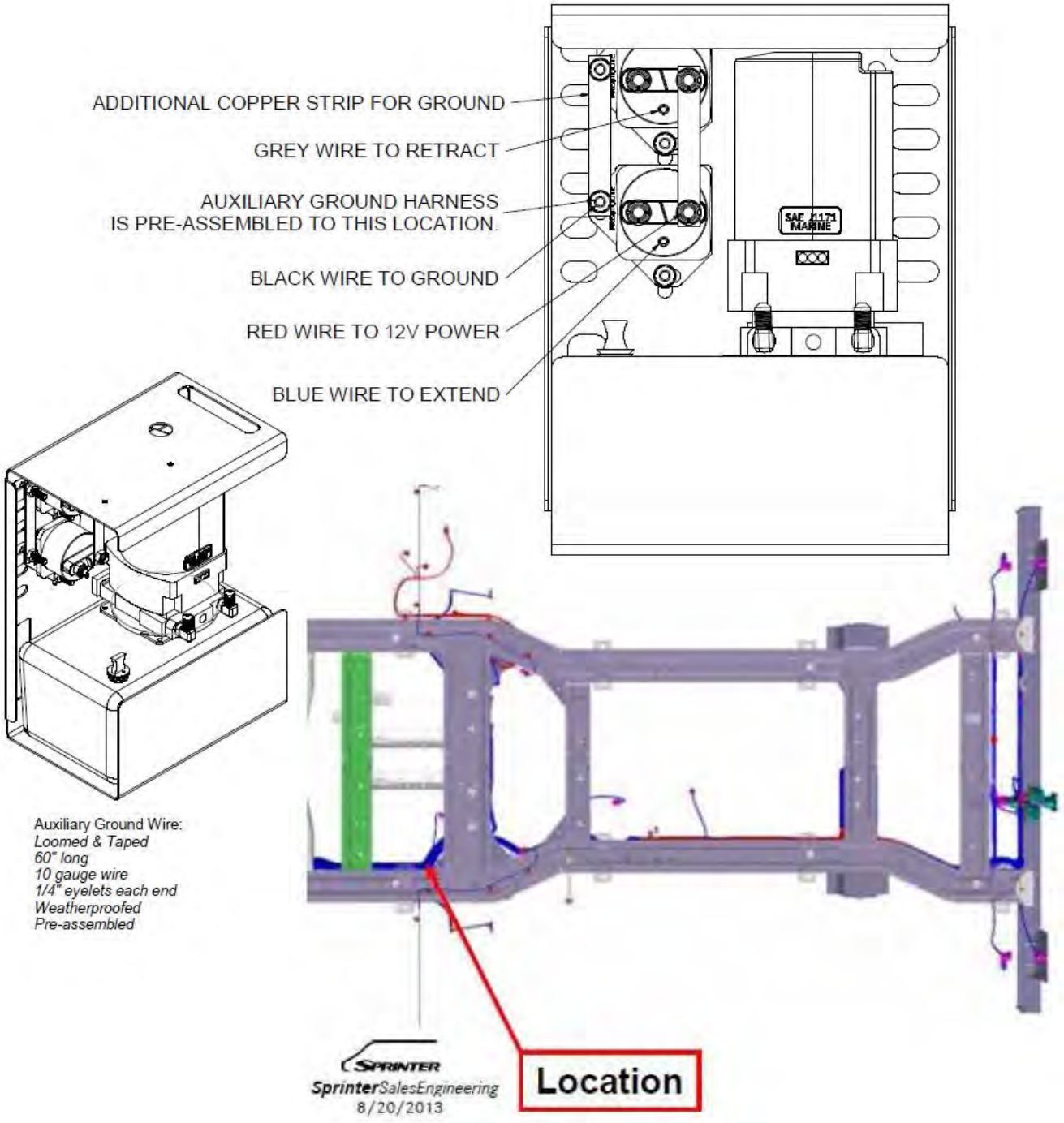
4 PT WIRING HARNESS COLOR CODE DIAGRAM:
LEFT FRONT: GREEN/WHITE & GREEN
RIGHT FRONT: BLUE/WHITE & BLUE
LEFT REAR: GREY/WHITE & GREY
RIGHT REAR: BROWN/WHITE & BROWN

### Mounting Tank Assemblies

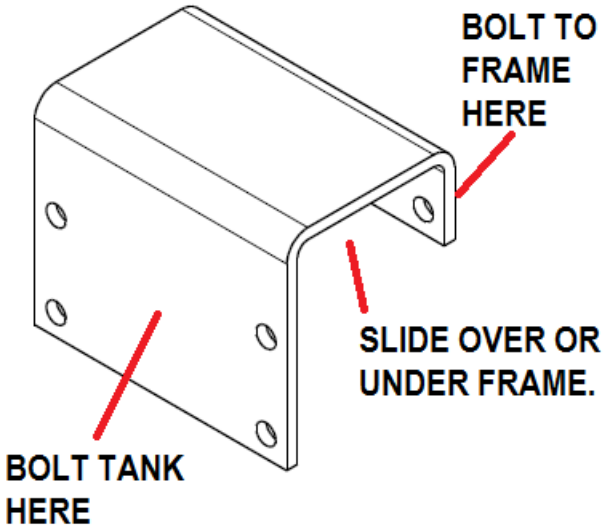
Our tank assemblies are weather resistant and must be mounted vertically and can be mounted externally on the vehicle's frame by drilling holes in the frame or welding a bracket, tanks can be mounted to a cylinder bracket or inside a storage box. Use at minimum two 7/16" or 3/8" bolts per tank assembly. 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 minimum 10 gauge wire from the location shown below (solenoid mounting stud from each solenoid) and to a good grounded surface on the vehicle frame or directly to the negative terminal on the battery. Quad pump or 2pt assembly shown below, but the same solenoids are used on the vertical central pump assembly. At the bottom of this page is a picture of the Mercedes Sprinter (chassis cab) ground location in front of the rear axle, RV manufacturer may have other ground studs similar.



# FORD E-350/450 TANK MOUNT BRACKET




This #M29311 tank mount bracket (to the right) enables the tank assembly (quad pump or central pump assemblies) to mount in-between the frame rails on the Ford's channel frame. Typical open location is on the driver's side in front of the rear axle. For quad pump systems, maybe install both rear tanks or both front tanks. This brackets slides over the top or underneath the channel, allowing a vertical surface over the "open" area of the channel style frame where the cables and wiring are attached. Take care not to drill into the wiring when mounting this to the frame. Simply bolt the tank to the other side using a minimum of two bolts. You can mount the tank using just one side of the bracket to the tank (Ex. To left holes on bracket and tank), the tank body is strong enough to support the weight of the assembly (7/16" hardware and lockwasher required, torque to 70 ft/lbs.).

## Main Wire Harness *–Automatic Leveling & Platinum System*

**Installing the 14-Pin Wiring Harness <u>Central Pump</u> 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…

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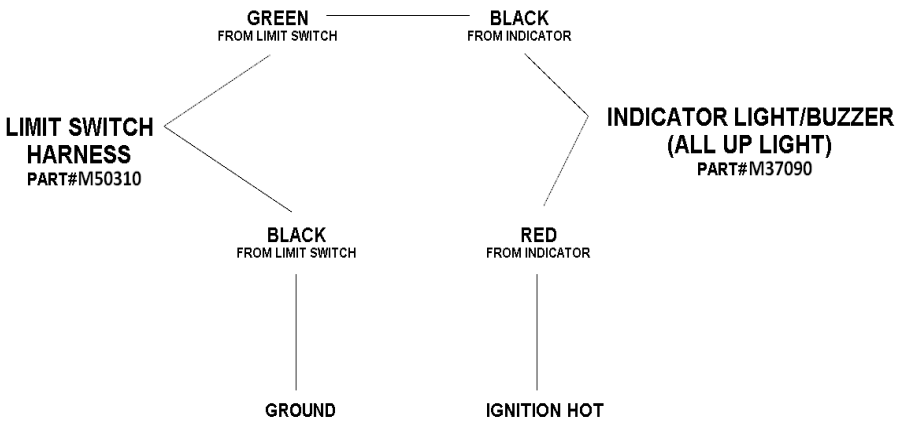
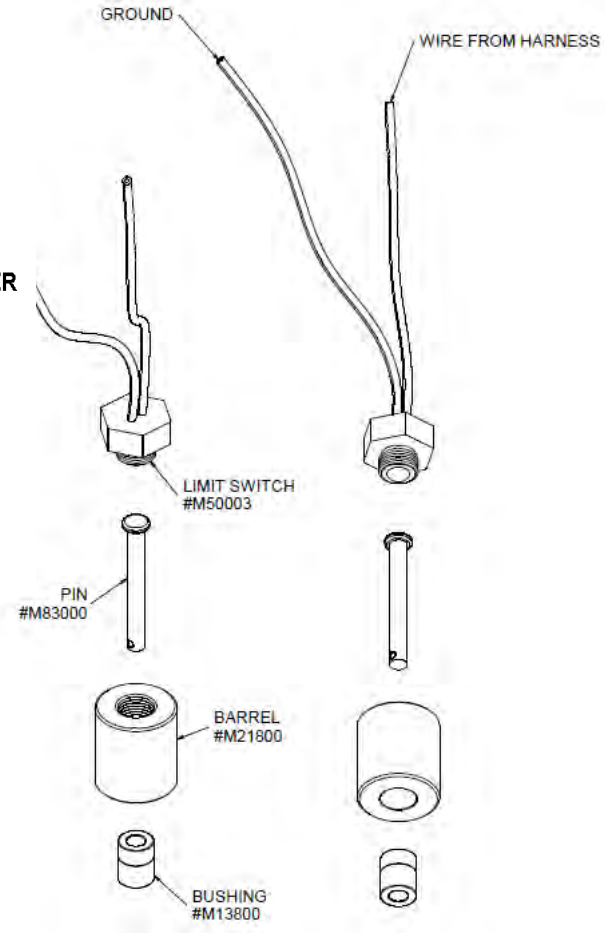
## Installing the Limit Switches to the Jacks

Central Pump systems, both wires from limit switch plug into harness with male and female spade connectors.




**Limit Switch & Pin Replacement:**
**Ford Transit 350 part #M50103FLAT**
**Ford E-350/E-450 part #M50103**

# Wiring Harness & Battery Cable Installation

**Installing the 14-Pin Wiring Harness (Central Pump 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…

**Ignition Safety (Central Pump Systems)**

- The wiring harness for Central Pump Systems has a yellow 16 gauge wire extending from the end that plugs into the Control Panel or Sensor and needs to be tied to an ignition auxiliary/accessory wire. This allows the control panel to sound an alarm when the engine is started while the jacks are extended. A suitable wire will usually have 0 to 1.5 volts with the ignition in the off position and at least 5 volts with the ignition on or in the accessory position. *(Some vehicles may require the engine to be started for the voltage to increase.)*

**Attention:**
**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.**

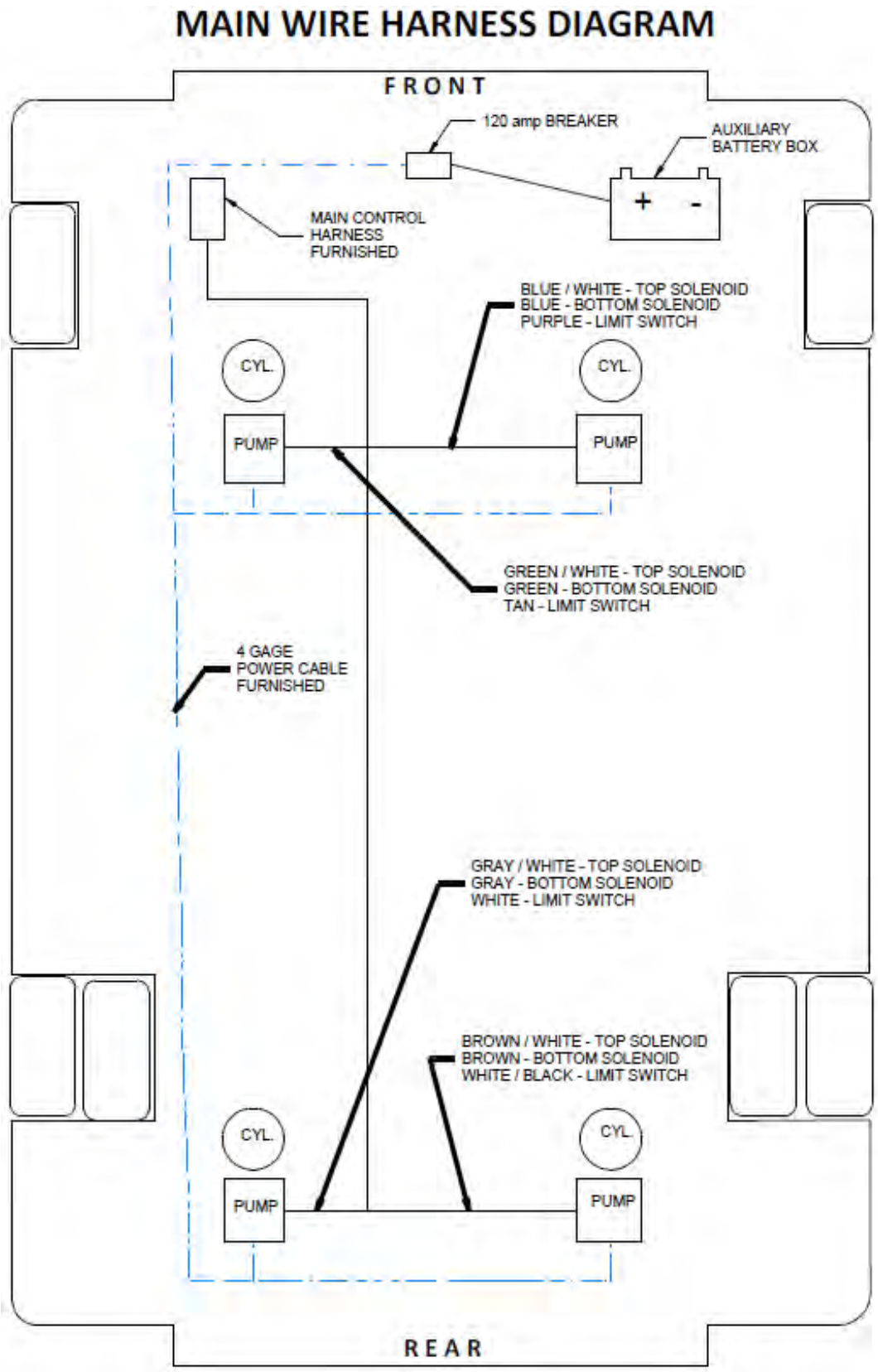
**Battery Cable Installation (Central Pump Systems)**

- Mount an 80 amp breaker beside the coach/house batteries.
  **Do not connect the batteries to the breaker at this time - this will be final step of system installation.**
- Connect one end of 4 gauge battery cable to the breaker.
- Route the cable along chassis, being sure to avoid heat sources and moving parts, to the Central Pump Tank Assembly and attach to the power stud on the lower solenoid (with the copper strip).

**Battery Cable Installation (2 Point Systems)**

- Supplied will be a 4 gauge battery cable that needs to be cut into two pieces.
- The 1st to run from the Solenoid power stud (marked BATT+) to the 80 amp breaker AUX stud.
- The 2nd to run from the BAT stud on the breaker to the Positive Terminal on the coach's house battery.
- The supplied 80 amp breaker should be securely fastened in the battery box. Ground cable attached to central pump assembly, (typically white 10 gauge wire) should be fastened to vehicle frame or extended to negative terminal on battery.

Example below of routing the Quad Pump 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 or Platinum panel. Take care to avoid high heat areas and moving parts.



# FORD TRANSIT IGNITION WIRING FOR YELLOW WIRE:

Under the hood on the diesel chassis, locate the fuse box as shown below, find the GREEN wire on the LEFT side closest to the engine. Test this wire first, but this should be an ignition hot source to tie our yellow wire to. The yellow wire may need to be extended, be sure to route wiring away from heat and avoid moving parts. For the gas chassis, you will have to find another source from the fuse box OR check near the RV battery for breakers or electrical boxes or RV switches near entry door, either of these may have a good ignition source to tie into, again test source prior to attaching our yellow wire.

**Hydraulic lines are universal lengths and fit the majority of applications, however if they do not fit your exact model you will need to call and order longer lines.**

## *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 ¾" 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.*

# 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

## *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.

# A1 Automatic (AKC) System

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

## ***ATTENTION:***

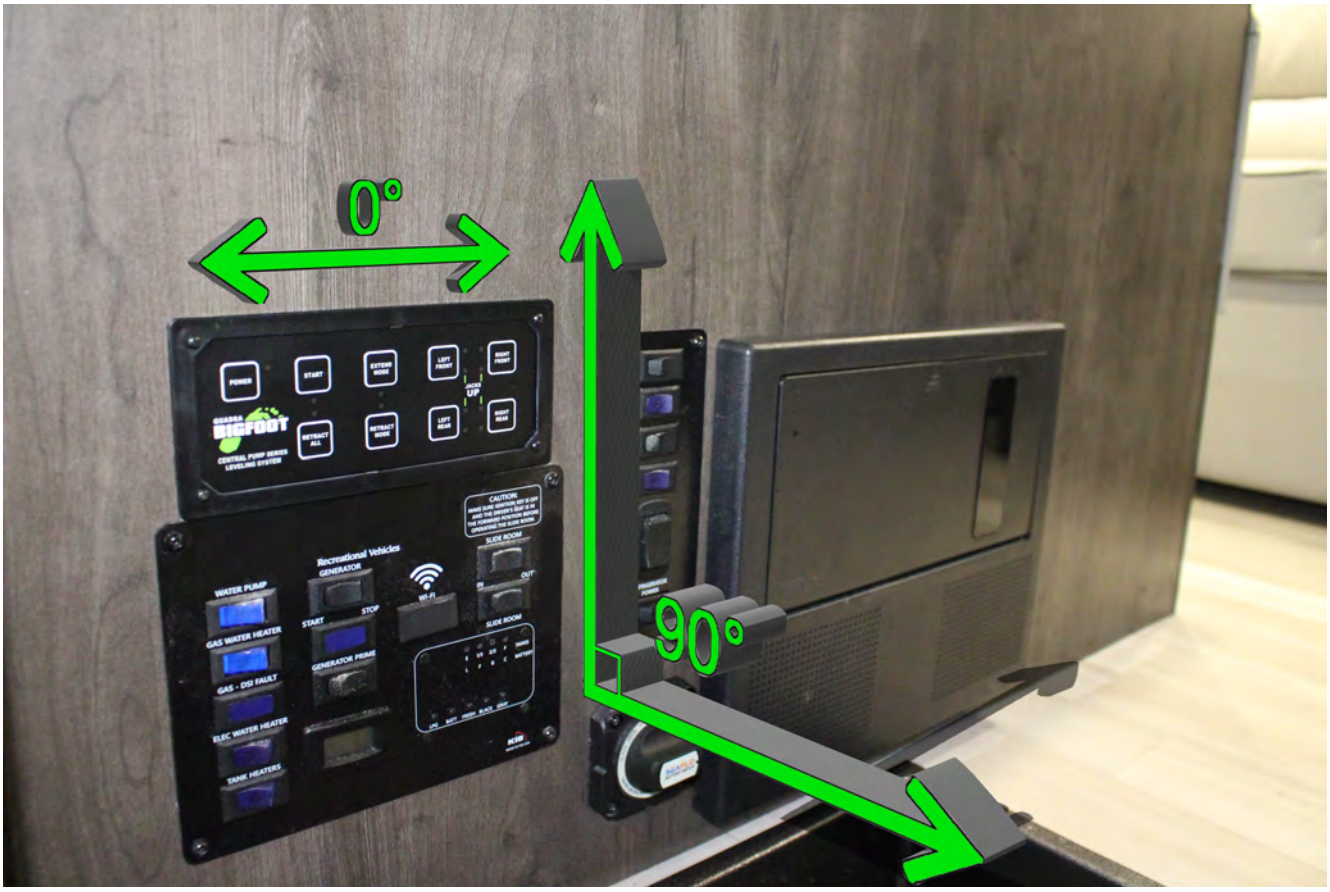
***Improper installation and calibration could result in system and/or vehicle damage.***

# Control Panel Installation

## Step #1. Mount Panel

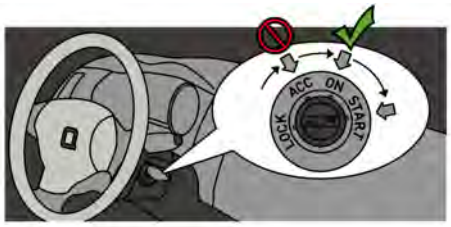
1. Plug the wiring harness into the rear of the control panel (14-pin and 6-pin plugs).

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. Control Panel Orientation




1. Panel to be on, but at rest (no modes active).

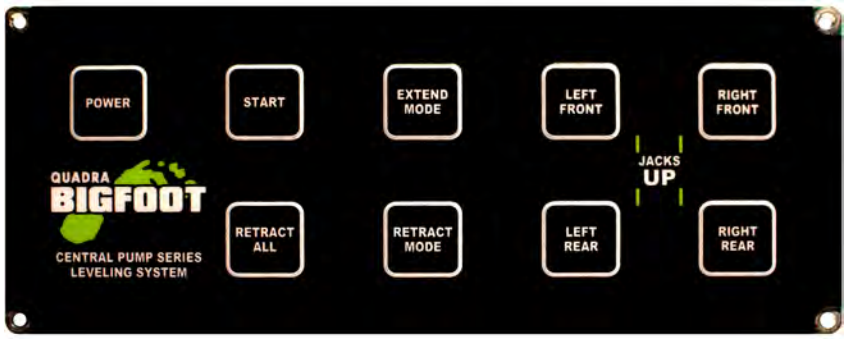
2. Turn vehicle ignition to the ON/RUN position.

3. Press and hold LEFT FRONT and RIGHT FRONT button for 3 seconds, the LEFT FRONT and RIGHT FRONT amber LED's will start flashing at an interval of 1 second, you have now entered calibration mode for panel orientation.

4. The four different orientations of the panel face are shown below:

1) Press **LEFT FRONT** for **ORIENTATION #1** / *Panel facing front of vehicle*
2) Press **RIGHT FRONT** for **ORIENTATION #2** / *Panel facing passenger side of vehicle*
3) Press **LEFT REAR** for **ORIENTATION #3** / *Panel facing rear of vehicle*
4) Press **RIGHT REAR** for **ORIENTATION #4** / *Panel facing driver side of vehicle*


5. Once selected, turn vehicle ignition off, panel is now oriented.




## 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 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 to 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, see below, 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/trailer 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. For 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.*

## Installing Platinum Control Panel (“PC” part #’s)


### 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 any flat surface, typically on vertical cabinet wall near entry door of coach (near other controls, switches, etc.) If you cannot find a location, we do offer a handheld plastic box that can be ordered separately (#M13601 from Quadra Mfg.) the panel would fit inside Quadra’s plastic box assembly with the harness loosely coiled underneath the driver’s seat for convenience.

Fasten panel with four supplied small black #4 phillips screws (5/8” long).

**Optional safety feature for Platinum panels**, The manual EXTEND mode is active while the ignition is on (version A Platinum panels only). So one could turn the panel on, press EXTEND, and would have to press & hold one of the cylinder buttons to extend the corresponding cylinder, this could be possible while driving down the road. Safety option: Install an in-line on/off 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.

### Operation on next page, but here are some Platinum Panel operational notes…

The START function (jacks automatically deploy) is disabled when the ignition is on.

The panel will shut off automatically after 10 minutes when there are no buttons pressed.

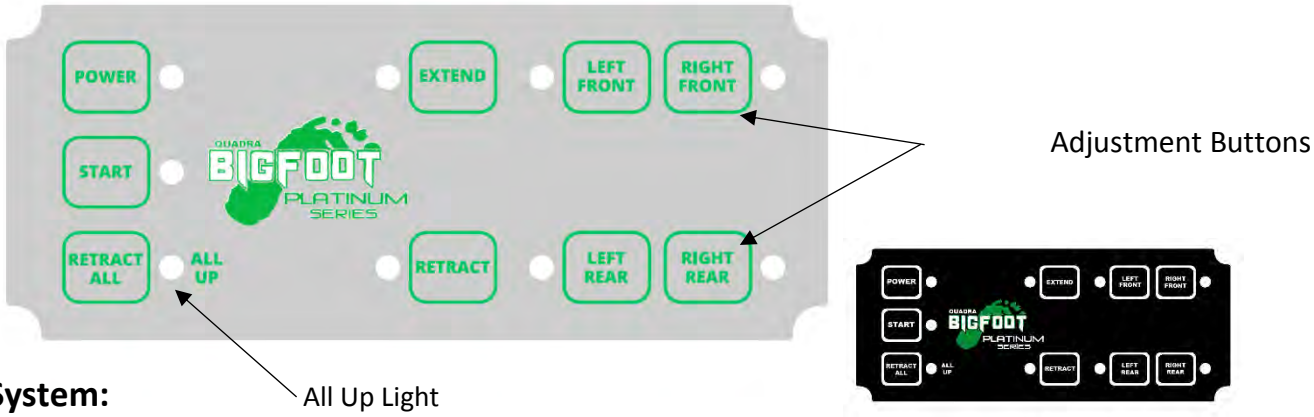
The panel will turn on automatically when the ignition is on, and will not power off until the ignition is off.

The panel will shut off automatically after 10 minutes from the ignition is shut off.

If all the LED’s flash for one second and the panel turns off, the panel is receiving less than 9.5 Volts and you need to charge your house batteries.

# Platinum Leveling Operation ("PC" part #'s)

Panel also available in black, NOTE: 1. Panel turns on when ignition turns on to inform user if jacks are up or down (alarm sounds). 2. Due to another safety feature, to operate the "START" and "RETRACT ALL" buttons, press and hold the button for 1-2 seconds then release.




**Extend System:**

1. Press the **Power** Button (Red LED will come on constant).
2. Press the **Start** Button, this brings the front of the vehicle nearly level to the rear and stabilizes the rear as well. (LED will come on until program is finished, pressing any button during operation will cancel program, Vehicle Ignition must be OFF).
3. Done! Vehicle is now stabilized, ***if*** additional adjustments are desired:
    1. Press **Extend** (now in "Extend Mode" LED will come on). Release button.
    2. Press & Hold the Adjustment Button for the designated corner(s) of the vehicle that is low or high. *(Ex. Right or Curb side is low, press & hold RIGHT FRONT individually or RIGHT FRONT & RIGHT REAR simultaneously until level, driver's side is considered the left side for reference.).*
4. **Power** Off (panel will automatically shut off after 10 minutes of no activity).

**Retract System:**

1. Press the **Power** Button (Red LED will come on).
2. Press the **Retract All** Button until the green **"All Up"** light comes on constant.
   (This process will take up to 60 seconds. After 60 seconds the green light will flash, this means that one or more of the jacks did not fully retract, see troubleshooting) If you have a false all up light (one or more jacks are not fully retracted and the light is on, you may have defective limit switch) to retract override, press RETRACT, then press & hold the corresponding button for that particular jack (version B or later only).

***Always do a visual check to verify that all the jacks are fully retracted prior to operating the vehicle.***

# **2pt Stabilizing System:** Wireless or Rocker Switch Controls

## Wireless Controls

Receiver shown on Left,
Transmitter shown on Right.
Replacement Transmitter #M37098
Replacement Transmitter/Receiver #M37029

### Operation:

Depress the on/off button on the transmitter to activate. The blue LED light on the top right corner should turn on. The transmitter should be in the off position when the unit is not in use, but is equipped with a safety feature that shuts off if not being used after 3 minutes.

On the transmitter, press & hold the Extend button to lift your unit to desired height. To lower the unit or fully retract the jack(s) press & hold the Retract button.

The controls on the receiver operate the same as the transmitter.

### Sync Transmitter:

This is usually done by the original installer, but if you have an issue or have a new transmitter follow these simple steps…

Make sure the receiver and the transmitter are off. Enter the "learn mode" by pressing & holding the on/off button on the receiver until the LED light starts to **flash quickly** on the receiver then release.

Now press & hold the on/off button on the transmitter until the LED on the receiver becomes **constant**, then release. Transmitter now "learned".

### Re-Program Receiver:

If you are having issues with your controller at all try this before calling for service…

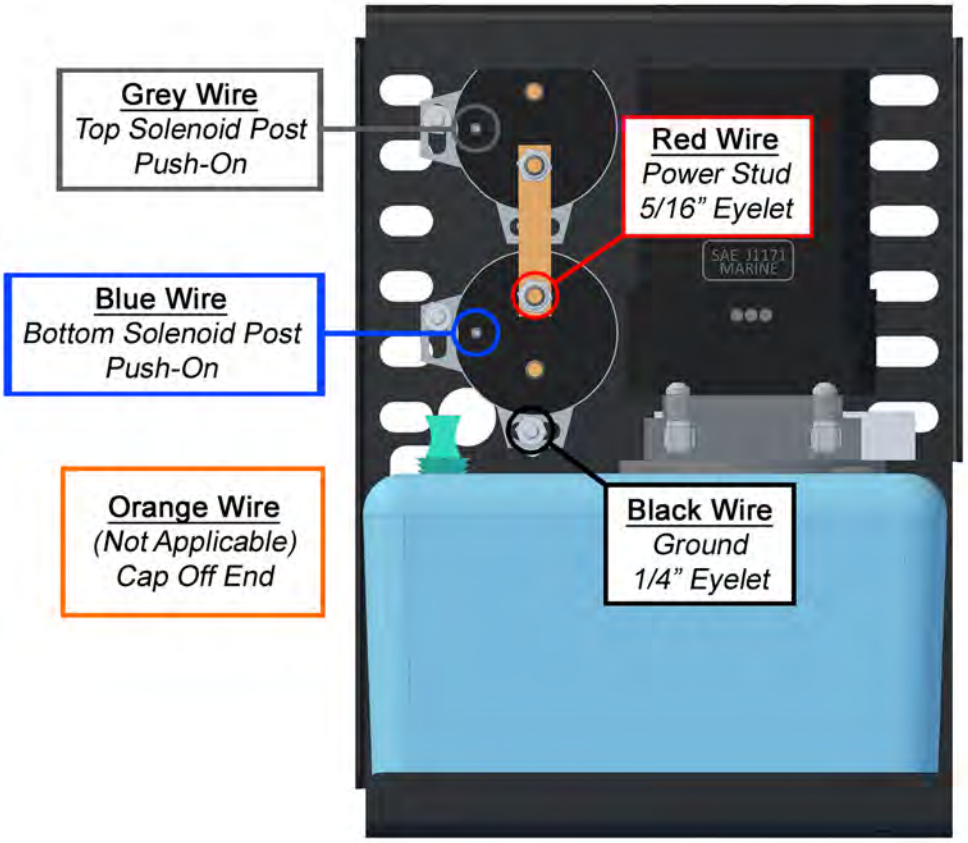
With the transmitter and the receiver off, press & hold the on/off button on the receiver, the LED light will start to flash quickly on the receiver but continue to hold until the light starts to **flash slower**, then release. The receiver module is now cleared of all codes.

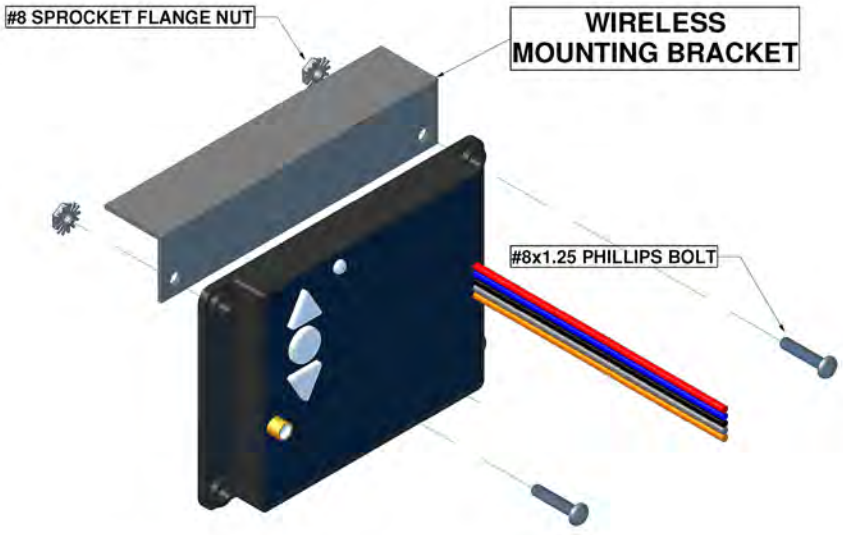
Now press & hold the on/off button on the transmitter until the LED on the receiver becomes **constant**, then release. Transmitter now again "learned".

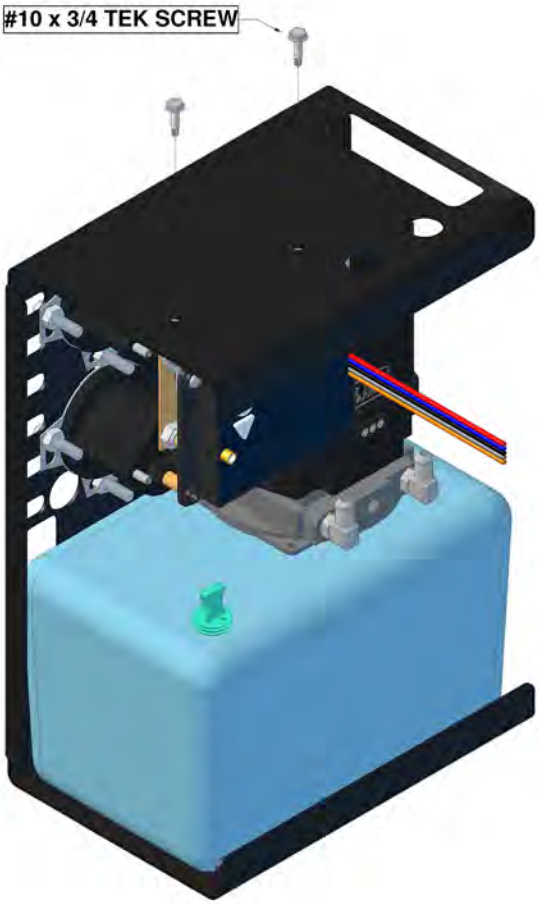
To exit this mode press and release the on/off button on the receiver, the light will become constant. Your controller is now re-programmed and cleared of all error codes.

The Wireless control is wired to the tank assembly and wires are color coded to mate to the extension harness (#M43800 if included). The receiver is podded and can be mounted outside the vehicle, but should be placed where it is easily reached in case if the transmitter is damaged or misplaced, typical placement is inside a storage box wall or inside the tank assembly itself.

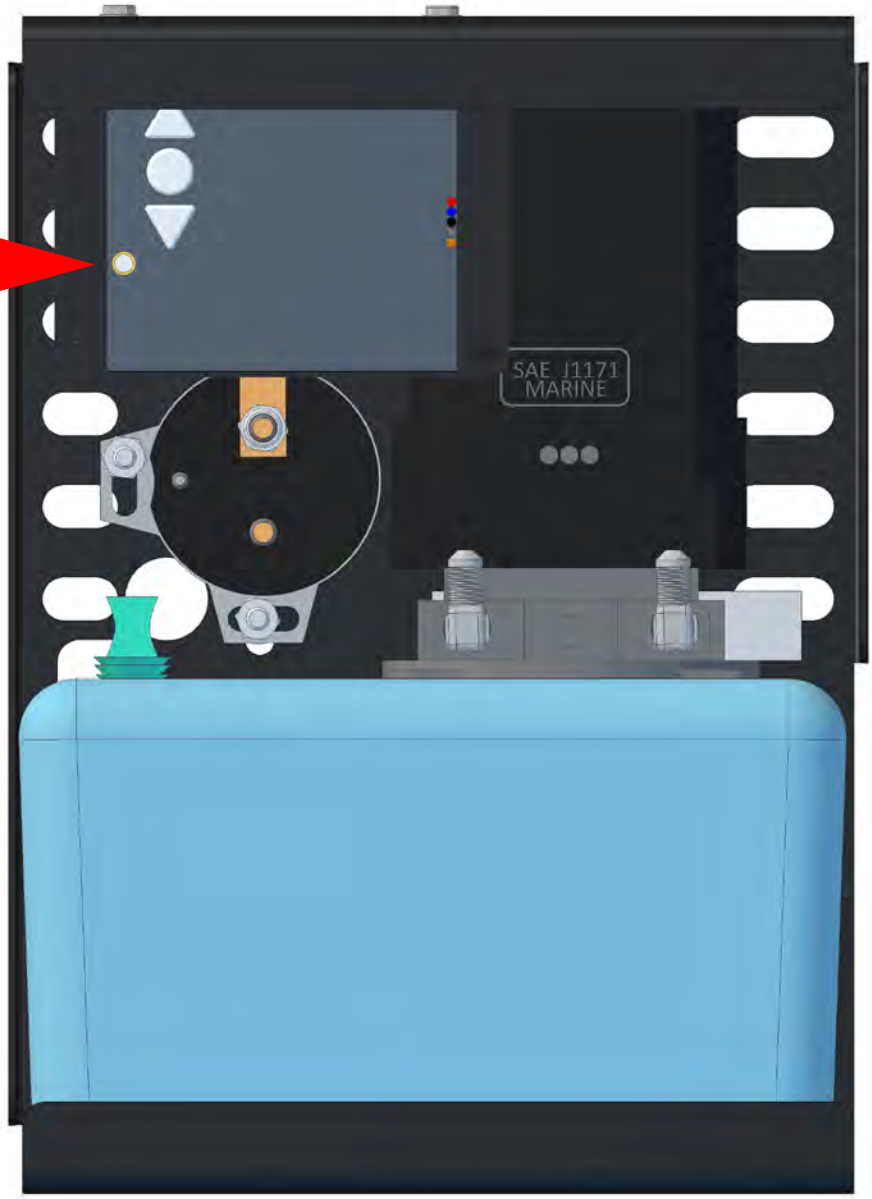
# GEN 3 WIRELESS INSTALLATION



ANTENNA PORT

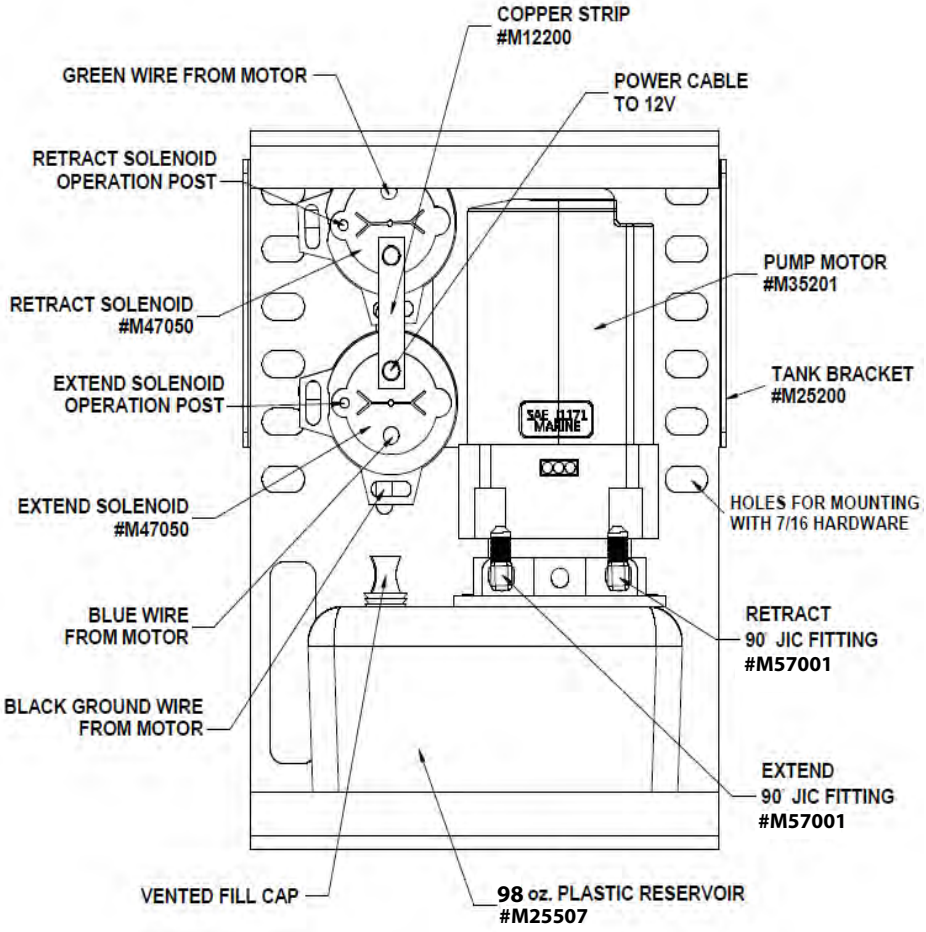




**ATTENTION**: Antenna must be installed in a location outside of the pump assembly.

Primary Control for the jack is the Key Fob, but if this is misplaced, use the Emergency Controls located on the Wireless Receiver.

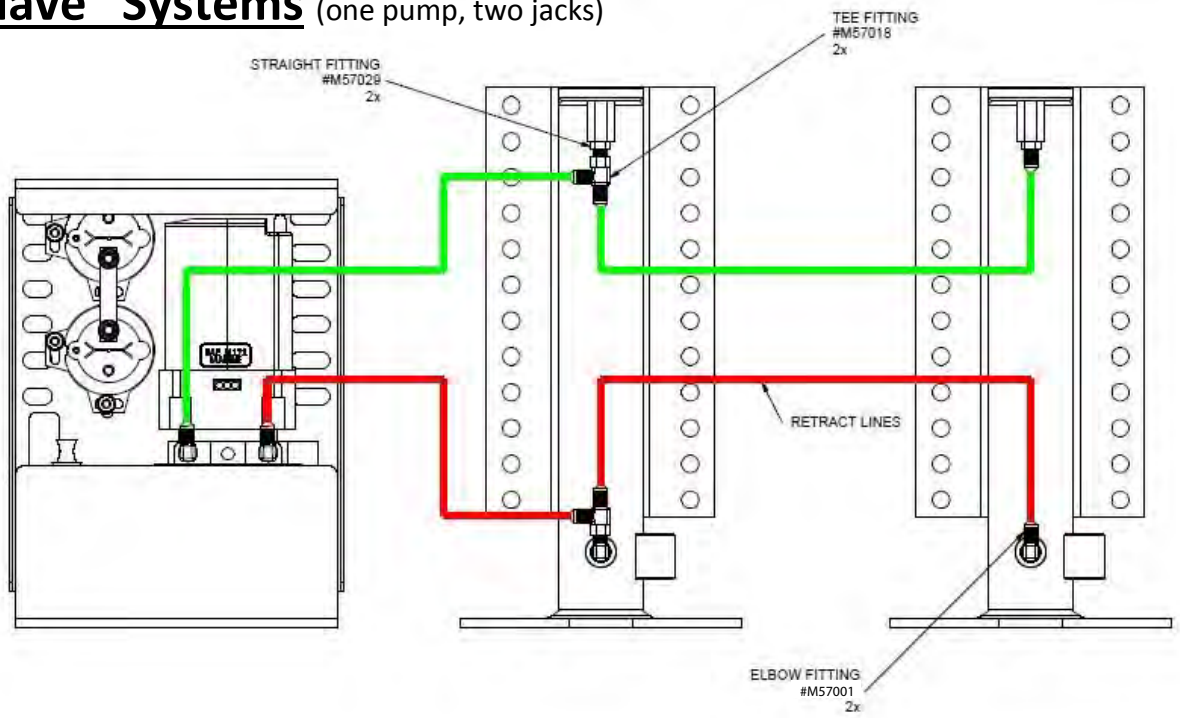
## Rocker Switch Controls

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.

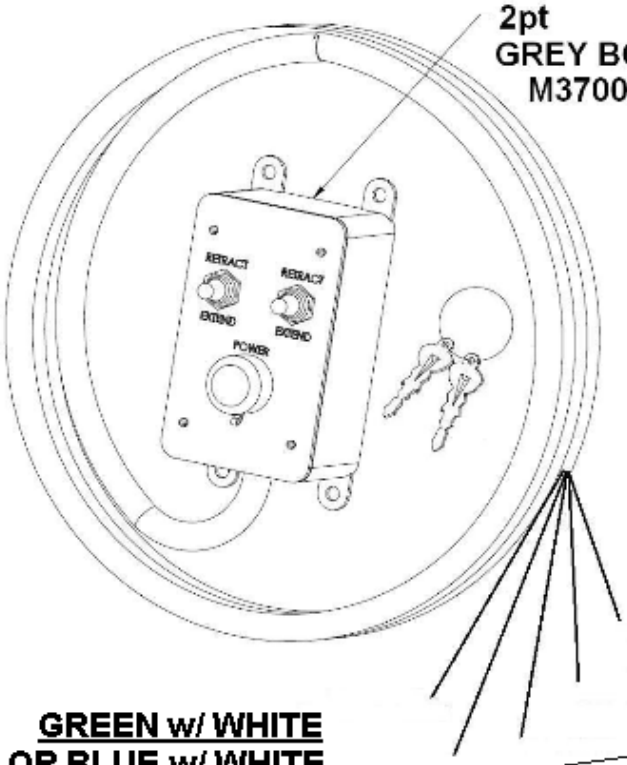
VERSION #2: INCLUDES MOUNTING THE "TEE" FITTINGS TO THE PUMP FITTINGS.

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.

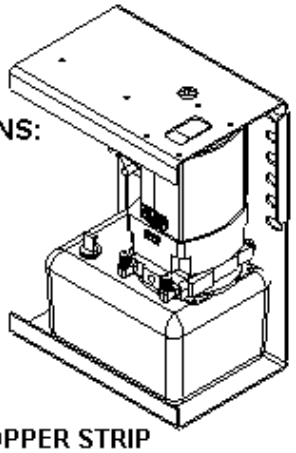
# 2pt Dual Control…

## MEDIUM TANK ASSEMBLY

#M26850




2pt
GREY BOX
M37007



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

GREEN WIRE
FROM MOTOR

COPPER STRIP
#M12200

PUMP MOTOR
#M35201

**GREEN w/ WHITE OR BLUE w/ WHITE WIRE FROM BOX**
RETRACT SOLENOID
OPERATION POST

**RED WIRE FROM BOX**

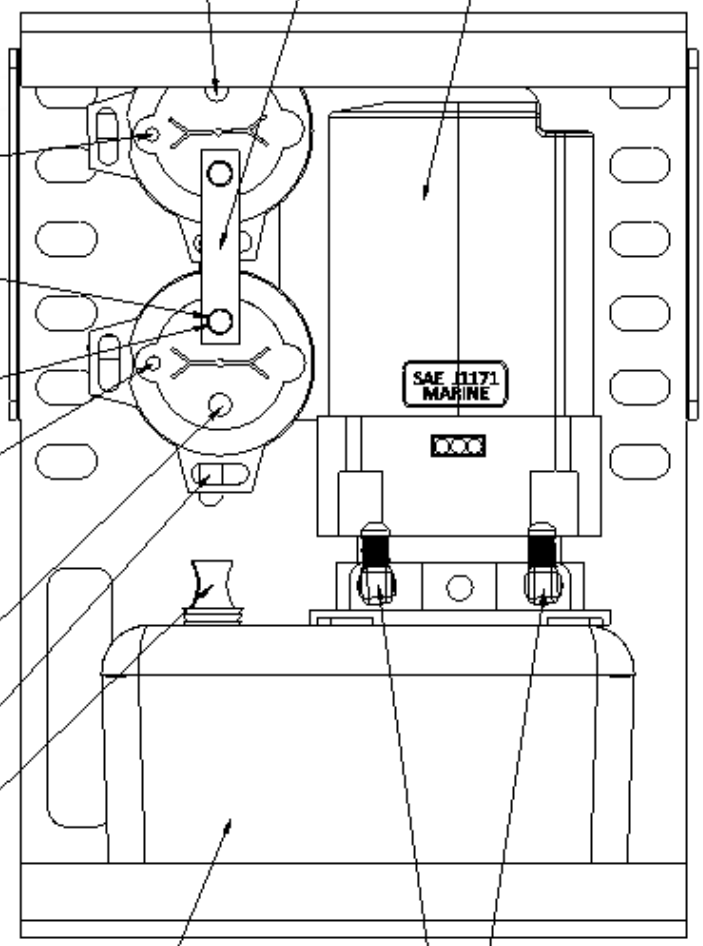
4 GA. BATTERY CABLE
ONE END HERE THEN
TO BREAKER MARKED 'AUX'
THEN FROM POST MARKED 'BAT'
TO POSITIVE TERMINAL
ON BATTERY

**GREEN WIRE OR BLUE WIRE FROM BOX**
EXTEND SOLENOID
OPERATION POST

BLUE WIRE
FROM MOTOR

BLACK GROUND WIRE
FROM MOTOR

VENTED FILL CAP




**1pt GREY BOX (#M37022)**
WIRES UP THE SAME WAY
(ONLY ONE SWITCH & ONE SET OF WIRES)

98 oz. PLASTIC
RESERVOIR
#M25507

EXTEND
90˚ JIC FITTING
#M57001

RETRACT
90˚ JIC FITTING
#M57001

**NOT PICTURED:**

TANK COVER (BLACK TEXTURED PLASTIC) #M12002

5/9/11

QUADRA MANUFACTURING

# WARRANTY GUIDE

**Owner must activate warranty!** Via Phone or Website

**OEM Installed Quad/Central Pump Systems:** 1 year parts and labor
**Platinum Central Pump System:** Lifetime Cylinders, 2 years parts, 1 year labor
**Automatic Leveling System:** Lifetime Cylinders, 2 years parts, 1 year labor
**Manual Leveling Quad Pump System:** Lifetime Cylinders, 2 years parts, 1 year labor
**1 & 2 Point Round Leg Stabilizing Systems:** 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.**

## ***Quadra 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-torqueing 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. Effective date: 7/1/2023

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