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800-334-6150

Version 1.1

1999-2004 (2005) Ford Super Duty & Excursion 5-6" & 7-8" and 9-10" 4-Link Front Installation Instructions

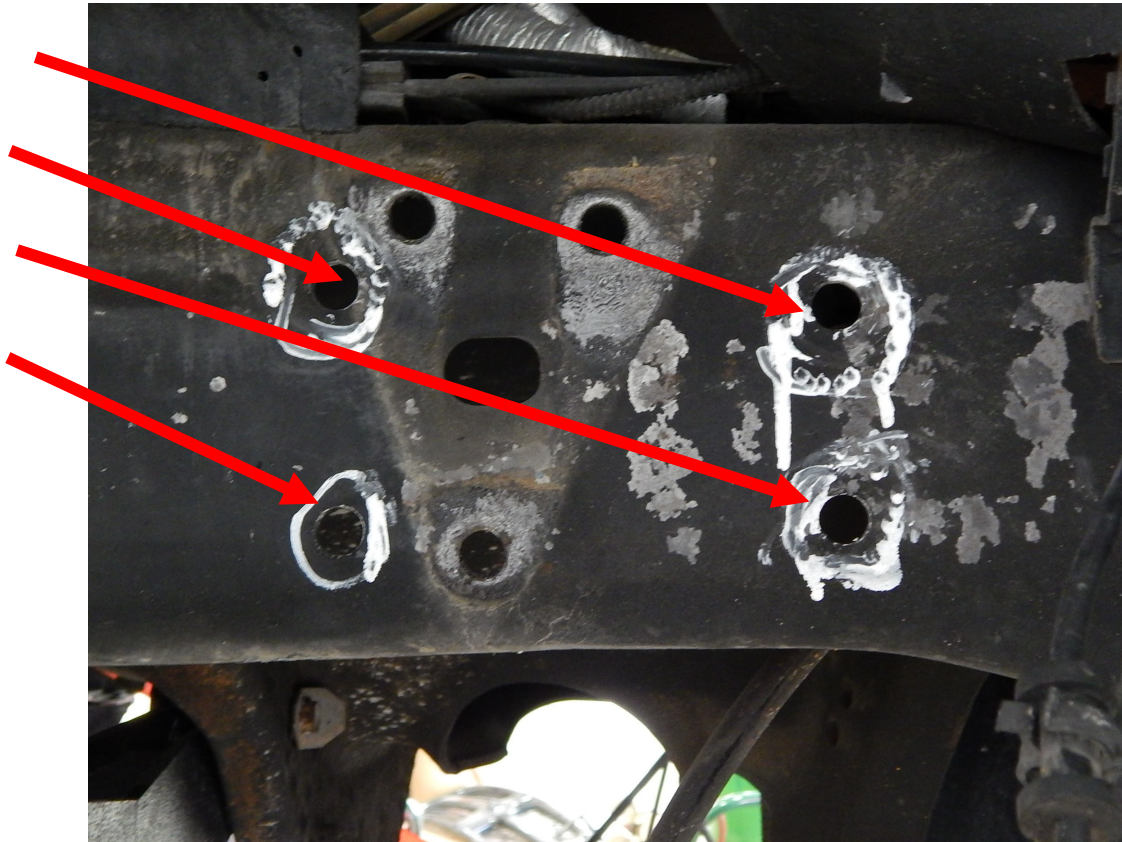


NOTE: This install packet is for 3 different kits. The installation procedures for each kit are very similar. The 9-10" kit uses a longer pitman arm and pan hard bar drop, transfer case indexing ring and the OEM sway bar is removed. All the pictures of the blue kit are the 9-10" kit.

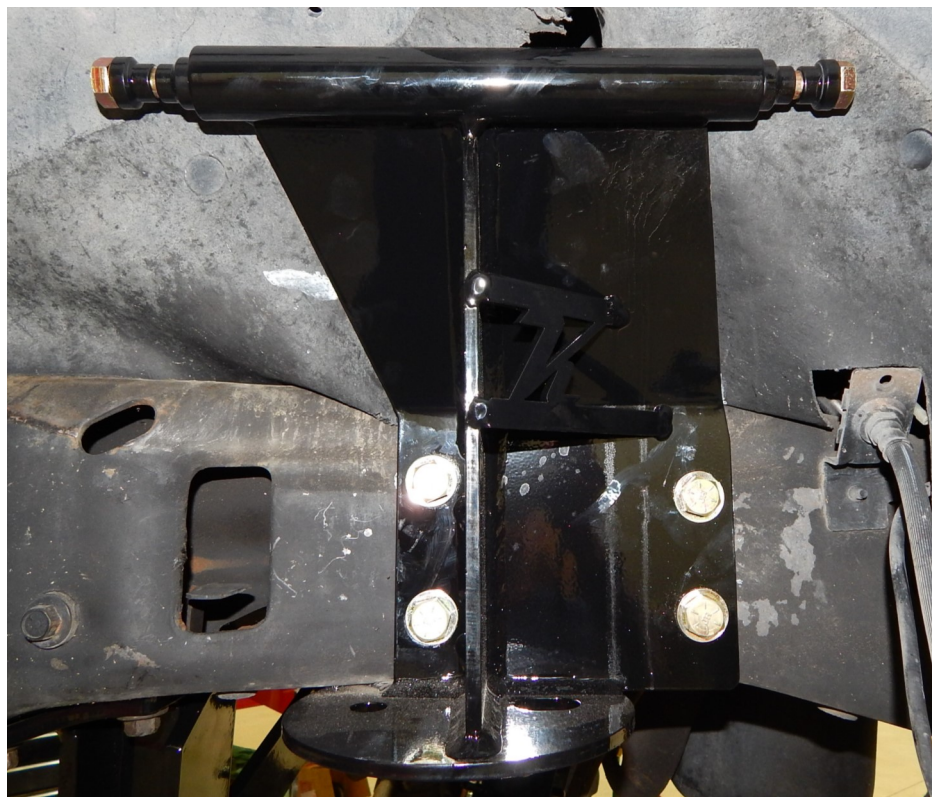
1. Before doing anything, measure the pinion angles on the front and rear differentials and write them down here F _____ R _____. These measurements are needed when doing the final set up. When putting the front axle back to this pinion angle, your factory caster will be correct.
2. Lift the truck up and place a jack stand under each side of the frame. Jack the truck up enough so the tires are just barely off the ground. Use a tie down strap and tie it to the frame and under the differential. This will help keep the axle in the general proximity while the factory suspension is removed and the 4 link is installed.
3. Remove the shocks and leaf springs, Also remove the steering linkage from the pitman arm. Remove the pan hard bar drop (keep the bolts) and remove the pitman arm.
4. Locate the drop pitman arm and install the FD 499 (9-10" kit uses the FD 699). Torque to 300 ft/lbs. Re-torque after 50 miles of test driving.
5. Locate the pan hard bar drop (part# 11353 5-6 and 7-8" part # 10510 9-10"). It fastens to the bottom of the frame with the 2 factory bolts and use the 1/2x1 1/2" bolts in the forward hole and the cross member. Torque these bolts to 85 ft/lbs. **NOTE: The 9-10" driver side pan hard bar drop will share the forward bolt with the sway bar drop.**



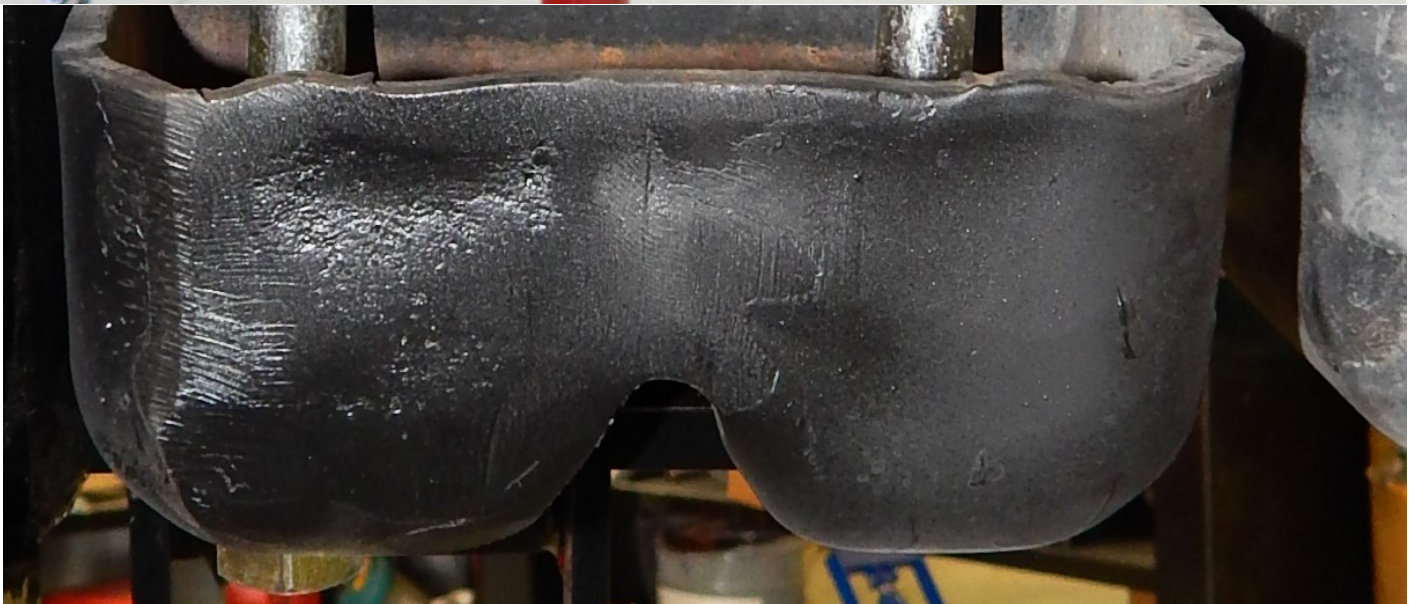
6. Using a 17/32" drill bit, drill out the 4 holes outlined below. **BE SURE TO LOOK ON THE INSIDE OF THE FRAME FOR WIRING, BRAKE LINES, FUEL LINES, AIR CONDITIONER LINES (EXCURSION) Etc!!!!** Once the holes are drilled out, locate the upper air bag mounts (part# 1000 PS and 10482 DS) and fasten them in place with the four 1/2x1 1/2" bolts. Torque these bolts to 85 ft/lbs.



Drivers side pictured



7. Skip this step if installing the 5-6" or 7-8" kit. If you are installing the 9-10" kit, Locate the OEM sway bar mount on the passenger side. It needs to be cut off. Use a torch, plasma, grinder, etc. to do so. Once its off, clean it up and use black paint or materials to protect the affected area.



9-10" Front sway bar instructions

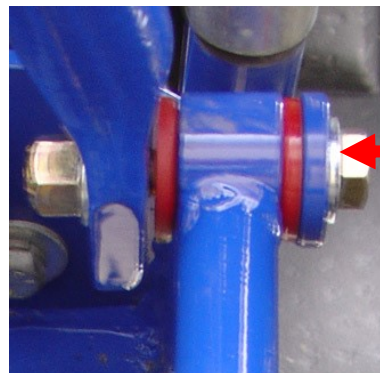
The 9-10" kit does not use the factory sway bar. It uses a different sway bar and it installs on the front side of the axle like the 2005 and new Ford Super Duty trucks.

1. Locate the sway bar drops (part #11747DS and 11746 PS). These bolt to the bottom of the frame. The drivers side shares the forward bolt with the pan hard bar drop. **Do not tighten yet.**
2. Locate the cross member and the four 1/2x1 1/2" bolts. The cross member fastens between the sway bar drops. Once the nuts are started, torque the bolts that connect the sway bar drops the frame to 85 ft./lbs. and the 1/2" bolts to 85 ft./lbs.

3. Locate the sway bar (part #1139-159kld). Use the blue bushings and D rings to fasten to the lower sway bar drops with the 3/8x1 1/2" bolts. Use the supplied grease on the inside of the blue bushings to prevent squeaking. Torque the 3/8" bolts top 40 ft./lbs.



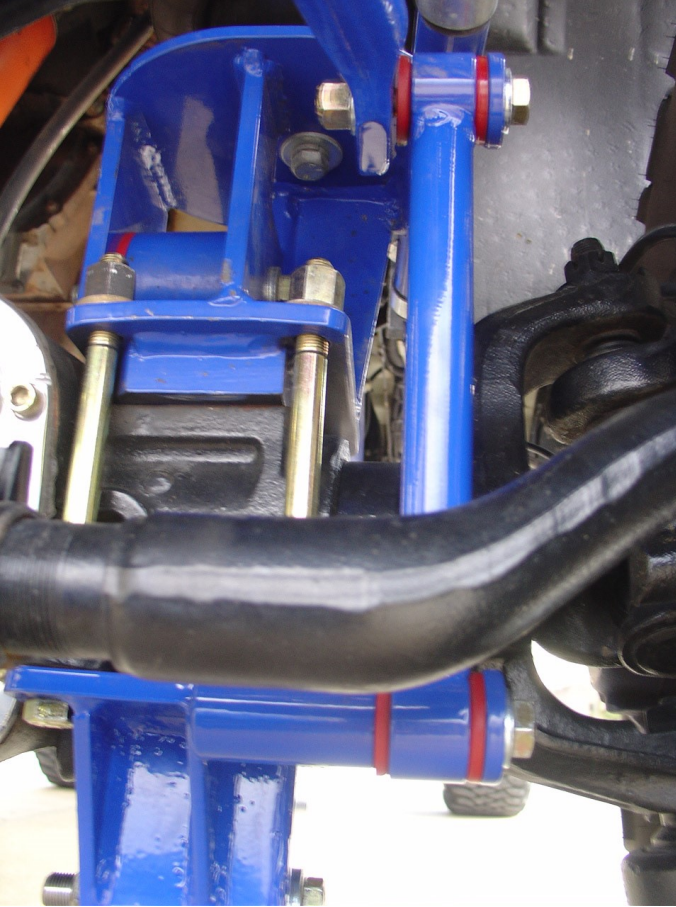
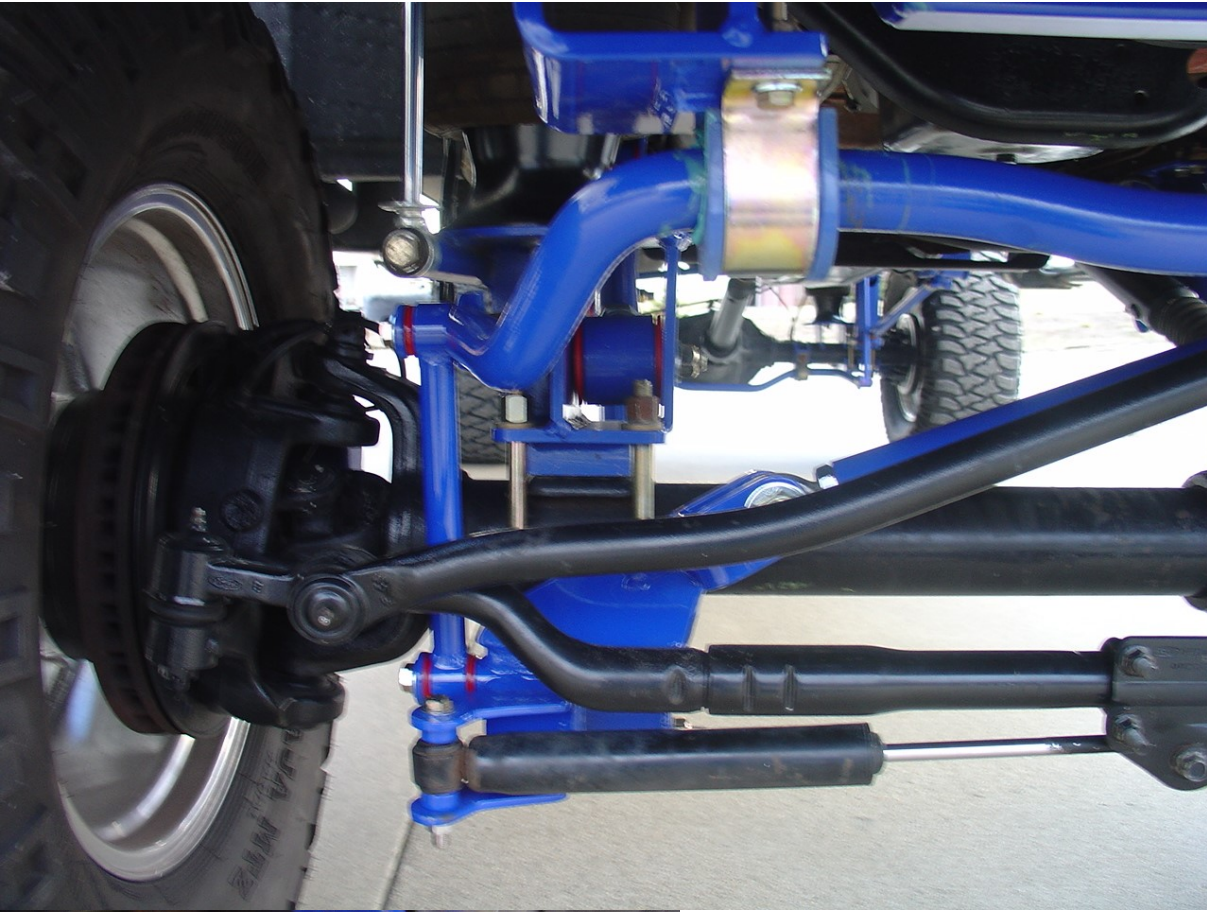
4. Locate the end links (part # 30295). They fasten to the sway bar with the 1/2x3" bolts. Use the large flat washer on the outside of the bushing. The bottom of the end link fastens to the lower trailing arm mounts with the 1/2x2 1/2" bolts. Again use the large washer on the outside of the end link bushings.



Large flat washer goes on bushing side of the end link



9-10" Front sway bar instructions continued

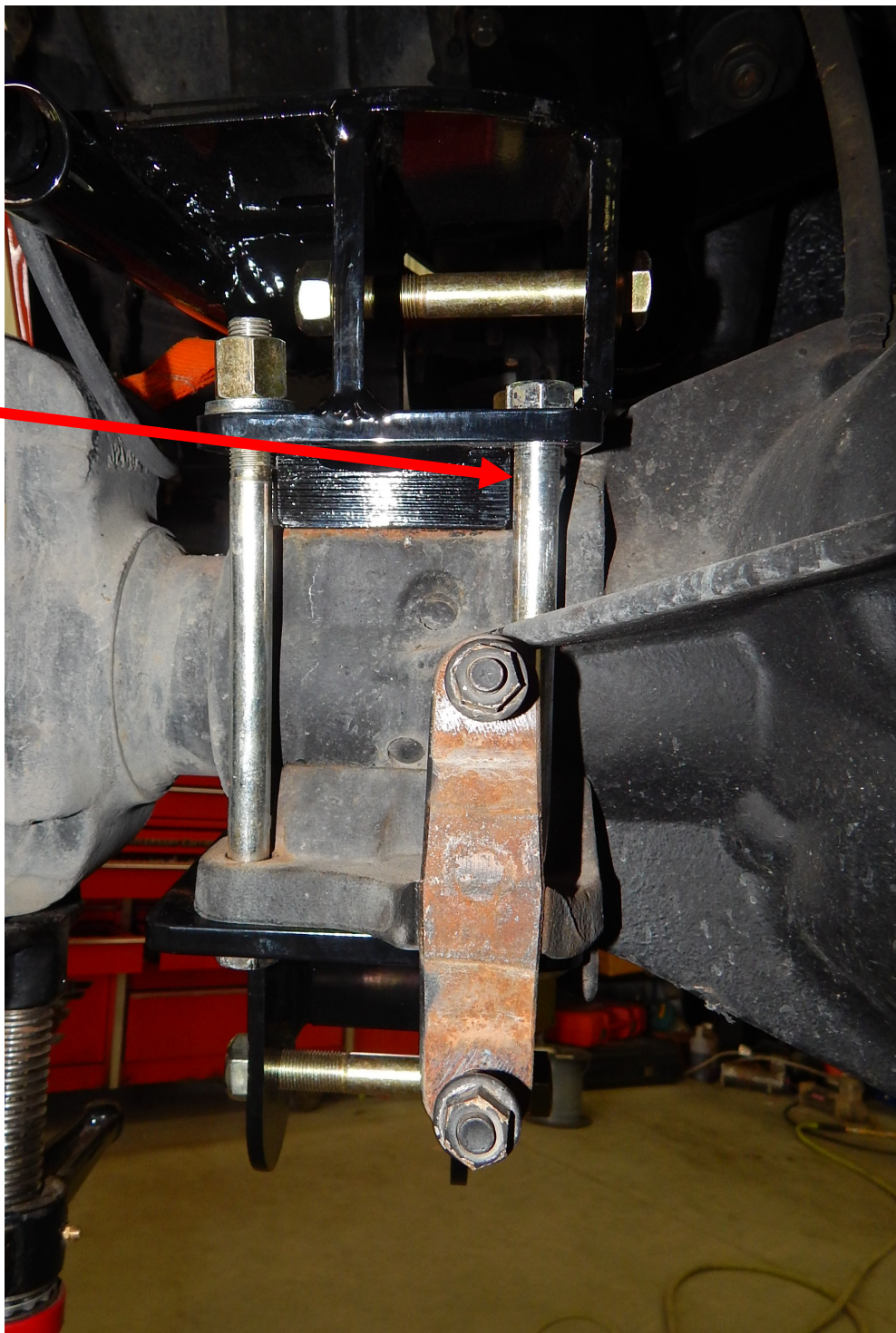


8. Locate the drivers side upper trailing arm brackets (part# 11369 DS 5-6", 11363 DS 7-8") and drivers side lower trailing arm brackets (part# 11273DS). Locate the four 9/16x8 1/2" bolts, Grab one bolt and drop it down the rear inner hole on the upper trailing arm bracket. Place this on the axle. Locate the Lower trailing arm bracket, place it on the bottom of the axle and run the other three 9/16" bolts up from the bottom. If the bolts don't fit through the casting on the bottom of the axle use a 9/16 drill bit to open it up. Once all the bolts are installed, torque the bolts to 135 ft/lbs.

The inner rear bolt needs to be installed top down.

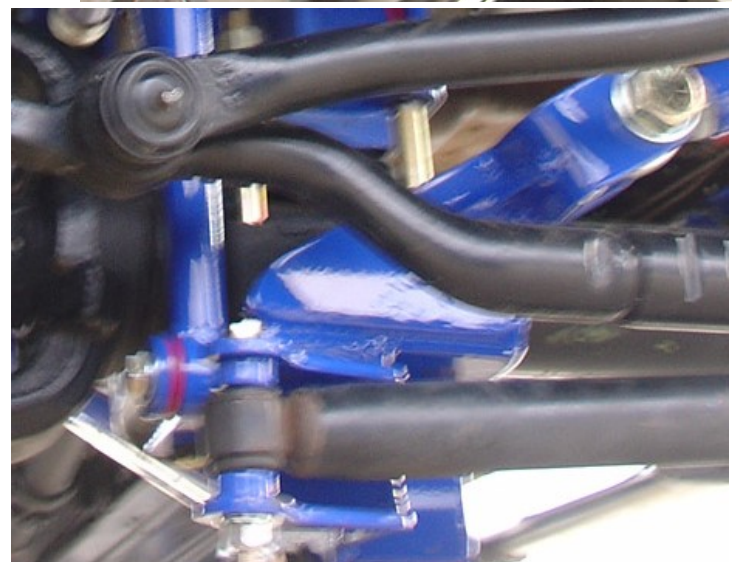
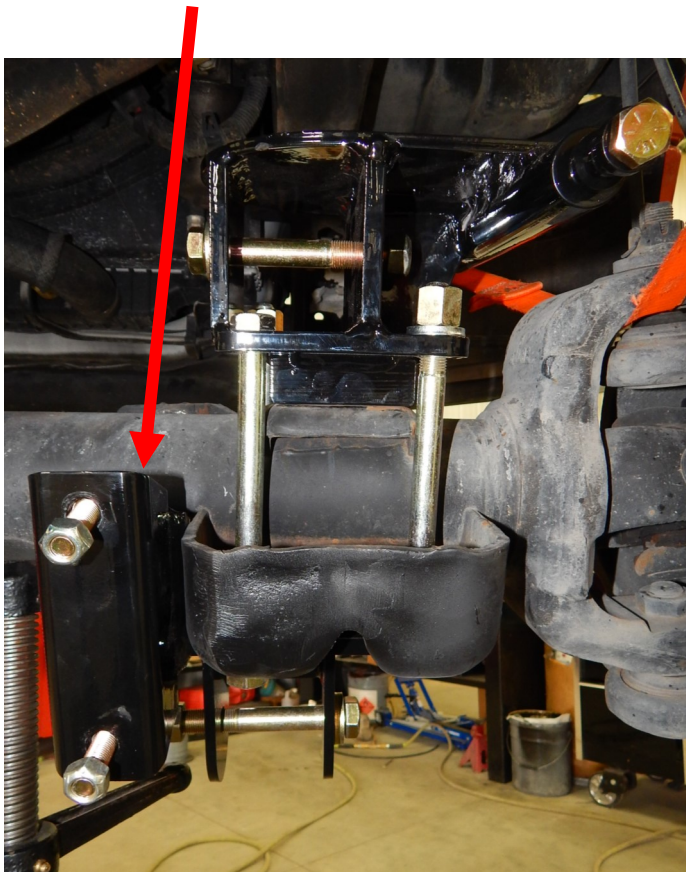
You need to do this before installing the top bracket!!!!

The trailing arm cannot be installed if this bolt goes in from the bottom up.



9. Locate the passenger side upper trailing arm bracket (part# 11368 PS 5-6" and 11362 PS 7-8") and the passenger side lower trailing arm bracket (part# 11272). Locate the four 9/16x8" bolts. Just as you did on the drivers side, the rear inner bolt needs to be inserted top down on the upper trailing arm bracket. Place the top bracket on top of the axle and fasten to the lower trailing arm bracket with the other three 9/16x8" bolts. Those bolts go from the bottom up. Torque the bolts to 135 ft/lbs.
10. **NOTE: The 9-10" kit uses lower trailing arm bracket part# 14841 . This also serves as the pan hard bar mount and factory steering stabilizer mount.**

The 9-10" kit will not have this bracket on the lower trailing arm mount. Only the 5-6" and 7-8" have this kit.



Blue kit shown is 9-10" lower trailing arm mount installed with the factory steering stabilizer bracket and pan hard bar.

10. Locate the passenger side rear trailing arm mounts (part # 10918). They fasten to the frame with the eight 1/2x 1 1/2" bolts. Use the pictures below for correct bolt orientation. The 1/2" bolts get torqued to 85 ft./lbs.

All four bolts go from the outside in



All four bolts go up through the bottom of the frame

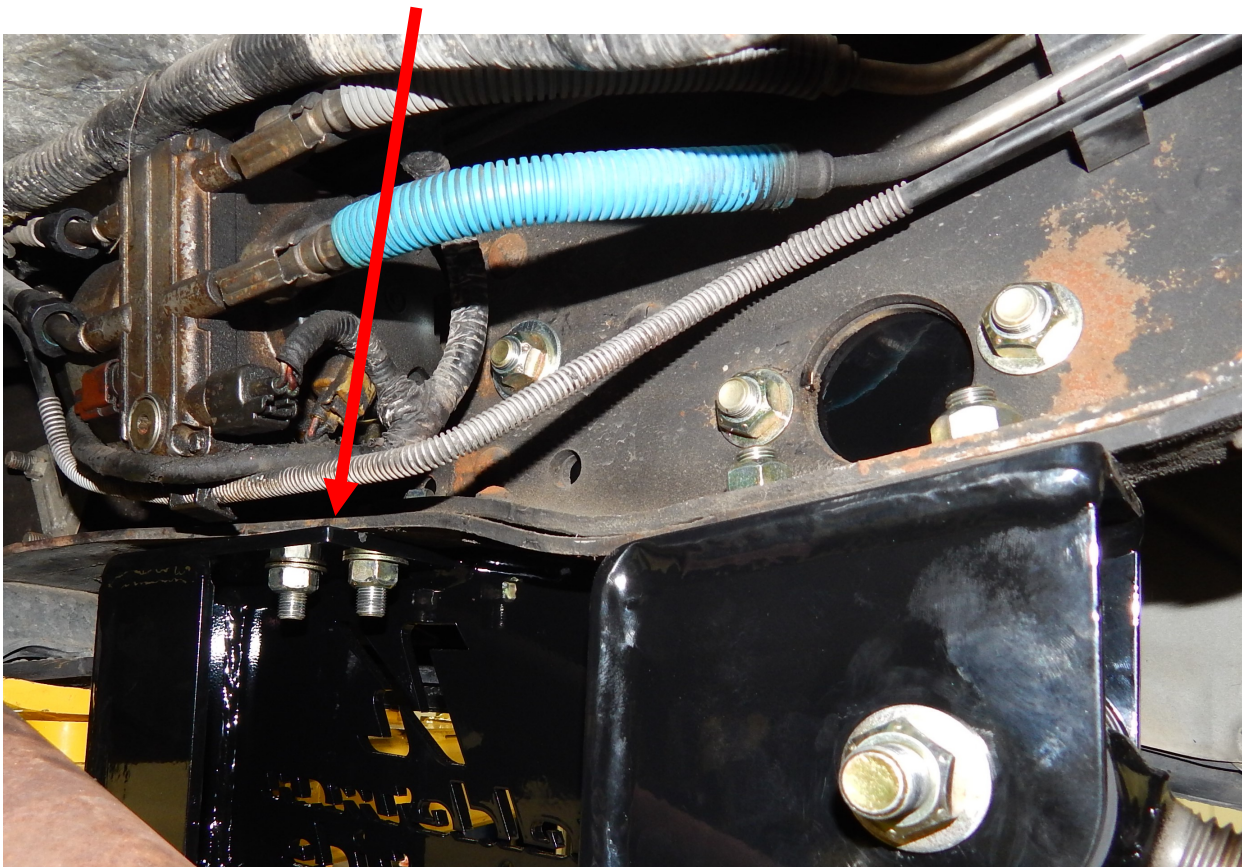


11. Locate the drivers side rear trailing arm mount (part# 10919). It fastens to the frame with the eight 1/2x1 1/2" bolts. Use the picture below for orientation. The fuel pump needs to be loosened so the rear bolt can be inserted inside out. While the fuel pump is loose, drop the rear two bolts in top down. Torque the bolts to 85 ft/lbs.

Rear bolt goes inside out

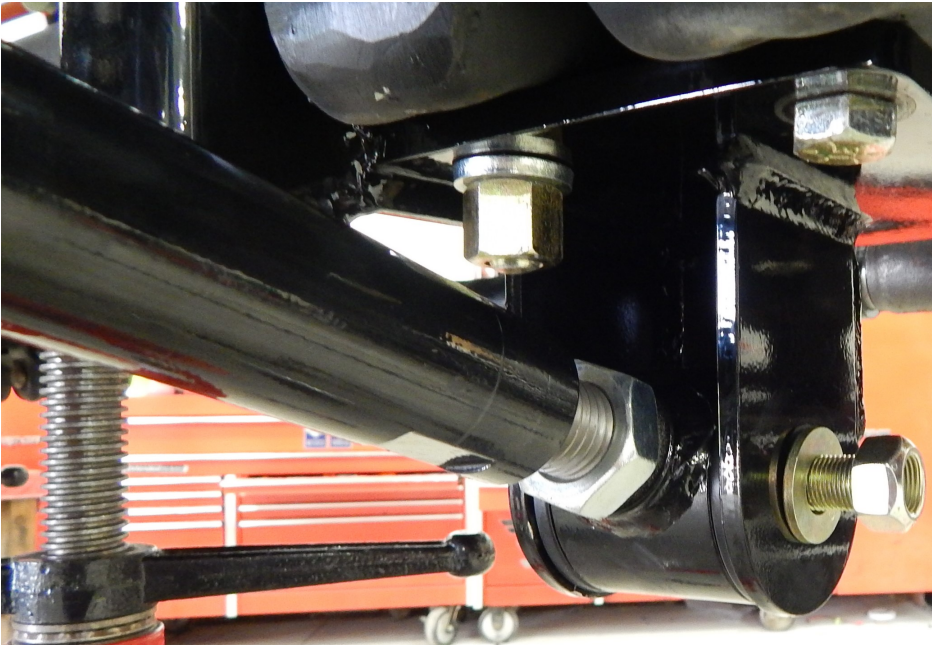


These 2 bolts go downward. You will have to loosen the fuel pump on diesels to gain access to the holes



12. Locate the trailing arms (part# 11343 upper and part # 11336 lower). Set the upper (shorter) arms to 26" center to center of the holes. Set the lower bars to 40 1/4" center to center. This will get you close to the right measurement. Some fine tuning may need to be done in final set up. Use the 1/2x5" bolts to fasten into the front and rear trailing arm mounts. Place the bolts from the

13. outside in. Torque these bolts to 85 ft/lbs



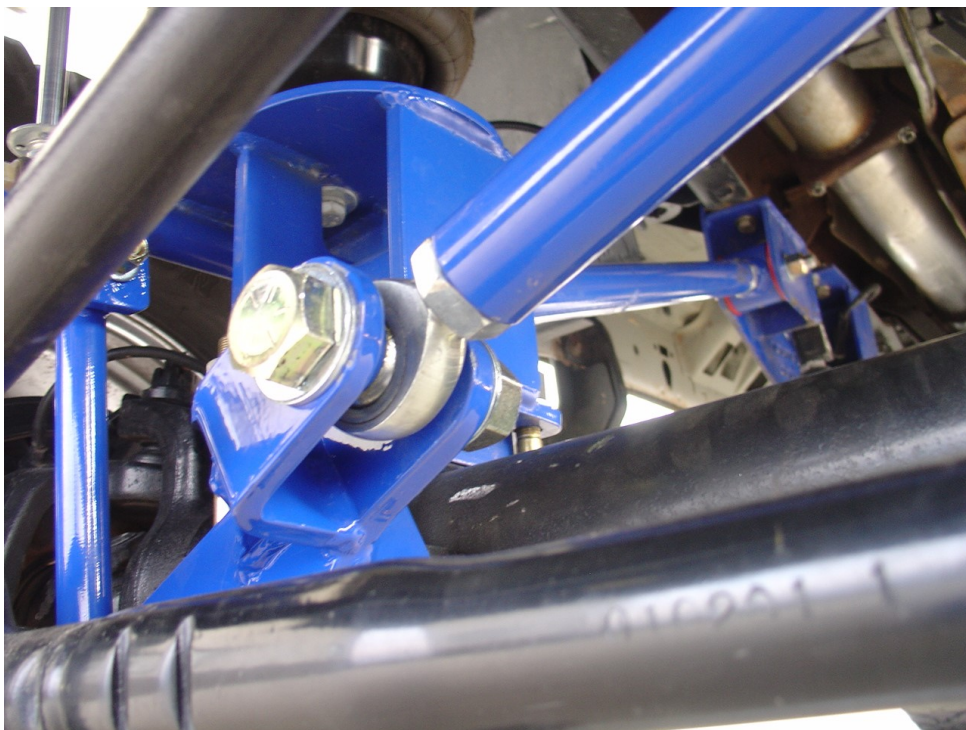
13. For the 5-6 and 7-8", Locate the pan hard bar (part# 11403) The drivers side fastens into the pan hard bar drop with the 3/4x4 1/2" bolt. Use the supplied spacer on the each side of the heim end in order to center it in the pan hard bar drop. The passenger side fastens into the axle with the 7/8x4" bolt . You will need to drill out the hole in the axle to 7/8". Its just a few thousandths too small. Use the supplied spacers to center up the heim end on the axle. Torque the 3/4" bolt to 175 ft./lbs. and the 7/8" bolt to 200 ft./lbs.



The lower pan hard bar mount on the axle is removed for the 9-10" kit.



The 9-10" track bar mounts from the drivers side pan hard bar drop down to the passengers side lower trailing arm mount with the 3/4x4" bolts. Use the supplied spacers to center the heim ends in the center of the mounts. Torque the 3/4" bolts to 175 ft./lbs.



14. Locate the Firestone 5323 air bags (part# F5323 5-6" and 7-8"). They install into the upper air bag mount with the 1/2 and 3/4" nuts and lock washers. Use the 1/2x3 1/2" to fasten the lower portion of the air bag to the lower bag mount. Once the bags are installed torque all the bolts to 35 ft./ lbs. Locate the air line and hand tighten into the port. Next use a wrench and tighten the fitting one complete turn. **Do not overtighten. NOTE: The 9-10" kit uses F8979 air bags.**



15. If installing the 5-6" kit, you will need to lengthen the end links around 1.75" to allow for full travel on the suspension without the sway bar hitting the upper trailing arm. The goal is that when the suspension has no air in it, there is about an inch between the bottom of the sway bar and lower trailing arm. Remove the end link, cut it and use the supplied 1x3/4x3 3/4" DOM tubes to extend the end links. A certified welder must do this work. If installing the 7-8" kit, you will simply flip the cast upper end link mounting brackets to the bottom of the frame and not extend the factory end link. If installing the 9-10" kit use the instructions provided earlier on page 5.



16. Locate the new front brake lines. Remove the OEM brake lines from the brackets and install the longer ones. Make sure the brake lines are not rubbing the air bags. Check the brake lines once the install is complete to make sure they don't rub on the tires when turning. Bleed the brakes once you are done.



17. Locate the four front shocks. Use the 1/2x2" bolts to fasten them in place. If using a heim end shocks, use the provided machined spacers on each side. If using bushing shocks just bolt them up.

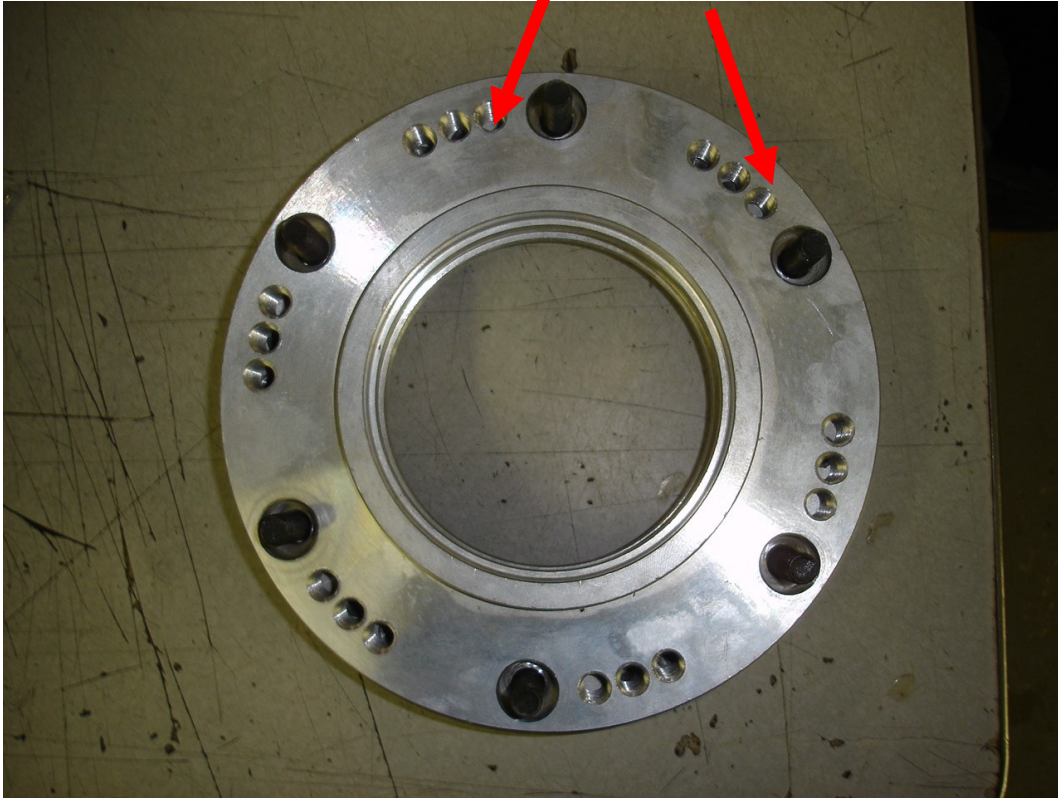


Optional Fox 2.0 Remote reservoirs shown with optional Kelderman clamps

9-10" Indexing Ring Instructions

The 9-10" kit requires the transfer case to be indexed. Locate the provided indexing ring. There are 3 sets of holes and you will use the threaded hole closest to the large hole.

Use the threaded hole closest to big hole



Remove the rear driveshaft and remove the transfer case. Install the indexing ring on the back of the transmission. Use the supplied gaskets for each side. Install the indexing ring with the cap screws. Torque to 30 ft./lbs. Now place the transfer case on the studs that you have installed in the hole closest to the countersunk bolts. Use the lock washers and nuts and torque to 35 ft/lbs.

Now that the transfer case is indexed, you may need to cut some additional clearance for the driveshaft right above the cross member. When the install is complete run the truck all the way up maxed out. If the driveshaft is going to hit the crossmember, Locate the transmission crossmember drop bracket (part # 10885), Locate the bracket and center it up under the driveshaft flange. Use a welder to tack the bracket to the bottom of the crossmember. Remove the crossmember and weld up the drop. Now cut the center portion out of the crossmember. Reinstall.

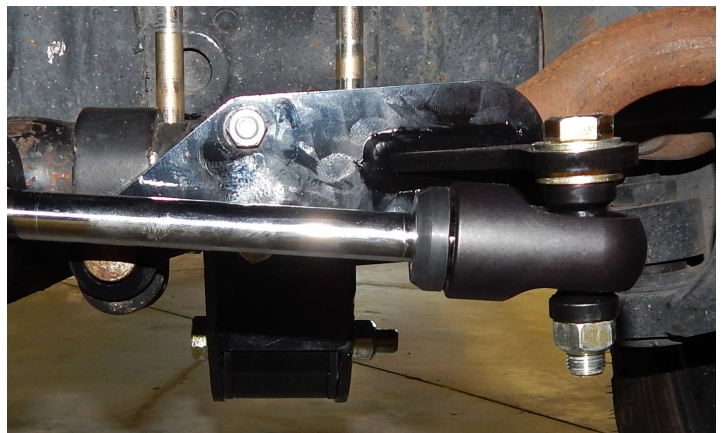
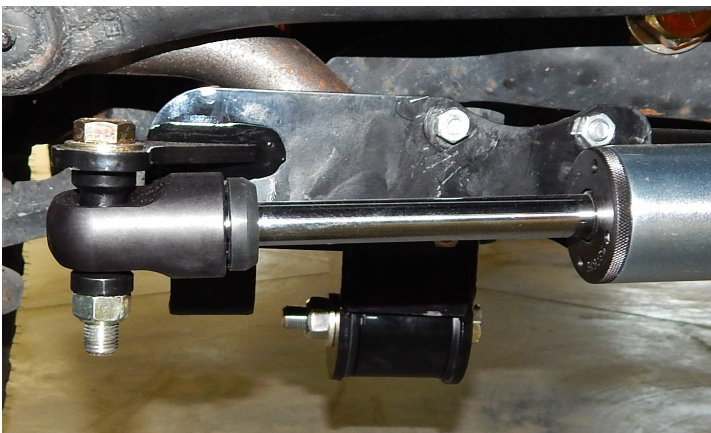
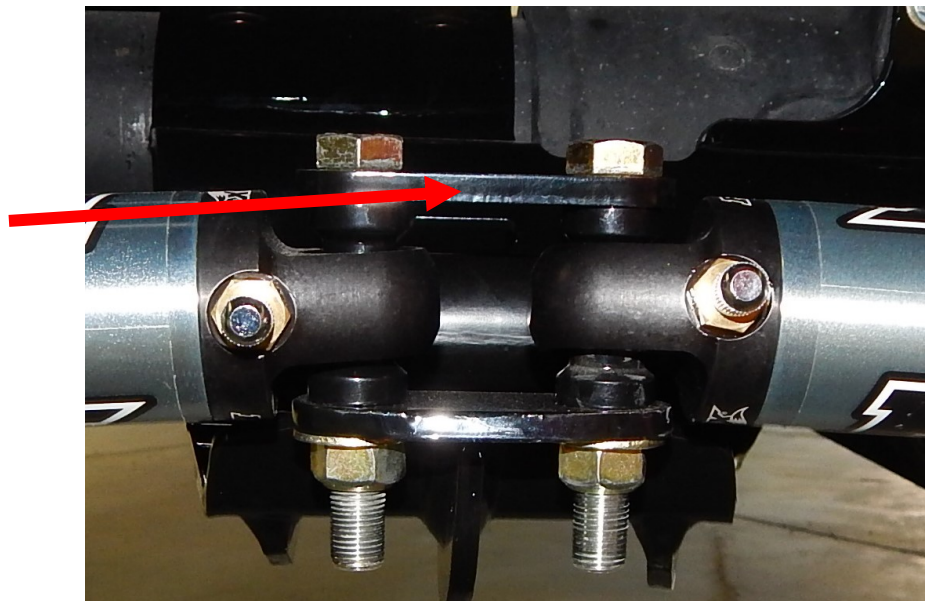
NOTE: Once the install is complete you will need to check and see if the front drive shaft needs lengthened. Run the suspension all the way maxed out and check that the driveshaft still has enough splines engaged. It may be required to add 3/4-1" to the driveshaft. Make sure then do drop the air and check to see how much room there is to bottom out the driveshaft. Do not lengthen the driveshaft more than this measurement.

18. If you ordered the optional steering stabilizer assembly, locate the center section (part# 30157) and axle mount (part# 30166) and fasten it to the differential with the four 7/16x1 1/2" bolts and two 3/8-16x1" bolts. If the axle has the factory differential cover you will need to use the mounting spacer (part# 30168) Locate the outer shock mounts (part# 30167 PS and 30164 DS). The passenger side outer shock fastens to the drag link with the 2 U-bolts. The drivers side uses one U bolt and the clasp inner lower bolt. Once the brackets are in place, locate shocks, eight shock spacers, center brace and the four 1/2x3" bolts.

Starting with the center bracket, drop 2 1/2x3" bolts down through the shock strap (part# 20227) Next place a spacer on each side of the shock eyelette and drop the bolt down through the center section. Tighten these bolts to 85 ft/lbs. Use a 1/2x3" bolt on each end of the shock to fasten the end of the shock to the outer shock mounts. Use the spacers just like you did on the center section.



Shock strap



19. When install is complete on the front, it is time to square up the axle. The first step is to set the air bags at 8.5" (measure between the upper air bag mount and lower air bag mount). Once they are at 8.5" you need to set the pinion angle to the measurement recorded in step one. You will adjust the upper and lower bars to get the air bags and shocks straight up and down. When the bags are straight they will be centered in the wheel wells. Use the adjustable pan hard bar to set the axle side to side. Once you have all this set, tighten the jam nuts on the trailing arms and pan hard bar. Now is also a good time to go over all the bolts to make sure they are torqued to the specs provided. NOTE: There is a video on YouTube on how to dial in the Kelderman suspension system. Just type 'Kelderman Manufacturing Dialing In The Kelderman Lift Kit' in the search box. This will take you to the company YouTube page and a demonstration on 'Dialing In The Kelderman Lift Kit' video.

20. NOTE: The 9-10" kit will operate the air bags in the 12" range.



21.. Locate the optional front sensor brackets, 2 sensors, collars and end links. Shorten the linkage rod to 4". Place the sensor brackets just in front of the sway bar end link mount. It needs to be straight up and down. Make sure you still have enough space to put a socket over the end link nut. The sensor bracket gets welded to the frame. Make sure the bracket far enough down so the slot in the bracket has enough clearance to get a socket on your 1/4" bolt that holds the sensor to the bracket. Once the bracket is welded on, paint it black and bolt the sensor to the bracket. Now place the collar on the upper trailing arm so the linkage will be straight up and down. If the collar doesn't squeeze down tight on the trailing arm, remove the clamp and either use a file, sanding disk or grinder to remove a few thousandths off the collars where they connect.

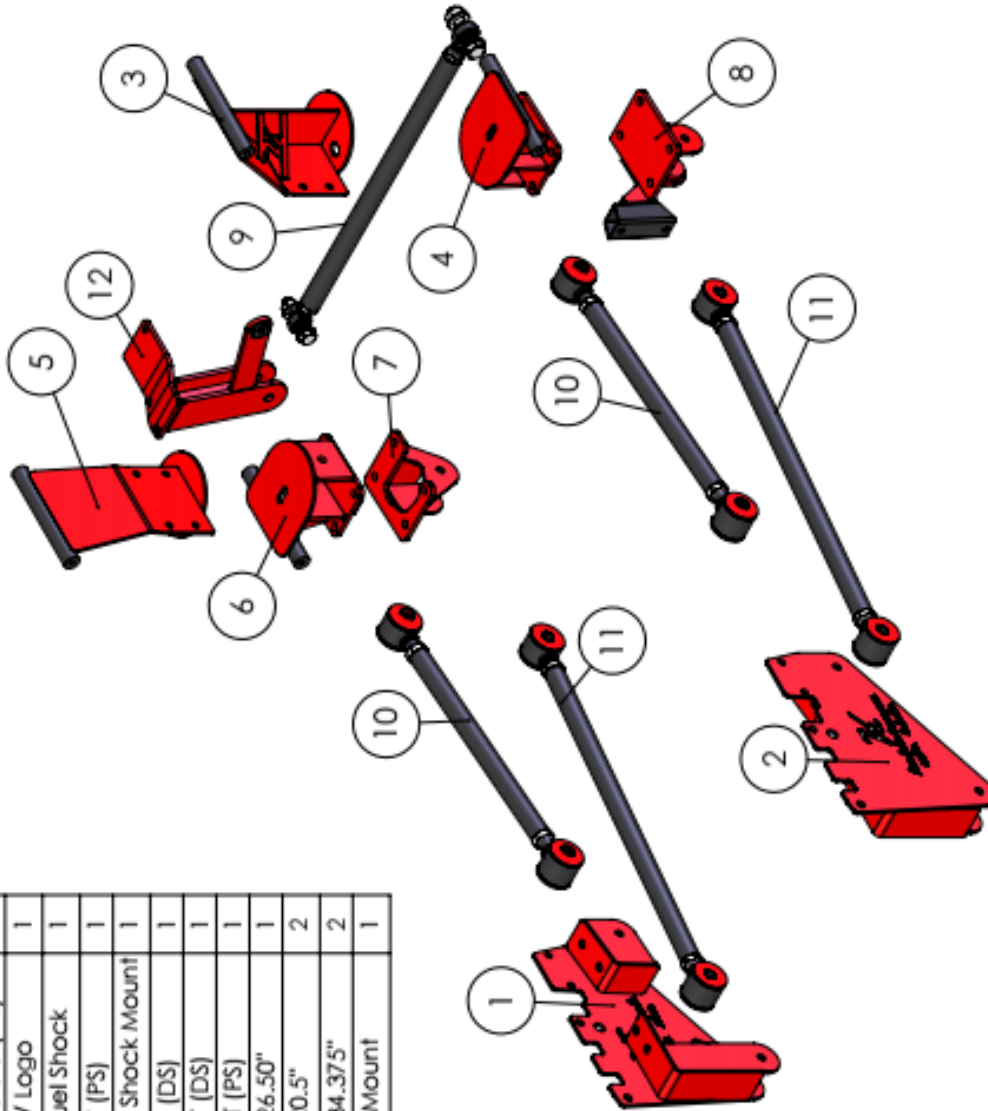
NOTE: There is a video on YouTube on how to dial in the Kelderman suspension system. Just type 'Kelderman Manufacturing Dialing In The Kelderman Lift Kit' in the search box. This will take you to the company YouTube page and a demonstration on 'Dialing In The Kelderman Lift Kit' video.

Hadley control sensor shown



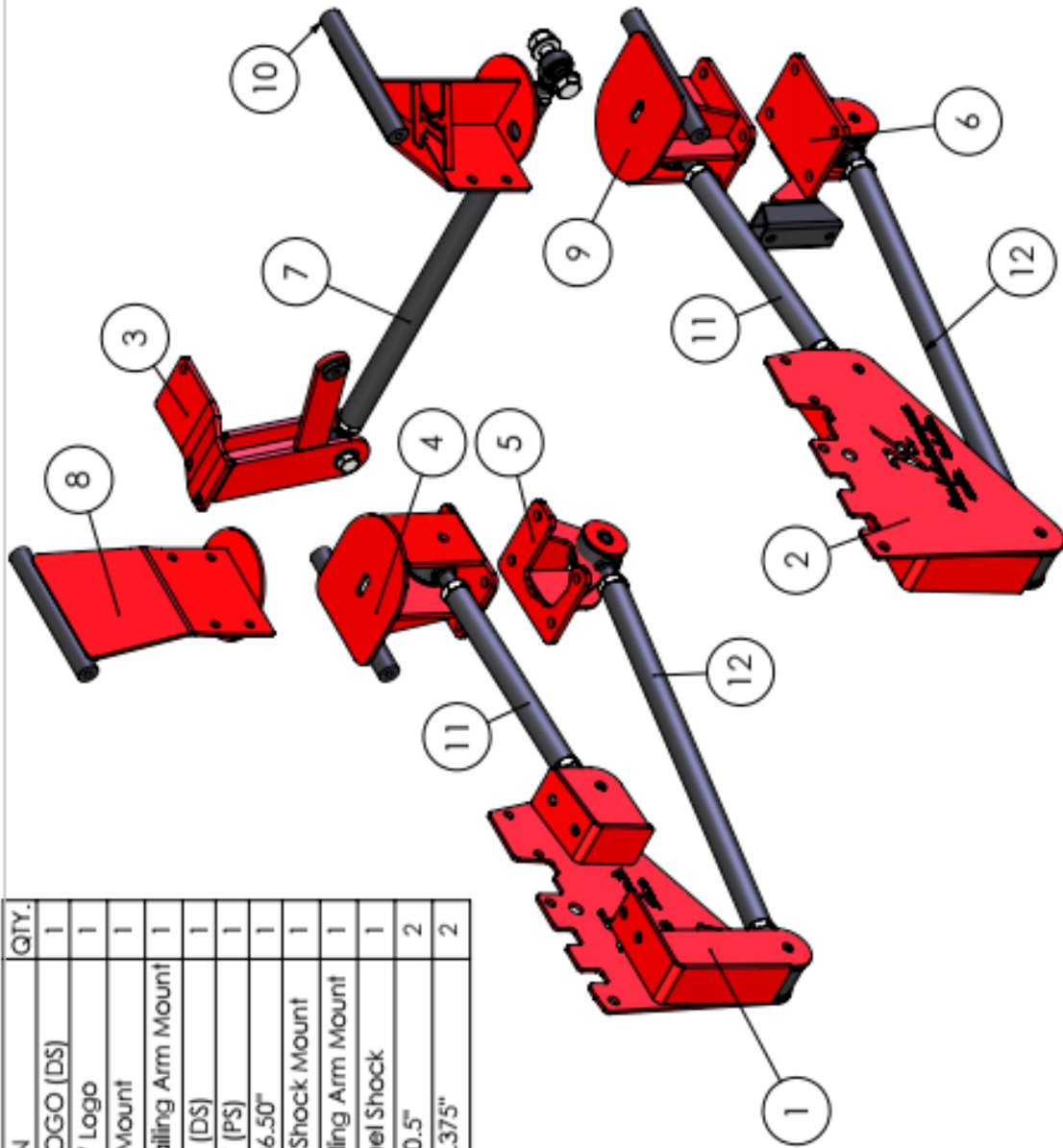
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	10919	MOUNT - PERCH W/LOGO (DS)	1
2	10918	(PS) Side Plate w/ Logo	1
3	10000	(PS) Bag Mount / Duel Shock	1
4	11368	MOUNT - FRONT (PS)	1
5	10482	(DS) Upper Bag Mount / Shock Mount	1
6	11369	MOUNT - FRONT (DS)	1
7	11273	MOUNT - FRONT (DS)	1
8	11272	MOUNT - FRONT (PS)	1
9	11403	Pan Hard Bar - 26.50"	1
10	11343	Trailing Arm - 20.5"	2
11	11336	TRAILING ARM - 34.375"	2
12	11353	(PHB) Front Drop Mount	1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: 1/32" ANGULAR: MAX ± 1 BEND ± 1 TWO PLACE DECIMAL ± .030 THREE PLACE DECIMAL ± .005 MATERIAL FINISH		Design By: Zach Beltz 2014 Shell # / Qty Inventory Run Qty:	Project: 1999-2005 F250/350/Excursion 5-6" Lift Front
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 WRITTEN PERMISSION IS STRICTLY PROHIBITED.		Description: 4-Link Front	SIZE DWG. NO. A 11169

ITEM NO. / PART NUMBER	DESCRIPTION	QTY.
1 10919	MOUNT - PERCH W/LOGO (DS)	1
2 10918	(PS) Side Plate w/ Logo	1
3 11353	(PHB) Front Drop Mount	1
4 11363	(DS) - Lower Bag Mount/ Trailing Arm Mount	1
5 11273	MOUNT - FRONT (DS)	1
6 11272	MOUNT - FRONT (PS)	1
7 11403	Pan Hard Bar - 26.50"	1
8 10482	(DS) Upper Bag Mount / Shock Mount	1
9 11362	(PS) Lower Bag Mount/Trailing Arm Mount	1
10 10000	(PS) Bag Mount / Duel Shock	1
11 52102-.50	Trailing Arm - 20.5"	2
12 52103-4.375	Trailing Arm - 34.375"	2

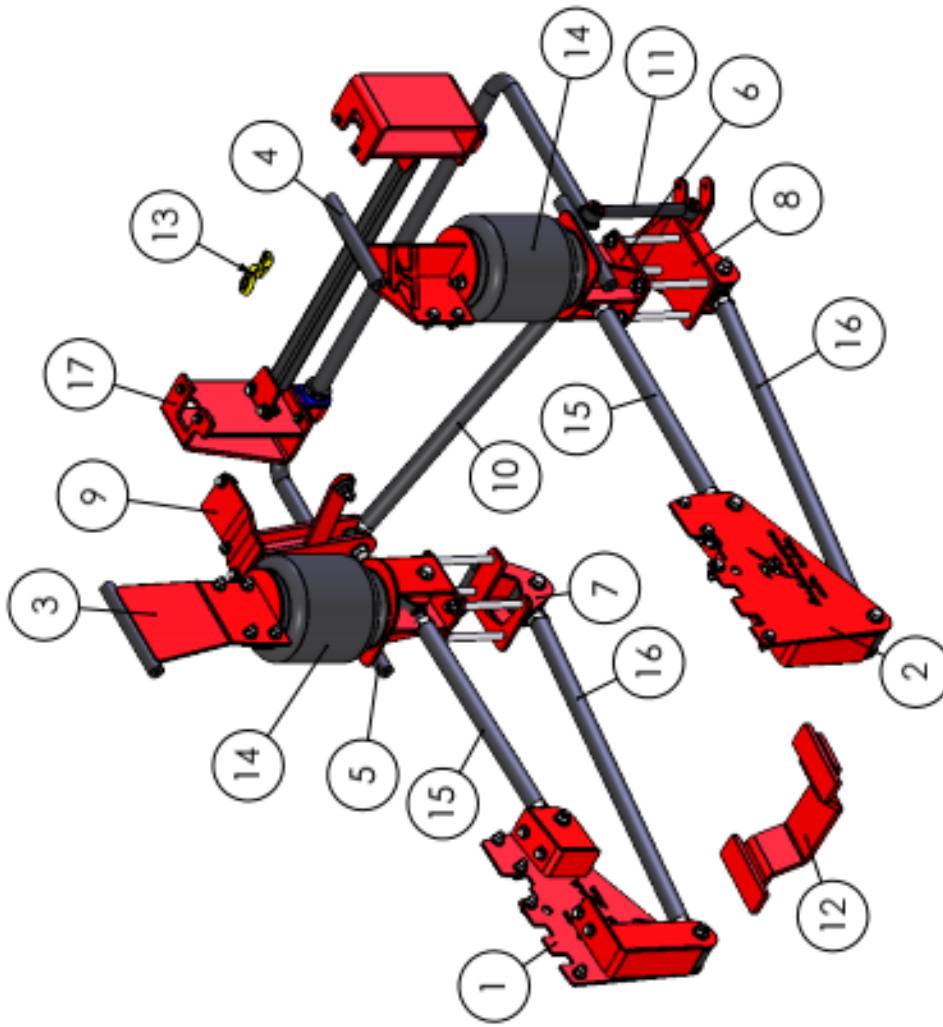


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 ANGULAR: MAX: 1 BEND: 1
 TWO PLACE DECIMAL: ±.030
 THREE PLACE DECIMAL: ±.010
 MATERIAL:
 FINISH:
 SURFACE:

Design By: Zach Beltz 2014
 Shelf # / Qty
 Inventory
 Run Qty:
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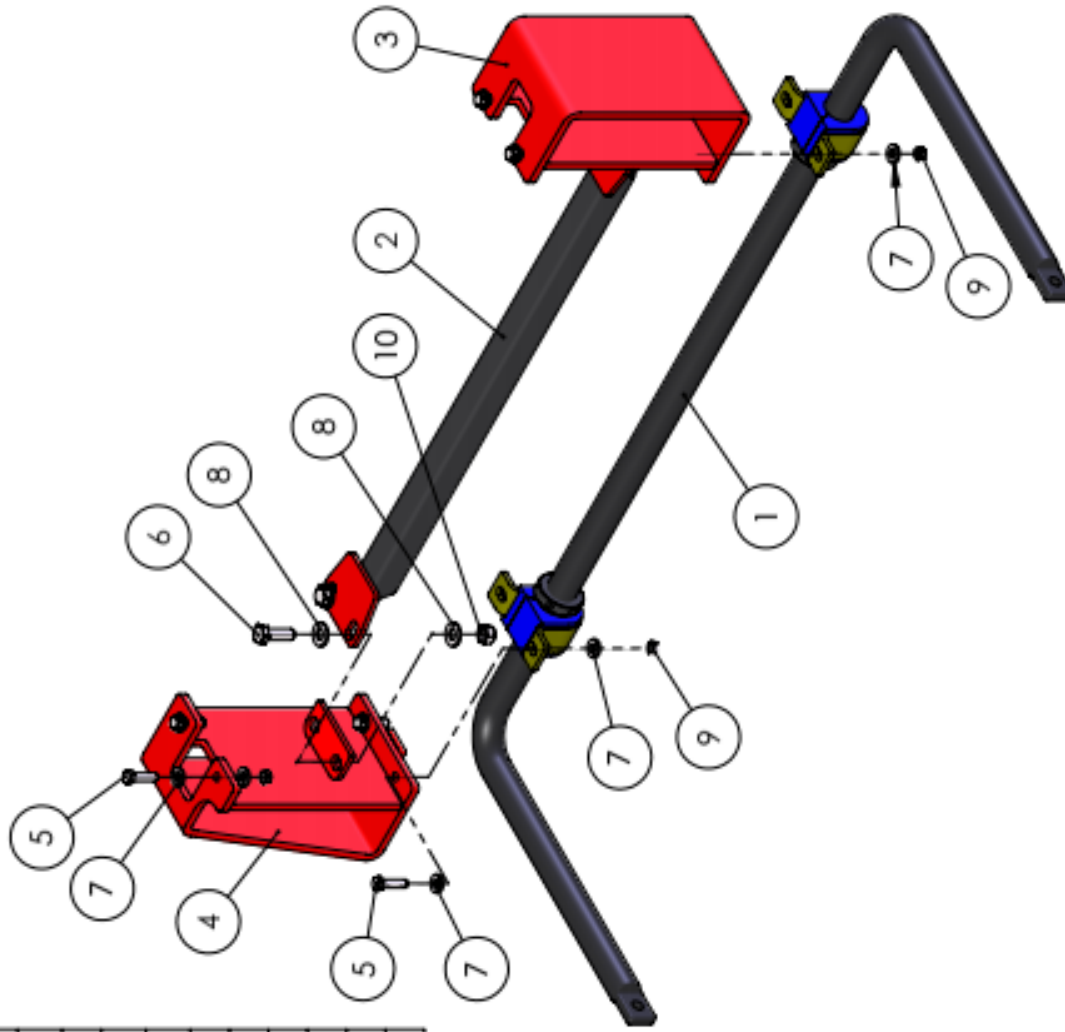
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 Description: KR 4-Link Front
 SIZE DWG. NO. A 11139

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	10919	(DS) Side Plate w/ Logo	1
2	10918	(PS) Side Plate w/ Logo	1
3	10482	(DS) Upper Bag/Shock Mount	1
4	10000	(PS) Upper Bag/Shock Mount	1
5	11363	(DS) Lower Bag/Shock/Trailing Arm Mount	1
6	11362	(PS) Lower Bag/Shock/Trailing Arm Mount	1
7	14758	(DS) Lower Trailing Arm Mount	1
8	14841	(PS) Lower Trailing Arm/ PHB Mount	1
9	10510	Pan Hard Bar Drop (Front)	1
10	11403	26.50" Panhard Bar	1
11	30295	9.75" End Links	2
12	10882	Transmission Crossmember Drop Bracket	1
13	14613	FA699 Pilman Arm	1
14	10580	BAG KIT - 8979	2
15	11342	TRAILING ARM - 20.50	2
16	11335	TRAILING ARM - 34.38	2
17	11924	Sway Bar Kit	1
18	13004	1/2" Flat Washer	56
19	13005	9/16" Lock Washer	12
20	13006	5/8" Flat Washer	16
21	13124	1/2" Hex Nut	28
22	13177	9/16" Hex Nut	8
23	13166	5/8" Hex Nut	4
24	13126	5/8" Lock Nut	4
25	12007	Bolt - 1/2"-20 x 1 1/2" Gr.8	27
26	12011	Bolt - 1/2"-20 X 2" Gr.8	1
27	12347	Bolt - 5/8"-18 x 8" Gr.8	8
28	12429	Bolt - 5/8"-18 x 4.25" Gr.8	4
29	12431	Bolt - 5/8"-18 x 4.5" Gr.8	3
30	12433	Bolt - 5/8"-18 x 4.75" Gr.8	1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/32" ANGULAR: MAX ± 1 BEND ± 1 TWO PLACE DECIMAL ± .008 THREE PLACE DECIMAL ± .003	Design By: Zach Beltz 2014	Project: 1994-2004 F250/F350/Excursion Pickup 9-10" I/R (Front)
MATERIAL	Shell # / Qty	Description: Kelderman 4-Link Front
FINISH	Inventory	SIZE DWG. NO. A 11173
WEIGHT	Run Qty:	SCALE: 1:50 DO NOT SCALE DRAWING
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ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	14690	1139-159KLD Sway Bar	1
2	11743	29.5" Crossmember	1
3	11746	(PS) Sway Bar Drop	1
4	11747	(DS) Sway Bar Drop	1
5	12215	Bolt - 3/8-24 x 1.375" Gr.8	8
6	12007	Bolt - 1/2"-20 x 1.50" Gr.8	4
7	13022	3/8" Flat Washer	16
8	13004	1/2" Flat Washer	8
9	13122	3/8" Lock Nut	8
10	13124	1/2" Hex Nut	4

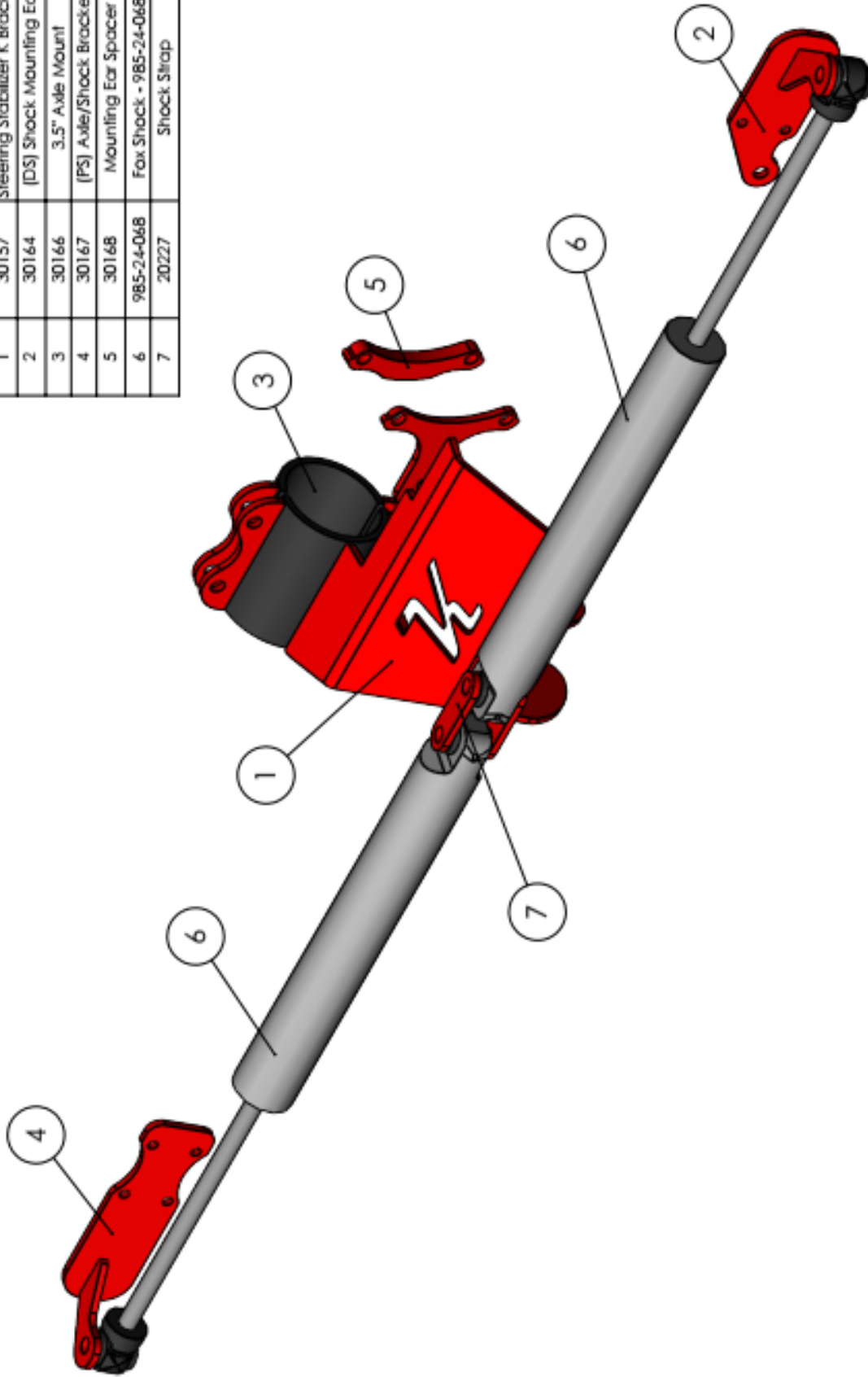


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 ANGULAR: MACH: 1 BEND: ±1
 TWO PLACE DECIMAL ±.030
 THREE PLACE DECIMAL ±.010
 MATERIAL
 FINISH
 WEIGHT
 50.22

DESIGN BY: Zach Beltz 2016
 SHELL # / QTY
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Project: 1994-2004 F250/350/Excursion Pickup 9-10" LH (Front)
 Description: Sway Bar KB
 SIZE DWG. NO. A 11924
 SCALE: 1:5 DO NOT SCALE DRAWING SHEET 1 OF 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	30157	Steering Stabilizer K Bracket	1
2	30164	(DS) Shock Mounting Ear	1
3	30166	3.5" Axle Mount	1
4	30167	(PS) Axle/Shock Bracket	1
5	30168	Mounting Ear Spacer	1
6	985-24-068	Fox Shock - 985-24-068	2
7	20227	Shock Strap	1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL: 1/32" ANGULAR: MACH: 1 BEND: ±1 TWO PLACE DECIMAL: ±.020 THREE PLACE DECIMAL: ±.010 MATERIAL:	Design By:	Zach Beltz 2014	Project:	2005 Excursion
	Shell # / Qty		Description:	Steering Stabilizer
	Inventory		SIZE	DWG. NO.
	Run Qty:		A	30169
FINISH	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 KELDERMAN MFG. INC. IS PROHIBITED.			
WEIGHT	22.08			
	SCALE:	1:20	DO NOT SCALE DRAWING	SHEET 1 OF 1