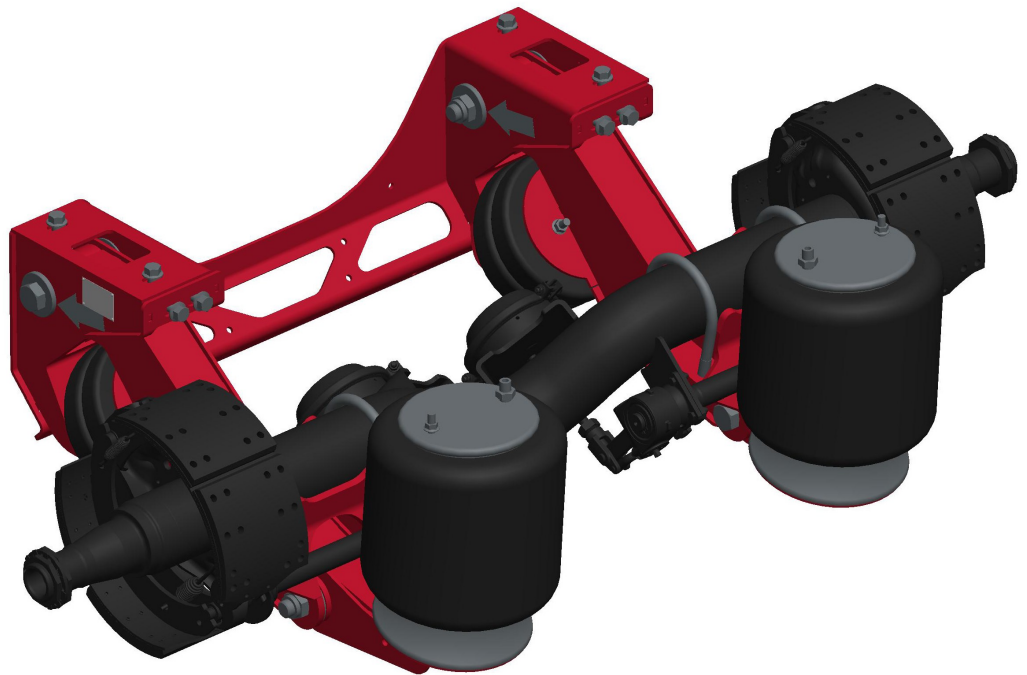


# **Link**® Auxiliary Suspensions

## **TRAILER INSTALLATION INSTRUCTIONS**

**8A000450 DuraMax**  
20,000 LB. CAPACITY



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**QUESTIONS?  
CALL CUSTOMER  
SERVICE  
1-800-222-6283**

Refer to separate Owner's Manual for details regarding  
operation and maintenance.

80000310  
SEP 18, 2014

**IMPORTANT:** IT IS IMPORTANT THAT THE ENTIRE INSTALLATION INSTRUCTIONS BE READ THOROUGHLY BEFORE PROCEEDING WITH SUSPENSION INSTALLATION.






## 1. INTRODUCTION

Thank you for choosing a Link DuraMax 20K Auxiliary Suspension. We want to help you get the best results from this suspension and to operate it safely. This manual contains information to introduce you to the Link DuraMax 20K Auxiliary Suspension and to assist you with its installation. This manual is intended solely for use with this product.

All information in this manual is based on the latest information available at the time of printing. Link Manufacturing reserves the right to change its products or manuals at any time without notice.

Damaged components should be returned to Link with a pre-arranged Returned Materials Authorization (RMA) number through the Customer Service Department. The damaged component may then be replaced if in compliance with warranty conditions.

## 2. SAFETY SYMBOLS, TORQUE SYMBOL, and NOTES

 <b>DANGER</b>	<b>DANGER</b> indicates a hazardous situation which if not avoided, will result in death or serious injury.
 <b>WARNING</b>	<b>WARNING</b> indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 <b>CAUTION</b>	<b>CAUTION</b> indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.
 <b>NOTICE</b>	<b>NOTICE</b> indicates a potentially hazardous situation which, if not avoided, may result in property damage.
 <b>TORQUE</b>	<b>TORQUE</b> indicates named fasteners are to be tightened to a specified torque value.
<b>NOTE:</b>	<b>NOTE</b> provides information or suggestions that help you correctly perform a task.

## 3. SAFE WORKING PRACTICES:

### 3.1 CAUTION

When handling parts, wear appropriate gloves, eyeglasses, ear protection, and other safety equipment.

### 3.2 CAUTION

Practice safe lifting procedures. Consider size, shape, and weight of assemblies. Obtain help or the assistance of a crane when lifting heavy assemblies. Make certain the path of travel is clear.

## 4. INSTALLATION GUIDELINES

**4.1** In order for this suspension to operate properly, it must operate in the parameters specified by Link.

**4.2** The installer must verify the trailer is configured properly for the lift axle(s) being added.

**4.3** It is the responsibility of the installer to determine the location of the suspension in order to obtain proper load distribution.

**4.4** Suspension Identification: Each assembly has an identification label located on the hanger of the suspension on the drivers side of the vehicle. The label includes the Link part number for the axle and the suspension serial number.

**4.5** No alterations of any Link suspension component is permitted without proper authorization from qualified Link personnel.

**4.6** No welding of any suspension components is permitted except when specified by Link.

### 4.7 CAUTION

The trailer manufacturer should be consulted before any modifications are made to the frame of the vehicle. Cutting or altering the frame in certain areas may affect the manufacturer's warranty.

### 4.8 WARNING

It is the responsibility of the installer to ensure that compliance with FMVSS 121 is maintained by the braking system.

### 4.9 CAUTION

Proper tightening of fasteners is important to the performance and safety of the suspension. Follow all torque specifications throughout the instructions.

## 5. PRE-INSTALLATION CHECKLIST

- ☐ Verify that the intended axle spacing to be used conforms to Federal and local bridge laws.
- ☐ Verify that the frame width matches the suspension specifications (41.25 to 42.75").
- ☐ Verify that adequate air supply exists to support braking requirements for the lift axle being installed.
- ☐ Verify tire clearance in all directions, with the axle lifted and lowered.
- ☐ Verify air spring clearance in all directions, with the axle lifted and lowered.
- ☐ Verify suspension clearance with truck components, with the axle lifted and lowered.

## 6. FRAME BRACKET KITS:

There are 2 frame bracket kits available to allow for a wide range of ride heights. See charts below for details.

## 7. RIDE HEIGHT AND FRAME ACCOMMODATIONS FOR DuraMax 20K SUSPENSION (8A000450)

**7.1 NOTICE** In order for the suspension to function properly, the "ride height" of the suspension must be within the range specified by Link Mfg. See the charts below for more information on available lift.

**7.2** Two ride heights exist for this suspension; 15.00" to 17.50" and 17.00" to 19.50".

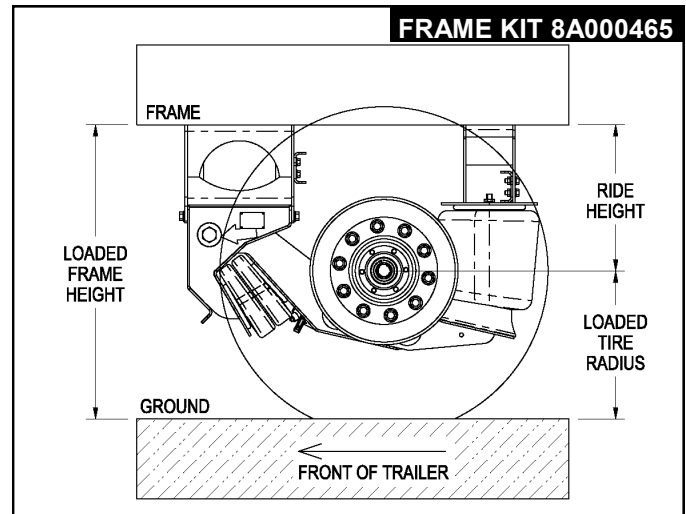
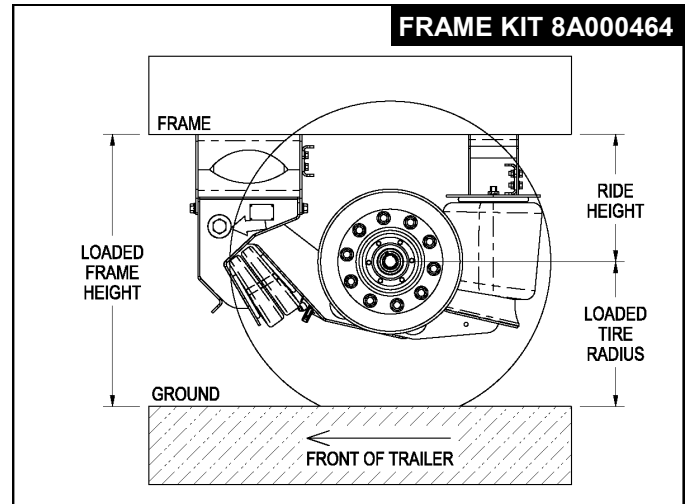
**7.3** To determine the appropriate Frame Mount Kit and chart, use the formula below.

$$\text{Loaded Frame Height} - \text{Loaded Tire Radius} = \text{Ride Height}$$

**7.4** With the correct chart, the amount of lift can be

found by intersecting the Loaded Tire Radius with the Loaded Frame Height.

**NOTE:** When measuring frame to ground clearance, be sure to measure with trailer loaded, at intended suspension location and on level ground.



20K LIFT CHART	RIDE HEIGHT 15.0" - 17.5" (FRAME MOUNT KIT 8A000464)														
LOADED FRAME HEIGHT	32.0	32.5	33.0	33.5	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	
TIRE RADIUS															
17 (LOADED)	3.5	4.0	4.5	5.0	5.5	6.0									
18 (LOADED)			3.5	4.0	4.5	5.0	5.5	6.0							
19 (LOADED)					3.5	4.0	4.5	5.0	5.5	6.5					
20 (LOADED)							3.5	4.0	4.5	5.0	5.5	6.0			
21 (LOADED)									3.5	4.0	4.5	5.0	5.5	6.0	

20K LIFT CHART	RIDE HEIGHT 17.0" - 19.5" (FRAME MOUNT KIT 8A000465)														
LOADED FRAME HEIGHT	34.0	34.5	35.0	35.5	36.0	36.5	37.0	37.5	38.0	38.5	39.0	39.5	40.0	40.5	
TIRE RADIUS															
17 (LOADED)	3.5	4.0	4.5	5.0	5.5	6.0									
18 (LOADED)			3.5	4.0	4.5	5.0	5.5	6.0							
19 (LOADED)					3.5	4.0	4.5	5.0	5.5	6.0					
20 (LOADED)							3.5	4.0	4.5	5.0	5.5	6.0			
21 (LOADED)									3.5	4.0	4.5	5.0	5.5	6.0	

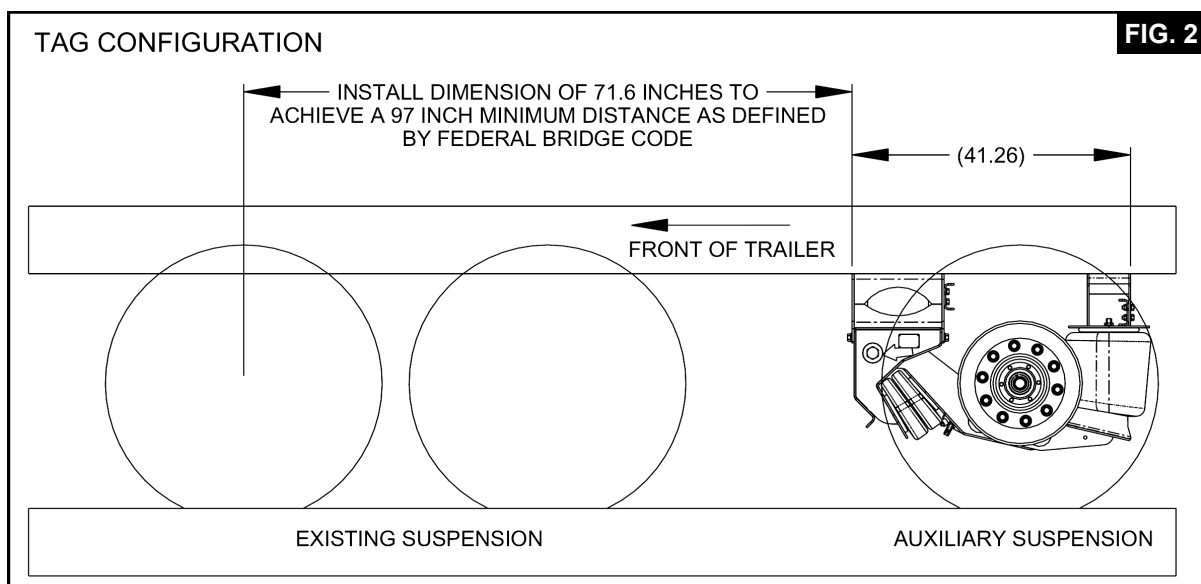
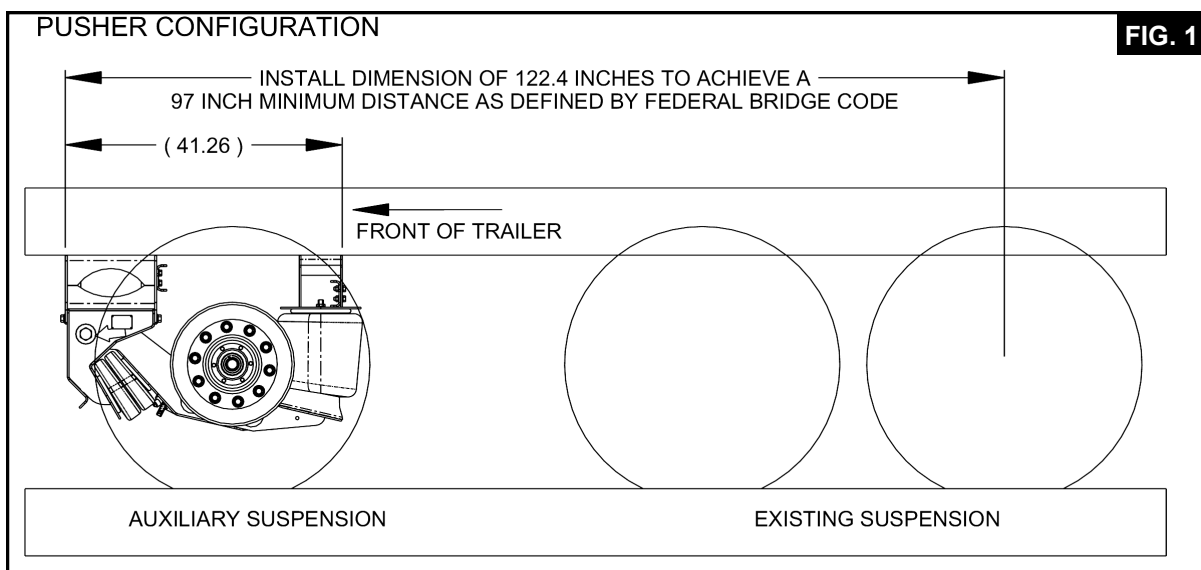
## 8. SUSPENSION LOCATION

**8.1** Before determining the suspension location, thoroughly review the pre-installation checklist found in Section 5 of this manual. Be sure that the trailer is located on a flat and level surface before measuring for suspension location. When this is complete, mark the suspension location and boundaries on the trailer frame rails. (See **Fig. 1** & **Fig. 2** below for details). Contact Link Application Specialists for answers to any additional questions.

**8.2** Prior to suspension installation, any interference with existing frame bolts or brackets should be addressed. If any modification to the auxiliary suspension is needed, you should consult Link.

**NOTE:** Trailer frame cross-members should be located at or near the front frame brackets.

**NOTE:** For purposes of increased weight carrying capacity or better weight distribution, these dimensional distances may be increased but never decreased less than the specified minimum distance between references.



## 9. SUSPENSION INSTALLATION

**NOTICE** For trailers with aluminum frames or other applications that do not allow for weld on installation, follow the trailer manufacturer's guidelines for attaching the suspension.

**9.1** With the suspension location determined, prepare the frame of the trailer and the trailer brackets for welding by removing paint from the areas requiring weld (See **Fig 4** for details).

**9.2** Clamp the front and rear frame brackets tightly to the bottom of the trailer frame rails at the distance shown in **Fig 3**. Remember, alignment slots will allow the axle to move fore and aft

**9.3** Loosely assemble one lateral crossmember to the back of the front frame bracket set and one to the back of the rear frame bracket set using mounting hardware provided (see **Fig 5** for details).

**9.4** Double check the suspension location and check for any interference concerns. Also, check that welding will not interfere with any brake lines, air lines, wiring, or other components that might be located near the mounting areas of the frame brackets

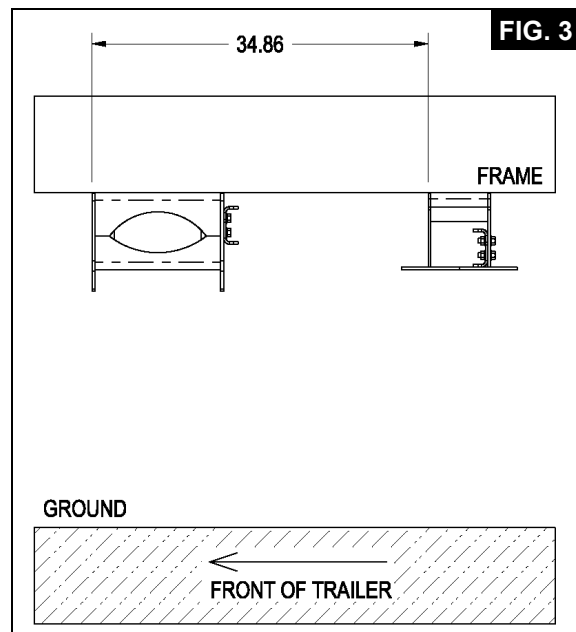
**NOTICE** The welding in the following steps should only be performed by a certified welder.

**9.5** With the frame brackets clamped in place, tack the front and rear frame brackets into place.

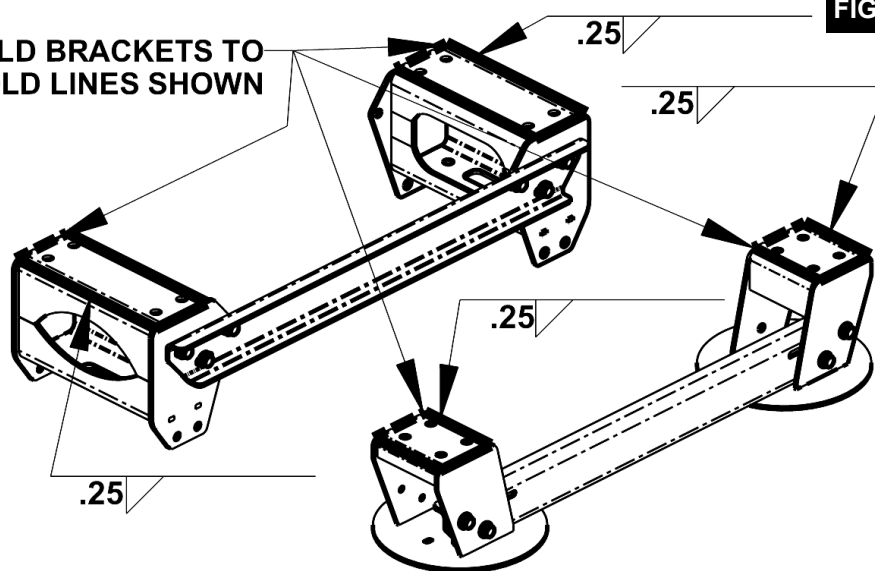
**9.6** Once tacking is complete, recheck position and alignment of the frame brackets. If the brackets have the correct position and alignment, proceed

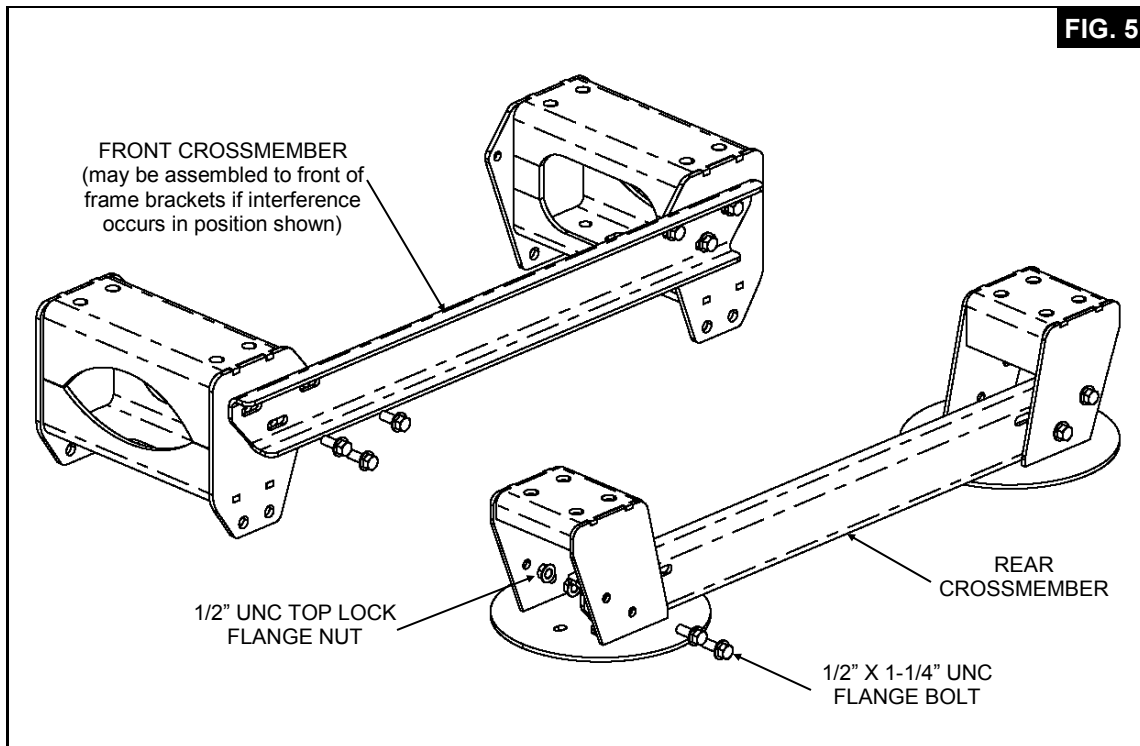
with the next step. If not, remove tack welds, adjust, tack again, and re-check until brackets are in the proper place.

**9.7** Using the welding information given in **Fig 4**, completely weld all four frame brackets to the trailer frame



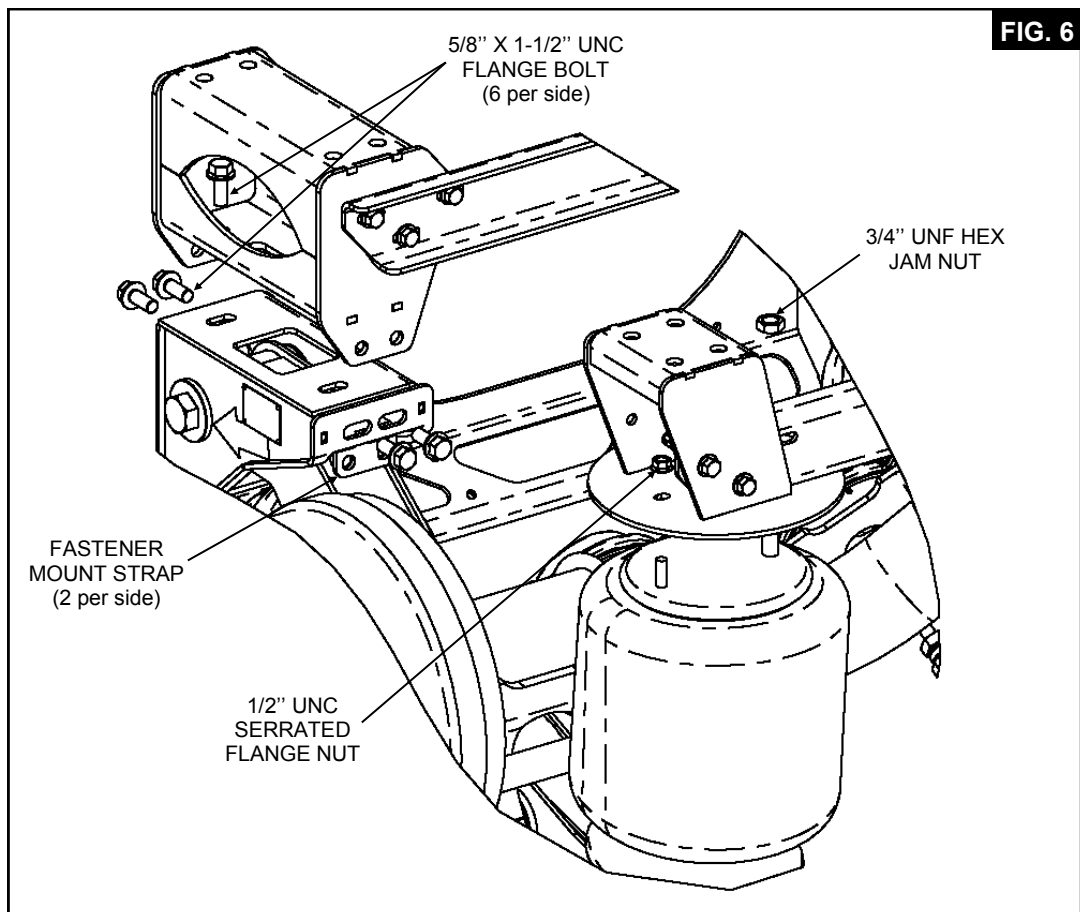
**REMOVE PAINT AND WELD BRACKETS TO TRAILER FRAME ALONG BOLD LINES SHOWN**





**9.8** Assemble the suspension to the front frame brackets using the provided mounting hardware (See **Fig. 6** for fastener detail)

**NOTE:** Center the suspension on the trailer with the frame width adjustment slots.



**TORQUE** 5/8" nuts to 180-230 FT-LBS.

9.9 Assemble the air springs to rear frame brackets using the 1/2" and 3/4" mounting hardware (See Fig. 6 for fastener detail).

**TORQUE** 1/2" nut to 20-30 FT-LBS.

**TORQUE** 3/4" nut to 45-50 FT-LBS.

## 10. AXLE ALIGNMENT

10.1 Once the suspension is securely fastened and the mount fasteners tightened to the proper torque, the axle must be aligned. To accomplish this, there are 4 alignment slots and 4 alignment collars in the hanger brackets, which allow fore and aft movement of the axle (See Fig. 7).

**NOTE:** Alignment collars are held in place by 1 1/8" UNC bolts that have been pre-torqued at factory, but still allow fore and aft movement of the axle.

10.2 Set the suspension at ride height and set front steer axle wheels so that they are steering straight ahead.

10.3 Inspect each tire set so that they are inflated to the proper air pressure. Also check that each tire's radius is matched to within 1/8" of the other tires within the wheel set.

10.4 Secure the truck and release the brakes on the auxiliary suspension. This will allow fore and aft adjustment of the axle within the alignment slot.

10.5 Position auxiliary axle so that the alignment collar is centered in the alignment slot on one side. Tack weld the alignment collar to the hanger bracket (one side only).

10.6 With one side of the auxiliary suspension tacked, measure the distance from the center of the front axle spindle to the center of the auxiliary axle spindle.

10.7 Adjust the non-tacked side of the auxiliary suspension within the alignment slot so that it is equal distance from the center of the front axle spindle on both sides. A maximum difference of 1/8" is acceptable.

10.8 If alignment is not attainable by steps 5-7, remove tack weld from step 5 and adjust axle as needed.

10.9 Double check alignment. If acceptable, finish weld with a 1/4" weld completely around the 4 alignment collars. Perform welds in 3-4 steps to avoid excess heat (See Fig. 7).

10.10 Paint over welds to prevent rust.

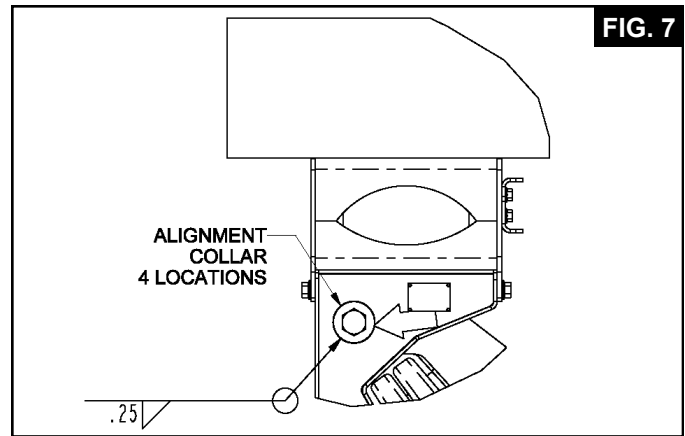


FIG. 7

## 11. PLUMBING

11.1 Connect the load springs and lift springs to the air control system (see Fig. 8 for a typical configuration example).

**NOTE:** Contact Link for available air control options.

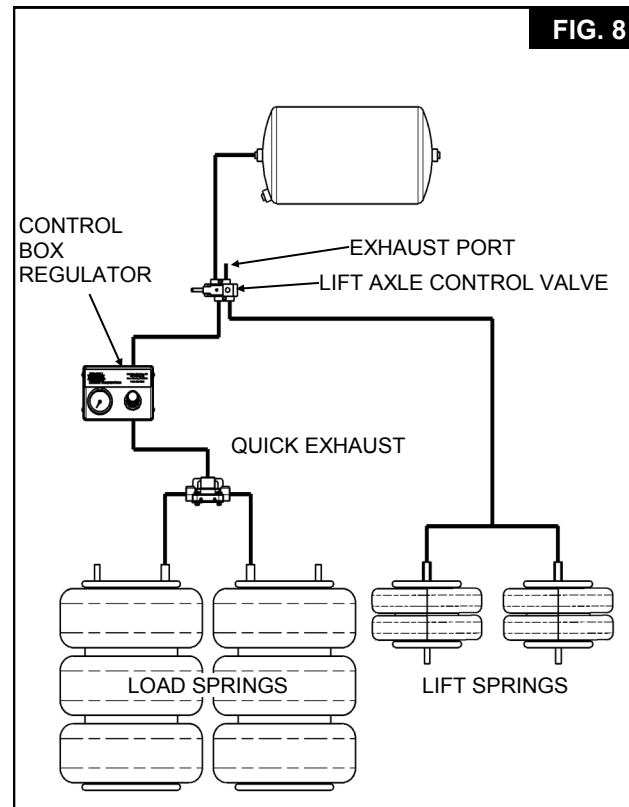


FIG. 8

## 12. FINAL ASSEMBLY AND INSPECTION CHECKLIST

- ☐ Are all 4 alignment collars welded around completely?

**NOTE:** These are located on the inside and outside of the frame mounted hanger brackets.

- ☐ Are all fasteners installed and bolts tightened to proper torque specifications? **NOTE:** All fasteners torque specifications are given for dry fasteners with no additional lubrication required.
- ☐ Are all wheel lug nuts tightened to recommended torque specifications?
- ☐ Is air control installation complete and checked for leaks and proper operation?
- ☐ Has the suspension been raised and lowered, and inspected for any interference between the auxiliary suspension and any trailer components?
- ☐ Are brakes and slack adjusters properly set, and the wheels free to rotate?
- ☐ Are wheel hubs sufficiently filled with the manufacturer's specified lubricant?

**NOTICE** With the trailer unloaded, the auxiliary axle's ride springs must be limited to a maximum of 20 psi to avoid improper weight distribution or component damage.

Refer to separate Owner's Manual for details regarding operation and maintenance.



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