

INSTALL INSTRUCTIONS

2019-2024 RAM 3500 P/U

STOCK/2-3" 4-LINK

REAR AIR SUSPENSION

(FACTORY AIR RIDE & LEAF)



#10004409 - FACTORY AIR ASSIST
#10005561 - LEAF REPLACEMENT

kelderman**KELDERMAN MANUFACTURING****2686 HIGHWAY 92 EAST OSKALOOSA, IOWA 52577****INFO@KELDERMAN.COM 1-800-334-6150**

TABLE OF CONTENTS

♦ KIT NUMBERS.....	(3)
♦ INTRODUCTION.....	(4)
♦ SAFETY.....	(5)
♦ PRODUCT OWNER RESPONSIBILITIES.....	(6)
♦ DISASSEMBLY.....	(7-8)
♦ KIT INSTALLATION.....	(9-33)
♦ KIT DRAWINGS.....	(34-35)
♦ NOTES.....	(36)
♦ CONTACT INFORMATION.....	(37)



KIT NUMBERS

- THIS INSTALLATION MANUAL COVERS THE FOLLOWING AIR RIDE KITS.

KIT NUMBER	DESCRIPTION
10004409	KIT - 4-LINK REAR - STOCK HEIGHT - FACTORY AIR ASSIST REPLACEMENT : 2019-2024 RAM 3500
10005561	KIT - 4-LINK REAR - STOCK HEIGHT - LEAF REPLACEMENT : 2019-2024 RAM 3500



2019 RAM 3500 MEGA CAB SHOWN

INTRODUCTION

IMPORTANT

- ♦ IT IS IMPORTANT THAT THE ENTIRE INSTALLATION INSTRUCTIONS BE READ THOROUGHLY BEFORE PROCEEDING WITH INSTALLATION.
- ♦ IF YOUR KIT WAS ORDERED RAW, OPEN EVERY BOX AND LOCATE ALL PARTS. THERE ARE SEVERAL SMALLER BUSHING PIECES AND BOLTS THAT ARE PACKAGED SEPARATELY INSIDE THE MAIN BOX.

PRODUCT INSTALLER RESPONSIBILITIES

- ♦ INSTALLER IS RESPONSIBLE FOR INSTALLING THIS PRODUCT IN ACCORDANCE WITH KELDERMAN MFG. INC. SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
- ♦ INSTALLER IS RESPONSIBLE FOR PROVIDING PROPER INSTALLATION OF VEHICLE COMPONENTS AND ATTACHMENTS AS WELL AS REQUIRED OR NECESSARY CLEARANCE FOR SUSPENSION COMPONENTS, AXLES, WHEELS, TIRES, AND OTHER VEHICLE COMPONENTS TO ENSURE A SAFE AND SOUND INSTALLATION AND OPERATION OF THIS PRODUCT.

DEFINITION OF TERMS

- ♦ **WARNING:** INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.
- ♦ **CAUTION:** A POTENTIAL HAZARDOUS SITUATION MAY RESULT IN PROPERTY DAMAGE.
- ♦ **NOTE:** PROVIDE INFORMATION OR SUGGESTIONS THAT HELP CORRECTLY PERFORM A TASK.
- ♦ **TORQUE:** WHEN ITALICIZED “TORQUE” ALERTS THE INSTALLER TO TIGHTEN FASTENERS TO A SPECIFIED VALUE.

BOLT TORQUE CHART

BOLT SIZE	GRADE 5 TORQUE	GRADE 8 TORQUE
1/4"-20	8 <i>FT-LB</i>	12 <i>FT-LB</i>
3/8"-16	19 <i>FT-LB</i>	26 <i>FT-LB</i>
3/8"-24	21 <i>FT-LB</i>	30 <i>FT-LB</i>
1/2"-13	45 <i>FT-LB</i>	64 <i>FT-LB</i>
1/2"-20	50 <i>FT-LB</i>	70 <i>FT-LB</i>
9/16"-18	70 <i>FT-LB</i>	100 <i>FT-LB</i>
5/8"-11	90 <i>FT-LB</i>	125 <i>FT-LB</i>
5/8"-18	100 <i>FT-LB</i>	150 <i>FT-LB</i>
3/4"-16	175 <i>FT-LB</i>	250 <i>FT-LB</i>
7/8"-14	275 <i>FT-LB</i>	400 <i>FT-LB</i>

SAFETY

YOUR SAFETY AND THE SAFETY OF OTHERS IS VERY IMPORTANT.

- ◆ READ AND UNDERSTAND ALL SAFETY PRECAUTIONS AND INSTRUCTIONS BEFORE INSTALLING THIS PRODUCT.

CAUTION: TRUCKS EQUIPPED WITH PARKING SENSORS OR OTHER LIKE DEVICES.

- ◆ RELOCATION OF THESE DEVICES WILL ALTER THE FIELD OF VIEW. IT IS THE RESPONSIBILITY OF THE OWNER TO UNDERSTAND HOW THESE CHANGES AFFECT THE OPERATION OF THESE SYSTEMS.

WARNING: COMPONENTS UNDER PRESSURE.

- ◆ BLEED ALL PRESSURE FROM THE AIR SYSTEM BEFORE PERFORMING ANY MAINTENANCE OR SERVICE. SERIOUS INJURY COULD OCCUR IF COMPONENTS ARE REMOVED WHILE SYSTEM IS PRESSURIZED.

WARNING: CARELESS INSTALLATION CAN RESULT IN SERIOUS INJURY OR PROPERTY DAMAGE

- ◆ WEAR EYE PROTECTION.
- ◆ DISCONNECT THE BATTERY BEFORE DOING ANY WORK ON THE VEHICLE.
- ◆ WORK ON FLAT LEVEL GROUND.
- ◆ ENSURE TRUCK IS PROPERLY SUPPORTED BY JACK STANDS. NEVER WORK UNDER A VEHICLE SUPPORTED ONLY BY HYDRAULIC JACKS.
- ◆ TAKE PRECAUTIONS WHEN LIFTING PRODUCT. DUE TO THE SIZE AND WEIGHT OF THIS PRODUCT TWO PEOPLE ARE RECOMMENDED FOR INSTALLATION.
- ◆ NEVER WORK DIRECTLY UNDER THE PRODUCT UNTIL IT HAS BEEN SECURELY FASTENED TO THE VEHICLE.
- ◆ AVOID SHARP, HOT, AND MOVING COMPONENTS WHEN ROUTING ELECTRICAL CABLES AND AIR LINES.
- ◆ IF DRILLING, INSPECT BOTH SIDES OF THE SURFACE AND REMOVE/RELOCATE ANY OBJECTS LOCATED IN THE WAY.
- ◆ ENSURE ALL BOLTS ARE PROPERLY TIGHTENED BEFORE DRIVING.

PRODUCT OWNER RESPONSIBILITIES

- ◆ PRODUCT OWNER IS SOLELY RESPONSIBLE FOR PRE-OPERATION INSPECTION, PERIODIC INSPECTIONS, MAINTENANCE, AND USE OF THE PRODUCT AS SPECIFIED BY KELDERMAN MFG. INC. OF PARTICULAR IMPORTANCE IS THE RE-TORQUE OF FASTENERS.
- ◆ THIS RE-TORQUE MUST BE PERFORMED WITHIN 2500 MILES OF THIS PRODUCT BEING PUT INTO SERVICE.
- ◆ THE KELDERMAN AIR SUSPENSION IS FULLY AUTOMATIC IN CONTROLLING THE HEIGHT OF THE CHASSIS WHEN PROPERLY INSTALLED.
- ◆ NO MANUAL INTERVENTION TO CONTROL AIR PRESSURE OR RIDE HEIGHT IS NEEDED DURING THE COURSE OF NORMAL OPERATION.
- ◆ PRODUCT OWNER IS RESPONSIBLE FOR “*DOWN TIME*” EXPENSES, CARGO DAMAGE, AND ALL BUSINESS COSTS AND LOSSES RESULTING FROM A WARRANTABLE FAILURE.

SERVICE INTERVALS

FIRST 2,500 MILES

- ◆ CHECK RIDE HEIGHT $\pm 1/4$ ”
- ◆ CHECK FOR AIR LEAKS AROUND FITTINGS.
- ◆ CHECK FOR ANY LOOSE OR RUBBING HOSES AND WIRES.
- ◆ RE-TORQUE ALL HARDWARE.

EVERY 30,000 MILES

- ◆ CHECK RIDE HEIGHT $\pm 1/4$ ”
- ◆ CHECK FOR AIR LEAKS AROUND FITTINGS.

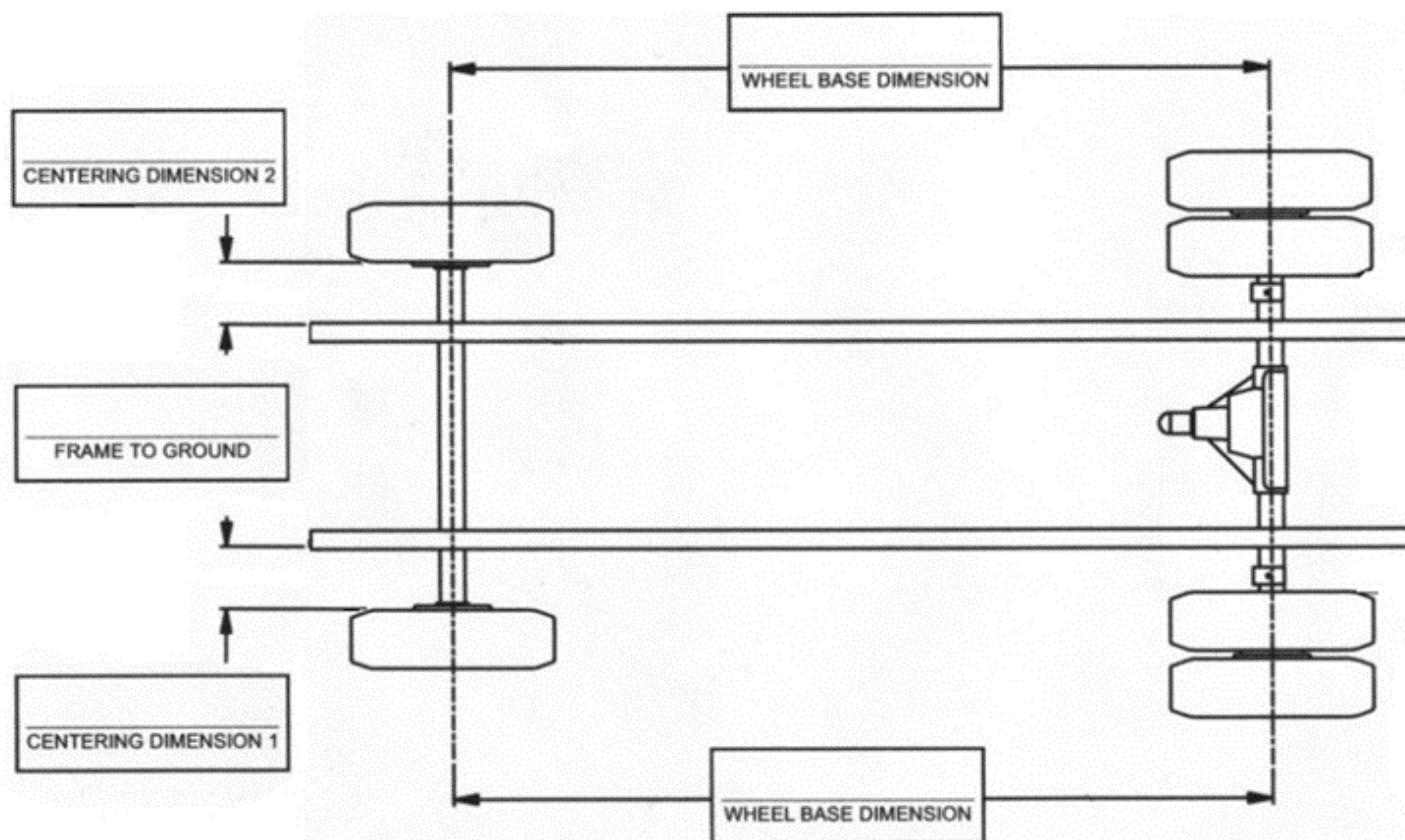
DISASSEMBLY

BEFORE DOING ANYTHING, MEASURE THE PINION ANGLE AND RECORD IT. THIS IS IMPORTANT BECAUSE YOU WILL NEED TO PUT THE AXLE BACK TO THIS MEASUREMENT AFTER INSTALLATION. SEE FIGURE 1.

PINION ANGLE _____

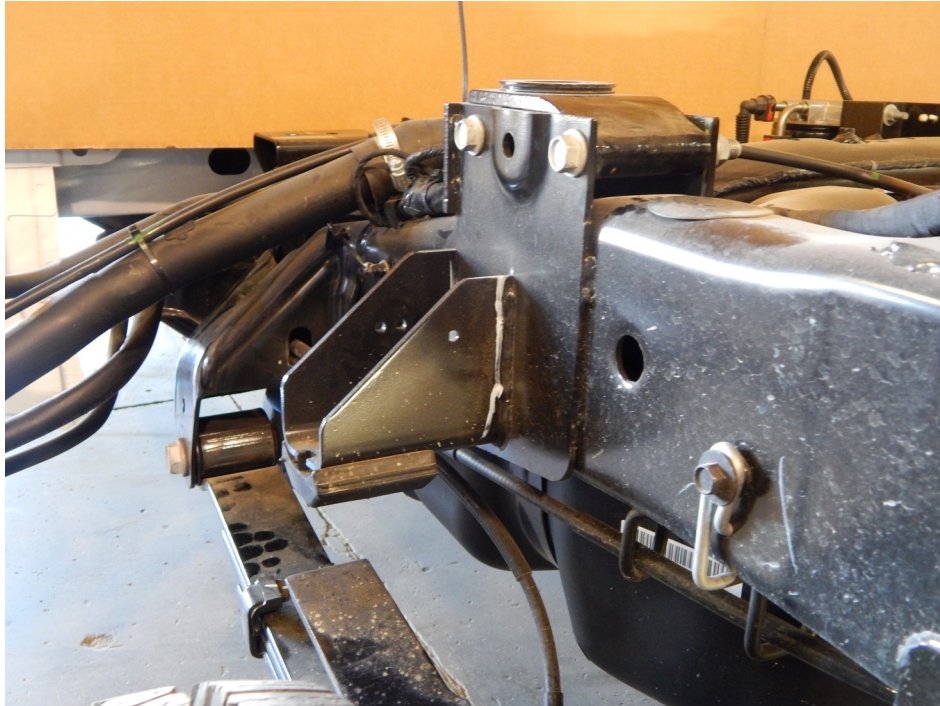


TAKE THE FOLLOWING MEASUREMENTS FOR FUTURE REFERENCE. THESE MEASUREMENTS WILL BE USED TO ADJUST THE SUSPENSION AFTER INSTALLATION.



JACK UP THE REAR OF THE FRAME SO THAT MOST OF 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. IF THE TRUCK HAS THE RAM FACTORY AIR SUSPENSION, REMOVE THE AIRBAGS. DISCONNECT THE AIR RIDE SENSOR LINKAGE OFF THE LOWER LINKAGE MOUNT. YOU WILL BE ABLE TO USE THE RAM AIR MANAGEMENT SYSTEM OR THE KELDERMAN SYSTEM ONCE THE INSTALL IS COMPLETE. REMOVE THE LEAF SPRINGS.

NOTE: IF YOUR TRUCK HAS FACTORY OVERLOAD PERCHES WELDED TO THE FRAME, BOTH PERCHES ON EACH SIDE WILL NEED TO BE REMOVED. USE A CUT OFF WHEEL ON A GRINDER TO CUT THE WELDS. PAINT OVER GROUND AREA. DO NOT REMOVE THE REAR LEAF SPRING PERCH.

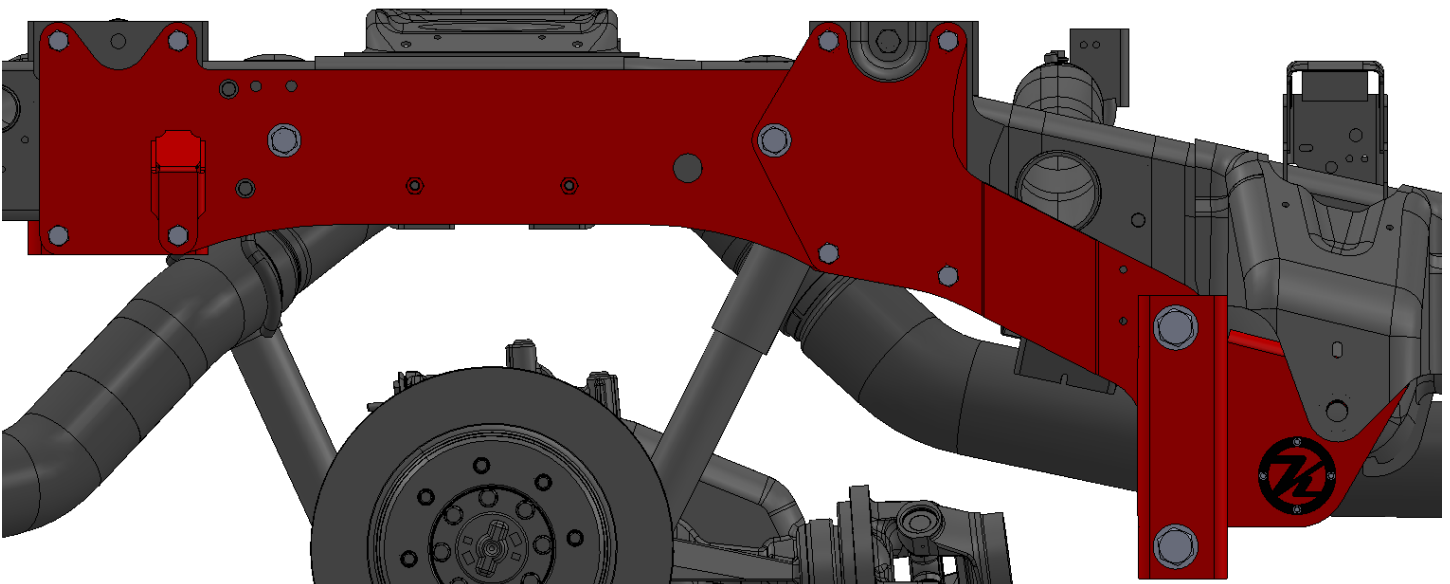
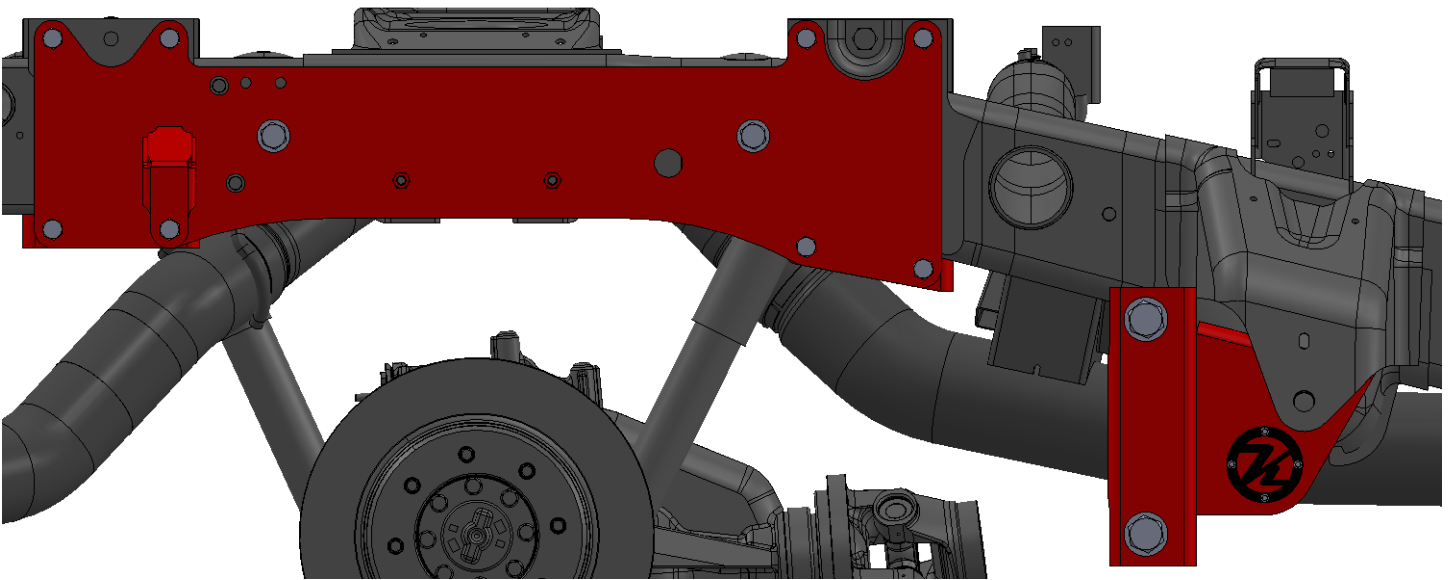


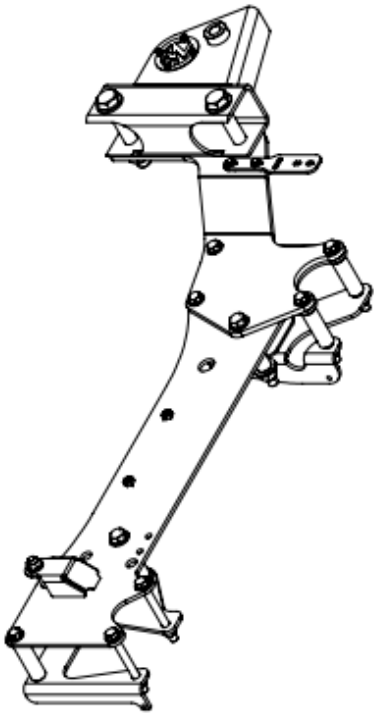
OVERLOAD PERCH SHOWN REMOVED FROM THE FRAME



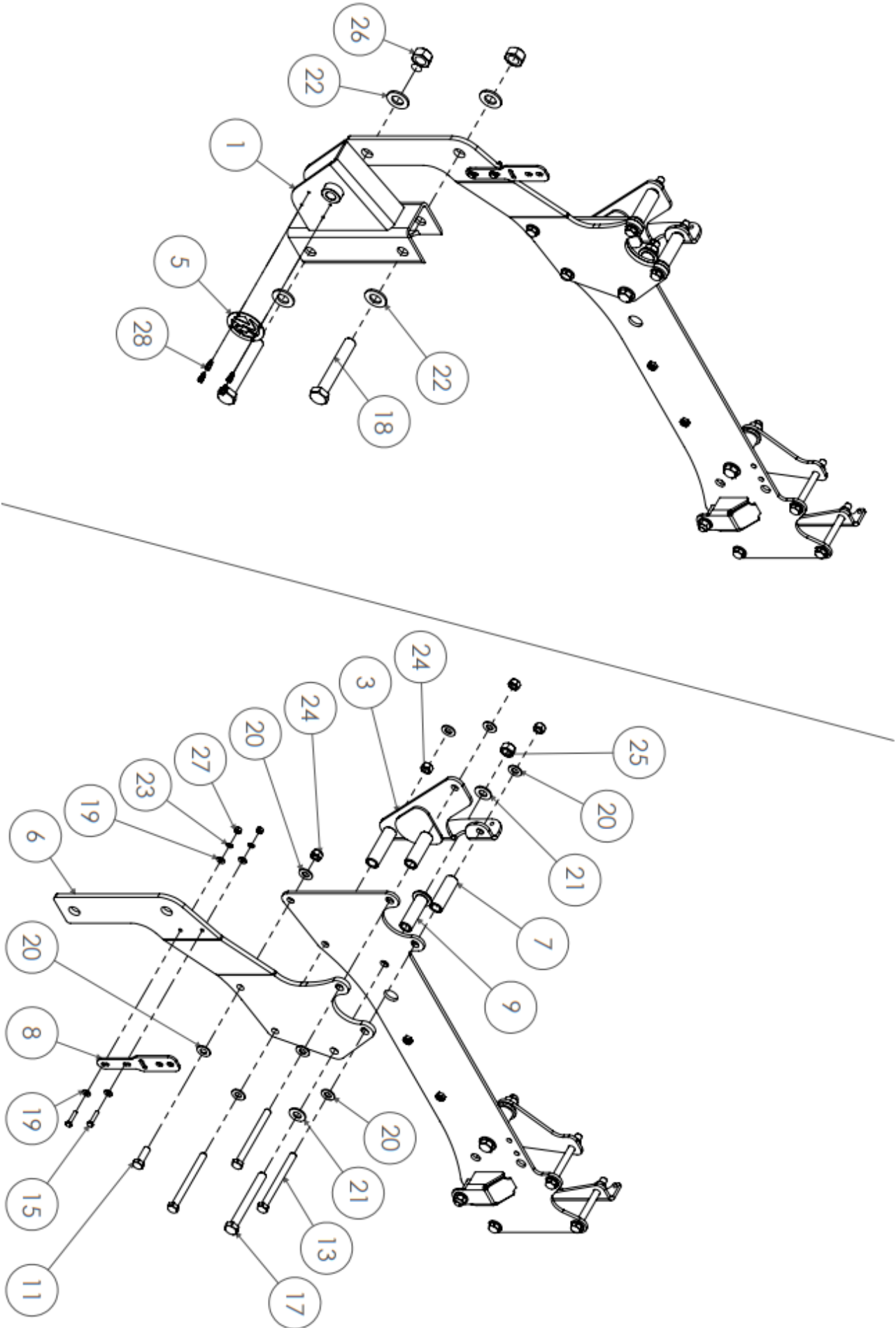
ASSEMBLY

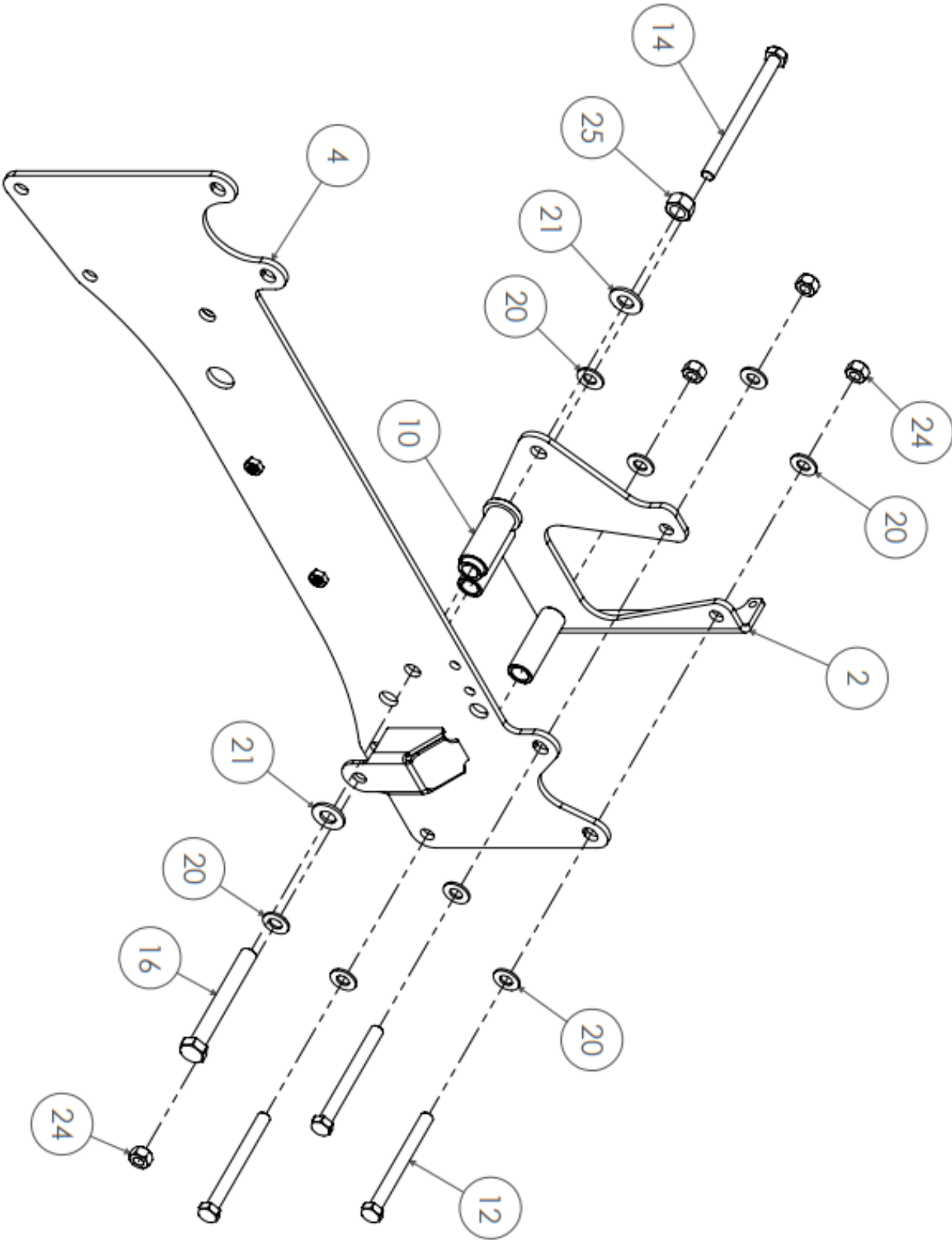
1. LOCATE THE TRAILING ARM MOUNTS (#10004407-DS & 10004514-PS) AND THE SIDE PLATES (#10005557-DS & 10005604-PS). YOU CAN INSTALL BOTH SIDES AT THE SAME TIME IF YOU HAVE TWO PEOPLE WORKING ON THE TRUCK. THE TRAILING ARM MOUNTS FASTEN TO THE FORWARD OEM LEAF SPRING PERCH WITH THE FRONT LEAF SPRING BOLT AND THE SIDE PLATES FASTEN TO THE OEM FRONT HITCH MOUNTS. YOU WILL FASTEN THE SIDE PLATE TO THE HITCH MOUNT WITH THE FACTORY 14MM BOLTS (IF IT DOESN'T HAVE FACTORY BOLTS USE THE 9/16" BOLTS AND BUSHINGS PROVIDED) FRAME SUPPORT PLATES (10004410-DS & 10004518-PS) WILL ATTACH TO SIDE PLATE AND TRAILING ARM MOUNT.

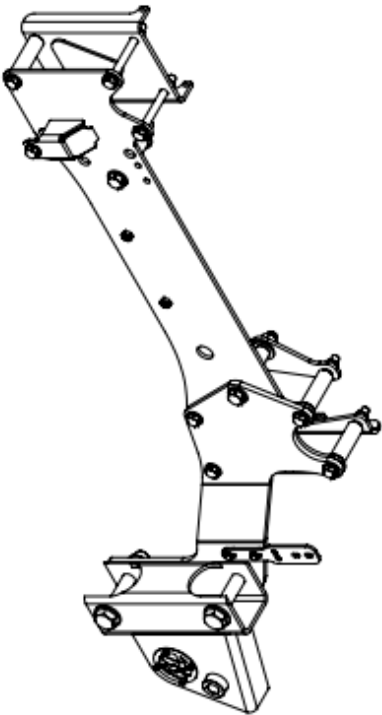




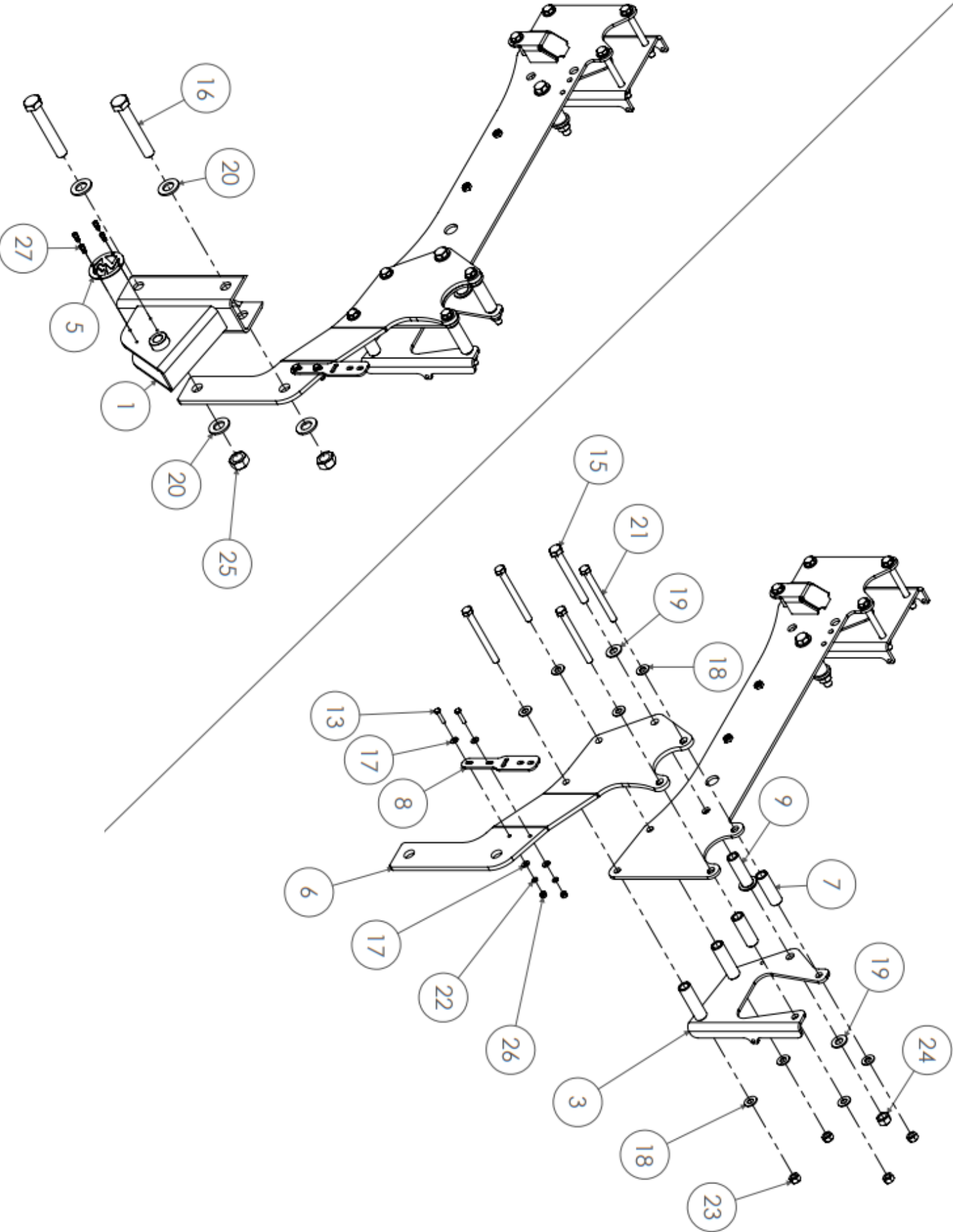
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
		Weldments	
1	10004407	Weldment - (DS) Perch Mount	1
2	10005434	Weldment - Side Plate Frame Clamp - Rear (DS)	1
3	10005442	Weldment - Side Plate Frame Clamp - Front (DS)	1
4	10005576	Weldment - DS Side Plate	1
		Parts	
5	10004408	Plate - 14ga. - Kelderman Badge - 2.635" Bolt Circle	1
6	10004410	Plate - 3/8" - (DS) Frame/Perch Support	1
7	10004891	Tube - 1" OD x 0.687" ID x 3" L - Fifth Wheel Ear Anti-Crush Bushing	2
8	10005159	Plate - 7ga - Height Control Sensor Bracket - Key	1
9	10005405	DOM - 1-1/2" OD x 5/8" ID x 3.161" - Top Hat Bushing Frame Anti-Crush, Front	1
10	10005488	DOM - 1-1/2" OD x 5/8" ID x 3.166" - Top Hat Bushing Frame Anti-Crush - Rear	1
		Hardware	
11	12007	Bolt - 1/2"-20 x 1.50" Gr.8	1
12	12037	Hex Bolt - 1/2"-20 x 5" - GR8 - YZ	3
13	12041	Hex Bolt - 1/2"-20 x 5-1/2" - GR8 - YZ	3
14	12047	SCREW-HCS-.50-20X6.25-GR8-YZ	1
15	12112	Hex Bolt - 1/4"-20 x 1-1/4" - GR5 - Z	2
16	12435	Hex Bolt - 5/8"-18 x 5" - GR8 - YZ	1
17	12439	Hex Bolt - 5/8"-18 x 5-1/2" - GR8 - YZ	1
18	12633	Hex Bolt - 7/8"-14 x 5-1/2" - GR8 - YZ	2
19	13020	1/4" Flat Washer	4
20	13024	1/2" Flat Washer	16
21	13026	Flat Washer SAE - 5/8" - GR8 - YZ	4
22	13030	Flat Washer SAE - 7/8" - GR8 - YZ	4
23	13042	1/4" Lock Washer	2
24	13124	1/2"-20 Lock Nut	8
25	13126	Top Distorted Thread Lock Nut - 5/8"-18 - GR8 - YZ	2
26	13130	Top Distorted Thread Lock Nut - 7/8"-14 - GR8 - YZ	2
27	13140	1/4"-20 Hex Nut	2
28	14017	1/4"-20 x 1/2" SS Socket Head Cap Screw	4

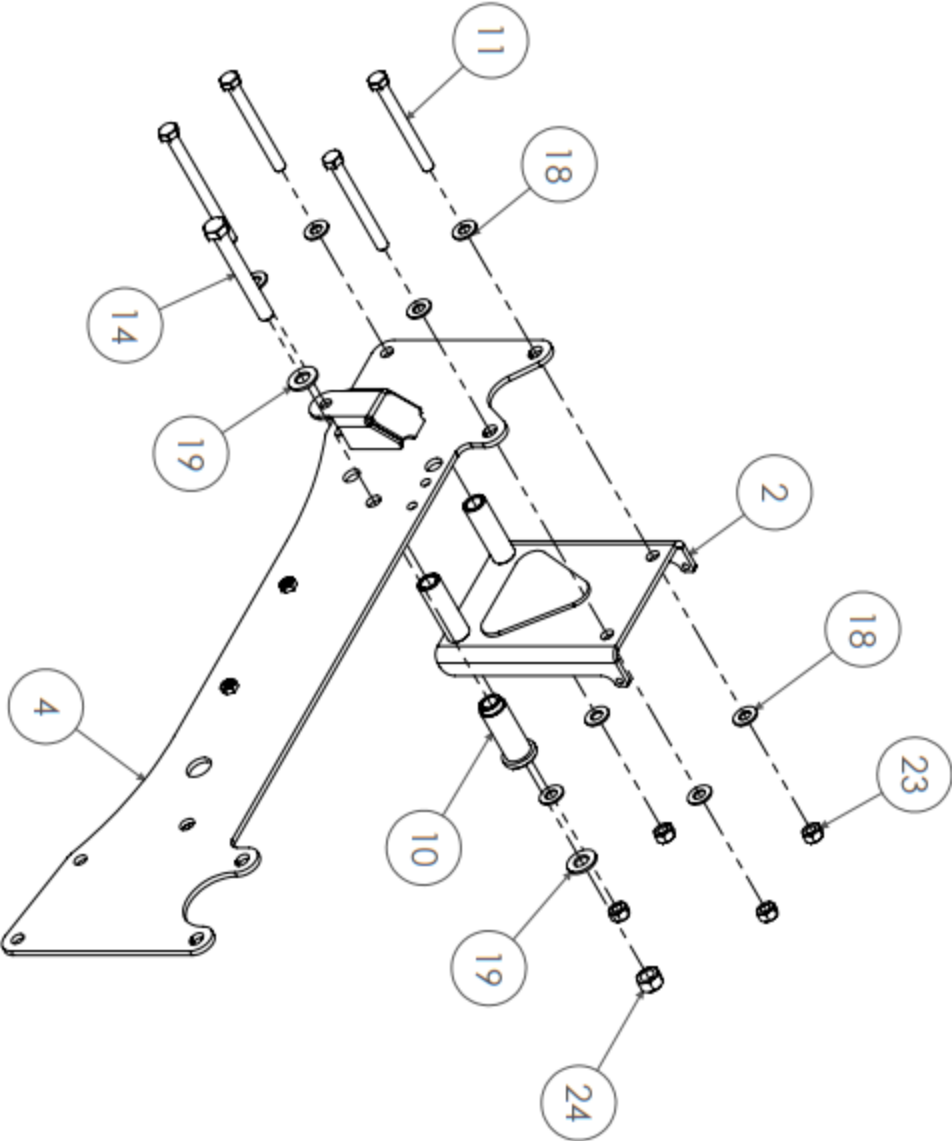






ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
		Weldments	
1	10004514	Weldment - (PS) Perch Mount	1
2	10005435	Weldment - Side Plate Frame Clamp - Rear (PS)	1
3	10005438	Weldment - Side Plate Frame Clamp - Front (PS)	1
4	10005604	Weldment - PS Side Plate	1
		Parts	
5	10004408	Plate - 14ga. - Kelderman Badge - 2.635" Bolt Circle	1
6	10004518	Plate - 3/8" - (PS) Frame/Perch Support - w/Bends	1
7	10004891	Tube - 1" OD x 0.687" ID x 3' L - Fifth Wheel Ear Anti-Crush Bushing	2
8	10005159	Plate - 7ga - Height Control Sensor Bracket - Key	1
9	10005405	DOM - 1-1/2" OD x 5/8" ID x 3.161" - Top Hat Bushing Frame Anti-Crush, Front	1
10	10005488	DOM - 1-1/2" OD x 5/8" ID x 3.166" - Top Hat Bushing Frame Anti-Crush - Rear	1
		Hardware	
11	12037	Hex Bolt - 1/2"-20 x 5" - GR8 - YZ	3
12	12047	SCREW-HCS-.50-20X6.25-GR8-YZ	1
13	12112	Hex Bolt - 1/4"-20 x 1-1/4" - GR5 - Z	2
14	12435	Hex Bolt - 5/8"-18 x 5" - GR8 - YZ	1
15	12439	Hex Bolt - 5/8"-18 x 5-1/2" - GR8 - YZ	1
16	12633	Hex Bolt - 7/8"-14 x 5-1/2" - GR8 - YZ	2
17	13020	1/4" Flat Washer	4
18	13024	1/2" Flat Washer	16
19	13026	Flat Washer SAE - 5/8" - GR8 - YZ	4
20	13030	Flat Washer SAE - 7/8" - GR8 - YZ	4
21	12041	Hex Bolt - 1/2"-20 x 5-1/2" - GR8 - YZ	4
22	13042	1/4" Lock Washer	2
23	13124	1/2"-20 Lock Nut	8
24	13126	Top Distorted Thread Lock Nut - 5/8"-18 - GR8 - YZ	2
25	13130	Top Distorted Thread Lock Nut - 7/8"-14 - GR8 - YZ	2
26	13140	1/4"-20 Hex Nut	2
27	14017	1/4"-20 x 1/2" SS Socket Head Cap Screw	4





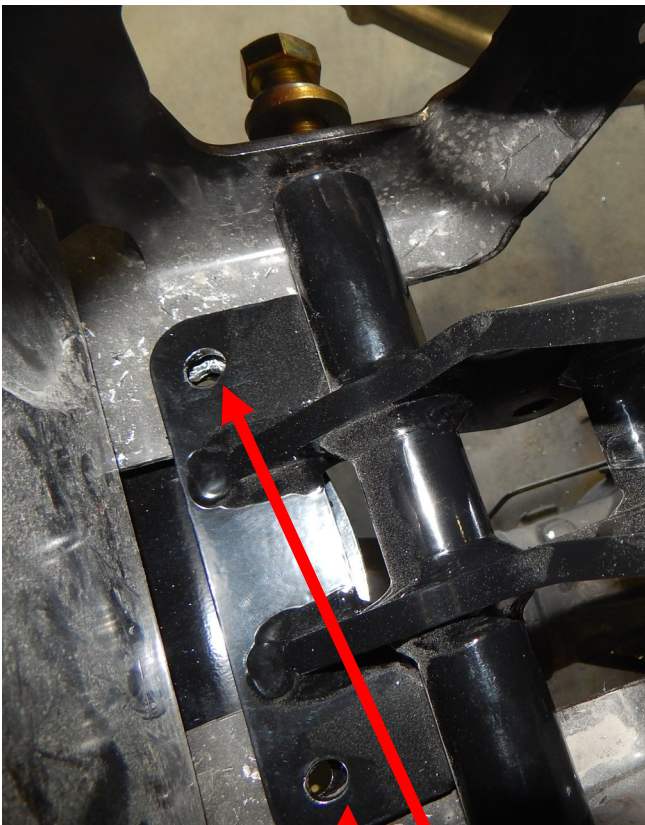
2. LOCATE THE LOWER AIR BAG MOUNTS (#10004557-DS AND 10004424-PS). THEY WILL FIT ON THE AXLE PAD AND THE OEM AIR BAG MOUNT ON THE AXLE. IF YOU HAVE FACTORY AIR, THEN WILL HAVE TO DRILL (4) HOLES IN THE LOWER BAG MOUNT. SET THE LOWER BAG MOUNTS IN PLACE AND MARK WHERE TO DRILL ON THE LOWER OEM LOWER BAG MOUNTS. DRILL THESE HOLES OUT TO 3/4". YOU MAY HAVE TO USE A DIE GRINDER TO OBLONG THE HOLES IF THE BOLTS DON'T DROP STRAIGHT DOWN AND SLIDE INTO THE LOWER AXLE CLAMPS (#10004647). DO NOT INSTALL THE LOWER BAG MOUNTS YET.



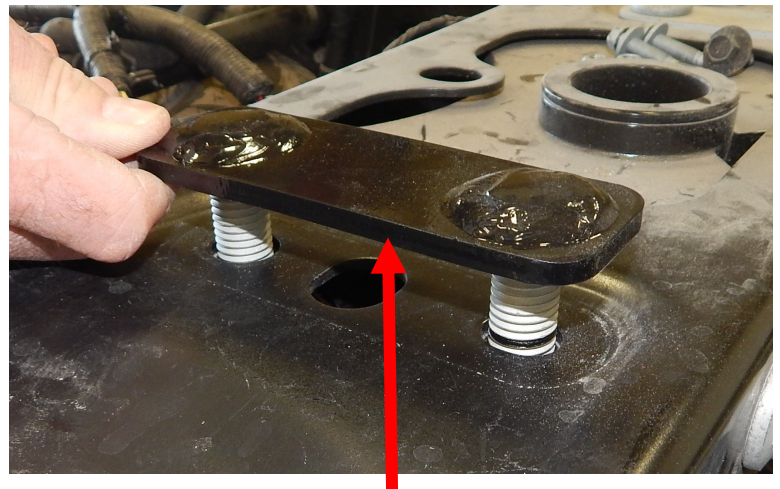
NOTE:

ON THE 2-3" KIT, YOU WILL
INSTALL A 2" SPACER IN
BETWEEN THE AIR BAG AND
THE LOWER BAG MOUNT.

3. LOCATE THE UPPER PAN HARD BAR MOUNT (#10009640) AND PANHARD BAR BOLT PLATE (#10004553). THE UPPER PAN HARD BAR MOUNT FASTENS INSIDE THE FRAME/HITCH AREA ON THE PASSENGER SIDE. REMOVE THE PASSENGER SIDE BOLT PLATE THAT FASTENS THE HITCH IN PLACE. SLIDE THE MOUNT UP FROM THE BOTTOM AND USE THE 1/2" X 1" BOLTS AND FLAT WASHERS TO FASTEN THE LOWER PART OF THE MOUNT TO THE FRAME. SLIDE THE NEW BOLT PLATE FROM THE TOP DOWN AND TORQUE THE BOLT PLATE NUTS TO 150 FT./LBS. TORQUE THE 1/2" BOLTS TO 85 FT./LBS. DRILL TWO 3/8" HOLES THROUGH THE FRAME OF THE TRUCK. YOU WILL SEE A COUPLE HOLES THAT ARE JUST UNDER 3/8". DRILL UP THROUGH THE BOTTOM OF THE FRAME. BE CAREFUL WHEN DRILLING. YOU ARE GOING THROUGH THE FRAME AND THEN UP THROUGH THE HOLES IN THE PAN-HARD BAR MOUNT. USE CAUTION WHILE DRILLING AS THE DRILL MAY SNAG. **NOTE:** IF THE TRUCK HAS AN AFTERMARKET FIFTH WHEEL HITCH, YOU MAY HAVE TO TRIM OUTER PART OF THE MOUNT BACK. IT IS DESIGNED OFF THE OEM HITCH SYSTEM. NON-FACTORY HITCHES WILL USE A FRAME SPACE (#10004890)



**DRILL THE SMALL HOLE IN
THE FRAME OUT TO 3/8"**



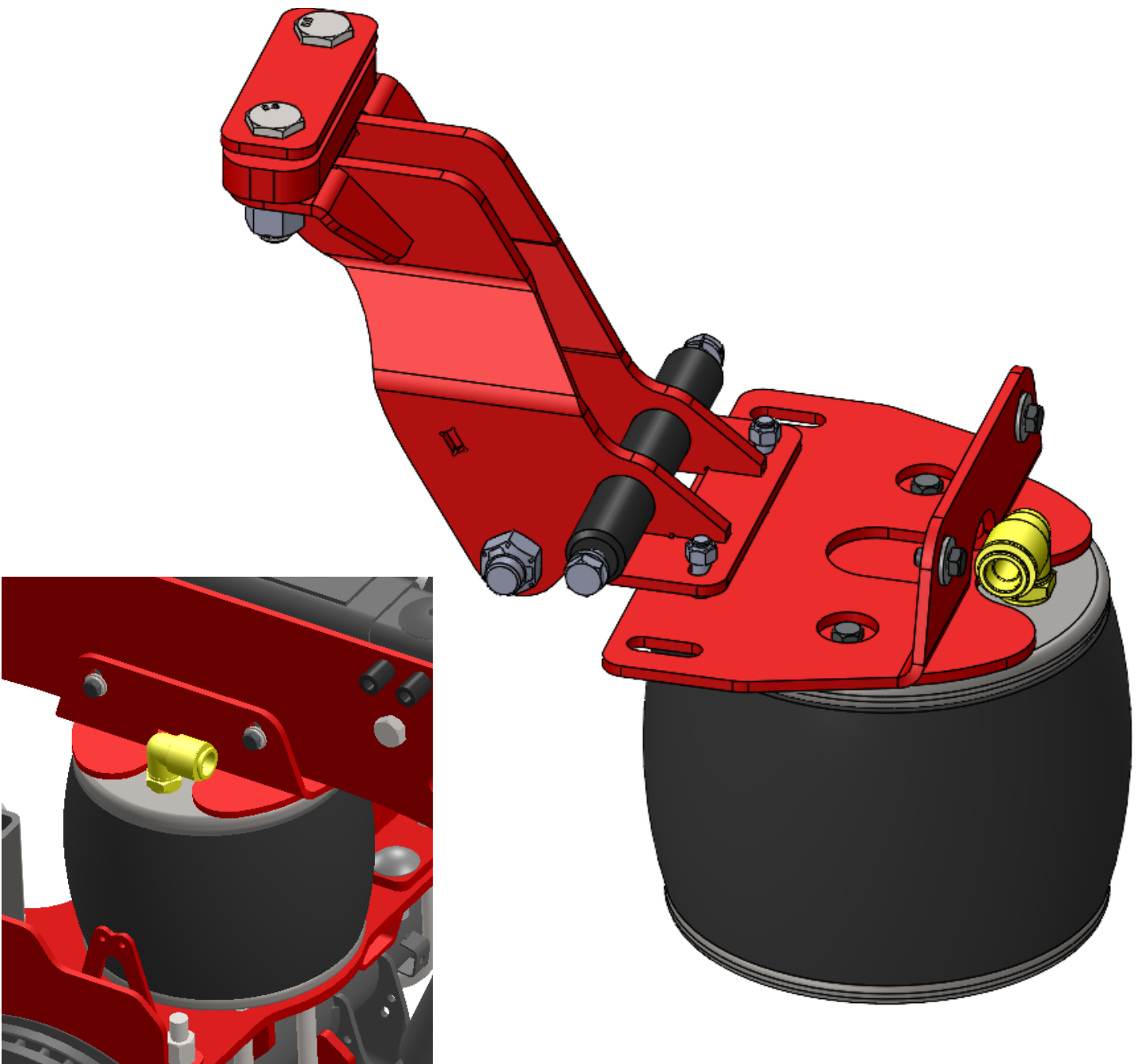
**PANHARD BAR BOLT PLATE REPLACES OEM
BOLT PLATE (PASSENGER SIDE)**

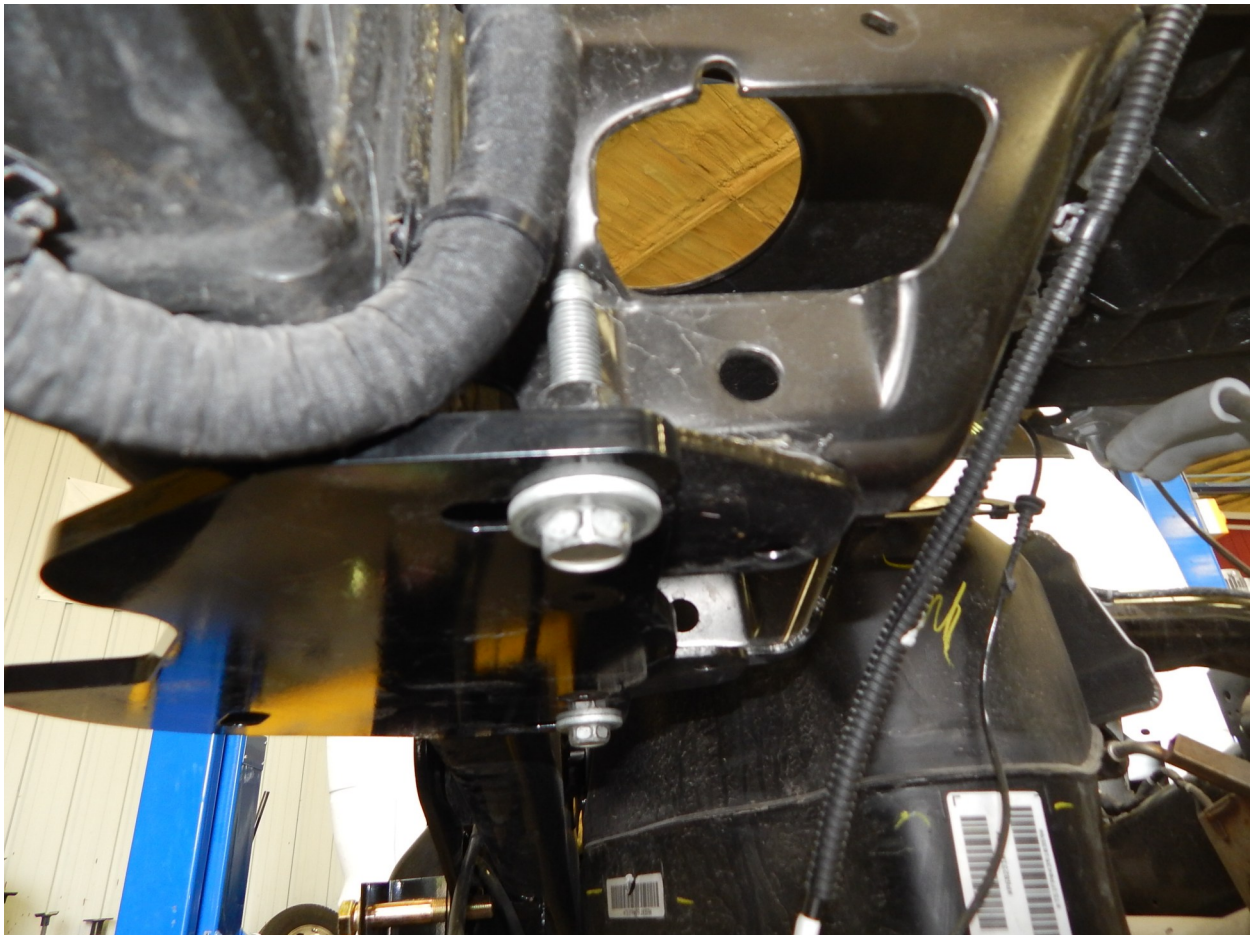
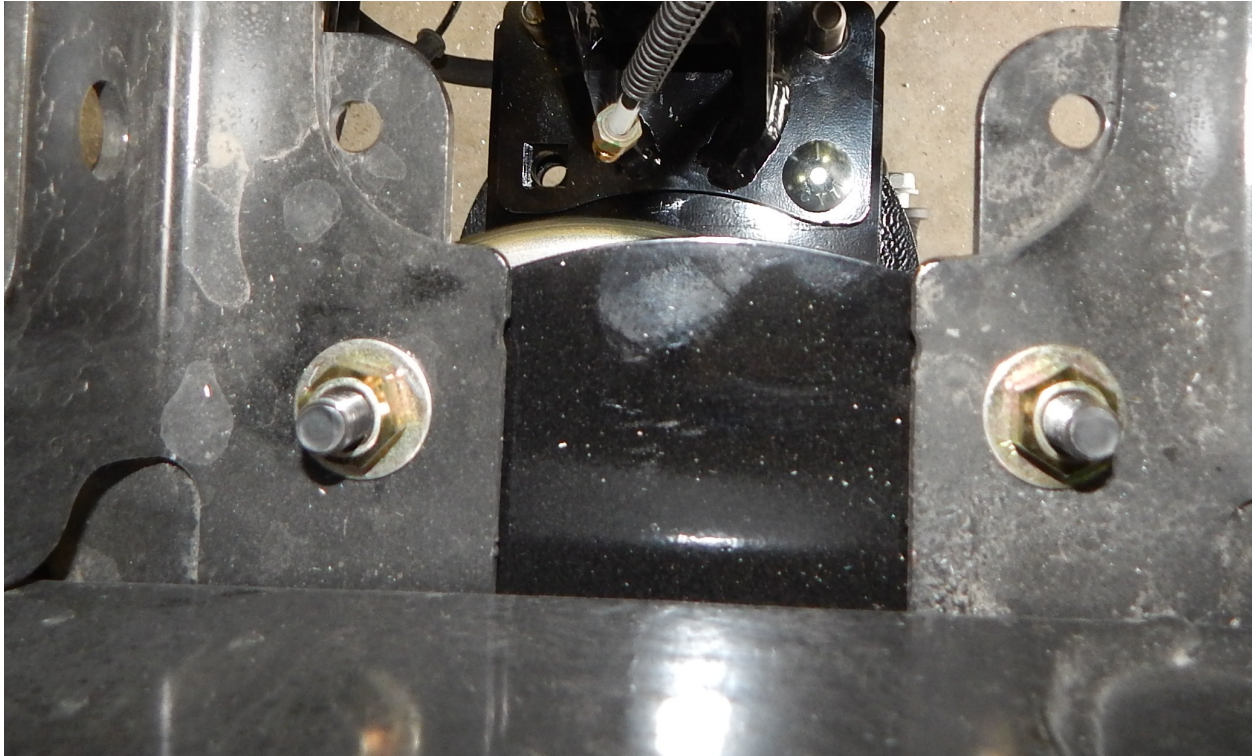


**OEM BOLT THAT
HELD THE FACTORY
AIR BAG IN PLACE**

PASSENGER SIDE SHOWN

4. LOCATE THE UPPER AIR BAG MOUNTS (#10005602-DS AND 10005603-PS). THE LARGE NOTCH IS TO BE ORIENTATED TOWARDS THE OUTSIDE OF THE TRUCK. ON THE PASSENGER SIDE YOU WILL NEED TO PLACE THE HOLES SO THEY LINE UP WITH THE HOLES IN THE LOWER PLATE ON THE PAN-HARD BAR BRACKET. RUN THE (2) M10-1.5 X 45MM SOCKET CAP SCREW BOLTS UP FROM THE BOTTOM OF THE AIR BAG MOUNT (USE THE COUNTERSUNK HOLES) THROUGH THE FRAME AND THROUGH THE PLATE ON THE LOWER PAN-HARD BAR MOUNT. USE THE LOCK NUT TO SNUG THE BOLT. RE-USE THE FACTORY BOLTS THAT HELD THE OEM AIRBAG IN PLACE TO FASTEN THE OUTER TWO HOLES IN THE AIR BAG BRACKET TO THE FRAME. NOTE: ON NON AIR RIDE TRUCKS, THE AIR BAG MOUNTING BOLTS ARE NOT THERE. YOU WILL NEED TO WELD THE OUTSIDE OF THE AIR BAG BRACKET TO THE FRAME. GRIND THE POWDER COAT AND PAINT OFF THE FRAME AND LAY A 3" WELD. ONCE ALL THE BOLTS ARE IN PLACE, TORQUE THE INNER BOLTS TO 45 FT./LBS. AND THE OUTER BOLTS TO 85 FT./LBS. THE DRIVERS SIDE INSTALLS THE SAME WAY, MINUS FASTENING THROUGH THE PAN-HARD BAR MOUNT.

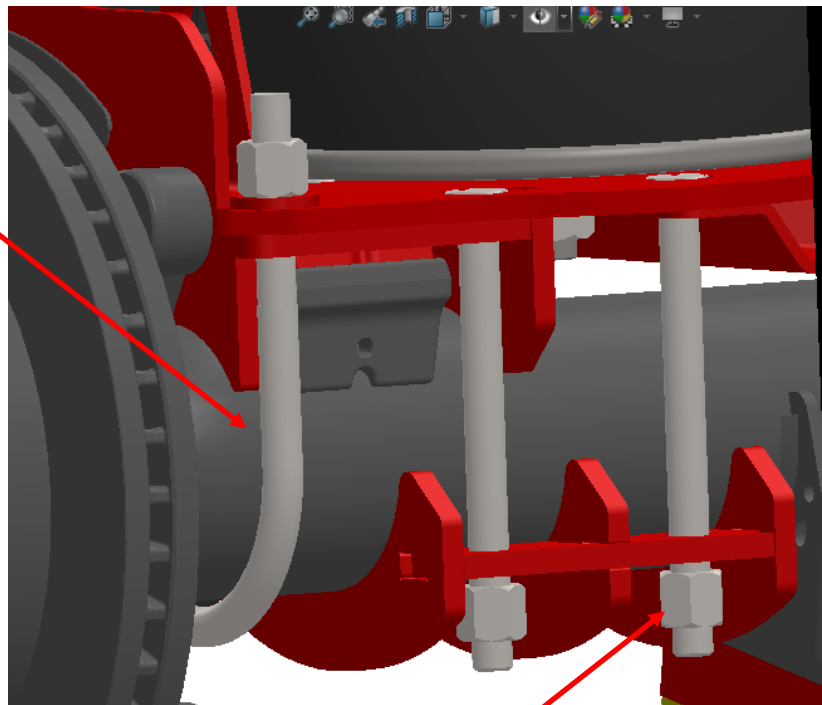


DRIVERS SIDE UPPER BAG MOUNT INSTALLED

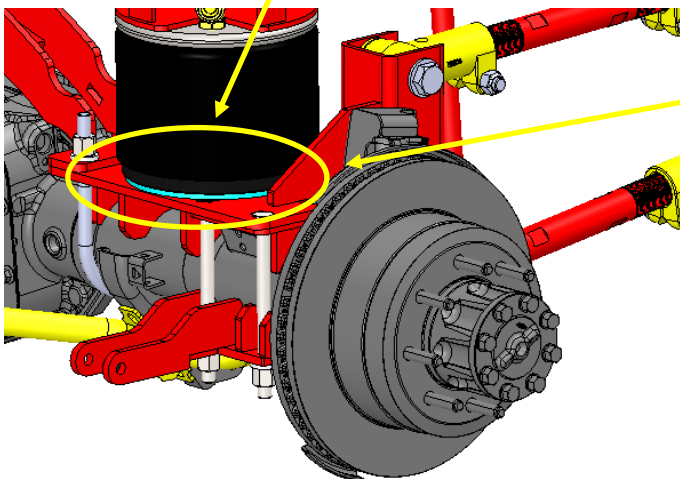
5. LOCATE THE LOWER AIR BAG MOUNTS (#10004557-DS AND 10004425-PS), LOWER AXLE CLAMPS (#10004647), (2) U-BOLTS (#14114) AND AIR BAGS (#F5748 OR CAS601536). THE LOWER AIR BAG MOUNT FASTENS ON TOP OF THE LEAF SPRING PERCH AND CLAMPS TO THE AXLE WITH THE U-BOLTS AND (4) 5/8" X 8-1/2" BOLTS DROP THE (4) 5/8" BOLTS THROUGH THE LOWER BAG MOUNT. PLACE THE AIR BAG ON TOP OF THE LOWER BAG MOUNT. SNUG THE STUD UP ON THE BOTTOM OF THE AIR BAG WITH THE 3/4" LOCK WASHER AND NUT. NOTE: POSITION THE AIR BAG SO THE LARGE PORT IN THE AIR BAG WILL LINE UP WITH THE CUT OUT IN THE UPPER BAG MOUNT AND THE SMALL HOLE IN THE UPPER BAG MOUNT WILL LINE UP WITH THE THREADED HOLE IN THE AIR BAG. YOU CAN TORQUE THE STUD ON THE BOTTOM OF THE AIR BAG ONCE THE INSTALL IS COMPLETE. IT JUST NEEDS TO BE SNUG FOR NOW. DO NOT TORQUE THE 5/8" BOLTS OR U-BOLTS UNTIL AFTER THE CROSSMEMBER IS INSTALLED IN STEP 8. LOCATE THE AIR FITTING FOR THE AIR BAG AND FASTEN IT INTO THE AIR BAG SO THE LARGE AIR FITTING POINTS TOWARDS THE REAR OF THE TRUCK. YOU WILL CONNECT THE PORT TO THE ACCUMULATOR TANK IN STEP 8.

U-BOLT (#14114)
NUT (#13179)

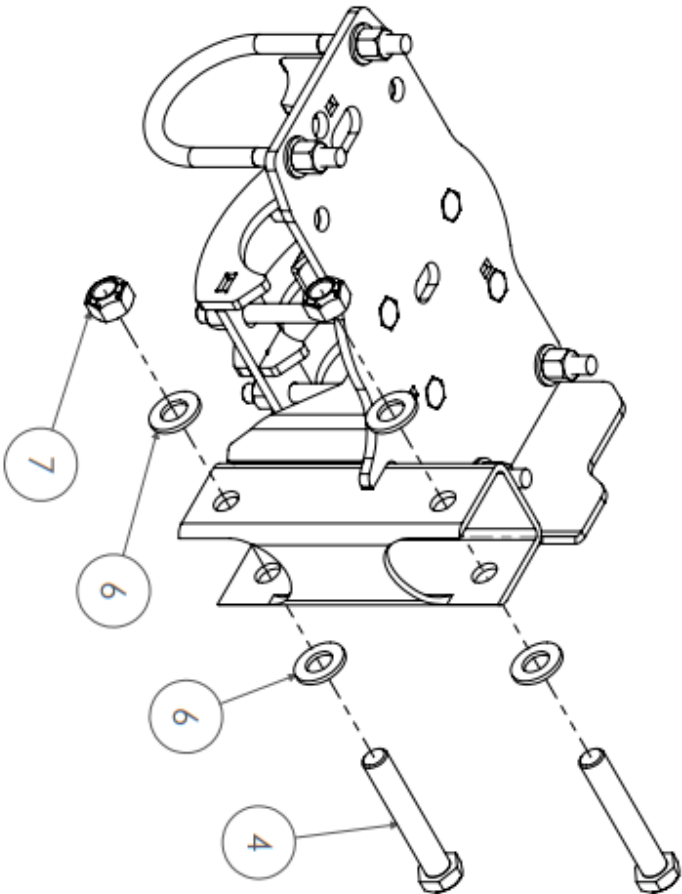
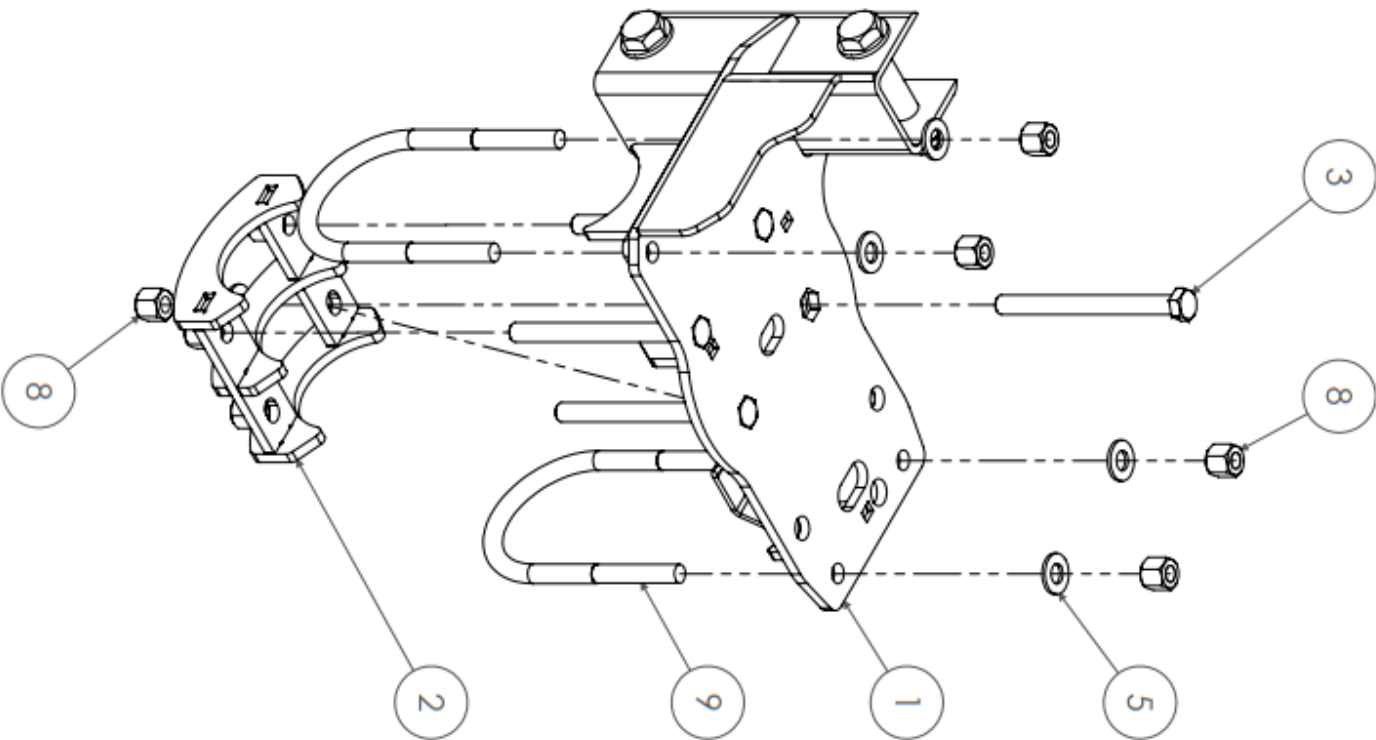
#10029610



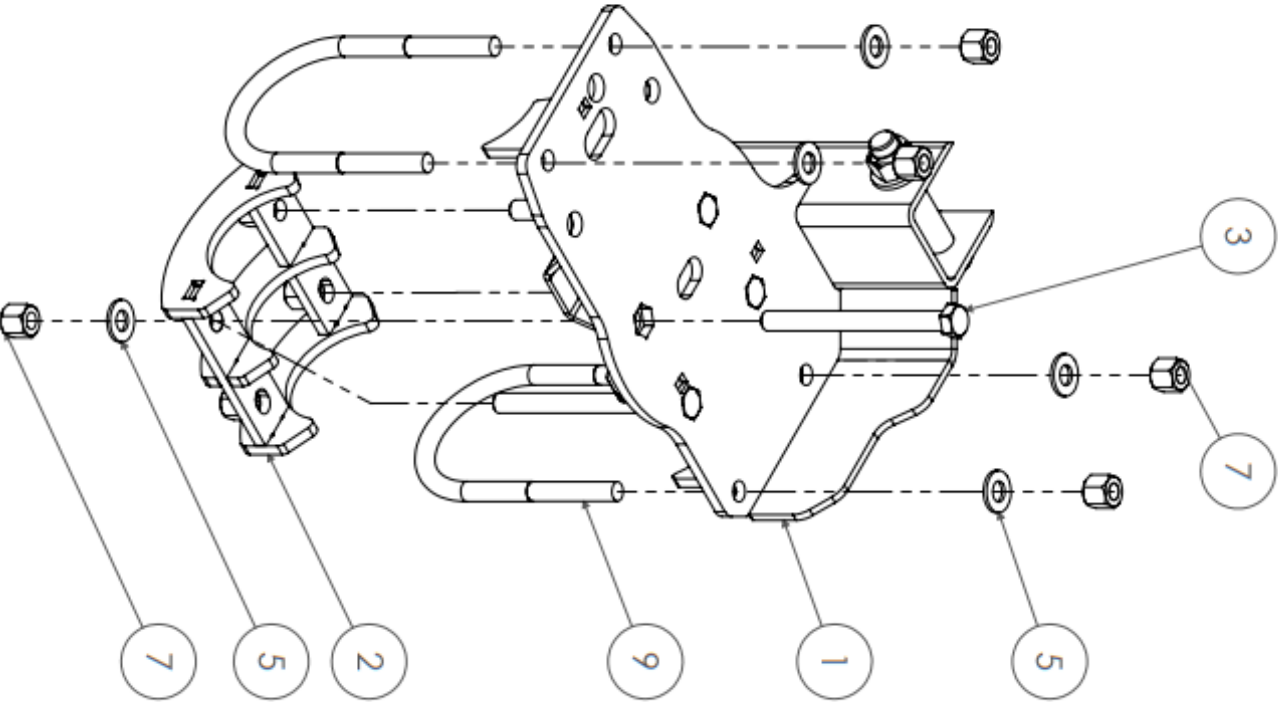
5/8"-18 X 8-1/2" BOLTS (#12451) NUT (#13179)



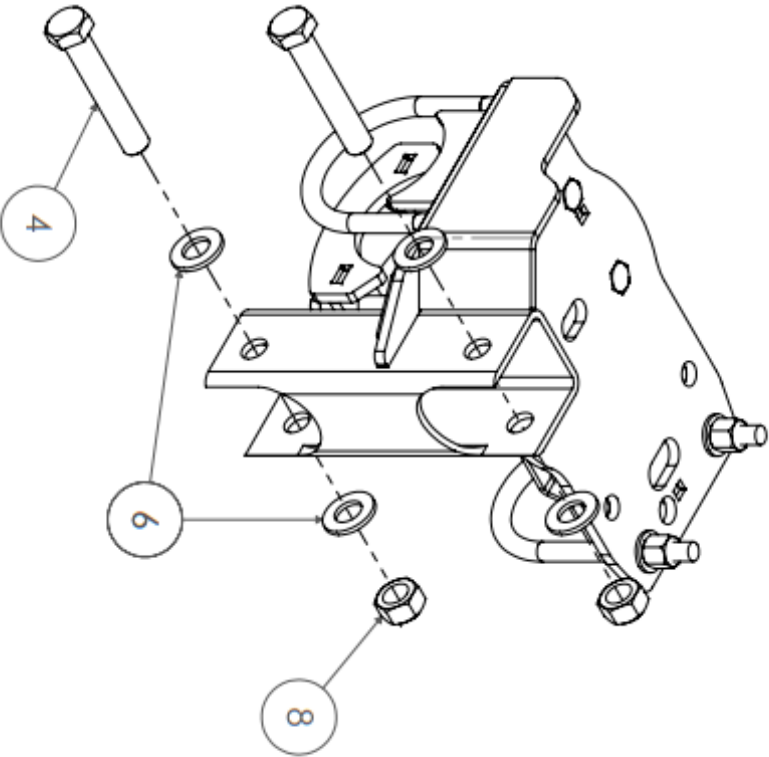
IF KIT INCLUDES THE CONTINENTAL VERSION OF THE 5748 AIR BAG, THEN YOU WILL NEED TO INSTALL THE SUPPLIED SPACER PLATE (#10029610). THE PLATE NEEDS TO GO ON THE LOWER BAG MOUNT WITH THE BAG ON TOP OF THE PLATE. THE PLATE DOESN'T NEED TO BE BOLTED.



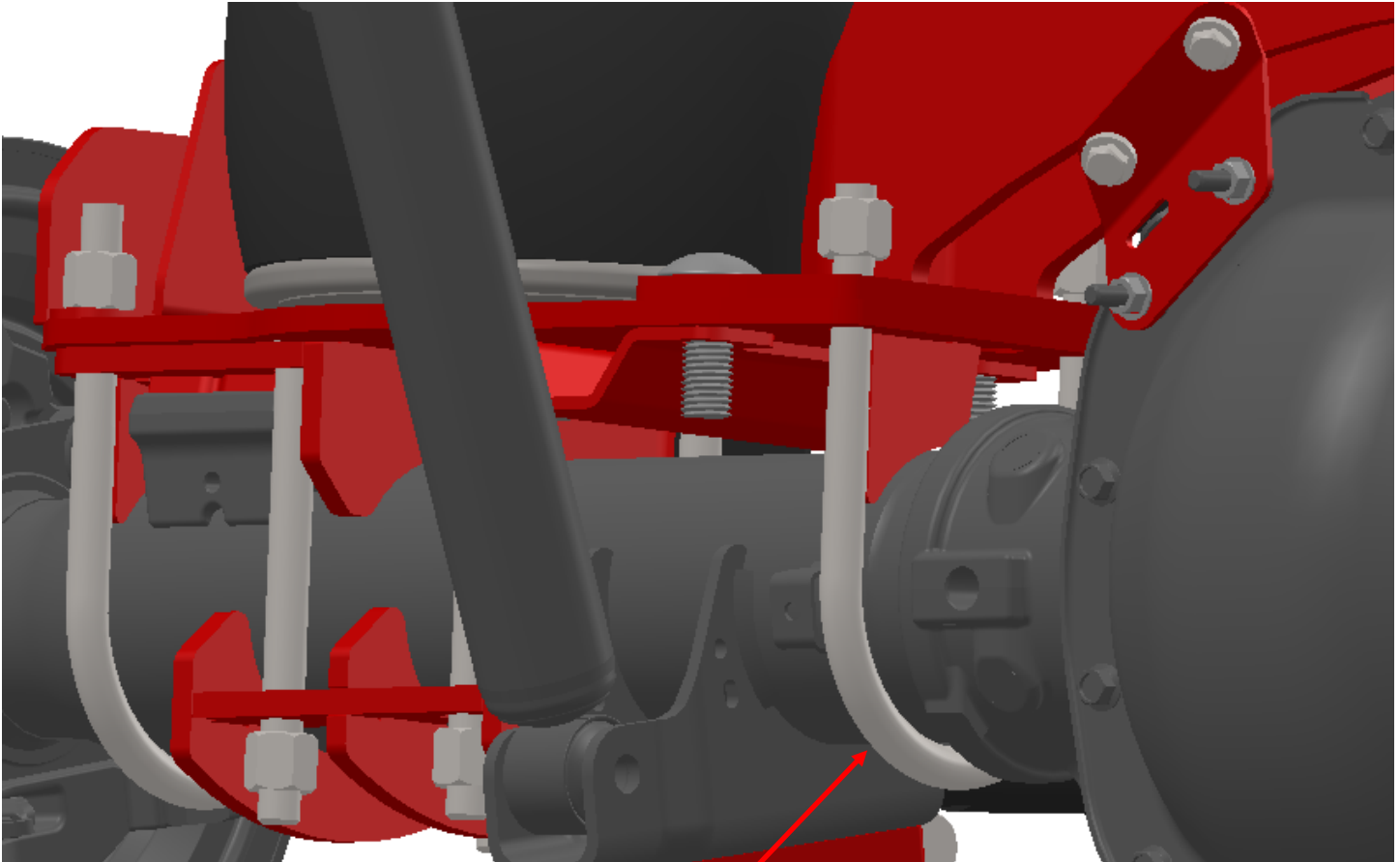
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	10004557	Weldment - (DS) Lower Bag/Axle Mount - 4.25"	1
2	10004647	Weldment - 4.25" Lower Axle Clamp	1
3	12451	Hardware	4
4	12629	SCREW-HCS-.63-18X7.00-GR8-YZ	2
5	13026	Hex Bolt - 7/8" x 5" - GR8 - YZ	8
6	13030	Flat Washer SAE - 5/8" - GR8 - YZ	4
7	13130	Flat Washer SAE - 7/8" - GR8 - YZ	2
8	13179	Top Distorted Thread Lock Nut - 7/8"-14 - GR8 - YZ	8
9	14114	Hex Nut High - 5/8"-18 - GR8 - YZ	2



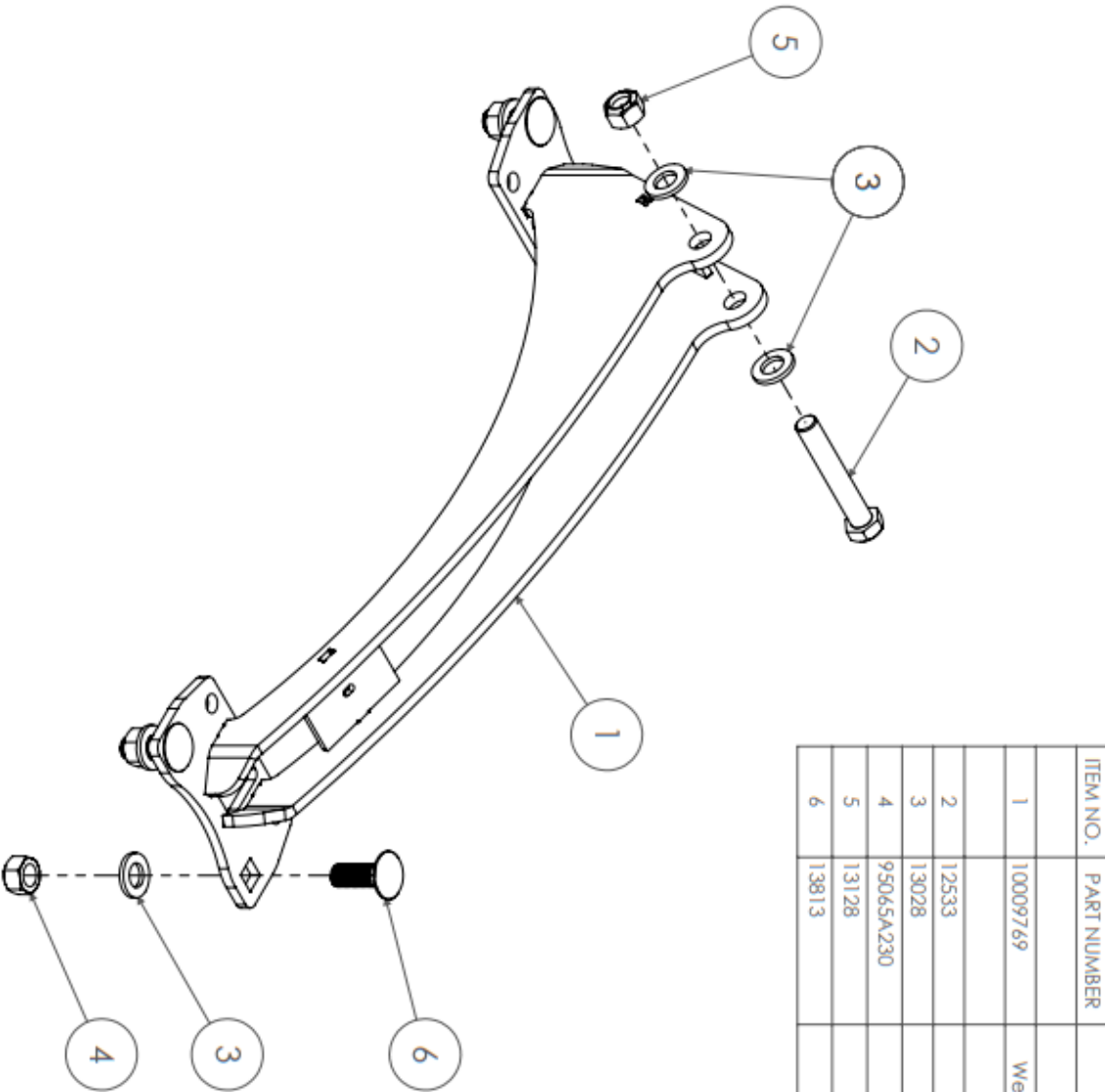
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
Weldments			
1	10004424	Weldment - (PS) Lower Bag/Axle Mount - 4.25	1
2	10004647	Weldment - 4.25" Lower Axle Clamp	1
Hardware			
3	12451	SCREW-HCS-.63-18X7.00-GR8-YZ	4
4	12629	Hex Bolt - 7/8" x 5" - GR8 - YZ	2
5	13026	Flat Washer SAE - 5/8" - GR8 - YZ	8
6	13030	Flat Washer SAE - 7/8" - GR8 - YZ	4
7	13179	Hex Nut High - 5/8"-18 - GR8 - YZ	8
8	13130	Top Distorted Thread Lock Nut - 7/8"-14 - GR8 - YZ	2
9	14114	U-BOLT 5/8-18 X 8 X 4.5 X 3/1/4 THREAD - PLAIN	2



6. LOCATE THE LOWER PANHARD BAR CROSSMEMBER (#10009769). IT FASTENS TO THE LOWER AIR BAG MOUNTS WITH THE 5/8" U-BOLT AND (4) 5/8" CARRIAGE BOLTS. TORQUE THE U-BOLTS TO 100 FT./LBS. TORQUE THE 5/8" BOLTS TO 55 FT./LBS. YOU MAY NOW TORQUE THE U-BOLT ON THE OUTER ENDS OF THE LOWER BAG MOUNT TO 125 FT./LBS. AND TORQUE THE 5/8" X 8-1/2" BOLTS TO 150 FT./LBS.



U-Bolt (Part # 14114) Nut (Part # 13179)



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
		Weldments	
1	10009769	Weldment - Panhard Bar Crossmember - Short - 3/4" Bolt	1
		Hardware	
2	12533	Hex Bolt - 3/4"-16 x 4-1/2" - GR8 - YZ	1
3	13028	Flat Washer SAE - 3/4" - GR8 - YZ	6
4	95065A230	Top Distorted Thread Lock Nut - 3/4"-10 - GR5 - Z	4
5	13128	Top Distorted Thread Lock Nut - 3/4"-16 - GR8 - YZ	1
6	13813	Carriage Bolt - 3/4"-10 x 2 Gr.5	4

7. LOCATE THE TRAILING ARMS (# 52116) & KNUCKLES (#10005/10006). **NOTE:** **THE TRAILING ARM BARS AND KNUCKLES WILL MOST LIKELY BE PRE-ASSEMBLED.** ADJUST THE TRAILING ARMS SO THERE IS APPROXIMATELY 9" BETWEEN THE KNUCKLES. THE TRAILING ARMS WILL FASTEN INTO THE FORWARD TRAILING ARM MOUNTS AND LOWER AIR BAG MOUNTS WITH THE 7/8"-14 X 5-1/2" BOLTS. INSERT THE BOLTS ON THE TRAILING ARMS SO THE BOLT HEADS ARE ON THE OUTSIDE ON THE MOUNTS. LARGER, WIDER TIRES MAY HIT THE BOLTS IF MOUNTED INSIDE OUT.



KNUCKLE #10006

KNUCKLE #10005

TRAILING ARMS SHOWN INSTALLED AT 9" IN BETWEEN KNUCKLES

***TRAILING ARMS SHOWN INSTALLED INTO FORWARD
MOUNT AND LOWER AIR BAG MOUNT***

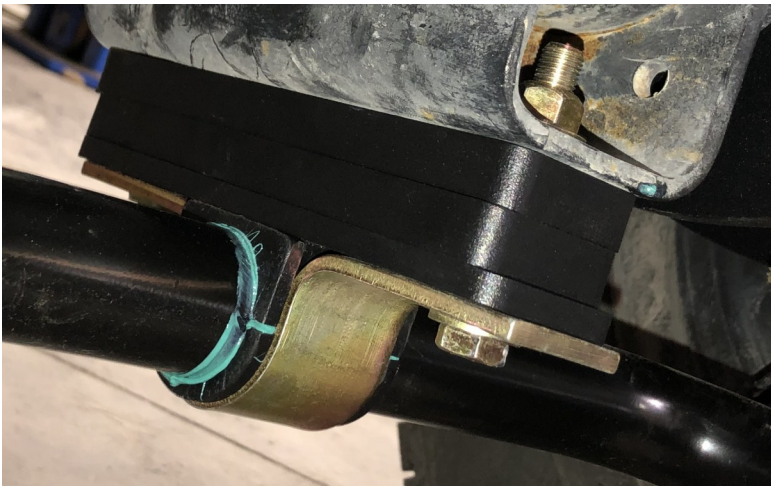


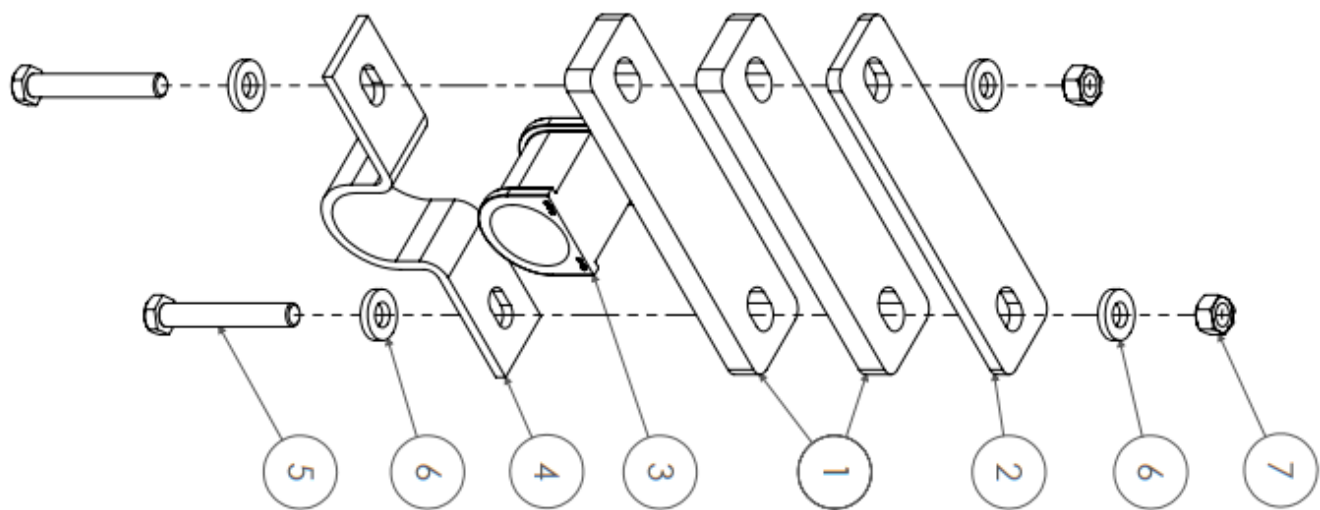
8. LOCATE THE ACCUMULATOR TANKS (#10005063). THE TANKS FASTEN INTO THE REAR LEAF SPRING PERCH. POSITION THE TANK SO THE LARGE PORT FACES TOWARDS THE FRONT OF THE TRUCK. FASTEN THE TANK IN PLACE WITH THE FACTORY REAR LEAF SPRING SHACKLE BOLT. TORQUE THIS BOLT TO 150 FT./LBS.

9. LOCATE THE 3/4" AIR LINE. LAY THE AIR LINE BESIDES THE FITTING ON THE AIR BAG AND THE ACCUMULATOR TANKS. BE SURE TO ADD SOME EXTRA LENGTH TO THE AIR LINE AND CUT IT TO FIT BETWEEN THE AIRBAG AND TANK. REMEMBER THAT THE AIR LINE WILL PRESS INTO THE FITTINGS. ONCE THE AIR LINE IS CUT, CONNECT THE ACCUMULATOR TANK TO THE AIR BAG.



10. LOCATE THE UPGRADED SWAY BAR (#80246), THE SWAY BAR D-RING BRACKETS/ BUSHINGS (PART # 80255/80258), THE SWAY BAR END LINKS (PART # 17091) AND SWAY BAR DROP SPACERS (PART # 10004769/10005463). THE SWAY BAR INSTALLS ON THE BOTTOM OF THE SHOCK MOUNTS WITH THE (2) 1/2" & (1) 1/4" SPACERS ON EACH SIDE AND THE 3/8" X 2-1/2" BOLT. IF YOUR TRUCK HAS THE OVERLOAD PADS ON IT, REMOVE THE PLASTIC CONTACT PAD. USE A 1/2" DRILL BIT OR DIE GRINDER AND OB- LONG THE HOLE FRONT TO REAR. INSERT THE END LINK STUD UP THROUGH THE HOLE USING THE FLAT WASHER AND RUBBER BUSHING ON THE END LINK. INSTALL A RUBBER BUSHING ON THE OVERLOAD PAD AND PLACE A FLAT WASHER ON TOP. YOU WILL TIGHT- EN WITH THE 1/2" NUT. IF YOUR TRUCK DOESN'T HAVE THE FACTORY OVERLOAD PADS, YOU WILL USE THE UPPER SWAY BAR MOUNTS TO THE TWO FACTORY HITCH BRACKETS. YOU WILL HAVE TO WELD THE SIDE OF THE UPPER SWAY BAR BRACKET TO THE SIDE OF THE FRAME. A COUPLE 3" DOWN HAND WELDS WILL BE SUFFICIENT. MAKE SURE TO GRIND THE PAINT OFF THE FRAME AND THE POWDER COAT OFF THE BRACKET BEFORE YOU WELD.



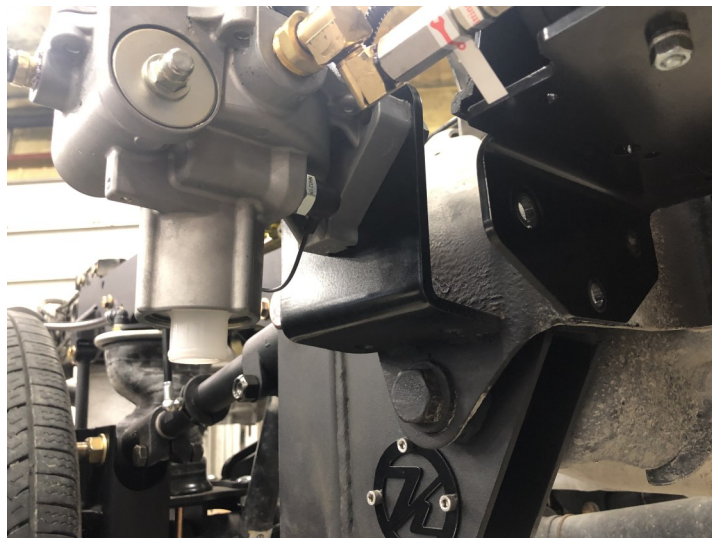
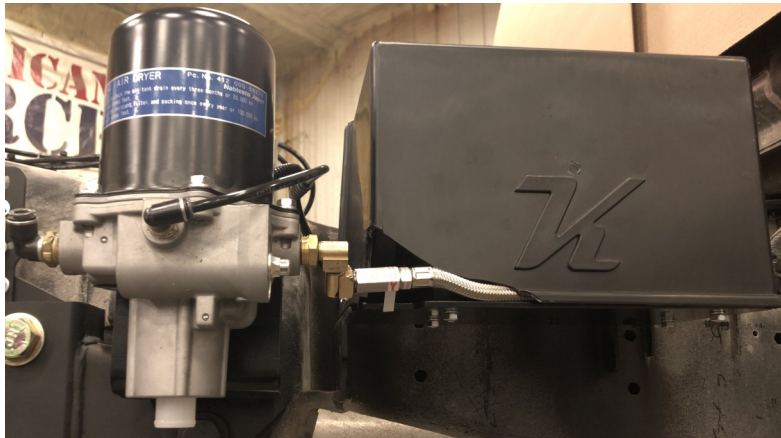


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
<i>Parts</i>			
1	10004769	Plate - 1/2" - Sway Bar Drop Spacer	2
2	10005463	Plate - 1/4" - Sway Bar Drop Spacer	1
<i>Hardware</i>			
3	80255	Purchased - Sway Bar Bushing - 1-3/8" ID (5347)	1
4	80258	Purchased - Sway Bar D-Ring Bracket - 5" Bolt Spacing - 1.5" ID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

11. END LINKS (#17091) ATTACHES TO SIDE PLATES (#10005604-PS & 10005576-DS) WITH 1/2"-20 X 6-1/4" BOLTS, 1/2" WASHERS AND 1/2" 20 LOCK NUT.



12. LOCATE THE OPTIONAL AIR CONTROL BOX AND AIR DRYER. THE CONTROLS BOX FASTENS TO THE INSIDE OF THE FRAME ON THE PASSENGER SIDE. YOU CAN ALSO MOUNT IT WHERE THE SPARE TIRE GOES IF YOU WISH, THEN THE SPARE TIRE CANNOT BE RE-INSTALLED. THERE ARE (2) BRACKETS (#15140) THAT YOU WILL NEED TO WELD TO THE FRAME. ONCE THE BRACKETS ARE WELDED TO THE FRAME, ATTACH THE AIR COMPRESSOR BOX TO THE BRACKETS WITH THE SUPPLIED 3/8" X 1" BOLTS AND NUTS. THE AIR DRYER BRACKET (PART# 30256) ALSO NEEDS TO BE WELDED TO THE SIDE OF THE FRAME. THE DRYER ATTACHES WITH FACTORY DRYER HARDWARE. THE AIR TANK WILL ALSO BE MOUNTED TO THE SIDE OF THE FRAME. IF YOU ARE NOT RUNNING RETRACTABLE RUNNING BOARDS, THEN TANK CAN BE MOUNTED TO OUTSIDE OF FRAME. DRILL & TAP (4) 3/8"-16 HOLES AND BOLT TO THE FRAME WITH (4) 3/8"-16 X 1" BOLTS.

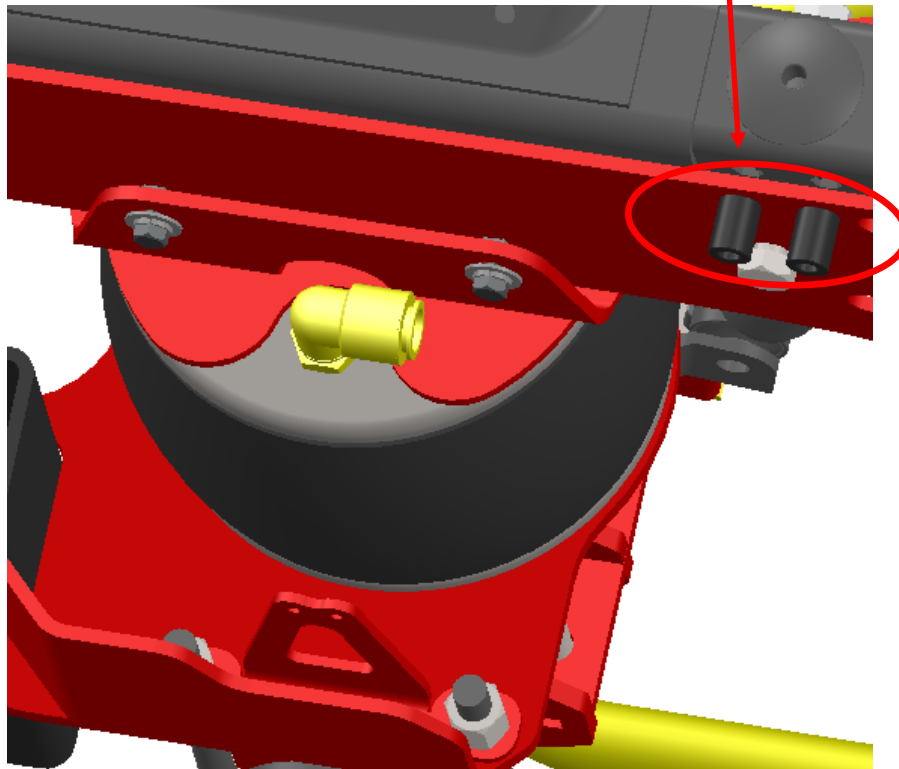
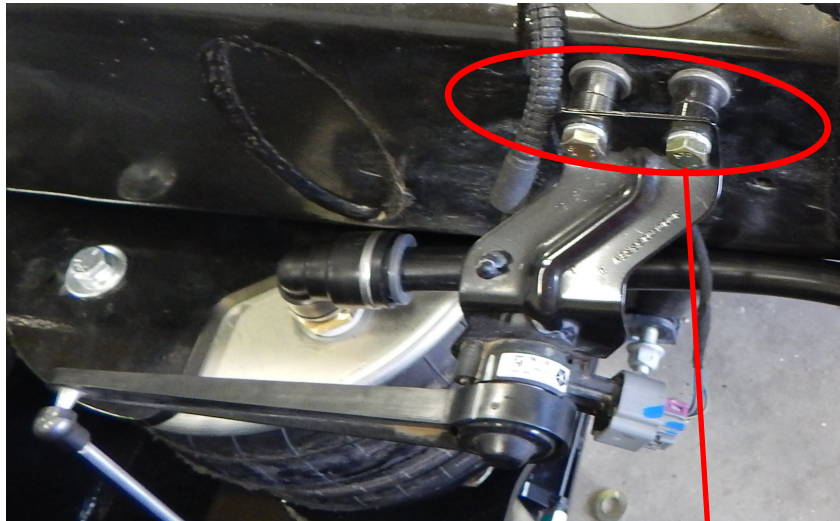


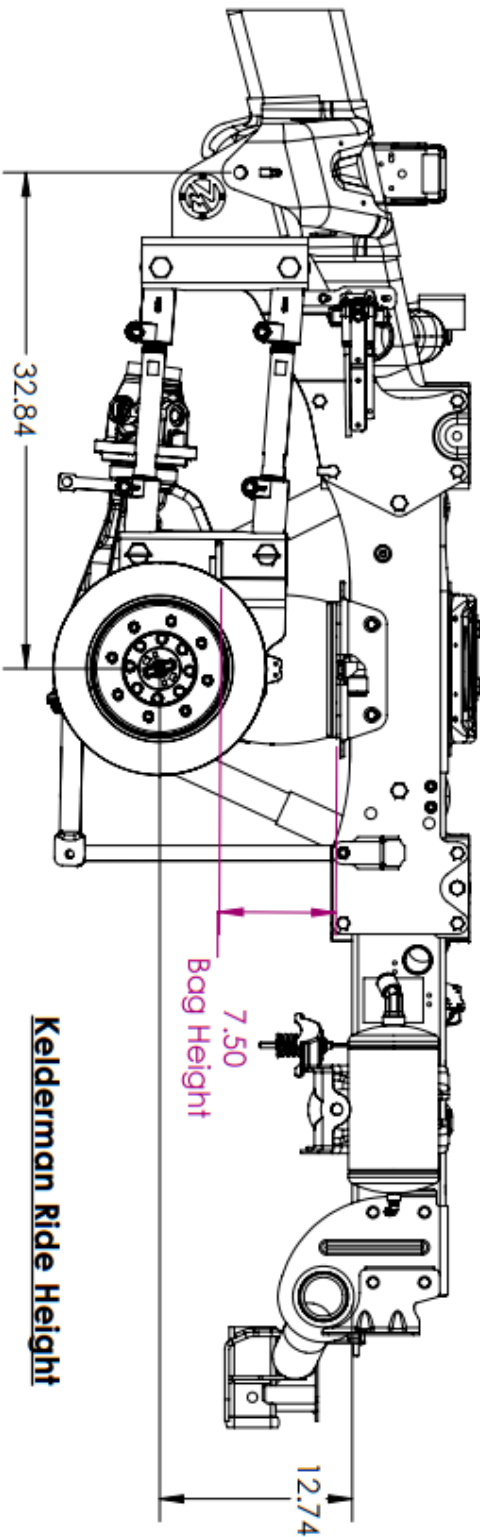
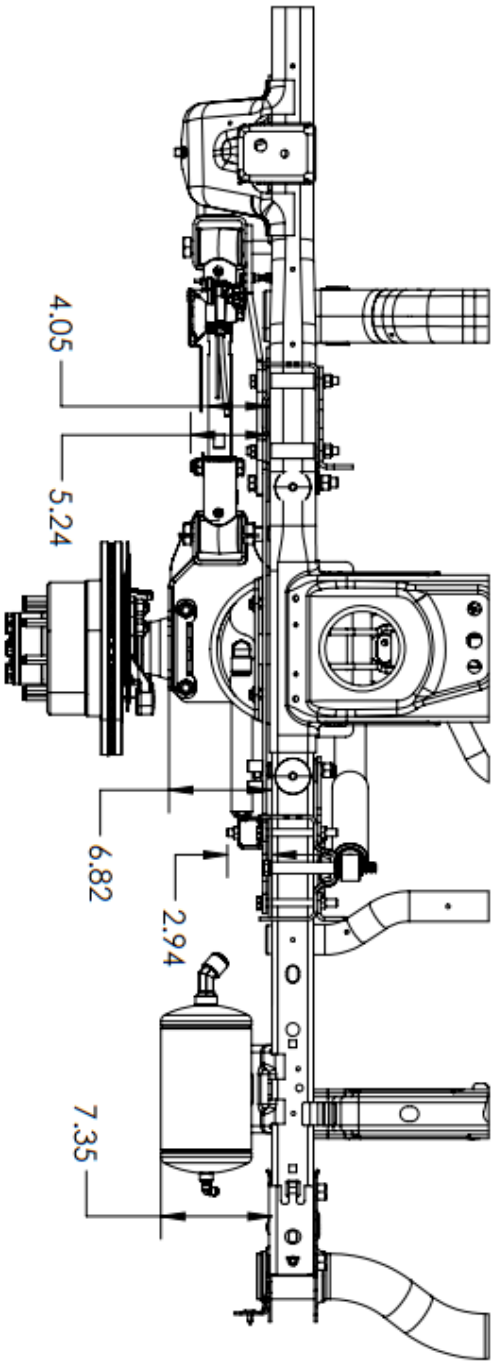
13. ONCE YOU HAVE THE AIR TANK AND AIR BOX MOUNTED, LOCATE THE HEIGHT CONTROL VALVES. THEY FASTEN TO THE SENSOR MOUNTING BRACKETS ON THE SIDE PLATES WITH THE 1/4" BOLTS. YOU WILL WANT TO INSTALL THE HEIGHT CONTROL VALVE SO THE LEVER IS STRAIGHT OUT FROM THE BODY WHEN THE AIR BAG IS AT 7" TALL. YOU WILL USE A PHILLIPS SCREWDRIVER TO ATTACH THE COLLAR TO THE UPPER TRAILING ARM STRAIGHT DOWN UNDER THE END OF THE BALL OF THE HEIGHT CONTROL LEVER. WITH THE HEIGHT CONTROL VALVES INSTALLED, USE THE WIRING AND PLUMBING INSTRUCTIONS PROVIDED WITH THE AIR CONTROLS TO FINISH THE INSTALLATION. ONCE COMPLETED, IT WILL REQUIRE SOME FINE TUNING TO GET THE TRUCK LEVEL SIDE TO SIDE. LOOSEN THE NUT ON THE SIDE OF THE LEVER AND ROTATE UP OR DOWN ACCORDINGLY. A TEST DRIVE WILL NEED TO BE DONE TO GET THE FINAL RIDE HEIGHT DETERMINED.

FINE TUNE ADJUSTMENT NUT



14. IF YOU CHOOSE TO RUN THE FACTORY AIR CONTROLS, YOU WILL NEED TO SPACE THE FACTORY SENSOR OUT AWAY FROM THE FRAME 3/4" WITH THE PROVIDED SPACERS (10010290). YOU WILL ALSO NEED TO ATTACH THE LOWER END LINK BRACKET (10010287) TO THE LOWER AIR BAG MOUNT. THE IDEAL RIDE HEIGHT FOR THE AIR BAG IS 7". RAM TRUCKS MAY OR MAY NOT WARRANTY ANY OF THEIR COMPONENTS ONCE THEIR FACTORY SYSTEM IS REMOVED.





Kelderman Ride Height

	A			DO NOT SCALE DRAWING	1:50	Approximate Weight = lbs					
	MATERIAL SPECIFICATIONS										
	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES										
	STANDARD TOLERANCES X.XX ± 0.00 X.XXX ± 0.005 FRACTIONS 1/16" ± 0.007 Drop: 1/8"										
PROJECT: 2019+ Ram 3500 - 4-Link Rear - Stock Height - Replacement											
PART NUMBER: 10004409											
DATE: 12/21/2019											
DESIGN BY: Jack Reiter											
CHECKED BY: [Signature]											
SHEET 2 OF 2											

NOTES

CONTACT INFORMATION

KELDERMAN MANUFACTURING APPRECIATES YOUR BUSINESS. WE STRIVE TO MEET THE NEEDS OF OUR CUSTOMERS BY PROVIDING THE HIGHEST QUALITY PRODUCTS. IF YOU HAVE ANY QUESTIONS CONCERNING OUR PRODUCTS PLEASE CALL OR EMAIL US AT THE FOLLOWING:

2686 HIGHWAY 92
OSKALOOSA, IOWA 52577

PHONE: 1-800-334-6150

EMAIL: INFO@KELDERMAN.COM

kelderman



SCAN ME

SCAN QR CODE FOR KELDERMAN WARRANTY PAGE