



Automatic Leveling System Installation for:

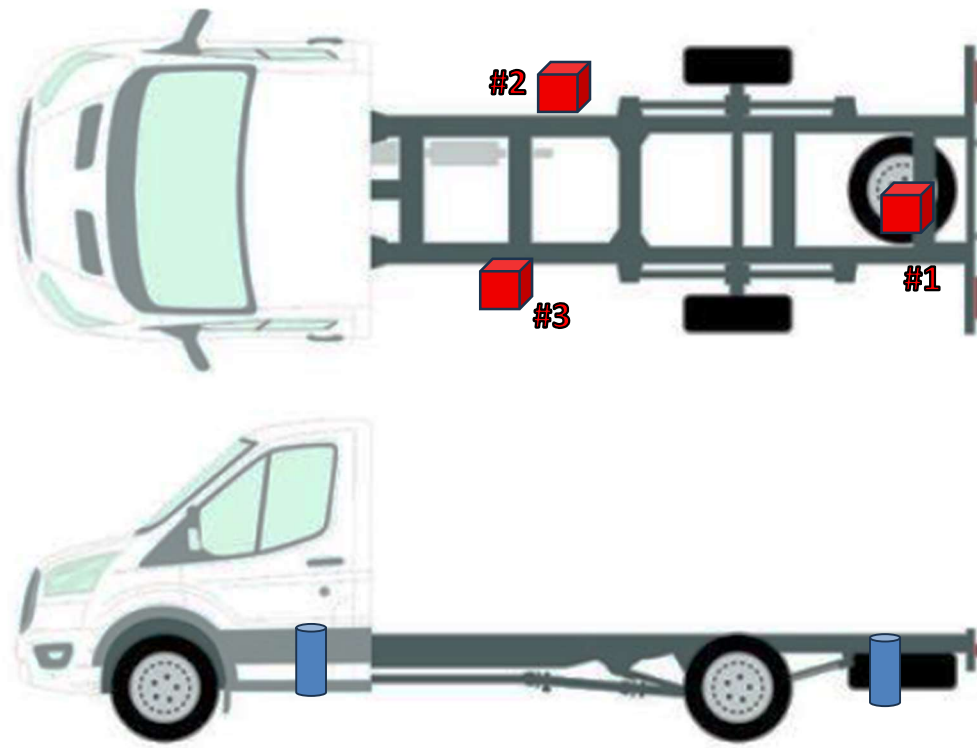
2024+ Ford Transit 350HD

Cutaway Chassis

Chassis Mounting Locations

 Cylinder

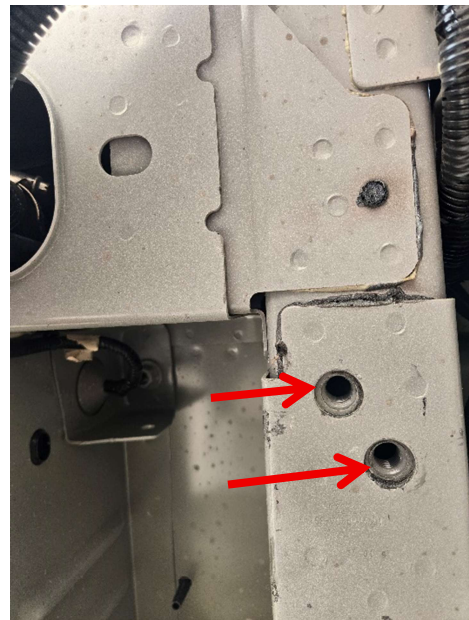
 Pump Options



Front cylinder location under the cab, inside the stepwell, locate the two threaded holes on the bottom of the frame as shown. Driver front frame section on the right and passenger front on the left.




Front of vehicle

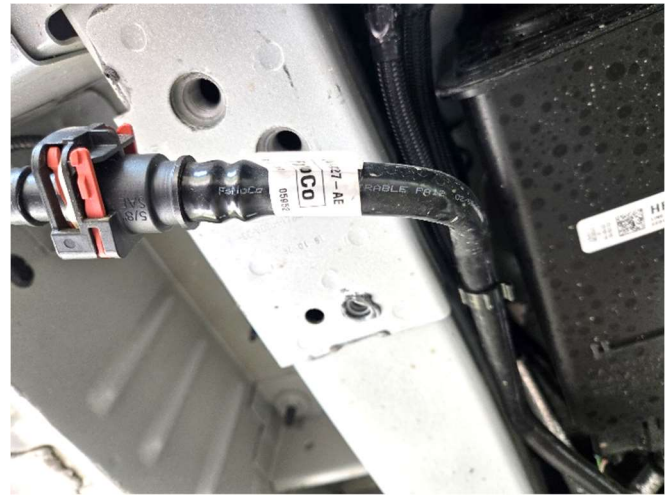


Driver front cylinder

Temporarily remove the line shown, from the “clip” in order to access the holes and place the jack to the frame.

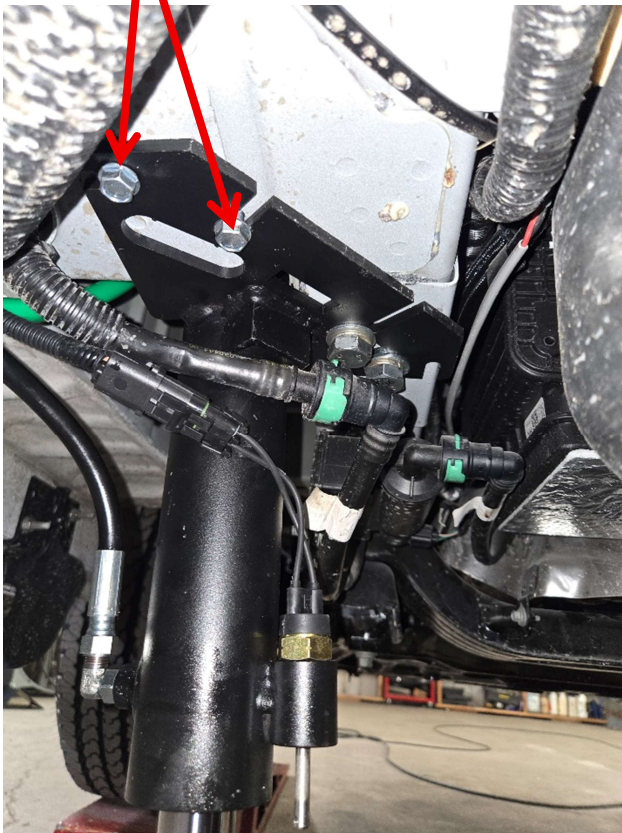
Install the cylinder elbow fittings on the cylinder ports.

Place the cylinder to the frame as shown with the holes lined up. Install the two M14 bolts into the existing holes, tighten to 80 ft/lbs. Install the 5/16” self-threading screws as shown. Make sure the Ford line is routed similar to how it was before and re-attach to the clip.



M14 Bolt(s)

5/16” Self-threading Screw

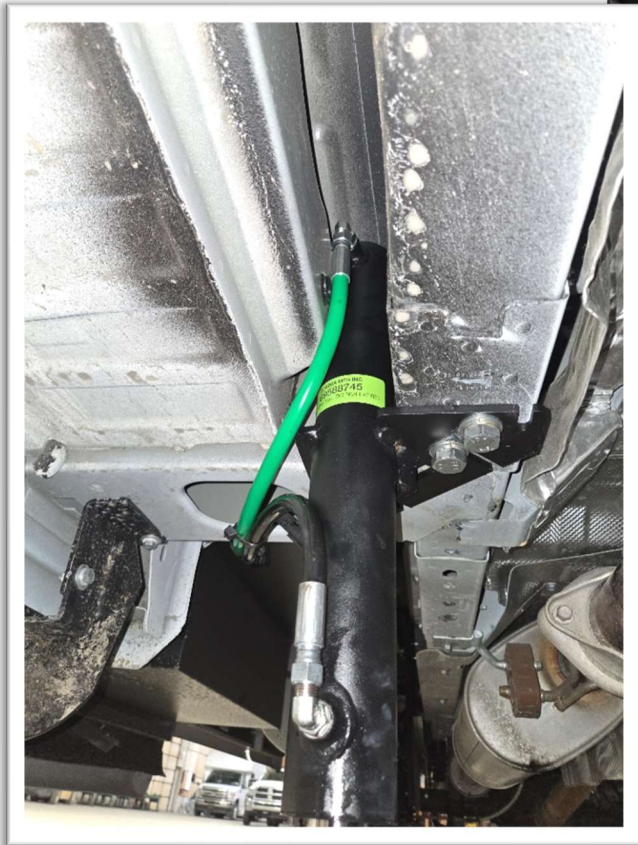


Passenger front cylinder

Install the fittings on the cylinder and set the cylinder in place with the holes lined up as shown. See the orientation of the cylinder and fittings as they slide inside the “pocket” of the body, shown lower right. Loosely install the two M14 bolts. Do not fully tighten the bolts or install the self-threading screws until the designated hydraulic hose is connected to the top extend fitting as the jack may have to be removed to tighten that fitting. Once the hose is installed to the cylinder extend port, go ahead and tighten the M14 bolts to 80 ft/lbs. and install the self-threading screws (1/2” socket).

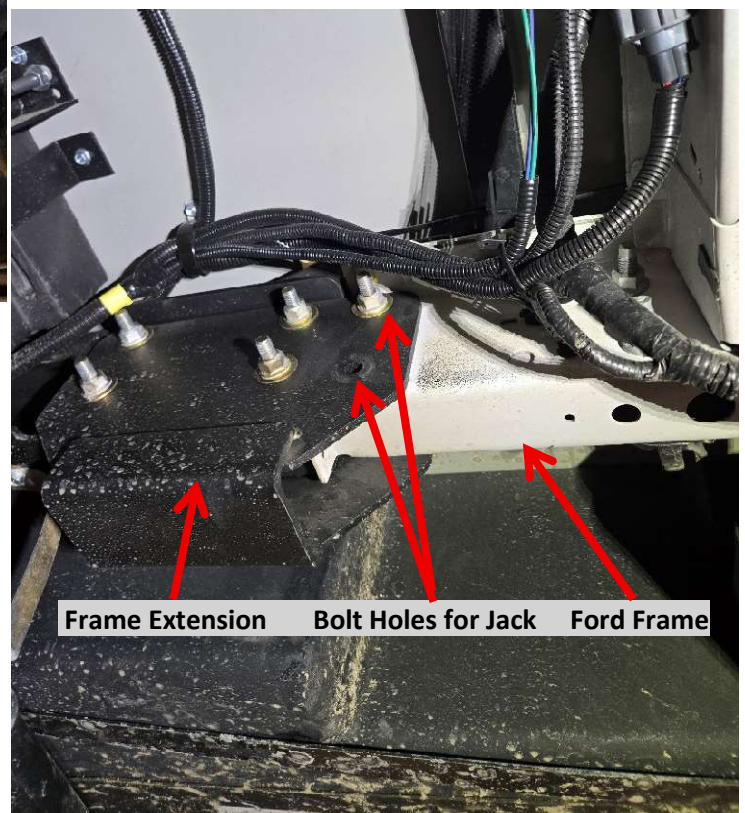
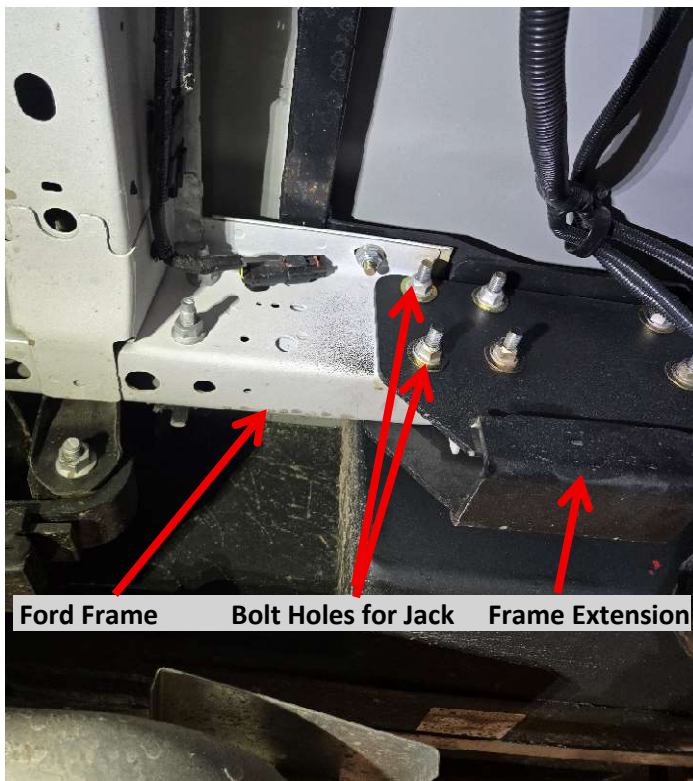
5/16” Self-threading screws

M14 Bolts w/ flat washers

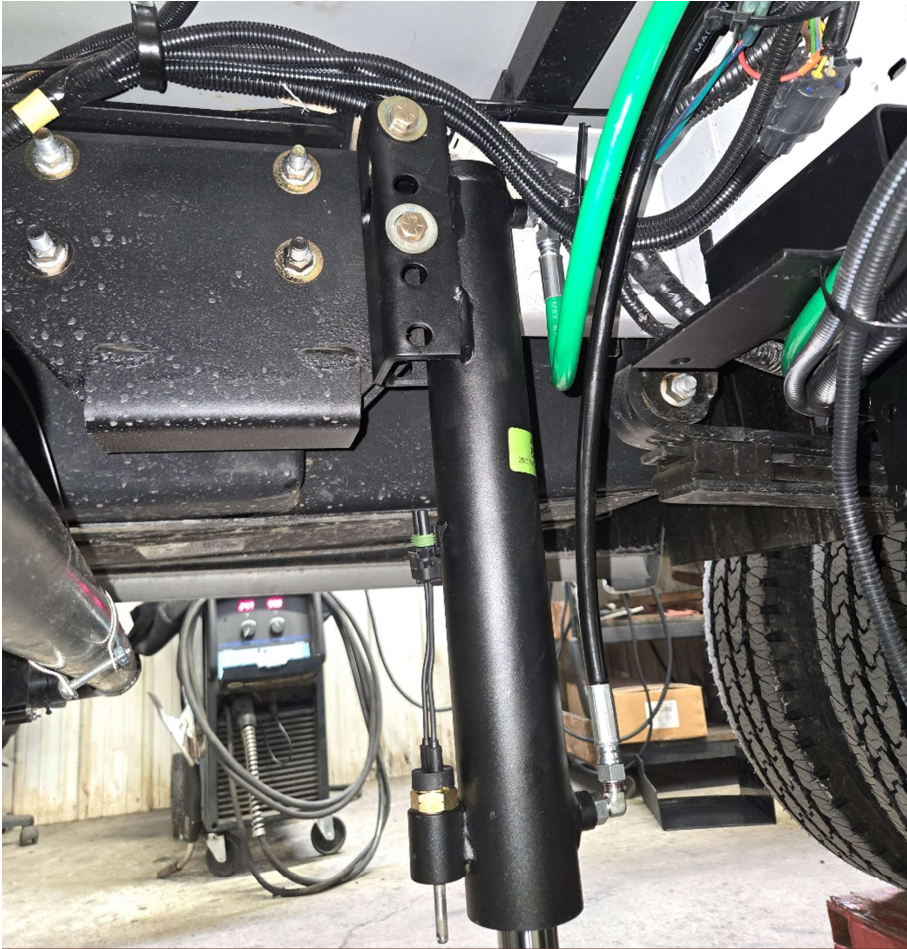


Rear Cylinder Mounting

Rear cylinders are mounted to rear frame rails, just past the rear leaf spring shackle mounts about 3-4 feet behind the rear axle. They utilize existing holes in the Ford frame that the vehicle hitch receiver or the RV manufacturer's frame extension fastens to. Locate the area in Fig.22, notice the "rear set" of holes are the preferred holes to utilize. Un-bolt the two bolts shown, insert the rear cylinder either on the inside or outside of the frame rail, and install the supplied longer bolts. Both cylinders can be in-between the rails, both on the outside or staggered with one inside and one outside. Typically, the cylinders face forward with the ports & fittings facing the front of the vehicle. Picture of mounted cylinder on following page. The bolts and sleeves inside the Ford frame may be a tight fit and require pressing or forcing the bolts through, 7/16" bolts are provided, however if the frame extension is too thick, longer bolts may be required, ensure they are grade 8 bolts. Use flat washers when necessary, torque each to 75 ft/lbs.

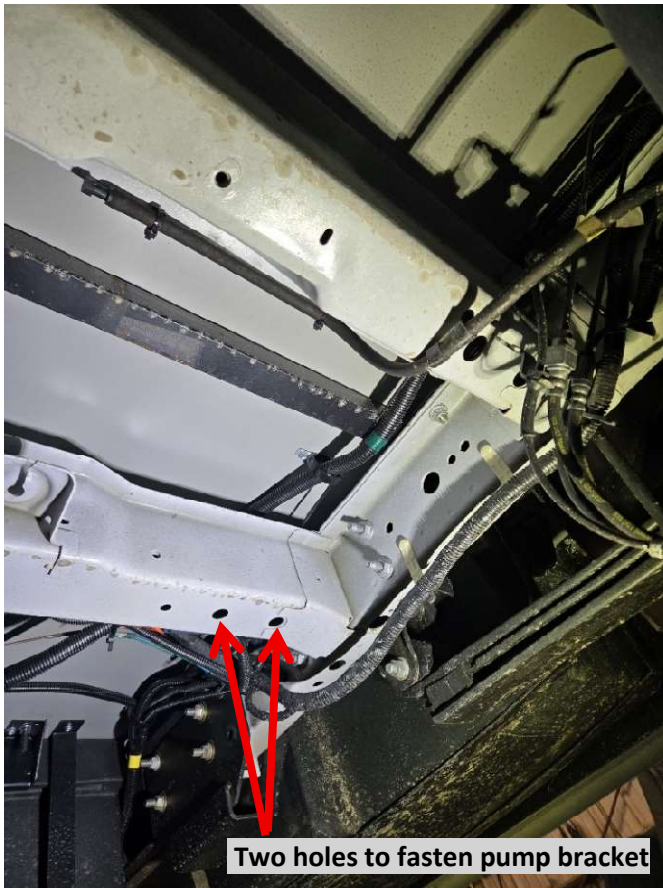


Rear Cylinder Mounting cont'd...



Pump Mounting option #1

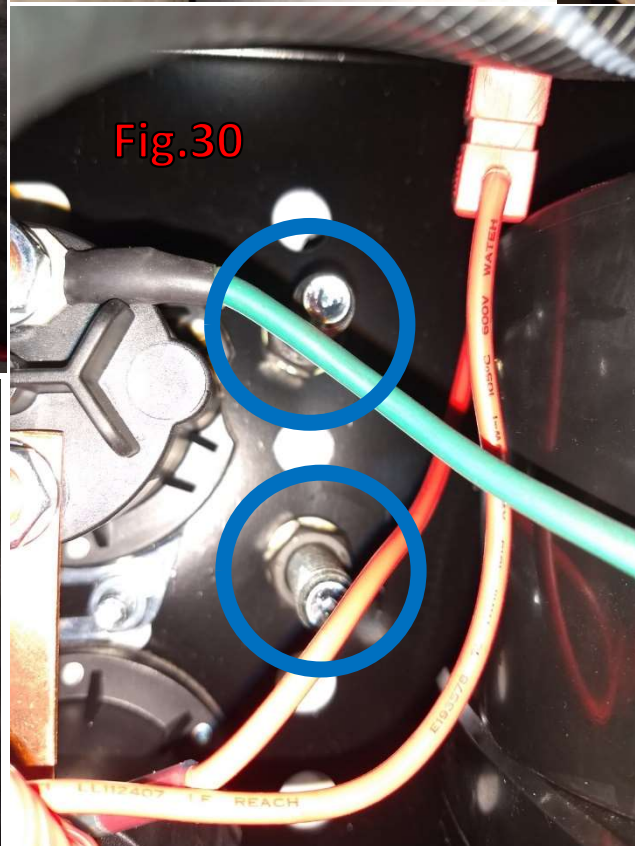
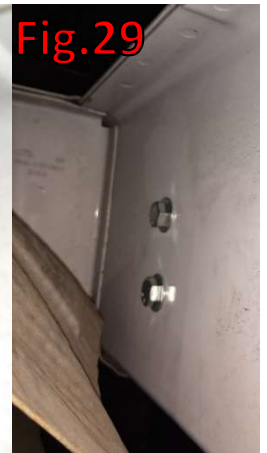
Locate the area shown below, just behind the rear axle. Locate the two holes shown that will mount the M29313B pump bracket to the frame with the provided 11/16" blind bolts. The pump housing can be mounted to this bracket after attaching to the frame with the welded bolts in the bracket to hang the pump as shown.



Pump Mounting option #2

If this method is used, longer hoses will be required. 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 23 for pump assembly diagram, information and fill reservoir prior to mounting.



Fill reservoir prior to mounting!

Pump Mounting option #3

IF THIS LOCATION IS USED, LONGER HOSES WILL BE REQUIRED.

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.



Fig.32



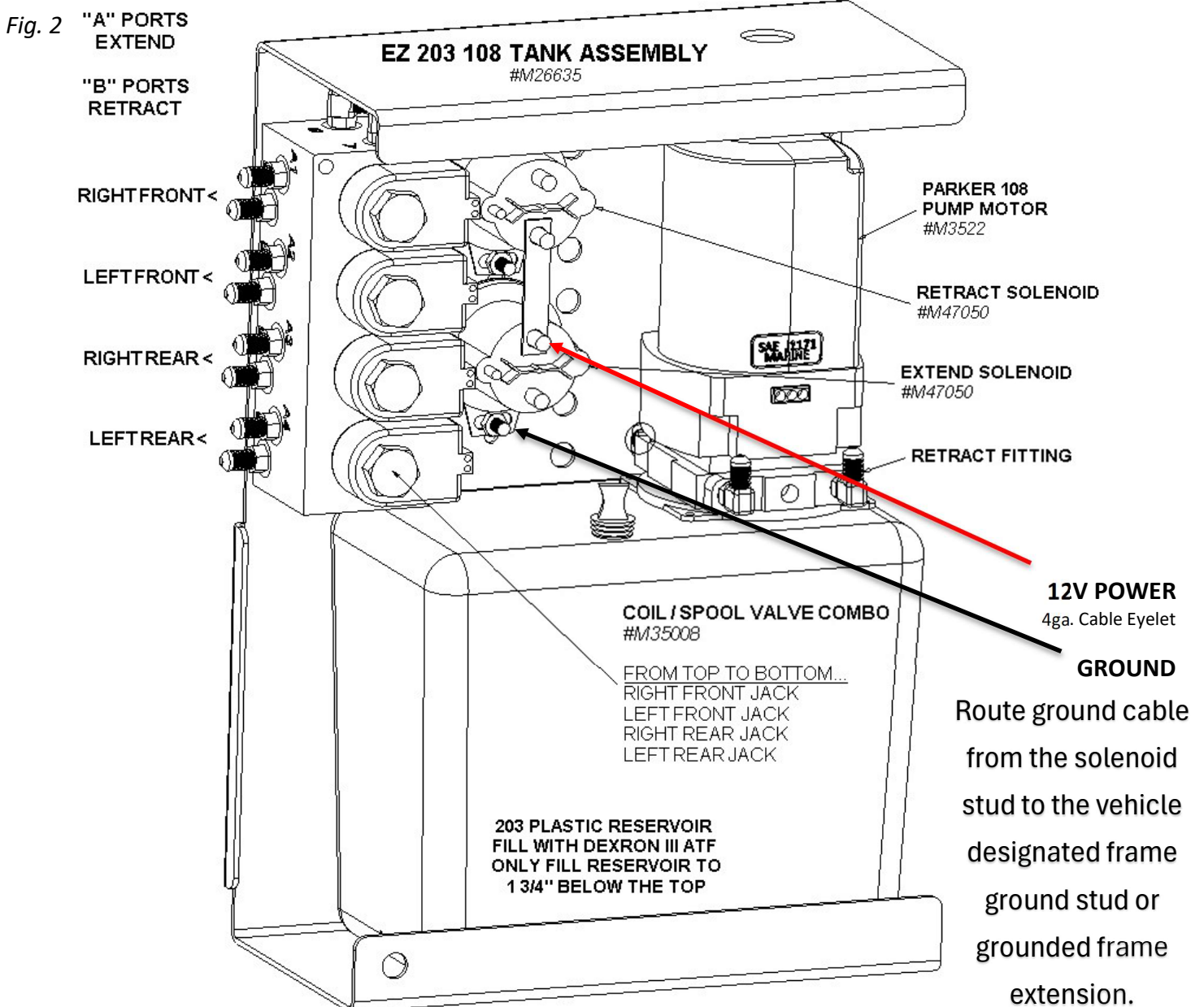
Fig.33

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 connector 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.



Hydraulic Plumbing

Typical hose plumbing for this chassis, lengths required may vary based on application, pump location and hose routing. Some models may require longer hoses due to their floor plans, required hose routing, etc. Recommend purchasing any longer hoses from Bigfoot systems to ensure hoses and fittings are to the specifications of our system. JIC fittings require hand tight + $\frac{1}{4}$ turn. Do not overtighten as the fittings may break, however check all fittings and ensure they are nice and snug before and after running the hydraulic system. You will need a $\frac{7}{16}$ " wrench for the fittings, $\frac{3}{16}$ " allen for the port fittings and 15mm wrench for the hose fittings.

Front Passenger Cylinder Extend Port to Manifold A1 = Green 19 ft

Front Passenger Cylinder Retract Port to Manifold B1 = Black 19 ft

Front Driver Cylinder Extend Port to Manifold A2 = Green 15 ft

Front Driver Cylinder Retract Port to Manifold B2 = Black 15 ft

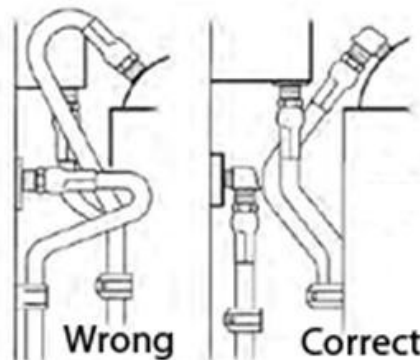
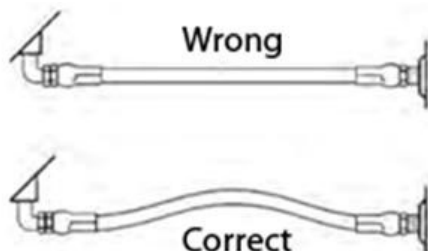
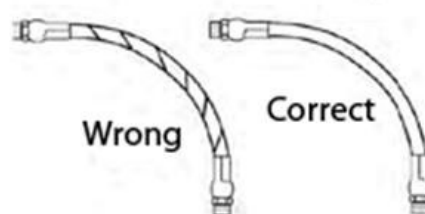
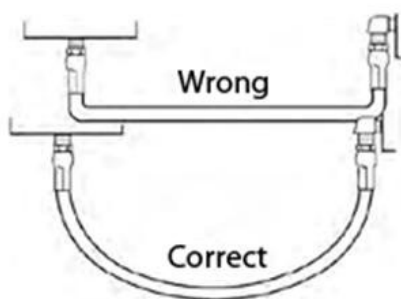
Rear Passenger Cylinder Extend Port to Manifold A3 = Green 4 ft

Rear Passenger Cylinder Retract Port to Manifold B3 = Black 4 ft

Rear Driver Cylinder Extend Port to Manifold A4 = Green 4 ft

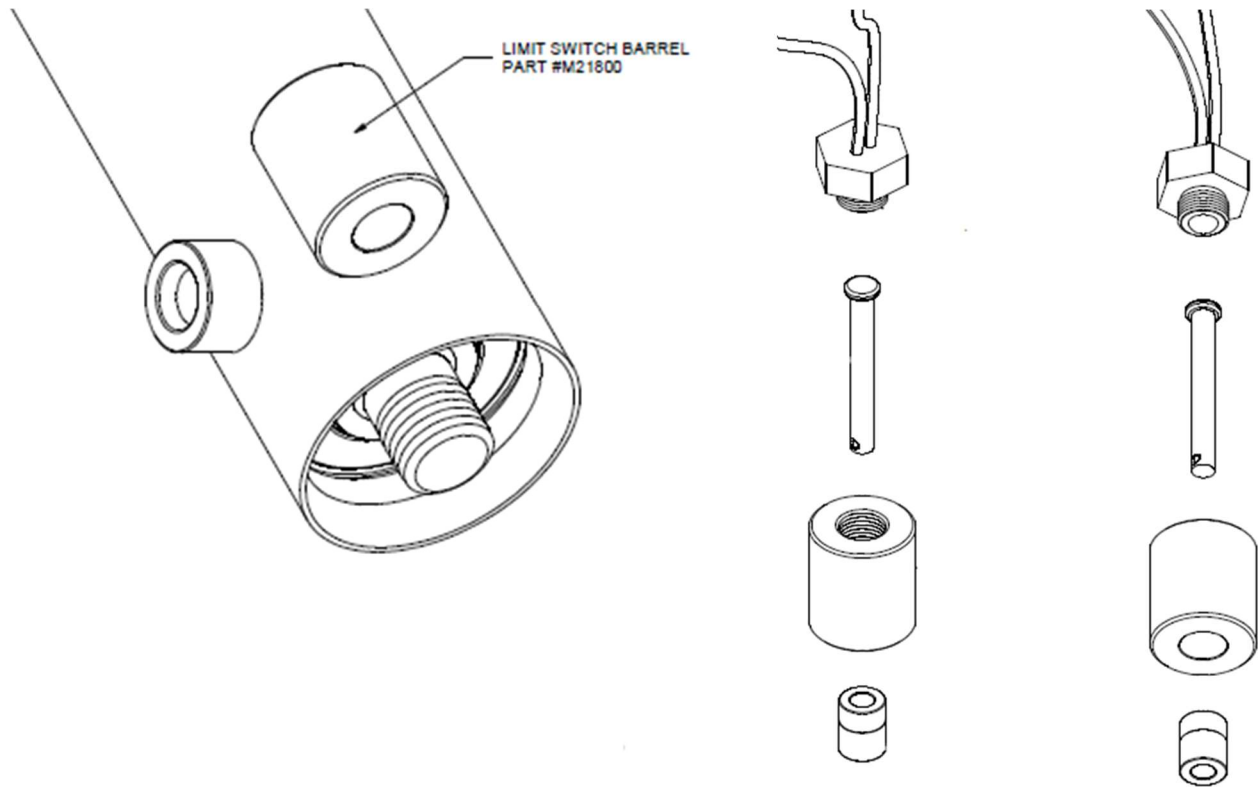
Rear Driver Cylinder Retract Port to Manifold B4 = Black 4 ft

When routing the hose, avoid twisting the hose, keep bends long and sweeping, with slack. Avoid any areas where the bends could kink with tight turns or rub against moving, sharp or hot objects.



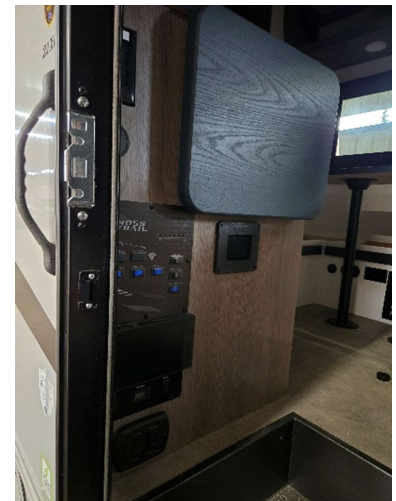
Limit Switches

Each cylinder has a mechanical switch that provides a signal to the controls when the cylinder is not fully stowed or retracted. Locate the limit barrel welded to each cylinder near the footpad as shown below. The barrel already has the white bushing installed from the bottom, need to install pin from the top and thread in the limit switch itself with 7/8" wrench, do not overtighten.



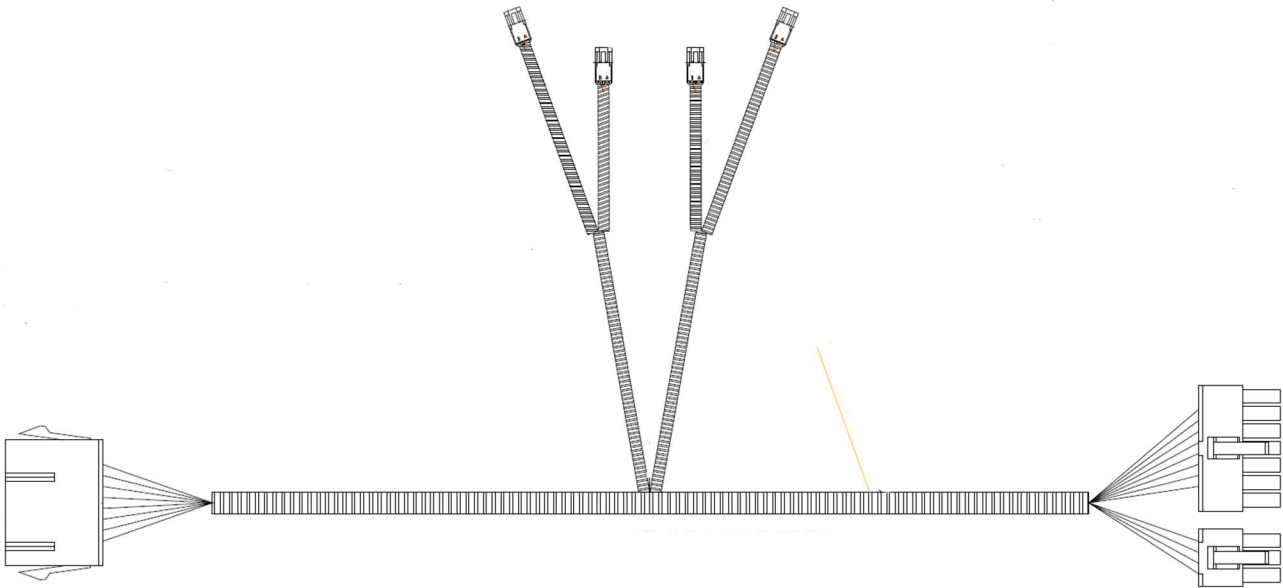
Electronics

Install the controller to a vertical surface, must be directly facing the front, rear, passenger or driver side of the vehicle. Controls cannot be mounted at angles or laying flat. Typical installation is near on or near the cabinetry or dinette near the RV side entry door. Controls may vary, but typically mounted as shown.



Electronics cont'd...

The harness shown below, each black Deutsch connector is routed to a cylinder limit switch, doesn't matter which one. The end with one 14-pin connector is routed and plugged into the pump harness. The end with one 14-pin connector and one 6-pin connector is routed inside the vehicle to the backside of the controller. The yellow wire needs to tie into an ignition or accessory hot wire from the vehicle, see next pages for details.



Battery Cable Installation

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 from the pump with copper strip to the 80 amp breaker AUX stud.
- The 2nd to run from the BAT stud on the breaker to the Positive Terminal on the RV house battery (not Ford 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. Ground cable (attached to central pump assembly, typically white 10ga. wire should be fastened to vehicle frame or extended to negative terminal on battery.

Transit ignition source option

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. The yellow wire enables the safety feature for the jacks down alarm to prevent drive offs and operating while the vehicle is in motion.



SYSTEM MAINTENANCE

For most Bigfoot landing gear and leveling systems...

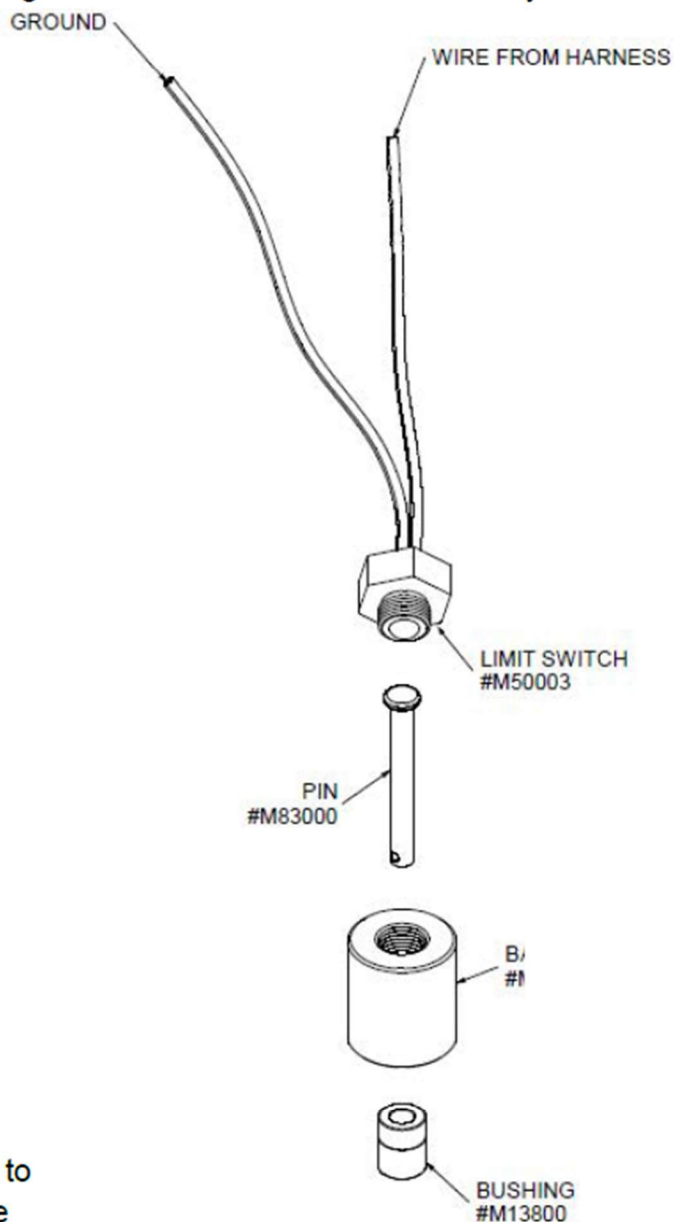
#1. Check the power supply to the Bigfoot system, RV house batteries, diesel chassis battery, trailer battery, etc. Test the voltage under load by using a volt meter and test your voltage with the system pump operating, if this drops below 10-11 volts, you may need to look into replacing the battery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

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

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

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

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



TROUBLESHOOTING

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

Control Panel shuts off during operation

This means the control is receiving less than 9.5v from your house batteries, please check and charge your batteries, then try again.

Cylinders not lifting or holding pressure

This means there is more than likely air in the system (not bleed during installation). Two methods, easy method is to enter manual mode and completely extend all four cylinders to full extension and leave for an hour, then retract, wait another 30 minutes before operating again. If this does not fix the issue then the secondary bleeding procedure must be done, see below for instruction.

Secondary air bleeding process

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

Cylinder will not operate, extend or retract

Attempt to bleed system first, verify that it will not operate in either direction. Then check all wires at the control panel to make sure they are inserted properly and plugged in(wires may be loose in connector). If this is all good, then check wiring at pump(s).

Warranty Guide

Owner must activate warranty! Via Phone or Website

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

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

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

Core charges may be applied and refunded on certain components.

Bigfoot is NOT responsible for:

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

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

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

Prior to any work being done an **authorization number must be obtained** by calling

269-483-9633 for Warranty Parts or Service Labor. For full warranty transcript just contact us!

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

Write down your system serial number here _____

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