

Version 1.4

KLM69022



kelderman
AIR SUSPENSION SYSTEMS

A 1/4"-20 and 3/8"-24
tap and 13/64" and
21/64" and 7/16" drill
bits are required

Red Loctite required

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2017+ Ford F-450 Pickup 4X4

8-10" Front Lift Kit

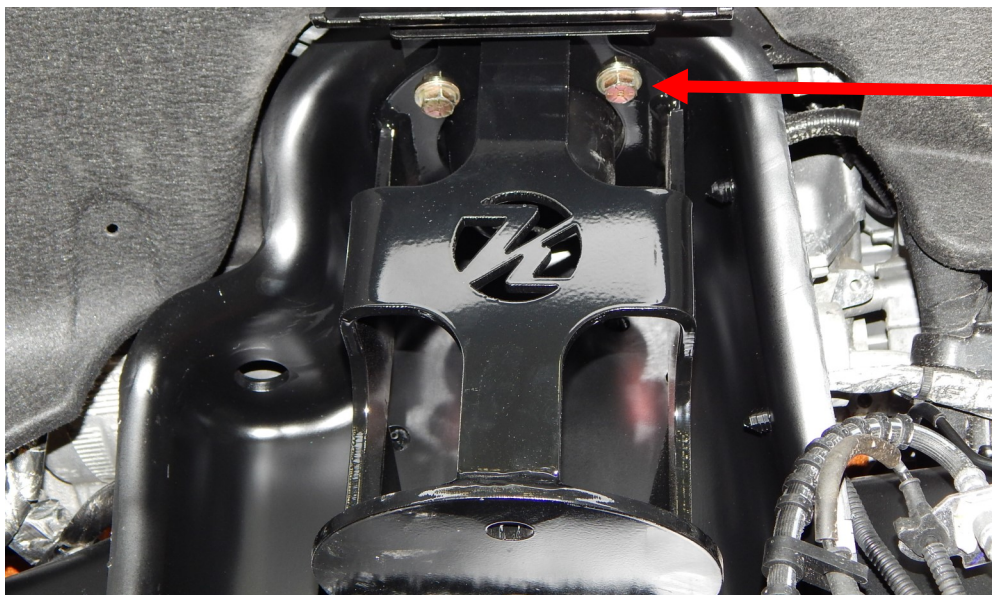
Installation Instructions



1. Measure the pinion angle on the bottom of the differential. Make sure to record the measurement here _____. Once the kit is installed, it is required to put the axle back to this measurement. This will keep the correct caster and camber.
2. Remove the transmission skid plate and remove the rear driveshaft. Disconnect the front sway bar end links and remove the front sway bar. If you don't have a lift, place a jack under the front differential and lift the truck until the wheels are 4-5" off the ground. Place a jack stand on each side of the frame, right under the radiator support.
3. Remove the wheels, shocks, steering arm, pitman arm, track bar, pan hard bar, pan hard bar drop and factory steering stabilizer shock. *You will need an air hammer to press the passenger side ball joint up and out of the axle.* Lower the jack and remove the coil springs (they should have some tension on them). Remove the cup on top of the axle that held the bottom of the coil in place, as well as the 8mm bolts that hold the ABS wire in place. Remove the upper brake line bolt that holds the brake hose located by the rear side of upper coil bucket.
4. Remove the factory front radius arms. Remove the yellow bump stop and remove the bolt that held the mounting cup in place. These will not be reused.
5. Install the sway bar drop brackets. Use the factory bolts that go into the frame.



6. Locate the upper air bag mounts (Part # 69557DS and 69558PS) and the upper shock reservoir brackets (Part# 69468DS and 69469PS). The upper bag mounts fasten to the upper coil perch with (2) 3/8" x 1-1/2" bolts. The shock reservoir mounts fit between the spring perch and top of the top of the air bag mount. Drill (2) 7/16" holes in the upper part of the spring bucket. (If your upper has (3) holes in the top, do not drill the inner hole. Just do the two holes closest to the tire.) **NOTE: Make sure not to drill into any wires or modules that are located just above the spring perch!** The lower (2) 1/4" x 1-1/4" bolts fasten to the side wall of the frame. These (2) holes need to be drilled with a 21/64" drill bit and threaded with a 3/8"-24 tap. Hold the upper bag mount in place and mark the holes where to drill.



**Drill these
holes
To 7/16"**



**Drill these holes
to 21/64" and
thread with a
3/8"-24 tap**

7. Install the pan hard bar drop bracket (Part # 69411) where the OEM bracket was. Use the factory bolts and nut tabs to fasten into the bottom of the frame. Use the 3 bolt flange and factory nuts to fasten into the engine cross member. Torque these bolts to 135 ft./lbs. (You will install the track bar later on in step 9).

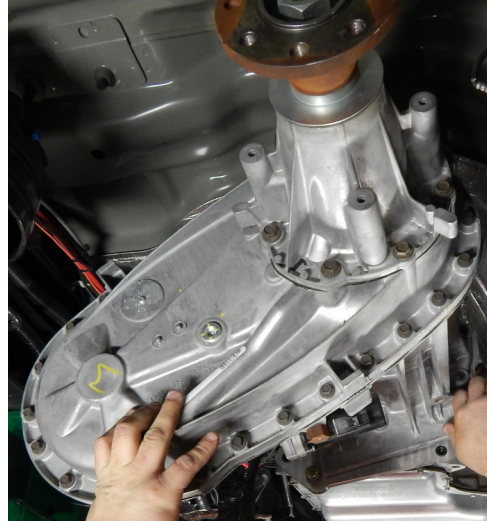
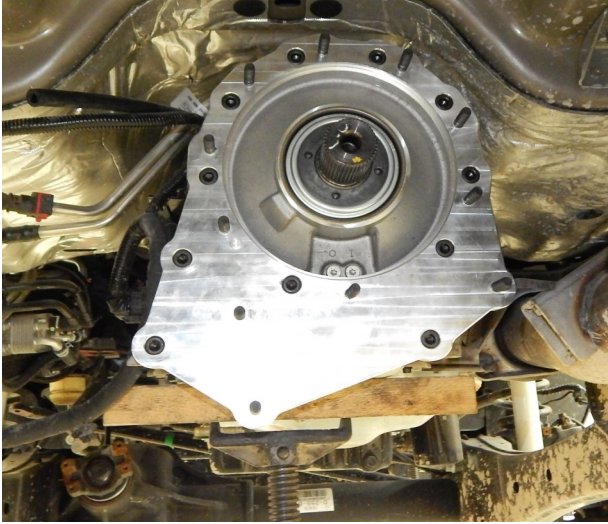


8. Remove the factory pitman arm and install new dropped pitman arm (Part # 80115). (The pitman arm is the same part number as the Ford pitman arm that is removed. The new pitman arm has been reworked so the steering arm connects on the bottom side instead of the top). Torque to 275 lb./ft. Reconnect the steering arm and make sure to re-install the cotter pin and nut cover. **NOTE: You will need to re-torque the pitman arm after 100 miles.**

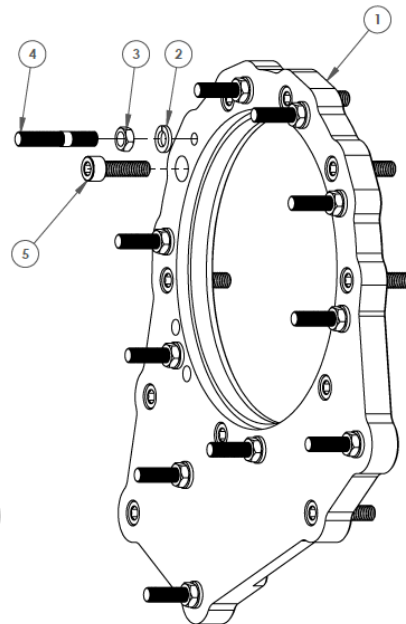
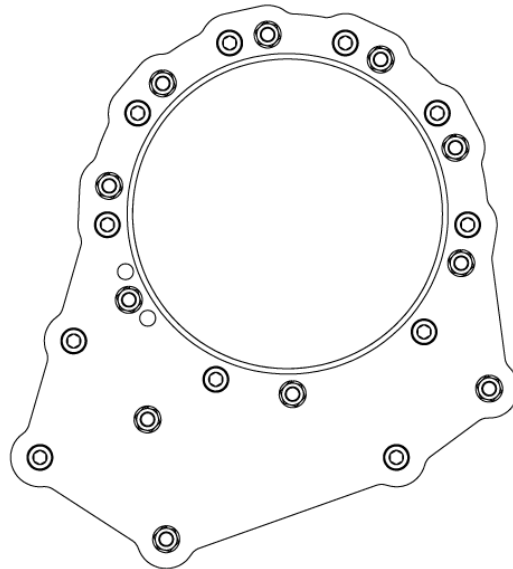
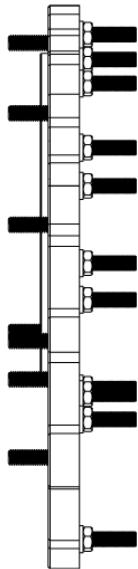
9. Locate the panhard bar (Part # 69453). It looks like the OEM unit except the end as a heim end on it to allow for the centering of the front axle. This will be determined at ride height. Press out the OEM ball joint and rotate it 180 degrees so it goes tapered shaft up. Connect the passenger side to the axle with the OEM ball joint. The drivers side mounts to the lower panhard bar with the 7/8" x 4" bolt. Use the provided spacer (Part # 18541) on each side of the heim end to center the heim in the pan hard bar drop. Once the final alignment is complete torque this bolt to 275 ft./lbs.

10. Place a jack under the transmission. Remove the transmission cross member. Remove the transfer case from the back of the transmission. Locate the indexing plate (Part # 70526) and studs.

11. Fasten the indexing plate to the transmission with the eleven M10 x 30 socket head cap screws. NOTE: USE RED LOCTITE. IF YOU DON'T HAVE LOCTITE DO NOT PROCEED UNTIL LOCTITE IS ACQUIRED. Torque these to 35 ft./lbs.



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	10006725	Plate - 1" - 25° Transfer Case Indexing Ring	1
2	13046	3/8" Lock Washer	11
3	13142	3/8"-16 - Hex Nut	11
4	14083	3/8"-16 Thread, 2.25" Overall Length - 3/4" Thread & 1.25" Thread Length	11
5	13916	Alloy Steel, M10 Thread, 35mm Length, 1.50mm Pitch	11



USE RED LOCTITE ON ALL THE BOLTS AND STUDS.

REV	ECN	CHANGE DESCRIPTION	CHECK BY	DATE	 <small>UNLESS OTHERWISE SPEC. DIMS. IN INCHES</small> <small>STD. TOLERANCES</small> <small>X.X ±.000</small> <small>X.XX ±.000</small> <small>XXX ±.010</small> <small>FRAC. DIM. 3/16"</small> <small>Dep ± .5"</small>	<small>DO NOT SCALE DRAWING</small> <small>1:8</small> <small>Approximate Weight = lbs</small>	<small>MAIL SPECS:</small> <small>DESCRIPTION: Assembly - 25° Indexing Ring</small> <small>PROJECT: 2011+ F250-450 Pickup 4-6" * 8-10" Lift Rear</small> <small>PART NUMBER: 10006727</small> <small>DESIGN BY:</small> <small>DATE: 4/14/2022</small>	
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12. Once the indexing plate is installed, locate the wedge (Part # 10009457) and install on the bottom of the transfer case with the factory bolts.. Install the factory rubber mount to the bottom of the wedge.

NOTE: YOU MAY HAVE TO CUT THE LAST FEW THREADS OFF THE STUD THAT HITS THE WEDGE.



Factory crossmember bolts



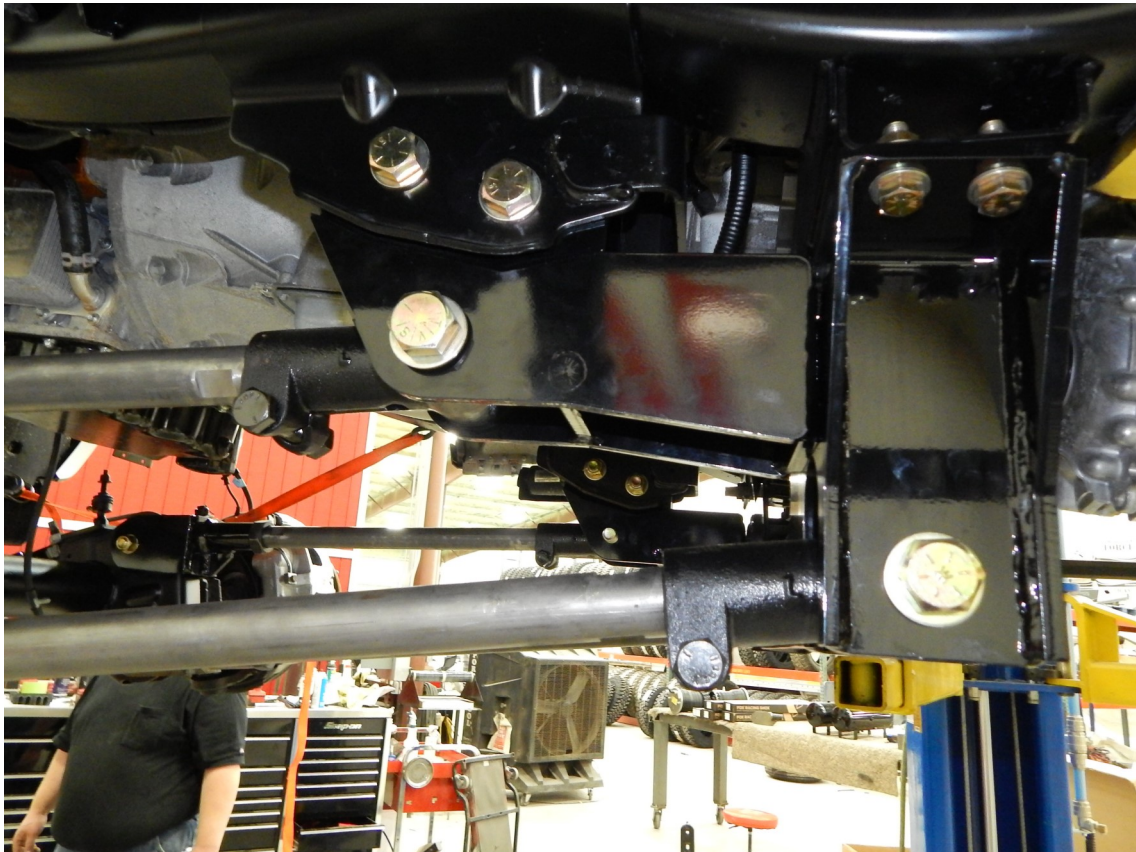
13. Locate the crossmember (Part # 69121) and the upper control arm mounts (part# 69116). The crossmember bolts into the original factory crossmember location with the factory bolts. You will need to drill (2) 1/2" holes in the bottom of the frame flange. Use the crossmember to mark your holes. Insert the (4) 1/2" x 1-1/2" bolts and torque to 85 ft./lbs. Torque the factory and 1/2" bolts to 85 ft./lbs. The upper control arm mounts fasten to the factory trailing arm mounts with (2) 3/4" x 5" bolts and to the crossmember with the 1/2" x 1-1/2" bolts. Torque the 3/4" bolts to 300 ft./lbs.

Drill these holes



14. Locate the (4) trailing arms (Part # 52124 upper & 52134.5 lower) fabricated knuckles (Part # 11109), jam nuts (Part # 13219) and cast knuckles (Part # 18498) The fabricated knuckles attach to the factory axle bushings with the M18 bolts. The jam nuts go against the fabricated knuckles. The cast knuckles go on other end of the trailing arms. Adjust the shorter arms so there is 17-7/8" between the jam nut and rear knuckle and adjust the longer arms to 27-3/4" between the jam nut and cast knuckle. Use the 7/8" x 5-1/2" bolts to fasten the lower trailing arm into the crossmember. Use the factory bolt to fasten the upper trailing arm into the factory control arm mount. The upper knuckle needs uses a 3/16"(Part # 18513) or 1/4"(Part # 18512) spacer on the inside of the knuckle between the crossmember to take up the gap. Use the M18 x 130 bolts to fasten the fabricated knuckles into the axle.

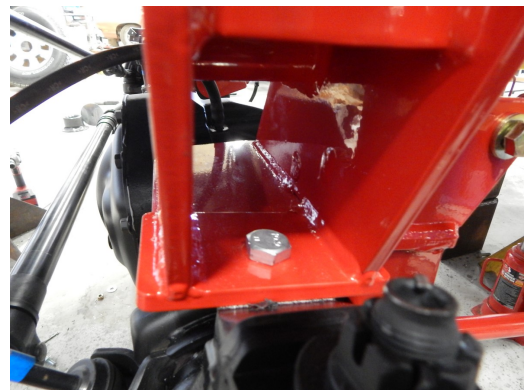
NOTE: Make sure the gussets on the fabricated knuckles are facing each other (shown on Page 8). The measurements provided should get you very close to the measurement needed at final install. Final adjustments will likely be needed once installation is complete. See picture on next page.





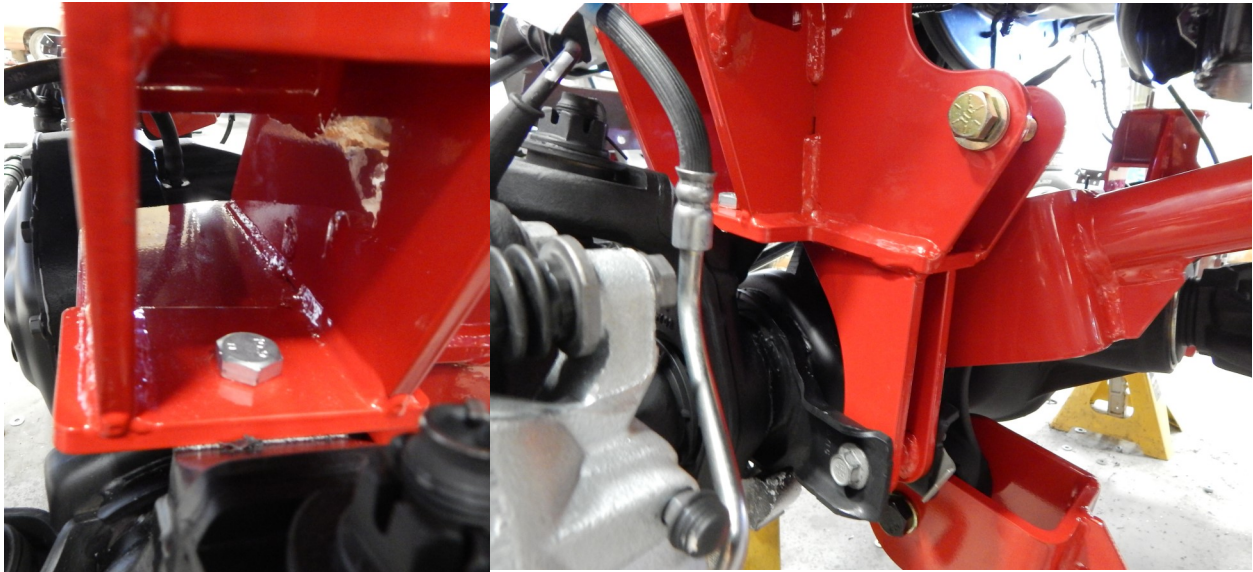
Fabricated knuckles shown w/ gussets shown facing each other.

15. Locate the lower bag mounts (Part # 69391-DS and 69397-PS) and crossmember (Part # 69403) The lower bag mounts fasten to the axle with the M14 x 25 bolt (**use Loctite**) and into the factory shock mount with the factory shock bolt. You will also have to drill the axle for a 3/8" bolt. The crossmember fastens to the lower air bag mounts with the 1/2" x 1-1/2" bolts. Torque the M14 bolt to 55 ft./lbs., 1/2" bolts to 85 ft./lbs. and the 3/8" to 40 ft./lbs.



Passenger side uses hole closest to the tire. Opposite of the drivers side.

16. Each lower air bag mount has (2) holes in it. You will use the hole closest to the tire on the passenger side and the hole furthest away from the tire on the drivers side.



14. Locate the 5323 air bags (Part # 80012-5323). They fasten to the upper air bag mounts with the 1/2" and 3/4" washers and nuts. Torque these bolts to 35 ft./lbs. The bottom of the air bag fastens to the lower bag mount with the 1/2 x 3-1/2". Install the shocks in step 18. The bottom air bag mount as a series of holes. Each truck is different, so don't tighten the lower air bag bolt until the final assembly and set up is complete. Start with the middle hole and adjust the bag by using the inner or outer hole if it is to close to the shock or frame at ride height. Torque the lower air bag bolt to 35 ft./lbs. once the installation is complete

The 5323 air bag rides the best between 8-9".

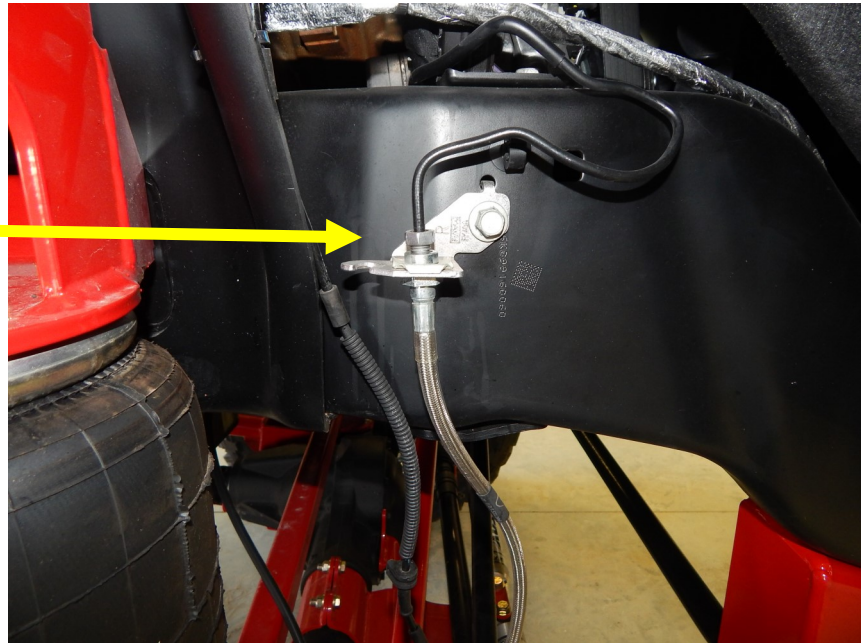
Measure the air bag ride height between the air bag mounting brackets.



18. Locate the extended brake lines. They attach to the frame (shown below). The bottom attaches to the front of the lower air bag mount with the 1/4" x 1-1/4" bolt. Install and bleed the brake lines.

19. Locate the front shocks (part numbers depend on which shocks are ordered). The top of the shock is a stem mount and fastens to the OEM location. The bottom uses the 1/2" x 3" bolt and fastens to the lower air bag mount. You will want to make sure there is clearance between the shocks and airbag when the install is complete and running the system all the way up and down as mentioned in step 14.

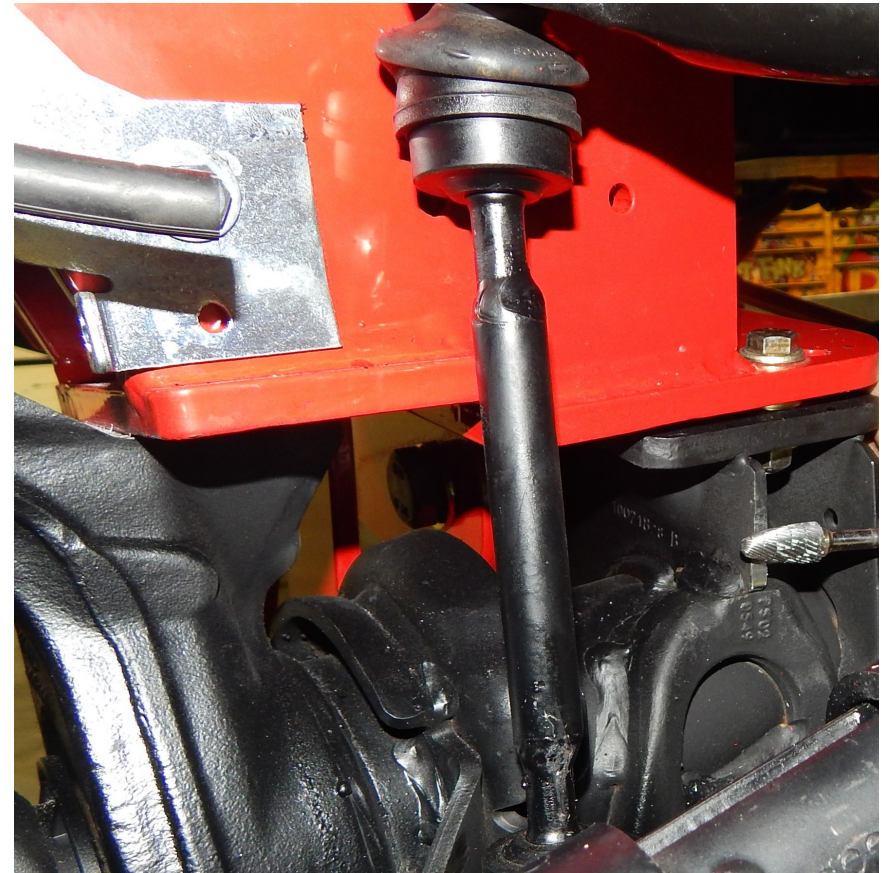
Upper brake line extension mount shown



Lower brake line extension mount shown

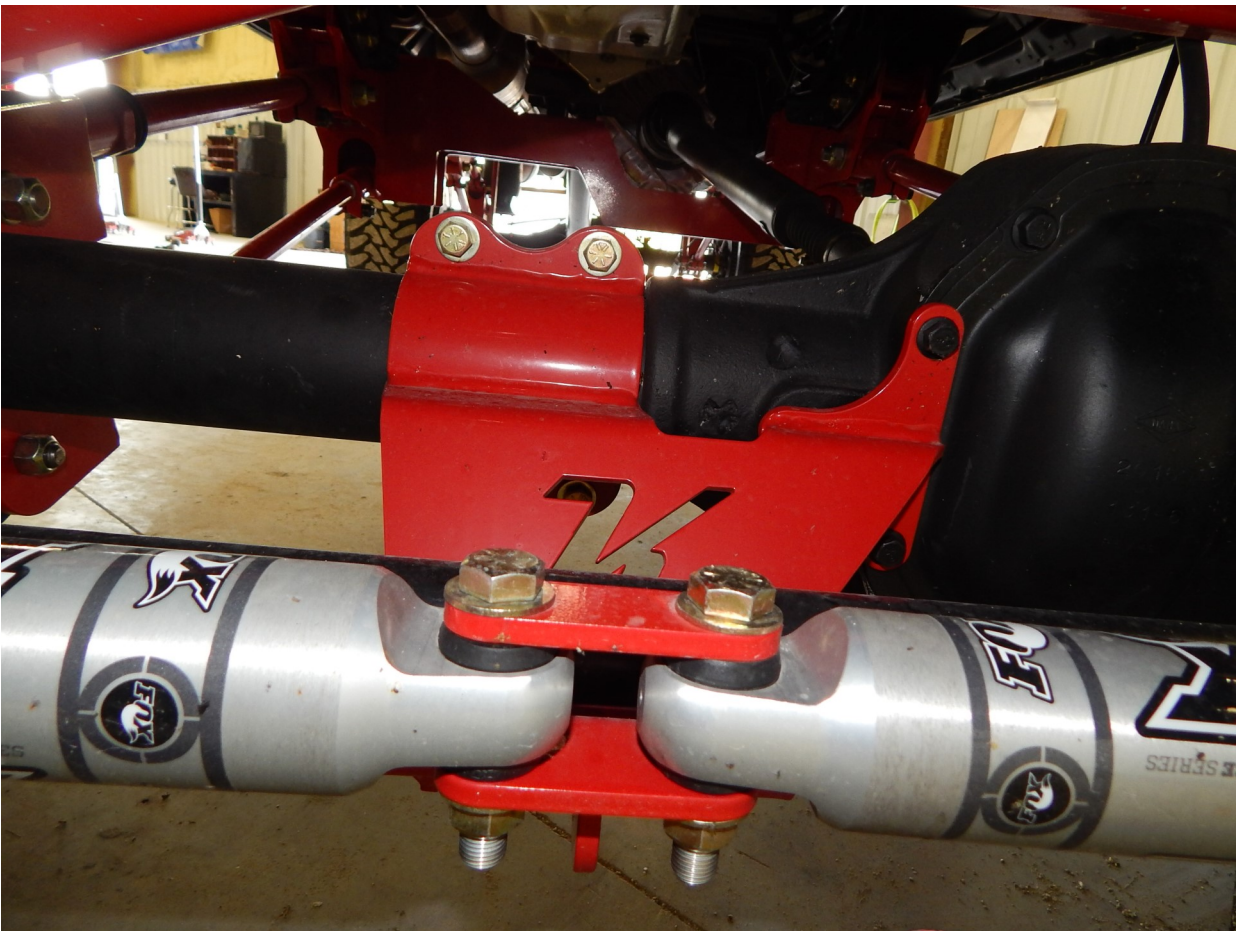


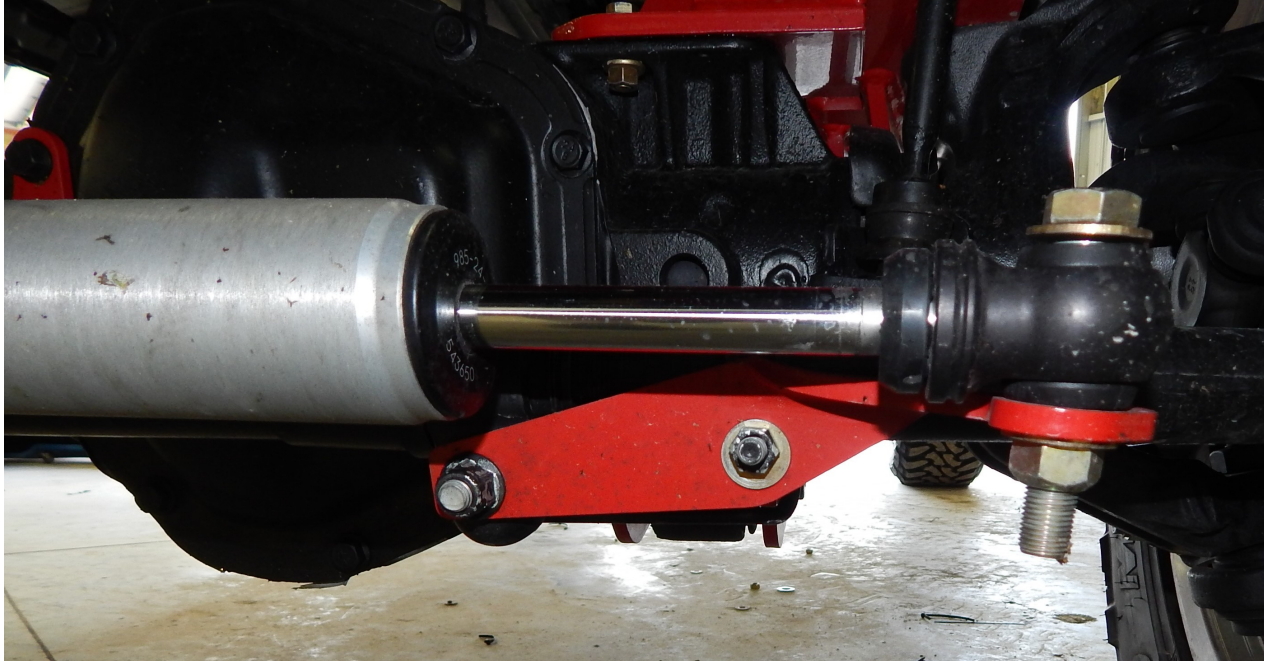
20. Install the new extended front sway bar end links (Part # 69420). Locate the front sway bar (Part # 1139-180KLD) and install the sway bar to the previously installed sway bar drop brackets with the 3/8" x 1-1/2" bolts. Torque the bolts to 40 ft./lbs.



21. Locate the steering stabilizer kit. Remove the middle two bolts on the passenger side of the differential cover. Locate part # 16879 and place it on the front side of the axle. Use the bolts that you removed from the diff cover to fasten the right side of the bracket to the differential cover. Use (4) 7/16" x 1-1/2" bolts to fasten it to the backing clamp (Part # 16008) Locate the shock end mounts (Part # 69386-DS and 69388-PS) and fasten them to the pinch bolts on the drag link.

22. Locate the steering stabilizer shocks (Part # 985-24-068). Use the 1/2" x 3" bolts to fasten the shocks between the steering stabilizer bracket and upper shock strap (Part # 20227) . Use the 1/2" x 2-1/2" bolts to fasten the shock end mounts to the other end of the shocks.





Drivers side pictured.



23. If the trailing arms and pan hard bar are set to the measurements provided earlier in the instructions, the axle location and pinion angle should be in the ballpark. If some fine tuning is needed to get the original pinion angle, adjust the axle until it is centered in the wheel well and squared up with the rear axle.

24. At ride height, the bag should measure around 8.5" tall. The height of the air bag is the distance measured in between the upper and lower air bag mounts. The airbag will be nearly straight up and down. Adjust the axle so it is centered in the wheel well while keeping the pinion angle correct. Once the rear kit has been installed, measure from the front side of the rear axle to the kingpin on the front axle. Make sure the measurement is within 1/8" on each side.

NOTE: There are videos on our YouTube channel (youtube.com/keldermantrucks) that has valuable information on how to dial in the suspension system. Take a minute to look it over when making adjustments.

Measure air bag height by measuring from the top of the air bag to the bottom of the air bag piston



25. Locate two of the Hadley ride height sensors (if equipped). They will mount to the side of the frame with the 1/4 x 1" bolts. You will need to drill two holes in the frame with a 13/64" drill bit and then tap the holes 1/4-20. Use the picture below for reference. Make sure the holes for the sensor are straight up and down from each other.

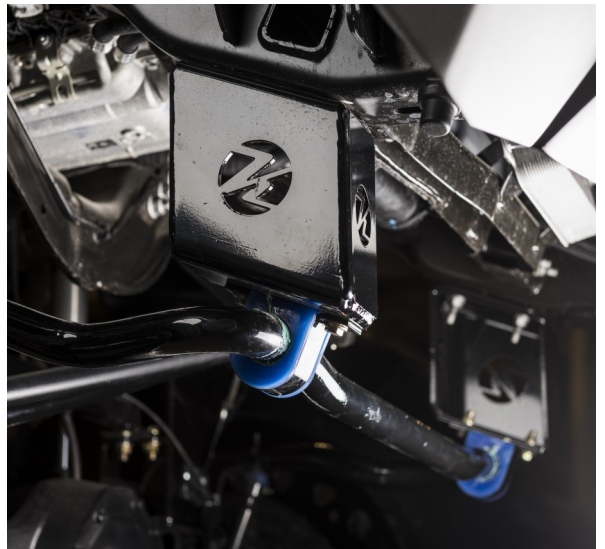
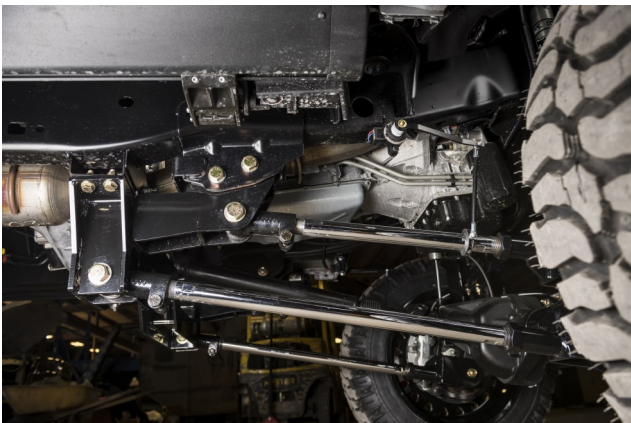
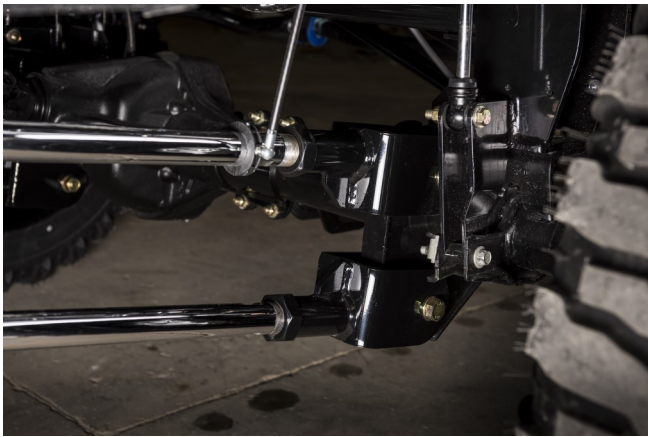
26. The sensor should have the arm straight out when the air bags are at 8.5" (ride height). Once the sensor holes are tapped, fasten the sensor to the frame. Locate the collars and place them on the upper trailing arm about 1/4" from the jam nut. Adjust the sensor linkage to . There is a little wire clip on the linkage end. Pull the retaining clip out, push over the ball and reinstall the retaining clip. Use the instructions included with the air control system to finish the control installation.

Arm on sensor needs to be straight out when front air bags are at ride height. Adjust the sensor arm length as the arms sent may be to long.

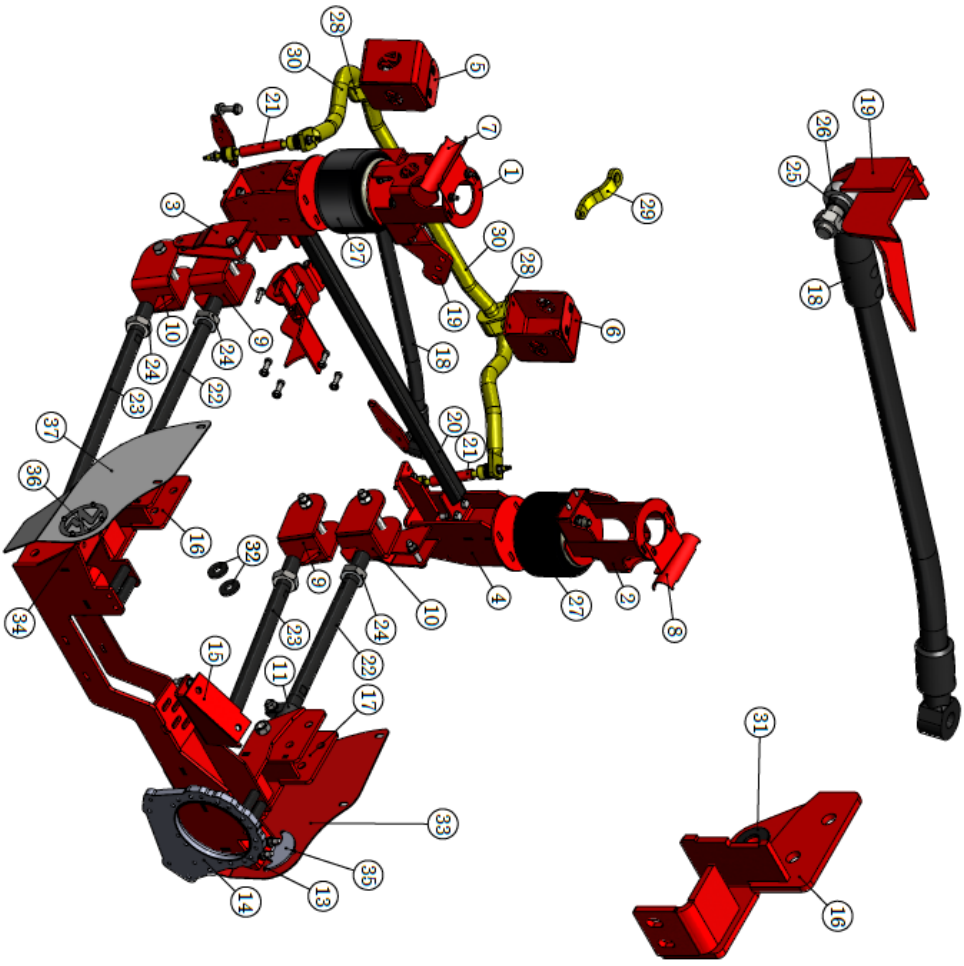


Holes for sensor need to be straight up and down from each other





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	69557	Weldment - [D5] Upper Frame/Bag Mount	1
2	69558	Weldment - [P5] Upper Frame/Bag Mount	1
3	69391	[D5] Lower Bag/Axe Mount	1
4	69397	[P5] Lower Bag/Axe Mount	1
5	69109	Weldment - [D5] Front Sway Bar Bracket	1
6	69110	Weldment - [P5] Front Sway bar bracket	1
7	69448	[D5] Shock Res. Holder	1
8	69449	[P5] Shock Res. Holder	1
9	14623	Assembly - Ford Knuckle D5 Upper and P5 Lower	2
10	11109	Assembly - Ford Knuckle D5 Lower and P5 Upper	2
11	18497	Cast Knuckle 10005	4
12	16877	Steering Stabilizer	1
13	69121	Weldment - Tondiforce Crossmember	1
14	70526	Tondiforce Index Ring	1
15	18091	2 nd Mounting Bracket	1
16	69116	[D5] Upper Control Arm Mount	1
17	69116	[P5] Upper Control Arm Mount	1
18	69453	Panhard Bar OEM Reworked	1
19	69411	Panhard Bar Drop	1
20	69403	40.5" Front Axle Crossmember	1
21	69420	6" Sway Bar End Link - Ball Joint Ends	2
22	52124	24" Trailing Arm Bar	2
23	52134.5	34.5" Trailing Arm Bar	2
24	13219	Join Nut - 1.5"-12 - Gr.8 YZ	4
25	18541	7/8" Hex Spacer - 7/16" THK.	2
26	80051	[RH] 7/8" Hex-end	1
27	80125-5923	Purchased Parts - Frontone 5923	2
28	80140	4139-180 Sway Bar Bushing Kit 1.5"	2
29	80115	Pitman Arm [Reworked]	1
30	1139-180KLD	1139-180 Sway Bar	1
31	18513	Bushing 2" OD X 57/64" ID X .188" THK.	2
32	18512	Bushing 2" OD X 57/64" ID X 1/4" THK	2
33	10003875	Plate - 11 GA. - S5 Transmission Crossmember Cover Plate w/ Bends 10-12"	1
34	10003874	Plate - 1/4" - D5 Side Plate Bracket Ford 4 - 8" 10-12 w/ Bends	1
35	10003872	Plate - 1/4" - P5 Side Plate Bracket Ford 6 - 8" 10-12 w/ Bends	1
36	10003871	Plate - 14ga. - Circle K Emblem OD - 5"	2
37	10003876	Plate - 11 ga. - D5 Transmission Crossmember Cover Plate w/ Bends 10-12	1



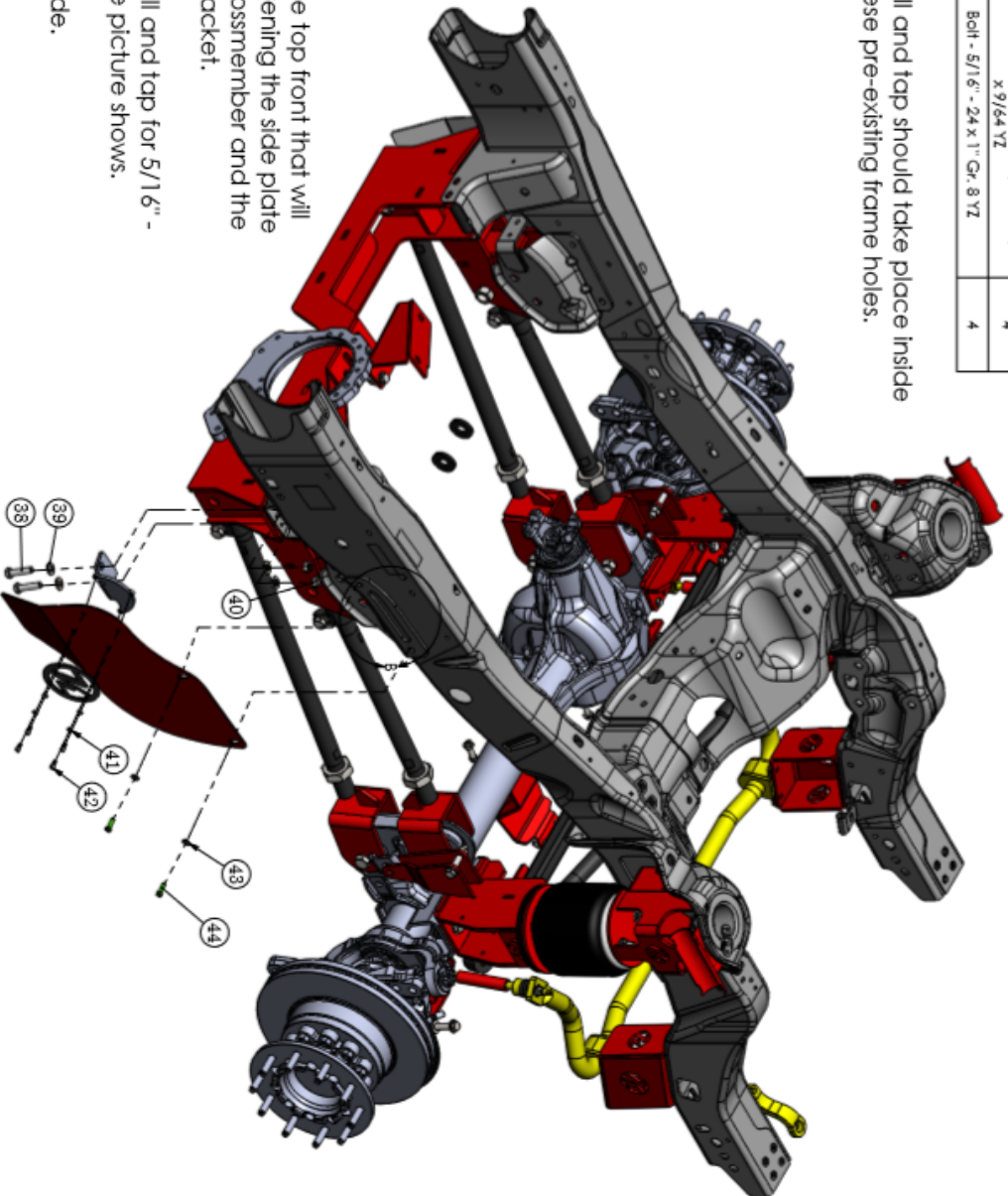
REV	ENR	CHANGE DESCRIPTION	CHG BY	DATE
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: .XX .000 .XXX .010 RACIALM .12Z Dep. .3"				
PART NUMBER: KLM-69022		DATE: 4/1/2019		
DESCRIPTION: Assembly - 2017 F450 Pickup 8-10' Lift Front		DESIGN BY: 2817		
MULT. SPECS: 1:32 Approximate Weight = 782.07 lbs.				
SHEET 2 OF 3				

Side Plate Cover Installation/Hardware

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
38	12011	Bolt - 1/2"-20 X 2" Gr.8	4
39	13004	Washer - 1/2" Flat STRL Washer	8
40	13164	Nut - Hex Nut - 1/2"-20 Gr.8 YZ	4
41	10003864	Washer - 1/4" O.D. .4625"	8
42	92196A537	1/4"-20 X 1/2" SS Socket Head Cap Screw	8
43	13021	Washer - Flat SAE Washer - 5/16" x 11/64" X 9/64 YZ	4
44	13307	Bolt - 5/16" - 24 x 1" Gr. 8 YZ	4

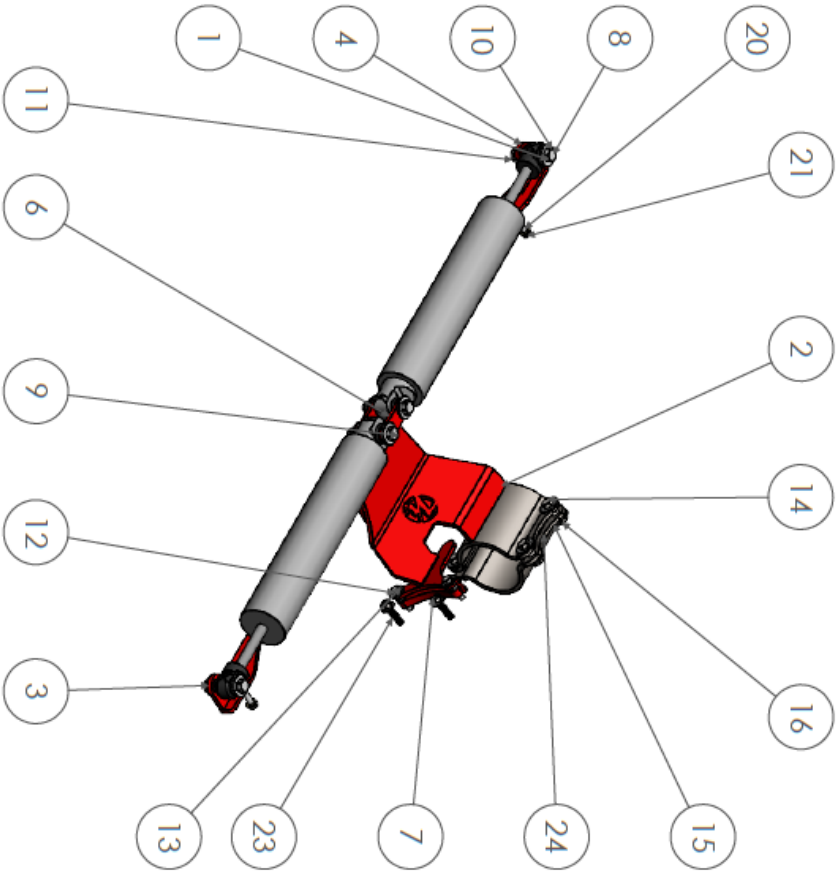
DETAIL B
SCALE 1 : 5

Drill and tap should take place inside these pre-existing frame holes.



1. Mark for the two bolts on the top front that will be drilled and tapped, by fastening the side plate bracket to the transmission crossmember and the side plate to the side plate bracket.
2. Once holes are marked, drill and tap for 5/16" - 18 bolts in frame as the above picture shows.
3. Repeat all steps for driver side.

1	985-24-068	Purchased Parts - Fox Shock	2
2	10012797	Weldment - Steering Stabilizer "K" Bracket	1
3	69386	(DS) Axle/Shock Mounting Bracket (5.75")	1
4	69388	(PS) Axle/Shock Mounting Bracket (5.75")	1
5	10007430	Plate - 16ga - Logo Backing Plate	1
6	20227	Plate - 1/4" - Shock Strap	1
7	30168	Plate - 1/2" - (SS) Front Differential Spacer	1
8	12017	Hex Bolt - 1/2"-20 x 2-1/2" - GR8 - YZ	2
9	12021	Hex Bolt - 1/2"-20 x 3" - GR8 - YZ	2
10	13004	Flat Washer USS - 1/2" - GR8 - YZ	8
11	13164	Hex Nut - 1/2"-20 - GR8 - YZ	4
12	12216	Hex Bolt - 3/8"-16 x 1-1/2" - GR5 - Z	2
13	13002	Flat Washer USS - 3/8" - GR8 - YZ	2
14	13411	Hex Bolt - 7/16"-20 x 1-1/2" - GR8 - YZ	4
15	13003	Flat Washer USS - 7/16" - GR8 - YZ	8
16	13173	Hex Nut High - 7/16"-20 - GR8 - YZ	4
17	14070	HEX NUT - #10-24 - SS	2
18	14086	SPUT LOCK WASHER - #10 - SS	2
19	14062	FLAT WASHER - SAE - #10	2
20	13021	Flat Washer SAE - 5/16" - GR8 - YZ	4
21	13101	Top Distorted Thread Lock Nut - 5/16"-18 - GR5 - Z	2
22	13322	Hex Bolt - 5/16"-18 x 3" - GR5 - Z	2
23	13872	Flange Bolt - M10-1.5mm x 35mm - Class 10.9 - Z	2
24	2001946	Axle Mount Bracket	1



A	Updated "K" Logo	28	12/9/20			A	DO NOT SCALE DIMENSIONS	130	Approximate Weight = 25.55 lbs
B	Added 5/16" Hardware	TA	3/31/21						
C	Added Parts 10006756	TA	4/19/21						
D	Added M10 Hardware	TA	5/10/21						
E	Removed Parts 10006756	TA	6/17/21						

REVISIONS UNLESS OTHERWISE SPECIFIED: DIMENSIONS IN PARENT PARENTS XX.XX XX.XX XX.XX FRAC.DIM = 1/16"	MATERIAL SPECIFICATIONS ALL SPEC'S SEE ABOVE DESCRIPTION: Assembly - Steering Stabilizer PROJECT: 2011+ F450/550 Pickup-Chassis Cab PART NUMBER: 16978 CHECK THE DOCUMENT FOR THE LATEST REVISIONS
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