

Mercedes Benz Sprinter 3500 Cutaway & Van Chassis
Version #10123



INSTALLATION & OPERATION USER MANUAL

AKC-MB2007, AKC-MB2019, PC-MB2007, PC-MB2019, AKC-MB5 & AKC-MB8

Also reference: AKC-MB3, AKC-MB4, AKC-MB7, PC-MB3, PC-MB4, PC-MB7

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United States Patents
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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.

System kits and instructions are based upon the **chassis' date of manufacture.**
(Not the RV's model year)

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General Tools Required:

- Cordless Impact Driver
- Cordless Drill
- 9/16" Drill Bit
- White Paint
- Ratchet Wrench
- 1/2" Socket (with extension)
- 5/8" Socket
- 11/16" Deep Socket
- 9/16" Deep Socket
- 3/4" Deep Socket
- 10mm Wrench
- 15mm Wrench
- 1/2" Wrench
- 9/16" Wrench
- 5/8" Wrench
- 11/16" Wrench
- 3/4" Wrench
- T-25 Torx Bit (3" long or use extension)
- 5/16" Socket Bit
- Small Phillips Screw Driver
- Flat Head Screw Driver

2019 and up Sprinter Front Cylinder Mounting

Starting with passenger side: Remove side step cover in cab, there are two torx screws on top (use T-25 torx bit) see Fig.1; and three at step floor under tapered caps, see Fig.2 for a close up of the tapered caps, use a flathead screw driver/knife to remove them by pulling outward (away from vehicle) and up, they will slide out.

Place drill template on step (Fig.3B) to mark holes shown in Fig.3A & Fig.8 on next page. Make sure template corner is in the rear corner of the step well and the bottom of the template is sitting flat against the floor of the step. Mark the four holes.

Remove template & drill the four holes with a 9/16" drill bit. Apply white spray paint to holes, let dry.

Pre-assemble two cylinders, as shown in Fig.4, place cylinder under cab in jack location (Fig.5 & Fig.6), elbow fittings should be installed on cylinder prior to mounting for best access. Make sure bolting surface of mounting bracket lines up with holes drilled in body. Insert four 7/16" x 1.5" bolts with flat washers from the outside, attach, but do not tighten, nuts and lockwashers on the inside at the bracket until later on.

Make sure lifting surface is tight to bottom of frame as seen in Fig.4 & Fig.7, If your kit was equipped with the 3/4" square tube 49" long, go ahead and fasten the bolts in the step walls when the cylinders are straight and see the "Front Crossbrace" page. Otherwise insert "Hole Catcher" aluminum block into existing hole in frame (Fig.4/7), then tighten 7/16" x 3" full threaded bolt and lockwasher so hole catcher draws tight. Make sure cylinder is straight, then tighten 7/16" x 1.5" hardware on outside of body, (11/16" wrench, 5/8" socket) tighten to 70 ft/lbs. If cylinder is not straight, loosen 1/2" bolts on cylinder with 3/4" wrenches and/or 7/16" bolts in body, straighten cylinder, re-tighten with 3/4" tools. Final install should look like Fig.8 from the outside.

Re-install step cover and tapered plugs with original torx screws.

Repeat on driver side,
there will be no bottle jack.

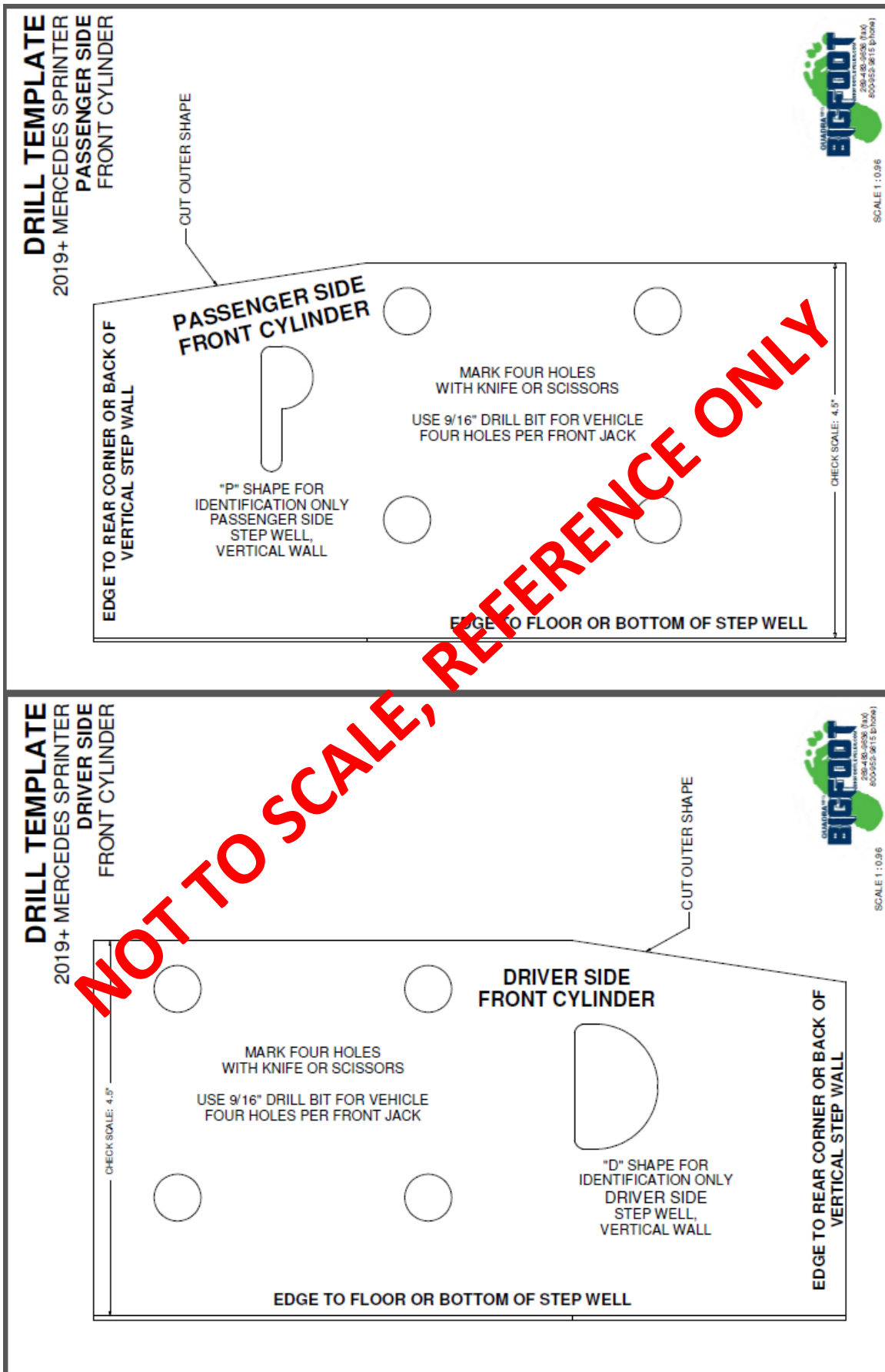


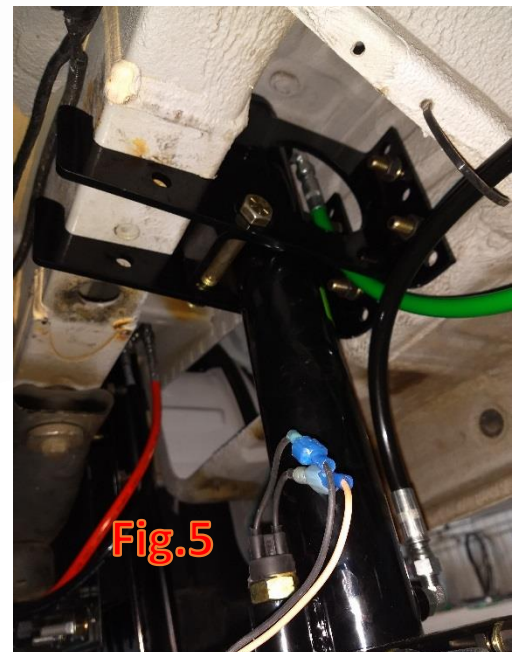
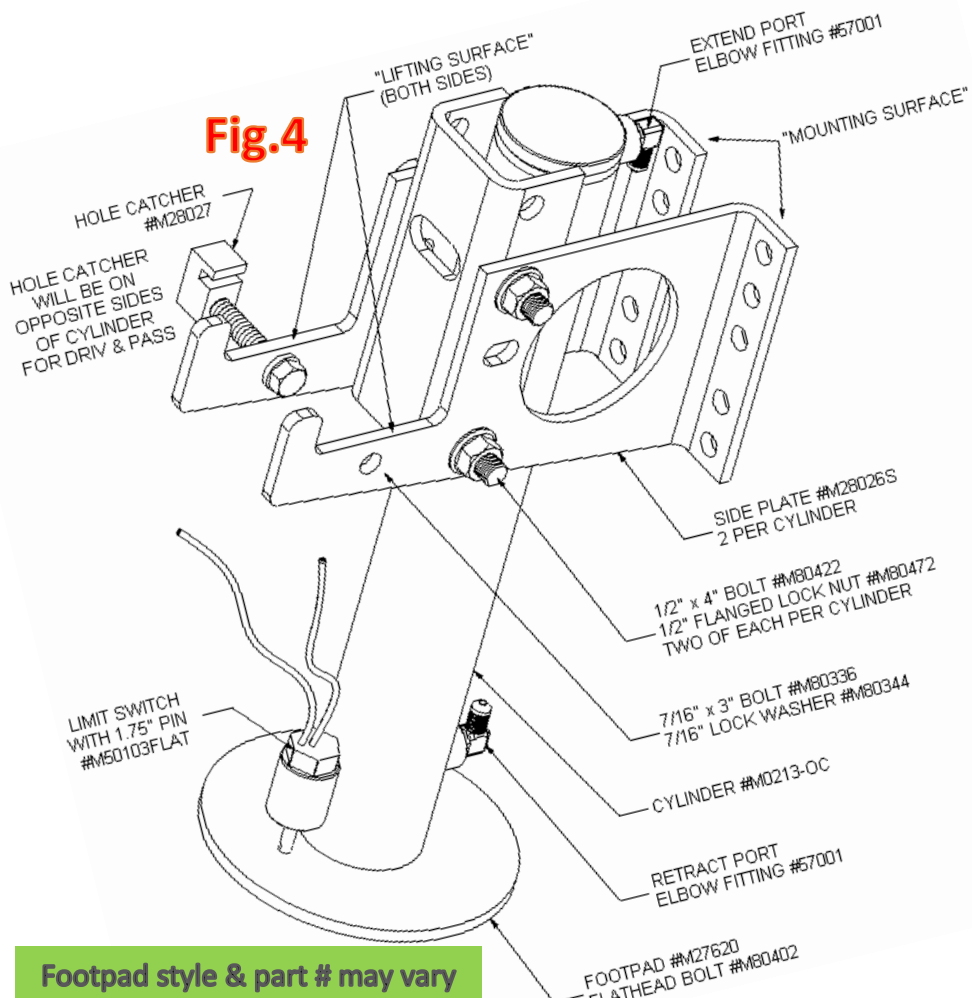
Make sure template against back
of step & flat surface on step.

Paper drill templates for front cylinders should be included with this installation manual.

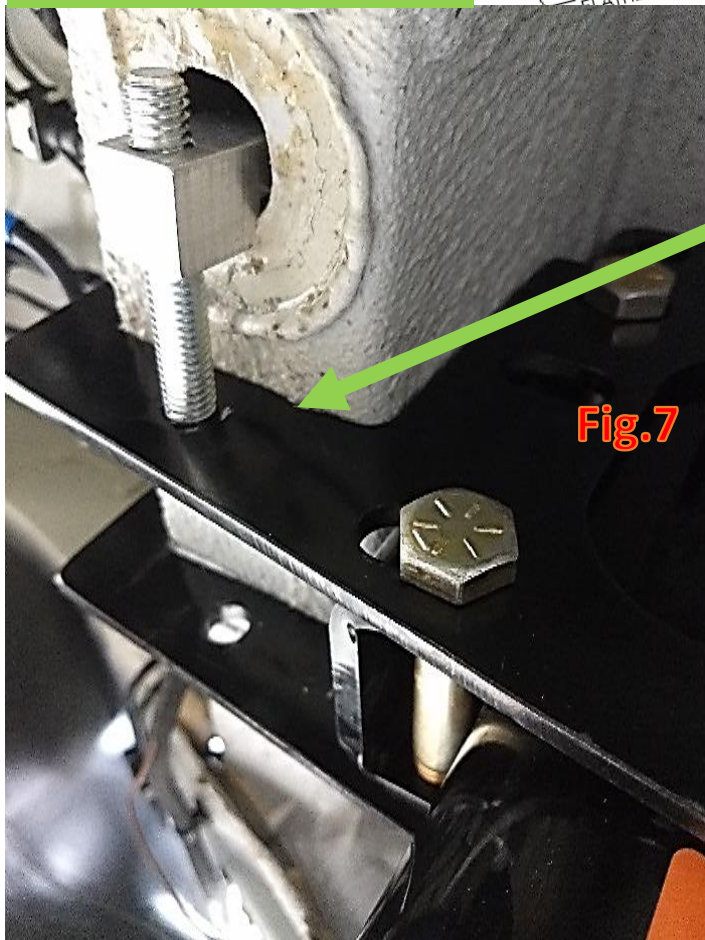
They can also be downloaded at <http://www.thebigfootleveler.com>

Templates below are not to scale, for identification only.





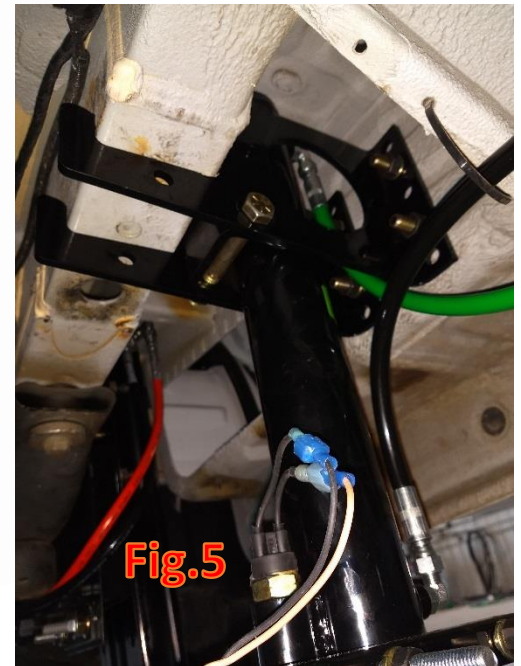
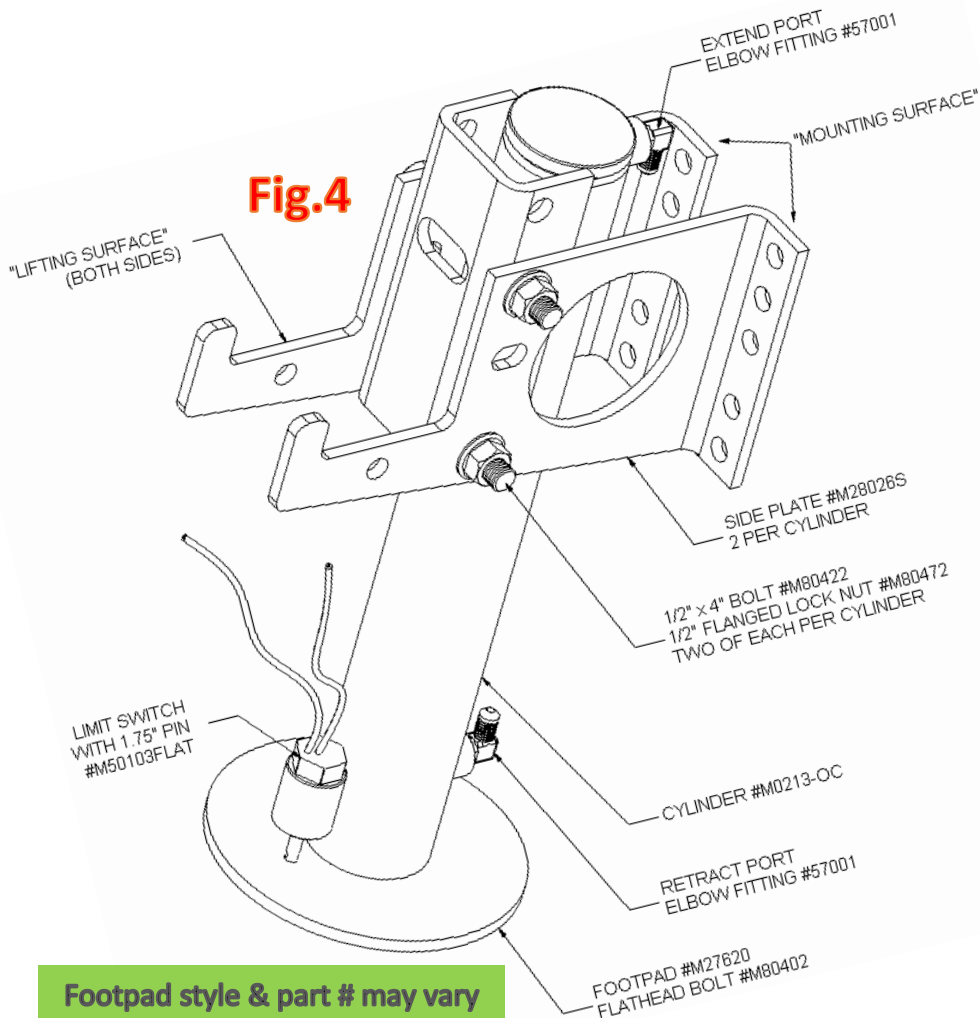
Footpad style & part # may vary



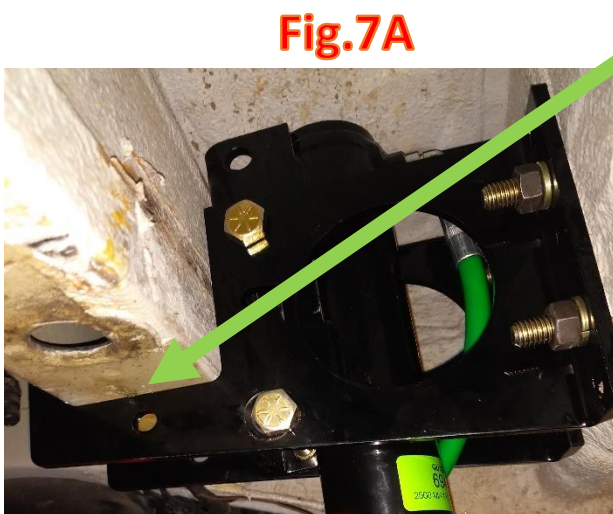
BOTH BRACKET LIFTING SURFACES MUST BE TIGHT TO BOTTOM OF FRAME, HOLE CATCHER WILL BE ON OPPOSITE SIDES FROM DRIVER TO PASSENGER CYLINDER.



If your system came with front crossbrace (see Fig.8C)... Use these pages for front cylinder mounting, your kit will NOT have the hole catchers. Crossbrace is not required as long as you have hole catchers installed.

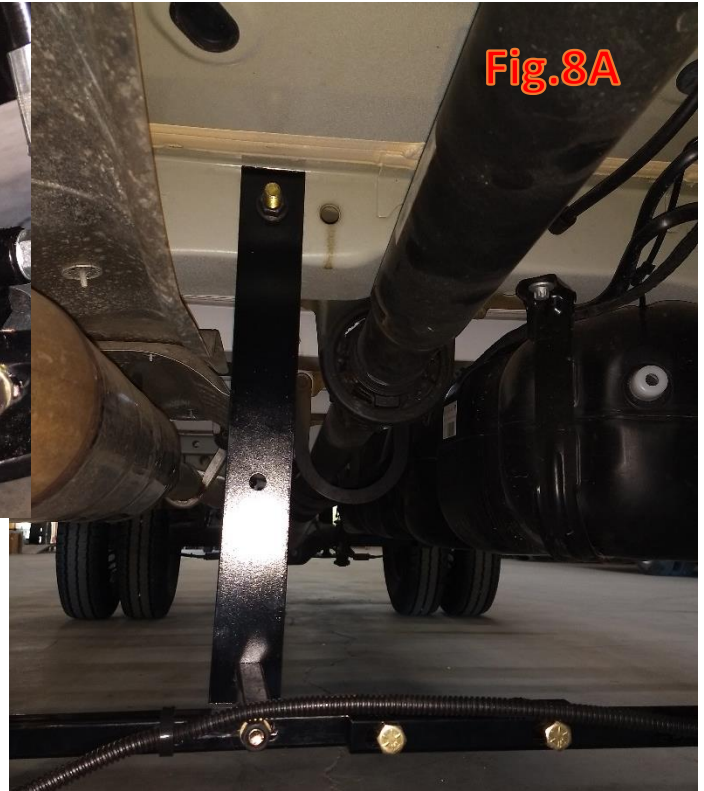
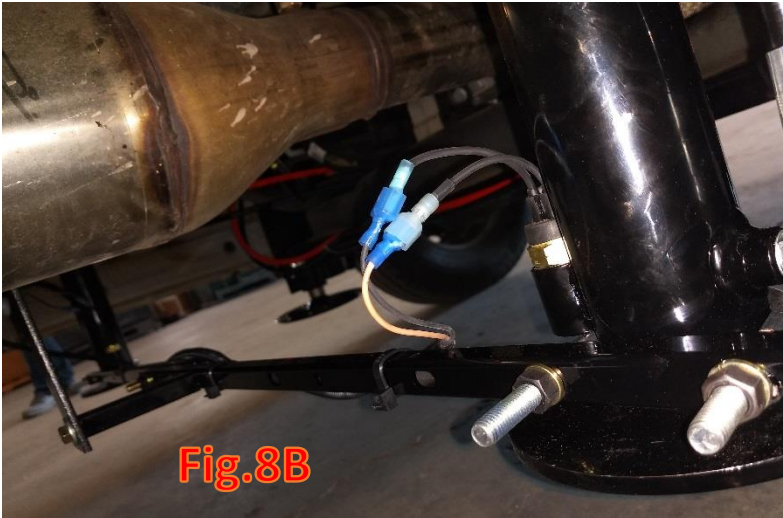


BOTH BRACKET LIFTING SURFACES MUST BE TIGHT TO BOTTOM OF FRAME!



Front Crossbrace (If equipped, again not required as long as hole catchers are installed)

Crossbrace is attached to each cylinder with a 3/8" U-bolt, nuts and lockwashers and to the "hanger" which utilizes an existing hole in the Mercedes cross-member (shown Fig.8A). Original design is a two-piece crossbrace (3/4" tubing) as shown in Fig.8A & Fig.8B, production versions will be one-piece as shown in Fig.8C.



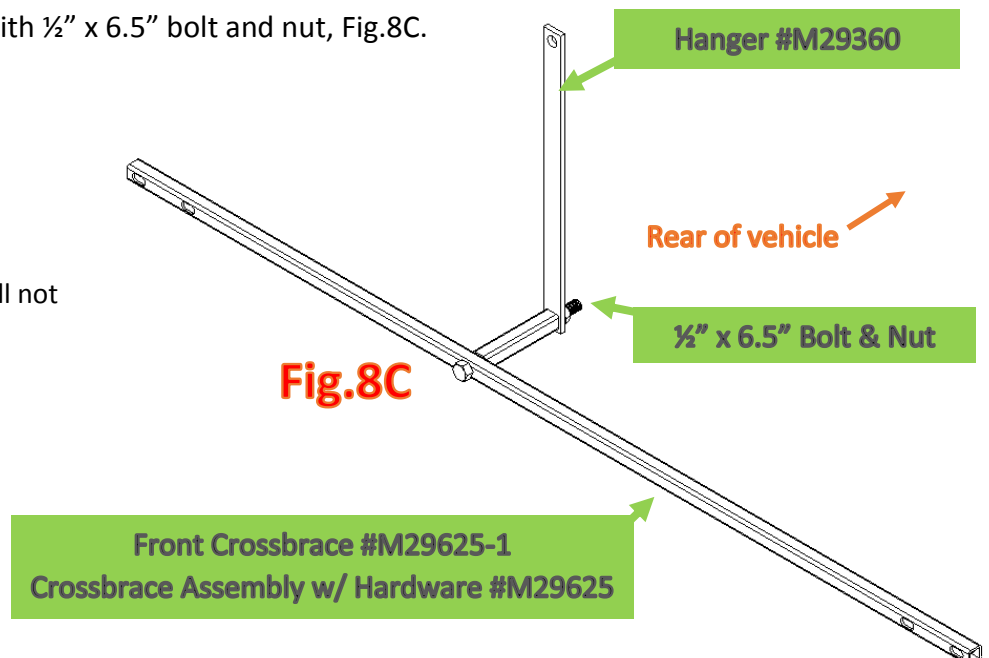
Crossbrace assembly shown in Fig.8C.

Bolt hanger to existing hole in Mercedes frame crossmember as shown in Fig.8A, using supplied 1/2" x 5.5" bolt, flat washer & nut (3/4" socket/wrench).

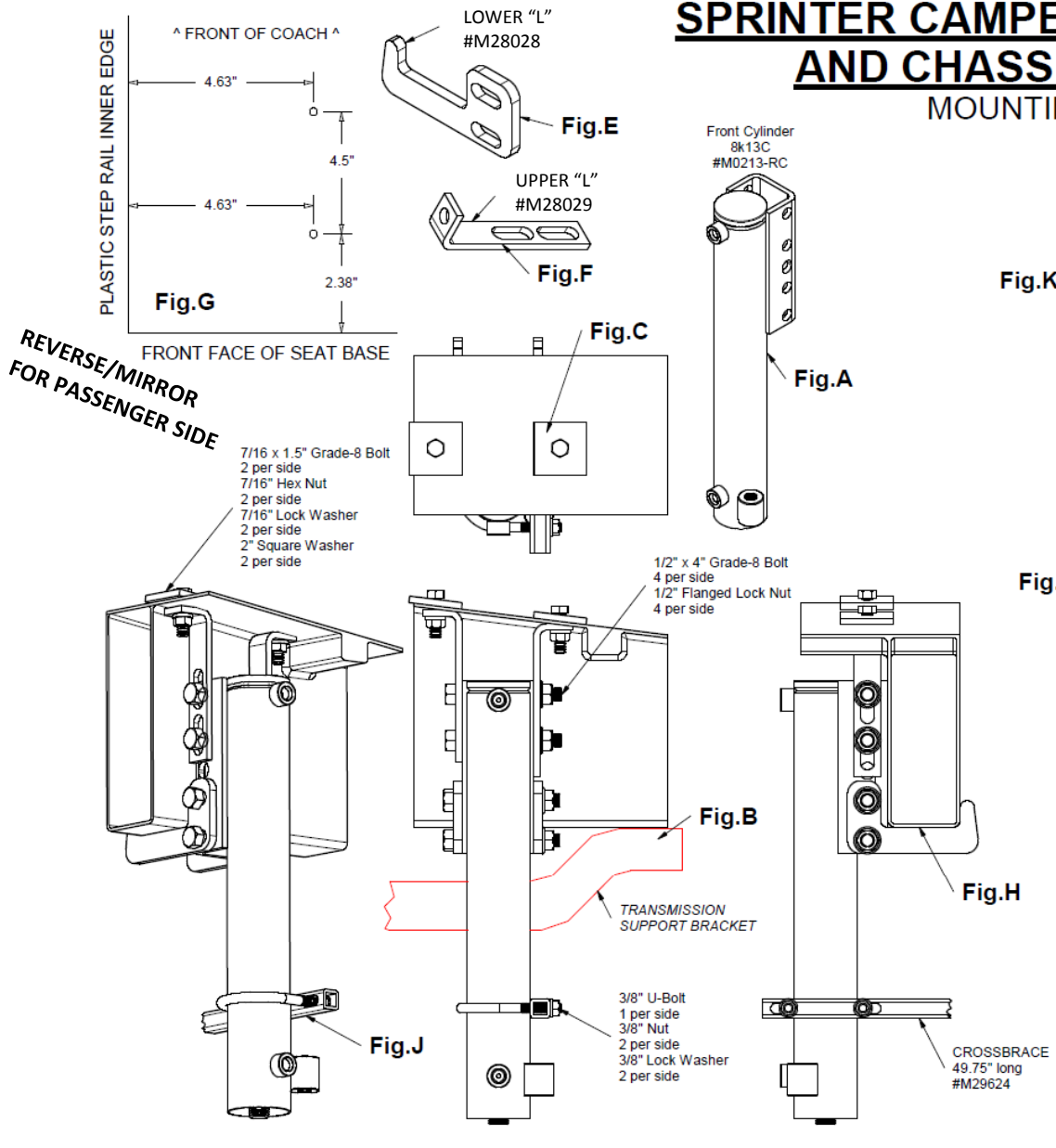
Mount crossbrace (with spacer pre-welded) to each cylinder using the U-bolts, nuts & lockwashers with 9/16" wrench or deep socket. Note how U-bolts slide under limit switch barrel and between limit switch pin and cylinder housing. Crossbrace should be just above the footpad, and mounted to rear side of cylinder, Fig.8B.

Now fasten hanger and crossbrace with 1/2" x 6.5" bolt and nut, Fig.8C.

If your kit came with these parts, you will not have or need the hole catchers.



SPRINTER CAMPER VAN CLASS-B AND CHASSIS CAB CLASS-C MOUNTING FRONT CYLINDERS



The front cylinder setup is the same on a Sprinter Chassis Cab Class-C and a Sprinter Camper Van Class-B. First, locate area under vehicle front cab in front of the driver's seat on the outside face of the frame. See (Fig.B and Fig.M) above showing the transmission support bracket attached to the frame, our cylinder's Lower "L" Bracket (Fig.E) will slide between that support bracket and the bottom face of the frame (Fig.C). Prior to mounting, attach the Top "L" (Fig.F) and Lower "L" (Fig.E) Brackets to the cylinder (Fig.A) loosely, do not tighten as adjustments may be required using the supplied 1/2" x 4" long Bolts and Flanged Lock Nuts, do this for both cylinders.

Find your supplied "Sprinter Drill Template" (sheet of paper) or use the measurements shown in (Fig.G). Drill two 1/2" holes in the locations above and spray each hole with white primer for corrosion resistance.

Now place one cylinder on a floor jack and set in place. Make sure Lower "L" Bracket is "cupping" the frame tightly by lifting the cylinder with the floor jack creating a rock solid mating/lifting surface (Fig.H). Insert supplied 7/16" Bolts with Lock Washers, Nuts and Square Washers through the new holes from inside the cab as shown in (Fig.C and Fig.K) to fasten the Top "L" Brackets to the floor (keep semi-loose). Repeat on other side.

Mount the supplied 3/4" Square Crossbrace with supplied 3/8" U-bolts, Nuts and Lockwashers as shown in (Fig.J), keep semi-loose. Do for both sides.

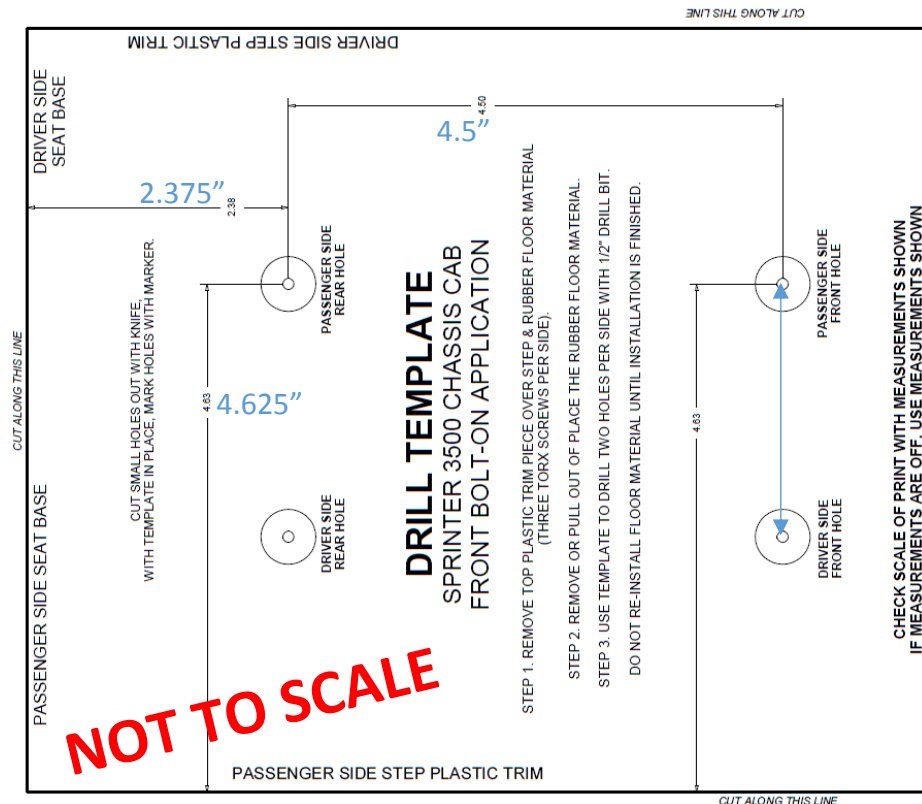
Finally, verify both cylinders are as straight and level as possible before tightening every thing to the following specs below:
1/2" hardware: 120ft/lbs., 7/16" hardware: 70 ft/lbs., 3/8" hardware: 50 ft/lbs.

What drill template

Looks like for the

2007-2018 Sprinter

front cylinders...



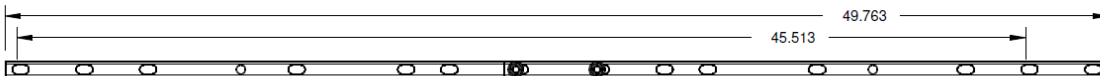
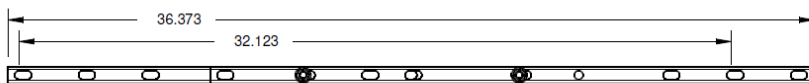
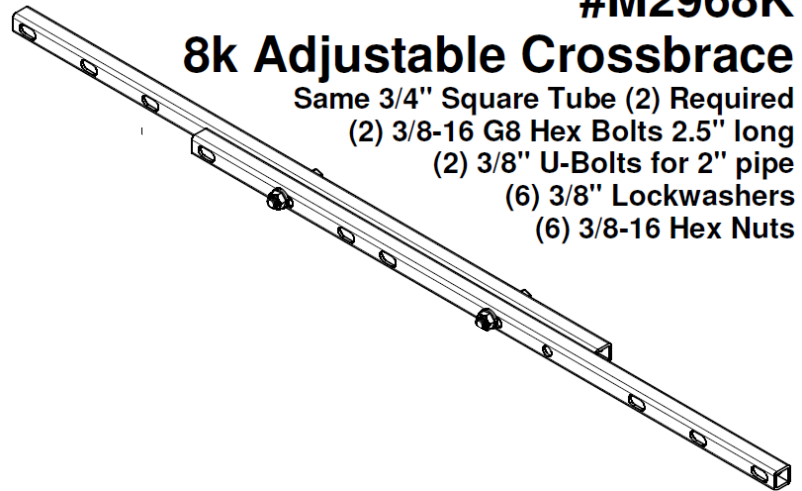
If your kit did not come with a cross-brace...

Then it is not required, or found to be un-necessary for that application...

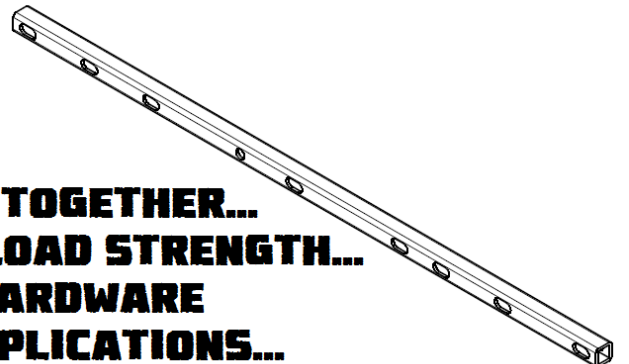
Continue to next step....

#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



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



8K13 CHANNEL CYLINDER BOLTED IN POSITION "A" UTILIZING EXISTING HOLES IN FRAME FURTHER BACK



Rear Cylinder Mounting Setup Position “A” from previous page...

Rear cylinders do not require any additional mounting brackets, so pre-assembly will be the same as Fig.4 except for the side plates, hole catcher and hardware mentioned. You will still want to pre-install the elbow fittings, maybe slightly rotate them as shown in Fig.11 for each side for increased clearance from bolts.

Cylinders utilize the same mounting holes as the frame extension, see Fig.11B. Kit will come with 6.5” and 8” long ½” mounting bolts. The four 8” are used when a coach has a frame extension (fit most models) as shown below, the 6.5” long bolts can be used when there is no frame extension. (Make sure other bolts holding frame extension will clear cylinder fitting, Fig.11). Typically cylinders will be placed on the inside of the vehicle frame (Fig.10). However, if there is room on finished unit, cylinders could be mounted to outside of frame extension or staggered (one inside and one outside) as well.

Make sure cylinders are level or straight, then tighten ½” bolts to 120ft/lbs. using ¾” socket and wrench.

Rear cylinders can be mounted on the outside of the frame extension as well

Fig.10, make sure extend fitting clears bolt, may need shorter bolt or add washers for additional clearance.

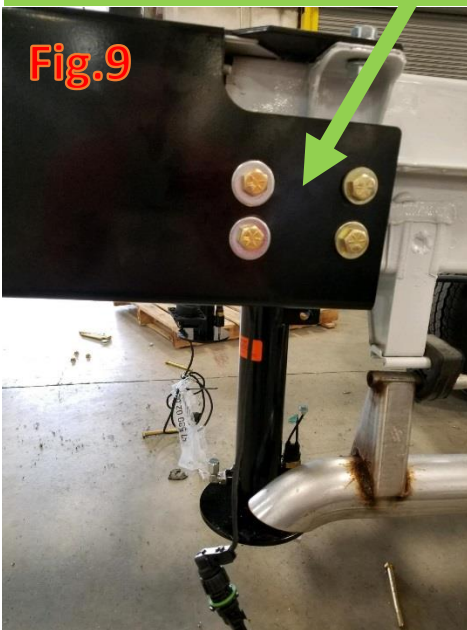
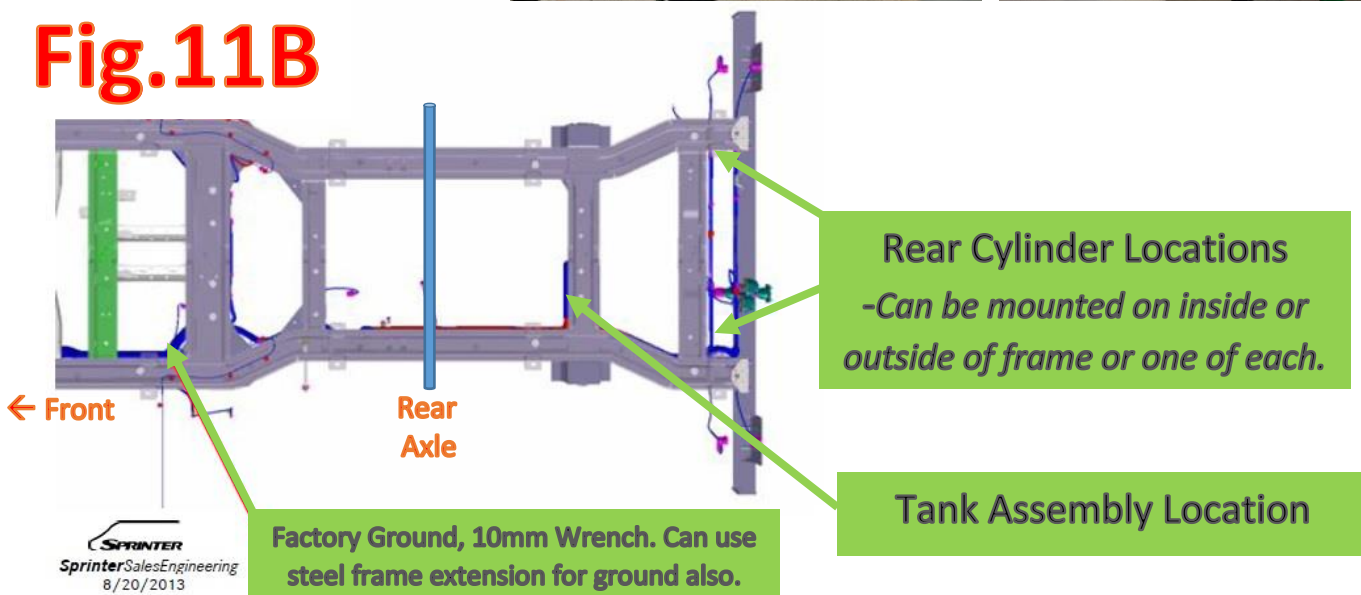


Fig.11B



Rear Cylinder Mounting Setup Position “B” from page 9...

See the diagram on page 9 for locations and visual confirmation on how this system attaches to the vehicle’s frame. This is a bolt-on system and requires no drilling or welding.

Cylinder Preparation

Install the Elbow fittings on the lower & top ports of the jacks. Take care not to overtighten and break the fittings, just needs to squeeze the o-ring. You can always check the fittings for fluid or final tightening during bleeding process later on. The foot pads can be installed now or after the jacks are installed. Must use an impact, do not turn counter-clockwise. Use the ¾” jam nut OR Allen hex flat head bolt (threadlocker required for bolt) to attach depending on footpad style.

Location

The center of the brackets & jacks should be roughly 15” from center of rear axle, just between the sway bar link bracket and a body mount.

Driver Side

First place the M28038 brackets and M28035 bracket on driver’s side frame rail in the location listed above. To hold the two brackets up place two 5 ½” bolts & ½” lock nuts (head side to outside of rail) thru the holes as shown in the diagram. Then place the M28037 brackets (both are the same) on the bolts and have the locknuts ready to keep the assembly from falling. Now place the bottom bolts and nuts thru holes, prior to tightening, make sure bottom bolts tight to frame. Insert cylinder with ½” x 4” long bolts two per cylinder, see different height positions for mounting, you want between 6-8” of ground clearance when finished, both cylinders to be at the same height. Tighten bolts to brackets when they are straight and level.

Passenger Side

Use the M28030 bracket & longer 9” bolts & ½” lock nuts due to the exhaust on this side. Follow the same instructions as the driver side. If you don’t have exhaust in this area and want a wider stance, call and order another M28035 bracket and 5 ½” bolts.

Crossbrace

Attach using the supplied U-Bolts, 3/8” nuts & lock washers, make sure it is level prior to tightening. Modification may be required to clear parts, like drilling additional holes for U-bolts or cutting excess tube.

NOTE: Installations may require modifications...

Certain vehicles & RV models may require modifications to the following: Weld-on brackets, Extending limit switch wires & battery cables, Re-routing vehicle exhaust and RV plumbing or wiring, Modification to sub-floor brackets or joists, Storage boxes & Floors.

Make sure the proper hardware is used in the proper locations. Everything should be attached and level prior to tightening. All hardware to be fastened to following torque specs:

1/2” (5 ½” & 9” Bolts) = Torqued to 120ft/lbs.

7/16” (1 ½” Bolts) = Torqued to 70 ft/lbs.

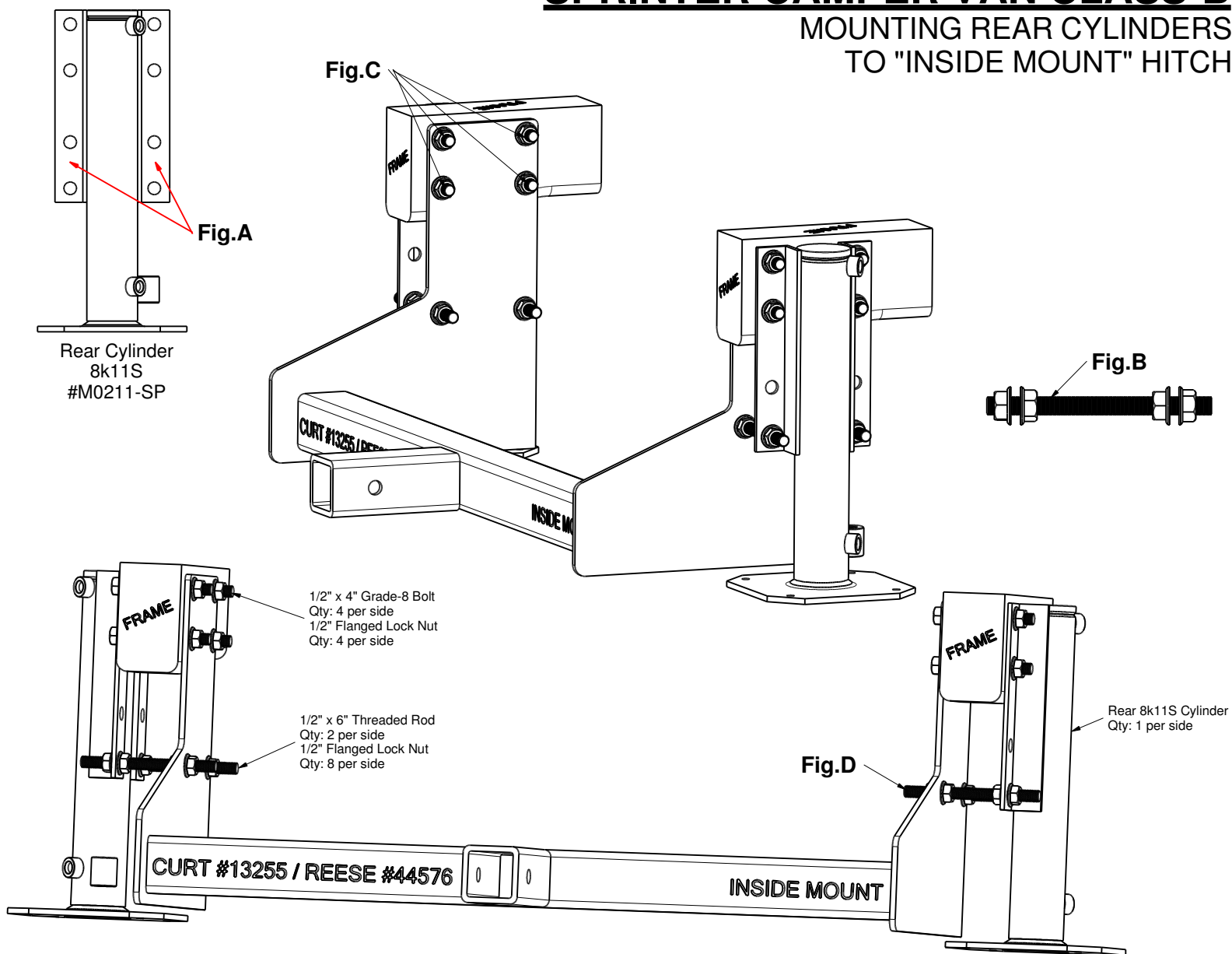
3/8” (U-Bolts) = Torqued to 45 ft/lbs.

3/4” (Nuts for Foot Pads) = Impact must be used and one to two threads should be visible past nut.

Allen head foot bolts require thread locker prior to installing, do not go counter clockwise, torque to 80 ft/lbs.

SPRINTER CAMPER VAN CLASS-B

MOUNTING REAR CYLINDERS TO "INSIDE MOUNT" HITCH



Typical Sprinter Van's have two basic hitch options: 1. "Inside Mount" which refers to the mounting plates bolting in-between the frame rails on the inside surface. 2. "Outside Mount" which refers to the mounting plates mounting on the outside surface of the frame rails.

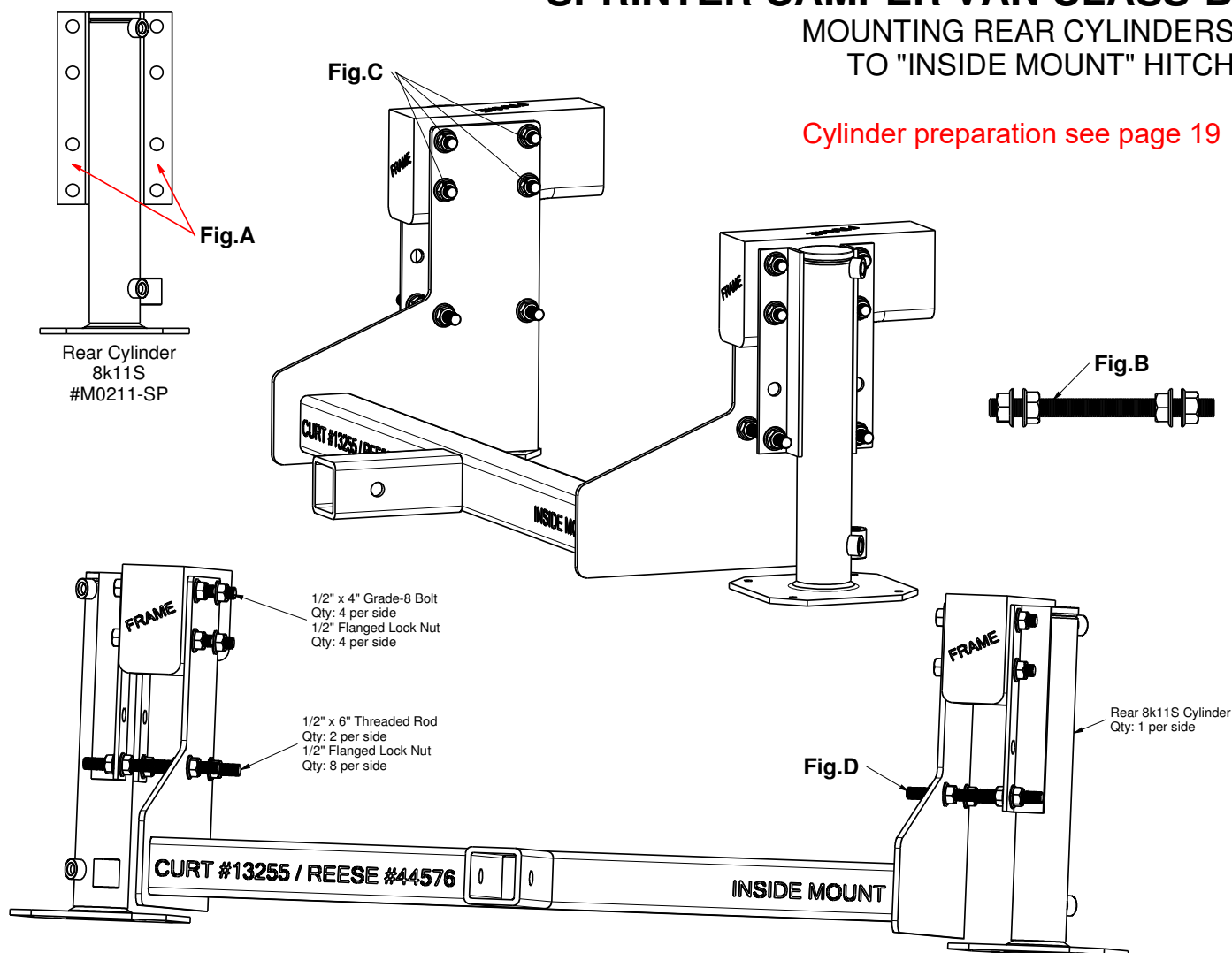
For the inside mount hitch setup, start by removing the four mounting bolts on one side of the hitch (Fig.C). Remove the hitch's backing plate (if equipped) from the outside surface of the frame rail (opposite hitch mounting plate). Place cylinder in location and insert the supplied 1/2" x 4" long Grade-8 Bolts and Flanged Lock Nuts "sandwiching" the frame with the hitch mounting plate and the hydraulic cylinder. Make sure the cylinder is level and straight prior to tightening each bolt to 80 ft/lbs. Repeat for the other side.

Now that each cylinder is bolted to the frame on each side, it is time to fasten the cylinders to the hitch for side load capacity. Locate the two bottom un-used holes in the cylinder's brackets (Fig.A). Make two marks on the outside surface of the hitch mounting plate even with these two holes for each cylinder. Drill a 1/2" clearance hole (17/32" recommended drill size) at each mark (four total, two per side). Now place the supplied threaded rod as shown in Fig.D with the supplied Flanged Lock Nuts oriented in the manner shown in Fig.B. Tighten all four rods (four nuts per rod) to 70 ft/lbs.

AKC-MB5 or AKC-MB8 Rear Cylinder Mounting Setup #1

SPRINTER CAMPER VAN CLASS-B MOUNTING REAR CYLINDERS TO "INSIDE MOUNT" HITCH

Cylinder preparation see page 19



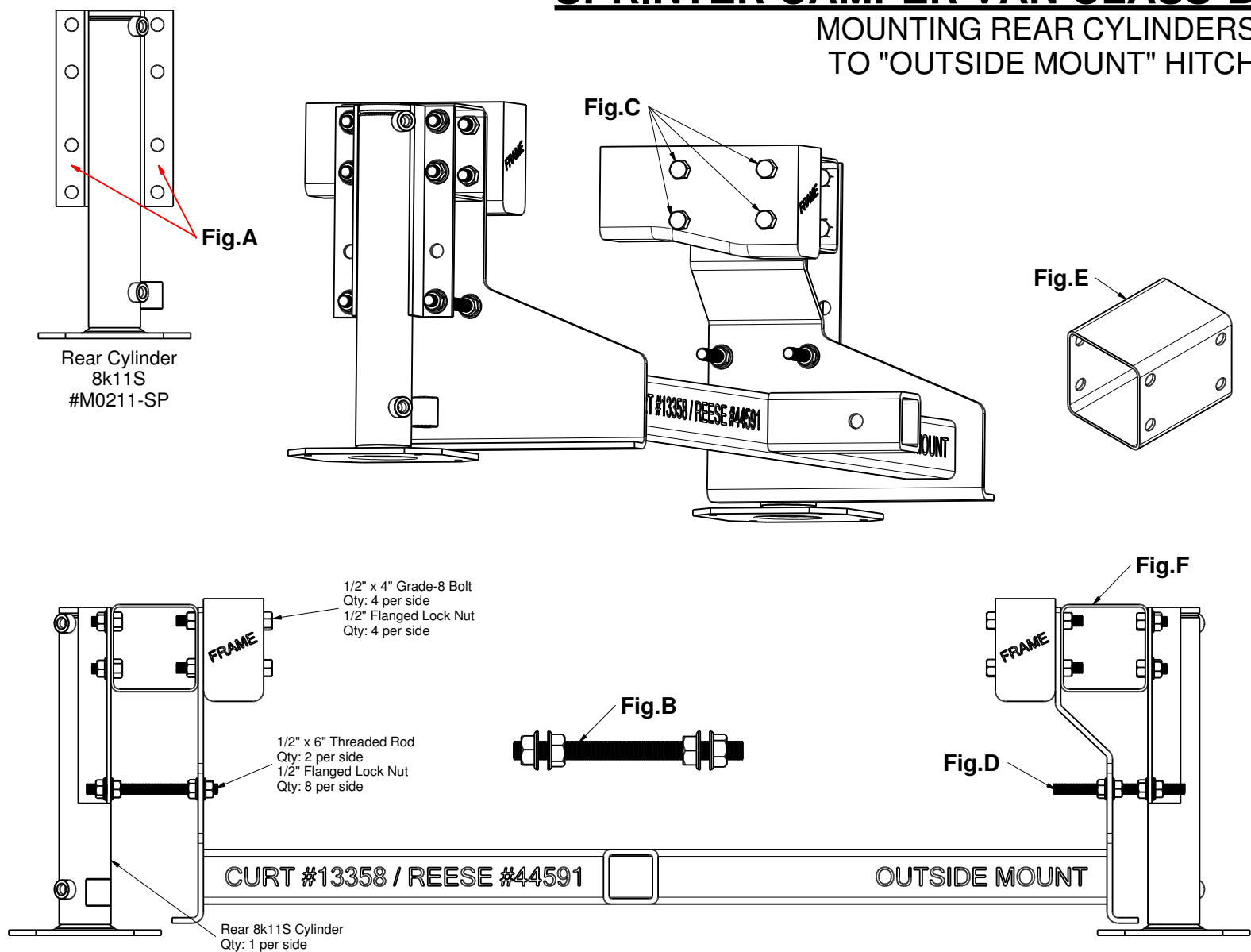
Typical Sprinter Van's have two basic hitch options: 1. "Inside Mount" which refers to the mounting plates bolting in-between the frame rails on the inside surface. 2. "Outside Mount" which refers to the mounting plates mounting on the outside surface of the frame rails.

For the inside mount hitch setup, start by removing the four mounting bolts on one side of the hitch (Fig.C). Remove the hitch's backing plate (if equipped) from the outside surface of the frame rail (opposite hitch mounting plate). Place cylinder in location and insert the supplied 1/2" x 4" long Grade-8 Bolts and Flanged Lock Nuts "sandwiching" the frame with the hitch mounting plate and the hydraulic cylinder. Make sure the cylinder is level and straight prior to tightening each bolt to 80 ft/lbs. Repeat for the other side.

Now that each cylinder is bolted to the frame on each side, it is time to fasten the cylinders to the hitch for side load capacity. Locate the two bottom un-used holes in the cylinder's brackets (Fig.A). Make two marks on the outside surface of the hitch mounting plate even with these two holes for each cylinder. Drill a 1/2" clearance hole (17/32" recommended drill size) at each mark (four total, two per side). Now place the supplied threaded rod as shown in Fig.D with the supplied Flanged Lock Nuts oriented in the manner shown in Fig.B. Tighten all four rods (four nuts per rod) to 70 ft/lbs.

SPRINTER CAMPER VAN CLASS-B

MOUNTING REAR CYLINDERS TO "OUTSIDE MOUNT" HITCH



Typical Sprinter Van's have two basic hitch options: 1. "Inside Mount" which refers to the mounting plates bolting in-between the frame rails on the inside surface. 2. "Outside Mount" which refers to the mounting plates mounting on the outside surface of the frame rails.

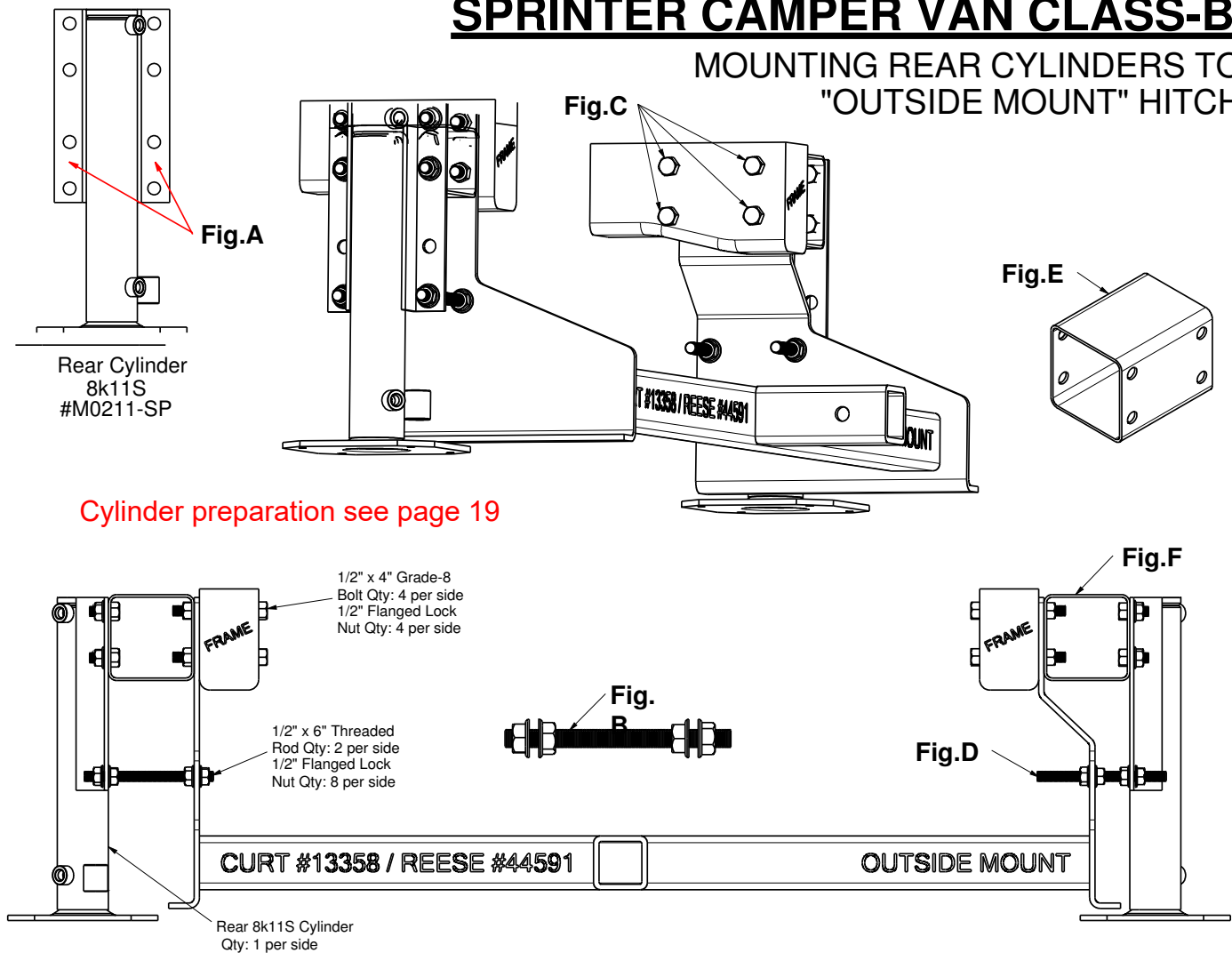
For the outside mount hitch setup, start by removing the four mounting bolts on one side of the hitch (Fig.C). Remove the hitch's backing plate (if equipped) from the outside surface of the frame rail (opposite hitch mounting plate). Place the Spacer Block (Fig.E) in location and insert the supplied 1/2" x 4" long Grade-8 Bolts and Flanged Lock Nuts "sandwiching" the frame with the hitch mounting plate and the Spacer Block (shown in Fig.F), tighten to 70 ft/lbs. Now place the Hydraulic Cylinder and line the holes up with the Spacer Block and fasten to the Block with supplied 1/2" x 1.5" long Grade-8 Bolts and Flanged Lock Nuts (four per side). Make sure the cylinder is level and straight prior to tightening each bolt to 80 ft/lbs. Repeat for the other side.

Now that each cylinder is bolted to the frame on each side, it is time to fasten the cylinders to the hitch for side load capacity. Locate the two bottom un-used holes in the cylinder's brackets (Fig.A). Make two marks on the outside surface of the hitch mounting plate even with these two holes for each cylinder. Drill a 1/2" clearance hole (17/32" recommended drill size) at each mark (four total, two per side). Now place the supplied threaded rod as shown in Fig.D with the supplied Flanged Lock Nuts oriented in the manner shown in Fig.B. Tighten all four rods (four nuts per rod) to 70 ft/lbs.

AKC-MB5 or AK-MB8 Rear Cylinder Mounting Setup #2

SPRINTER CAMPER VAN CLASS-B

MOUNTING REAR CYLINDERS TO "OUTSIDE MOUNT" HITCH



Cylinder preparation see page 19

Typical Sprinter Van's have two basic hitch options: 1. "Inside Mount" which refers to the mounting plates bolting in-between the frame rails on the inside surface. 2. "Outside Mount" which refers to the mounting plates mounting on the outside surface of the frame rails.

For the outside mount hitch setup, start by removing the four mounting bolts on one side of the hitch (Fig.C). Remove the hitch's backing plate (if equipped) from the outside surface of the frame rail (opposite hitch mounting plate). Place the Spacer Block (Fig.E) in location and insert the supplied 1/2" x 4" long Grade-8 Bolts and Flanged

Lock Nuts "sandwiching" the frame with the hitch mounting plate and the Spacer Block (shown in Fig.F), tighten to 70 ft/lbs. Now place the Hydraulic Cylinder and line the holes up with the Spacer Block and fasten to the Block with supplied 1/2" x 1.5" long Grade-8 Bolts and Flanged Lock Nuts (four per side). Make sure the cylinder is level and straight prior to tightening each bolt to 80 ft/lbs. Repeat for the other side.

Now that each cylinder is bolted to the frame on each side, it is time to fasten the cylinders to the hitch for side load capacity. Locate the two bottom un-used holes in the cylinder's brackets (Fig.A). Make two marks on the outside surface of the hitch mounting plate even with these two holes for each cylinder. Drill a 1/2" clearance hole (17/32" recommended drill size) at each mark (four total, two per side). Now place the supplied threaded rod as shown in Fig.D with the supplied Flanged Lock Nuts oriented in the manner shown in Fig.B. Tighten all four rods (four nuts per rod) to 70 ft/lbs.

Tank Assembly Mounting for “One Piece” Tank Mount Bracket

The tank bracket will come pre-assembled with hardware (Fig.12). Remove the top two 7/16” x 1” bolts and lower 7/16” nuts and set aside. Place the tank mount bracket on top of the frame in location Fig.11BA, Fig.14A & Fig.14 on next page, the tank body side will typically face front of vehicle, but can be oriented any direction.

The bottom two 7/16” bolts will be welded and you can hang the tank assembly to the bracket, the tank can be mounted in 1” increments to desired tank height, shown in pictures mounted flush with top of mount bracket, but can be lowered; Fig.12/13. Tighten two lower bolts with 7/16” nuts & lockwasher, Fig.12/13.

Now re-install each top bolt (Fig.12/13), these bolts will fasten the plate to tank bracket AND tighten bracket against the frame simultaneously, see Fig.12/13/14A.

Attach the two 7/16” x 1.5” bolts, lockwashers, nuts and black square washers (or one-piece plate) thru the front side of the bracket’s flange holes, Fig.12. Tighten bolts to “sandwich” to the frame’s flange.

Finally, tighten bolts on front side for the flange.

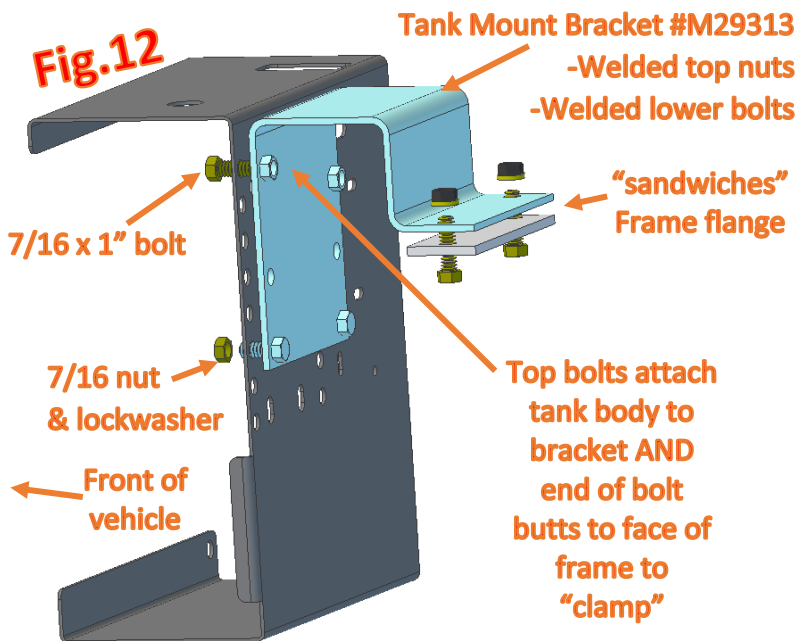
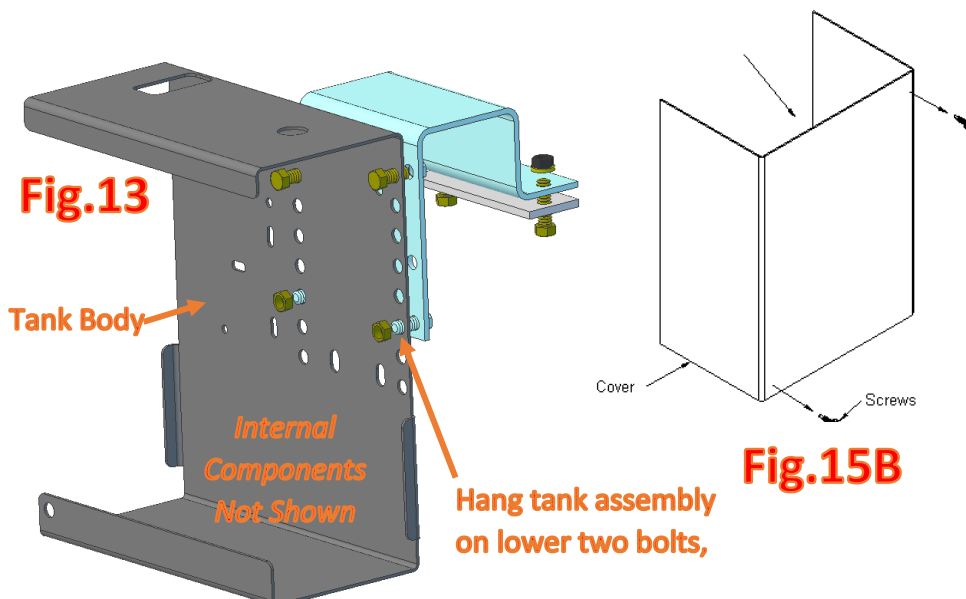
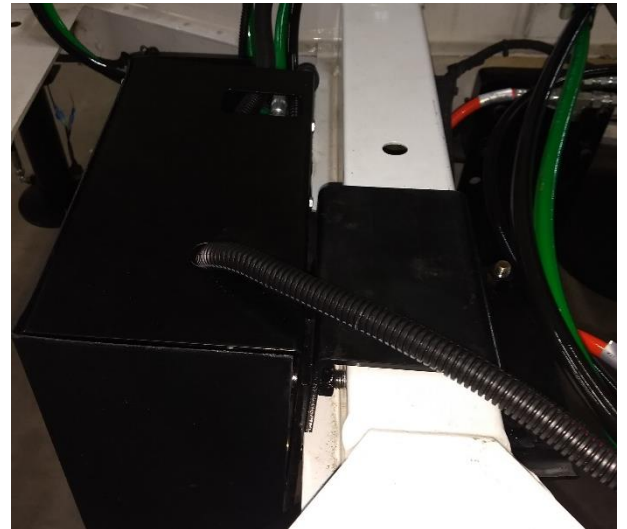


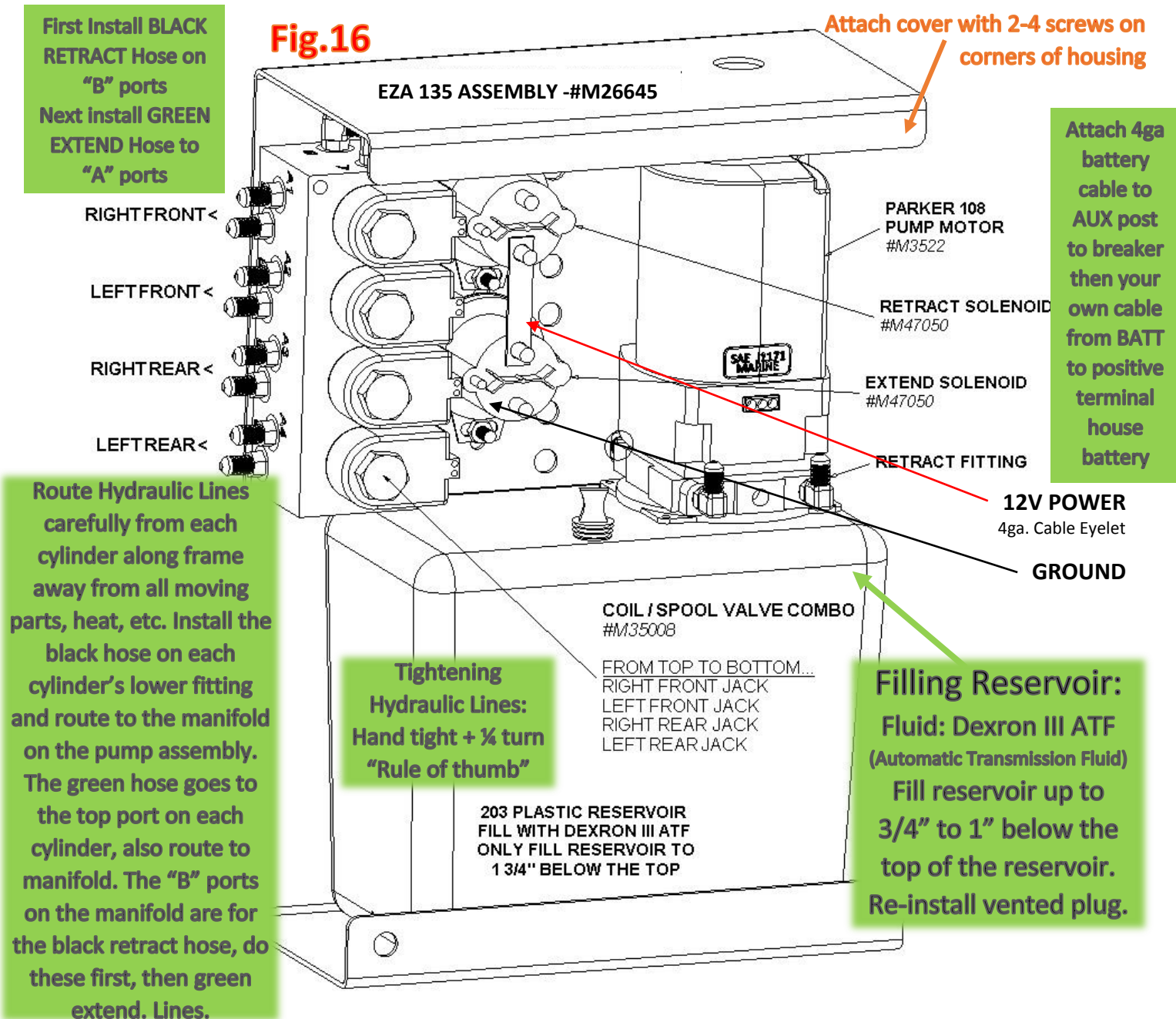
Fig.14A



Tank Assembly Diagram, Plumbing, Wiring, etc.

(Mount pump unit in vertical position as shown)

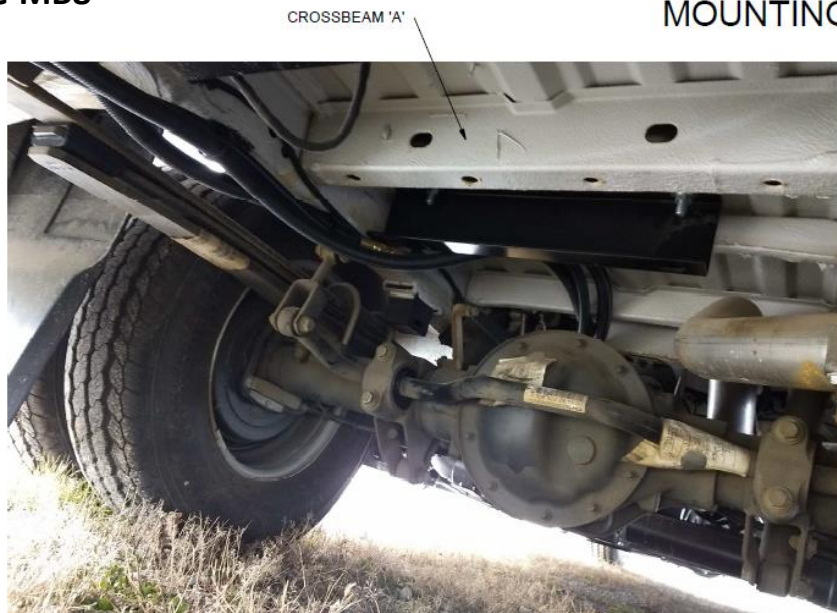
- Plumbing shown in Fig.16, use 15mm wrench and be careful not to **under or over-tighten** the hose fittings.
- The main wire harness will plug directly into the 14-pin connector that is pre-wired to the assembly.
- Route the ground cable (Fig.16) to a grounded frame surface or Mercedes ground stud, Fig.11B.
- Attach the supplied 15ft battery cable to one of the 5/16" studs with the copper strip & route to +12v source.
- Finally installing the plastic three sided tank cover (Fig.15B), to be done later on, fasten the tank cover with at least two self-threading screws, (5/16" bit) be careful not to puncture the plastic reservoir, Fig.15B.



Alternative pump mounting for MB6 & MB7 (hardware may not be included for cutaway kits)

AKC-MB8

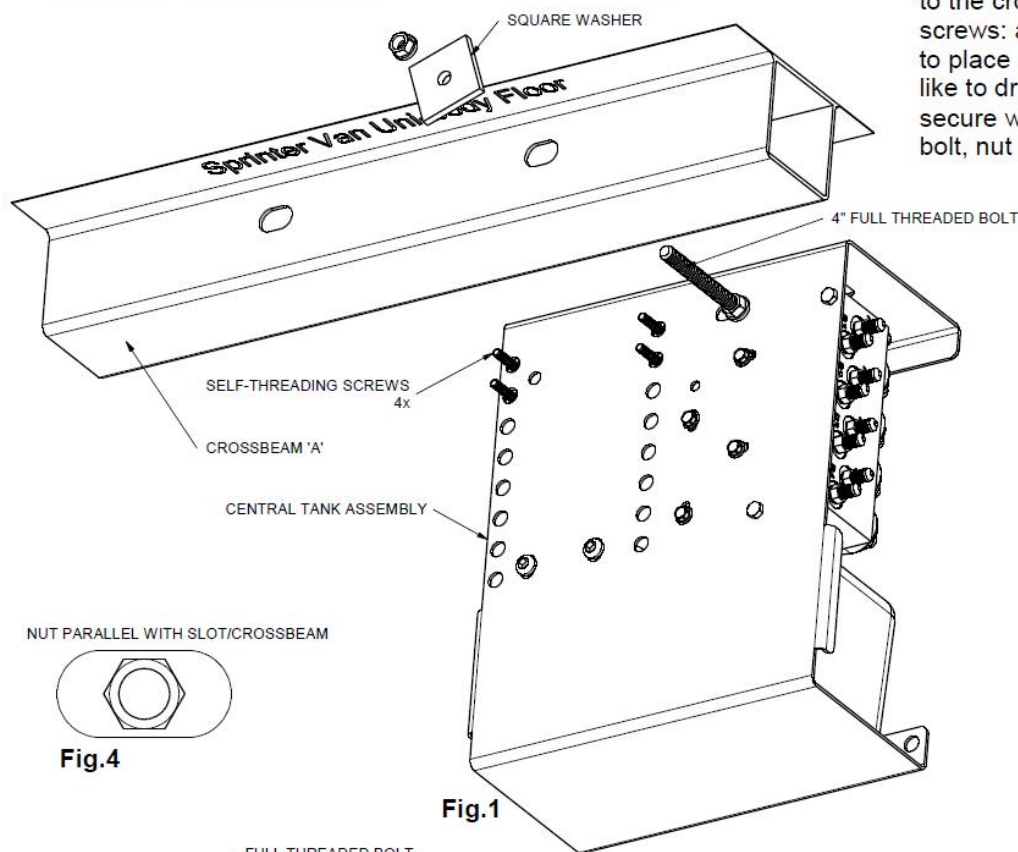
SPRINTER CAMPER VAN CLASS-B MOUNTING THE CENTRAL TANK ASSEMBLY



Locate the crossbeam shown to the left. The tank assembly can be mounted on either the front or rear face of the crossbeam.

Insert the 4" full threaded bolt thru the slotted hole shown in Fig.1 & Fig.2, fasten/tighten lockwasher and nut to backside of tank assembly as shown, keep nut parallel to the crossbeam (shown in Fig.4) as it will fit inside the slot in the crossbeam.

Hang tank assembly onto crossbeam by the 4" bolt through both ends of the slots in the crossbeam (Fig.1). Place square washer on backside of crossbeam and fasten/tighten the accompanied nut and lockwasher to 60 ft/lbs (Fig.3). Run all four supplied 5/16" self-threading screws into the holes shown in Fig.2 to finish mounting the tank assembly to the crossbeam. Alternative to self-threading screws: a second full threaded bolt is supplied to place inside one of the holes if you would like to drill a hole into the crossbeam and secure with the second supplied full threaded bolt, nut and lockwasher, fasten to 60 ft/lbs.



NUT PARALLEL WITH SLOT/CROSSBEAM



Fig.4

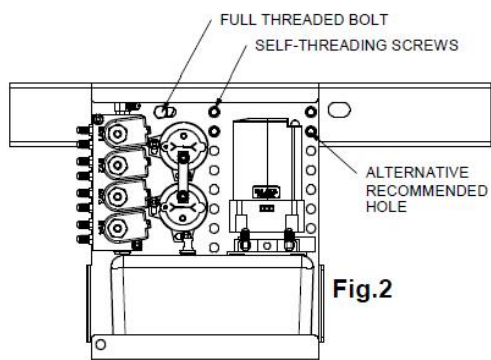


Fig.2

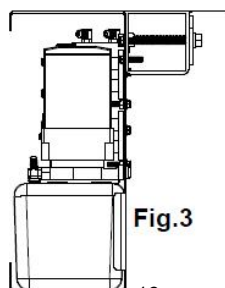


Fig.3

Main Wire Harness

The main wire harness (#M4810 or shorter #M41811) has two ends with plugs; the “control” end has a 14-pin connector and a 6-pin. This end will need to route to the control panel’s location (usually in wall of cabinet near entry 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 on each cylinder, it does not matter which limit switch the wires plug to, route best fit for your application. 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, take care not to pull on wires inside connector plugs.

Battery Cable & 80 amp Auto-Resetting Breaker

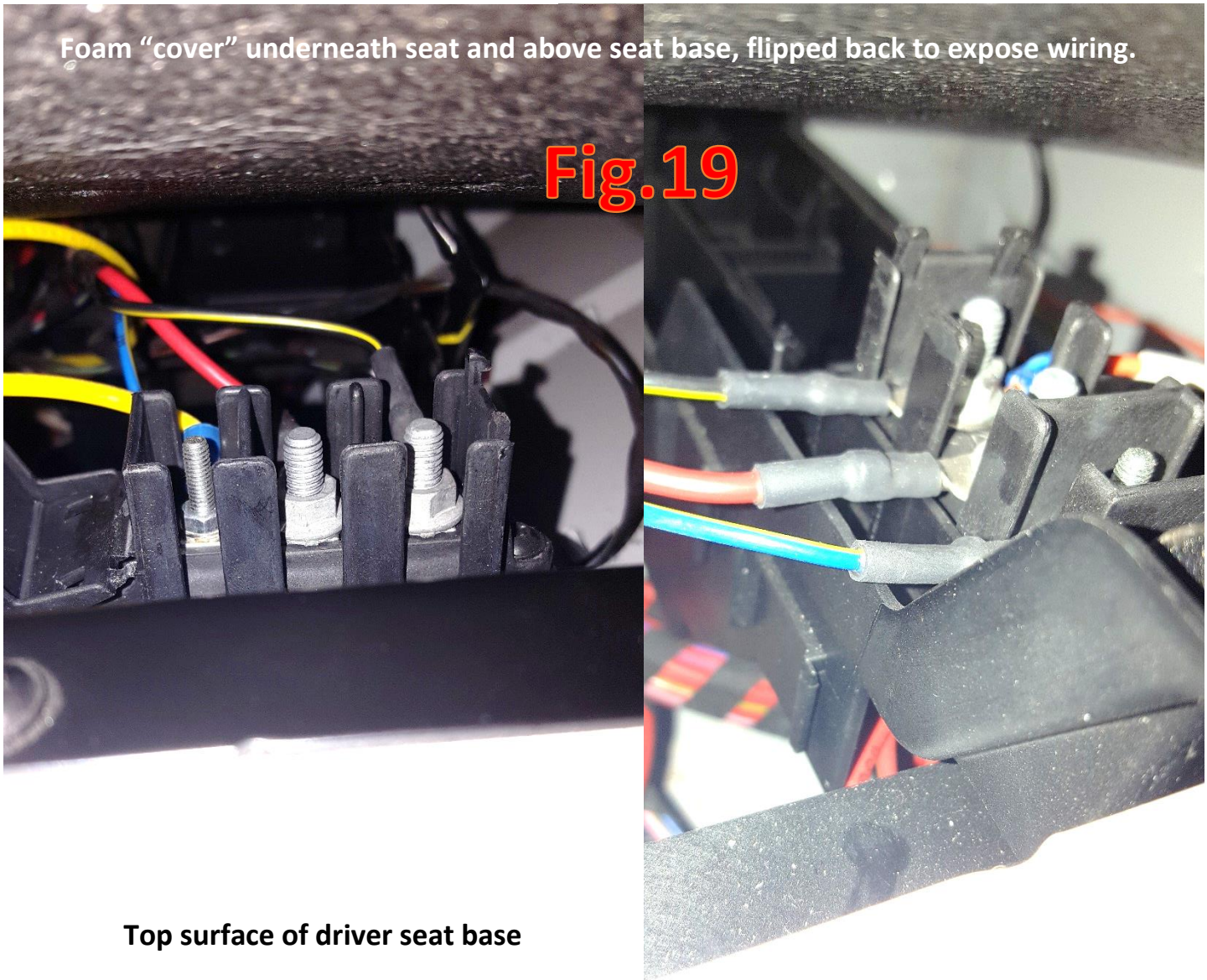
Supplied will be a 4 gauge battery cable that needs to be cut into two pieces.

Run long section (15ft 4 gauge cable supplied w/ 3/8” eyelets and looming) from the Solenoid power stud (Fig.16 page 15) to the 80 amp breaker AUX stud, using ½” socket/wrench.

Run a short section from the BAT stud on the breaker to the Positive Terminal on the coach’s house battery.

Hooking up the power should be the final wiring step so make sure this is done after all the other electrical work is done for safety. The supplied 80 amp breaker should be securely fastened in the battery box. Ground cable (attached to central pump assembly, typically white 10ga. wire) should be fastened to vehicle frame or extended to negative terminal on battery.

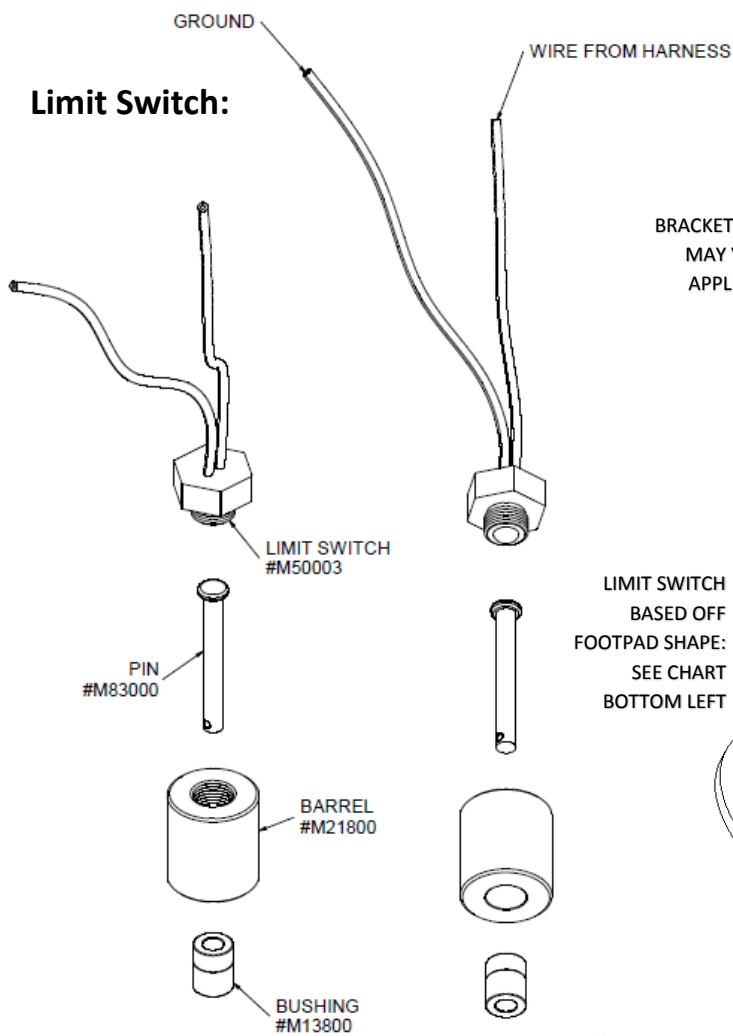
Ignition Source (Example under driver seat) **Hooking up YELLOW WIRE**



Top surface of driver seat base

Top surface of driver seat base

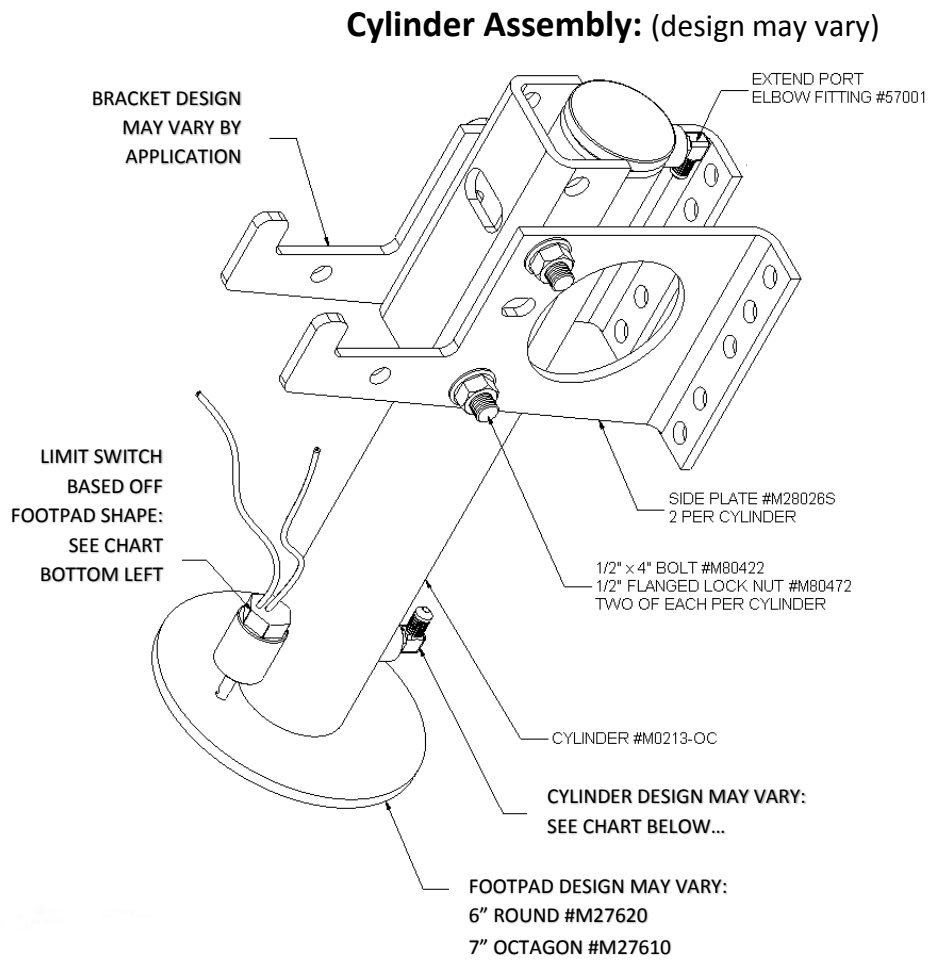
Open driver door, facing the outside face of the driver seat, find the steel seat base the seat bolts to. Look at the top of that seat base and flip back a fabric cover from the seat to expose a foam cover over the top of the steel seat base. Flip back cover to expose the wiring shown above. You are looking for the small black plastic case, which can be oriented front to back (pic#1) and left to right (pic#2). Case has a plastic lid that must be opened and flipped back to expose the three posts. As you can see there is one small post and two larger posts. The ignition hot wire is on the furthest large post from the small post, so in pic#1, it is the black with yellow stripe wire, in pic#2 it is also the black with yellow stripe wire. Manufacturer's may use different colored wire, determine ignition wire by the specified post mentioned above not by wire color.



LIMIT SWITCH DESIGNATION:

6" ROUND FOOTPAD, THEN SWITCH #M50103FLAT

7" OCTAGON FOOTPAD, THEN SWITCH #M50103



CYLINDER IDENTIFICATION CHART:

IF HAS 7" FOOTPAD OR THREADED STUD ON SHAFT:

FRONT: #M0213-RC, REAR: #M0213-RC

IF HAS 6" ROUND FOOTPAD OR THREADED HOLE IN SHAFT:

FRONT: #M0213-OC, REAR: #M0213-OC

CAUTION WHEN OPERATING:

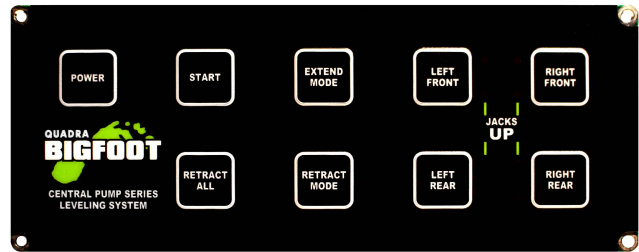
Rear tires must maintain contact with the ground
as the bolt-on system is not designed for this and the jacks may shift.
Front tires are typically OK to leave the ground,
as they may need to do so to level.

Operation:

- Vehicle ignition/accessory must be OFF in order to auto level or extend the jacks
- Make sure slide outs are retracted prior to operating leveling system to avoid damaging slide outs
- System is not tied to vehicle parking brake
- Panel will shut off automatically after 5 minutes of no use
- Panel will turn on automatically after ignition is turned on, safety feature to monitor that cylinders are retracted

A1 CONTROL PANEL

• Central Pump 4 Point System



The Bigfoot A1 Control Panel contains a sensor for automatic leveling operation and needs to be properly installed, programmed and calibrated before use.

ATTENTION:

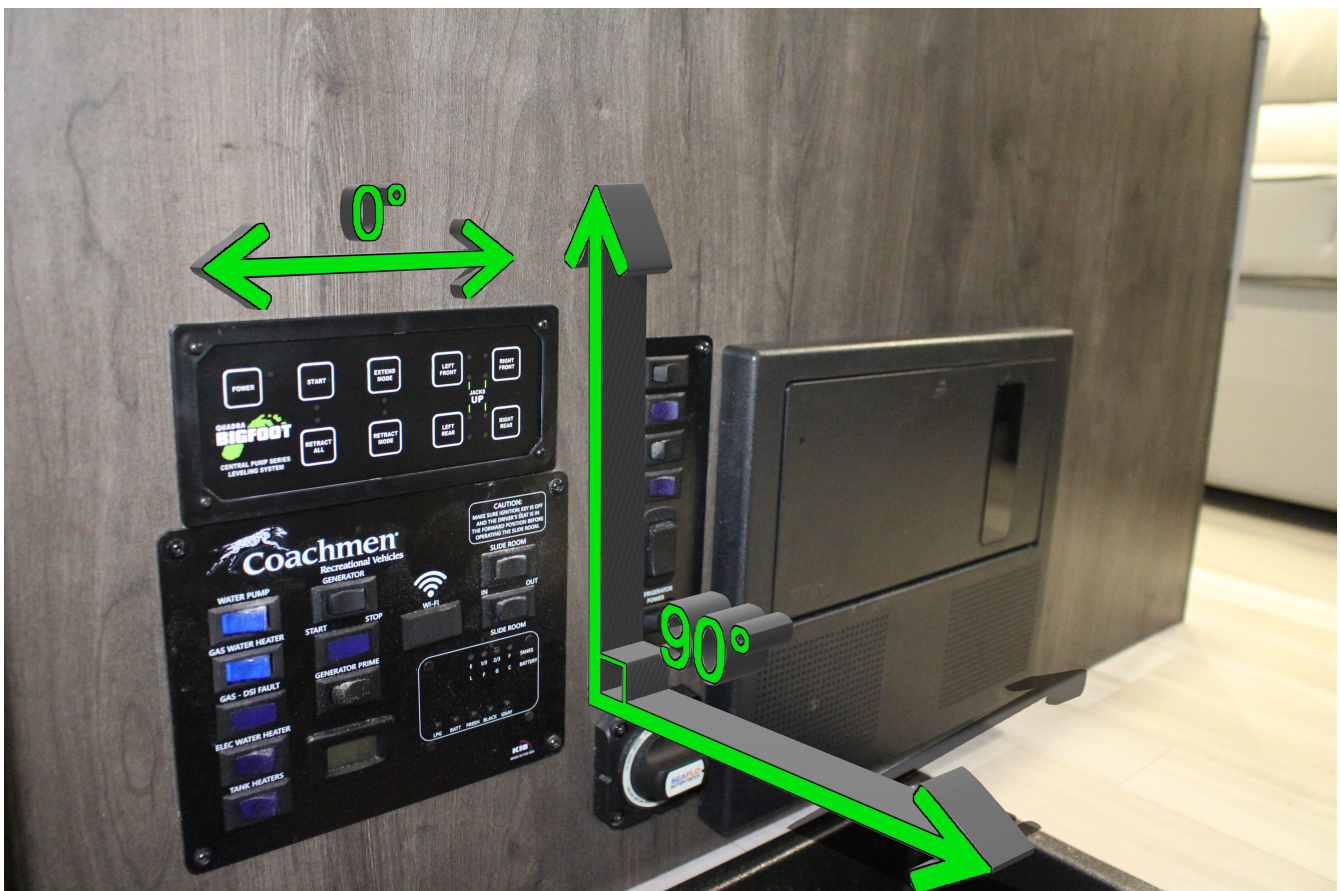
Improper installation and calibration could result in system and/or vehicle damage.

Control Panel Installation

Step #1. Mount Panel

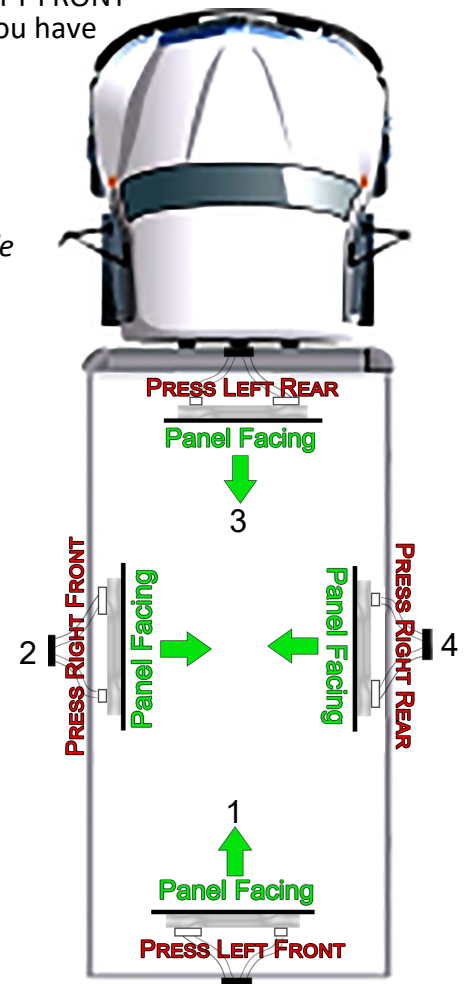
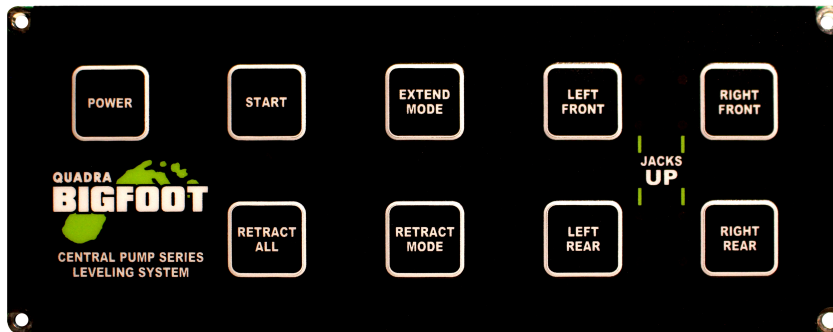
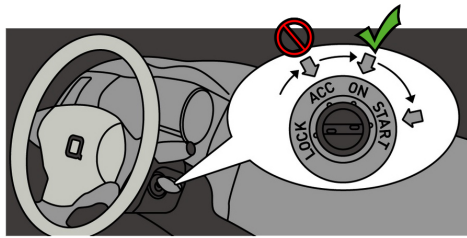
1. Plug the wiring harness into the rear of the control panel (14-pin and 6-pin plugs).
2. Place bezel on front of the control panel and proceed to mount with four #4 screws into **vertical** wall/cabinet directly facing the front, rear, left or right side of the vehicle. Panel must be mounted with face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

**Control panel cannot be mounted on an angled surface or in a handheld box on a tether.*



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)

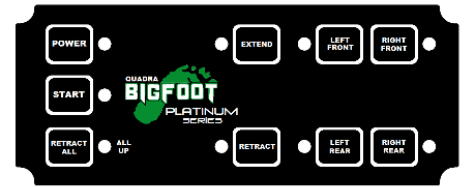
Installing the Platinum Control Panel

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 (page 18).

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, check backside of panel to see version). 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.

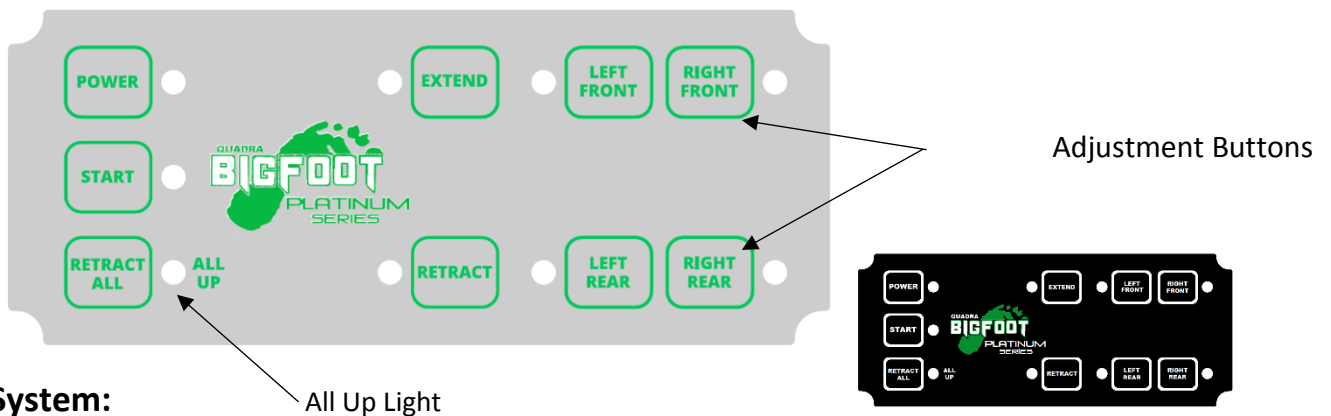
The panel will turn on automatically when the ignition is on, and will not power off until the ignition is off.

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 (with batteries under load) 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.). Take care not to make large movements with one cylinder to avoid frame/RV body twist/damage.
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 adjustment 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.

CAUTION WHEN OPERATING:

Rear tires must maintain contact with the ground as the bolt-on system is not designed for this and the jacks may shift. Front tires are typically OK to leave the ground, as they may need to do so to level.

Panel won't turn on, system won't run, clicking noise, lights flash...

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

Most tech support common calls

Most issues we receive are power related. Always check power and ground wire connections first. Check power level of battery under load (place volt meter on battery then manually extend/retract cylinder to see if voltage drops during operation).

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.

Cylinder will not operate, extend or retract...

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

Secondary air bleeding process

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

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-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. 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 _____