



kelderman.

AIR SUSPENSION SYSTEMS

1999-2004 Super Duty/ Excursion 12-14" Front Kit Install Instructions

Front driveshaft needs
lengthened 1.5"

1/2-20 tap is needed

KLM11157

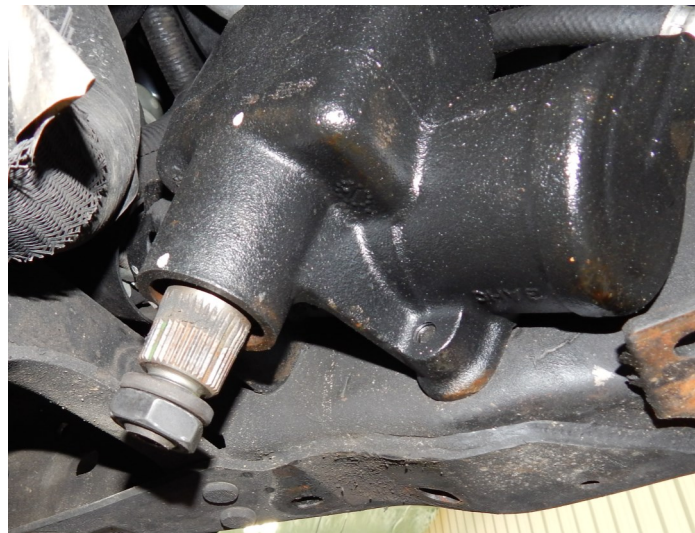
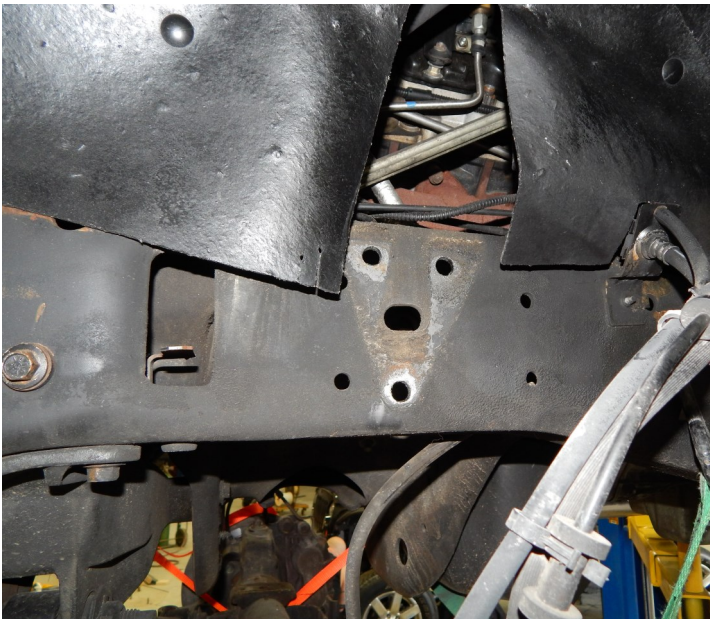
Requires cross over steering kit (not included)



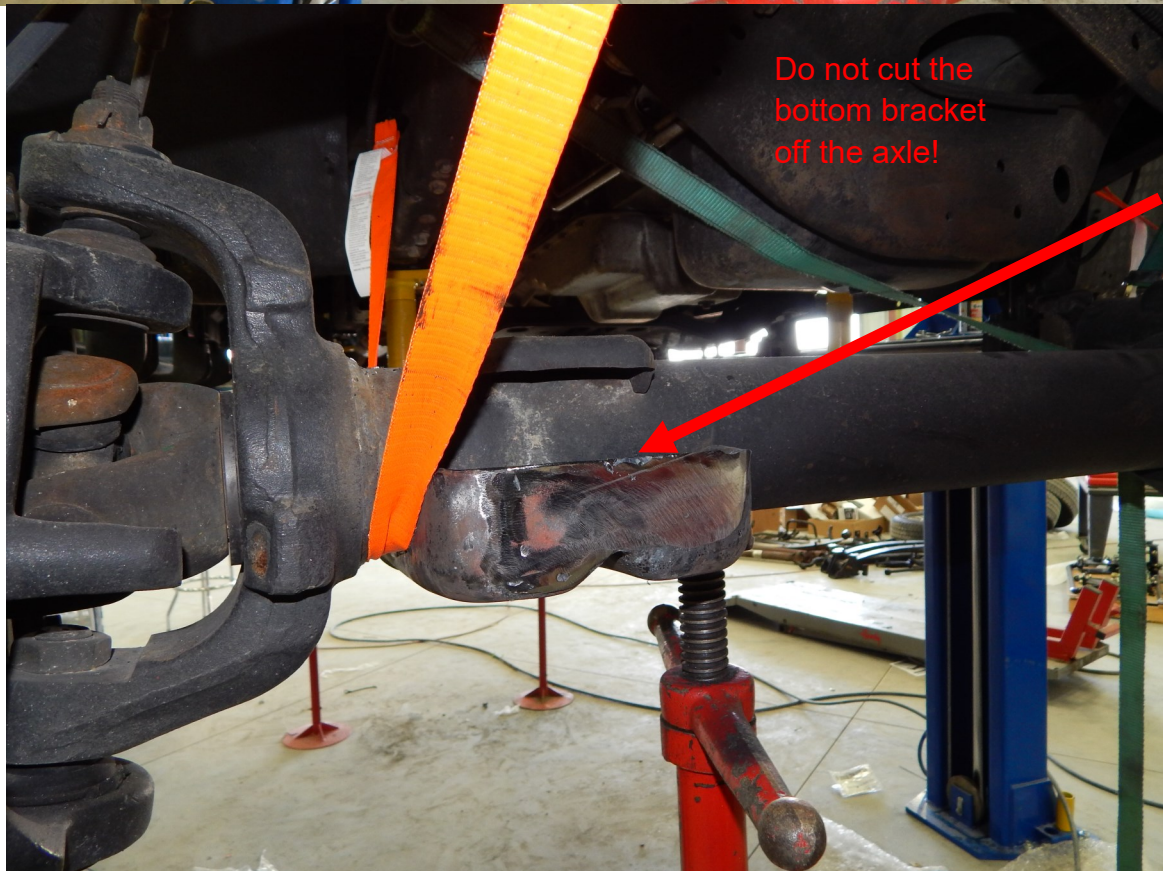
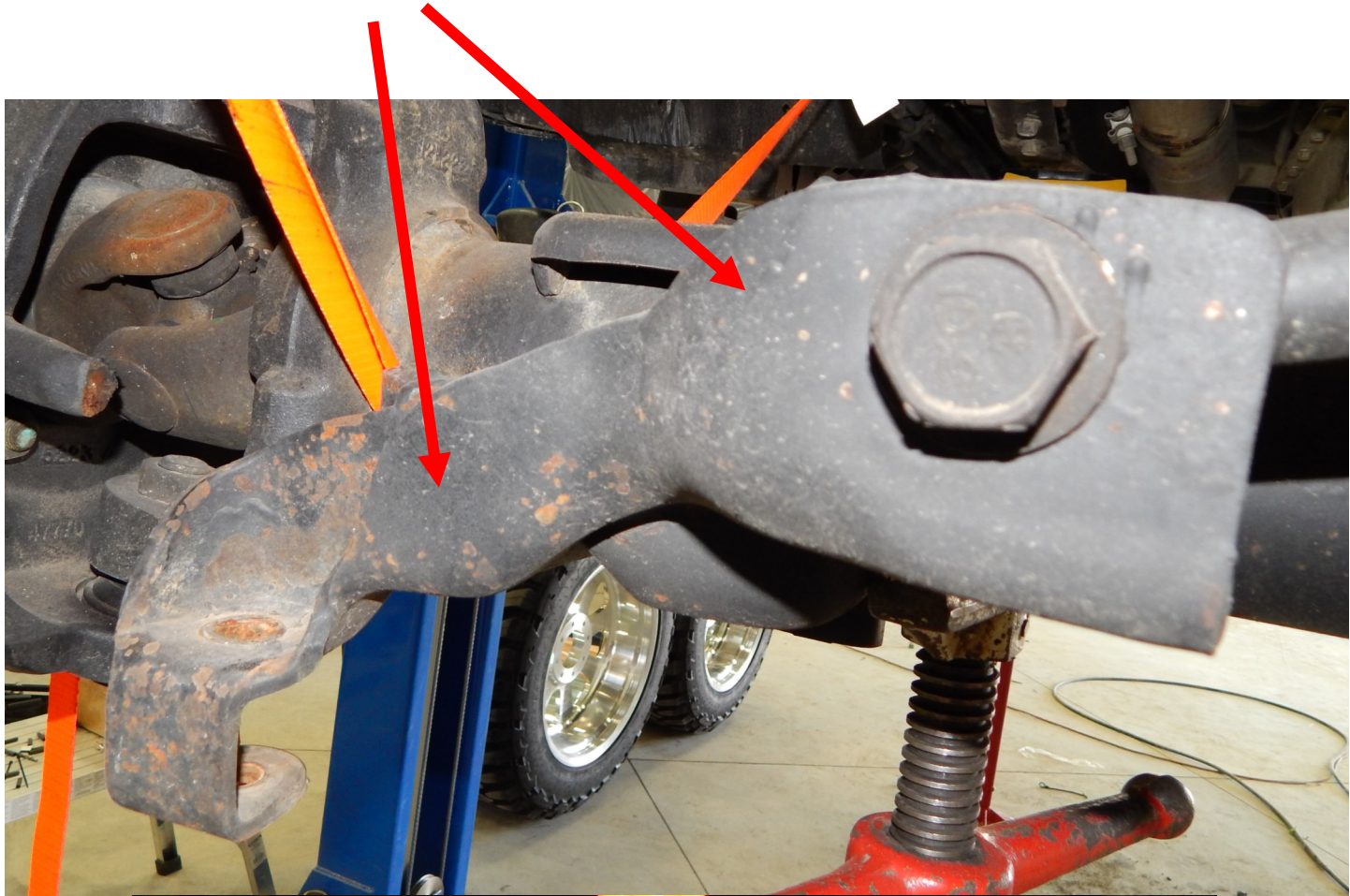
Step 1. Before you remove anything off the truck, measure the pinion on the front and rear axle differential. Make sure to record this measurement as we will want to put each axle back to this angle after the suspension lift kit is installed. This is especially important for the front axle. Putting the front axle back to the same measurement will keep the stock camber and caster. Record this measurement here _____

Step 2. Jack up the truck and place a jack stand under the frame on each side of the truck. Jack the truck up enough so that the front tires are just barely off the ground. Take a motorcycle strap and wrap the strap around the differential and to the frame. This will help keep the axle in the general proximity while the factory suspension is removed and the 4 link is installed.

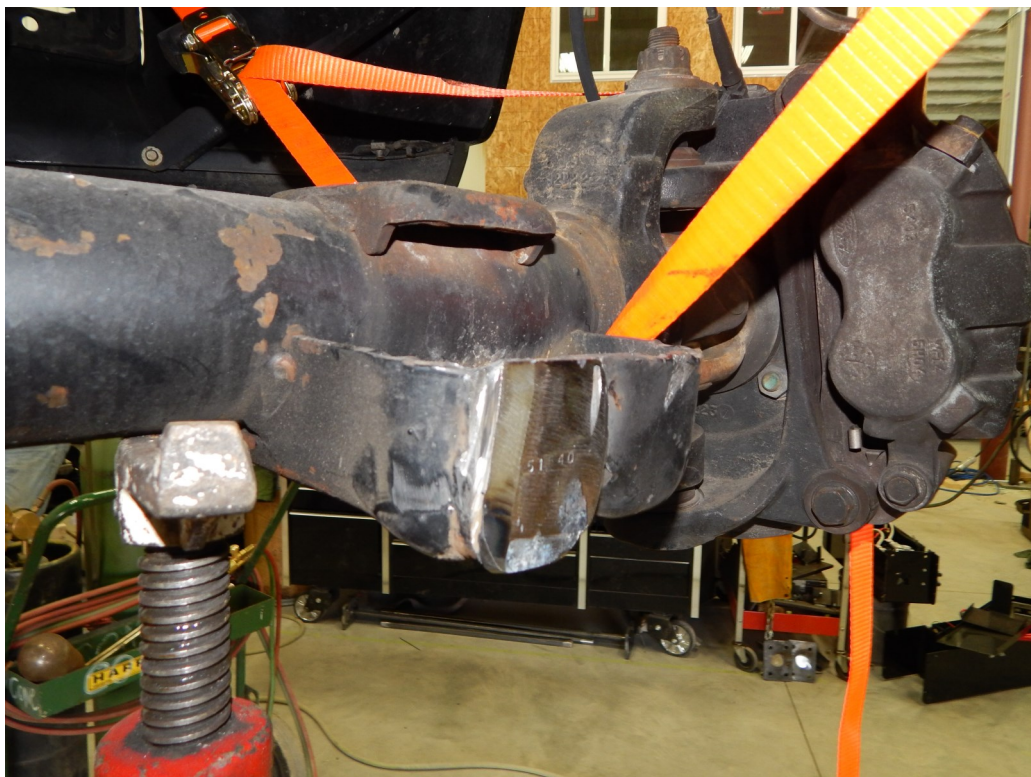
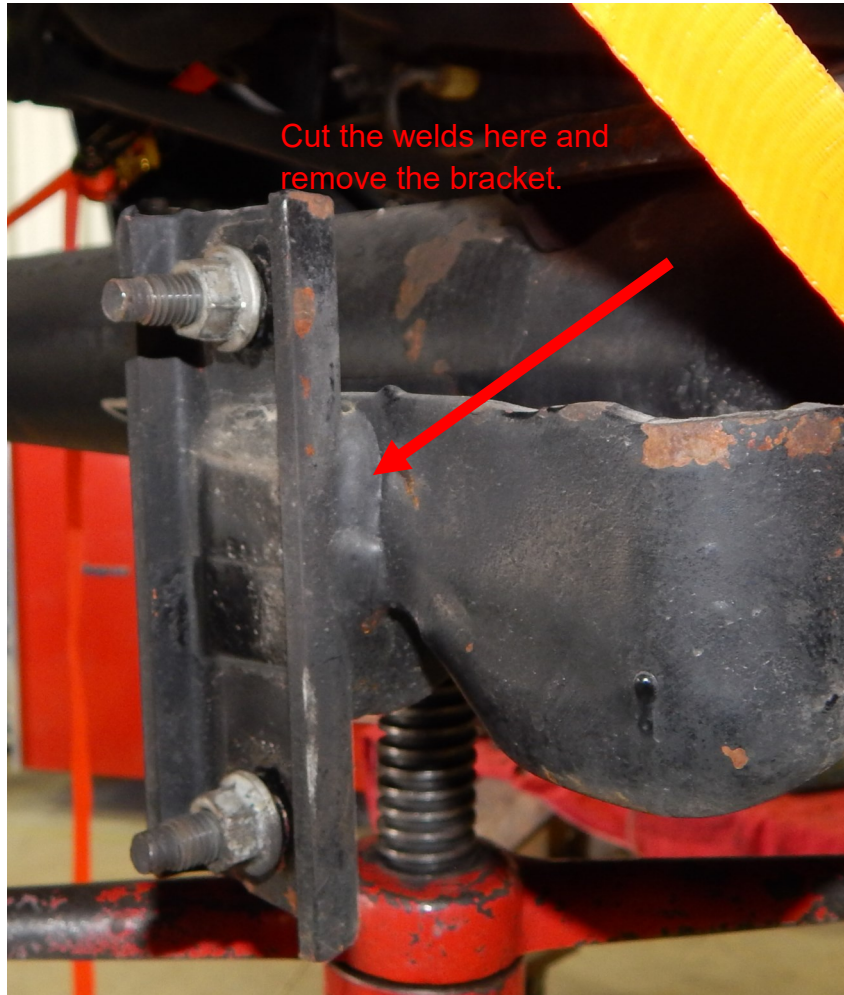
Step 3. Remove the drive shafts (they both need to be lengthened). The front drive shaft will need to be lengthened 1.5". Remove the front shock absorbers, bump stops, leaf springs, sway bar and sway bar end links. Make sure to set aside the lower casting from the driver side. It will be modified and re-used. Remove the track bar, steering stabilizer shock, steering link, pitman arm and track bar mount. You will also need to remove the drag links as the cross over knuckle will need to be installed on the passenger side.



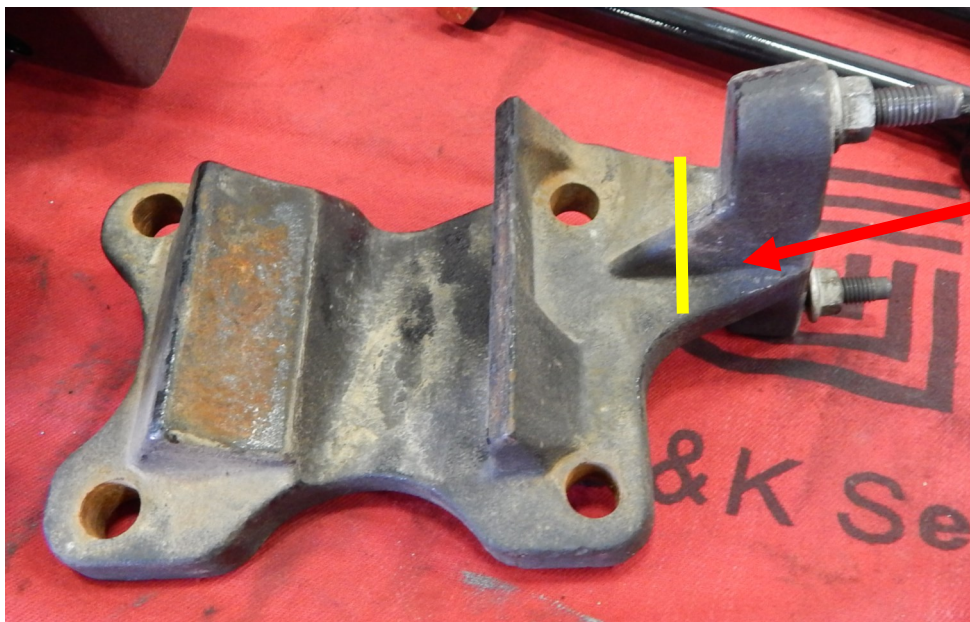
Step 4. The factory track bar mount and steering stabilizer mount will have to be removed from the front passengers side of the axle.



Step 5. You will need to cut off the passengers side sway bar mount on the backside of the axle. Just cut it off with a torch and grind the surface smooth. Use the pictures below as reference.

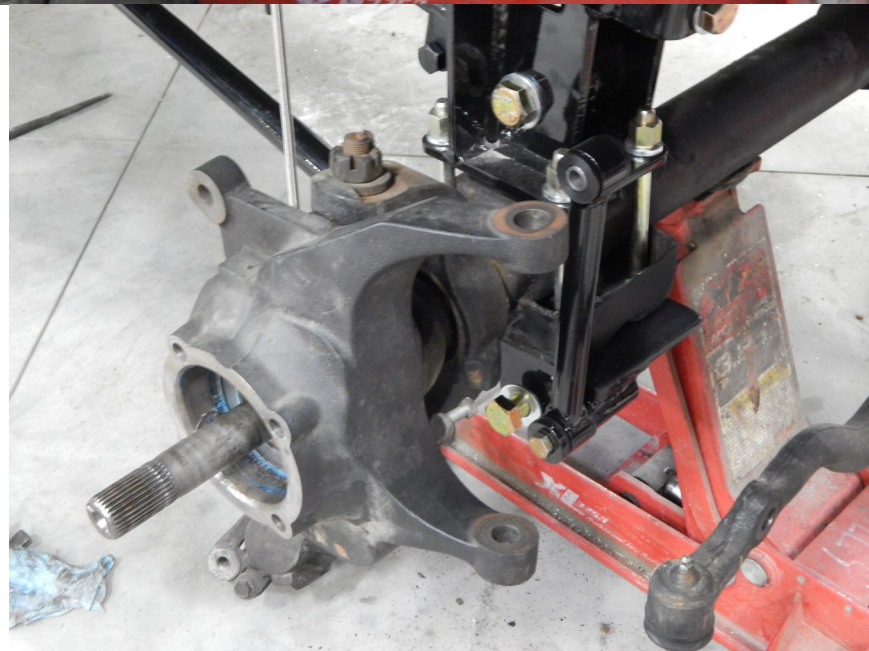


Step 6 Locate the lower casting from the bottom of the drivers side axle. The original sway bar mount will need to be cut off. Use the pictures below as reference.



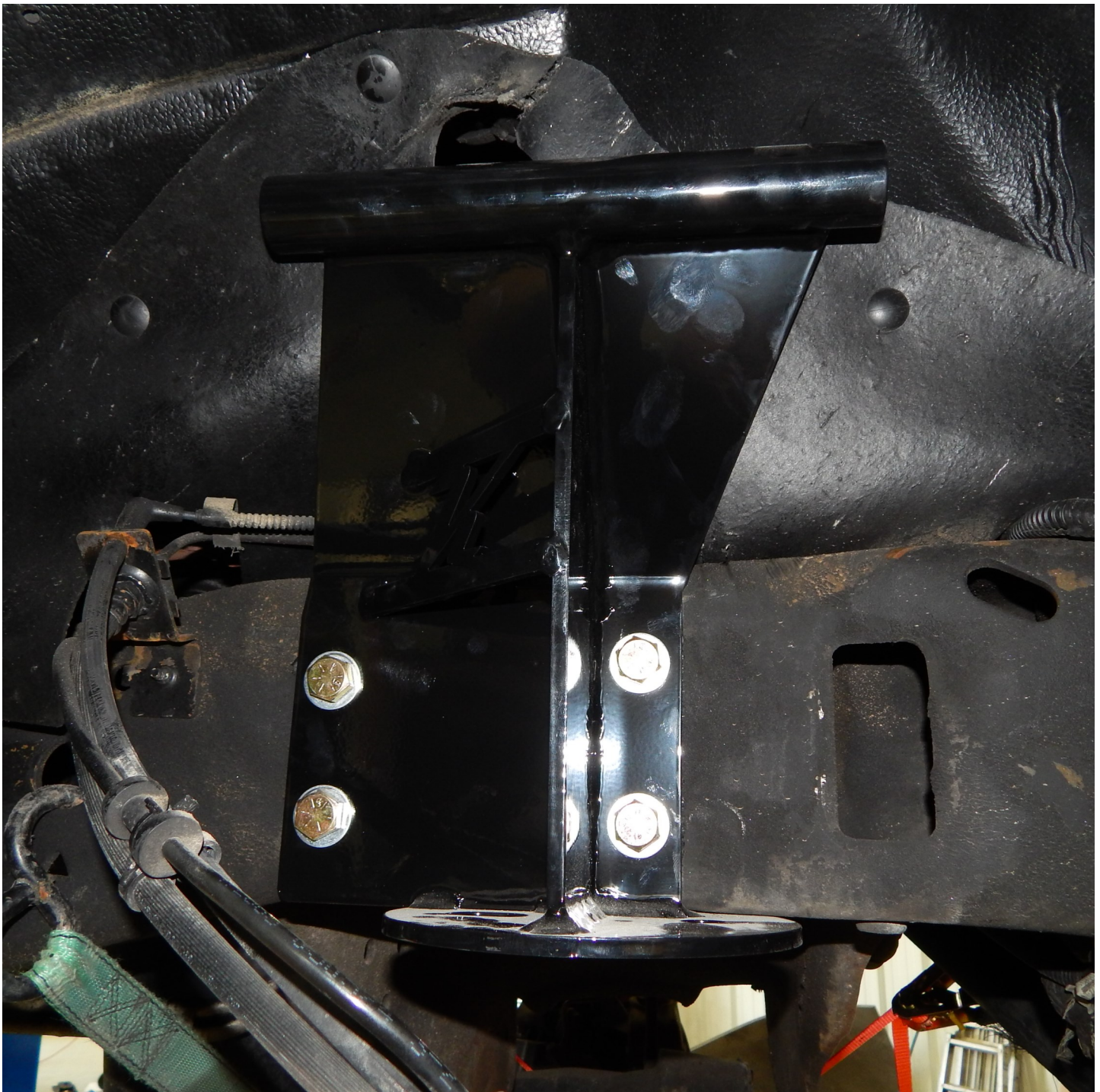
Step 7. The cross over steering kit can be installed on the passenger side axle at this time. Use the instructions provided with the kit. If you are changing the front gears, now is the time to do this while the passenger side axle is out. Once the cross over kit is installed, reinstall the drag link.

Cross over steering knuckle installed

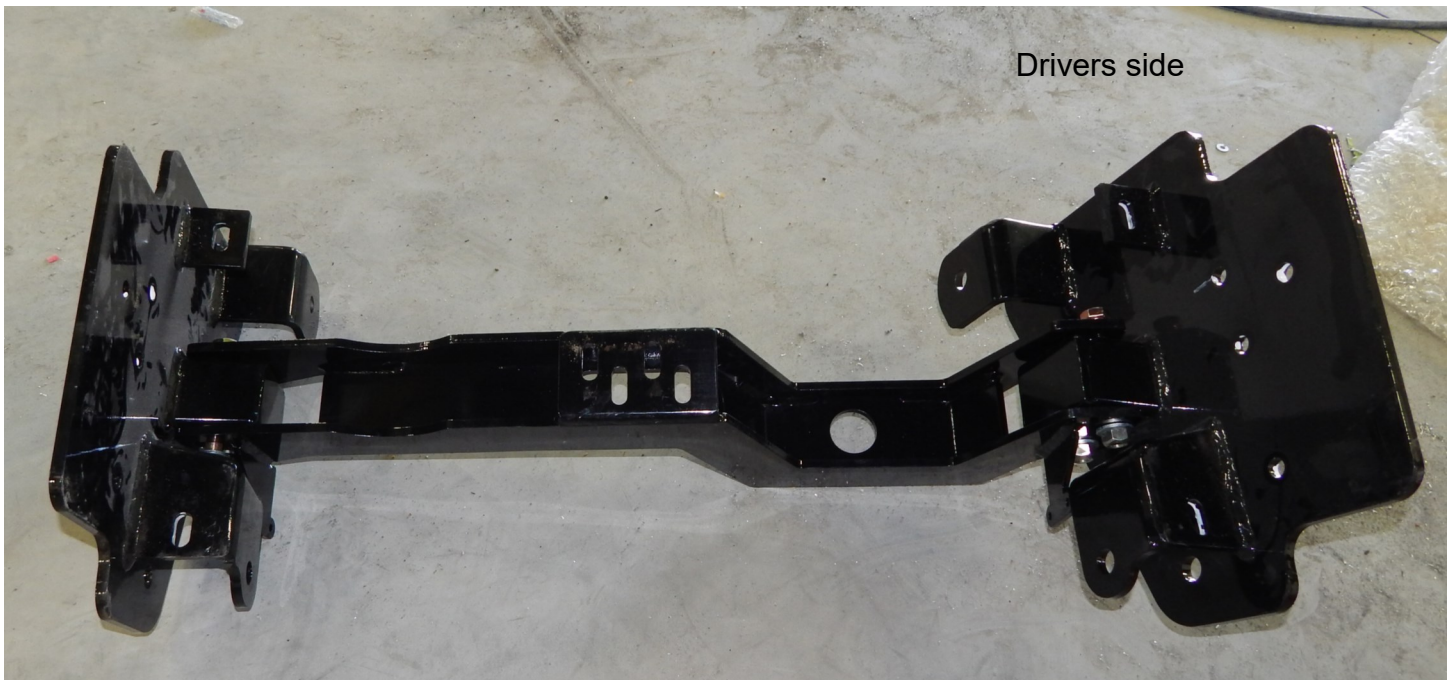


Step 8. Locate the upper bag mounts (part# 1000PS and 10482 DS). You will need to drill out the four holes in the frame out to 17/32". Look on the back side of the frame to make sure there are no brake lines, fuel lines, wiring, etc. before drilling. Once the four holes are drilled, fasten the upper bag mount with the 1/2 x 1 1/2" bolts. Torque these bolts to 85 ft./lbs. Install both sides at this time.

Passenger side pictured

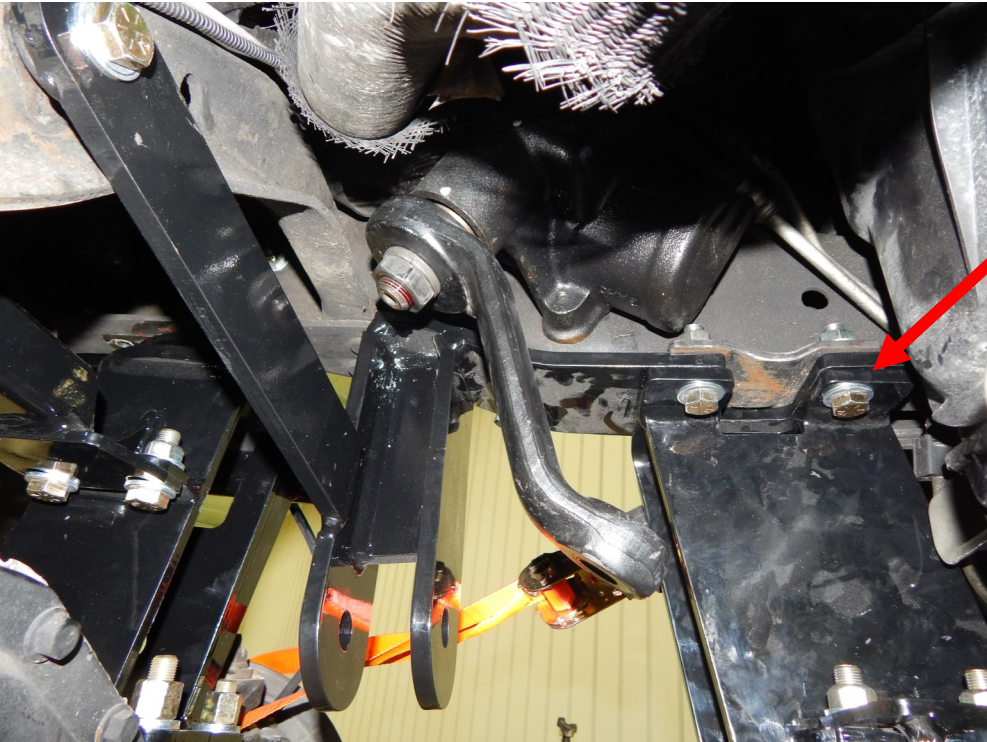


Step 9. Locate the side plates (part# 11100DS and 10999PS) and the cross member (part# 10288). The easiest way to locate which holes to use in the side of the frame is to mount the cross member to the transmission and then fit the side plates up to the cross member. To do this a jack needs to be put under the transmission and remove the factory transmission mount. Once you have the new cross member bolted up to the transmission mount, place the side plates along the frame and clamp them. There will be a couple holes that line up. Go ahead and bolt them in place with the 1/2 x 1 3/4" bolts. The other holes will need to be drilled out to 17/32. Excursion installs will require ALL the bolts to be drilled. You will want to start all the bolts in the side plates, but do not torque until the 5/8x5" bolts are installed into the side plates. Once all the bolts are started, go ahead and torque the 1/2" bolts to 85 ft./lbs. and the 5/8" bolts to 125 ft./lbs. There are more pictures on page 7 for reference.



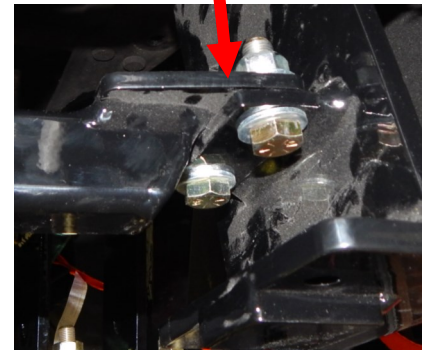


Step 10 Locate the pitman arm (should be part of the cross over steering kit), pan hard bar drop (part# 10510) and sway bar drop brackets (part number 11757). First install the pitman arm. Torque the nut to 275 ft./lbs. Next, the pan hard bar drop fastens to the frame with the factory bolts on the outside, 1/2x2" to the engine cross member. The front bolt on the pan hard bar drop also serves as the rear bolt in the sway bar drop bracket. Make sure the spacer is placed in between the front bolt and the frame. Use the 1/2x2" bolts to fasten in place. Once you have all the bolts installed, tighten to 85 ft./lbs. Locate the passenger side sway bar drop bracket and the cross member. Install the sway bar drop to the frame rail with the 1/2x1 3/4" bolts. Before torquing, install the cross member with the 1/2x1 1/2" bolts. Now torque the bolts to 85 ft./lbs.



Spacer goes here

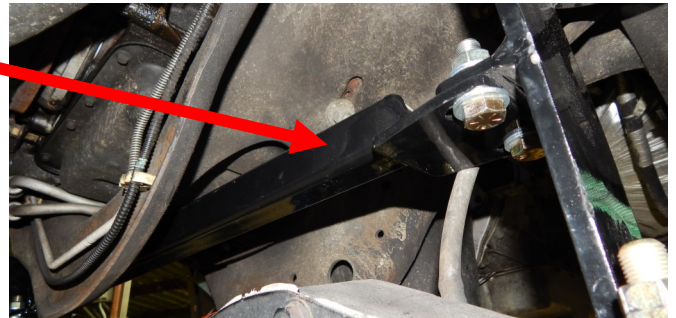
Cross member fastens here



Factory bolts that held the stock pan hard bar drop in place

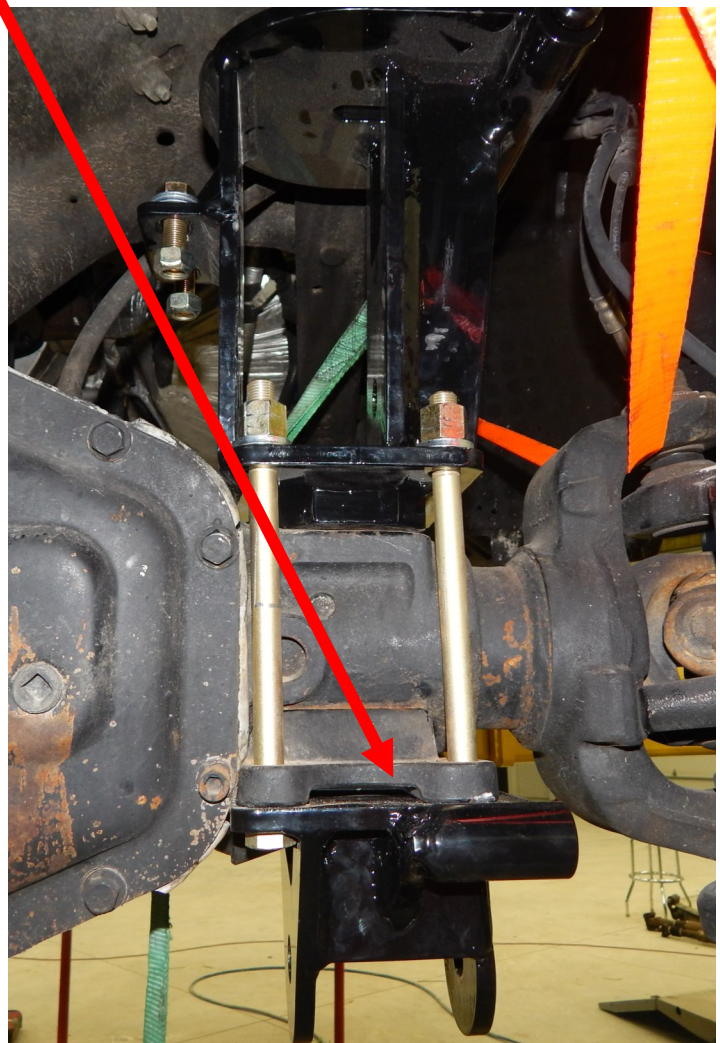
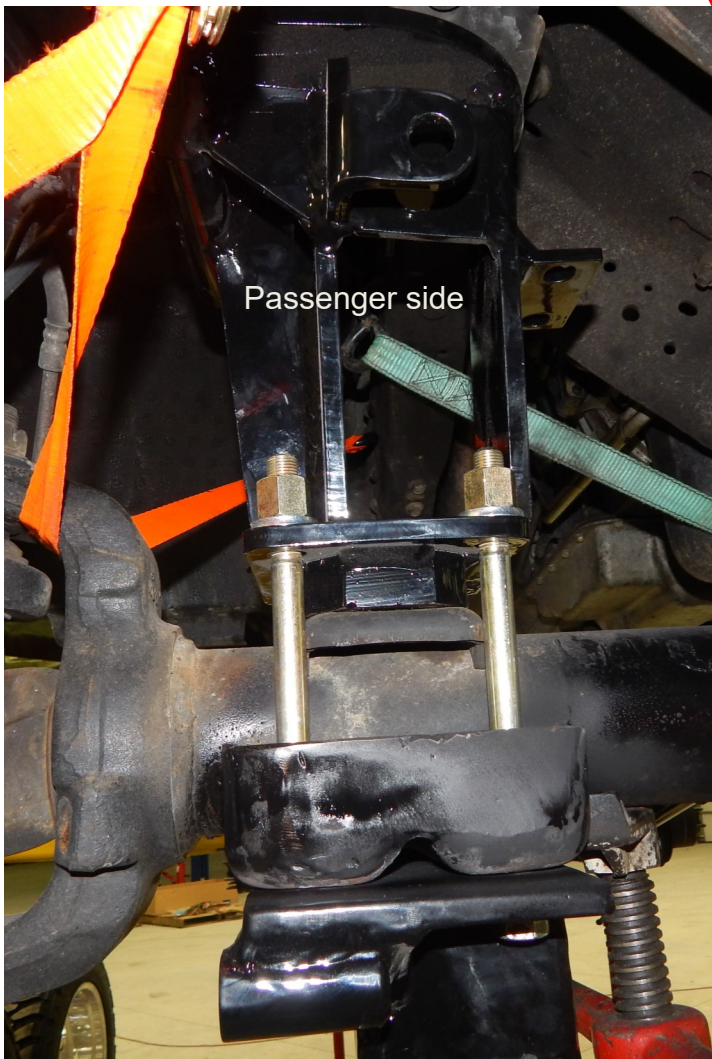
Step 11 Locate the lower trailing arm mounts (14765PS and 10505DS) and the lower air bag mounts (part# 10498DS and 10486PS) and the cross member (part# 10565). Starting with the drivers side, place the lower bag mount on top of the axle (10498). Locate the lower trailing arm mount (10505) and the factory cast piece that you cut the sway bar mount off. The sway bar mount goes to the front and faces the tire. Fasten these parts together using the four 9/16x8" bolts. NOTE: MAKE SURE THE BOLTS ARE INSTALLED FROM THE BOTTOM UP. Place the passenger side lower air bag mount (10486) on top of the axle. Place the lower trailing arm mount (14765) on bottom of the axle, with the sway bar mounts on the front side of the axle facing the tire, and fasten with the four 9/16 x 8 1/2" bolts. Before you tighten these bolts, locate the cross member (10565) and fasten between the lower air bag mounts with the 1/2x1 1/2" bolts. Place these bolts from the bottom up also. Once the cross member bolts are started, torque the 9/16" bolts to 135 ft./lbs. and the 1/2" bolts to 85 ft./lbs.

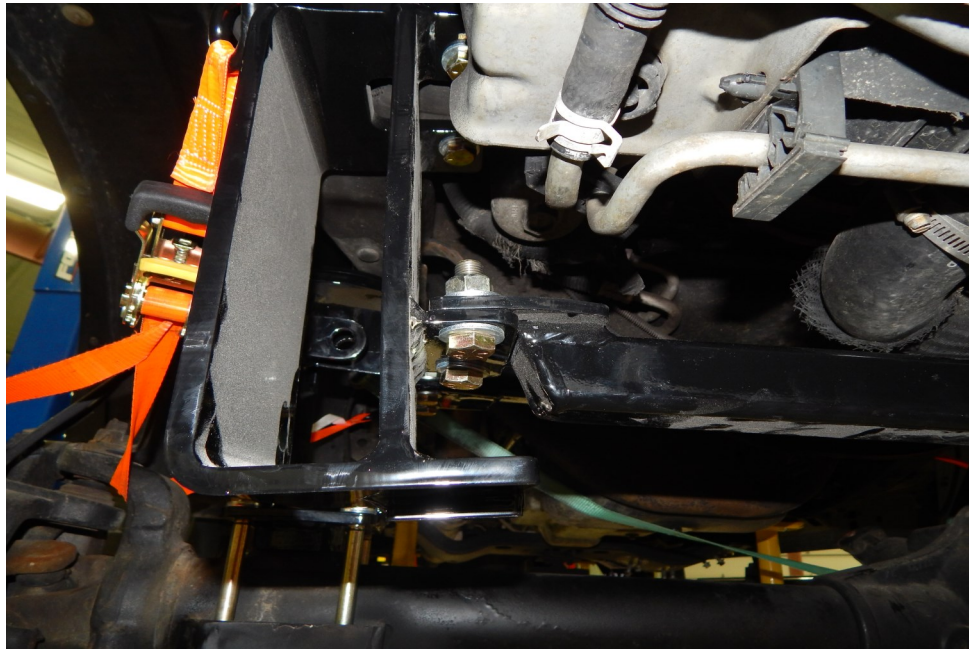
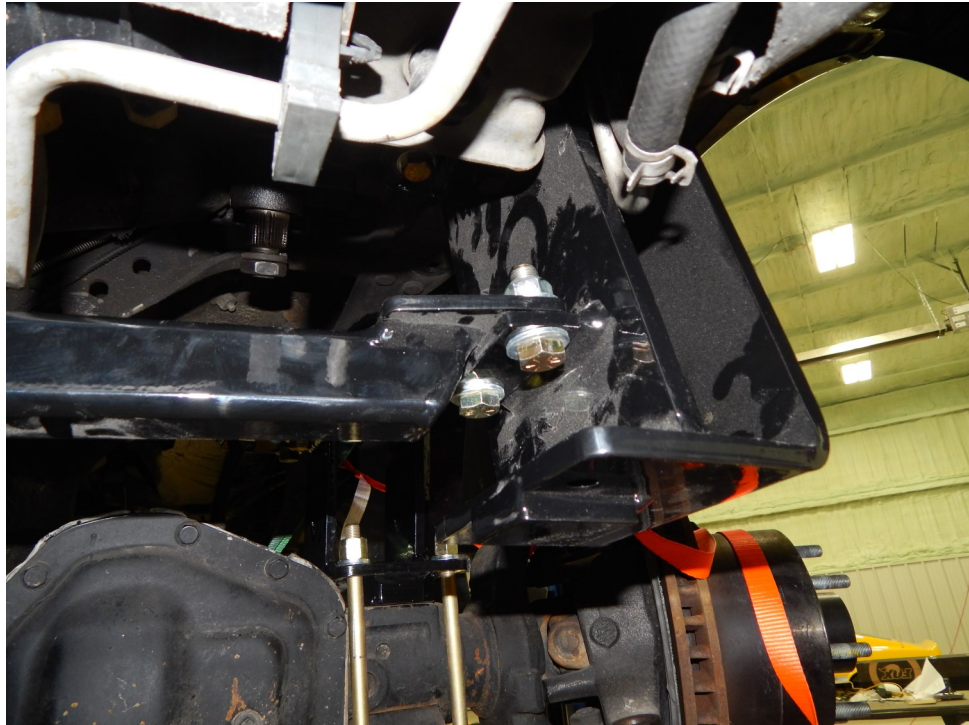
Crossmember installed



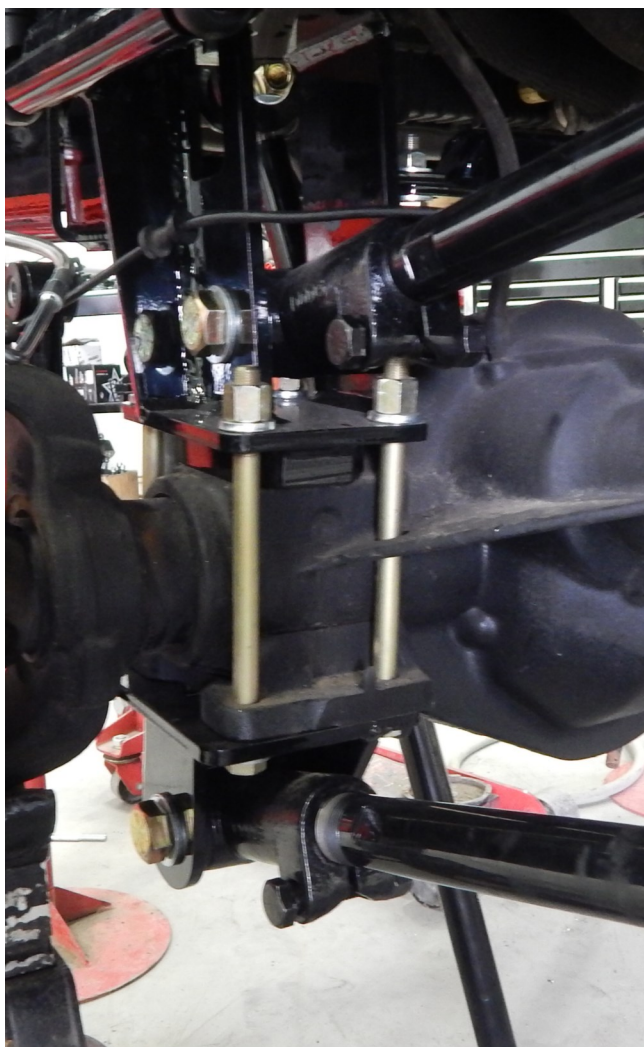
Drivers side

Cast iron piece cut in step 6

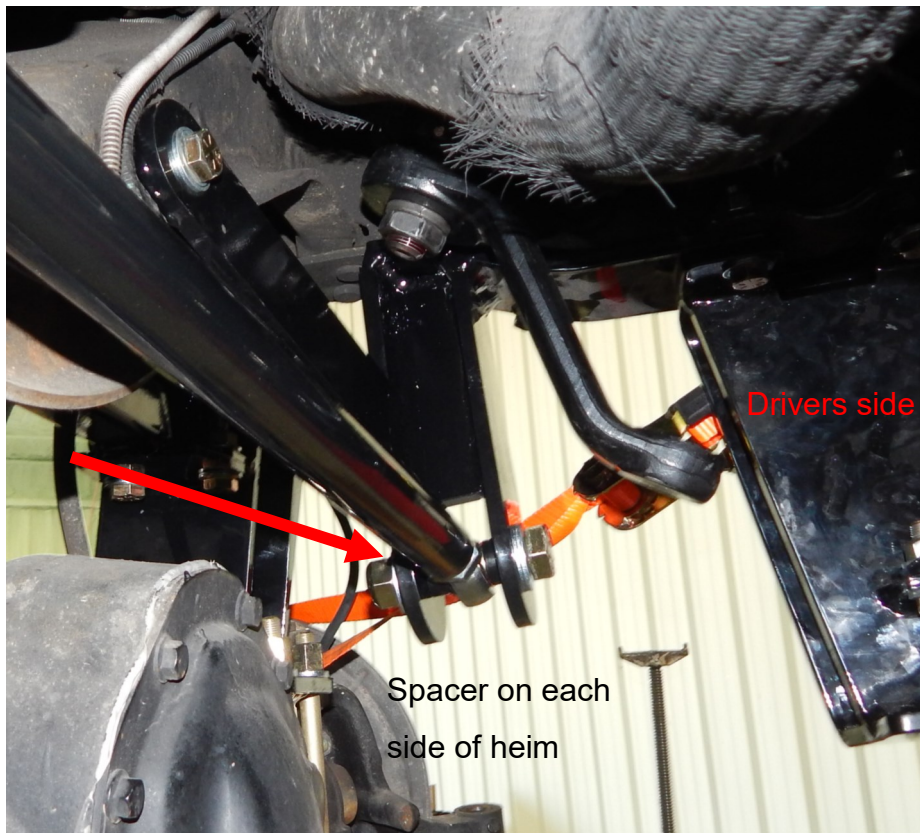
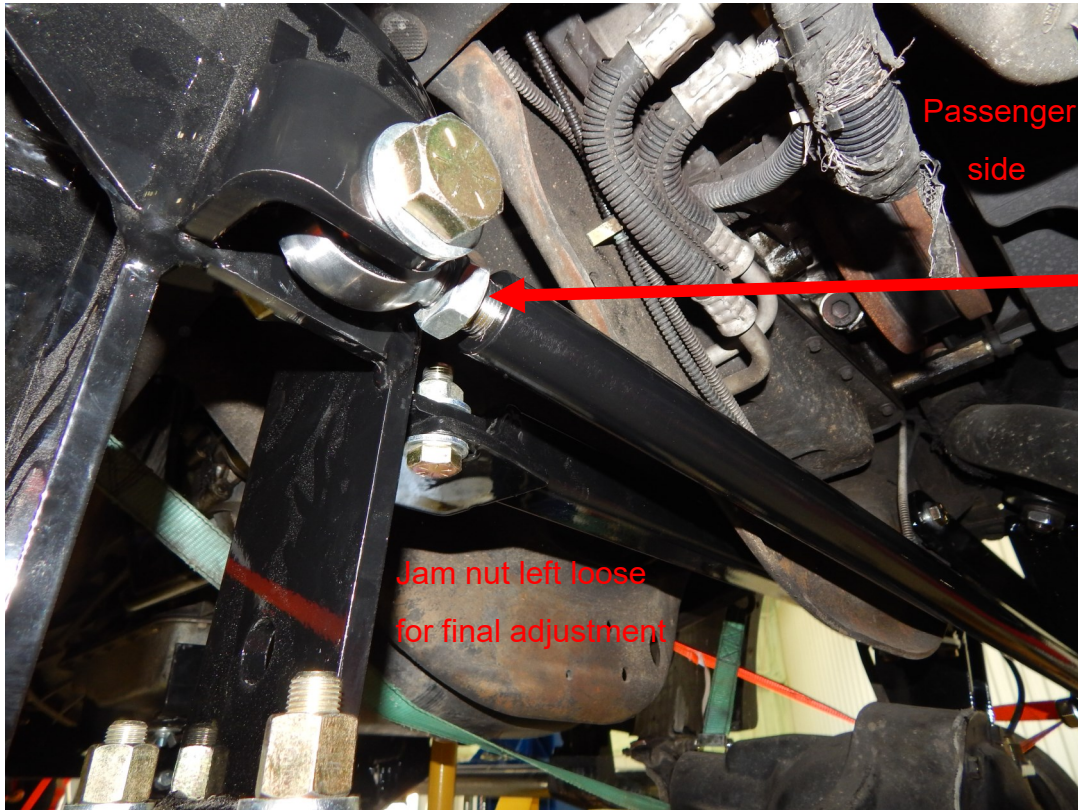




Step 13. Locate the trailing arms (part# 10017 upper and 11930 lower). Set the top bars to 29" between the knuckles and the bottoms to 44" between the knuckles. This will be a good place to start. Final adjustments will be made once the installation is complete. The rear of the trailing arms fasten into the side plates and lower air bag mounts with the 7/8 x 5" bolts. All the bolts go from the outside of the vehicle in.



Step 14 Locate the pan hard bar (track bar part# 11269) and the supplied spacers. Use the 3/4x3 1/2" bolts to fasten the bar into the pan hard bar drop (part#10510) and the passenger side lower air bag mount (part# 10498). Use the supplied spacers on each side of the heim ends. Torque the 3/4" bolts to 175 ft/lbs. You will adjust the pan hard bar to center up the front end in final alignment.



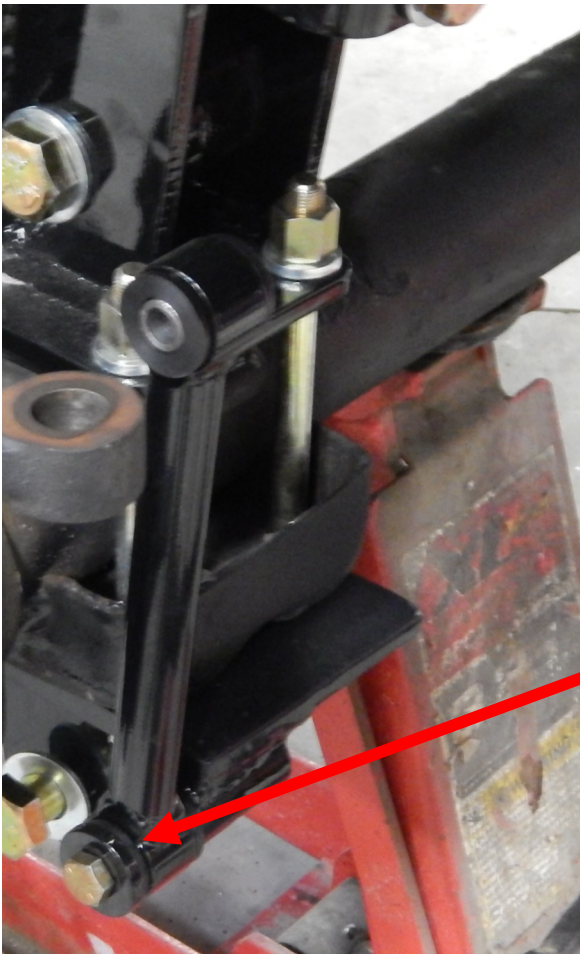
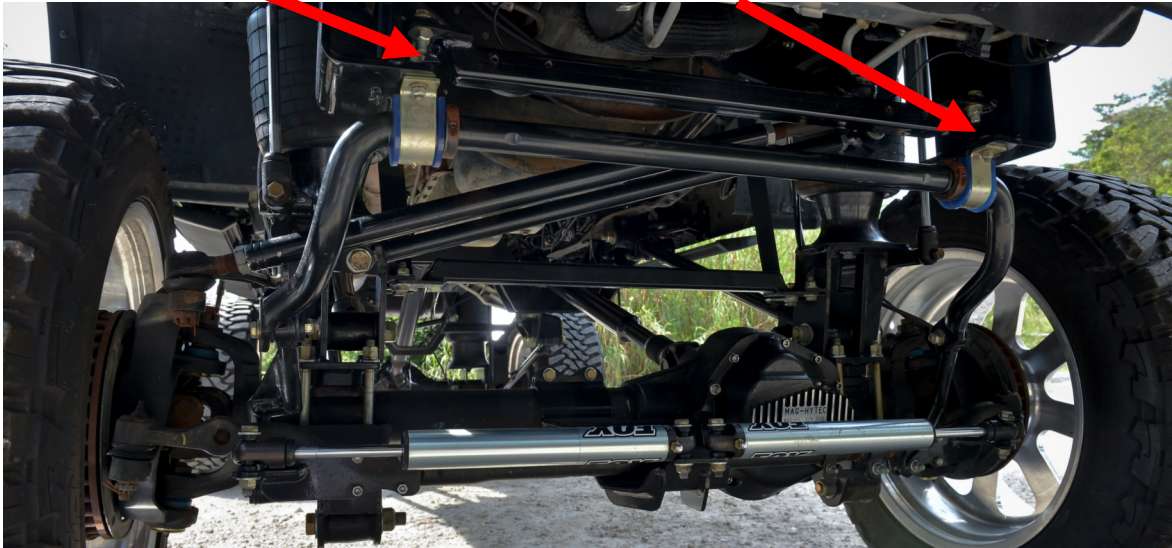
Step 15. Locate the 8979 air bags. They fasten into the upper air bag mount with the 1/2" and 3/4" lock washers and nuts. Torque these bolts to 35 ft./lbs. The bottom of the air bag fastens to the lower air bag mount with the 1/2x4 1/2" bolts. Torque this bolt to 35 ft./lbs. also.



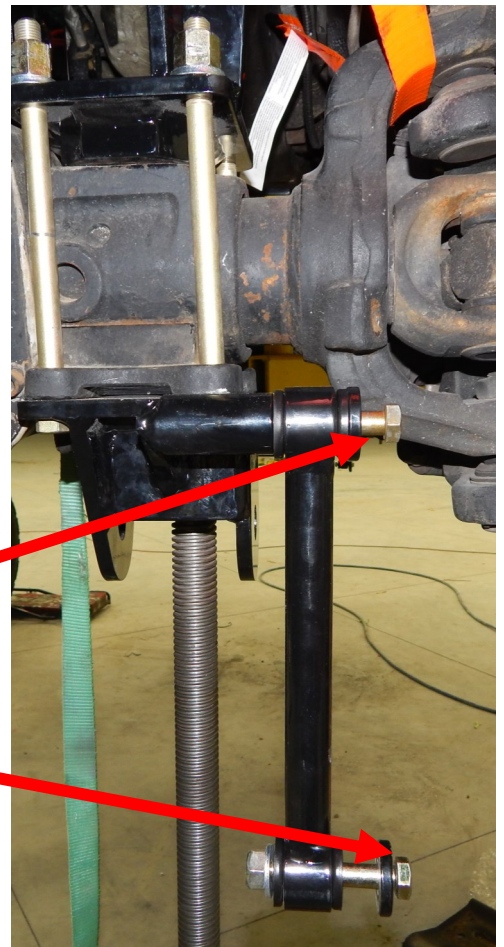
Step 16. Locate the longer braided brake lines and replace the OEM lines. You will need to bleed the brake system before test driving.

Step 16. Locate the sway bar (part# 1139-159KLD), sway bar clamps and sway bar end links. Install the sway bar end links with the 1/2 x 1 1/2" bolts into the lower control arm mounts. Make sure to use the large washer on the outside of the poly bushing. Fasten the sway bar to the sway bar mounting brackets with the D rings and 3/8x 1 1/2" bolts. Torque these bolts to 45 ft./lbs. Use the supplied grease on the inside of the blue bushing. This will prevent a squeaking sound when driving.

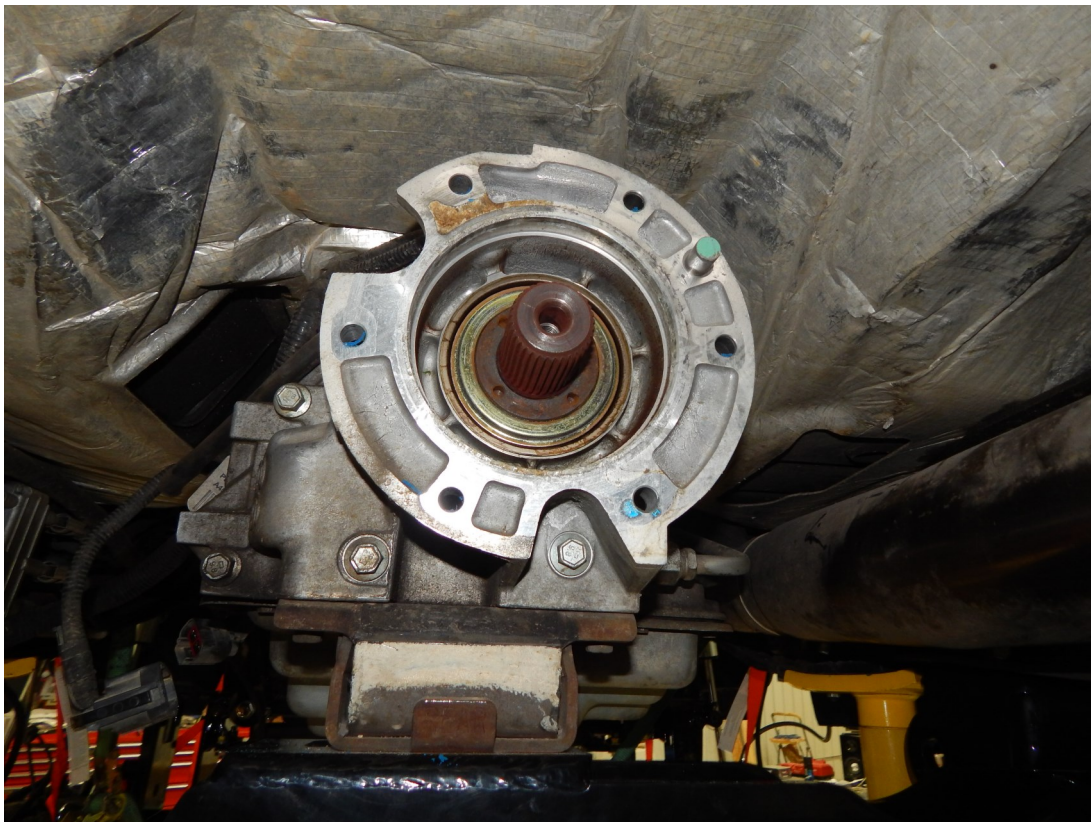
3/8 x 1 1/2" bolts fasten the sway bar to sway bar mounting brackets



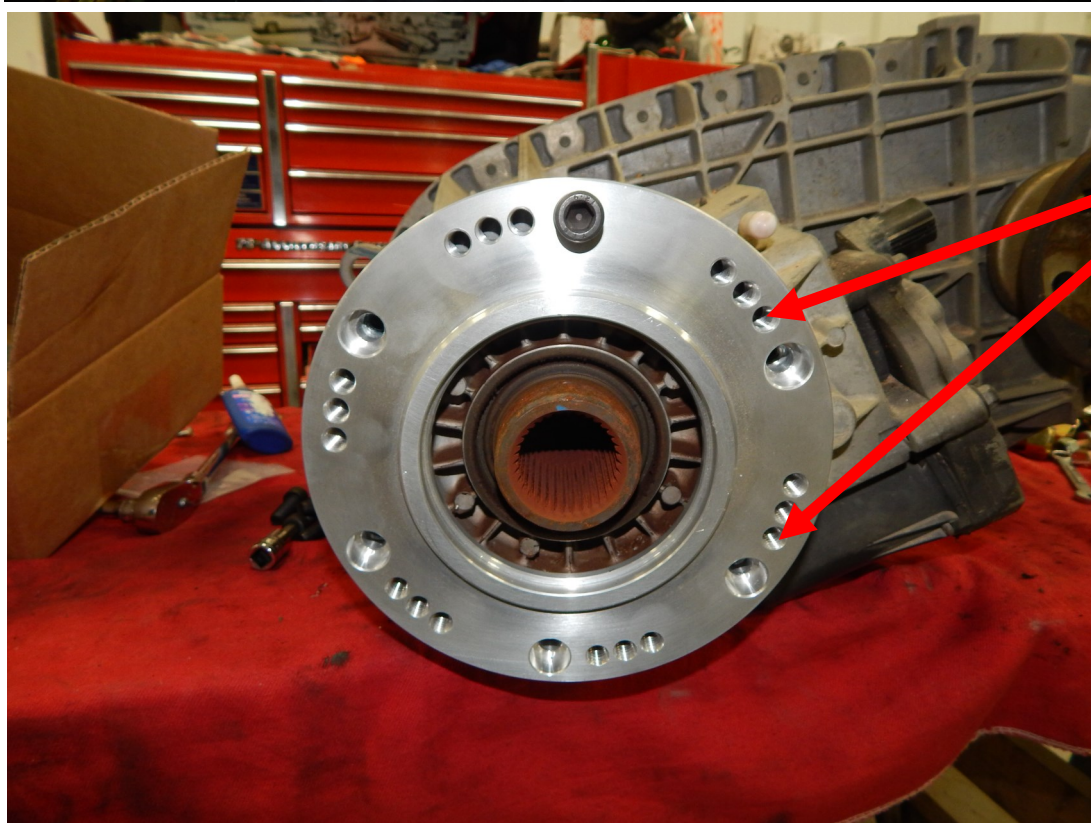
Place large flat washer on outside of sway bar end link



Step 17. Remove the transfer case off the back of the tranfercase. Locate the indexing ring and gaskets. Place the gasket on the back of the transmission and use the 10x35mm socket head bolts (WITH RED LOCTITE) to fasten the indexing ring to the back of the transmission. Torque to 35 ft/lbs. Now install the studs with short end of the stud into the indexing ring in the hole closest to the socket head bolt. Again, use REDLOCTITE on the studs.



Transmission with transfer case removed

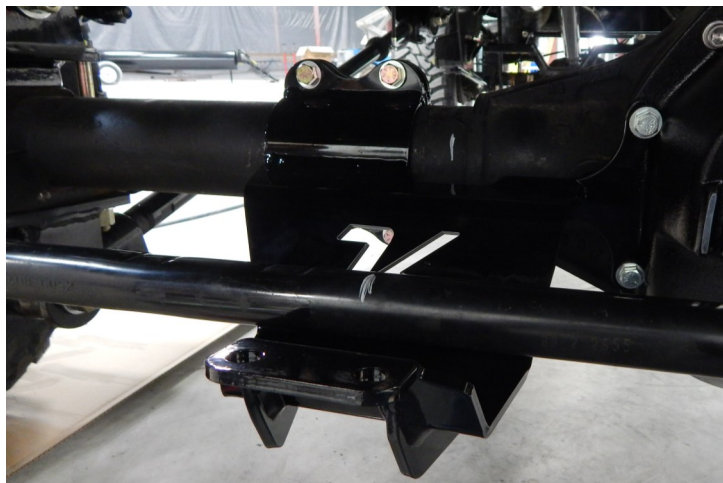


Use the hole closest to the socket head bolt for the studs

Transercase indexing ring installed

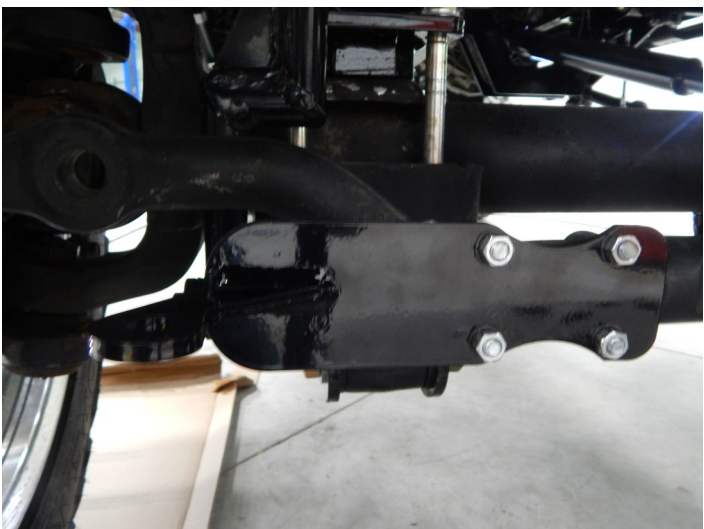


Step 18. Locate the OPTIONAL steering stabilizer kit. The passenger side outer shock mount (part# 30167) fastens to the drag link with two U bolts. The drivers side (part# 30164) uses outer the pinch bolt nut. Use the pictures below for reference. Tighten the U bolts to 20 ft./lbs. and the factory nut to 75 ft./lbs. Next locate the center shock mount (part # 30157) and attach to the axle with the backing plate (part# 30166) with the 7/16x 1 1/2" bolts, and to the differential with the 3/8x 1 1/2" bolts. If the truck DOES NOT HAVE an aftermarket diff cover use the spacer plate (part # 30168) .Torque the 7/16" bolts to 55 ft./lbs.

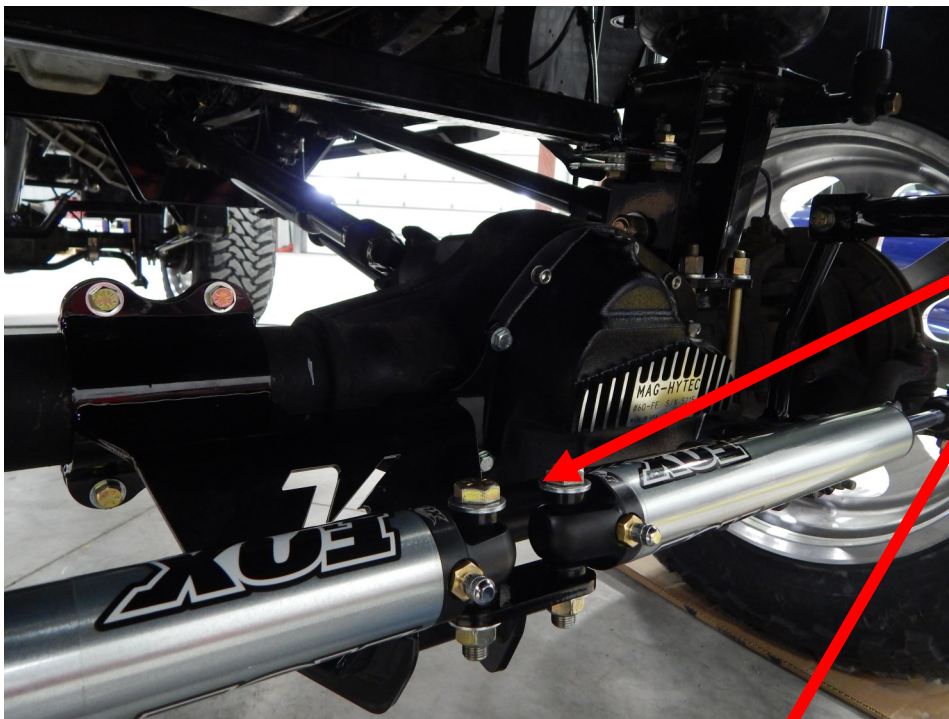


Drivers side

Passenger side



Step 19. Locate the Fox Steering Stabilizer shocks (part # 985-24-068). They fasten to the outer mounts and the center mount with the 1/2 x 2 1/2" bolts. The shocks fasten to the center mount with the 1/2 x 3" bolts and the shock strap (part# 20227). The shock straps were designed after the kit below was built. Refer to the exploded view on page 22 for placement.



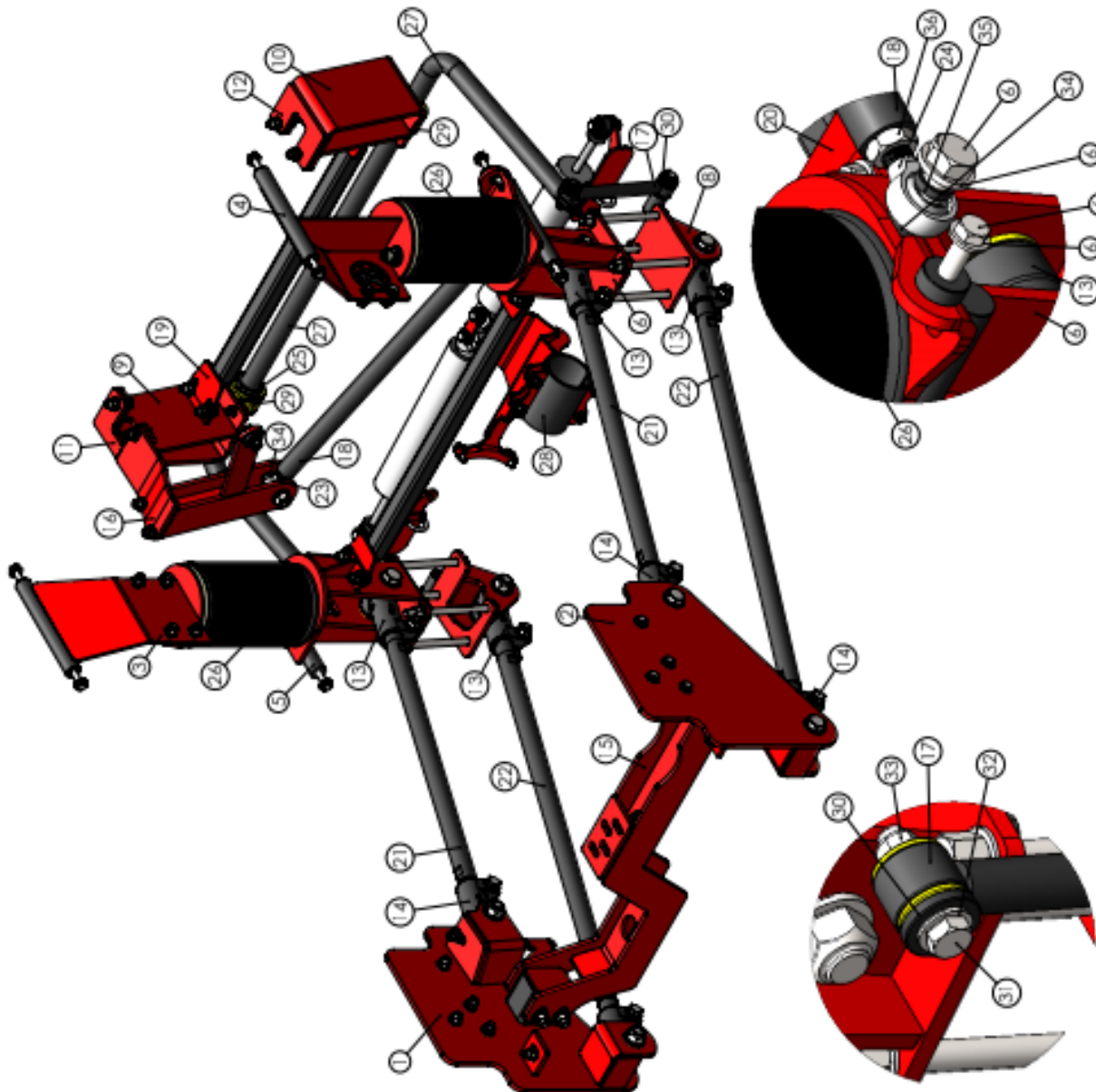
Shock strap goes here



20. Alignment: Refer back to step one to get your pinion angle measurement. Set the distance between the upper and lower air bag mounts at 12". This will be ride height. Use the adjustability in the trailing arms to set the pinion angle and center the axle in the wheel well. If the air management system is installed, then you can use that and program your ride height. If not, just use shop air on manual fill. You can gain a lot of set up knowledge by going to YOUTUBE and typing in Kelderman and look for the "how to set up a Kelderman suspension video". This will explain the operation.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	11100	(DS) Side Plate	1
2	10999	(FS) Side Plate	1
3	10482	(DS) Upper Bag / Shock Mount	1
4	10000	(FS) Upper Bag / Shock Mount	1
5	10498	(DS) Upper Trailing Arm Mount	1
6	10486	(FS) Upper Trailing Arm Mount	1
7	10505	(DS) Lower Trailing Arm Mount	1
8	14765	(FS) Lower Trailing Arm Mount	1
9	11741	(DS) Sway Bar Bracket	1
10	11675	(FS) Sway Bar Bracket	1
11	11751	(DS) Sway Bar Spacer Plate	1
12	20267	(FS) Sway Bar Spacer Plate	1
13	18498	Trailing Arm Knuckle 10006 (LHT)	4
14	18499	Trailing Arm Knuckle 10005 (RHT)	4
15	10288	Transmission Crossmember	1
16	10510	(PHB) Drop	1
17	30295	9.75" End Links	2
18	11811	29.50" Panhard Bar	1
19	16372	31" Crossmember	1
20	10565	32.25" Crossmember	1
21	52136	36" Trailing Arm Bar	2
22	52150	50" Trailing Arm Bar	2
23	80109	(RH) Ball Joint Rod End 3/4-16 x 3/4"	1
24	80110	(LH) Ball Joint Rod End 3/4-16 x 3/4"	1
25	14695	1.375" Lock Collar	2
26	80012-8979	Firestone 8979	2
27	1139-159KLD	SWAY BAR - 1.50"	1
28	30169	Steering Stabilizer	1
29	80140	4139-180 Sway Bar Bushing Kit 1.5"	2
30	11551	1.5"OD x .53" ID x 1/4"	4
31	12017	Bolt - 1/2"-20 X 2 1/2" Gr.8	2
32	13024	1/2" Flat Washer	4
33	13124	1/2"-20 Lock Nut	2
34	10199	Helm Spacer .440" (3/4" Bolt)	3
35	10195	Helm Spacer .25" (3/4" Bolt)	1
36	13208	Jam Nut - 3/4"	2



		REV ECN CHANGE DESCRIPTION OWNER BY DATE	
		A REVISED DRAWING 1.064 Approximate Weight = 483.5M07196 Bx	
MAIL SPEC: DESCRIPTION: Kelderman 4-Link (Front) 13-14" LB		DATE: 4/24/2018	
PROJECT: 1999-2004 F250-350 Pickup / 2005 Excursion		PART NUMBER: KUM-11157	
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