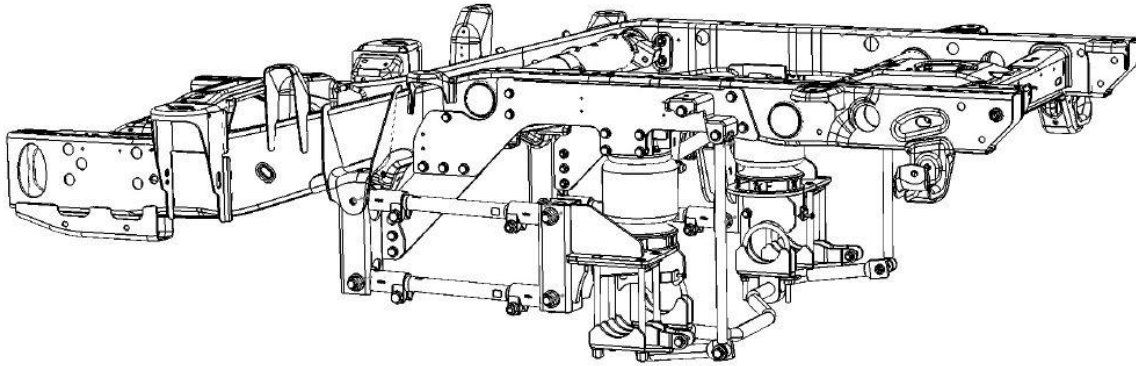




6 – 8 Inch Lift Rear Air Ride Installation Manual

- 2020+ Chevy / GMC 2500/3500

Kelderman 4-Link Air Ride



- Contents

- Kit Numbers..... (3)
- Introduction..... (4)
- Safety..... (5)
- Suspension Removal (6)
- Air Ride Installation..... (7)
- Drawings..... (18)
- Schematics.....(28)
- Owner Responsibilities.....(32)
- Contact Information..... (34)

Kit Numbers

- This installation manual covers the following air ride kits.

Kit Number	Description
10006053	2020+ GMC/ Chevy 2500/3500 6" – 8" lift rear air ride

Introduction

- **Important**

It is important that the entire installation instructions be read thoroughly before proceeding with installation.

- **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.

- **Product Owner Responsibilities**

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 90 days or 1000 miles of this product being put into service.

- **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.

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: 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 three 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.
 - 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.

Suspension Removal

- 1:** 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 _____



Figure 1

- 2:** The bed must be removed from the truck.

- 3:** Take the following measurements for future reference. You will need to refer to these measurements to adjust the suspension system. See figure 2 below.

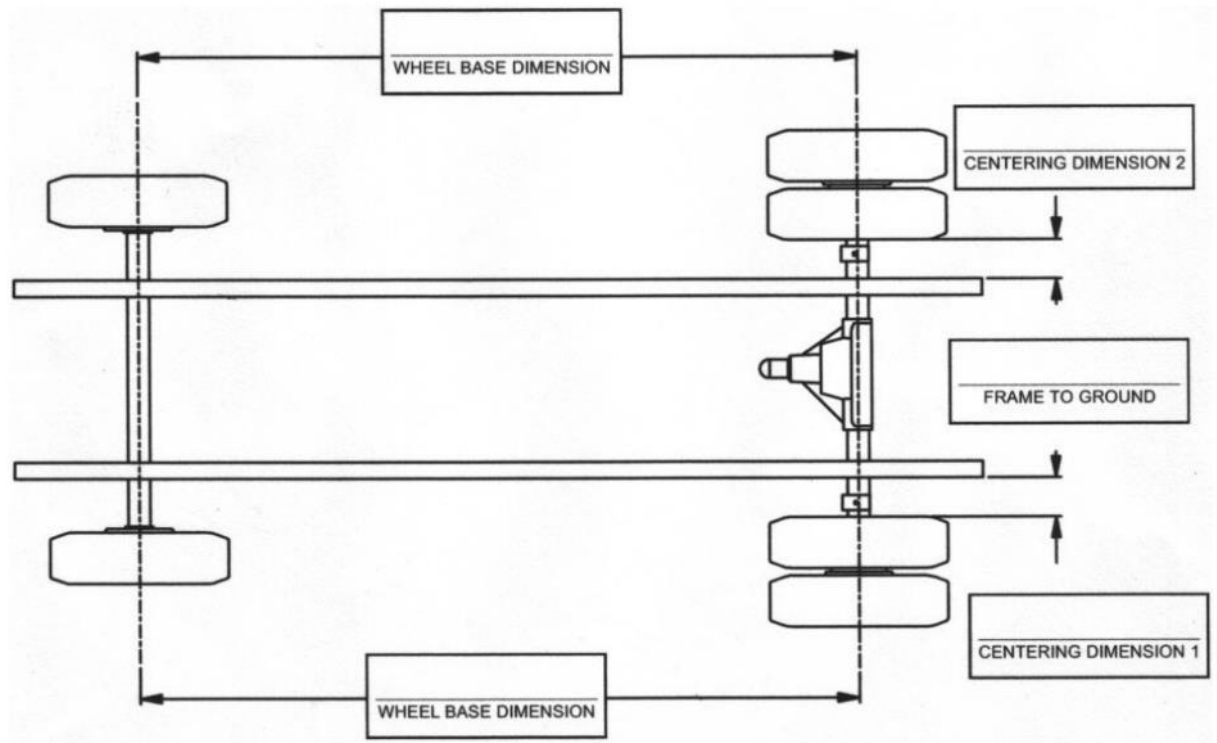


Figure 2

- 4:** Jack up the rear of the frame so that most of the tension is off of the leaf springs. Place a set of jack stands under the frame and block the tires so the axle won't move.
- 5:** Support the front of the pinion with a jack stand.
- 6:** Remove the leaf springs, shocks and sway bar, if equipped. Keep the mounting hardware for later use.
- 7:** Remove upper overload pads, if equipped.

- 8:** Cut bump stop pads off of the top side of the axle and grind the axle smooth. See figure 3.

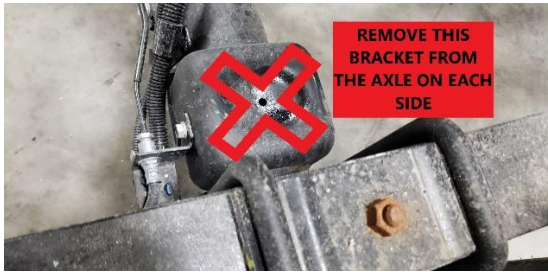


Figure 3

- 9:** Cut off factory shock mounts and grind axle smooth. See figure 4.



Figure 4

- 10:** Cut factory bump stop brackets off of the frame rails and grind the frame smooth. See figure 5.



Figure 5

- 11:** Paint or apply undercoating to areas that have been cut and ground on to protect from rust.

Air Ride Installation

- Open every box and locate all parts. There are several smaller bushing pieces and bolts that are packaged separately inside the main box.

1: *NOTE:* All of the bolts in this kit use a flat washer on each side of the bolt.

2: *NOTE:* Snug all bolts but do not tighten until the entire kit is installed

3: Remove the brake lines that run from the frame to the axle. Locate the brake line spacer, P/N 10005085. Remove the brake line bracket from the differential and relocate it with the brake line spacer, using factory hardware and ¼" - 20 hardware. Replace the brake lines with the ones supplied. Be sure to bleed the brake system before driving the truck. See figures 6 and 7.

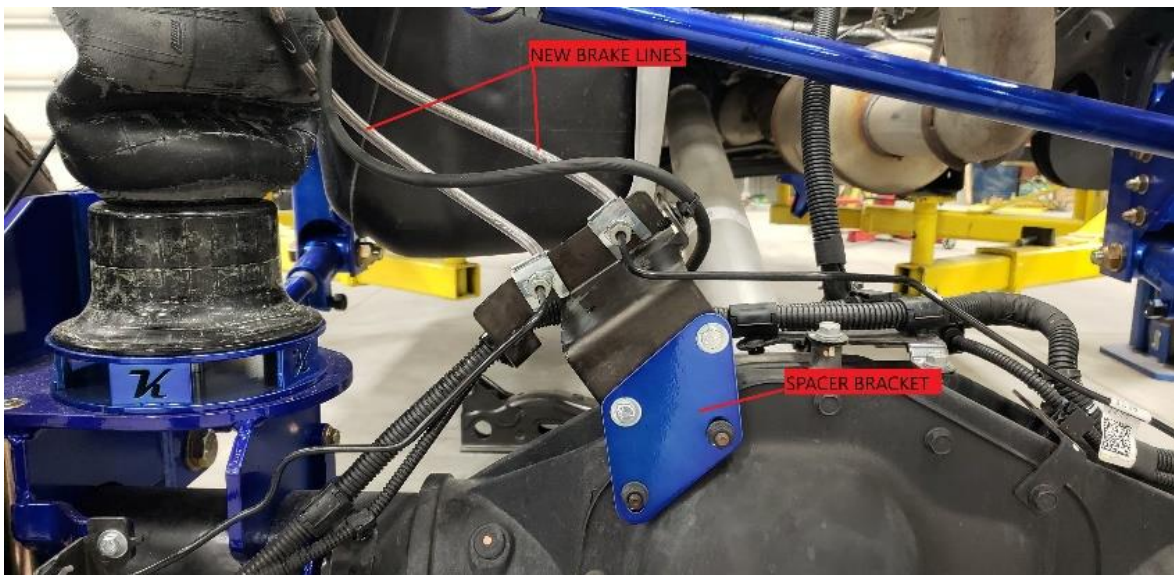


Figure 6



Figure 10

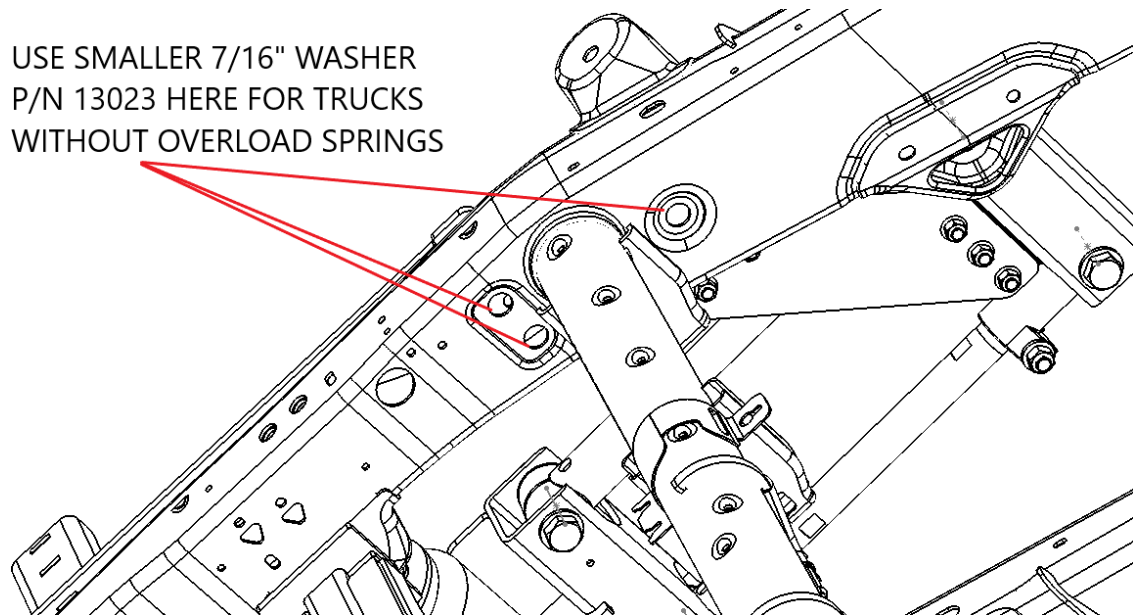


Figure 11

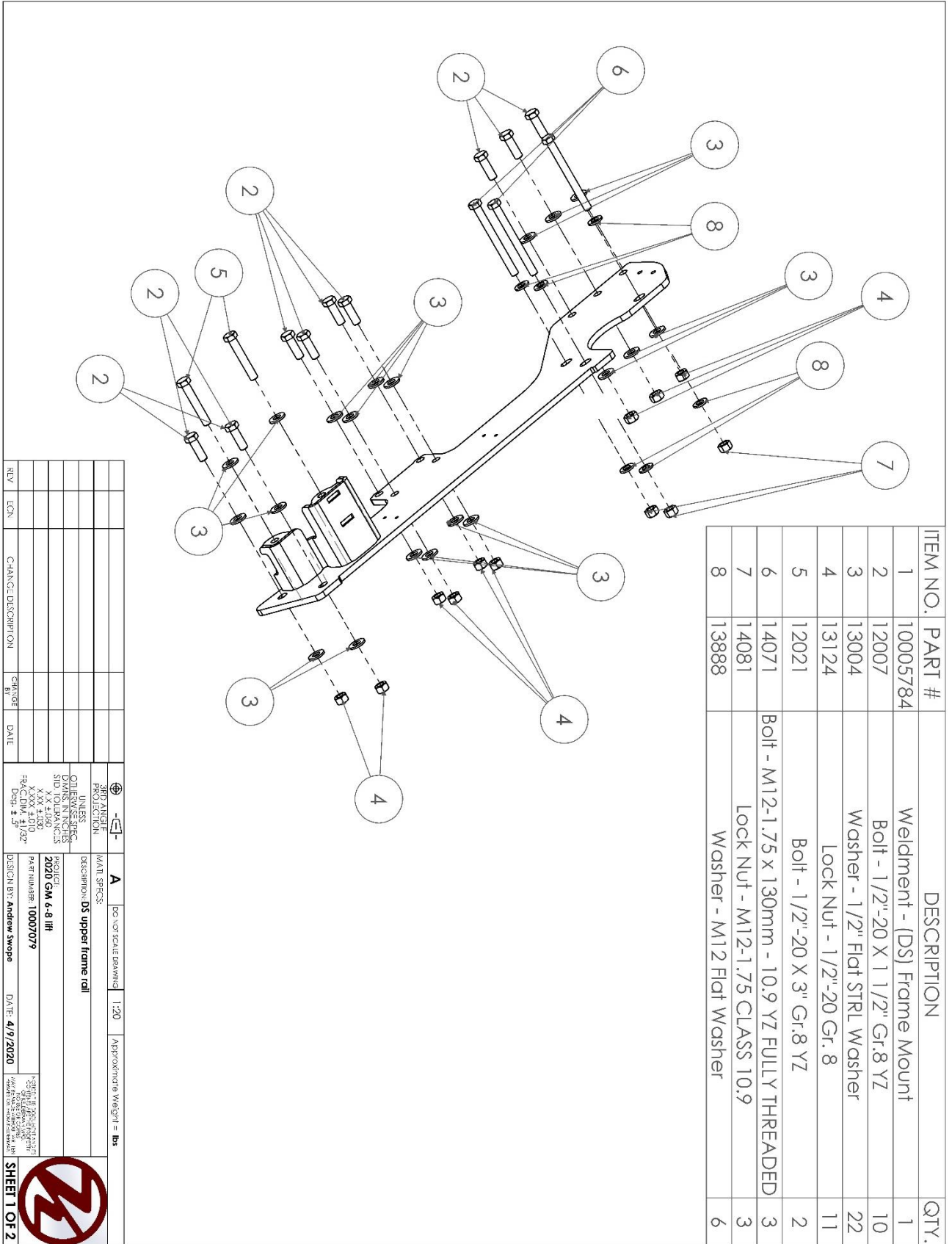


Figure 13

6" - 8" Lift Rear Air Ride - 020+ Chevy / GMC 2500/3500

- 6:** Install the crossmember, P/N 10007130, with the notch under the exhaust. It bolts to each side plate with $\frac{1}{2}$ " x $1 \frac{1}{2}$ " hardware. Tighten the crossmember to the side plates and then tighten the side plates to the truck frame. See figures 12, 13, 14, and 15.

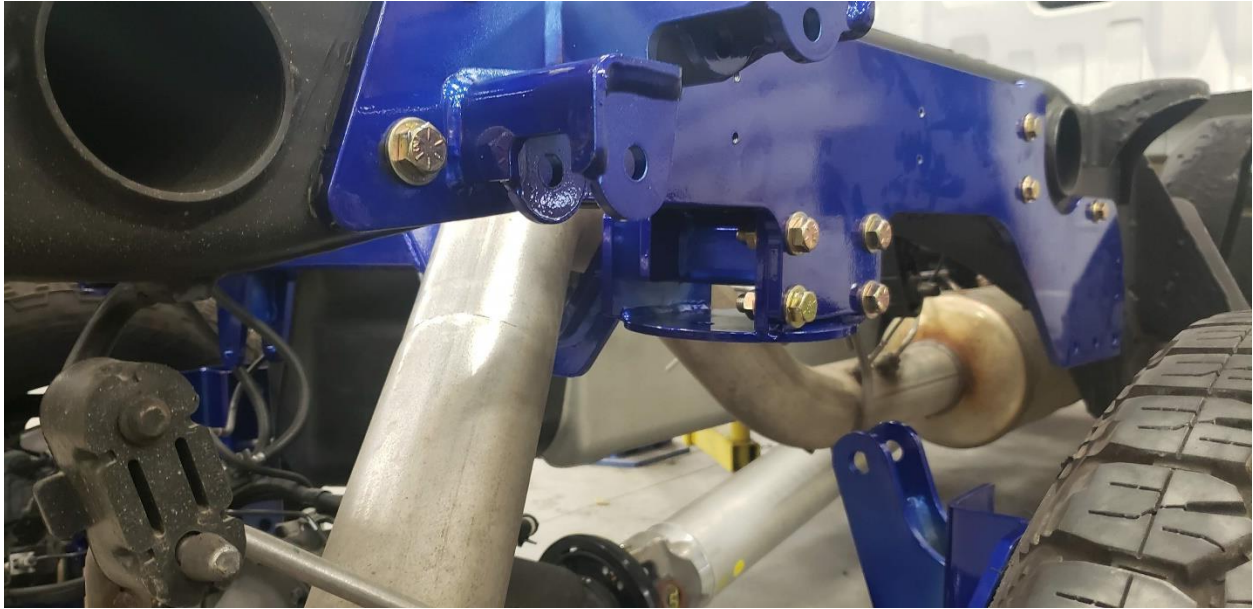


Figure 14

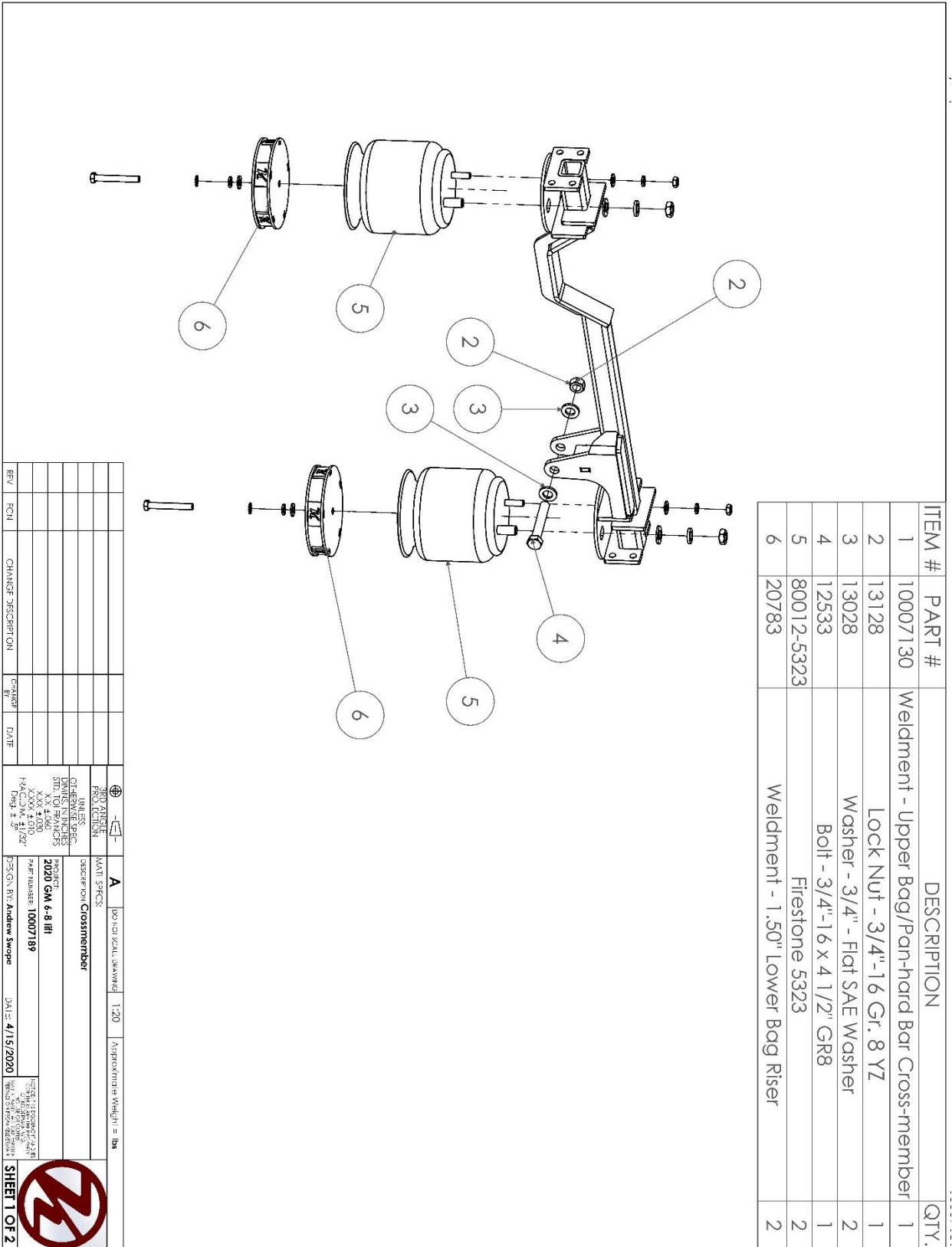


Figure 15

- 7:** Locate the lower bag mounts air bags, axle clamps and axle clamp hardware. DS lower bag mount P/N 10007024, DS axle clamp P/N 10006452. PS lower bag mount P/N 10007125, and PS axle clamp 10005813. If the tire is still on the truck, you will want to insert the upper trailing arm in the passenger side bag mount before installing on the truck to avoid removing the wheel. Mount the bag mounts using the factory leaf spring pad to position the bag mounts. See figures 16, 17, 18, and 19.



Figure 16

- 8:** Attach the front perch mounts to the side plates using the angle plate, P/N 10005785, and $\frac{1}{2}$ " x $1\frac{1}{2}$ " hardware. See figures 20, 22, and 23.



Figure 20

- 9:** Set the trailing arms to $10\frac{7}{8}$ " as a starting point. Install the trailing arms, you will use the factory front spring mount hardware and the 18mm bushing for the top trailing arm in the front on each side. All other knuckles will mount with $\frac{7}{8}$ " x 5" hardware. See figures 15, 16, 17, 19, 20, and 21.



Figure 21

11: Locate the sway bar P/N 80259, mounting clamps P/N 80271, sway bar bushings P/N 80256, and sway bar end links. The sway bar fastens to the axle with the sway bar axle clamps. First, attach the clamp to the lower bag mount with 7/16"-20 x 1 3/4" hardware, but do not tighten the bolts. Next, place the 1/2" - 20 4 1/2" x 8" U-bolt, P/N 13841, over the axle and through the clamp. The U bolt also goes through the axle clamp. Everything is held together with the 1/2" - 20 tall nuts and washers. The upper end of the end links mount to the pockets in the upper bag mounts with 1/2" x 3" bolts. The lower end of the end links attach to the frame with 1/2" x 3" bolts as well, be sure to use the large machined washer on the bolt head, P/N 11551. Use the supplied grease between the sway bar and the sway bar bushings to prevent squeaking. See figures 25 and 26.



Figure 25

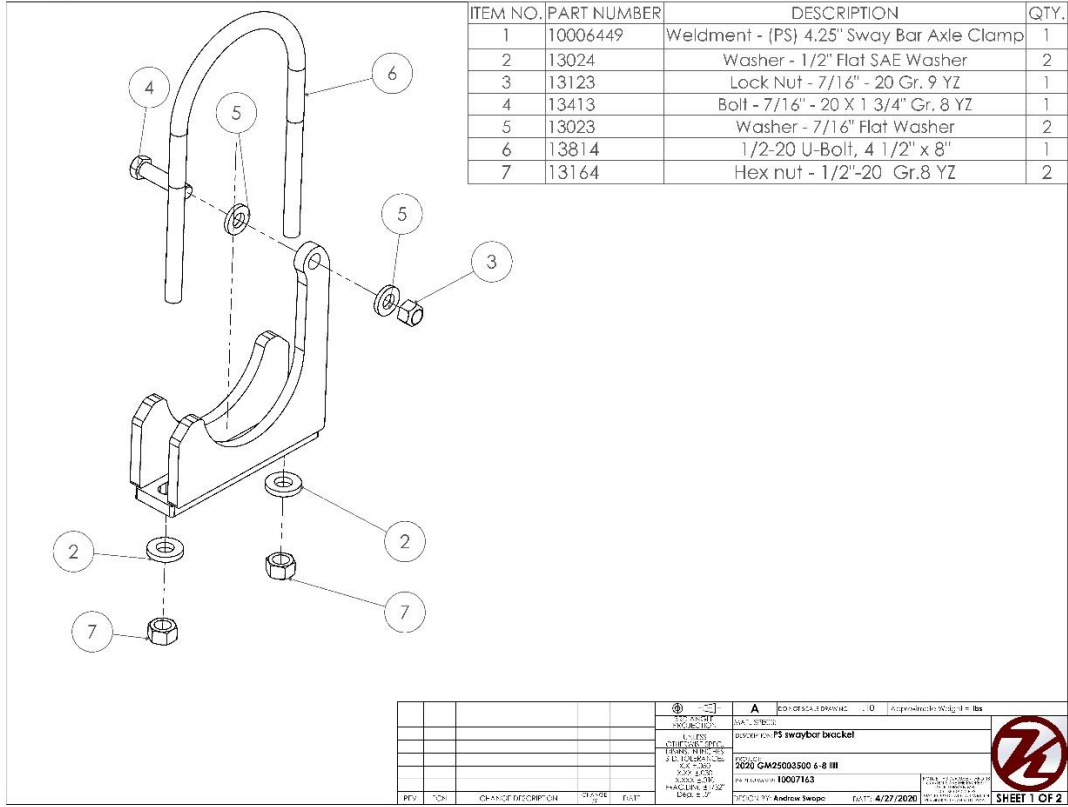


Figure 27

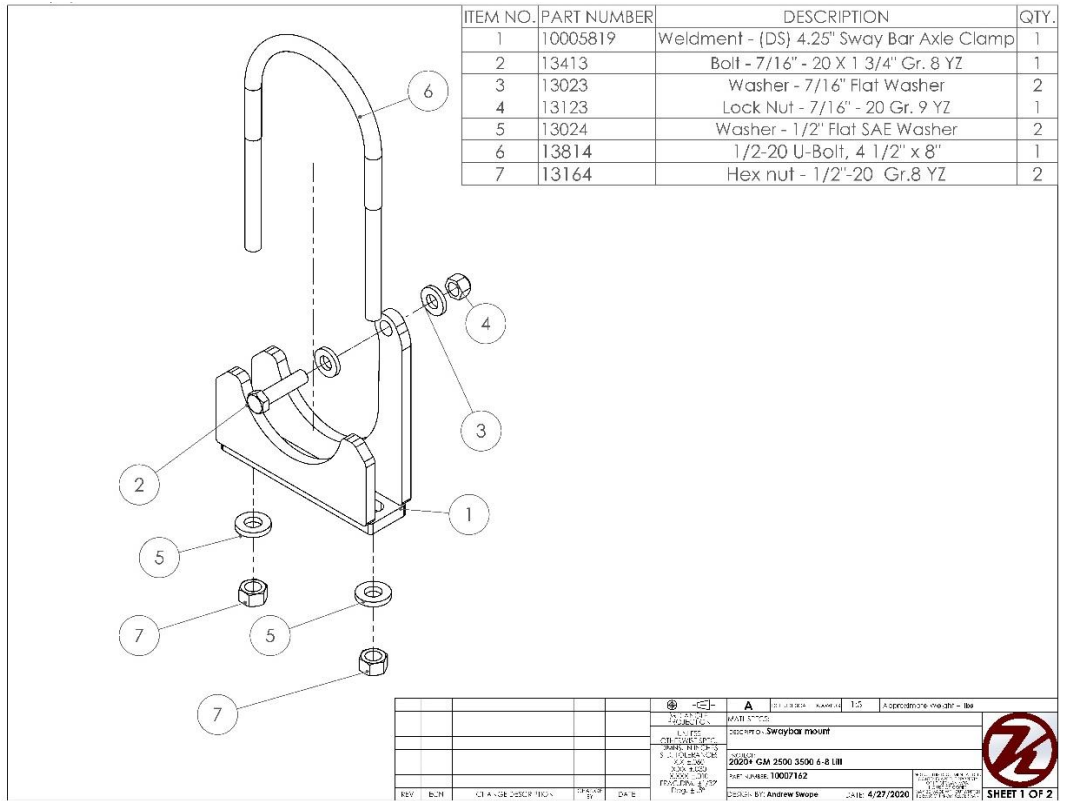


Figure 28

12: Once the kit is installed, inflate the airbags to 8 - 8 ½" this is where the airbag rides the best. These air bags can be run anywhere between 7 ½" and 9 ½", this allows for some adjustment depending on how the front kit is set. Measure off of the front axle ball joints to make sure that the axle is square with the front. See figure 27.

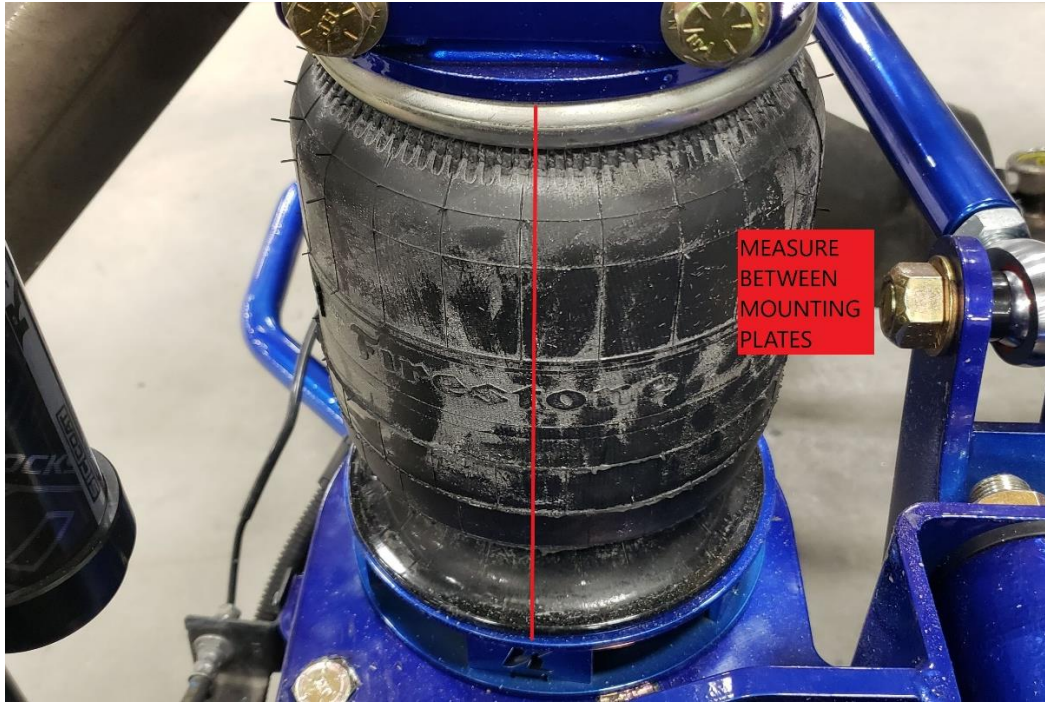


Figure 29

13: Mount the height control sensors to the Perch Mount using the hardware provided with the sensors. The mechanical valve must be vertical when installed and the arm must be horizontal at ride height. The height control valves are the same for each side of the truck. The height control valve has a built in 8 second delay. See figure 30.

NOTE: before installing the mechanical valve, rotate the arm clockwise and counterclockwise 4-5 times each way. This will prepare the internals for operation after sitting in inventory.



Figure 30

14: The recommended mounting location for the compressor box and air tank is where the spare tire originally went. Use the supplied mounting brackets and weld them to the cross member. See figures 31 and 32.

Make sure to use a battery protection device on the batteries or unhook the batteries before welding!



Figure 31



Figure 32

- 15:** See figure 33 for the dual tank configuration with air horns. The picture is looking up from underneath the truck.



Figure 33

16: After install is complete, and the rear axle is square, torque all fasteners to the specifications in the chart below.

Bolt Size	Torque
1/4"-20	70 <i>in-lb</i>
3/8"-16	20 <i>ft-lb</i>
1/2"-20	50 <i>ft-lb</i>
9/16"-18	100 <i>ft-lb</i>
5/8"-18	250 <i>ft-lb</i>
7/8"-14	300 <i>ft-lb</i>

17: After the bolts are torqued and the air bags are inflated to ride height, you can now replace the bed.

18: Set the pinion angle to the measurement that you took in Suspension Removal step 1.

19: Now the truck is ready for a test drive. Pay close attention to how the truck handles and if there are any vibrations.

20: When you test drive the truck, if the truck pulls to one side, shorten the **opposite side** trailing arms one turn and test drive again. Repeat until pull is no longer noticeable.

Owner Responsibilities

The Kelderman suspension needs no lubrication and little maintenance. However, immediate corrective action should be taken if a serious malfunction occurs.

CAUTION! If maintenance or service is to be done on the air system, be sure to drain all air from the system. Serious injury could occur if components are removed while system is full of air.

PRODUCT OWNER RESPONSIBILITIES

- Owner is solely responsible for pre-operation inspection, periodic inspections, maintenance, and use of the product as specified in the particular Kelderman MFG. instructions available by product model, except as provided in this warranty, and for maintenance of other vehicle components. Of particular importance is the re-torque of fasteners including axle bolts, four link bolts, and pan hard bar bolts. This re-torque must be performed within 90 days of the suspension being put into service.
- Owner is responsible for "down time" expenses, cargo damage, and all business costs and losses resulting from a warrantable failure.
- 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 operation.
- The Compressor Switch must be on for the compressor to operate. During difficult starting circumstances, (i.e. extremely cold weather) it is recommended to turn the compressor switch off until the vehicle is running, so it will not draw current from the battery. The compressor is controlled by the pressure switch located in the Air Control Box. This switch automatically turns the compressor on when the tank pressure falls below 110 psi, and turns them off at 145 psi.
- The Low Pressure Warning Light indicates a severe drop in tank pressure (below 45 psi). Immediate corrective action should be taken to determine the cause of air loss. Compressor switch should be turned off if Low Pressure Warning Light is on, and remains on even after the compressor has run for a normal period of time. **NOTE:** The Low Pressure Warning Light could come on briefly when the "Dump" feature is being used.
- When the weather is below freezing, it is important to release any moisture contained within the air tank on a daily basis. This is done by pulling on the attached release cable for approximately 5 seconds or turning the petcock. Not releasing the moisture on a regular basis will cause the drain valve to not operate properly.

CHECK AT EVERY VEHICLE SERVICE INTERVAL:

- Check Ride Height $\pm 1/4$ "
- Check for air leaks around fittings.

CHECK AFTER THE FIRST 1000 MILES:

- Recheck & tighten any loose fasteners.
- Check for any loose or worn components.

CHECK AFTER EVERY 30,000 MILES:

- Check trailing arm bushings and pan hard bar bushings for wear; replace if worn.

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

Fax: (641) 673-4168

Email: info@kelderman.com

