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2017-Current F250/350/450 Installation Instructions

Revision History		
Rev	Date	Description
A	08/18/2021	Initial release
B	10/20/2021	Various detail added to clarify installation steps and general notes. Include sku: 03
C	07/25/2022	Add Pg.9: Clarify installation details.
D	07/13/2023	Add model year 2023. Instructions now include Deaver and OEM leaf spring applications.
E	08/21/2023	Add page 12. Removable spacer shimming option.
F	01/18/2023	Pg.6. Define center pin procedure for previously installed aftermarket leaf springs.
G	04/23/2024	Pg.10. Improve/revise plumbing philosophy. Avoid leak points. Omit pages 11-12 (redundant information)

PLEASE READ

Read all instructions before beginning installation. These instructions are provided in good faith to help prevent any problems or injuries that may be caused by errors in installation. Full Travel Bags LLC and its Members shall not be held responsible for installation actions taken or not taken. There are details of the installation that are assumed to be general mechanical knowledge to experienced mechanics; which are not included in these instructions. Selection of an experienced installer is the sole responsibility of the vehicle owner. Full Travel Bags LLC and its Members do not accept any responsibility for failures, injuries or losses resulting from or associated with use of its product.

GENERAL INFORMATION

General Notes

1. The minimum compressed height of the airbag is 2.7". Airbags are equipped with internal bump stops and are rated to 250 PSI
2. Always wear safety glass and any other relevant protective equipment.
3. You should be comfortable and proficient at using an automotive floor jack or vehicle lift.
4. For the leaf spring portion: Complete the installation on one side of the vehicle before starting on the other side.
5. Install time is between 2-4 hours depending upon mechanical ability and shop amenities.
6. Please read through and understand the instructions before beginning work on truck.
7. Apply the PTFE thread sealant to all NPT joints.
8. For DRW trucks (dual rear wheel F350 / F450) verify that you have a minimum clearance of 7.5" from the inboard tire face to the face of the chassis.
9. Always consult Full Travel Bags LLC via email at tech@fulltravelbags.com with any questions.

Before Installation (not using a vehicle lift)

1. Park truck on level ground and apply emergency brake and chock the front wheels.
2. Do not attempt installation if you are unsure about properly lifting and supporting the vehicle/axle.

After Installation

1. Verify that all fasteners have been properly torqued.
2. Pressurize the system (30-40 psi) and check for air leaks.
3. Re-torque u-bolts after 100 miles of driving.

Tips

1. When the Removable Spacer is not installed, maintain the airbags at 0 psi. Some compressor manufacturers employ code which will always try to maintain a minimum of 5 psi. If this is your case, one solution is to install an in-line ON-OFF switch in your cab to kill power to the compressor when you don't need the airbags. The best solution is to wire the compressor hot line to a properly load rated up-fitter (auxiliary) switch. Unfortunately, not all truck trim models are equipped with these in-cab switches.

STEP(S)

THIS PAGE ONLY APPLIES IF USING AN OEM LEAF SPRING PACK

1. Park on level ground. Apply parking brake and chock the front wheels. Jack up the rear axle on the driver's side and support with jack stand where shown. Leave access to the u-bolt nuts. Do not jack up the truck by placing the jack underneath the differential. Remove the drivers side wheel. **ONLY WORK ON ONE SIDE OF THE TRUCK AT A TIME.**
2. Remove the two overload bump brackets from the frame, if equipped. These will not be re-used.
3. Spray PB Blaster (or equivalent penetrating oil) on the leaf spring center pin threads and allow time to penetrate. Remove the leaf spring center pin nut. Then remove the u-bolts, the u-bolt top bracket, the top overload spring (if equipped) and the spacer block (if equipped).

Conditional Notes

- If the center pin spins in place, preventing removal of the nut, see Page 4.

OR

- Your truck is equipped with the Top Overload Leaf Spring, see Page 4.

IF NOT, proceed to Page 5.

The truck shown is equipped with the optional factory top overload spring system.

1



Jack stand here

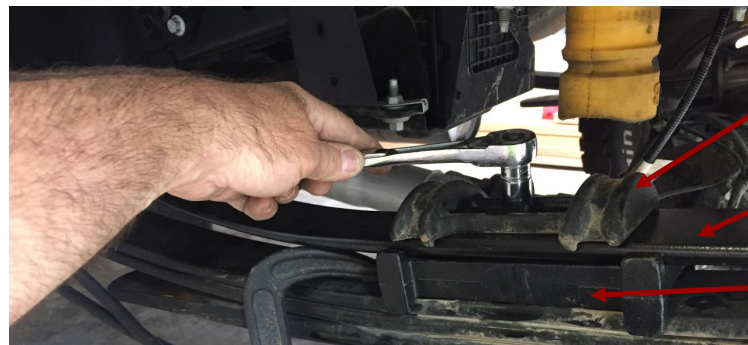
Jack here
(shock mount)

2



Remove
(2 places)

3



U-bolt Top Bracket
(re-used only for deaver
leaf spring applications)

Top Overload Spring
(not re-used)

Spacer Block
(not re-used)

STEP(S) **CONDITIONAL STEP******
THIS PAGE ONLY APPLIES IF USING AN
OEM LEAF SPRING PACK

1. Raise the rear of the truck as required and properly support it. This is to relieve the truck load on the spring. Clamp the main leaf pack together using two c-clamps as shown.
2. Use a jack to lower the drivers side of the axle away from the leaf spring until you can gain access to the Center Pin head. Clamp the Center Pin head with vise grips and proceed in removal of the nut.



1
C-clamp
(2 places)



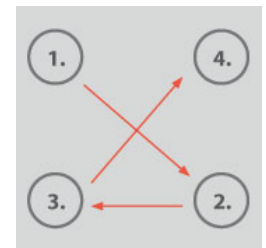
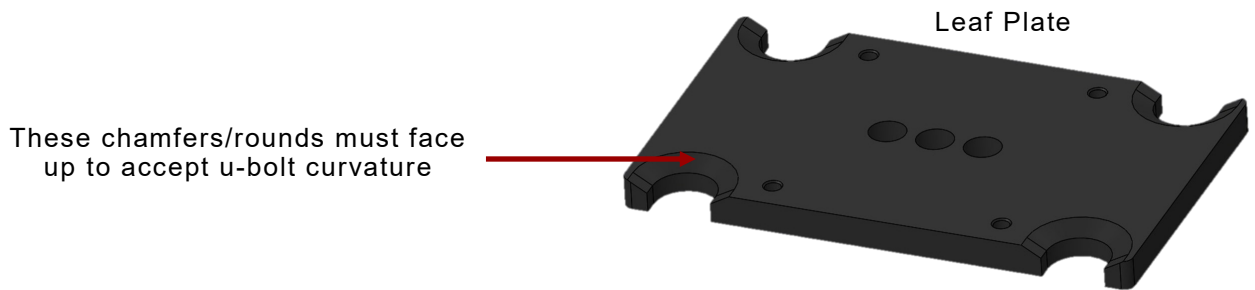
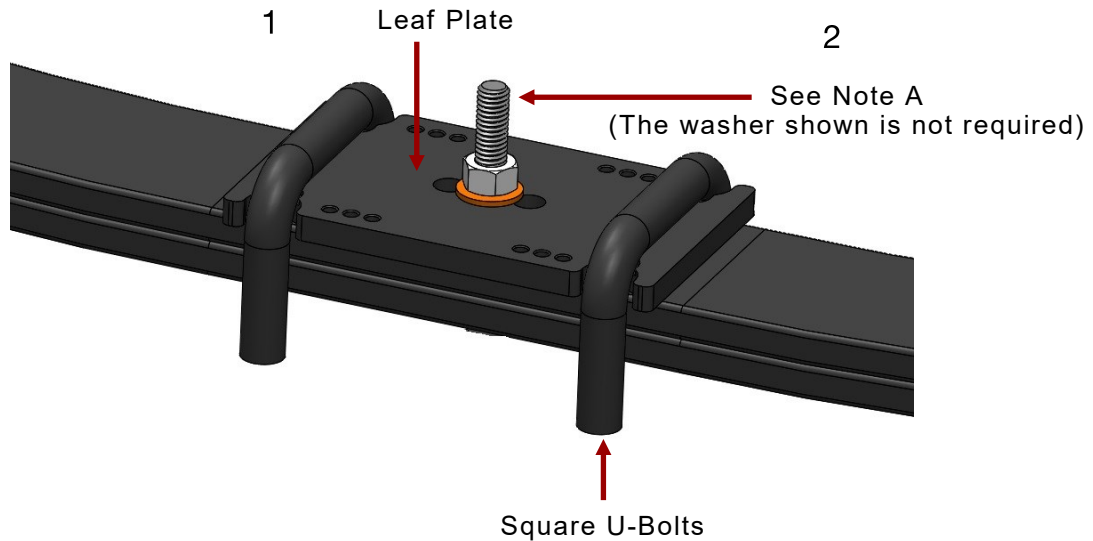
2
Vise grip head of
Center Pin

STEP(S)

THIS PAGE ONLY APPLIES IF USING AN OEM LEAF SPRING PACK

1. Install the Leaf Plate and the supplied square u-bolts as shown.
2. Re-install the factory center pin nut. Clean the nut and use a medium to high strength thread locking compound. Make sure the Leaf Plate is evenly centered, parallel with the leaf spring, and torque to 40 ft-lbs. Refer to Note A below.
3. Re-install the factory bottom u-bolt cradle and the supplied washers and nuts. Finger tighten the four nuts evenly such that they are all flush with the bracket (not angled at contact). Then torque the nuts incrementally in the cross pattern indicated until a torque of 140 ft-lbs is achieved. Note: (U-bolts must be re-torqued after driving for 100 miles, per manufacturer's recommendation).

Note A: For trucks that were equipped with a Top Overload spring the leaf spring center pin may be too long and lack adequate thread length. If so, replace it with the supplied center pin. Once torqued, cut off the excess thread about 1/4" above the nut. See page 4 for direction.



Torquing Pattern

3

Nuts are flush/parallel with factory u-bolt cradle. (Factory hardware is depicted here, but you will use the supplied u-bolts, washers and nuts.)

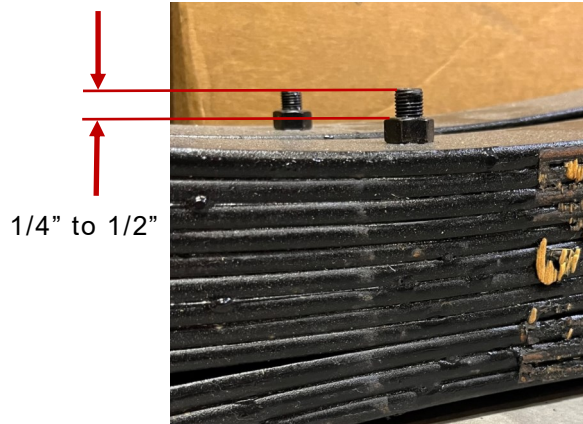
STEP(S)

THIS PAGE ONLY APPLIES IF USING A DEEVER(CARLI) LEAF SPRING PACK

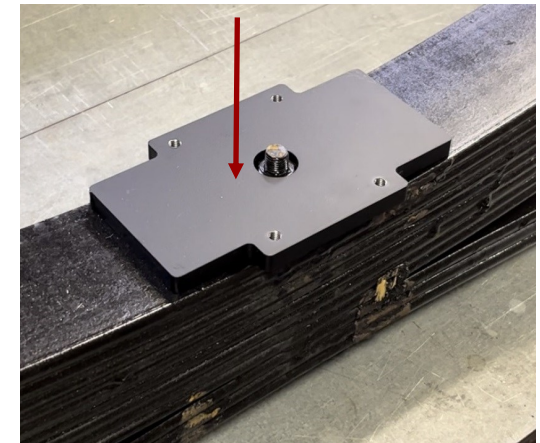
1. Install the Leaf Plate. Ensure there is 1/4"-1/2" of center pin thread extending beyond the nut. If not, replace the center pin with the supplied center pin. Be sure to clamp the leaf spring together before removing the nut. Refer to page 4 for insight.
2. Install the Factory U-bolt Top Cap followed by the semi-round u-bolts (not shown). These u-bolts are usually supplied with the deaver spring purchase. Mildly torque the u-bolts just to secure the axle to the springs. When the truck is back on the ground, with weight on the springs, torque the u-bolt hardware as shown on page 5. We recommend the use of new u-bolts.
3. Install the Receiver as shown. The top slot in the part goes toward the rear of truck. Install four M6x50 flathead screws where shown using an M4 hex driver. Medium-low strength Loctite may be used. Do not perform this step before completing step 2.

Note A: For applications where aftermarket leaf springs have been previously installed and the center pin hole of the Factory U-bolt Top Cap has been drilled out (enlarged to approx. 3/4" diameter). A second center pin nut must be installed over the first. This will ensure that the Factory U-bolt Top Cap remains centered and securely indexed.

1

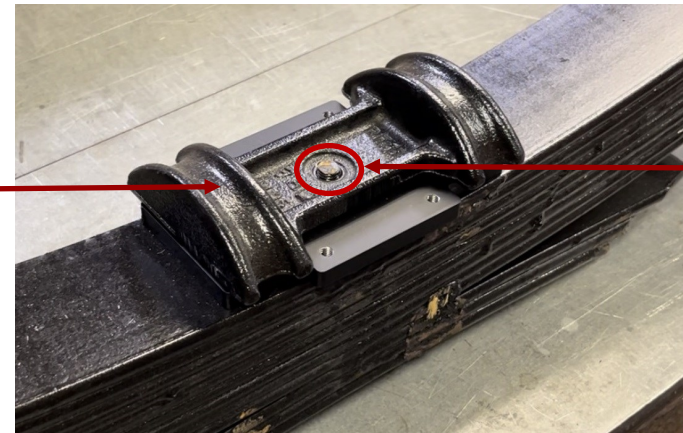


Leaf Plate



2

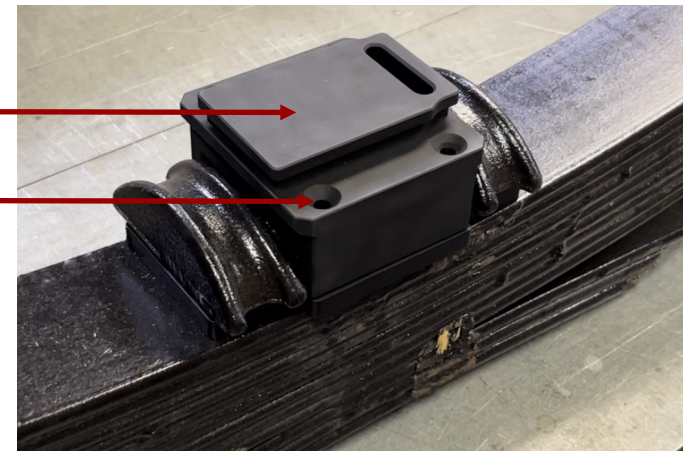
Factory U-bolt Top Cap. Also install u-bolts, washers and nuts.



Note A

3

Receiver
M6x50 flathead screw (4 places)



STEP(S)

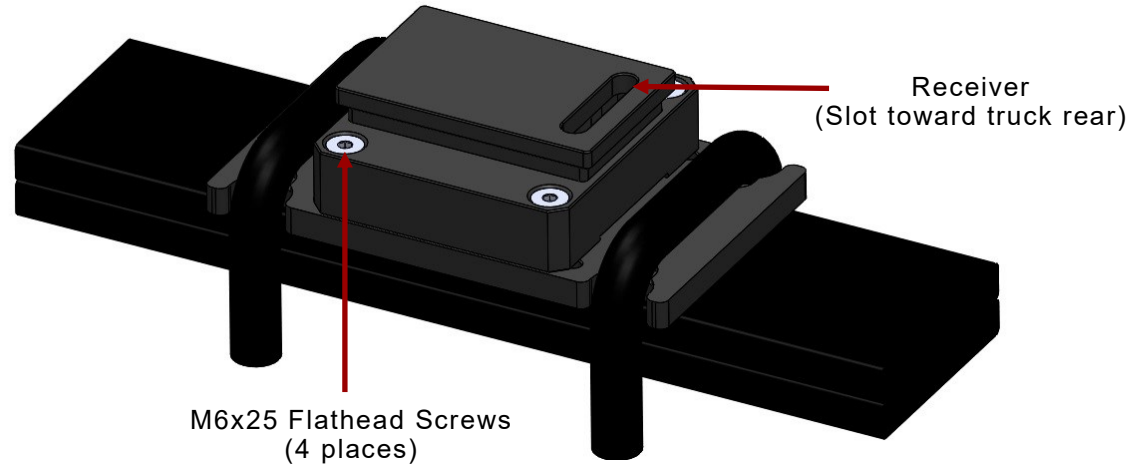
STEP 1 OF THIS PAGE ONLY APPLIES IF USING AN OEM LEAF SPRING PACK

1. Install the Receiver on the Leaf Plate using the 4x M6x25 Flat Head Screws. Orient the slot toward the rear of the vehicle. Tighten with an M4 hex driver.
2. Temporarily install the Drivers Frame Bracket using only the supplied 5/8" bolts. Have someone help you bias the bracket upward. Center punch or pre-drill a mark for the 7/16" holes to identify their centers, then remove the bracket and drill the holes (see next page for additional detail).

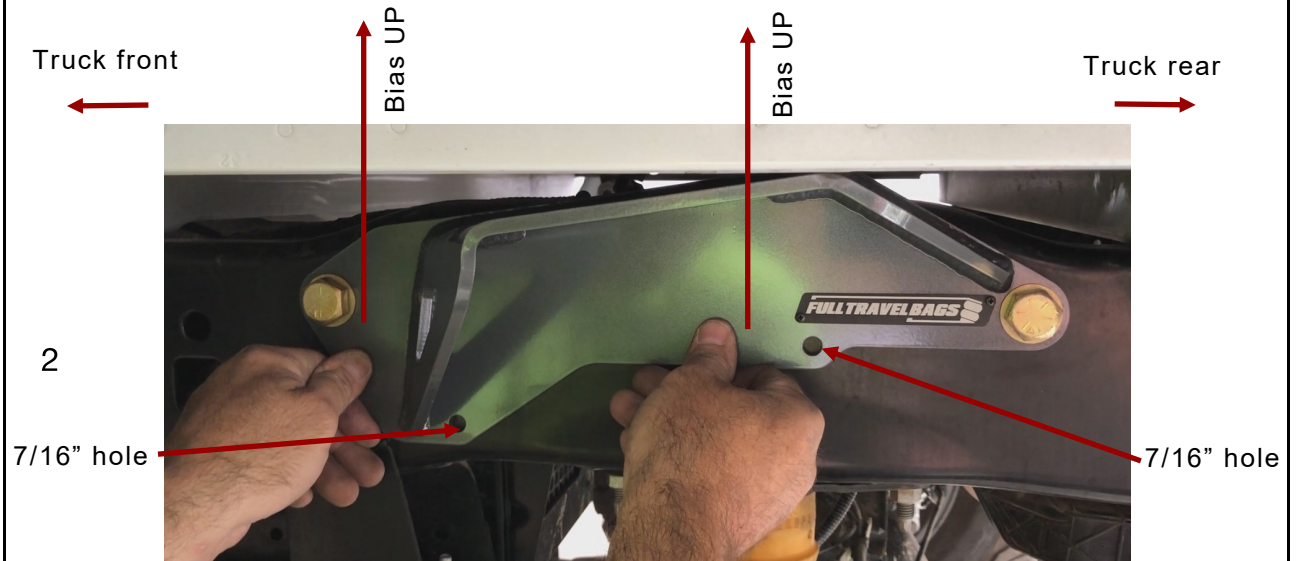
NOTE: The angle of the driver and passenger side Frame Bracket (where the airbag mounts) will always slop downward toward the front of the truck, as shown.

Before drilling, always check the inboard side of the frame for any brake lines or electrical wire clearance issues.

1



2



Bias the bracket UP before center marking the 7/16 holes.

Driver's side 2017-2022 bracket shown here. Brackets will differ in design.

STEP(S)

1. Remove the bracket and finish drilling the 7/16" holes. Be sure to drill straight thru.
Tip: It helps to start with smaller bits and work your way up in size.

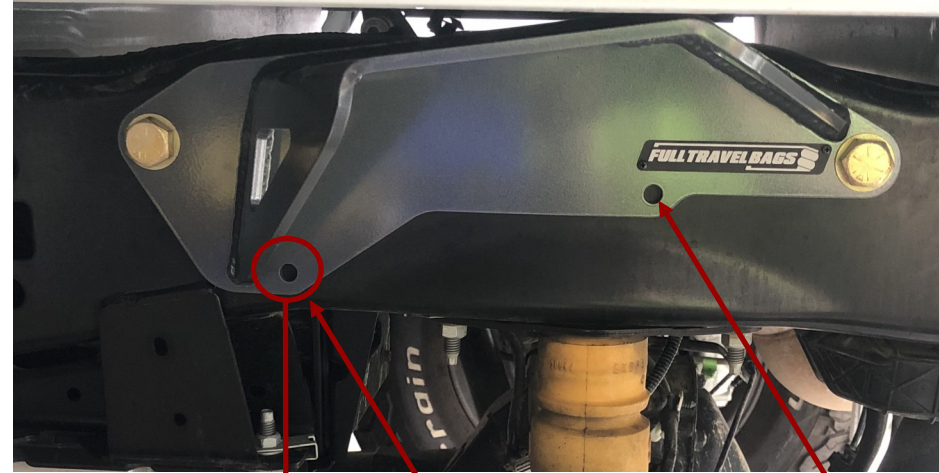
Note 1

Your truck may be equipped with the bracket shown on the inboard drivers side of the frame. If so, remove the factory bolt and clip nut from the frame.

Note 2

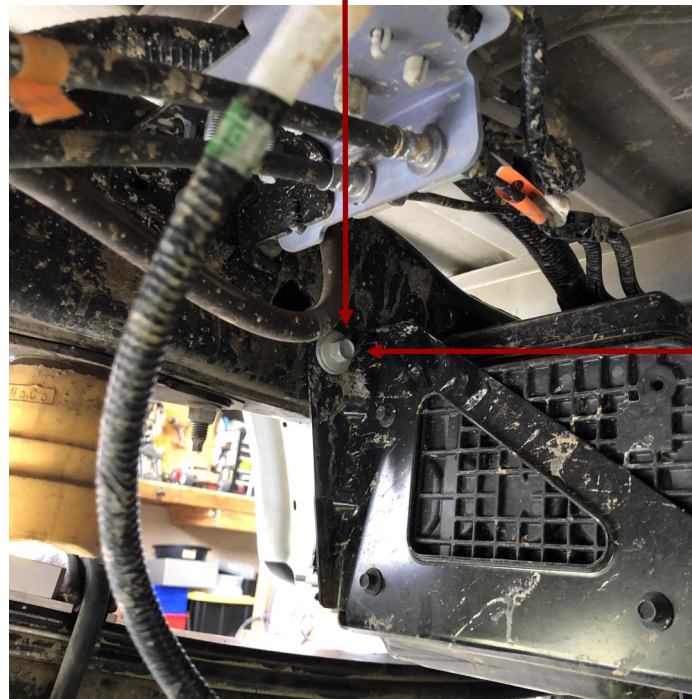
Be sure not to damage any electrical wiring on the inboard side of the frame when drilling.

Drilling and installation of the 7/16" hardware as shown, is required.



Drill a 7/16" hole
Drivers Side: Thru ONE chassis wall.
Pass Side: Thru BOTH chassis walls.

Drill a 7/16" hole
Thru BOTH chassis walls.



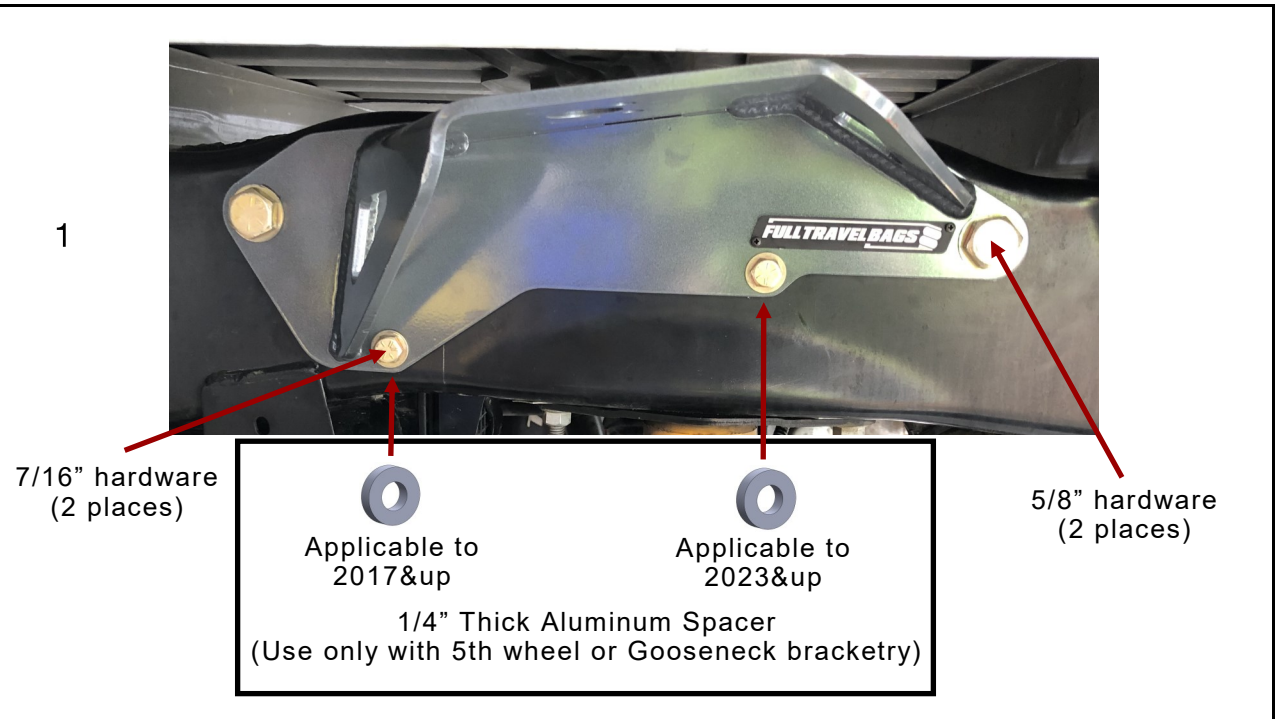
See Note 1

STEP(S)

1. Re-install the Bracket and the 5/8" and 7/16" hardware as shown. Washers on both sides. First torque the 5/8" bolts to 100 ft-lbs. Then torque the 7/16" fasteners to 20 ft-lbs. *Note: If installing the Frame Bracket over OEM 5th wheel or GN bracketry, use the supplied Aluminum Spacer(s). The Spacer goes between the Frame Bracket and the frame.*
2. Install the supplied elbow air fitting on the airbag. Liberally apply the provided PTFE thread sealant to all NPT fittings. Do not over tighten.
3. Install the airbag to the Frame Bracket with the supplied flange head 3/8" bolts. Tighten them to approx. 15 ft-lbs.

Note: The multiple mounting hole positions for the airbag (not shown in these pictures). Typically, you will use the forward position for Deaver springs and the rear position for OEM springs. The centerline axis of the bag should align with the centerline axis of the Removable Spacer when it is installed.

Repeat this process for the Passenger side Frame Bracket.



STEP(S)

1.
Use zip ties and the split loom sheathing to protect and secure all plumbing lines as required from abrasion and heat sources. The 1/4" dot tubing must be flushly square cut and not bent or kinked for a proper seal. Use the supplied PTFE pipe dope on all npt threads. Fully insert the 1/4 tubing into the push to connect fittings. The Schrader valve is for manual air fill and can also be used to fully vent the airbags in order to remove the Removable Spacer Assembly. Mount the Schrader in any desirable location.

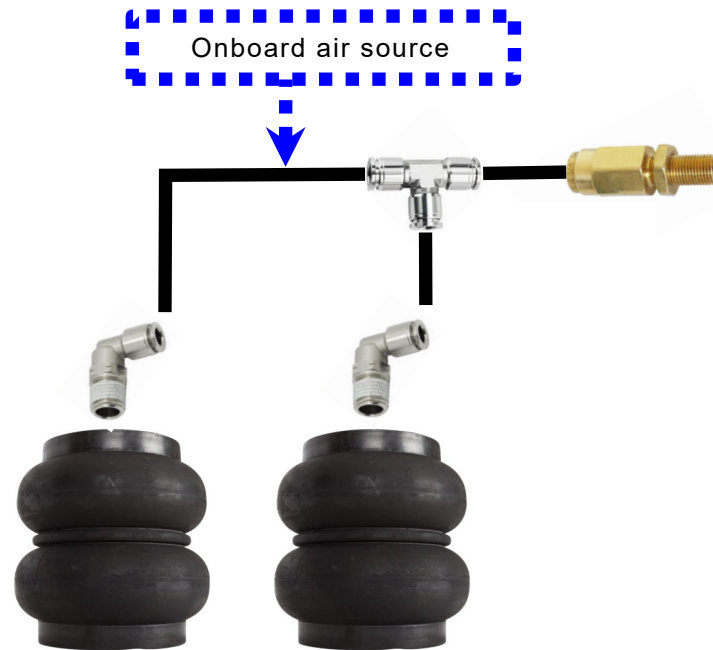
2.
Leaf springs all settle uniquely and frequently have unpredictable lift heights. It may be necessary to shim the Removable Spacer so that it can be easily installed/removed without interference from the airbag. The clearance under the airbag should be 1/4" - 1" under the following criteria:

- i. Truck is on level ground.
- ii. Airbags are at zero PSI.
- iii. All permanent accessory weight is in truck bed (ie: tool box, spare tires, tonneau cover, etc)

If necessary remove the indicated shim to achieve the proper clearance. If additional shims are desired please contact Full Travel Bags.

DO NOT USE ANY THREADLOCKING COMPOUNDS ON THE SHIM FASTENERS. IT WILL DETERIORATE THE PARTS AND COMPROMISE THEIR STRENGTH.

1



2

