

KIT #'s:

10004864
10005563

**INSPECT THE
CONTENTS OF
THE KIT PRIOR
TO INSTALL.**



VERSION 1.3

A certified welder
is required

Truck bed and fuel
tank will need to
be removed so
plan accordingly

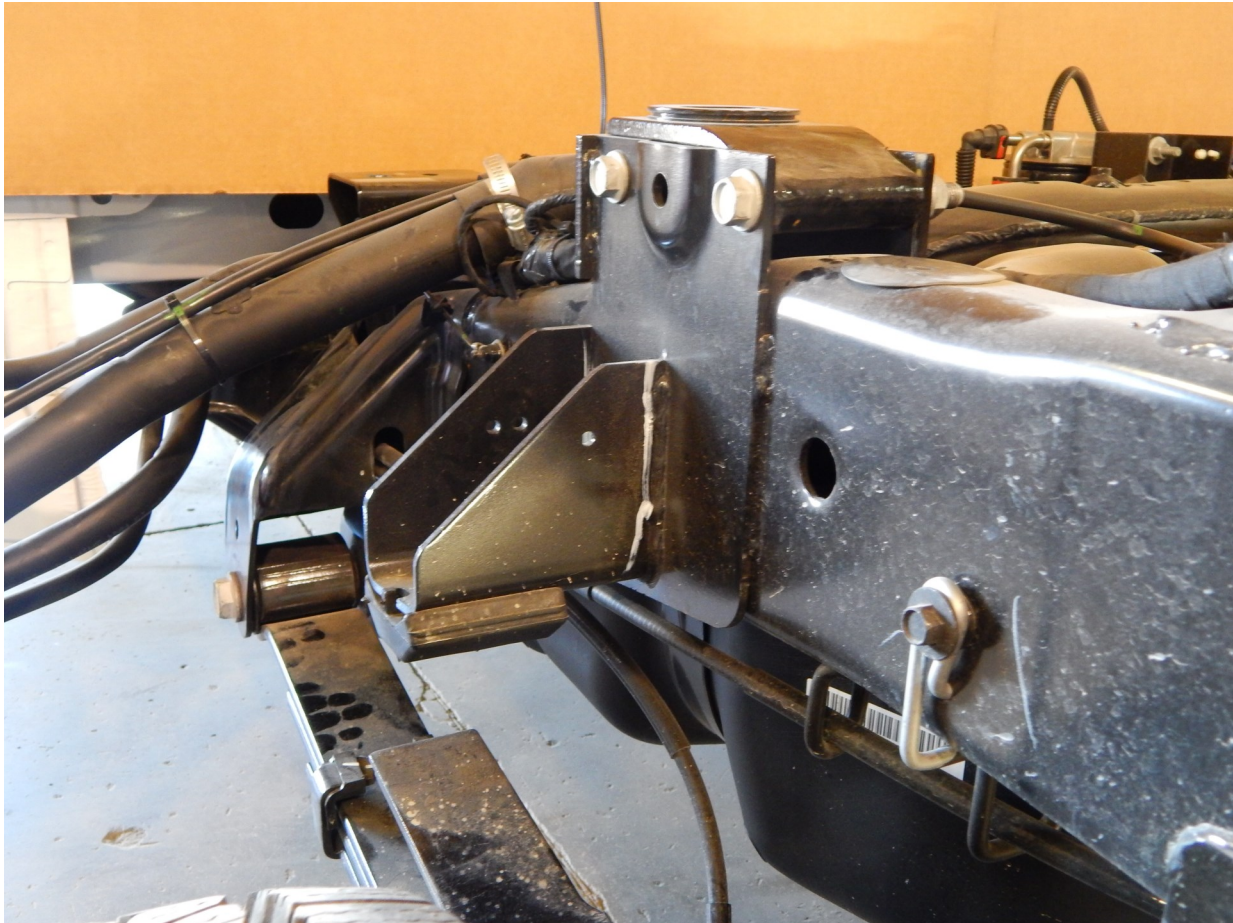
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www.kelderman.com

2019+ Ram 3500 P/U 5-6" 4-Link Rear Installation Instructions



Installation

1. Place the truck on a level surface and measure the pinion angle and write the angle down. This is important because you will need to put the axle back to this measurement after the installation. Also, take a measurement from the front of the axle to a location on each side of the front axle kingpin. Write these measurements here. Pinion angle _____. Right side _____ Left side _____ **NOTE: . Unless specified otherwise, all the bolts in this kit use a flat washer on each side of the bolt.** It is not required to remove the bed, but if you have the ability to do so, it will make the install much easier. Take off the E-brake cable at the tension adjustment.
2. Jack up the rear of the frame so that the tension is off the leaf springs. Place a set of jack stands under the frame, block the tires so the axle won't move, and place a jack stand under the pinion so it doesn't rotate. Remove the leaf springs, rubber bump stops fastened to the bottom side of the frame (non air ride trucks), air bags on the factory equipped air ride trucks and shocks. Keep the bolts that fasten the front of the leaf spring perch and the rear shackle bolt. These will be re-used in later steps. Remove the fuel tank.
3. Non-air ride trucks will be equipped with over load pads. Both the front and rear pads will need to be cut off and removed on both sides of the frame. Once removed, grind the area smooth.

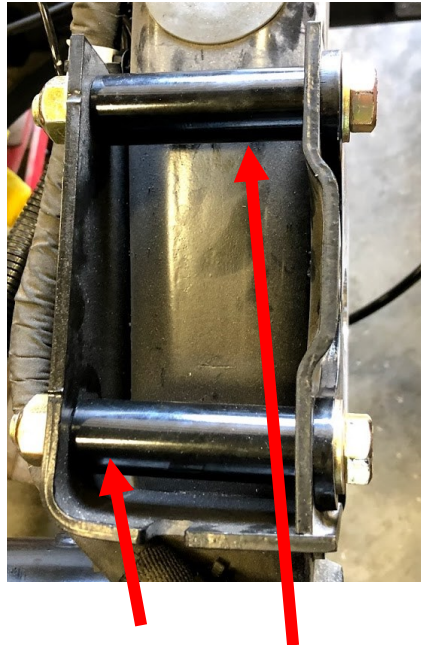




*Overload pads shown removed from the frame.
The area will need ground smooth for welding in later steps.*

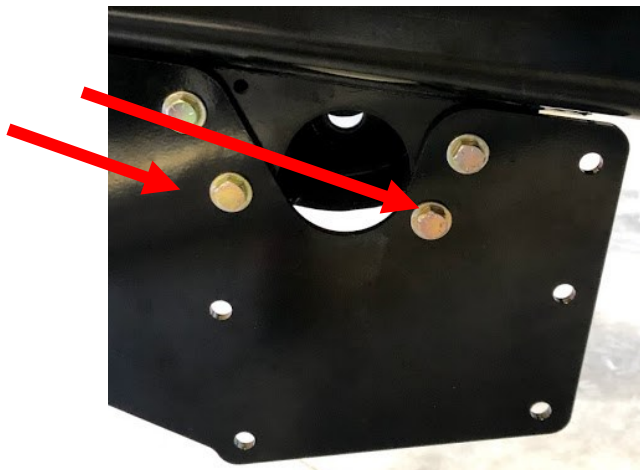


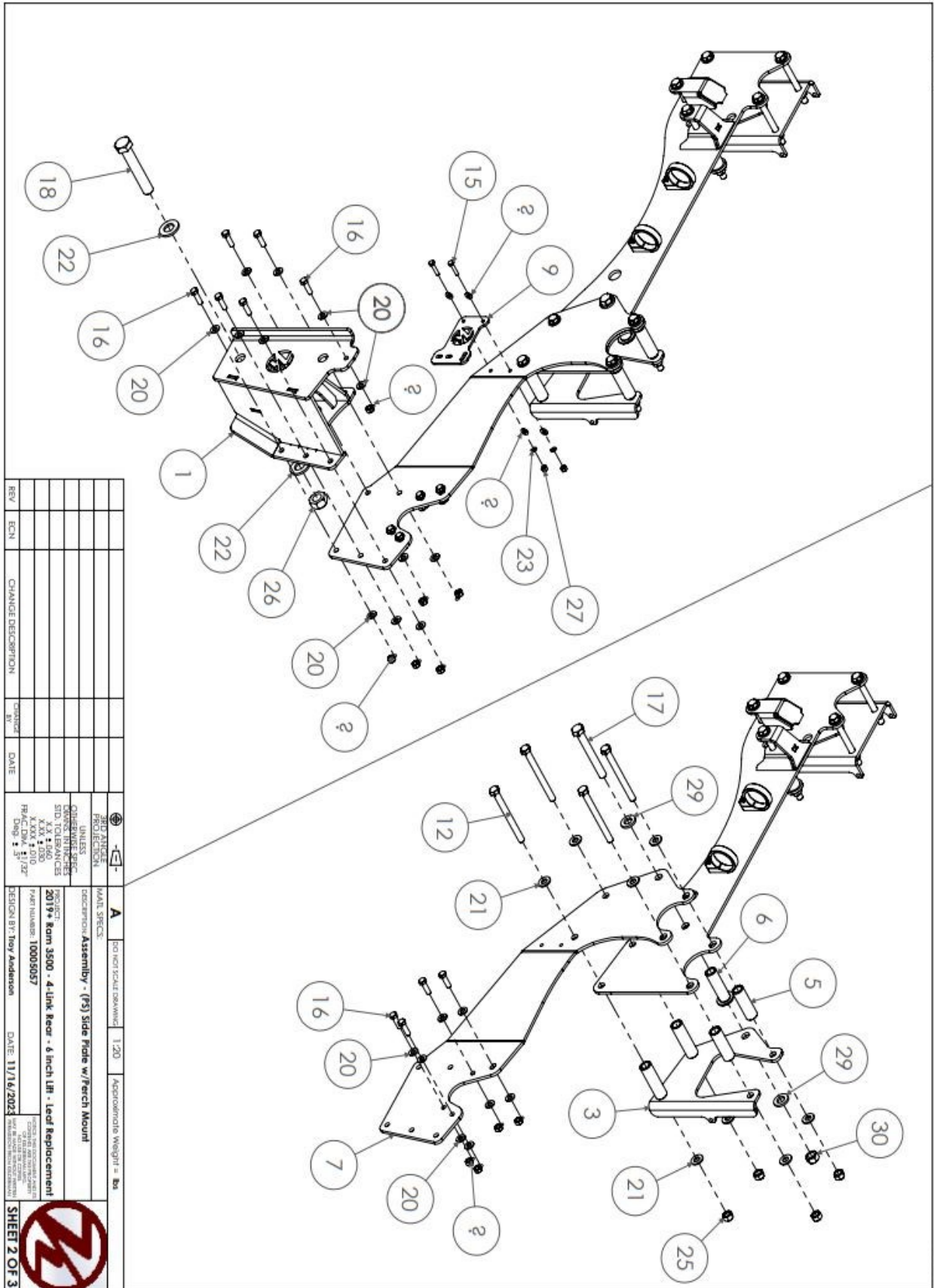
4. Locate the side frame mounting plate assemblies (Part # 5057-PS and 5414-DS). The next 6 pages show the parts and what bolts are used to fasten to the frame. There are four holes that need drilled on each side in the OEM spring perch. Use the frame/perch support as a drill guide. 3/8" bolts are used so, you will want to drill the holes around 1/16" bigger.



Use the supplied crush spacers if the truck does not have the factory 5th wheel hitch brackets

Drill the bottom two holes for the bottom bolts

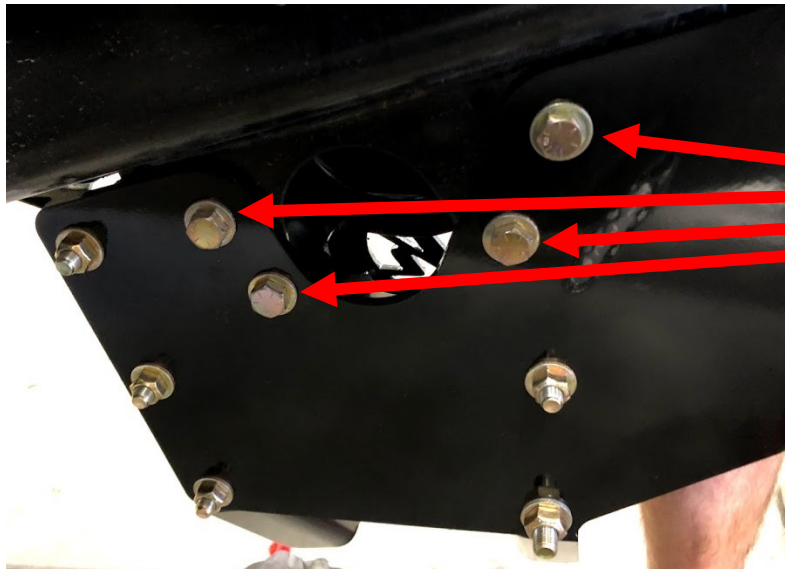








5. Locate the forward trailing arm mounts (Part # 10005059). It fastens to the forward leaf spring perch with the (6) 3/8" x 1-1/2" bolts. Slide the trailing arm mount in position and use the factory front leaf spring bolt to hold the mount in place. Install the (6) 3/8" x 1-1/2" bolts. There are five bolts that attach to the bottom side of frame mounting plate and one in the leaf spring perch itself. On the drivers side, locate the provided clip and run the drivers side e-brake cable through it. Tighten the top 3/8" bolt first and then do the bottom five that connect the trailing arm mount to the side plates. Torque these bolts to 50 ft./lbs.



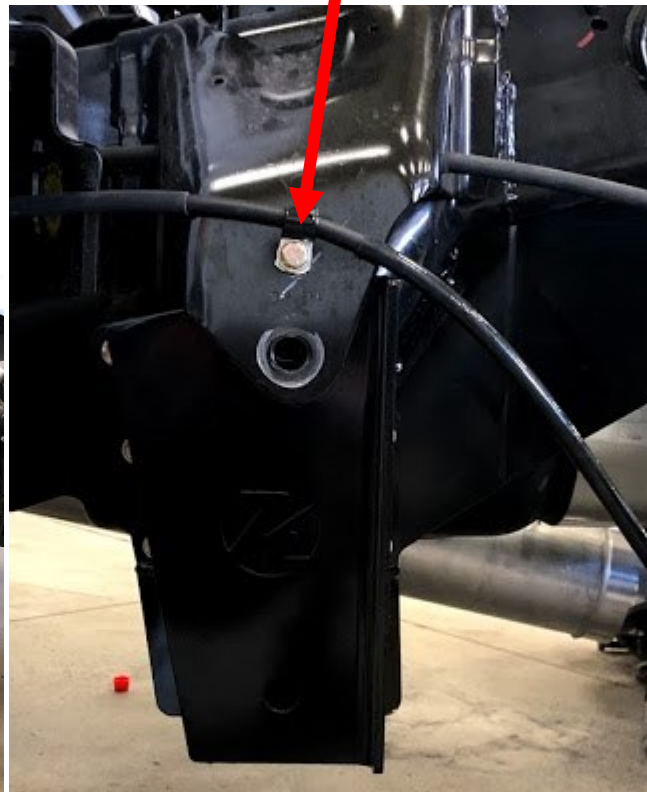
Note: On drives side, the fuel tank will need to be removed.

These 4 holes are drilled

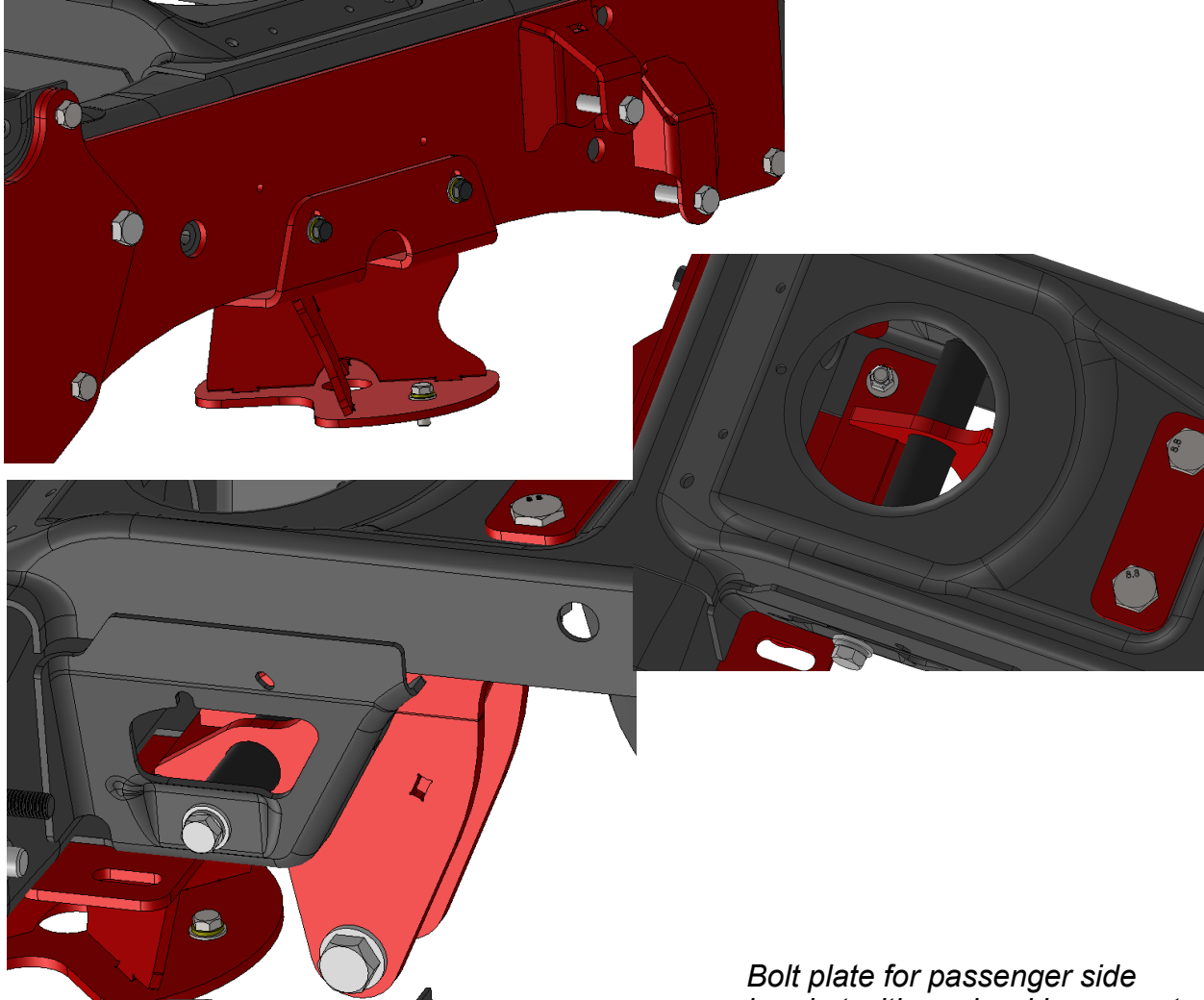
E brake cable installed into clip on drivers side

Driver side

Passenger side installed and welded (use undercoating or spray paint to paint the welds)



6. Locate the upper bag mounts (Part # 10005606) and Panhard Bar Drop (Part # 10009779). The upper bag mounts will fasten to the bottom of the fifth wheel cross-member and side plate. The PHB drop mounts inside the 5th wheel hitch with the 5/8" x 1" bolts and 3/8" x 1-1/4" bolts. The passenger side mounts with bolt plate (#10004553) on the hitch crossmember. The bolts on the OEM hitch plate are not long enough. If the vehicle you are working on does not have a 5th wheel hitch, you will use the bolt plate spacer (Part # 10004890) in between the bolt plate and the frame. The bolt plate is shown on the following page and the 1/2" x 1-1/2" bolts go through both sides of the PHB drop bushing. Torque the 3/8 bolts to 50 ft./lbs., 1/2" bolts to 75 ft./lbs. and OEM bump stop bolts to 45 ft./lbs.

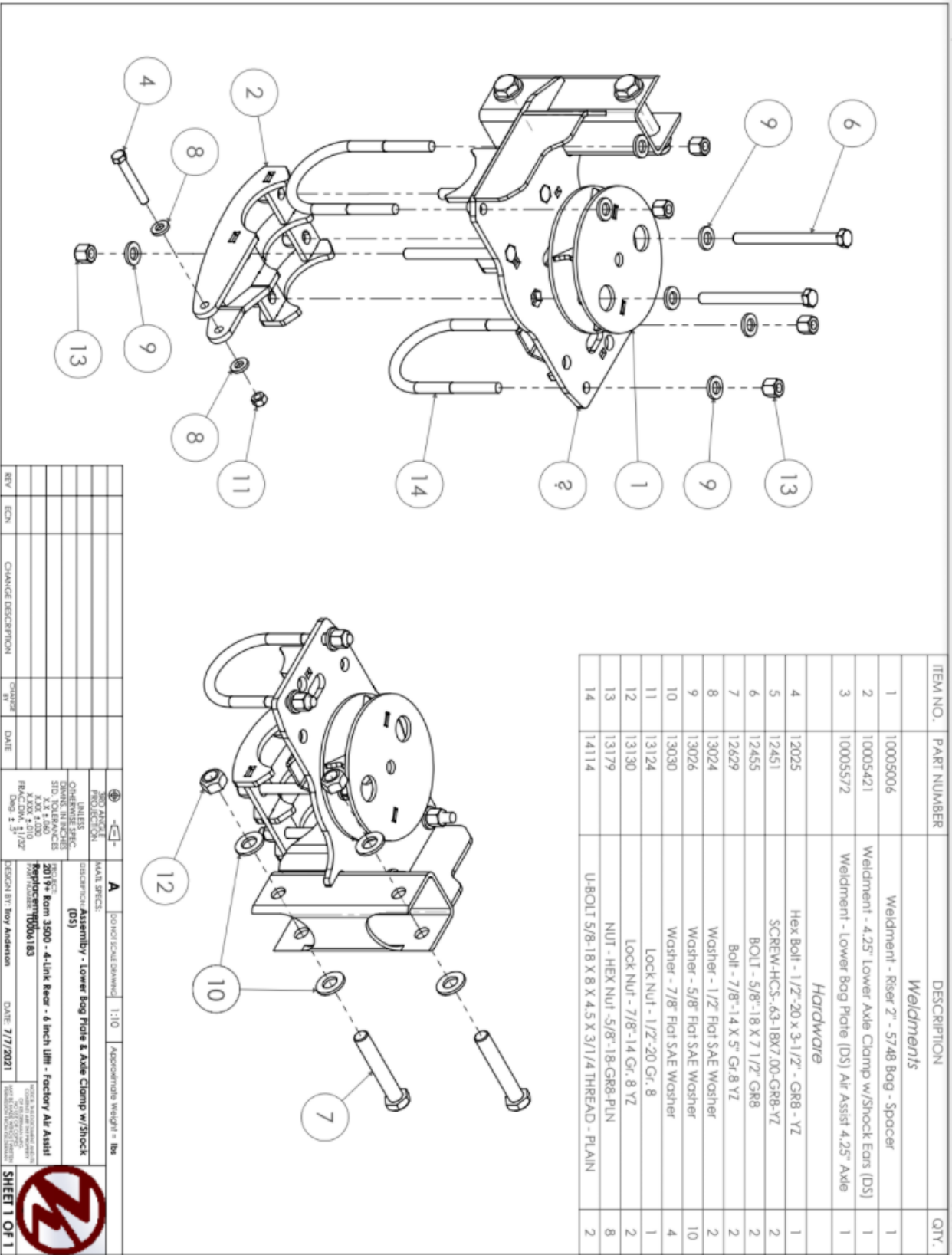


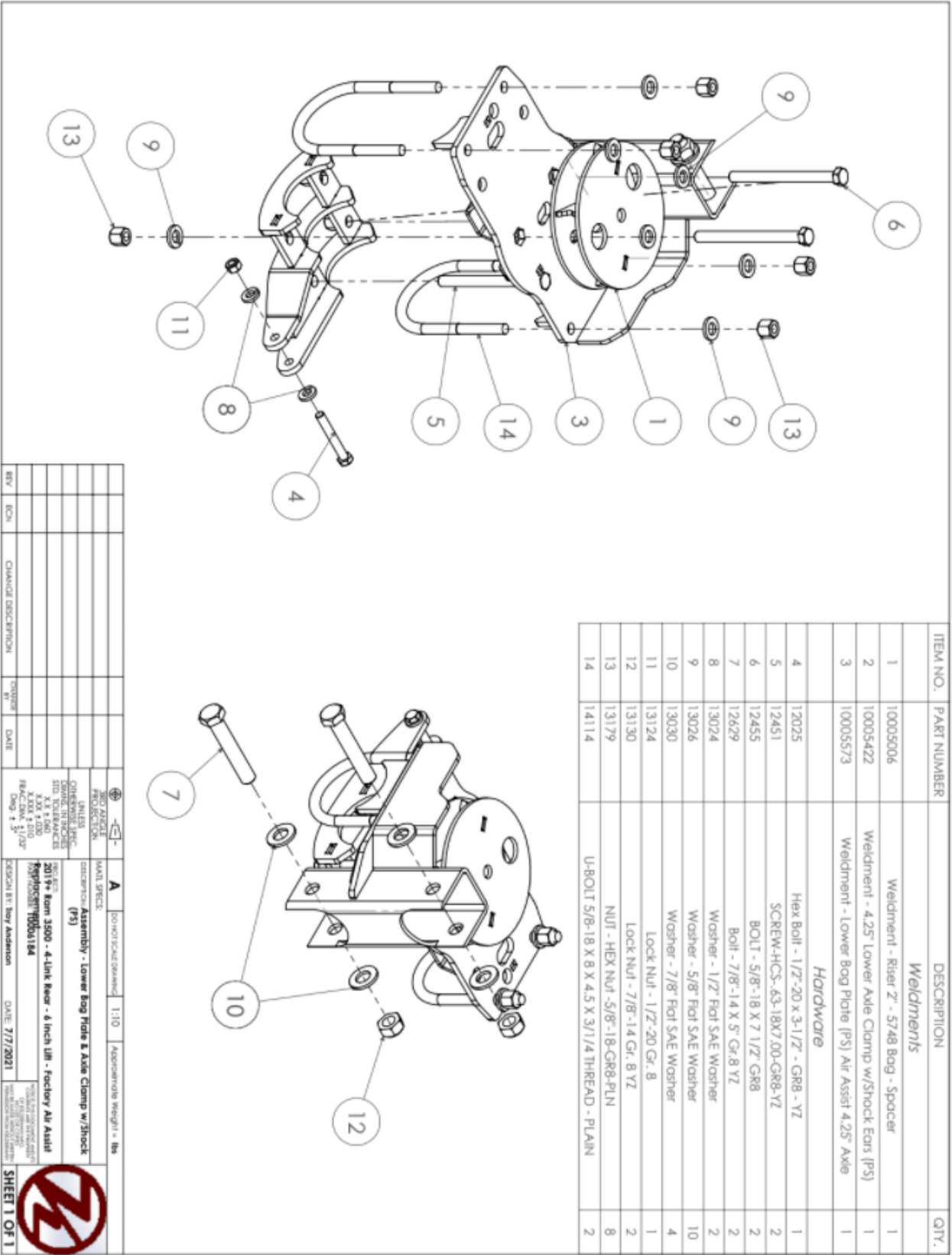
Bolt plate for passenger side bracket with panhard bar mount



7. Locate the lower air bag mounts (Part # 10005572-DS and 10005573-PS), Lower Air Bag Spacers (Part # 10005006), and air bags (Part # F5748). Install the four 5/8" x 7-1/2" bolts down through the lower bag mounts. Drop the air bag and the spacer down on lower air bag mount. Fasten the lower bag spacer to the lower air bag mount with the 3/4" lock nut and lock washer. Leave the nut finger tight. You will tighten this nut after the upper air bag is fastened to the upper air bag mount. Drop the lower bag mounts in place over the axle perches.

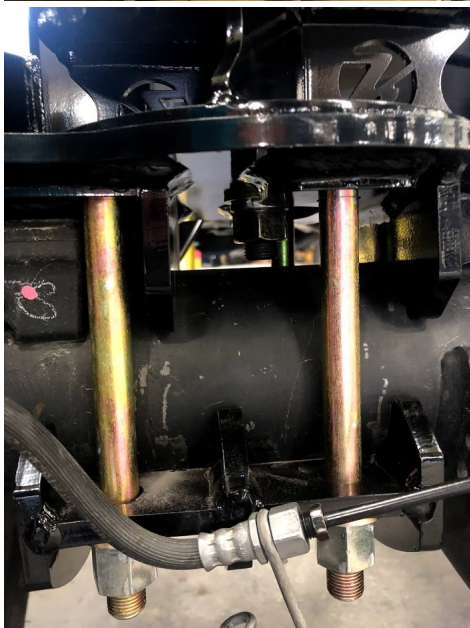


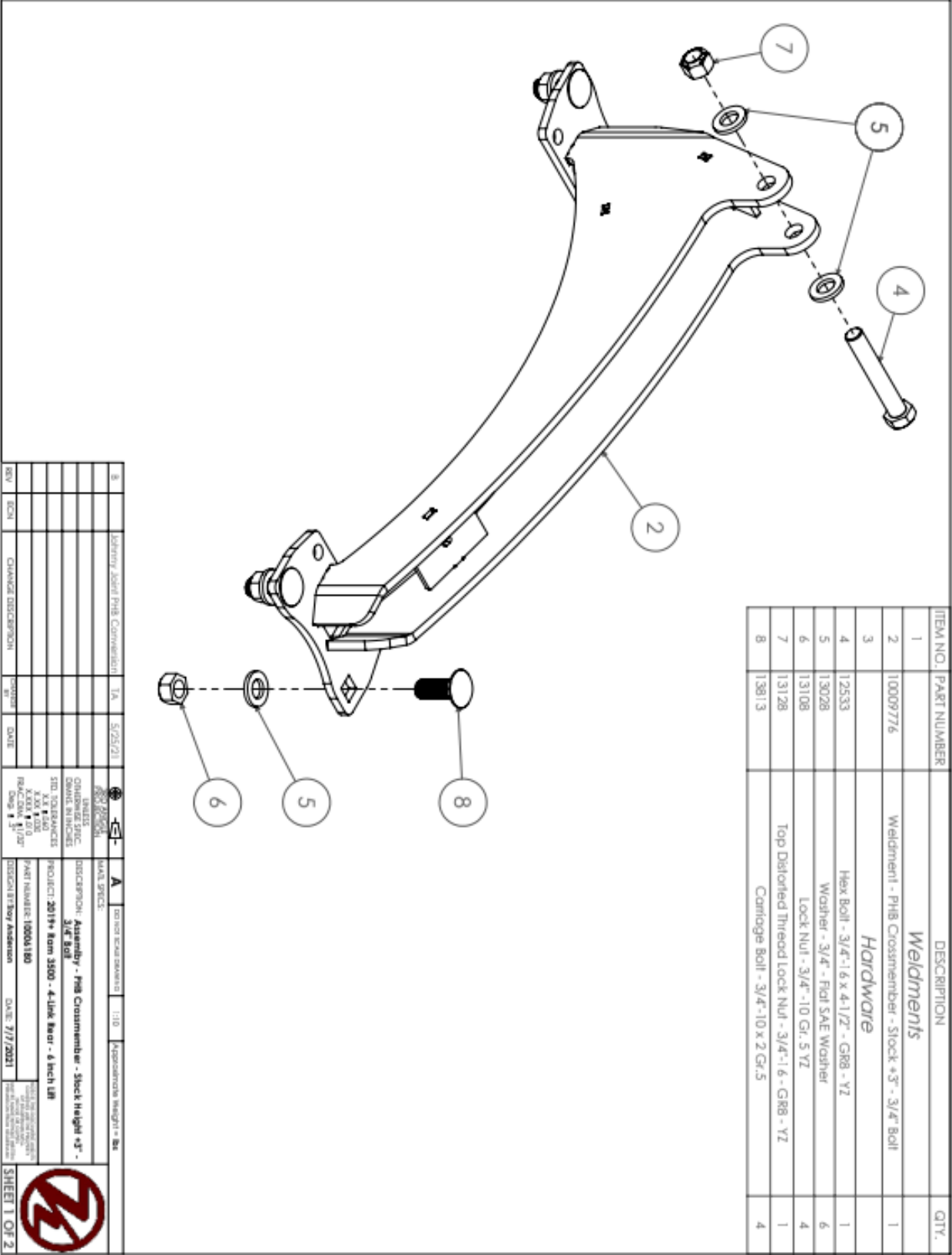




8. Locate the Axle Clamps (Part # 10005421-DS & 10005422-PS) and the PHB Crossmember (Part #10009776). Slide the axle clamps over the 5/8" bolts and tighten finger tight. Locate the outer U-bolts and slide them in place and start the nuts. Drop the PHB Crossmember down on the lower air bag mounts. The pan hard bar fastens to the lower air bag mounts with the 5/8" x 8" U bolts and (4) 3/4" x 1-1/2" carriage bolts. Torque the 5/8" bolts to 150 ft./lbs., U bolts to 75 ft./lbs., and the 3/4" carriage bolts to 150 ft./lbs.

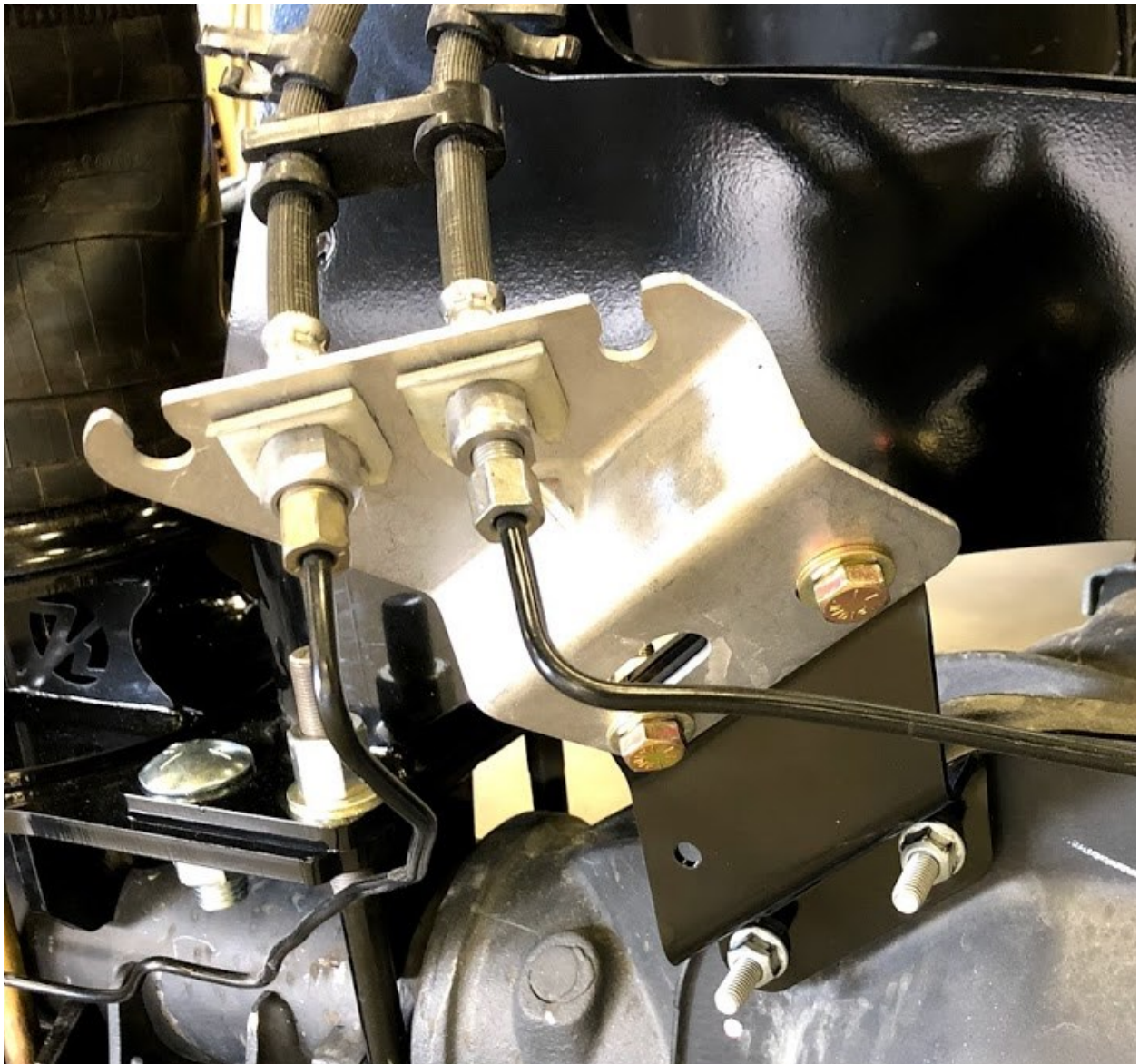
U-Bolts shown installed with lower PHB mount, airbags, and airbag spacers





9. Locate the brake line adapter (Part # 10005018). It fastens to the rear diff cover where the OEM brake lines attach, and to the OEM brake bracket with the two 3/8 x 1" bolts. This will raise the brake lines up and out of the way so they don't pinch when the suspension is dumped/deflated.

Brake line adapter must be installed to avoid damage to brake lines



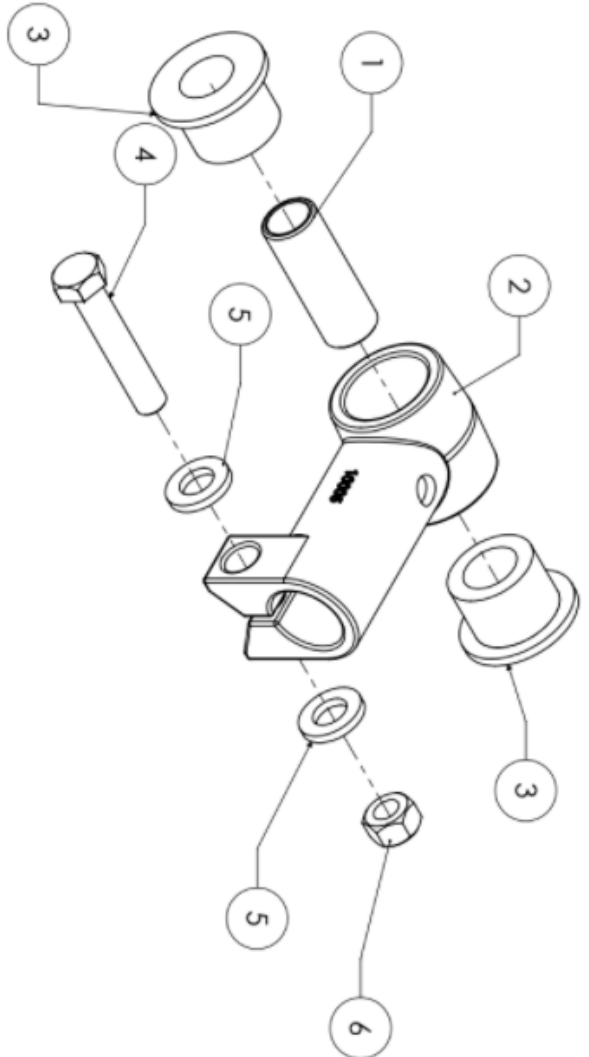
10. Locate the (4) trailing arms (Part# 52122). Set the distance between the trailing arm holes to 26-1/4" for the top bars and 25-3/4" for the bottom arms. The trailing arms fasten to the forward trailing arm mounts with the factory leaf spring bolt (upper hole) and the 7/8 x 5" bolts. The rear of the trailing arms fasten into the lower air bag mounts with (4) 7/8" x 5" bolts. Tighten the 7/8" bolts to 275 ft./lbs. and the factory trailing arm bolt to 250 ft./lbs. See more pictures on the next page. Leave the pinch bolts in the cast knuckles loose for now. Once the alignment is set, the 5/8" bolts can be torqued to 150 ft./lbs.

Trailing arms shown installed into forward trailing arm mounts.

Leave pinch bolts on the case knuckles loose for later adjustments



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
		<i>Parts</i>	
1	20093	Bushing - 1-1/8" OD 7/8" ID	1
		<i>Purchased Parts</i>	
2	10005	TORQUE ARM END (RH)	1
3	80136	Insert Press-In Bushing	2
		<i>Hardware</i>	
4	12420	Bolt - 5/8"-11 X 3 1/4" GR8	1
5	13026	Washer - 5/8" Flat SAE Washer	2
6	13106	Lock Nut - 5/8"-18	1



REV	ECN	CHANGE DESCRIPTION	ISSUED BY	DATE	<div><div></div><div>A</div><div>DO NOT SCALE DRAWING</div></div>	<div><div>1.2</div><div>Approximate Weight = lbs</div></div>
					PART SPEC:	
					UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES	
					ASSEMBLY - Cast Knuckle 10065 - 1" ID	
					CONNECTIONS TO BE MADE TO THE 510, 10065, 10065-1, 10065-2, 10065-3, 10065-4, 10065-5, 10065-6, 10065-7, 10065-8, 10065-9, 10065-10, 10065-11, 10065-12, 10065-13, 10065-14, 10065-15, 10065-16, 10065-17, 10065-18, 10065-19, 10065-20, 10065-21, 10065-22, 10065-23, 10065-24, 10065-25, 10065-26, 10065-27, 10065-28, 10065-29, 10065-30, 10065-31, 10065-32, 10065-33, 10065-34, 10065-35, 10065-36, 10065-37, 10065-38, 10065-39, 10065-40, 10065-41, 10065-42, 10065-43, 10065-44, 10065-45, 10065-46, 10065-47, 10065-48, 10065-49, 10065-50, 10065-51, 10065-52, 10065-53, 10065-54, 10065-55, 10065-56, 10065-57, 10065-58, 10065-59, 10065-60, 10065-61, 10065-62, 10065-63, 10065-64, 10065-65, 10065-66, 10065-67, 10065-68, 10065-69, 10065-70, 10065-71, 10065-72, 10065-73, 10065-74, 10065-75, 10065-76, 10065-77, 10065-78, 10065-79, 10065-80, 10065-81, 10065-82, 10065-83, 10065-84, 10065-85, 10065-86, 10065-87, 10065-88, 10065-89, 10065-90, 10065-91, 10065-92, 10065-93, 10065-94, 10065-95, 10065-96, 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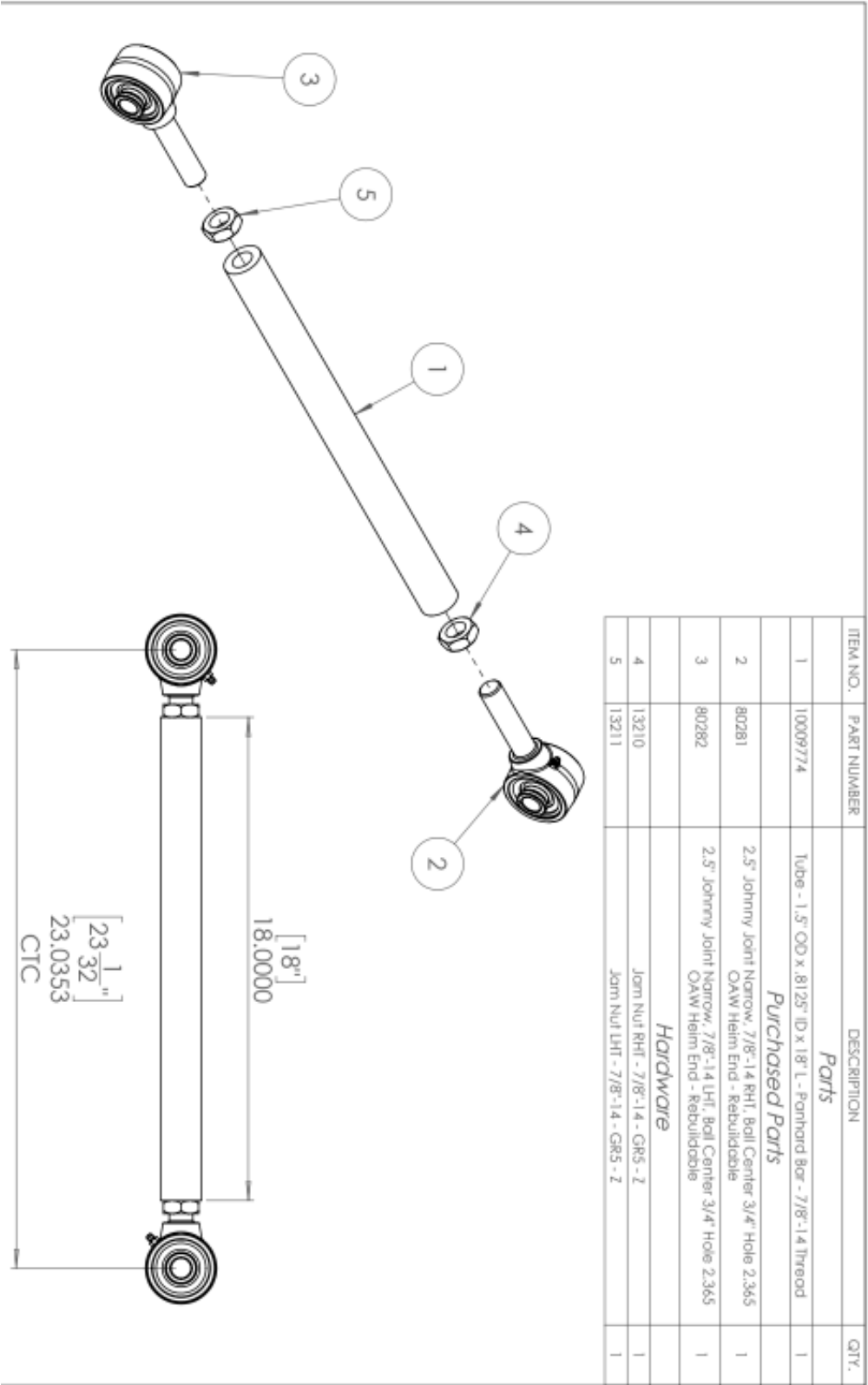


*Trailing arms shown installed
into lower airbag mounts.*

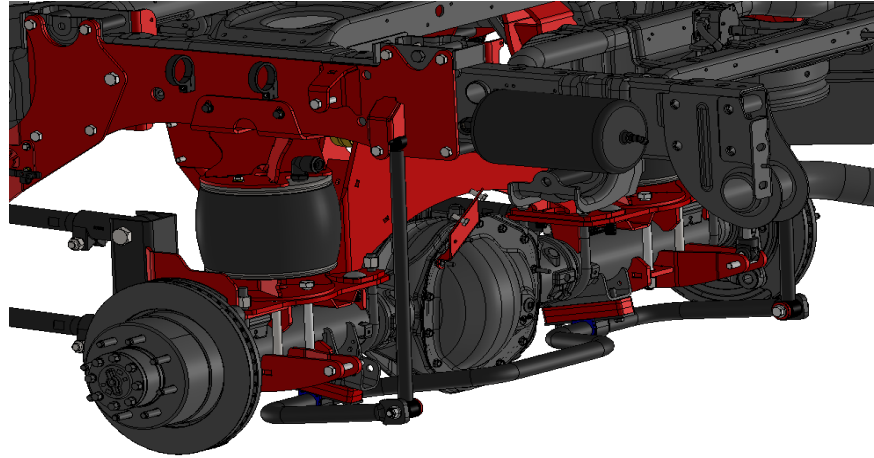
*Leave pinch bolts loose for
later adjustments.*



11. Locate the pan hard bar (Part #10010139). Set the bar so it is 23" center to center. The pan hard bar fastens into the lower pan hard bar mount with the 3/4" x 4-1/2" bolt. Torque the 5/8" bolts to 150 ft/lbs.



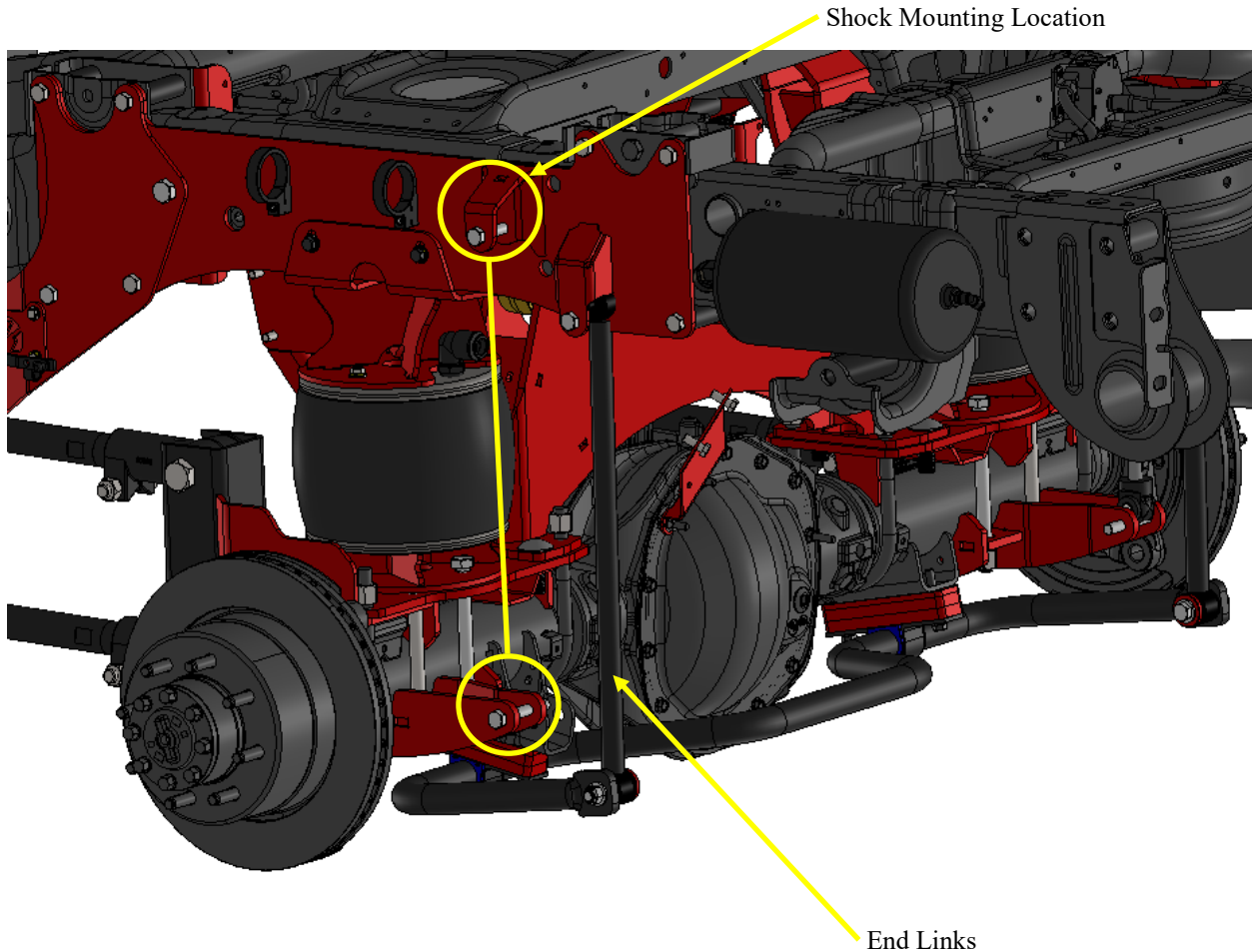
12. Locate the accumulator tanks (Part # 10005063-DS, Part # 10005062-PS) and the 3/4" air line. The tanks fasten into the rear leaf spring perches with the factory shackle bolt. Make sure end of the tank with the large port is facing towards the front of the truck. Torque the shackle bolt to 150 ft./lbs. Torque the fittings in the air tank. The fittings are pipe thread so they snug up as you tighten them. The fitting in the rear of the tank will be a 3/8" fitting and will connect to the manifold block on the air control system. Cut the 3/4" air line for the passenger side at 22-1/2" and the drivers side to 25-1/2". Insert the air line into the fitting in the air bag and the fitting in the accumulator tank. You will want to leak test these fittings once the control system is installed.



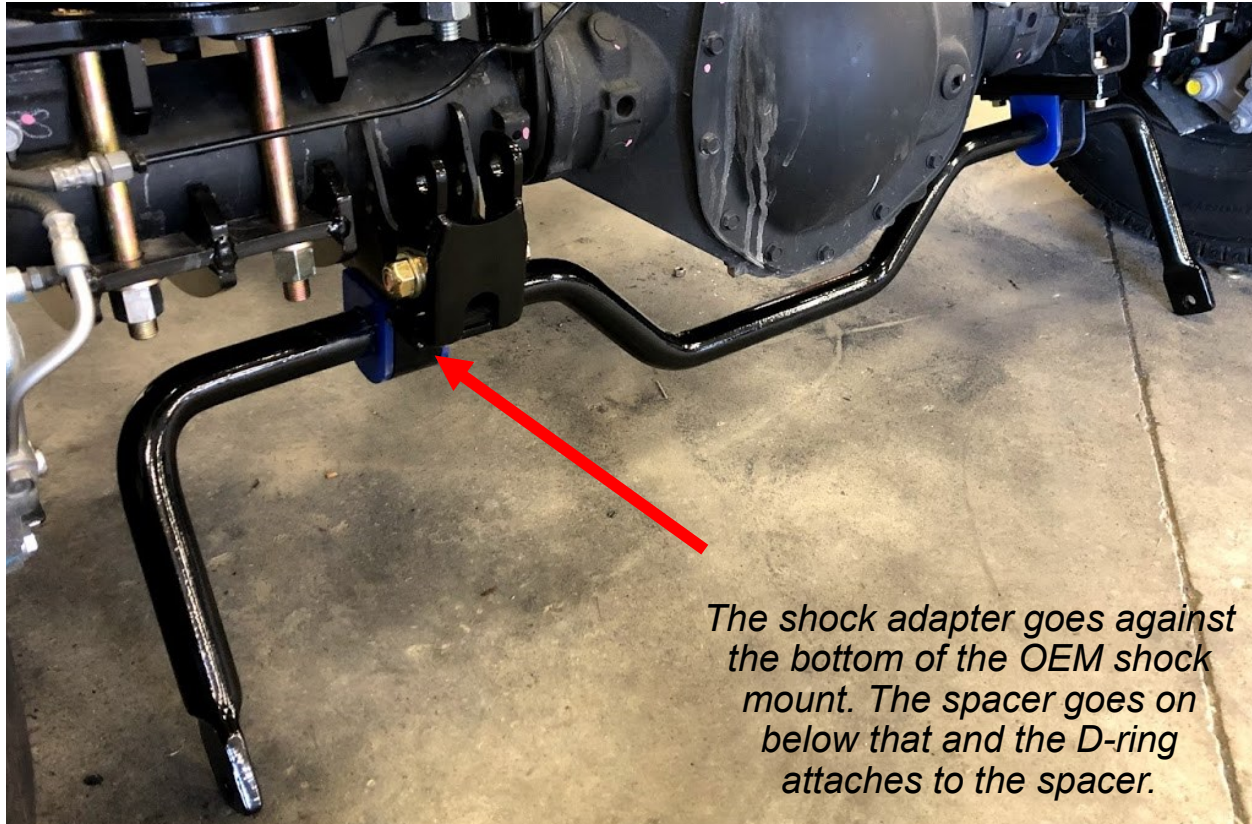
*3/4" air line shown installed from airbag to accumulator tanks.
Accumulator tanks install with factory rear shackle bolts removed in Step Two.*



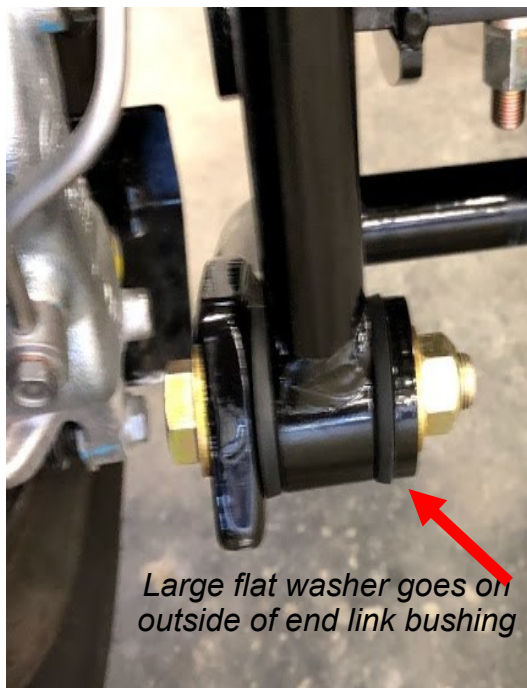
12. Locate the provided Sway Bar (Part # 80246), blue bushing/ D-Ring Kit (Part # 10006124). Use the provided grease and slide the blue poly bushings over the sway bar. The grease helps prevent squeaking. Place the shock relocation brackets on the bottom of the OEM shock mounts. Install the spacer on the bottom of the shock relocation brackets and the sway bar bushings w/ D-ring below that. Use the 7/16" x 2" bolts to fasten the stack together. Torque to 50 ft./lbs. Use the 9/16" x 3-1/2" to fasten the shock relocation bracket to the OEM shock hole. Torque this bolt to 85 ft./lbs. Locate the rear shocks (Part # 10004452). You will use the 9/16" x 3" bolt to attach the shock to the shock relocation bracket. The top of the shock attaches to side. Torque the top shock nut to 55 ft./lbs. See pictures on page 16.

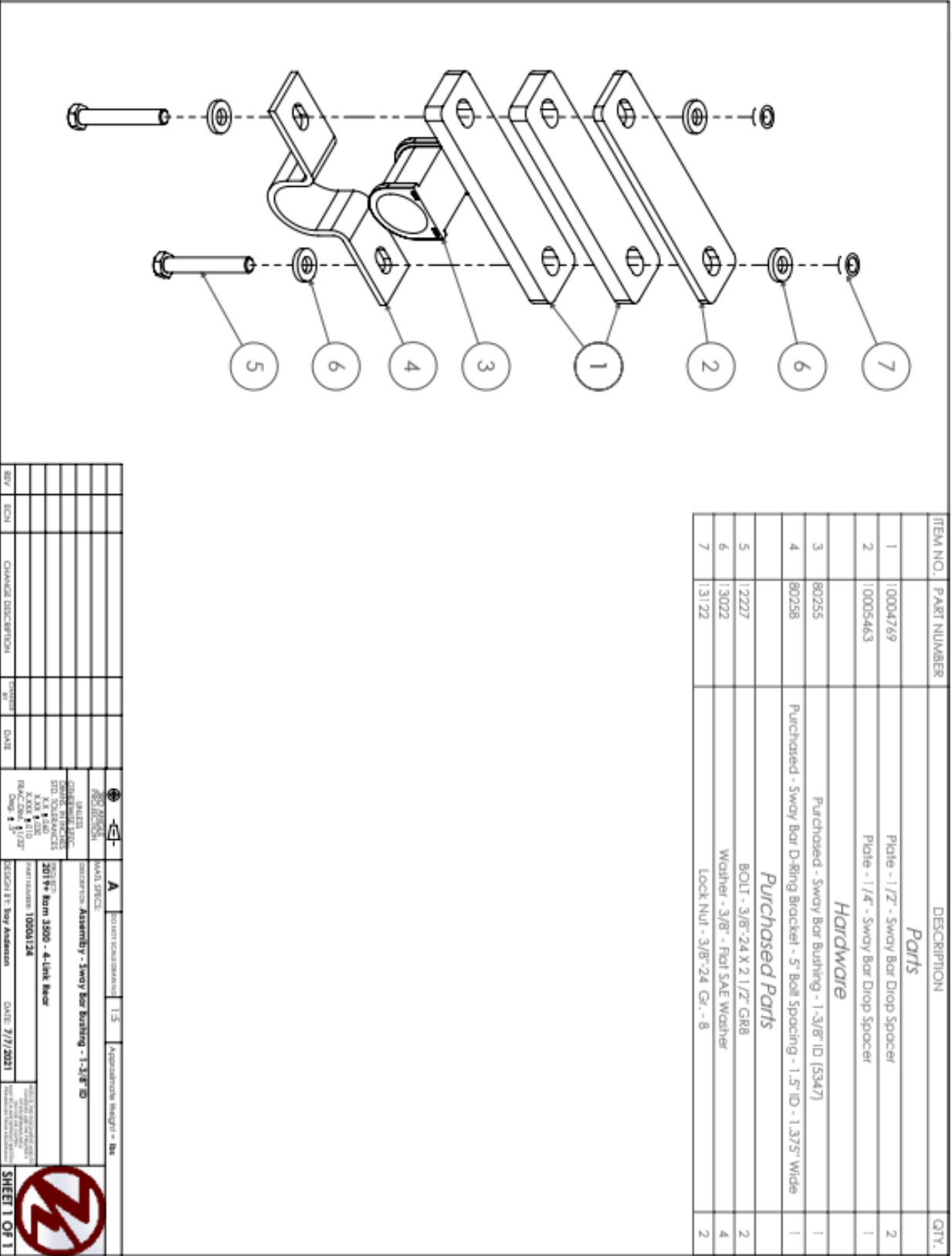


13. Locate the End Links (Part # 17744) and Spacers (Part # 11551). The bottom of the end links fasten to the outside of the sway bar with the 1/2" x 3" bolts. *Make sure to place the large flat washer on the outside of the end link.* Before the top of the end link is installed, slide the large flat washer on, then a spacer bushing and insert through the hole in the overload pad. Slide on another spacer bushing, large flat washer and lock nut. Just snug the lock nut up where the bushing just begins to squish.



The driver side shock relocation mount faces the rear of the truck. The passenger side shock relocation mount faces the front of the truck.





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
<i>Parts</i>			
1	10004769	Plate - 1/2" - Sway Bar Drop Spacer	2
2	10005463	Plate - 1/4" - Sway Bar Drop Spacer	1
<i>Hardware</i>			
3	80255	Purchased - Sway Bar Bushing - 1.375" ID (5347)	1
4	80258	Purchased - Sway Bar Drop Bracket - 5" Bolt Spacing - 1.5" ID - 1.375" Wide	1
<i>Purchased Parts</i>			
5	12227	BOLT - 3/8"-24 X 2 1/2" GR8	2
6	13022	Washer - 3/8" - Flat SAE Washer	4
7	13122	Lock Nut - 3/8"-24 GR - 8	2

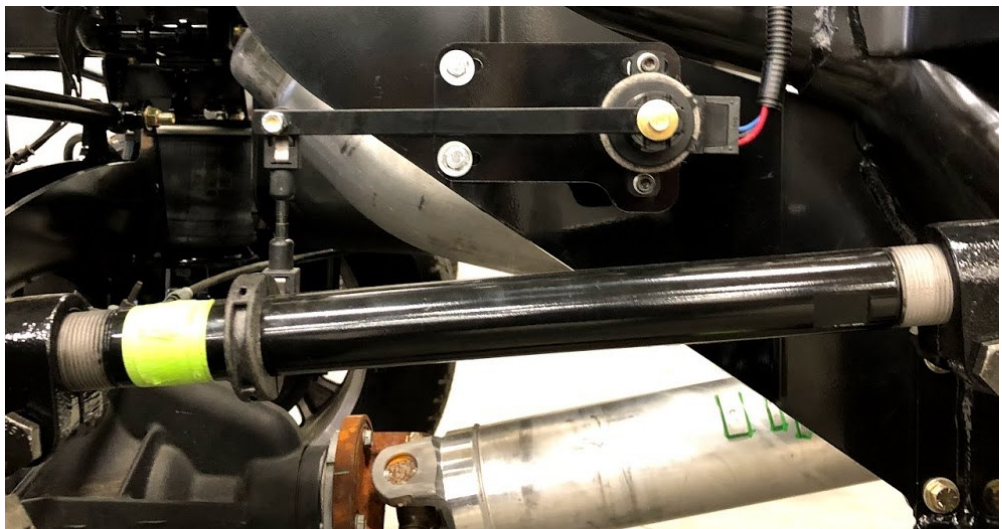
REV	ECN	CHANGE DESCRIPTION	CHANGED BY	DATE	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES FRACTIONS ARE IN 16THS OF AN INCH DECIMALS ARE TO 3 PLACES HOLE DIMENSIONS ARE TO 0.0005 INCHES HOLE LOCATIONS ARE TO 0.005 INCHES HOLE ANGLES ARE TO 0.001 INCHES HOLE TOLERANCES ARE TO 0.0005 INCHES HOLE FINISHES ARE TO 0.0005 INCHES HOLE TOLERANCES ARE TO 0.0005 INCHES HOLE FINISHES ARE TO 0.0005 INCHES	SCALE: 1/2"=1'-0"	PROJECT: 2019-01-01	DATE: 7/7/2021	SHEET 1 OF 1
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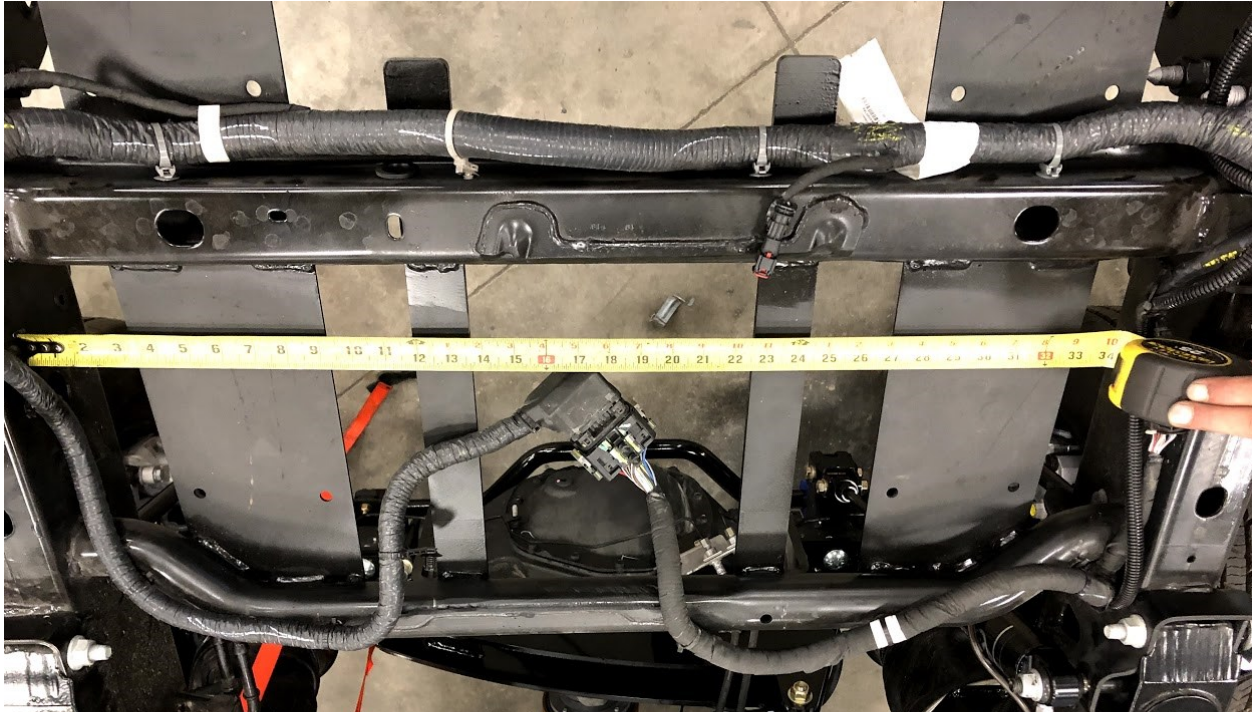
14. Locate the sensor mounting plate, (Part # XXXX) and sensor. The sensor plate attaches to the frame mounting plates with the two 1/2 x 1" bolts. Fasten the sensor to the mounting plate with the 1/4 x 1" Allen head bolts. Locate the plastic collar and attach it to the top trailing arm bar about 3 1/4" away from the rear knuckle. Connect the sensor linkage to the collar and sensor.

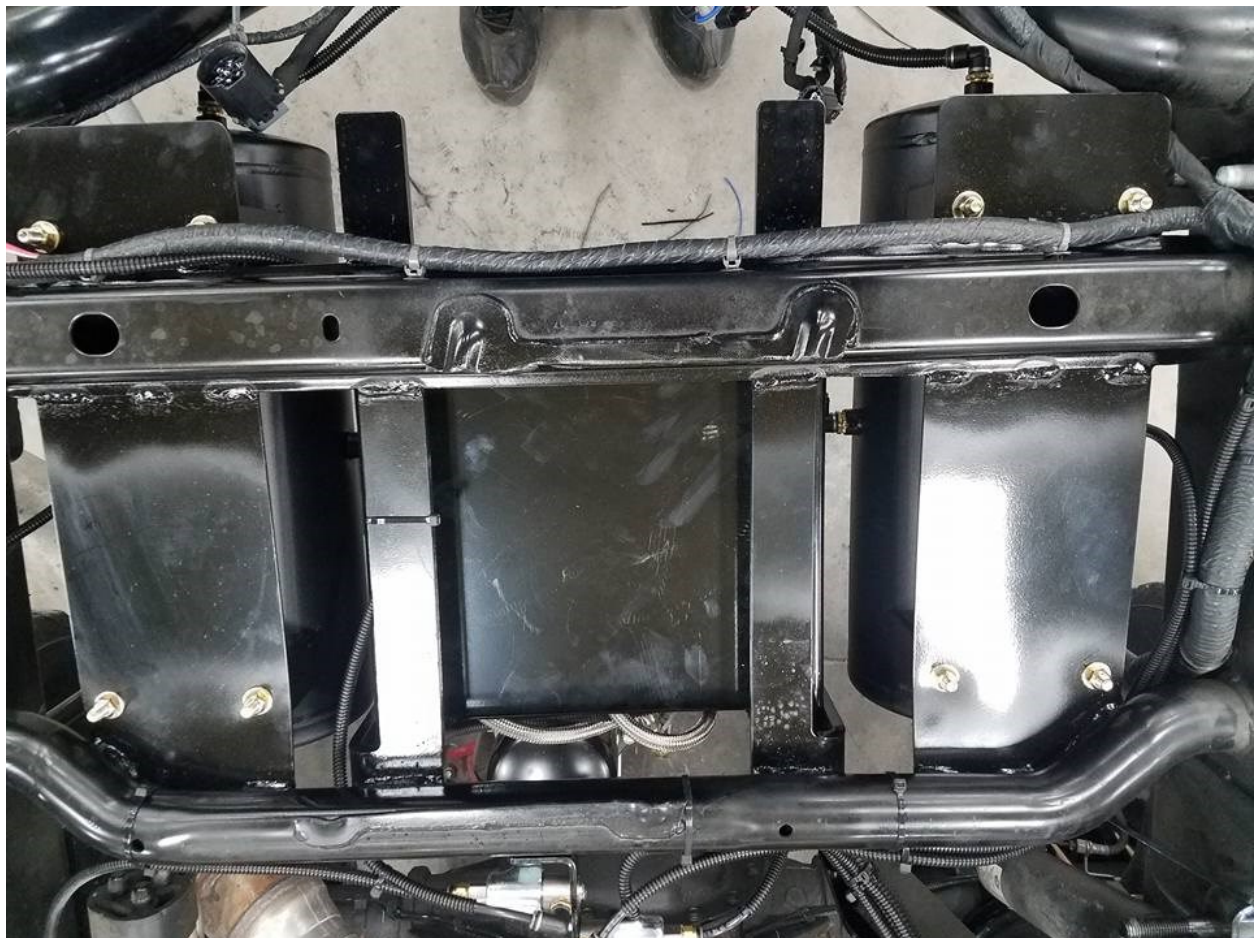
NOTE: If the collar turns on the bar after tightening the Philips head screws, remove the collar and grind or file the mating surfaces where the collar halves meet. Only a few thousandths needs to be removed.

Re-install the collar and connect it to the linkage.



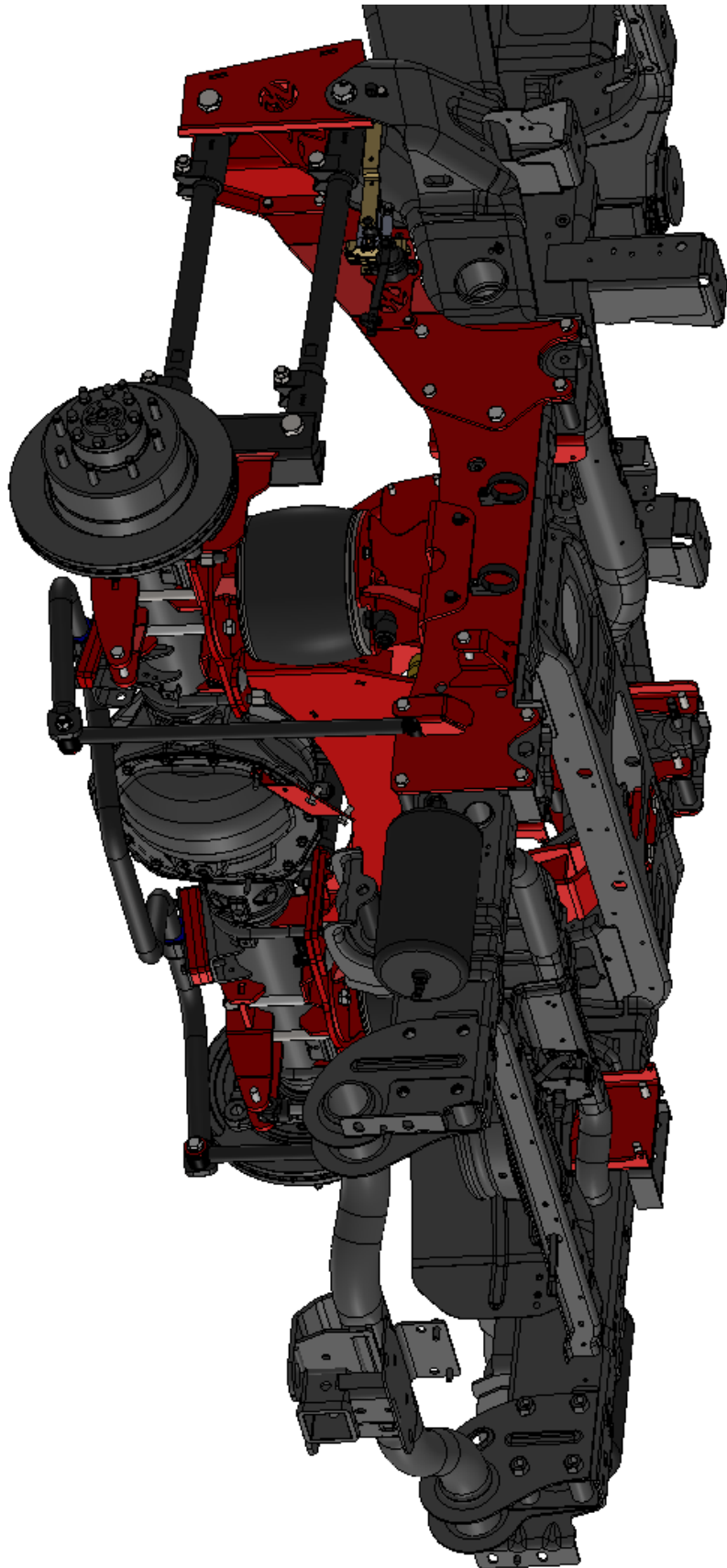
15. Locate the air management system. There is a video on our YouTube page that walks through the air box and air tank mounting process. Go to YouTube.com and search for "Kelderman Trucks. Several helpful videos for installation can be found there. Cut the spare tire assembly out that sits between the frame crossmembers. The air box mounting brackets get welded to the crossmembers and the air tank mounting brackets get welded on each side of the air box mounting brackets. Use the instructions supplied with the air control system to wire up the system and plumb it in.





16. Once the install is complete, re-check all the bolts on the system to make sure they are torqued to the provided specs. Measure from the front of the rear axle tube to the front axle king pin as done in step one. These numbers need to be within 1/8" before the truck is test driven. Review the pinion angle measurement recorded in Step One. Check the current pinion angle and adjust the trailing arms in or out as needed. The trailing arm measurements provided when doing the install will be close, but fine tuning is usually required. Once the fore and aft and pinion angles are done on the axle, check the side to side measurement. Adjust the pan hard bar in or out as needed. If the front kit is not installed yet, proceed to the front. If the install is complete, proceed to the air management installation.





Compressor Box Self-Leveling Kit Wiring Diagram (ambulance prep package)

