

**Class 6 & 7  
Trucks w/ 34"  
Frame Rail**



**KLM10745  
10004197**

**Version 1.3**

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Phone: 641.673.0468 - Fax: 641.673.4168  
[www.kelderman.com](http://www.kelderman.com)**

# **General Medium Duty 2-Stage Rear Air Suspension Install Instructions**





Commercial Product Warranty, Disclaimers and Warnings  
Kelderman techs are available at 641-673-0468 M-F 7:00-4:00 CST

Kelderman Air Suspension Systems offers a 3 year/ 100,000 mile Limited Warranty, parts and labor, to the original retail purchaser who owns the vehicle on which the unit was installed, for defects in materials and workmanship related to the fabricated parts. Non fabricated parts such as air bags, air compressors, gauges, solenoid kits, and electronic or mechanical air ride control systems are covered for 1 year/ 50,000 miles for parts and labor. In cases where ride control systems manufactured by The Air Lift Company or Hadley Products are provided, the ride control warranty in this document will not apply. Instead, the warranty will be that of Hadley and Air Lift.

Kelderman Air Suspension Systems must be contacted for warranty authorization before any diagnostic work or repairs are performed. At that time, Kelderman will provide diagnostic assistance and authorization for the repairs if warrantable. Any unauthorized diagnostic work performed before contacting Kelderman will not be covered under the warranty program if deemed unreasonable.

Kelderman Air Suspension Systems does not warrant any product for finish, alterations, modifications and/or installation different from Kelderman's instructions. Alterations / modifications to the final product include, but are not limited to powder coating, plating, and/or welding which will void the warranty. Some damage may occur to the finish of the parts during shipping. This is considered normal and is not covered under warranty.

Kelderman tries to ensure that the suspension parts fit the vehicles they were designed for, but due to unknown vehicle manufacturer's production changes and/or inconsistencies by the vehicle manufacture, Kelderman cannot be responsible for 100% fitment.

Kelderman's obligation under this warranty is limited to the replacement of the defective parts only. Freight charges, incidental or consequential damages are expressly excluded from this warranty. Kelderman is not responsible for damages and/or warranty of other vehicle parts related or non-related to the installed Kelderman Air Suspension System. This warranty is expressly in lieu of all other warranties expressed or implied. This warranty shall not apply to any product that has been subject to accident, negligence, alteration, abuse or misuse as determined by Kelderman.

Kelderman Air Suspension Systems are designed to be installed, and run at the recommended ride heights provided by Kelderman. All warranties will become void if Kelderman systems are run outside the recommended ride heights, or if the systems are combined/substituted with other suspension kits. Combination and/or substitution of other components may cause premature wear and inhibit the Kelderman Air Suspension from operating as designed, which may cause severe injury or death. Kelderman does not warrant parts not manufactured by Kelderman.

It is the installer and sellers reasonability to review all these warranties, warnings and disclaimers with the consumer prior to installation.

Kelderman reserves the right to supersede, discontinue, change designs, finishes, part numbers and/or applications of parts deemed necessary without written notice. Kelderman is not responsible for misprints, or typographical errors within the catalog or price sheets.

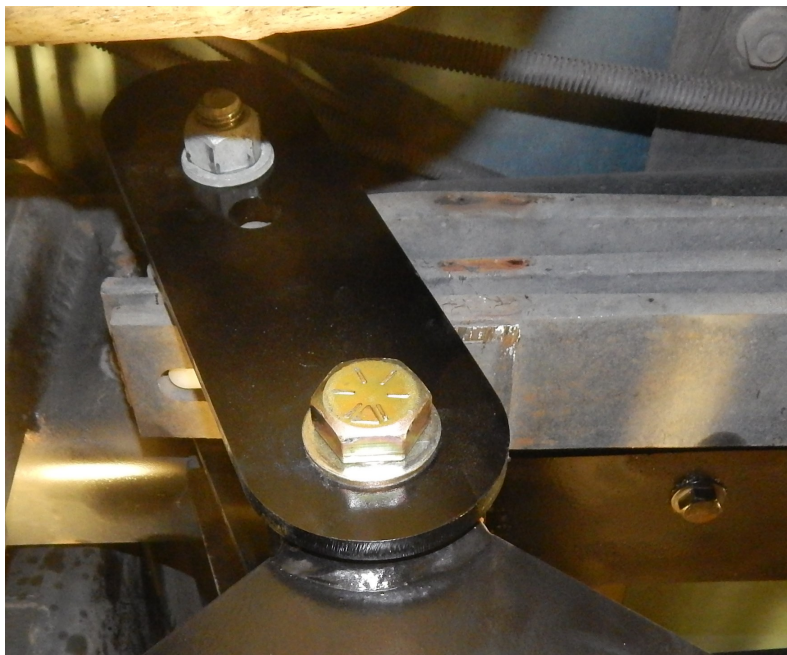
# Tools and Equipment

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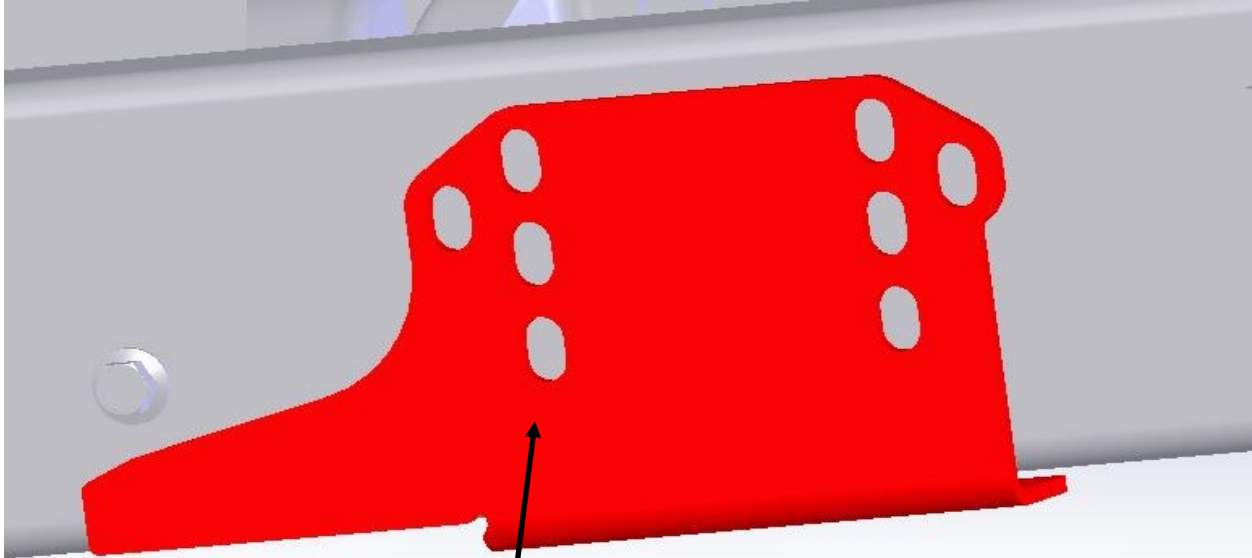
- Cutting torch or grinder
- (2) Jacks
- (2) Jack stands
- Wheel chocks
- Drill
- Drill bits (1/4" and 9/16")
- Combination wrench set
- Ratchet
- Socket set
- Hammer
- Center punch
- Side Cutters
- (2) C-Clamps
- Teflon tape or sealer
- Welder

## Installation

1. Place the truck on a level concrete surface. Jack the truck up from the frame just in front of the front rear leaf spring perch to where the tires are just barely on the ground.
2. Our shackle design uses an eyelet and shackle. The truck is a slider design, remove the slider perches from the side of the frame. If the truck has shackles, remove the shackle bolt and remove the shackle hangers.



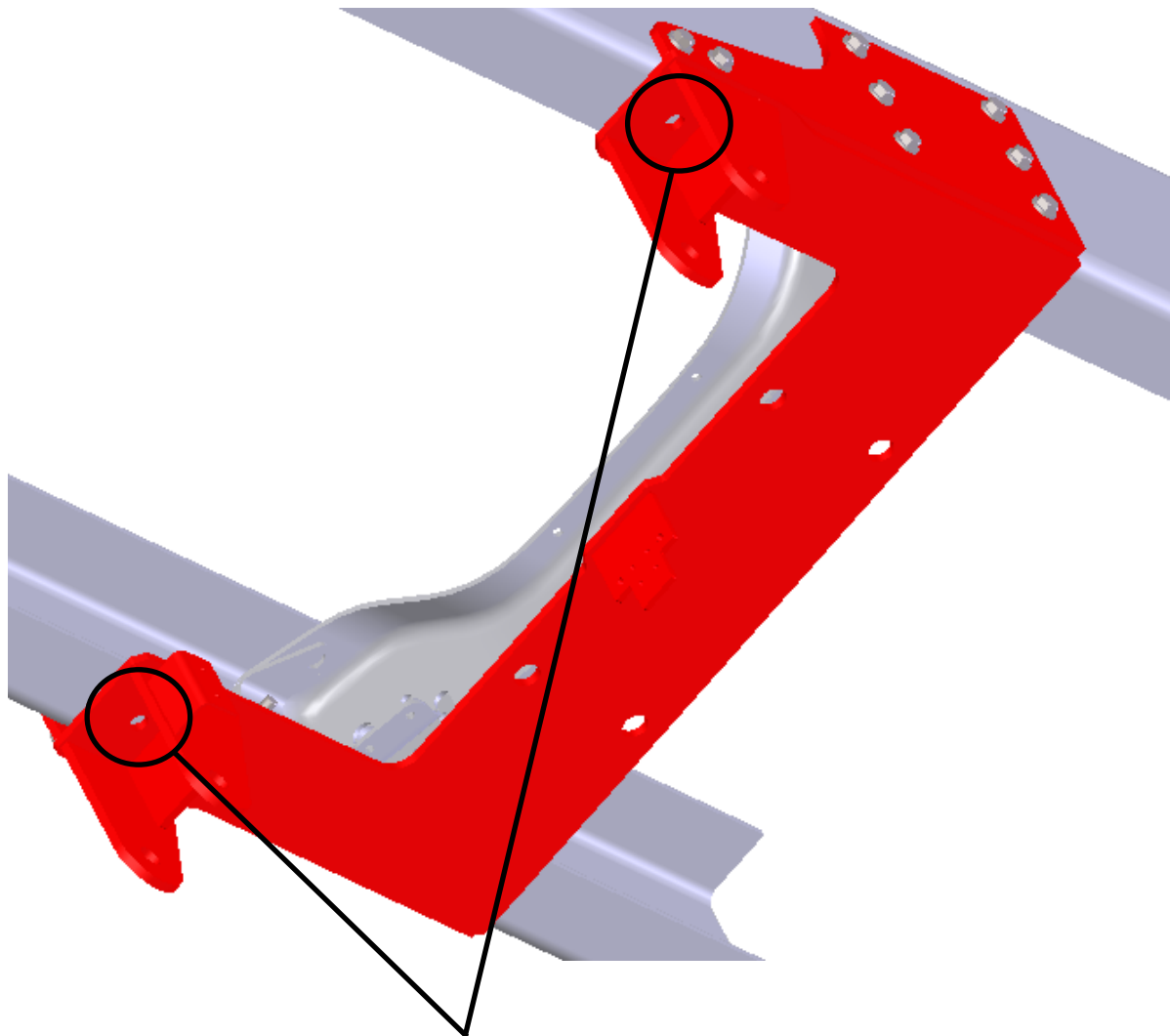
3. Locate the frame mounting plates (Part # 10015189 and 10015190). They will fit against the side of the frame with the narrow part facing forward. Place them against the frame so the bottom of the plate is up against the bottom of the frame. Use a chalk pencil to mark the holes in the frame against the plate of steel. Remove the plate and drill the holes. Do this on both sides.



Frame mounting plate with holes drilled and fastened to truck frame

4. Once your holes are drilled in the frame mounting plates, bolt them against the frame with the 1/2" x 2" bolts provided. If your truck used 9/16" or 5/8" bolts you can re-use them.

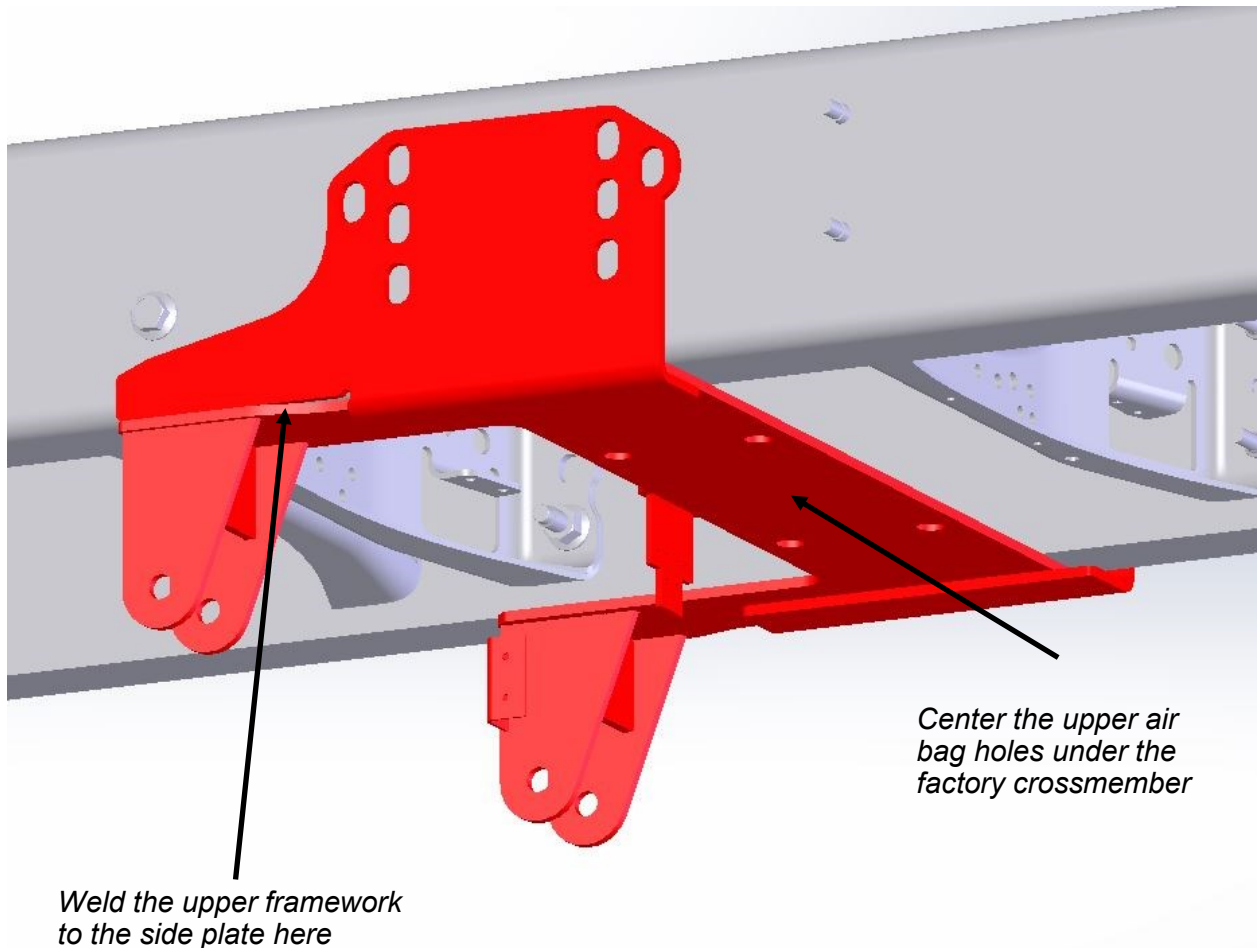
5. Locate the Top Frame (10004522). Place it against the bottom of the truck frame. The forward ears should be a couple inches from the air brake chambers (if the truck has air brakes). On non-air brake trucks, place the upper framework so that the rear portion of the air ride framework is centered under the cross member that runs between the frame rails. Clamp the upper framework in position. Use a center punch or chalk pencil to locate the hole in the upper framework located between the forward ears. Remove the upper framework and drill you're a 21/32" hole in the bottom of each frame rail.

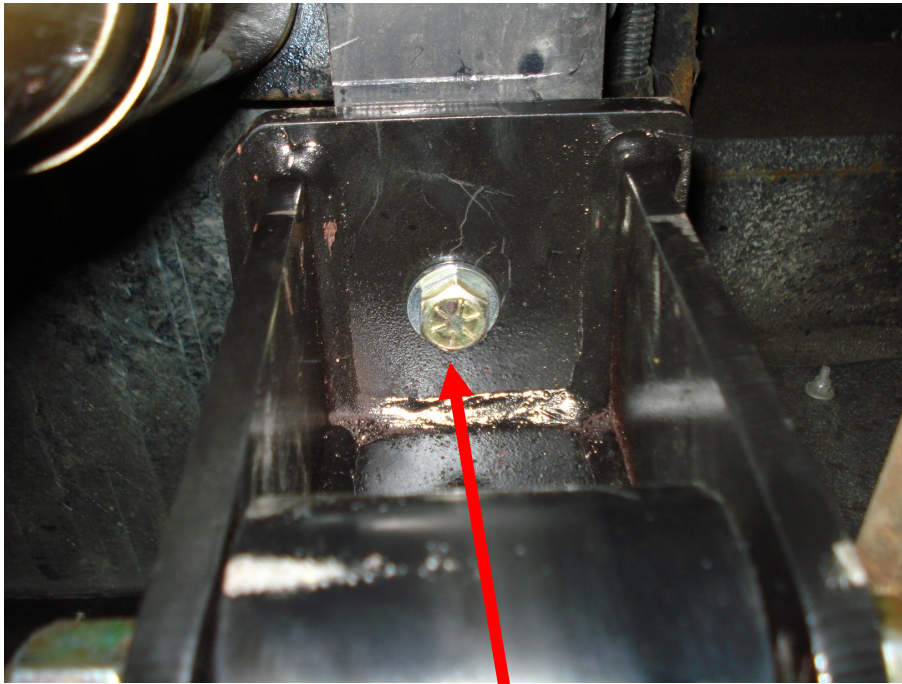


Drill 21/32" hole in these locations



6. Put the upper framework back in place. Start the 5/8 x 1 1/2" bolts in the forward holes in the upper framework. You will weld the upper framework to the frame mounting plates. Once the plates are welded together, tighten the 5/8" bolts to 135 ft/lbs. **You will need to locate a piece of steel to place on edge in between the upper framework where the air bags mount and between the cross member.** The piece of steel must be a minimum 1/2" thick and 1" tall. Each cross member is different so the size of steel will vary. Weld the piece in place so that the upper framework doesn't bend up when air is added to the bags. Check your clearance for the air bags to make sure there is enough room between the airbags and any potential obstructions.





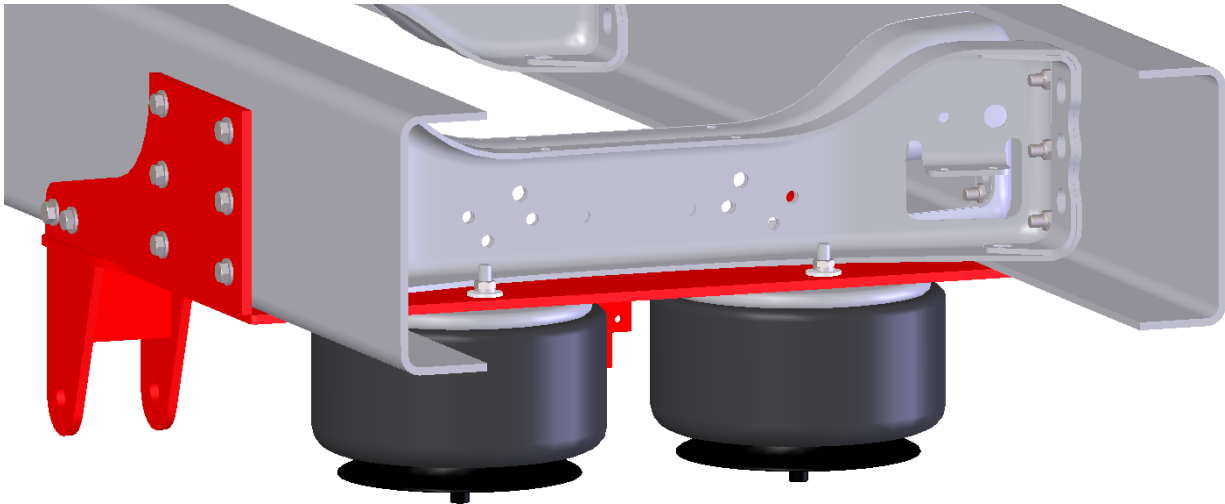
*Forward hole in upper  
bag framework with  
5/8" x 1-1/2" bolt installed*



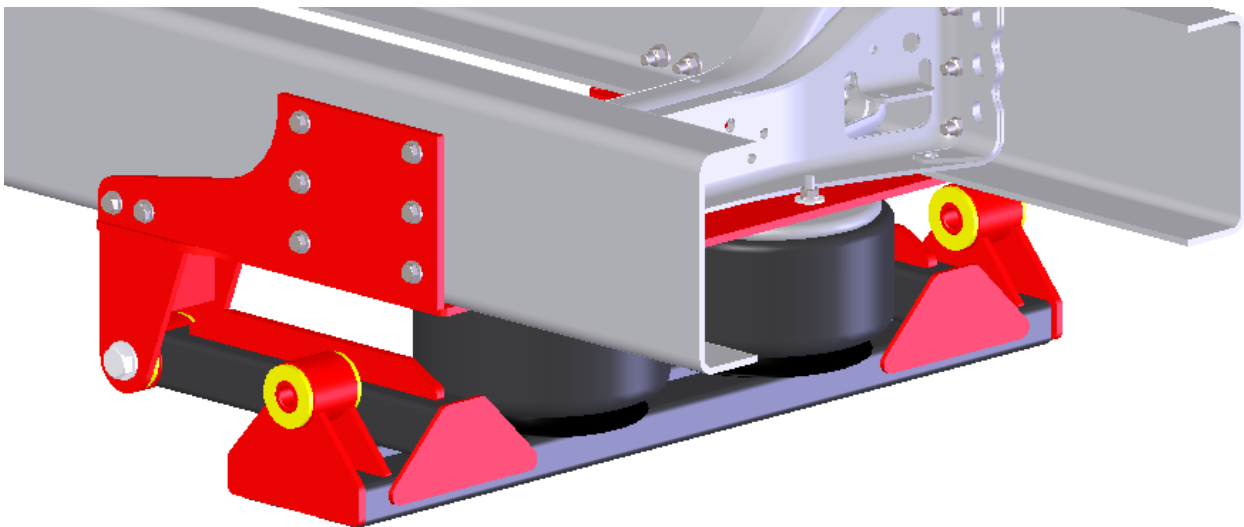
*If the factory cross  
member covers up  
the air bag hole,  
use a torch to  
make clearance.*



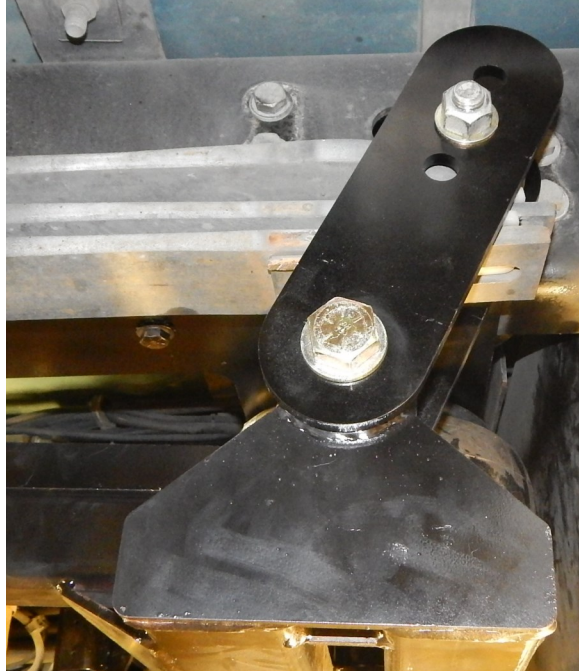
7. Once the upper framework is welded to the side plates, locate the F9039 air bags. Connect the top of the air bag to the upper frame work with the 3/4 and 1/2" lock washers and nuts.



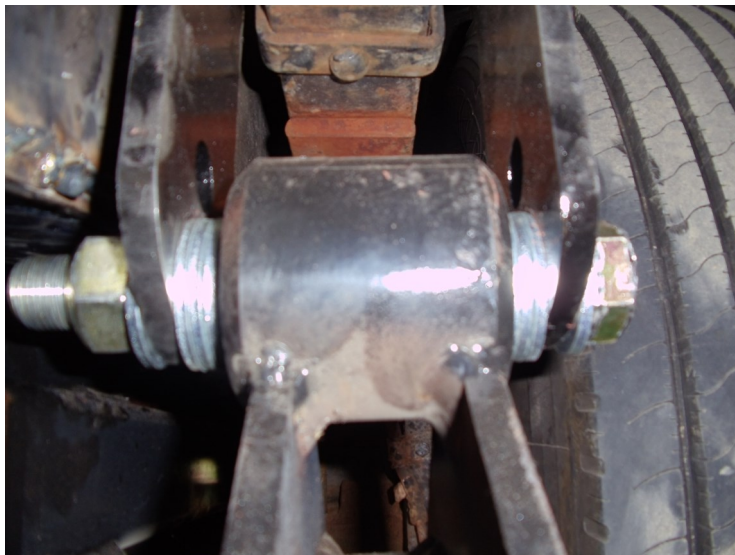
8. Locate the lower swing arm. This connects to the to upper framework with the 7/8" x 5-1/2" bolts. Use a slide clamp or strap to hold the assembly together. Adjust your strap or clamp so that there is 8" between the upper frame work and swing arm.



9. Locate your sliders (for units with flat springs) or side plates (for units with eyelets). The sliders have 3 holes in the bottom. Place the slider up over the leaf springs and see which hole lines up the best with the lower swing arm bushings. In most cases it is the middle hole. This will require the slider to be trimmed shorter. Use a torch or plasma cutter to cut the excess off the bottom.

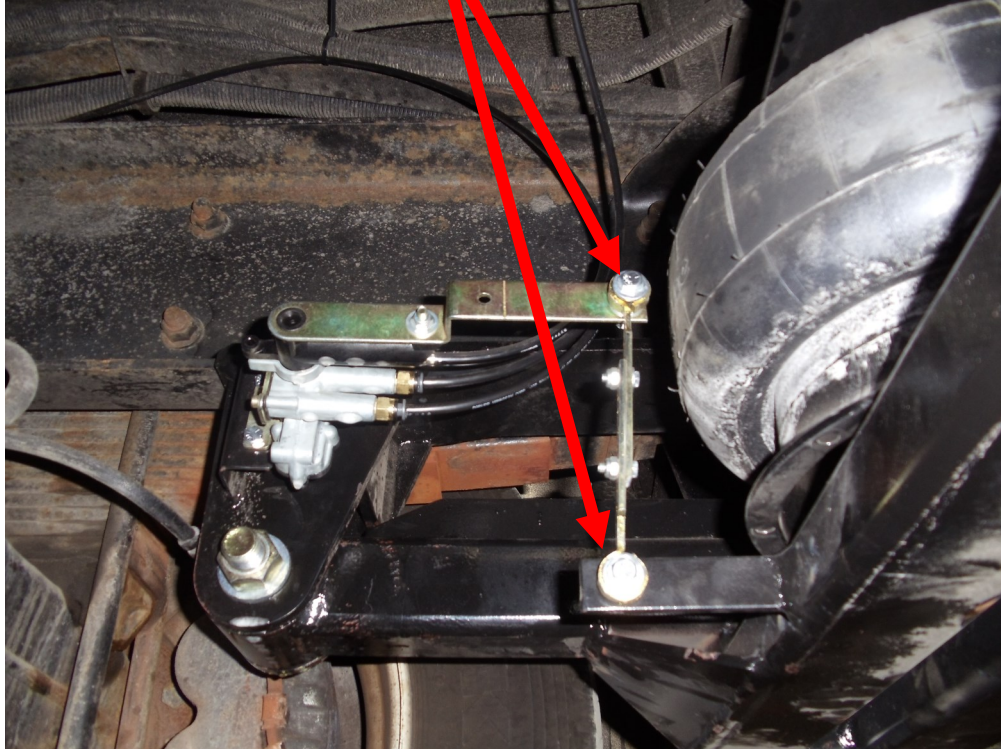


10. Place the slider over the leaf spring. You may have to remove the 1/2" x 6-1/2" bolt out of the slider to get it over the leaf spring. Connect the slider to the bottom swing arm with the 7/8" x 6-1/2" bolt. Use the 7/8" washers in between the swing arm bushing and slider sides. Usually one side will have more washers than the other side.



11. Locate the height control valve if supplied. Fasten it to the upper framework with the 1/4" x 1-1/2" bolts. The linkage needs to be set so the air bags are at 8" tall when the height control arm is parallel with the ground. Connect the linkage to the lower swing arm and the end of the height control linkage with the 1/4" x 1-1/2" bolts. Make sure to have a flat washer on the outside of the rubber on the linkage.

Height control valve linkage. Install a washer on outside of rubber bushings on linkage.



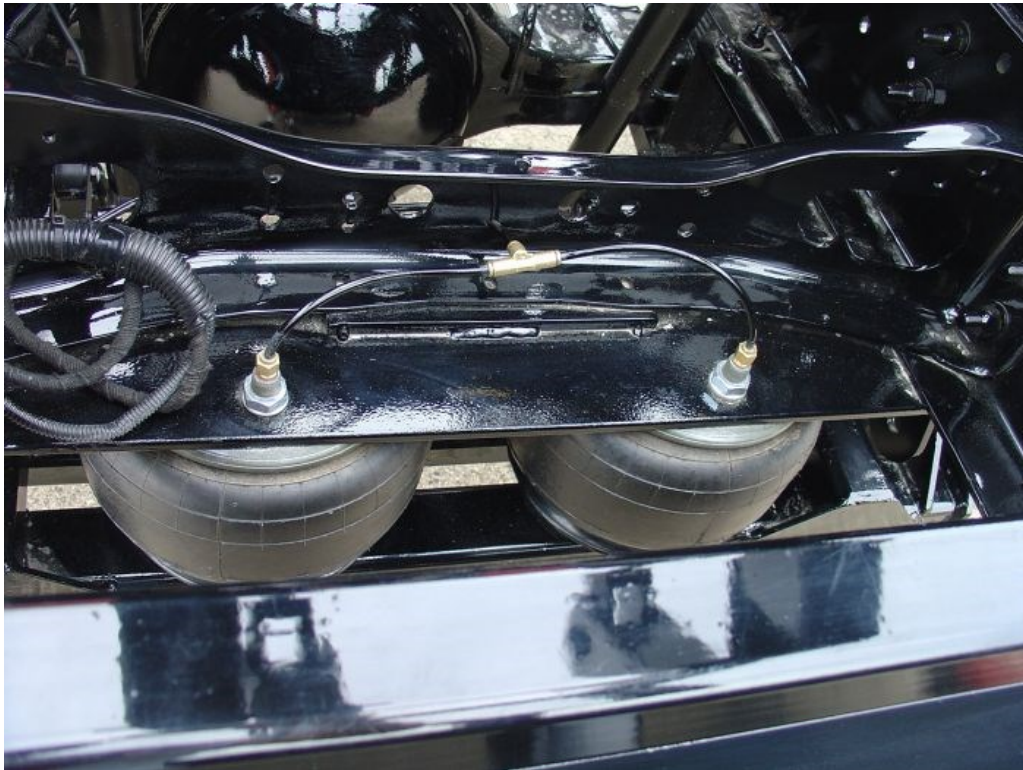




Firestone 9039 Air Bags shown at Ride Height, 8 inches tall.



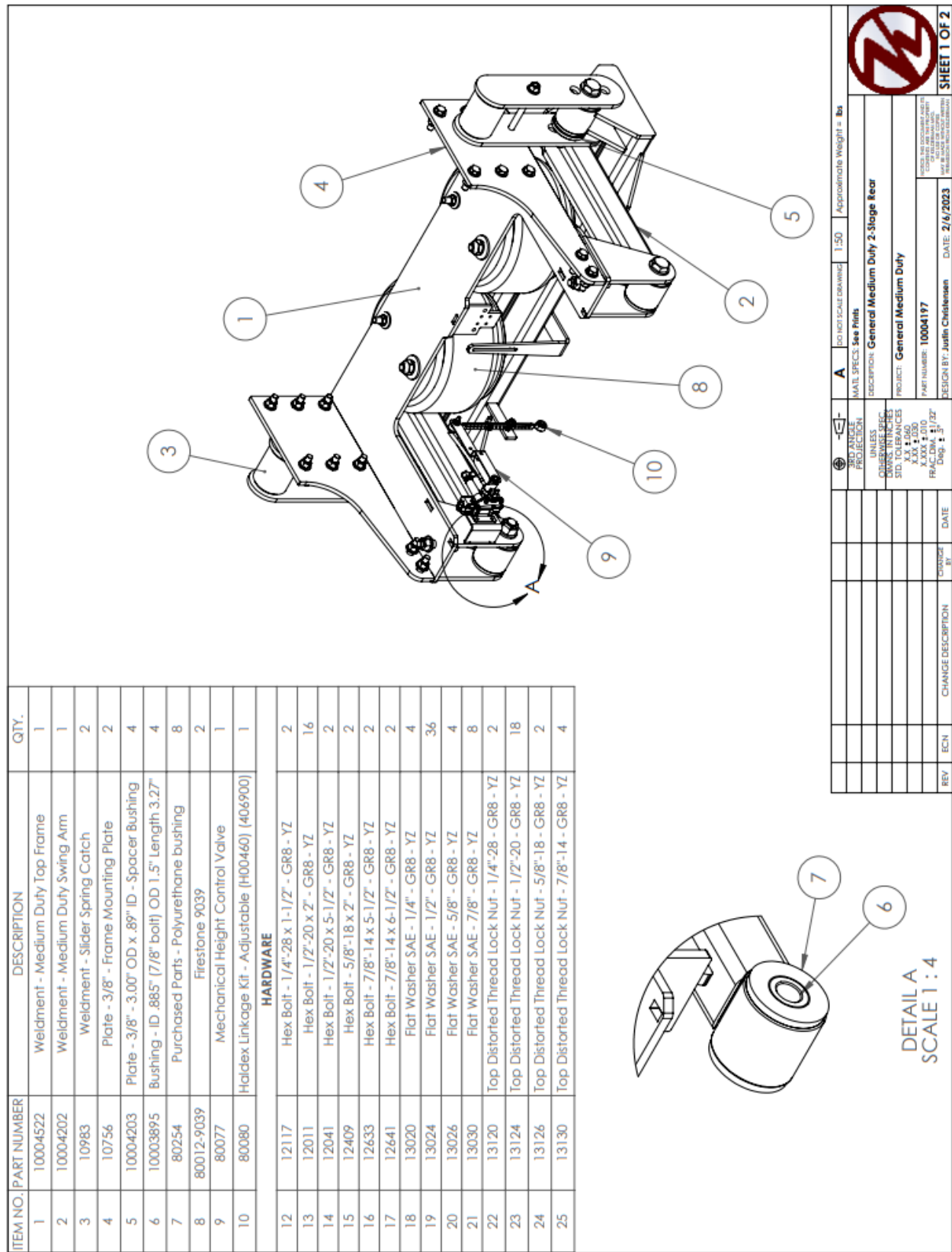
12. Once the height control valve and linkage is hooked up, you will need to hook it up to air supply. If the vehicle has on board air, run an air line and hook into the air tank. The air supply goes to the bottom port of the height control valve. The middle port of the valve goes out to the air bags. You will run a "T" fitting off the air line and go to each air bag. If you are installing the optional dump valve, you will install the dump valve in between the middle port of the valve and the air bags. The top port of the valve is the exhaust. **NOTE:** The height control valve has an 8 second delay, so don't be alarmed when there is a delayed action. If your truck does not have on board air use the wiring diagram included with the air supply that you purchased.



13. Now that the kit is assembled and at ride height, torque the 7/8" bolts to 300 ft/lbs. Make sure all the air lines are routed where they are not in risk of rubbing through. Use soapy water in a spray bottle to spray the air fittings to make sure you don't have any leaks.

14. Test drive the vehicle to ensure all components are working properly. Re-torque all bolts after at next service interval.





		SHEET 1 OF 2	
DESCRIPTION: General Medium Duty 2-Stage Rear		APPROXIMATE WEIGHT: 150 lbs	
PROJECT: General Medium Duty		DATE: 2/6/2023	
PART NUMBER: 10004197		DESIGN BY: Justin Chidester	
UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES STD. TOLERANCES FRACTIONS: 1/16" - 1/8" DECIMALS: .0005 - .001 ANGLES: 1/2° - 1°		SCALE: 1:1	
REV. ECN. CHANGE DESCRIPTION.		DATE	

