13/64”, 17/64” &
13/32” & 1/4” drill bit
are required.

A 1/4”-20 tap & 5/16”-18
taps are required

Version 1.7

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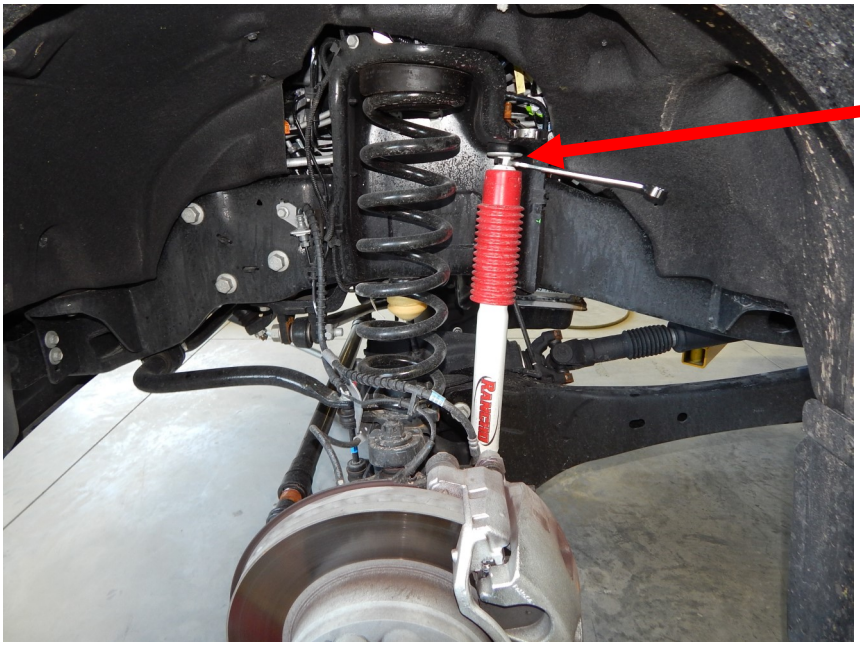
2017+ Ford Super Duty Front/Leveling Kit Installation Instructions

2017 Ford F-250 shown w/ 2-Stage Front Leveling Kit, 4-Link Rear Air Suspension

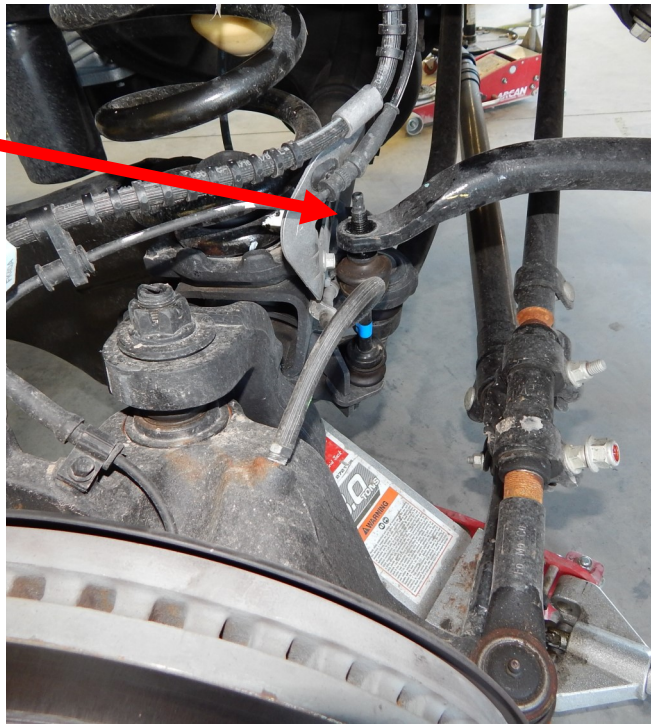
1. Jack the truck up by the frame and remove the front wheels. You will need to place floor jacks under the front axle to keep the axle from dropping when you remove the front factory shocks. If two people are doing the installation, both sides can be done at once.



Remove the factory/existing shocks

2. Remove the nut from the top of the factory sway bar end link and remove the factory shocks and lower coil bracket.

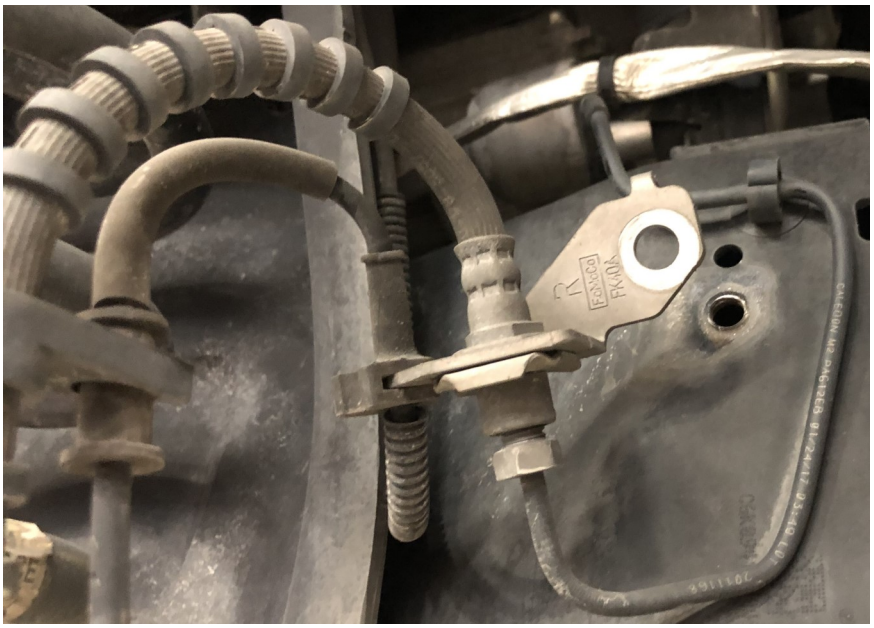
Unhook the sway bar end links from the factory sway bar.

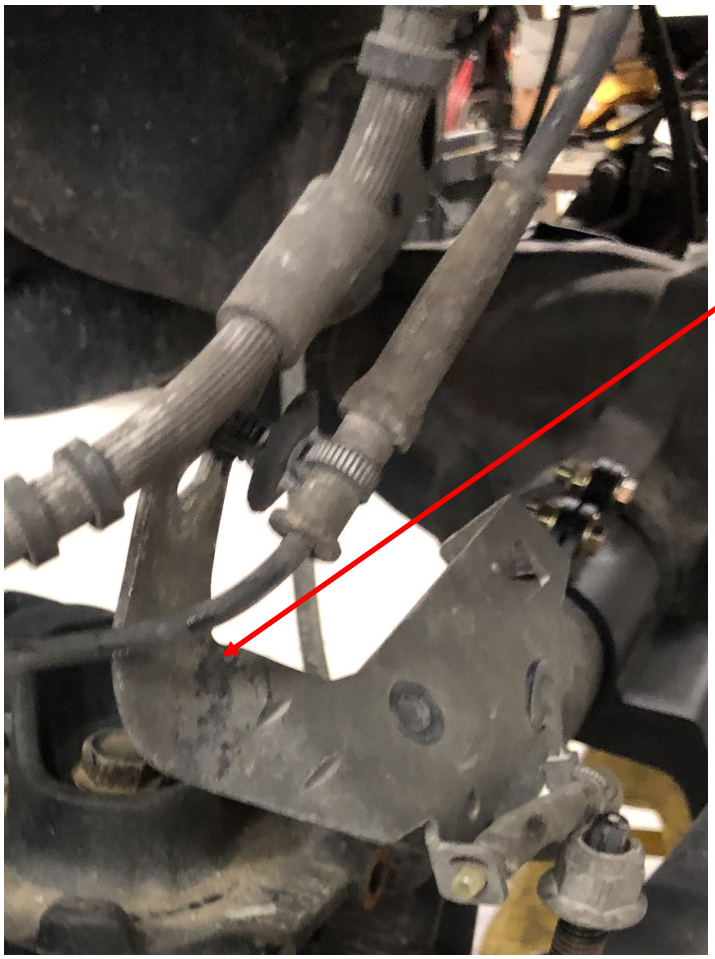


3. Remove bracket for pan hard bar and un-install factory pan hard bar.

4. Drop the axle and remove the coil spring and remove the bolt that holds the brake line mount to the lower spring mount casting

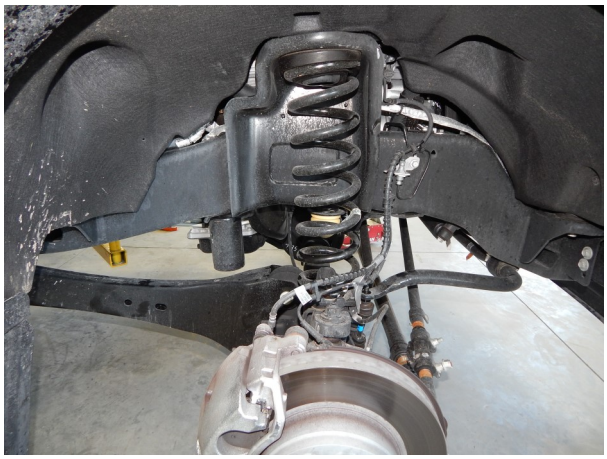
5. Remove bolt for brake line tab and bend brake line tab back so it will clear the lower bag mount. Pop off vacuum line from drivers side before removing coil spring.





Bend tab to move it away from lower bag mount during install

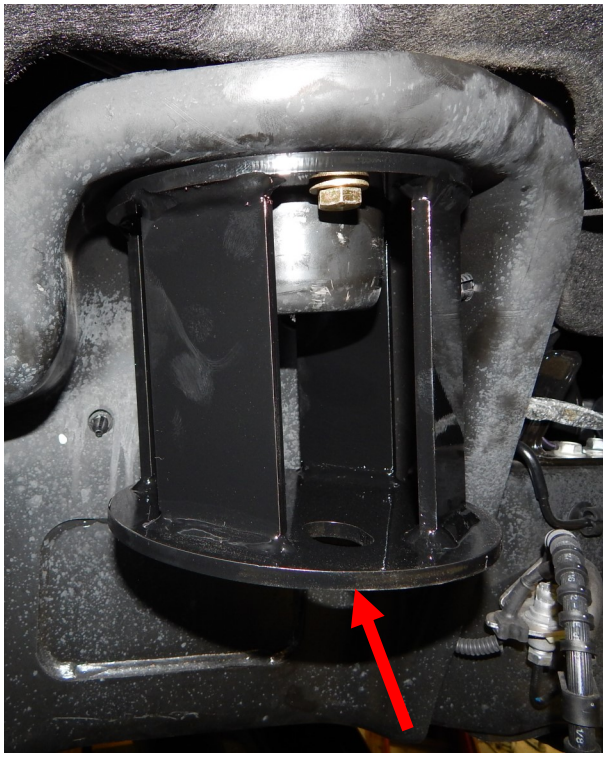
6. Remove both bumps stops before starting installation. Failure to remove the stops will cause them to rub on the air bags. Remove rubber and un-bolt metal stop.



3. Locate the upper air bag mounts (Part # 69067-DS and 69072-PS). These mounts fasten to the upper spring perch with the two 3/8” x 1-1/2” bolts. You will need to drill these holes. Put the upper airbag mount in place so the large hole for the air bag is facing out (towards you) and mark the holes. Pull the bracket towards you when marking where to drill the holes (there is about 1/8”- 3/16” of play. Pulling it away from the frame will keep the air bag from rubbing on the inside of the frame). Drill the hole to 13/64” then 17/64” then 13/32” and fasten the upper mount in place. Make sure not to drill into wires behind upper coil bucket. Torque the 3/8” bolts to 40 ft./lbs.

Holes will be drilled for the upper airbag mount to install into the spring perch.

Use the upper airbag mount as a template Before drilling the holes for the 3/8” x 1-1/2” bolts

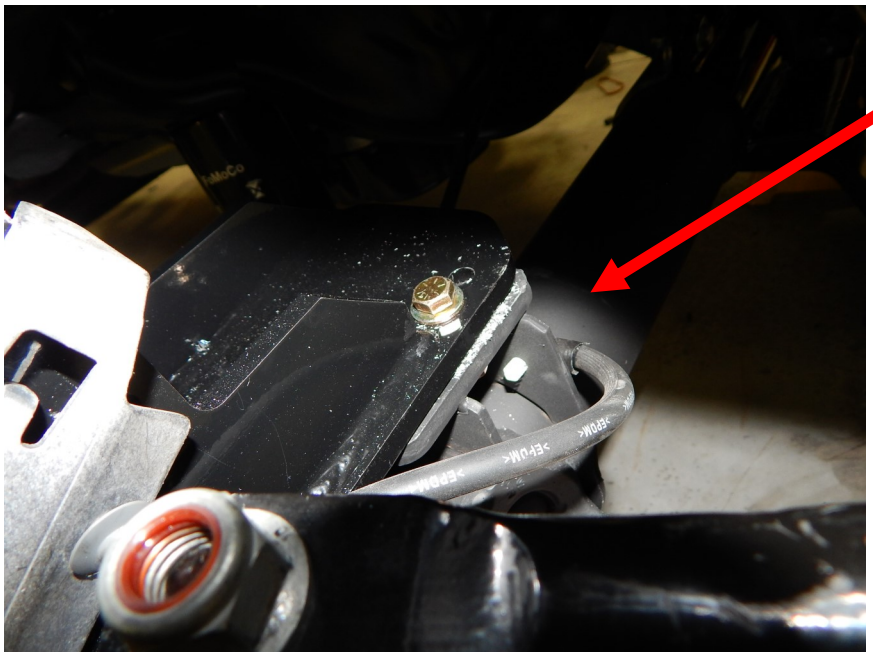


Large hole in bottom plate faces away from the frame

4. Locate the lower air bag mounts (Part # 69376 and 69372). These fasten to the axle with the M14 x 25 bolts and the 3/8” bolts. You will have to drill the holes for the 3/8” bolts. There are (2) holes in the lower plate. The passenger side uses the hole furthest away from the frame and the drivers side uses the hole closest to the frame. Drill the hole with a 13/64” then 17/64” then 13//32” drill bit. Fasten the brake lines to the front of the mount with the 1/4” x 1” bolt.

Keep lower bracket edge flush with axle mount.

Passenger side shown



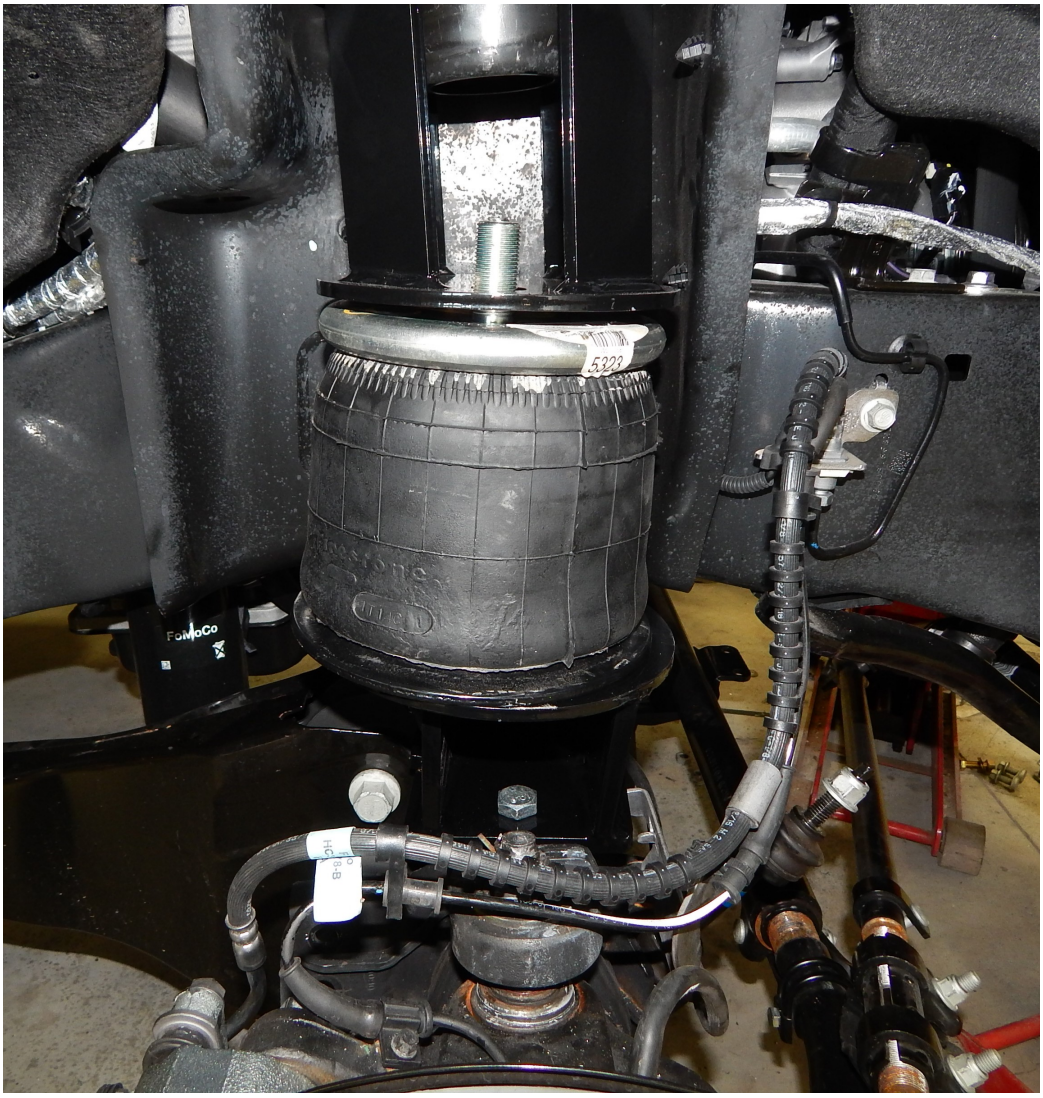
Passenger side uses the hole closest to the tire.

Drivers side uses the hole closest to

NOTE: The F-450 pickup only uses the 14mm bolt to fasten to the axle.

The lower air bag part numbers are 15107DS and 19905PS.

5. Locate the F5323 airbags. The airbags fasten to the upper airbag framework with the 1/2” and 3/4” nuts and lock washers. Torque these nuts to 35 ft./lbs. The bottom of the airbag fastens to the lower air bag mount with the 1/2” x 3-3/4”. Make sure the star washer sits against the lower airbag mount. Torque this bolt to 35 ft./lbs. This will prevent the air bag from sliding around on the plate. Locate the air fitting and insert into the air bag. Put the air fitting in finger tight and then turn one complete turn.



There are (2) holes in the lower bag plate, put the bad in place and check that the bag is level with the lower bag mount.

After attaching bags, attach the sway bar/bolt back to the truck.

6. Locate the provided shocks and the lower shock mounts NOTE: **F450-550 DOES NOT USE LOWER SHOCK MOUNTS** (Part # 69157). Install using the stock shock bolt on bottom. The standard shock option for this kit is a Rancho 9000 series adjustable. Using the red knob on the shock itself, turn the knob to adjust the valving according to your application. Typically setting # 3 works the best with the air suspension on these trucks. If using Raptor shocks (Part # 10124), grinding between the shock mount may be needed. The shock reservoir mounts between upper bag mount and coil bucket.

7. Once the air ride is installed, its time to hook up the air lines. If the system is a manual fill (no onboard air), just route the air lines up under the hood and zip tie somewhere for easy access. Each airbag will need a Schrader valve. Inflate the airbags to 8" and record your pressures for future reference. The pressure will typically be in the low 70 psi range at ride height. Don't be alarmed if one side is a few PSI higher than the other.

This picture shows the Schrader valve or manual fill. This placement is for mock up only. The air line needs to be run up under the hood close to the front for easy access.

If plumbing to an onboard supply, run the air line through the hole in the upper spring bucket . Make sure it is away from anything sharp or hot.

The air bag operates at 8" tall. Measure between the upper and lower air bag mounts.

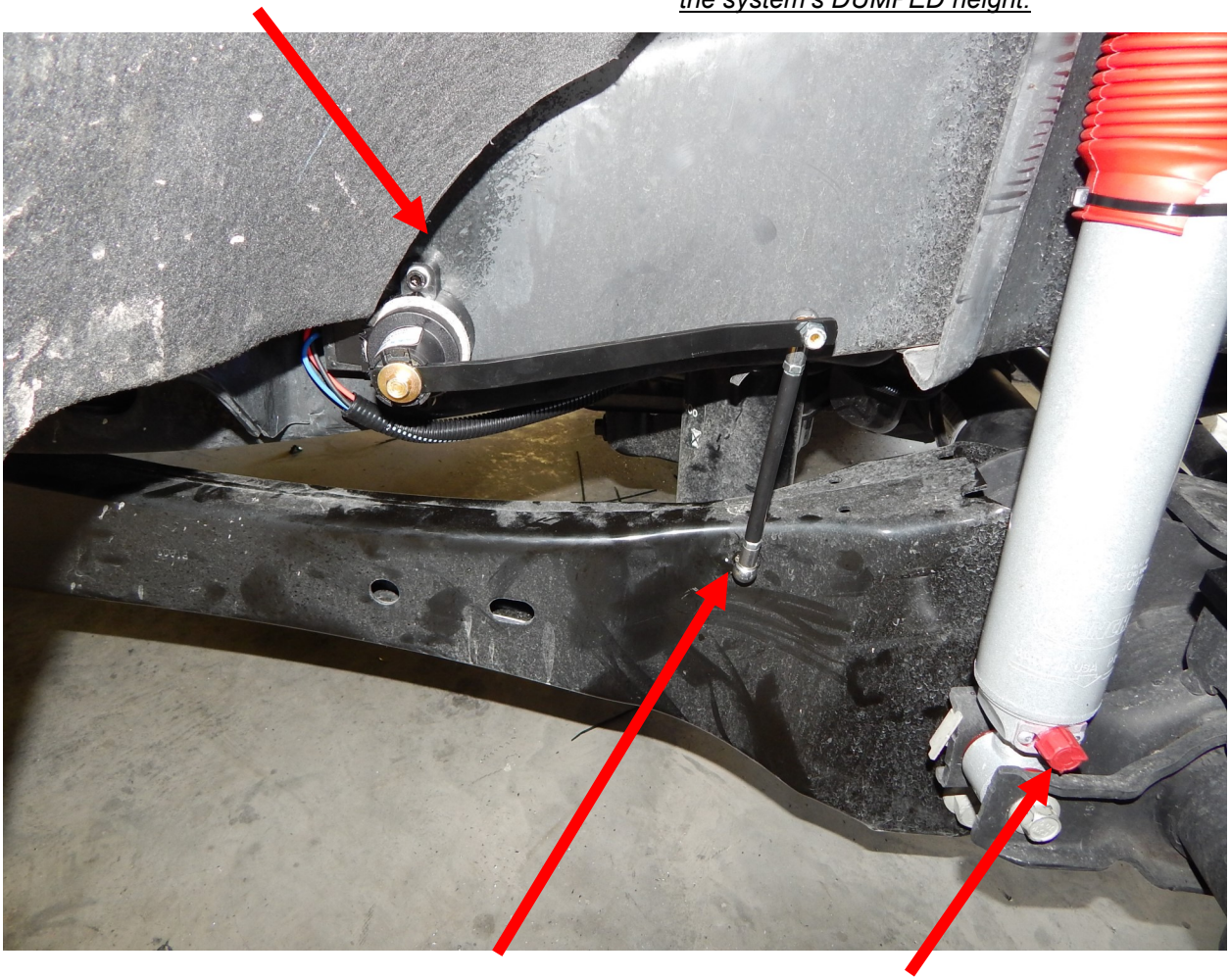
The 2017 F-450 uses a lower air bag like the one pictured here. It only uses the 14mm bolt to fasten to the axle.

Hadley Ride Height Sensor Mount-

8. If you are installing an electronic control system, use a 13/64” drill bit to drill and tap the frame for the 1/4-20 bolts. The mounting holes need to be straight up and down. The picture below shows where to locate the sensor and where to drill and tap the trailing arm for the ball stud. The sensor needs to be straight out at ride height. There is no air in the air bags in the picture below.
9. Once the sensor holes are tapped fasten the sensor to the frame, set the air bags at eight inches tall. The arm on the Hadley sensor will need to be straight out. Find the spot to mount the ball stud to the factory radius arm when the sensor arm is straight out. You can shorten the linkage arm if needed. Once you get the ball stud location, drill the spot with a 1/4” drill bit and tap it to 5/16-18. Install the ball stud and fasten the linage to the ball stud on the trailing arm and on the sensor. There is a small retaining clip on the linkage that needs to be removed when installing or removing the linkage.

The Hadley sensor mounting requires drilling into the factory frame & radius arm

The Hadley sensor should be straight out when the system is at ride height. Photo below is at the system’s DUMPED height.

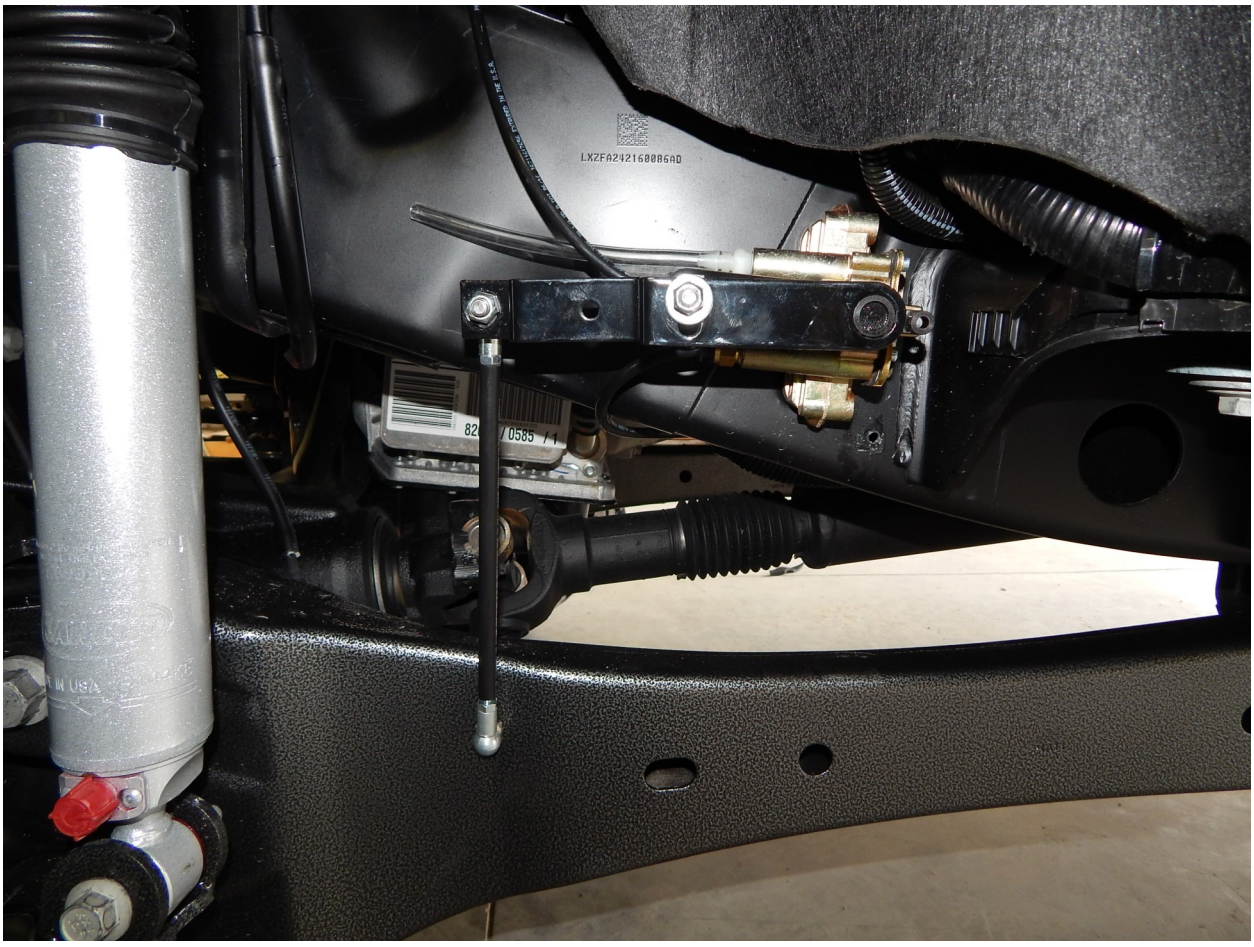


A ball stud is mounted into the factory radius arm to connect the linkage to Hadley sensor itself.

The red knob will allow adjustment to the valving on the supplied Rancho shocks.

Haldex Height Control Valve Mounting

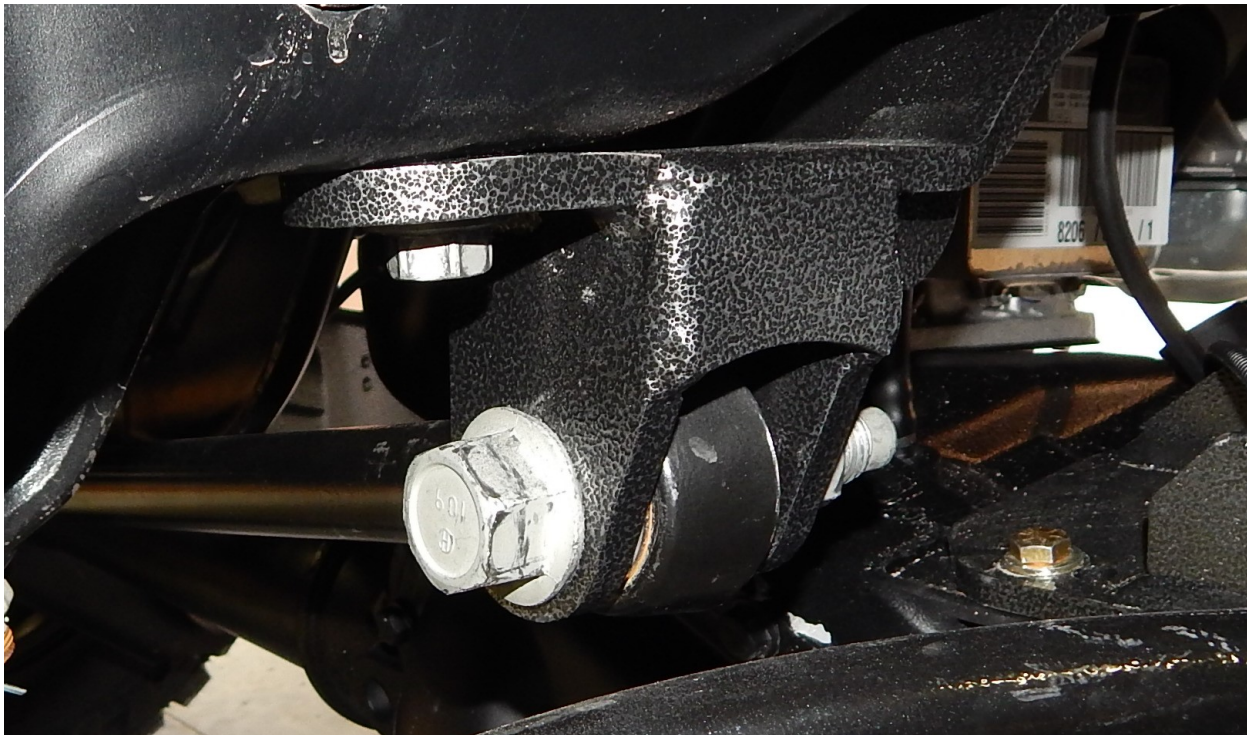
10. If you are installing the mechanical Haldex height control valve, use a 13/64” drill bit to drill and tap the frame for the 1/4”-20 bolts. The mounting holes need to be straight up and down. The picture below shows where to locate the sensor and where to drill and tap the trailing arm for the ball stud. The sensor needs to be straight out at ride height. There is no air in the air bags in the picture below. Once the sensor holes are tapped, fasten the sensor to the frame. Inflate the air bags to 8” tall. Set the arm on the sensor so that it is straight out. Find the location where to mount the ball stud to the trailing arm so the sensor is in the correct position. You can shorten the linkage arm if needed. Once you get the ball stud location, drill the spot with a 1/4” drill bit and tap it to 5/16”-18. Install the ball stud and fasten the linage to the ball stud on the trailing arm and on the sensor. There is a small retaining clip on the linkage that needs to be removed when installing or removing the linkage.



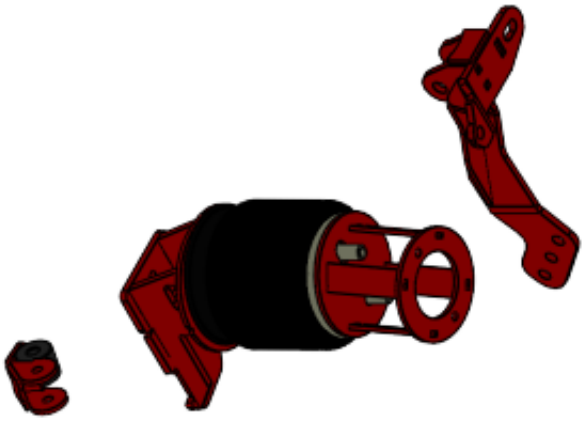
F450-550 pictured.

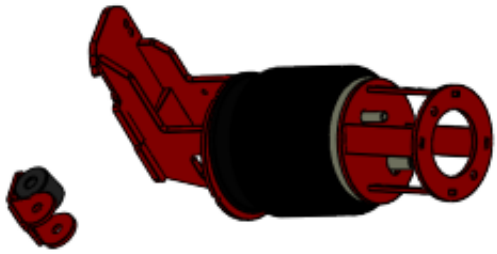
Track Bar Drop Bracket Installation

11. For F250-350 only, locate the pan hard bar drop bracket (Part # 96381). This bracket replaces the OEM pan hard bar bracket. The bolts from the factory pan hard bar bracket will be re-used. Torque the 14mm bolts to 125 ft./lbs. and the 18mm bolt to 175 ft./lbs.

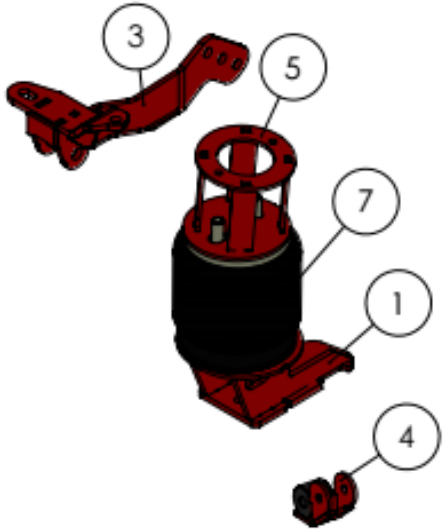


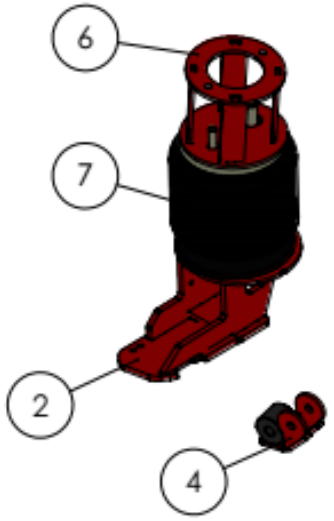
Ford F450-550 pictured below with Hadley sensors.
Note: No shock relocation brackets.





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	69376	(DS) Lower Bag Mount	1
2	69372	(PS) Lower Bag Mount	1
3	69381	Panhard Bar Drop	1
4	69157	Shock Relocation Bracket	2
5	69067	(DS) Upper Frame/Bag Mount	1
6	69072	(PS) Upper Frame/Bag Mount	1
7	80012-5323	Firestone 5323	2

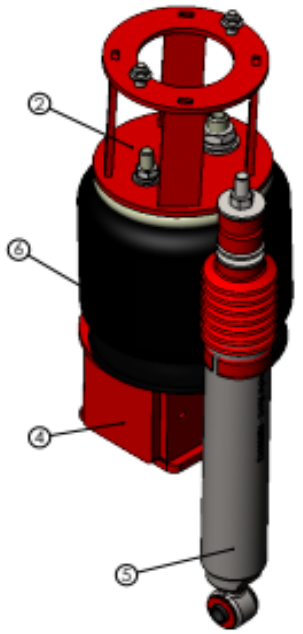


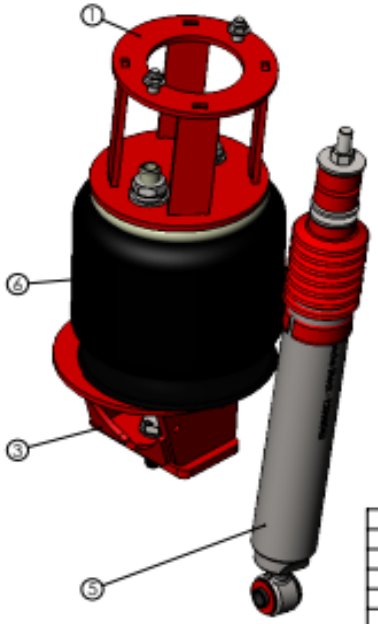


F250-350 pictured. F450-550 does not use lower shock mounts or panhard bar relocation bracket

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/32" ANGULAR: MACH ± 1 BEND ± 1 TWO PLACE DECIMAL ±.030 THREE PLACE DECIMAL ±.010 MATERIAL FINISH WEIGHT	Design By:	Zach Beltz 2014	Project: 2017 F250-350 Pickup
	Shelf # / Qty		
	Inventory		Description: 2-Stage Stock Height / Leveling Kit
	Run Qty:		
	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF KELDERMAN MFG. INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF		SIZE A / DWG. NO. KLM-69003

ITEM NO.	PART NUMBER	DESCRIPTION	Kit Only/QTY.
1	69067	(DS) Upper Frame/Bag Mount	1
2	69072	(PS) Upper Frame/Bag Mount	1
3	19904	(DS) Lower Bag Mount	1
4	19905	(PS) Lower Bag Mount	1
5	80119	Rancho RS999043	2
6	80012-5323	Firestone 5323	2





REV	ECN	CHANGE DESCRIPTION	CHANGED BY	DATE

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPEC. DIMNS. IN INCHES STD. TOLERANCES X.X ± .040 X.XX ± .030 X.XXX ± .010 FRAC.DIM. ± 1/32" Deg. ± .5°

A | DO NOT SCALE DRAWING | 1:48 | Approximate Weight = 316.93 lbs

MATL SPECS:

DESCRIPTION: Stock Height / Factory Arm 2-Stage (Front)

PROJECT: 2017+ F450-550 Chassis Cab

PART NUMBER: KLM-69500

DESIGN BY: ZBH | DATE: 3/8/2018

SHEET 1 OF 2