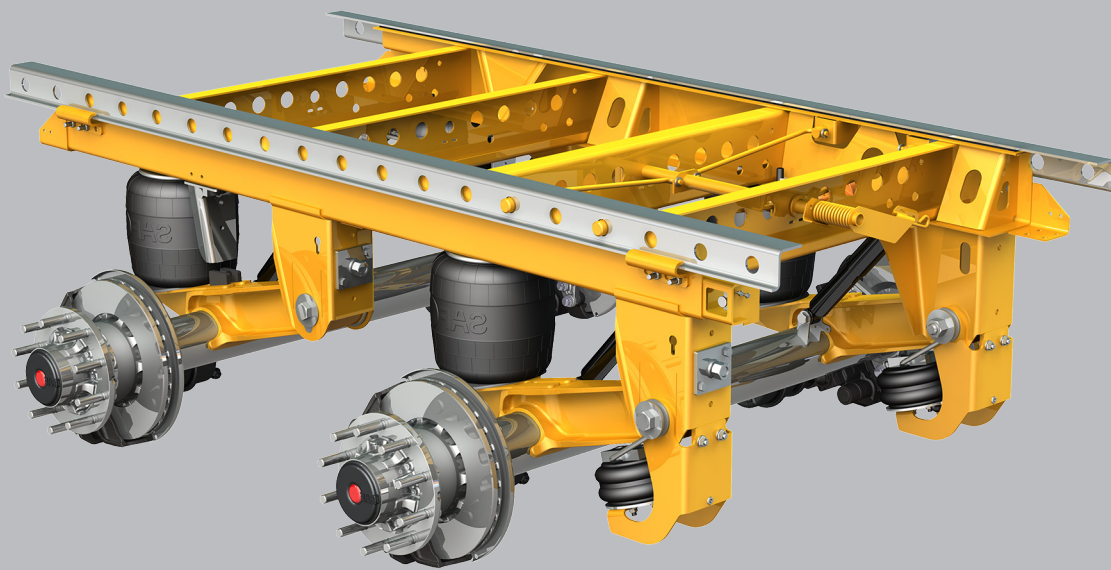


Maintenance Manual

CBX Slider Suspension System with Auto-PosiLift™

- For Disc and Drum Brake Applications



Contents	Page
Introduction	2
Warranty	2
Notes, Cautions, and Warnings	2
Section 1 – General Safety Instructions	3
Section 2 – CBX Slider Suspension System with Auto-PosiLift™ Model Identification	4
Section 3 – Welding Standards	5
Section 4 – Pre-Operation	6
Section 5 – Standard Air Control System	7
Section 6 – Ride Height Adjustment	8
Section 7 – Height Control Valve Performance Check.....	9
Section 8 – SwingAlign™ Axle Alignment.....	10
Section 9 – Air Spring Replacement.....	11

Contents	Page
Section 10 – Shock Absorber Replacement	12
Section 11 – Pivot Connection Bushing Replacement.....	13
Section 12 – Equalizing Beam and Axle Assembly Replacement .	16
Section 13 – Frame Bracket Replacement	18
Section 14 – Pivot Mount Bracket Replacement.....	20
Section 15 – Auto-PosiLift™ Air Spring Replacement	22
Section 16 – Bearing Block Replacement.....	23
Section 17 – Guide Arm Replacement.....	23
Section 18 – SwingAlign™ Replacement	24
Section 19 – Torque Specifications	27
Section 20 – Maintenance and Service Schedule	28
Section 21 – Troubleshooting	29

Introduction

This manual provides the information necessary for the maintenance of the SAF-HOLLAND® CBX trailer air suspension and slider system with Auto-PosiLift™ and is designed to automatically raise and/or lower the front axle for trailer load requirements.

NOTE: The CBX slider suspensions include premium 5.75" diameter axles.

NOTE: For axle end/brake components replacement, contact SAF-HOLLAND® Customer Service at 888-396-6501.

This suspension uses air drawn from the tractor air system to pressurize the air springs. The height control valve (HCV) regulates the air pressure required for varying loads while maintaining the design ride height. This suspension provides a cushioned ride throughout the load range, from empty to fully loaded.

The suspension also provides excellent side-to-side and axle-to-axle loading which helps equalize and control braking.

Warranty

Refer to the complete warranty for the country in which the product will be used. A copy of the written warranty is included with the product and can be found on the SAF-HOLLAND® website (www.safholland.com).

Notes, Cautions, and Warnings

Before starting any work on the unit, read and understand all the safety procedures presented in this manual. This manual contains the terms "NOTE", "IMPORTANT", "CAUTION", and "WARNING" followed by important product information. These terms are defined as follows:

NOTE: Includes additional information to enable accurate and easy performance of procedures.

IMPORTANT: Includes additional information that if not followed could lead to hindered product performance.

CAUTION Used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, could result in property damage.

CAUTION Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

1. Safety Instructions

General and Servicing Safety Instructions

- Read and observe all Warning and Caution hazard alert messages. The alerts provide information that can help prevent serious personal injury, damage to components, or both.

⚠ WARNING Failure to follow the instructions and safety precautions in this manual could result in improper servicing or operation leading to component failure which if not avoided could result in death or serious injury.

- All maintenance should be performed by a properly trained technician using proper/special tools, and safe procedures.

NOTE: In the United States, workshop safety requirements are defined by federal and/or state Occupational Safety and Health Act (OSHA). Equivalent laws could exist in other countries. This manual is written based on the assumption that OSHA or other applicable employee safety regulations are followed by the location where work is performed.

- Properly support and secure the vehicle from unexpected movement when servicing the unit.

⚠ WARNING Failure to properly support and secure the vehicle and axles prior to commencing work could create a crush hazard which, if not avoided, could result in death or serious injury.

- If possible, unload the trailer before performing any service procedures.
- After pre-positioning the brake chamber, slack adjuster and/or ABS system as instructed in this manual, always consult the manufacturer's manual for proper operation.
- Service both roadside and curbside of an axle. Worn parts should be replaced in sets. Key components on each axle's braking system, such as friction material, rotors and drums will normally wear over time.
- Follow all manufacturer's instructions on spring pressure and/or air pressure controls.

⚠ WARNING Failure to follow manufacturer's instructions regarding spring pressure or air pressure control could allow unexpected release of energy which, if not avoided, could result in death or serious injury.

- paint the wheel contact surfaces between the wheel and hub.

IMPORTANT: The wheel contact surfaces **MUST** be clean, smooth and free from grease.

⚠ WARNING Failure to keep wheel and hub contact surfaces clean and clear of foreign material could allow wheel/hub separations which, if not avoided, could result in death or serious injury.

- Only the wheel and tire sizes approved by the trailer builder can be used.

Operational and Road Safety Instructions

- Before operating vehicle, ensure that the maximum permissible axle load is NOT exceeded and that the load is distributed equally and uniformly.

- Make sure that the brakes are NOT overheated from continuous operation.

⚠ WARNING Failure to minimize the use of brakes during overheating conditions could result in deterioration of brake efficiency which, if not avoided could result in death or serious injury.

- The parking brake **MUST NOT** be immediately applied when the brakes are overheated.

CAUTION If the parking brake is immediately applied to the brakes when overheated, the brake drums or discs could be damaged by different stress fields during cooling.

- Observe the operating recommendation of the trailer manufacturer for off-road operation of the installed axles.

IMPORTANT: The definition of OFF-ROAD means driving on non-asphalt/non-concrete routes, e.g. gravel roads, agricultural and forestry tracks, on construction sites and in gravel pits.

IMPORTANT: Off-road operation of axles beyond the approved application design could result in damage and impair suspension system performance.

- Follow the recommended routine maintenance and inspections described in this manual. These procedures are designed so that optimum performance and operational safety are achieved.
- In the event of suspension air pressure loss, quickly reduce speed as safely as possible and remove the vehicle from traffic. If unable to remove vehicle from traffic, follow DOT safety requirements regarding emergency situations.
- Contact a qualified towing and/or service company to assist in repairing the vehicle or to move it to a qualified repair facility. **DO NOT** operate the vehicle in the absence of suspension air pressure; however in the event of an air system failure while in service, an internal rubber bumper built into the air spring will make it possible to temporarily operate the vehicle at reduced speed determined by road conditions.

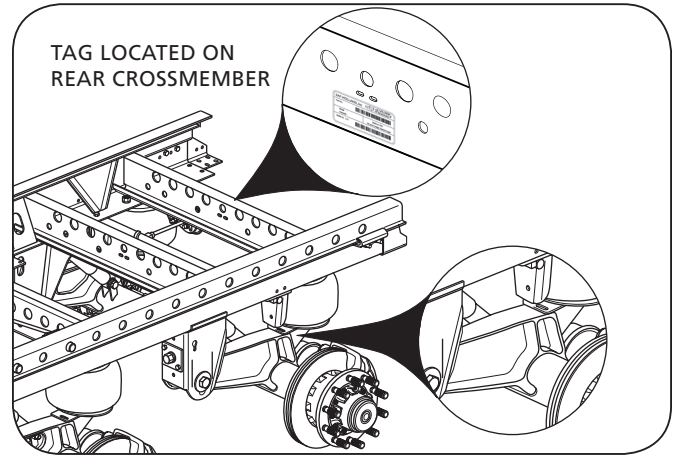
⚠ WARNING Operating the vehicle without proper air pressure can cause tire failure, fire, or loss of vehicle control which, if not avoided could result in death or serious injury.

2. CBX Slider Suspension with Auto-PosiLift™ Model Identification

The CBX slider suspension's serial tag is located on the rear crossmember (*Figure 1*).

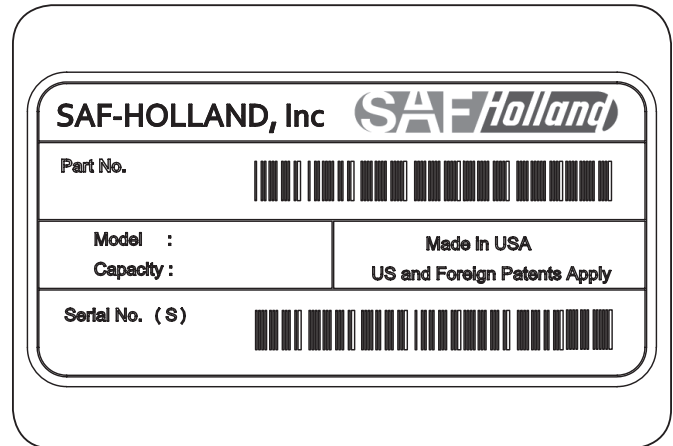
- NOTE:** Refer to the serial tag attached to the slider rear crossmember for information (*Figure 1*).
- NOTE:** If the suspension serial tag is NOT legible or is NOT available, the suspension model can be identified by the appearance of the PosiLift™ bracket on the front axle (*Figure 1*).
- NOTE:** This manual applies to the suspension models listed on the front cover. When the specific model number is determined, it is strongly recommended that the information is written below and referred to when obtaining information or replacement parts (*Figure 2*).

Figure 1

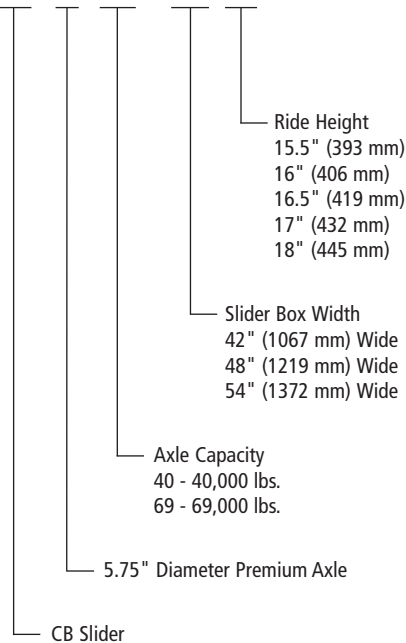


The sample tag illustrated will interpret the information on the SAF-HOLLAND®, Inc. serial tag. The part number is on the first line. The model number along with the suspension capacity are on the second line. The third line contains the serial number (*Figure 2*).

Figure 2



CB X 40 - 48 16



3. Welding Standards

3.1 Scope

The SAF® suspension has been designed to be installed on a trailer with no welding required. When welding is required for suspension repairs, observe the requirements below. Customers may NOT weld on an SAF® suspension without our prior approval, including the application of the American Welding Society standards by SAF-HOLLAND® engineering. This specification applies to all components supplied by SAF-HOLLAND®, and its products. The customer assumes all responsibility for weld integrity if weld material and procedure differ from those listed below.

3.2 Material

Frame attachment components made from low carbon or high strength alloy steel are to be welded with AWS filler metal specification AWS A5.18, filler metal classification ER-70S-3, ER-70S-6 or equivalent unless specified on the installation drawing.

NOTE: Any substitution for filler material from the above standard MUST comply, as a minimum, with the following mechanical properties:

Tensile Strength - 72k psi (496 MPa)
Yield Strength - 60k psi (414 MPa)
Charpy V notch - 20 ft.-lbs. (27 N•m) at 0°F (-17.7°C)
% Elongation - 22%

The recommended welding gas for gas metal arc welding (GMAW) is 90% Argon/10% CO₂. If a different gas is used, welds MUST comply with penetration requirements as illustrated below (**Figure 3**). Where the installation drawing specifies different than above, the drawing shall prevail.

3.3 Procedures

Tack welds used for positioning components are to be located in the center of the final weld, where practical. Tack weld should be completely fused to the finish weld. DO NOT break arc at the end of the weld. Back up all finish welds at least 1/2" (12 mm) or a sufficient amount to prevent craters at the end of the weld. Where weld is shown to go around corners, it is assumed the corner represents a stress concentration area. DO NOT start or stop weld within 1" (25 mm) of the corner. Particular care should be taken to prevent undercutting in this area.

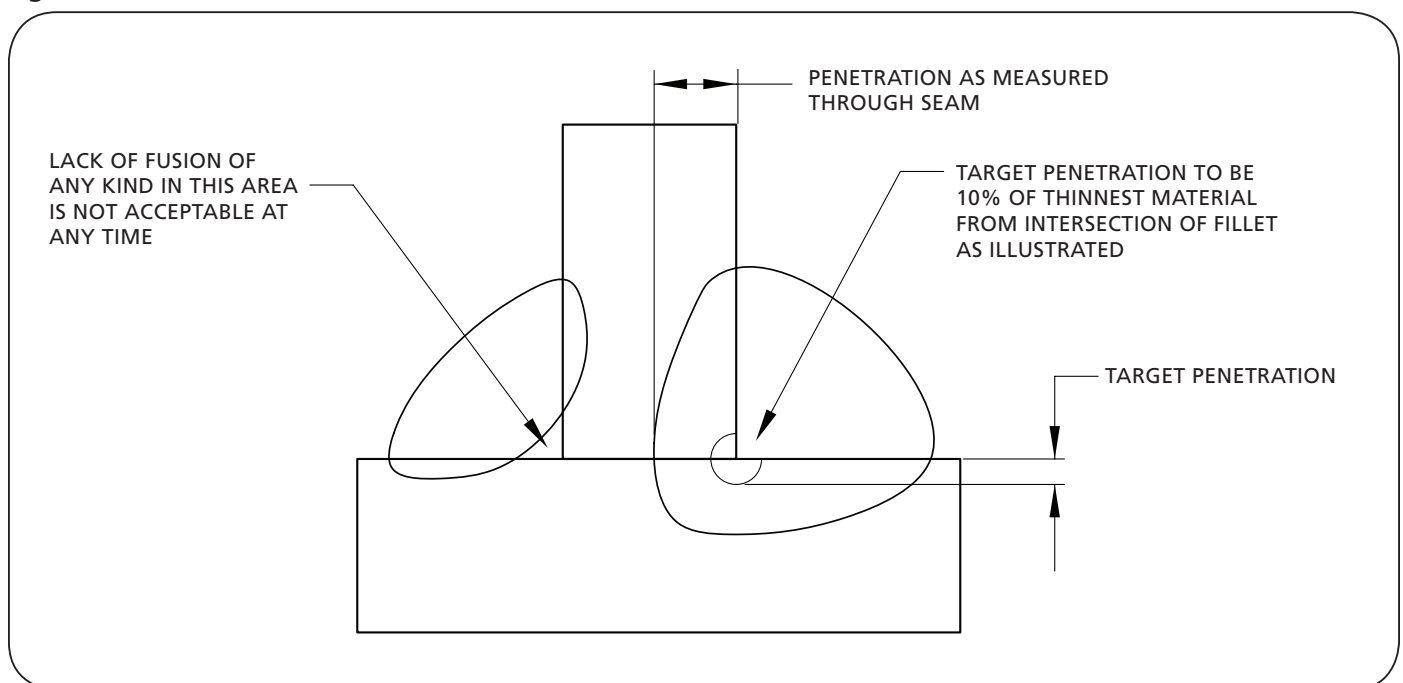
3.4 Workmanship

It is the responsibility of the Customer to provide good workmanship when attaching components to the frame structure.

3.5 Weld Size

If weld size is NOT specified, the effective throat of the weld MUST NOT be smaller than the thinnest material being welded (**Figure 3**).

Figure 3



4. Pre-Operation

1. With the vehicle on a level surface, bring air system to operating pressure, above 85 psig/5.9 bars.
2. Shut off the vehicle and inspect all air control system fittings for air leaks by applying a soapy water solution and checking for bubbles at all connections and fittings. Examine the air springs (**Figure 19**) for equal firmness.

IMPORTANT: It is the responsibility of the air system installer to secure all air lines and check for any air leaks. If air leaks are detected, repair is required.

CAUTION

Failure to eliminate air leaks could compromise suspension's performance which, if not avoided, could result in component or property damage.

3. Exhaust the air from suspension air springs using the valve that controls the PosiLift™. Refer to the plumbing diagram in Sections 5.
4. Check the shock absorbers for proper installation and make sure that the upper and lower 3/4" shock absorber nuts are torqued to 140-175 ft.-lbs. (190-237 N•m) (**Figure 4**).
5. Verify that the 1/2" air spring mounting nuts are torqued to 30-40 ft.-lbs. (41-54 N•m), and the 3/4" air spring mounting nuts are torqued to 40-45 ft.-lbs. (54-61 N•m) (**Figure 4**).

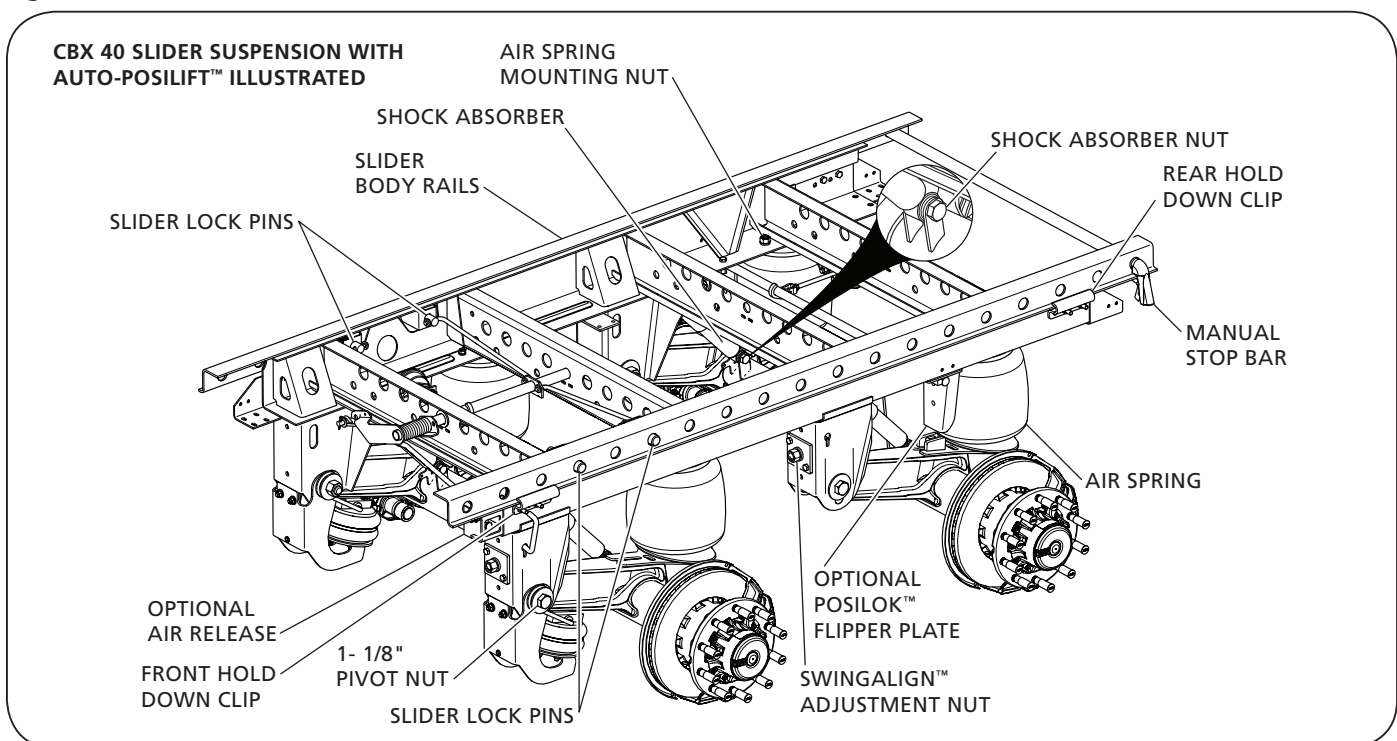
6. With the suspension at full capacity, check that there is a 1" (25 mm) minimum clearance around the air springs.
7. The suspension's ride height should be within $\pm 1/4$ " (6 mm) of the recommended design height. For proper height, refer to Slider Assembly Section 7.
8. Verify that the 1-1/8" pivot nut are torqued to 550-600 ft.-lbs. (746-813 N•m) (**Figure 4**).

IMPORTANT: The SwingAlign™ design maintains proper alignment under correct torque without welding; DO NOT weld (**Figure 4**).

NOTE: SwingAlign™ pivot connections are on roadside and fixed alignment pivot connections are on curbside. For SwingAlign™ Connection Axle Alignment procedure, refer to Section 7.

9. The vehicle is equipped with a PosiLok™ feature, make sure there is a 1" (25 mm) minimum clearance between the bottom of the flipper plate and the top of the beam pad when at ride height (**Figure 4**).
10. Check that the slider locking pins, slider pull-bar mechanism, and slider wear pads (**Figure 4**) are operating properly. For slider repositioning instructions, refer to procedures described in Section 10 of this manual.
11. Inspect the front and rear hold down clips (**Figure 4**) to make sure that they are correctly secured around the slider body rails. Torque all 1/2" hold down clip nuts to 75-90 ft.-lbs. (102-122 N•m).

Figure 4



5. Standard Air Control System

The air control system of the CBX slider suspension with Auto-PosiLift™ uses air drawn from the tractor air system to pressurize the suspension's air springs. The suspension, working with the air control system, provides optimum suspension performance only when all air control system components are installed and operating properly.

IMPORTANT: Make certain that all air lines and valves are free from obstruction through the full operational range of the suspension.

IMPORTANT: A pressure protection valve (PPV) **MUST** be attached to the air reservoir in order to maintain proper air pressure (**Figure 5**).

IMPORTANT: The pressure protection valve (PPV) maintains safe brake pressure. Approximately 85 psig (5.9 bars) opens the valve, and 65 psig (4.5 bars) closes the valve.

NOTE: When installing pressure protection valve, use a drop of oil or loctite® to lubricate threaded connections. **DO NOT** use a pipe compound or teflon tape because they could clog the valve.

A height control valve (HCV) is used to regulate the air pressure required for varying load capacities (**Figure 5**).

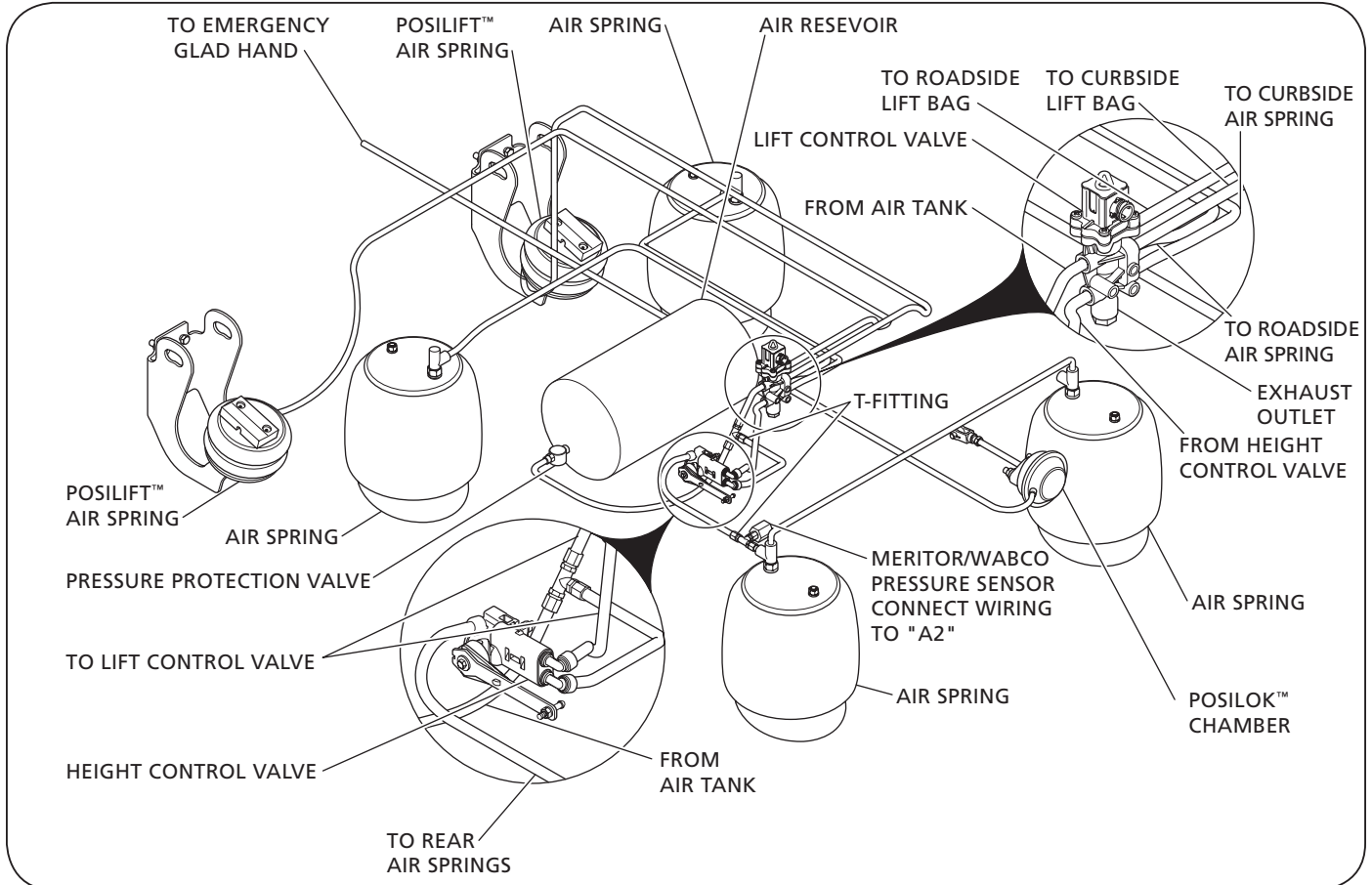
Optional Air Release System

If the CBX was ordered with a slider pull pin air release system, the air release control valve and the actuator will need to be plumbed. The Plumbing Diagram can be obtained in the Air Release Pin Pull Mechanism Installation and Operations Manual XL-AR452 Rev D, or contact SAF-HOLLAND® Customer Service at 888-396-6501.

PosiLok™ System

This CBX was ordered with a Auto-PosiLok™ anti-dock walk system. The PosiLok™ actuator will need to be plumbed (**Figure 5**).

Figure 5



6. Ride Height Adjustment

1. Ensure that the linkage assembled to the height control valve (HCV) and suspension is the appropriate length (**Figure 10**).

IMPORTANT: A 15" linkage is used for ride heights of 15.5" -17" A 16" linkage is required for 18" ride heights (**Figure 6**).

CAUTION Failure to match the linkage length to the design ride height could result in improper suspension height which, if not avoided, could result in damage to trailer components.

2. Install service and emergency lines to the slider and allow the suspension to air up.
3. Measure the ride height of the suspension (**Figure 7**) with a tape measure.
4. Compare the measured suspension ride height value to the appropriate value (**Table 1**). Make sure the measured ride height value is within $\pm 1/4"$ (6 mm).

Table 1

CBX SLIDER SUSPENSION W/ AUTO-POSILIFT™	"A" RIDE HEIGHT
CBX 4215.5 / 4815.5 / 5415.5*	15.5"
CBX 4216 / 4816 / 5416*	16"
CBX 4216.5 / 4816.5 / 5416.5*	16.5"
CBX 4217 / 4817 / 5417*	17"
CBX 4218 / 4818 / 5418*	18"

*These numbers refer to the last digits of the model number.

IMPORTANT: If the measured ride height value is NOT within $\pm 1/4"$ (6 mm); use the table to verify the linkage length (**Table 2 and Figure 10**), and the hole location where the top mounting stud of the height control valve (HCV) is bolted to the mounting bracket (**Figure 8**).

Table 2

RIDE HEIGHT	HOLE LOCATION	LINKAGE LENGTH
15.5"	TOP HOLE	15"
16"	2ND HOLE	15"
16.5"	3RD HOLE	15"
17"	4TH HOLE	15"
18"	4TH HOLE	16"

5. Once proper ride height is achieved, visually check all air control system fittings for air leaks by applying a soapy water solution and checking for bubbles at all air connections and fittings.

Figure 6

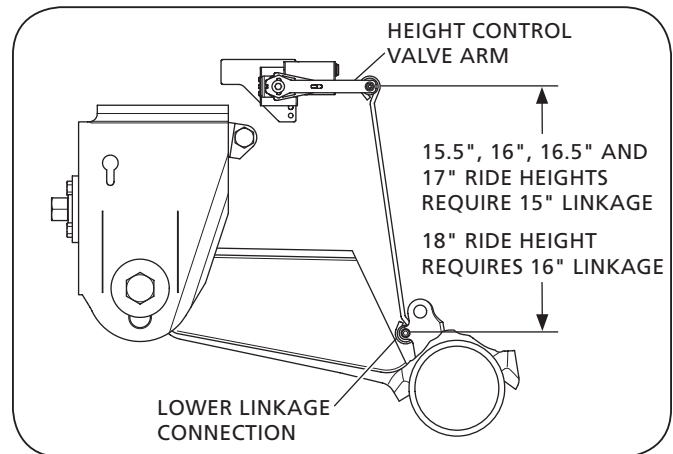


Figure 7

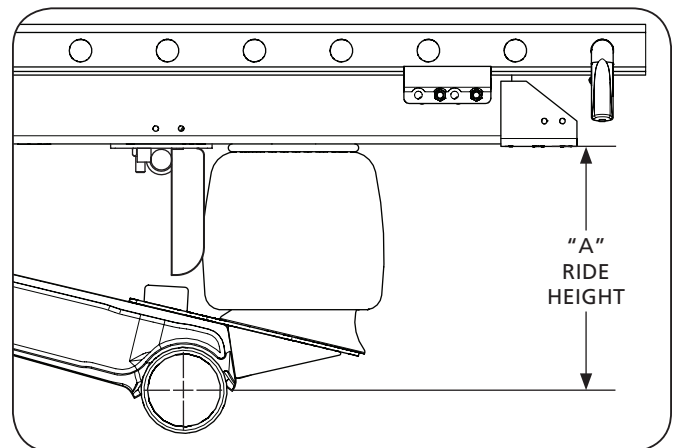
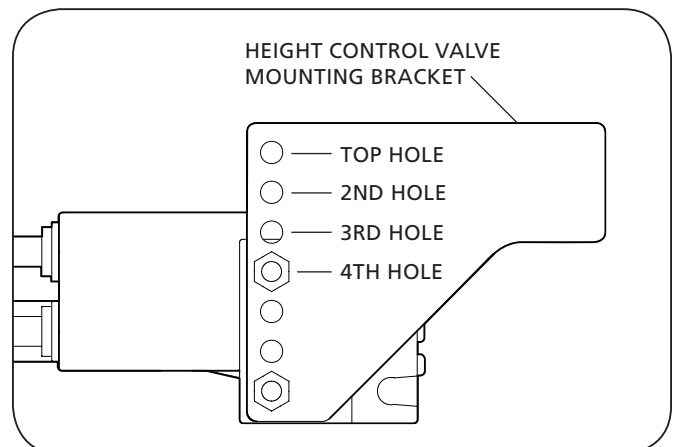


Figure 8



7. Height Control Valve Performance Check

NOTE: If the height control valve is equipped with a built in air exhaust feature, the pilot port of this feature **MUST** have air system pressure above 85 psig to ensure proper height control valve function prior to conducting a performance check.

IMPORTANT: Proper inspection can eliminate unnecessary replacement of height control valve.

1. Apply air system pressure above 85 psig (5.9 bars).
2. Using multiple jack stands support the vehicle frame approximately 2" (51 mm) below ride height per OEM specified locations.

⚠ WARNING Failure to properly support the suspension during maintenance could create a crush hazard which, if not avoided, could result in death or serious injury.

3. Detach the lower connection of the link assembly from mounting bracket.
4. Move control arm up 45° (intake) for 10-15 seconds – air should flow to air spring(s) (**Figure 9**).
5. Move control arm to center (neutral) position – valve should shut off air flow (**Figure 9**).
6. Move control arm down 45° (exhaust) for 10-15 seconds – air should flow from air spring(s) (**Figure 9**).
7. Move control arm to center (neutral) position – valve should shut off air flow.
8. The valve is operating correctly if it performs as described in Steps 4-7 above.

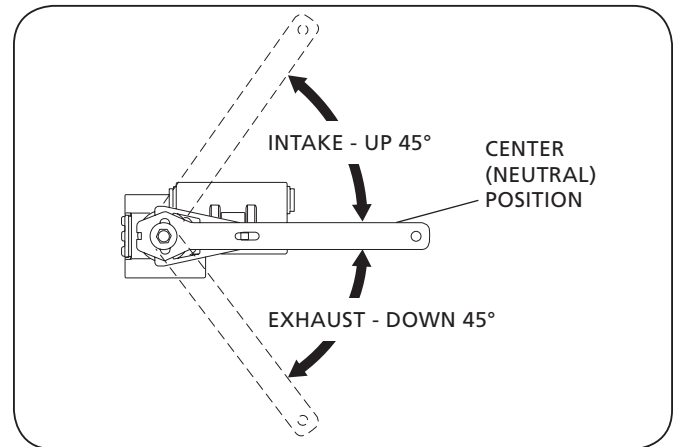
NOTE: If the valve does not perform correctly, replace the valve.

9. Re-attach the lower link assembly to mounting bracket, and torque to 30-40 in.-lbs. (3-5 N•m).

IMPORTANT: If 85 psig (5.9 bars) of air system pressure cannot be achieved, check pressure protection valve and vehicle air compressor to see if they are operating properly. Also, check the air lines for obstructions caused by dirt particles, foreign debris, ice, etc.

10. Remove the jack stands.

Figure 9



8. SwingAlign™ Axle Alignment

IMPORTANT: Axle alignment can only be achieved if the lock pin holes are the same distance from the kingpin, left and right. Axle alignment should always be done while the trailer is empty.

8.1 Alignment Preparation

1. Pull the trailer in a straight line for a sufficient distance to ensure there are no binds in the suspension.
2. Lock the trailer brakes and pull the trailer straight forward so the locking pins rest against the rear of the holes in the body rails.
3. Disengage the trailer parking brakes and make sure the trailer is empty.
4. Manually measure or use an optical device specifically designed for alignment measuring to determine the following:
 - a. Measure the distance from the kingpin to the centerline of the front axle spindles. It is recommended that spindle extensions be utilized.

Dimensions A and B (**Figure 10**) MUST be equal to within 1/8" (3 mm).
 - b. Measure the distance from the centerline of the front axle spindles to the centerline of the rear axle spindles.

Dimensions C and D, E and F (**Figure 10**) MUST be equal to within 1/16" (1 mm).

8.2 Alignment Instructions

Using the measurements from Step 4, align each axle by rotating the alignment bolt head on the front face of the roadside frame bracket clockwise to move axle forward (**A Arrows**); counter-clockwise to move axle rearward (**B Arrows - Figure 11**).

IMPORTANT: DO NOT loosen the pivot bolt.

IMPORTANT: Two scribe lines on the side of the frame bracket indicate maximum adjustment for axle alignment. If the edge of the visible washer touches either scribe line the SwingAlign™ axle alignment adjustment is "out of stroke" (**Figure 12**). Inspect and repair trailer components as necessary and re-align.

IMPORTANT: The SwingAlign™ design maintains proper alignment without welding and without loosening the pivot connection. DO NOT weld alignment bolt or pivot bolts (**Figure 12**). If connection requires tightening, refer to the Torque Specifications listed in Section 19.

Figure 10

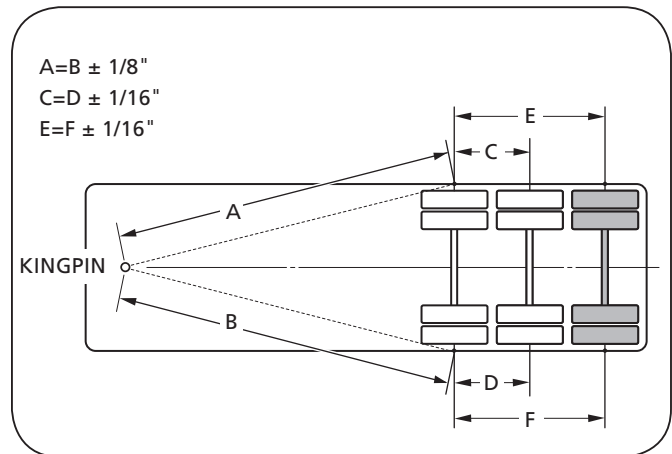


Figure 11

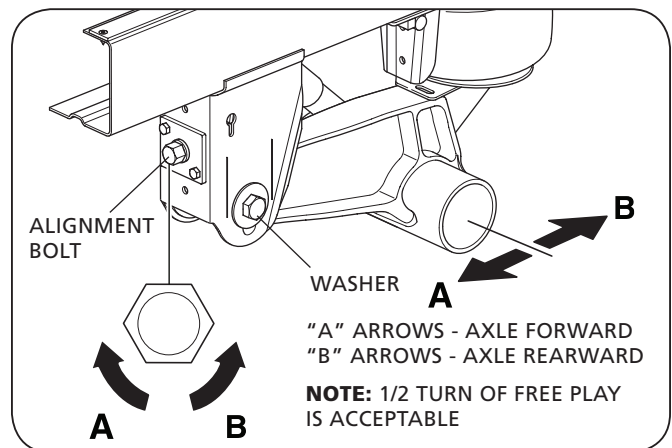
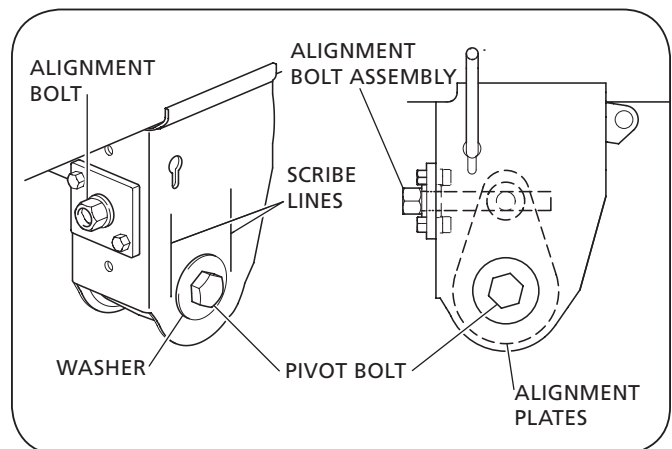


Figure 12



9. Air Spring Replacement

IMPORTANT: Air springs MUST be replaced with the proper air spring for the application. Check the flexible member and piston for the part number. If the part number cannot be found consult Parts Manual XL-AS11428PM-en-US.

NOTE: For further assistance with air spring part number identification, contact SAF-HOLLAND® Customer Service at 888-396-6501.

IMPORTANT: Maximum air spring static operation pressure is 100 psig (6.9 bars).

⚠ WARNING Failure to observe the maximum air spring static operating pressure could cause equipment failure which, if not avoided, could result in death or serious injury.

IMPORTANT: The trailer MUST be unloaded before beginning service procedures.

1. On a level surface, support the front of the trailer with either a kingpin stand, landing gear, or while coupled to a tractor (**Figure 13**).
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height.
3. At the suspension's specified ride height (**Table 3**), place multiple jack stands under the vehicle's frame per OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It could be necessary to shim jack stands to achieve specified height.

⚠ WARNING Failure to properly support the suspension during maintenance could create a crush hazard which, if not avoided, could result in death or serious injury.

4. Exhaust all air from the suspension, set parking brakes, and chock the wheels.

⚠ WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

5. Disconnect, remove and discard old air spring assembly (**Figure 14**).
6. Install new air spring assembly and torque fasteners. Refer to the Torque Specifications listed in Section 19.
7. Re-connect air supply line.
8. Raise the trailer approximately 2" (51 mm) above ride height and remove jack stands.

Figure 13

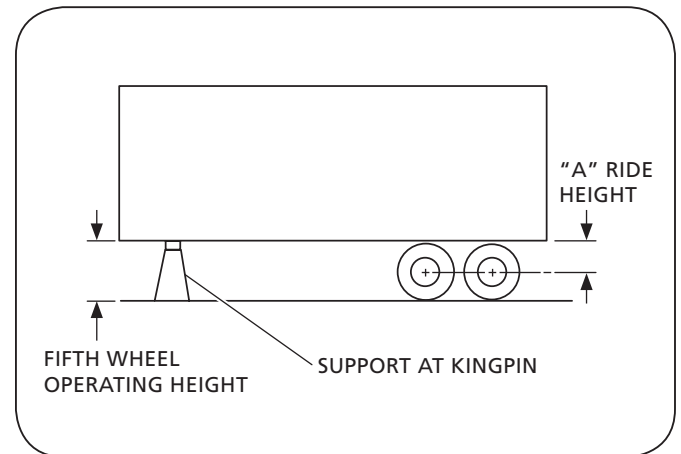
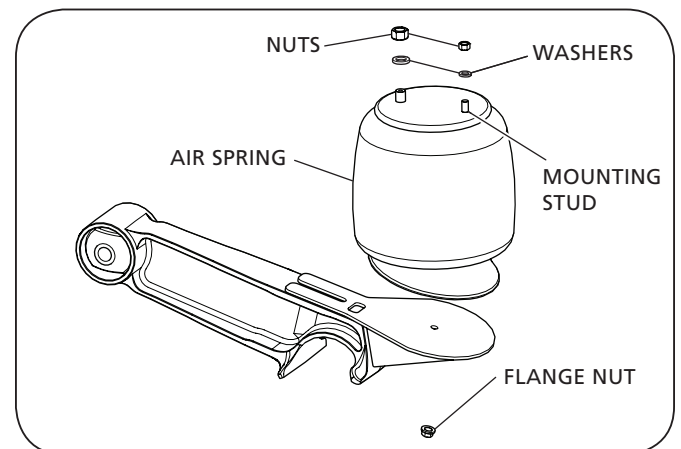


Table 3

CBX SLIDER SUSPENSION W/ AUTO-POSILIFT™	"A" RIDE HEIGHT
CBX 4215.5 / 4815.5 / 5415.5*	15.5"
CBX 4216 / 4816 / 5416*	16"
CBX 4216.5 / 4816.5 / 5416.5*	16.5"
CBX 4217 / 4817 / 5417*	17"
CBX 4218 / 4818 / 5418*	18"

*These numbers refer to the last digits of the model number.

Figure 14



9. Slowly lower the trailer so that trailer suspension is fully collapsed.
10. Apply air to the trailer and allow the suspension to return to ride height.
11. Verify all air connection fittings are tight. Check all fittings for air leaks by applying a soapy water solution and checking for bubbles at all air connections and fittings.

IMPORTANT: It is the responsibility of the air system installer to secure all air lines and check for any air leaks. If air leaks are detected, repair is required.

CAUTION Failure to eliminate air leaks could compromise suspension's performance which, if not avoided, could result in component or property damage.

12. Remove the wheel chocks.

10. Shock Absorber Replacement

IMPORTANT: Shock absorber MUST be replaced with the proper shock absorber. Check shock for part number. For replacement or service Parts refer to the SAF-HOLLAND® Aftermarket Parts Catalog at www.safholland.us.

IMPORTANT: The trailer MUST be unloaded before beginning service procedures.

1. On a level surface, support the front of the trailer with either a kingpin stand, landing gear, or while coupled to a tractor (**Figure 15**).
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height.
3. At the suspension's specified ride height (**Table 4**), place multiple jack stands under the vehicle's frame per OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It could be necessary to shim jack stands to achieve specified height.

WARNING Failure to properly support the suspension during maintenance could create a crush hazard which, if not avoided, could result in death or serious injury.

4. Exhaust all air from the suspension, set parking brakes, and chock the wheels.

WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

Figure 15

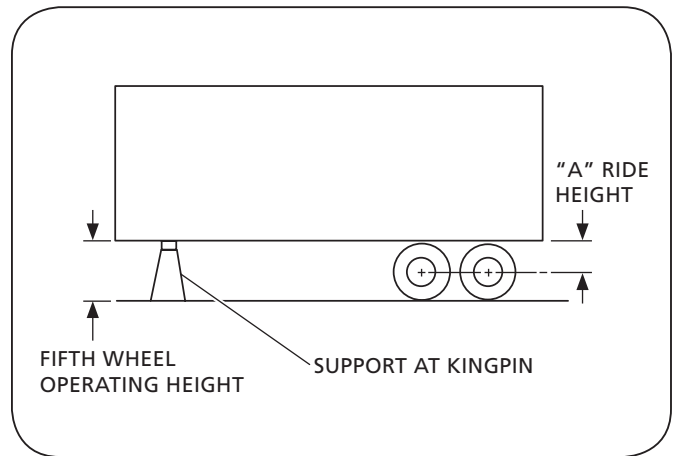


Table 4

CBX SLIDER SUSPENSION W/ AUTO-POSILIFT™	"A" RIDE HEIGHT
CBX 4215.5 / 4815.5 / 5415.5*	15.5"
CBX 4216 / 4816 / 5416*	16"
CBX 4216.5 / 4816.5 / 5416.5*	16.5"
CBX 4217 / 4817 / 5417*	17"
CBX 4218 / 4818 / 5418*	18"

*These numbers refer to the last digits of the model number.

5. Remove and discard upper and lower mounting bolts and remove shock absorber (**Figure 16**).
6. Replace with correct shock absorber and fasteners. Torque fasteners per specifications listed in Section 19.
7. Raise the trailer approximately 2" (51 mm) above ride height and remove jack stands.
8. Slowly lower the trailer so that the trailer suspension is fully collapsed.
9. Apply air to the trailer and allow suspension to return to ride height.
10. Remove the wheel chocks.

11. Pivot Connection Bushing Replacement

IMPORTANT: When replacing the rubber bushing at the pivot connection be sure the proper SAF-HOLLAND® Service Repair Kit is used. The kits contain all the necessary parts to service one axle (two (2) kits per tandem). Refer to Service Repair Kit section of Parts Manual XL-AS11428PM-en-US for the proper kit. It could be advantageous to service both pivot connections at the same time.

IMPORTANT: The vehicle **MUST** be unloaded before beginning service procedures.

1. On a level surface, support the front of the trailer with either a kingpin stand, landing gear, or while coupled to a tractor (**Figure 17**).
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height.
3. At the suspension's specified ride height (**Table 5**), place multiple jack stands under the vehicle's frame per OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It could be necessary to shim jack stands to achieve specified height.

⚠ WARNING Failure to properly support the suspension during maintenance could create a crush hazard which, if not avoided, could result in death or serious injury.

Figure 16

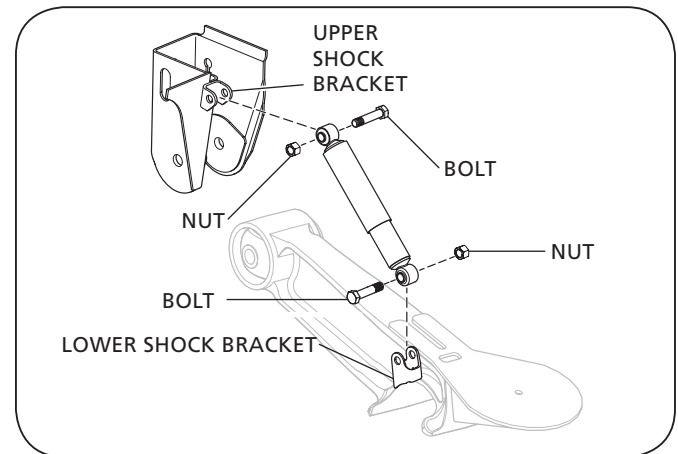


Figure 17

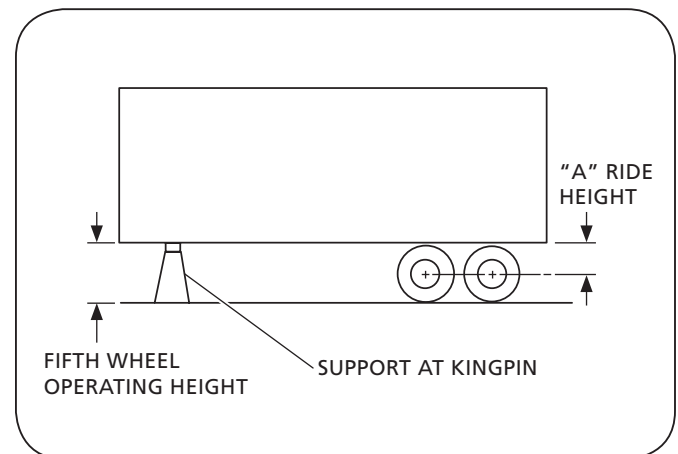


Table 5

CBX SLIDER SUSPENSION W/ AUTO-POSILIFT™	"A" RIDE HEIGHT
CBX 4215.5 / 4815.5 / 5415.5*	15"
CBX 4216 / 4816 / 5416*	16"
CBX 4216.5 / 4816.5 / 5416.5*	16.5"
CBX 4217 / 4817 / 5417*	17"
CBX 4218 / 4818 / 5418*	18"

*These numbers refer to the last digits of the model number.

- Exhaust all air from the suspension, set parking brakes, and chock the wheels.

⚠ WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

- Disconnect air spring and shock absorber at lower connections on both roadside and curbside.
- Disconnect the height control valve (HCV) linkage at lower connection.

NOTE: The SAF-HOLLAND® Bushing Service Tool, Part No. 50544015 (**Figure 18**) is available to ease removal and replacement of bushings. Contact the SAF-HOLLAND® distributor or Parts Manual for details.

- Raise the axle approximately 2" (51 mm) and support it with jack stands and remove wheel chocks.

⚠ WARNING Failure to properly support axle during maintenance could create a crush hazard, which if not avoided, could result in death or serious injury.

- Remove the tires.
- Disconnect front pivot connection fasteners and discard (**Figure 19**).
- Rotate equalizing beams down. Make sure equalizing beams are supported by jack stands.

⚠ WARNING Failure to properly support equalizing beams could create a crush hazard which, if not avoided, could result in component damage, death or serious injury.

- Inspect equalizing beams for wear, cracks and failed welds at axle. If cracks are detected anywhere on an equalizing beam, replace the beam and axle assembly.

IMPORTANT: NEVER repair a cracked equalizing beam. DO NOT weld cracks.

⚠ WARNING Failure to replace a cracked equalizing beam could cause loss of vehicle control which, if not avoided, could result in death or serious injury.

- Press out old bushing (**Figure 20**) using a SAF-HOLLAND® Bushing Service Tool, Part No. 50544015 (**Figure 18**).

IMPORTANT: DO NOT use an open flame or other heat source to remove the bushings.

Figure 18

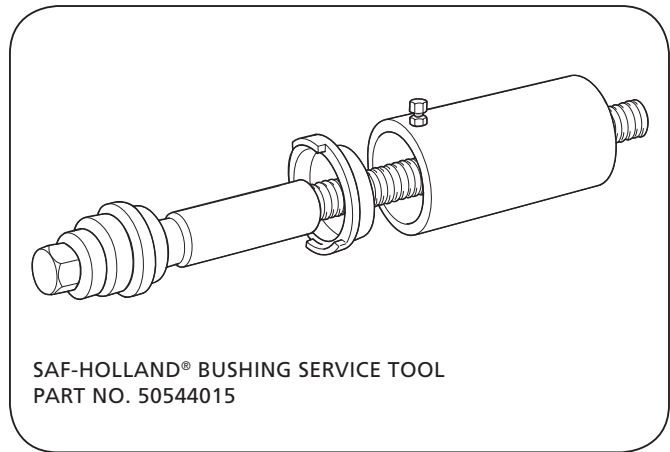


Figure 19

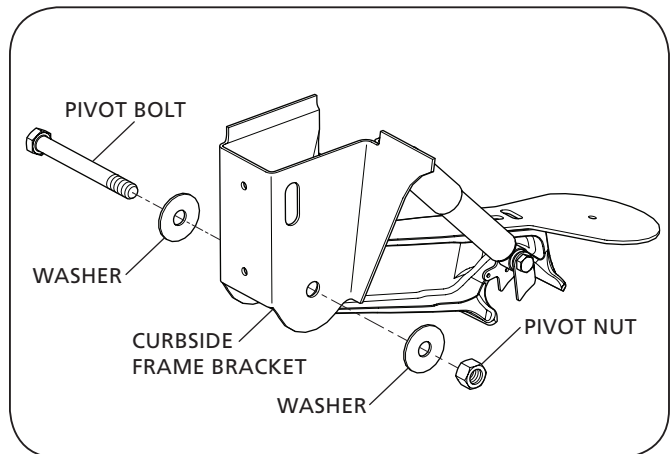
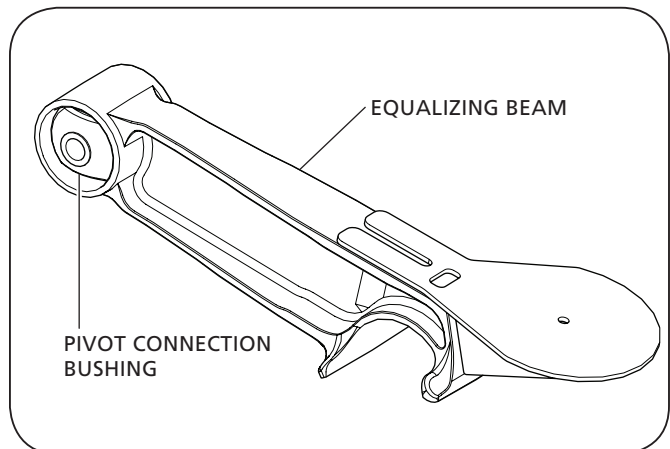


Figure 20



13. Clean out all foreign material from bushing receptacle(s) with a wire brush or wire wheel. Lubricate new bushing(s) with liquid dish soap and water solution.

IMPORTANT: DO NOT use oil-based lubricant or brake fluid, as they can cause damage to the rubber.

14. Press new bushing in beam. Bushing **MUST** be oriented, aligned and centered in beam receptacles:
 - a. Orientate the bushings per **(Figure 21)**.
 - b. Press the bushings into the beam receptacles and center them per **(Figure 22)**.

IMPORTANT: It could be necessary to push the bushing past center approximately 1" (25 mm) and then re-center the bushing to relieve the rubber **(Figure 22)**.

- c. Inspect bushing's alignment **(Figure 23)**. If the alignment is bad, press out bushing and repeat procedure.
15. Inspect the frame brackets, inside of the washers and SwingAlign™ alignment plates for excessive wear. If wear is excessive, refer to Section 13 for replacement information.
 - If only SwingAlign™ components need to be replaced, refer to Section 18 for replacement information.
 - If only fixed frame bracket components need to be replaced refer to Section 13 for replacement information.
16. Rotate beams up into frame brackets and re-install equalizing beam with new bolts and nuts. Position at ride height and torque fasteners per the specifications listed in Section 19.
17. Re-connect air springs, shock absorbers and height control valve linkage. Torque fasteners per the specifications listed in Section 19.
18. Raise the trailer approximately 2" (51 mm) above ride height and remove jack stands.
19. Slowly lower the trailer so that the trailer suspension is fully collapsed.
20. Apply air to the trailer and allow the suspension to return to ride height.
21. Verify all air connection fittings are tight. Check all fittings for air leaks by applying a soapy water solution and checking for bubbles at all air connections and fittings.

IMPORTANT: It is the responsibility of the air system installer to secure all air lines and check for any air leaks. If air leaks are detected, repair as required.

⚠ WARNING

Failure to eliminate the air leaks could compromise the suspension's performance which, if not avoided, could result in component or property damage.

22. Remove the wheel chocks.

Figure 21

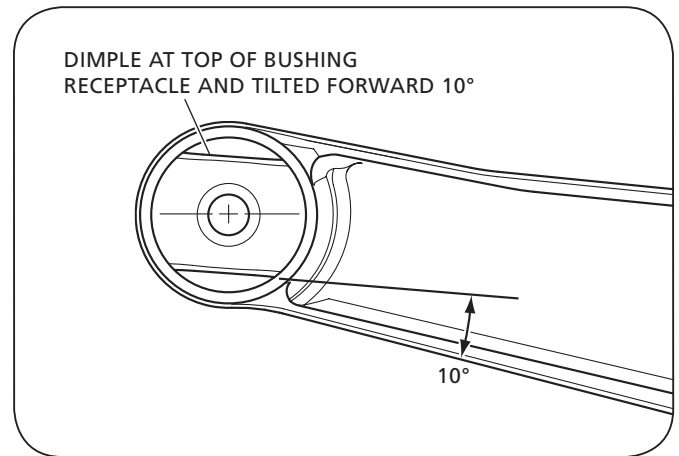


Figure 22

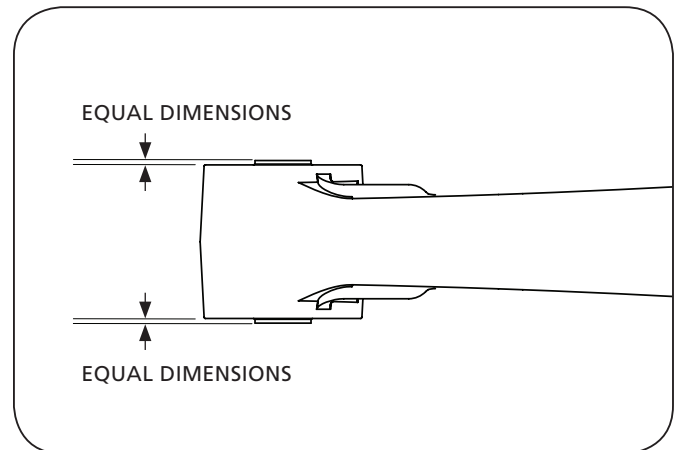
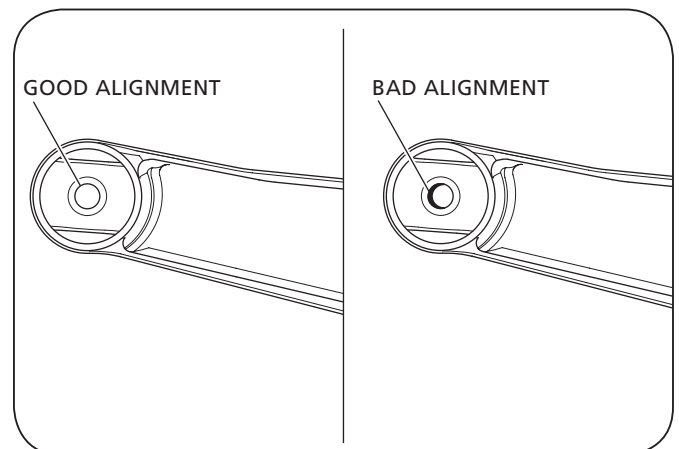


Figure 23



12. Equalizing Beam and Axle Assembly Replacement

IMPORTANT: The trailer MUST be unloaded before beginning any service procedures.

1. On a level surface, support the front of the trailer with either a kingpin stand, landing gear, or while coupled to a tractor (**Figure 24**).
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height.
3. At the suspension's specified ride height (**Table 6**), place multiple jack stands under the vehicle's frame per OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It could be necessary to shim jack stands to achieve specified height.

⚠ WARNING Failure to properly support the suspension during maintenance could create a crush hazard which, if not avoided, could result in death or serious injury.

4. Exhaust all air from the suspension, set parking brakes, and chock the wheels.

⚠ WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

5. Raise the axle approximately 2" inches (51 mm) and support it with jack stands and remove wheel chocks.

⚠ WARNING Failure to properly support axle during maintenance could create a crush hazard, which if not avoided, could result in death or serious injury.

6. Remove the tires.
7. Disconnect the air springs, shock absorbers and height control valve linkage at the lower connections.
8. Remove brake equipment:
 - Drum Brakes – remove brake chambers, slack adjusters, and wheel end assemblies. Refer to the XL-TA100060M-en-US Service Manual for detailed disassembly and reassembly procedures.
 - Disc Brakes – disconnect the brake chamber air supply lines. Refer to XL-SA100590M-en-US Service Manual for detailed disassembly and reassembly procedures.
 - For Non-SAF® Manufactured Axles – contact axle manufacturer for recommended disassembly and reassembly procedures.
9. Disconnect and discard front pivot fasteners from suspension (**Figure 25**).

Figure 24

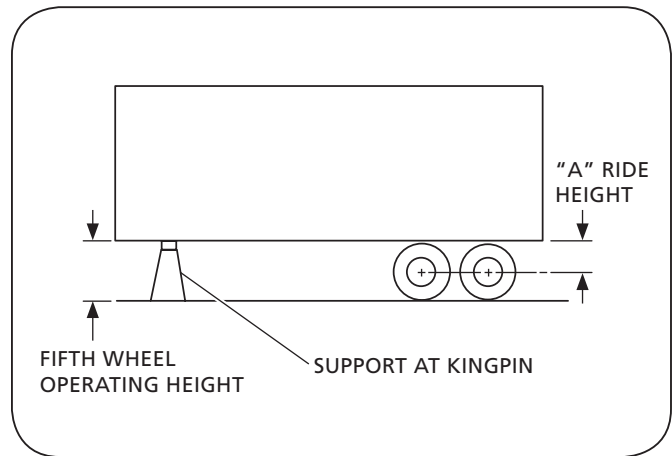
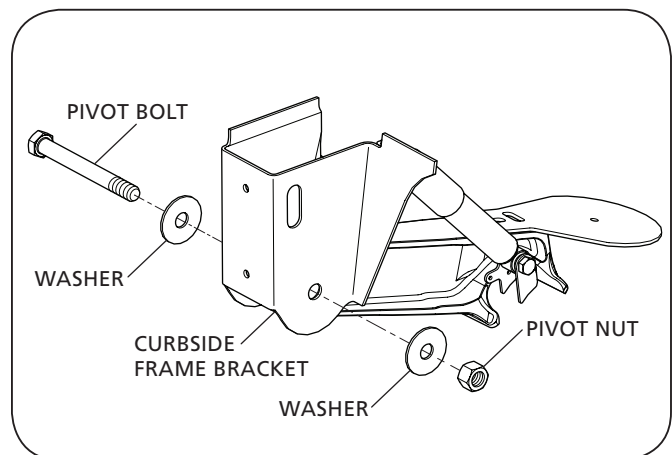


Table 6

CBX SLIDER SUSPENSION W/ AUTO-POSILIFT™	"A" RIDE HEIGHT
CBX 4215.5 / 4815.5 / 5415.5*	15.5"
CBX 4216 / 4816 / 5416*	16"
CBX 4216.5 / 4816.5 / 5416.5*	16.5"
CBX 4217 / 4817 / 5417*	17"
CBX 4218 / 4818 / 5418*	18"

*These numbers refer to the last digits of the model number.

Figure 25



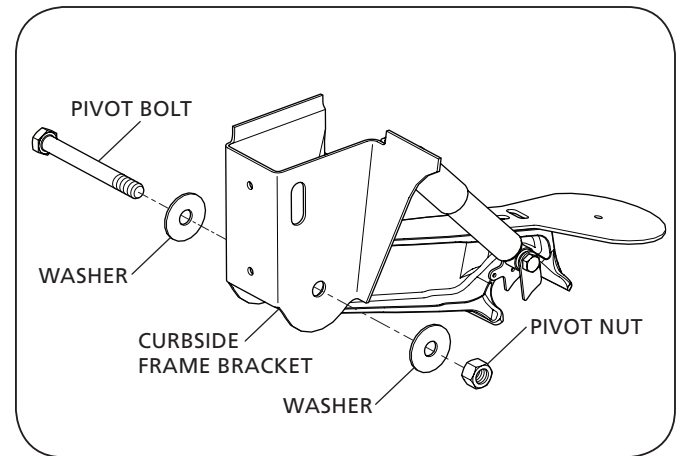
10. Remove axle and equalizing beam assembly.
11. Install new axle and equalizing beam assembly using new pivot fasteners (**Figure 26**). Position axle at ride height, support axle with jack stands, and torque front pivot connection per specifications listed in Section 19.
12. Re-connect lower connections on the air springs, shock absorbers and height control valve linkage. Properly torque fasteners according to the specifications listed in Section 19.
13. Install brake components and wheel ends following the instructions in the appropriate manual referred to in Step 8.
14. Re-install tires, remove jack stands supporting the axle and equalizing beam assembly, and lower the axle.
15. Chock the wheels.
16. Raise the trailer approximately 2" (51 mm) above ride height and remove jack stands.
17. Slowly lower the trailer so that the trailer suspension is fully collapsed.
18. Apply air to the trailer and allow the suspension to return to ride height.
19. With the suspension at rest, measure the ride height. Ride height **MUST** be within 1/4" (6 mm) of the suspension's specified ride height. Refer to Section 6 if ride height needs to be adjusted.
20. Verify all air connection fittings are tight. Check all fittings for air leaks by applying a soapy water solution and checking for bubbles at all air connections and fittings.

IMPORTANT: It is the responsibility of the air system installer to secure all air lines and check for any air leaks. If air leaks are detected, repair as required.

CAUTION Failure to eliminate air leaks could compromise the suspension's performance which, if not avoided, could result in component or property damage.

21. Remove the wheel chocks.
22. Re-align the axles using the axle alignment procedures listed in Section 8.

Figure 26



13. Frame Bracket Replacement

IMPORTANT: If only SwingAlign™ frame bracket, alignment plates and washers are to be replaced, refer to Section 18.

IMPORTANT: The trailer MUST be unloaded before beginning any service procedures.

1. On a level surface, support the front of the trailer with either a kingpin stand, landing gear, or while coupled to a tractor (**Figure 27**).
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height (**Table 7**).

NOTE: It could be necessary to shim jack stands to achieve specified height.

⚠ WARNING Failure to properly support the suspension during maintenance could create a crush hazard which, if not avoided, could result in death or serious injury.

3. Exhaust all air from the suspension, set parking brakes, and chock the wheels.

⚠ WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

4. Raise the axle approximately 2" (51 mm) and support it with jack stands and remove the wheel chocks.

⚠ WARNING Failure to properly support axle during maintenance could create a crush hazard, which, if not avoided, could result in death or serious injury.

5. Remove the tires.
 - If replacing the frame bracket with Auto-Posilift™ pivot mount bracket, proceed to Section 14, Step 3 and 4 then set the frame bracket with Auto-Posilift™ pivot mount bracket aside for reassembly later.
 - Once the frame bracket with Auto-Posilift™ pivot mount bracket has been removed, and/or servicing the frame bracket without the Auto-Posilift pivot mount bracket proceed with the following:
6. Disconnect and discard front pivot fasteners (**Figure 28**) and rotate equalizing beams downward out of the frame brackets.
7. On the side of the frame rail, mark the mounting location of the frame bracket to be replaced.

Figure 27

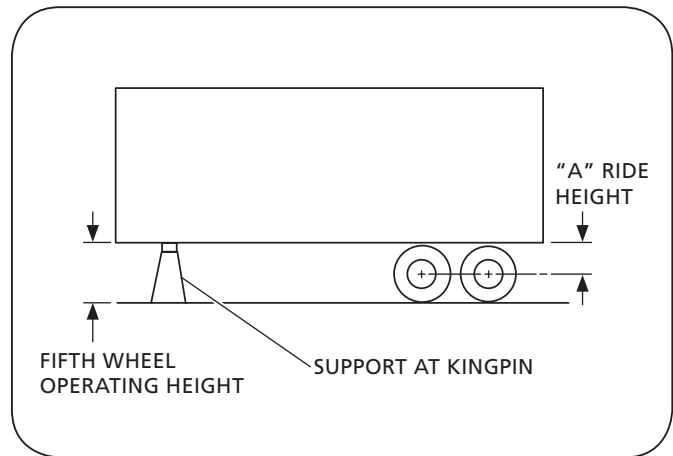
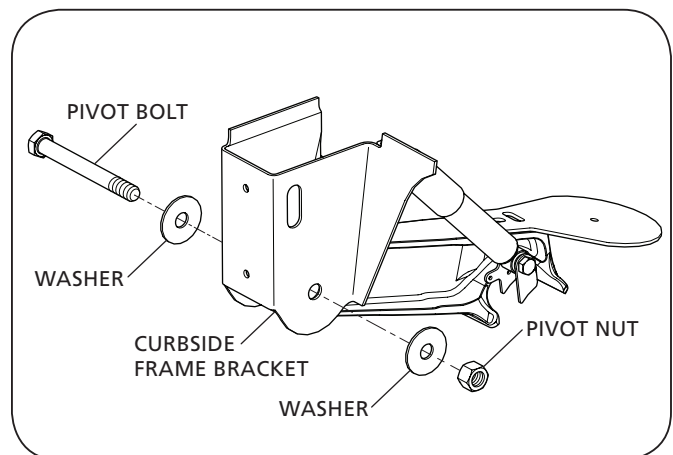


Table 7

CBX SLIDER SUSPENSION W/ AUTO-POSILIFT™	"A" RIDE HEIGHT
CBX 4215.5 / 4815.5 / 5415.5*	15.5"
CBX 4216 / 4816 / 5416*	16"
CBX 4216.5 / 4816.5 / 5416.5*	16.5"
CBX 4217 / 4817 / 5417*	17"
CBX 4218 / 4818 / 5418*	18"

*These numbers refer to the last digits of the model number.

Figure 28



8. Remove the old frame bracket.

IMPORTANT: Carefully air arc the welds connecting the frame bracket to the frame. DO NOT use frame if frame material is damaged. Repair the frame and then install the frame brackets.

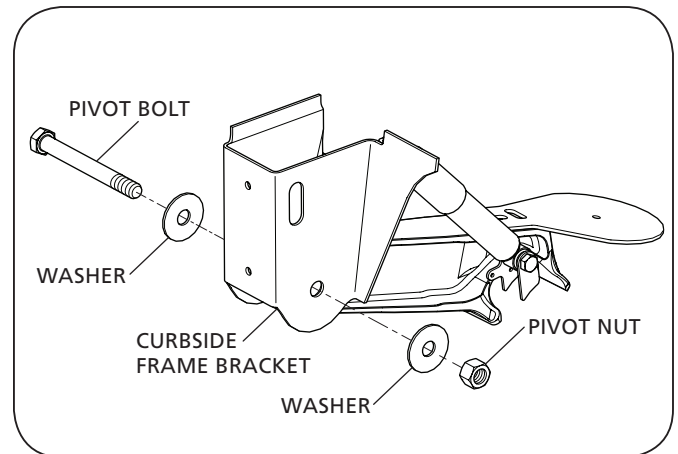
⚠ WARNING Failure to repair a damaged frame could cause damage to the suspension and possible loss of vehicle control which, if not avoided, could result in death or serious injury.

9. Place the new frame bracket(s) on the frame rail per the locations marked in Step 7. Refer to the model's specific installation drawing for the proper weld patterns and locations. Weld bracket in place according to the specifications listed in Section 3.

NOTE: To obtain a copy of a specific suspension's installation drawing, contact the SAF-HOLLAND® Customer Service at 888-396-6501.

10. If replacing the roadside SwingAlign™ frame bracket, refer to Section 18 for the SwingAlign™ fasteners installation procedures.
 - If servicing the frame bracket with Auto-Posilift™ pivot mount bracket, proceed to Section 14, Step 7.
11. Rotate equalizing beams upward into the frame brackets and install new pivot fasteners (**Figure 29**). Position the axle at ride height and torque pivot connection per the specifications listed in Section 19.
12. Re-install tires, remove jack stands supporting the axle and equalizing beam assembly, and lower the axle.
13. Chock the wheels.
14. Raise the trailer approximately 2" (51 mm) above ride height and remove jack stands.
15. Slowly lower the trailer so that the trailer suspension is fully collapsed.
16. Apply air to the trailer and allow the suspension to return to ride height.
17. With the suspension at rest, measure the ride height. Ride height MUST be within 1/4" (6 mm) of the suspension's specified ride height. Refer to Section 6 if ride height needs to be adjusted.

Figure 29



- Verify all air connection fittings are tight. Check all fittings for air leaks by applying a soapy water solution and checking for bubbles at all air connections and fittings.

IMPORTANT: It is the responsibility of the air system installer to secure all air lines and check for any air leaks. If air leaks are detected, repair as required.

CAUTION Failure to eliminate air leaks could compromise the suspension's performance which, if not avoided, could result in component or property damage.

- Remove the wheel chocks.
- Re-align the axles using the axle alignment procedures listed in Section 8.

14. Pivot Mount Bracket Replacement

IMPORTANT: The trailer MUST be unloaded before beginning service procedures.

- With the vehicle unloaded and on a level surface, exhaust all air from the system.
- Support the suspension beams with jack stands to prevent the equalizing beam pivot from moving.

WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

IMPORTANT: If air spring has a leak and is deflated, Step 1 MUST still be performed.

- Remove the air line and Auto-PosiLift™ air spring from the pivot mount bracket (**Figures 30 and 31**).

NOTE: Keep the guide arm and bearing block attached and put aside for later use.

- Remove the two (2) 1/2" nuts and bolts between the pivot mount and frame bracket (**Figure 32**).
- Remove the pivot connection hardware.
- Once the front bracket is replaced, assemble the new pivot mount bracket to the Auto-PosiLift™ air spring, guide arm, and the bearing block (**Figures 30 and 31**).

NOTE: For component replacement instruction refer to Sections 19 for proper location and torque.

Figure 30

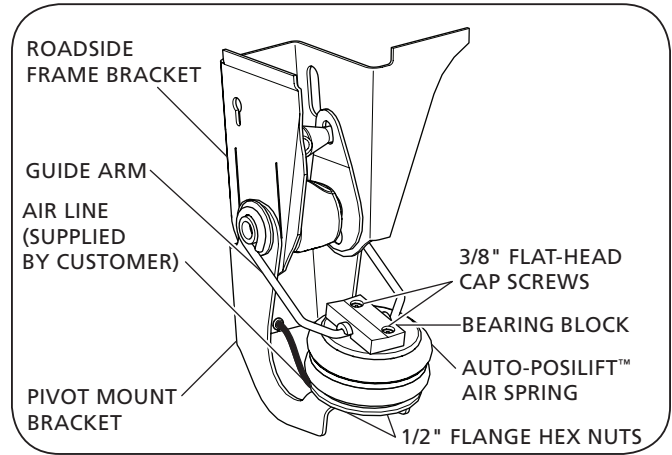


Figure 31

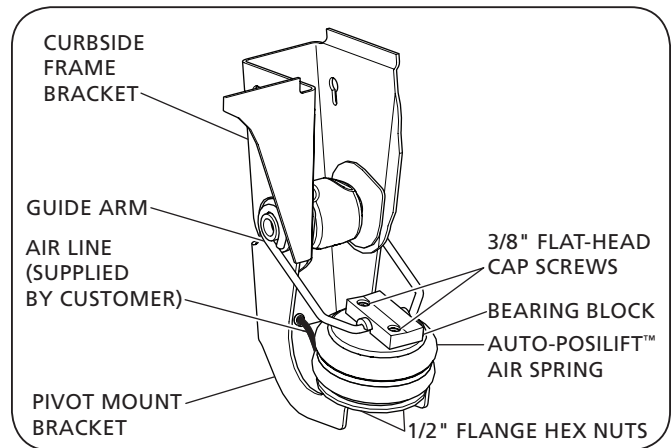
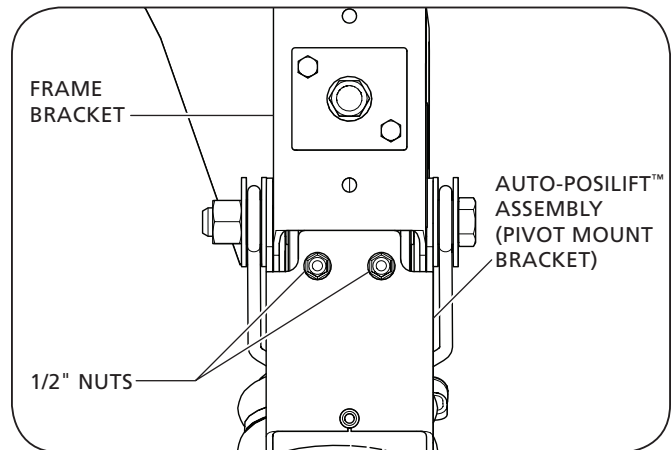


Figure 32



7. Place the pivot mount bracket assembly under the suspension frame bracket and install the two (2) 1/2" nuts and bolts (**Figure 32**). Refer to Section 19 for torque requirements.
8. Install the pivot connection hardware (**Figure 33**).

NOTE: Make sure the SwingAlign™ washers and components are in place prior to tightening the pivot connection to 550-600 ft.-lbs. (746-813 N•m) torque.

9. Re-attach the air line to the Auto-PosiLift™ air spring using the existing elbow fitting.

NOTE: Before attaching to the Auto-PosiLift™ air spring, ensure that the air line is fed through the grommet in the new pivot mount bracket (**Figure 34**).

10. Check for air leaks by applying a soapy water solution and checking for bubbles at all connections and fittings. If leaks are found, repair as necessary.

IMPORTANT: It is the responsibility of the air system installer to secure all air lines and check for air leaks. If air leaks are detected, repair as required.

CAUTION Failure to eliminate air leaks could compromise the suspension performance which, if not avoided, could result in component or property damage.

11. Remove the jack stands.

NOTE: It is recommended to re-align the trailer axle after the pivot connection is taken apart. Refer to Section 8 for alignment procedures.

Figure 33

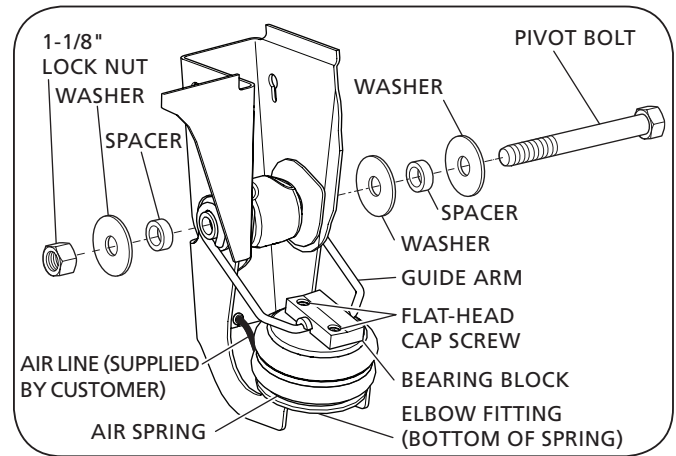
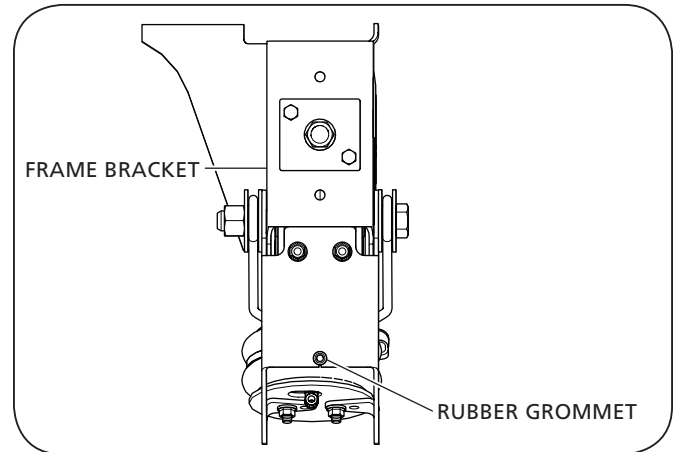


Figure 34



15. Auto-PosiLift™ Air Spring Replacement

IMPORTANT: The trailer MUST be unloaded before beginning service procedures.

1. With the vehicle unloaded and on a level surface, exhaust all air from the system and disconnect the air lines from the Auto-PosiLift™ air springs.

WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

IMPORTANT: If air spring has a leak and is deflated, Step 1 MUST still be performed.

2. Raise lift axle to full up position and support with jack stands.
3. Remove the 3/8" flat-head screws from the top of the air spring, air line and the 1/2" flange hex nuts from the bottom. (**Figures 35 and 36**).
4. Remove the Auto-PosiLift™ air spring and bearing block. Inspect the bearing block for excessive wear; if bearing block is worn down to the screws; replace the bearing block.
5. Install the new Auto-PosiLift™ air spring and air spring mounting plate onto the pivot mount bracket. Make sure to align air inlet with air line and lower mounting studs to correct holes in the pivot nut bracket (**Figures 38**). Torque 1/2" flange nuts to 30-40 ft.-lbs. (40-54 N•m).
 - a. Use the air spring marked "L" on the roadside (left side) of the trailer and the air spring marked "R" on the curbside (right side) of the trailer (**Figure 37**).

NOTE: The bottom of the tabs are marked "L" (left) and "R" (right) to indicate holes to be used.

6. Position the bearing block on the top of the Auto-PosiLift™ air spring and attach with the 3/8" flat-head screws (**Figures 35 and 36**). Torque to 90-110 ft.-lbs. (122-149 N•m)
7. Lower the axle until tires are back on the ground and remove the jack stands.
8. Using the existing elbow fitting, re-install the air line to the bottom of the Auto-PosiLift™ air spring (**Figure 37**). Check for air leaks by applying a soapy water solution and checking for bubbles at all connections and fittings. Fix if necessary.

IMPORTANT: It is the responsibility of the air system installer to secure air lines and check for air leaks. If leaks are detected, repair as required.

CAUTION Failure to eliminate air leaks could compromise the suspension performance which, if not avoided, could result in component or property damage.

Figure 35

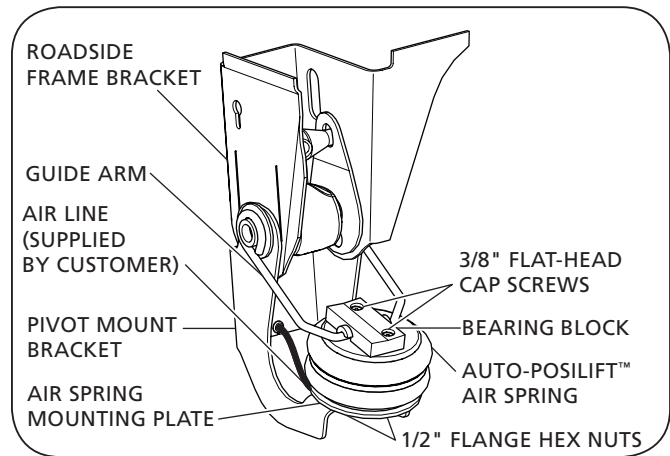


Figure 36

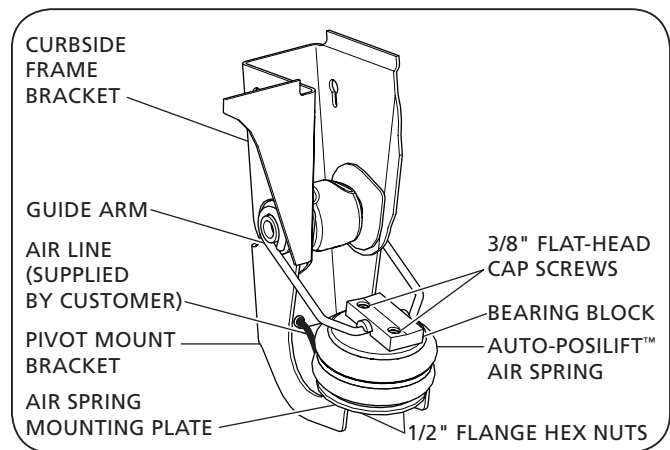
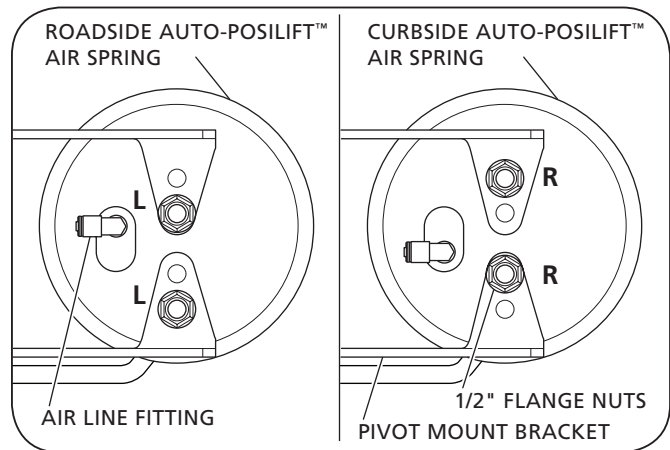


Figure 37



16. Bearing Block Replacement

IMPORTANT: The trailer MUST be unloaded before beginning service procedures.

1. With the vehicle unloaded and on a level surface, exhaust all air from the system.

⚠ WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

2. Remove the 3/8" flat-head screws and the bearing block from the top of the Auto-PosiLift™ air spring.
3. Install new bearing block using the 3/8" flat-head screws (Figures 38 and 39). Make sure bearing block is oriented as illustrated (Figures 38 and 39). Tighten to 90-110 ft.-lbs. (122-149 N•m) torque.

17. Guide Arm Replacement

IMPORTANT: The trailer MUST be unloaded before beginning service procedures.

1. With the vehicle unloaded and on a level surface, exhaust all air from the system.
2. Support the suspension beams with jack stands to prevent the equalizing beam pivot from moving.

⚠ WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

IMPORTANT: If air spring has a leak and is deflated, Step 1 MUST still be performed.

3. Remove the 3/8" flat-head screws from the bearing block and lift air spring (Figure 40).
4. Remove the pivot bolt, spacers and washers and guide arm.
5. Inspect the lift components for excessive wear and replace the worn part as required.
6. Install the new guide arm using the 3/8" flat-head screws. Make sure the guide arm is installed as illustrated (Figure 40).
7. Install the new pivot bolt, spacers and washers.
8. Torque the pivot bolt to 550-600 ft.-lbs. (746-813 N•m).
9. Remove the jack stands.

Figure 38

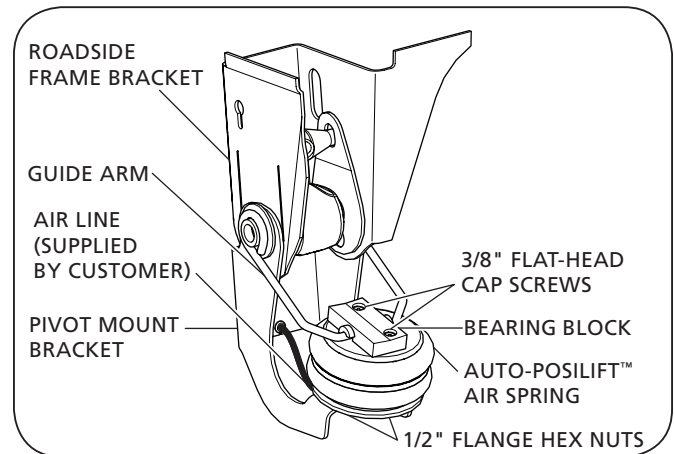


Figure 39

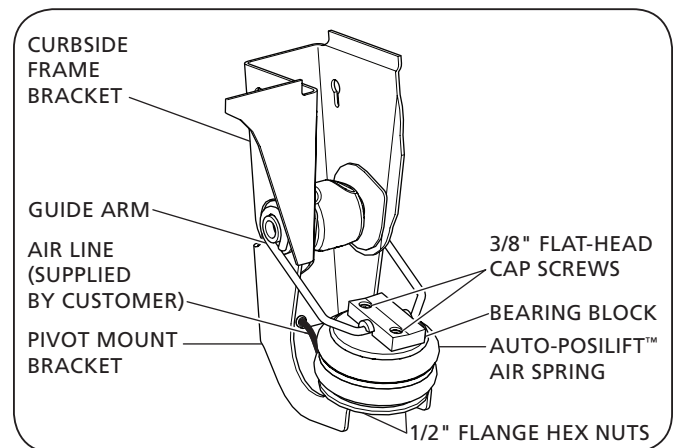
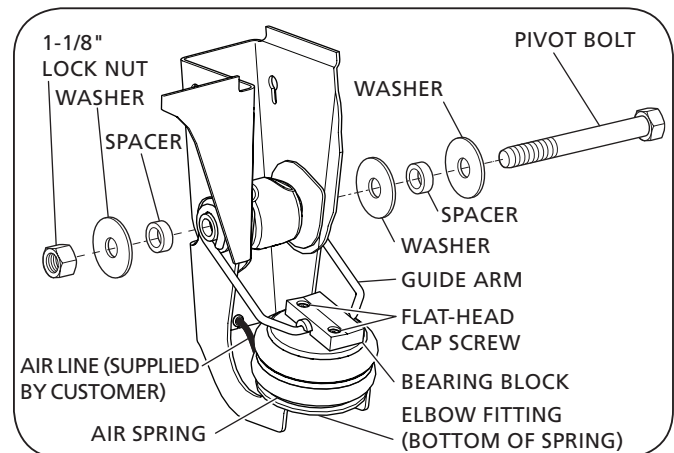


Figure 40



18. SwingAlign™ Replacement

IMPORTANT: The trailer MUST be unloaded before beginning any service procedures.

1. On a level surface, support the front of the trailer with either a kingpin stand, landing gear, or while coupled to a tractor (**Figure 41**).
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height.
3. At the suspension's specified ride height (**Table 8**), place multiple jack stands under the vehicle's frame per OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It could be necessary to shim jack stands to achieve specified height.

⚠ WARNING Failure to properly support the suspension during maintenance could create a crush hazard which, if not avoided, could result in death or serious injury.

4. Exhaust all air from the suspension, set parking brakes, and chock the wheels.

⚠ WARNING Failure to exhaust the suspension air and chock the tires prior to beginning maintenance could allow vehicle movement which, if not avoided, could result in death or serious injury.

5. Raise the axle approximately 2" (51 mm) and support it with jack stands and remove wheel chocks.

⚠ WARNING Failure to properly support axle during maintenance could create a crush hazard, which if not avoided, could result in death or serious injury.

6. Remove the tires.

7. Disconnect and discard front pivot fasteners (**Figure 42**) and rotate equalizing beams downward out of the frame brackets.

⚠ WARNING Failure to proper support equalizing beams during maintenance could create a crush hazard, which if not avoided, could result in death or serious injury.

Figure 41

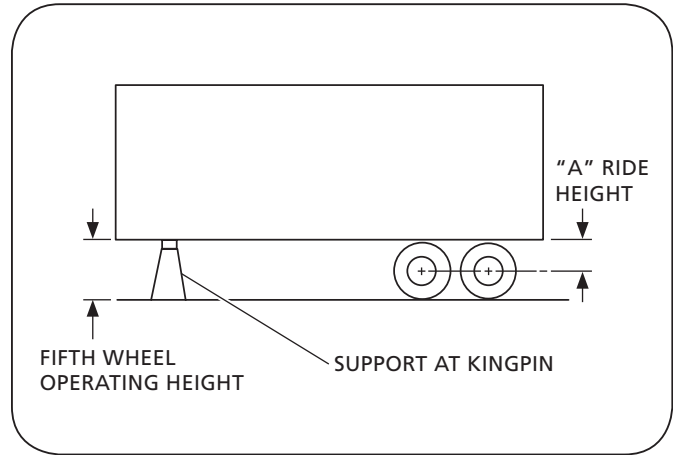
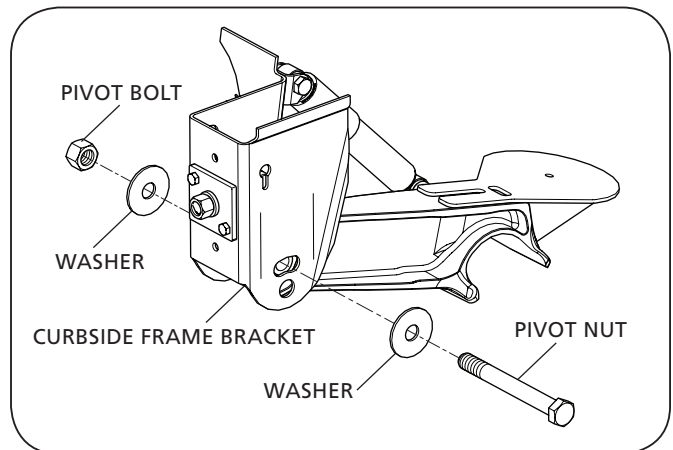


Table 8

CBX SLIDER SUSPENSION W/ AUTO-POSILIFT™	"A" RIDE HEIGHT
CBX 4215.5 / 4815.5 / 5415.5*	15.5"
CBX 4216 / 4816 / 5416*	16"
CBX 4216.5 / 4816.5 / 5416.5*	16.5"
CBX 4217 / 4817 / 5417*	17"
CBX 4218 / 4818 / 5418*	18"

*These numbers refer to the last digits of the model number.

Figure 42



8. Remove and discard the SwingAlign™ mounting fasteners and rotate the threaded rod assembly counter-clockwise until it disengages from the SwingAlign™ yoke (**Figure 43**).
9. Remove threaded rod assembly, alignment plates, and yoke (**Figure 43**).
10. Assemble the new SwingAlign™ yoke between two (2) new alignment plates and insert assembly into the frame bracket (**Figure 43**).

NOTE: Make sure the bosses on the alignment plates are fully seated into the frame bracket alignment plate holes (**Figures 42 and 44**).

11. From the front of the frame bracket, insert new threaded rod assembly into SwingAlign™ yoke and rotate threaded rod clockwise until access to the pivot bolt hole is achieved (**Figure 44**).
12. Rotate equalizing beams upward into the frame brackets. If necessary, adjust threaded rod assembly until holes in alignment plate are aligned with the pivot bushing holes. When assembly and hole alignment is achieved install new pivot fasteners (**Figure 45**).
13. Position the axle at ride height and torque pivot connection per specifications listed in Section 19.
14. Re-install tires, remove jack stands supporting the axle and equalizing beam assembly, and lower the axle.
15. Chock the wheels.
16. Raise the trailer approximately 2" (51 mm) above ride height and remove the jack stands.
17. Slowly lower the trailer so that the trailer suspension is fully collapsed.
18. Apply air to the trailer and allow the suspension to return to ride height.
19. With the suspension at rest, measure the ride height. Ride height **MUST** be within 1/4" (6 mm) of the suspension's specified ride height. Refer to Section 6 if ride height needs to be adjusted.
20. Verify all air connection fittings are tight. Check all fittings for air leaks by applying a soapy water solution and checking for bubbles at all air connections and fittings.

IMPORTANT: It is the responsibility of the air system installer to secure all air lines and check for any air leaks. If air leaks are detected, repair as required.

CAUTION

Failure to eliminate air leaks could compromise the suspension's performance which, if not avoided, could result in component or property damage.

21. Remove wheel chocks.

Figure 43

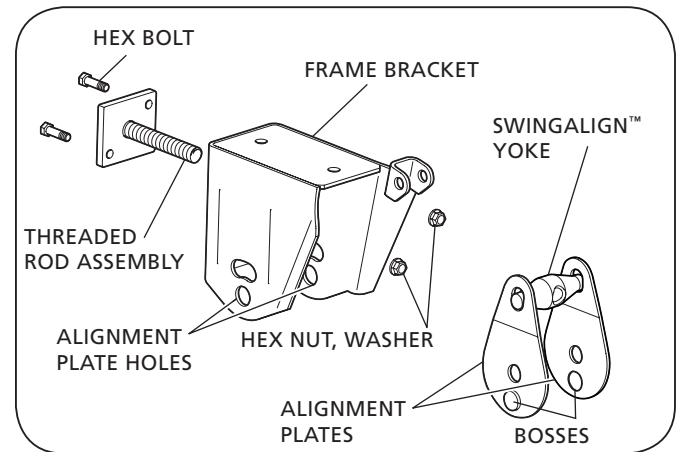


Figure 44

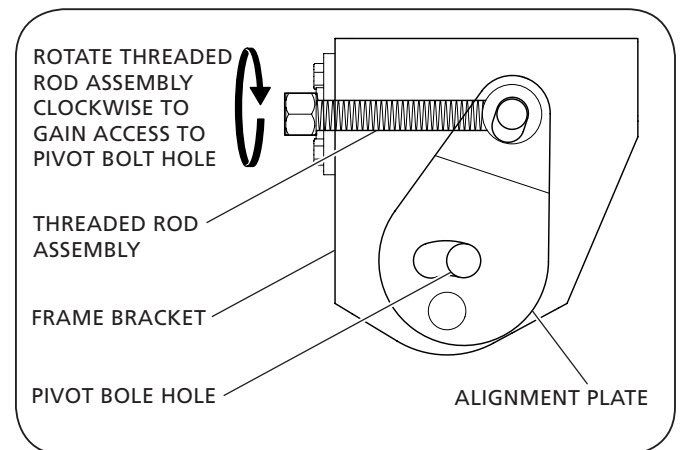
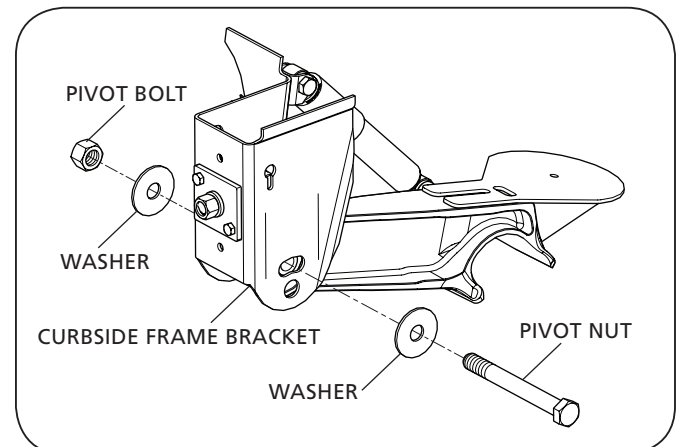
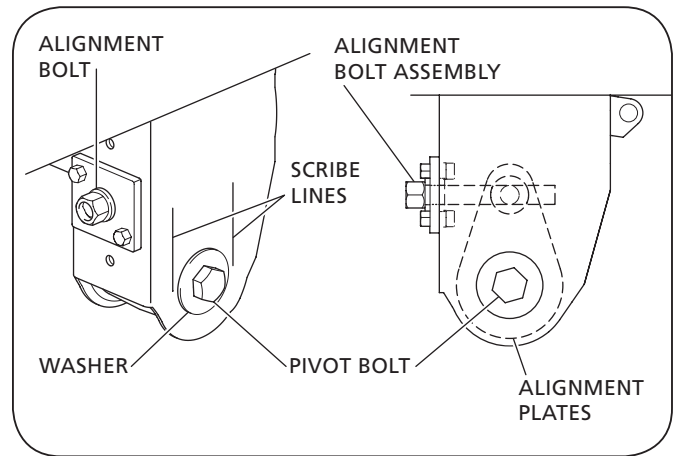


Figure 45



22. Rotate the bolt head of the threaded rod assembly clockwise until the edge of the washer reaches the forward scribe line. Then rotate the threaded rod assembly counter-clockwise until it reaches the rearward scribe line. Then rotate the threaded rod assembly clockwise until it is centered between the scribe lines. (**Figure 46**)
23. Re-torque the SwingAlign™ front pivot connection per the torque specifications listed in Section 19.
24. Re-align the axles using the axle alignment procedures listed in Section 8.

Figure 46



19. Torque Specifications

Table 9

COMPONENT	TORQUE VALUE	FASTENER SIZE
Shock Absorber	140-175 ft.-lbs. 190-237 N • m	3/4"
Pivot Connection	550-600 ft.-lbs. 746-813 N • m	1-1/8"
Air Spring	30-40 ft.-lbs. 41-54 N • m	1/2"
Air Spring	40-45 ft.-lbs. 54-61 N • m	3/4"
SwingAlign™ and Pivot Mount Bracket Mounting Fasteners Only - NOT Pivot Bolt	50-60 ft.-lbs. 68-81 N • m	1/2"
Height Control Valve Lower Linkage	30-40 in.-lbs. 3.4-4.5 N • m	1/4"
Hold Down Clip Nuts	75-90 ft.-lbs. 8.5-10 N • m	1/4"

All torque specifications are ± 5%.

Torques specified are for clean, lubricated threads.

Always Apply torque to nut if possible.

Required re-torquing at every brake re-lining.

NOTE: Torque specifications listed above are with clean lubricated/coated threads (**Table 9**). All new SAF-HOLLAND® fasteners come precoated from the factory. For bolt and lock nut grade markings, refer to **Figure 47**.

IMPORTANT: The use of special lubricants with friction modifiers, such as Anti-Seize or Never-Seez®, without written approval from SAF-HOLLAND® Engineering, will void warranty and could lead to over torquing of fasteners or other component issues.

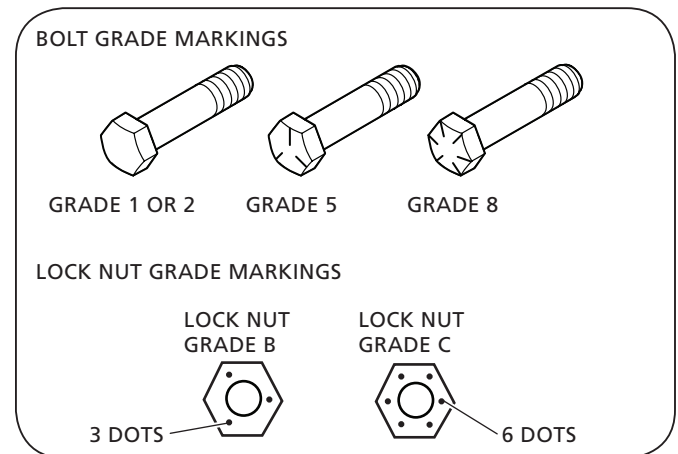
General Information

1. The torque specifications are applied to the nut and NOT the bolt as illustrated (**Figure 48**).

⚠ WARNING Failure to use the proper fasteners when servicing the suspension could cause component failure which, if not avoided, could result in death or serious injury.

⚠ WARNING Failure to properly torque all fasteners could result in component failure which, if not avoided, could result in death or serious injury.

Figure 47



20. Routine Maintenance and Daily Inspection

Daily or before each trip, check the suspension to be sure it is fully operational. Visually inspect air springs for sufficient and equal pressure and make sure the suspension is set at proper ride height. For ride height measurement and resetting instructions, refer to Section 6. Service as necessary.

20.1 Initial Three (3) Months or 5,000 Mile (8,000 km) Service Inspection

1. Suspension ride height (underside of frame to centerline of axle) **MUST** be within $\pm 1/4"$ (6 mm) of recommended design height. For instructions on measuring ride height, refer to Section 6.

CAUTION

An improperly set ride height could result in suspension component damage and/or poor vehicle ride performance.

2. After first three (3) months or 5,000 miles (8,000 km) of service, whichever comes first, inspect bolts and nuts at the pivot connections to ensure they are properly torqued. Check all other nuts and bolts for proper torque, refer to the specifications listed in Section 19. Re-torque as necessary thereafter.
3. With the vehicle on a level surface and air pressure above 85 psig (5.9 bars), verify that all air springs are of sufficient and equal firmness.

NOTE: Check all air control system fittings for air leaks, by applying a soapy water solution and checking for bubbles at all air connections and fittings.

20.2 Routine Physical Inspections

Every 100,000 Miles (160,000 km) or one (1) year, whichever comes first.

Check all other suspension components for any sign of damage, looseness, torque loss, wear or cracks. Repair, tighten or replace damaged part(s) to prevent equipment breakdown.

20.3 Visual Inspection Procedure

IMPORTANT: A schedule for physical and visual inspections should be established by the operator based on severity of operation or damage to the vehicle could occur.

IMPORTANT: During each pretrip and safety inspection of the vehicle, a visual inspection of the suspension should be done or damage to the vehicle could occur.

Visually check for:

- Loose, broken or missing fasteners. Repair or replace as needed.

WARNING

Loose, damaged, or missing fasteners can cause loss of vehicle control which, if not avoided, could result in death or serious injury.

- Air springs – clearances, wear damage, and proper inflation.
- Shock absorbers – leaking or damaged.
- Cracked parts or welds.
- Check the slider locking pins, slider pull-bar mechanism and slider wear pads for signs of excessive wear or binding, refer to Section 4 (**Figure 8**). Repair or replace as needed.
- Inspect the structure of the slider box and cross members for damage, refer to Section 4 (**Figure 8**). Repair or replace as needed.
- Inspect the front and rear hold down clips to make certain the clips are secured correctly around the body rails, refer to Section 4 (**Figure 8**). Torque all 1/2" nuts to 75-90 ft.-lbs. (102-122 N•m).

21. Troubleshooting

PROBLEM	POSSIBLE CAUSE	RESOLUTION
All air springs flat (no air).	Insufficient air pressure to suspension.	Build air pressure above 85 psig (5.9 bars). Malfunctioning air pressure protection valve – test the valve using instructions in Sections 7. Replace if necessary. Check air compressor. Height control valve not working – follow height control valve inspection procedures in Section 7.
	Air leakage from the suspension air system or the air brake system.	Test for air leakage due to loose fittings or damaged air lines, air springs, brake actuators or height control valve. Tighten loose fittings to stop leakage and/or replace worn or damaged parts.
Air springs deflate rapidly when vehicle is parked.	Air leakage from the suspension air system.	Test for air leakage due to loose fittings between air tank and air suspension or damaged air lines, air springs or height control valve. Apply a soap and water solution to connections and air springs to check for bubbles which signifies leaks. Tighten loose fittings to stop leakage and/or replace worn or damaged parts with new ones.
Ride height too high or too low.	Height control valve out of adjustment.	Re-adjust the height control valve – follow height control valve adjustment procedures in Section 6.
Air springs ruptured.	Tire, tire rim or brake component rubbing air spring.	Check inside to inside tire dimension. There MUST be 1" (25 mm) minimum clearance around air spring. If not, it could be necessary to re-install suspension. Use tire rim back spacers to provide additional clearance.
	Spring brake chamber rubbing air spring.	Re-locate chamber or rotate clamp ring for additional clearance.
Air spring failed.	Continual or repeated over-extension of the air spring.	Visually inspect for broken or loose shock absorber or shock absorber mounting bracket. Re-connect loose parts and replace any defective parts. Check the adjustment of the height control valve, refer to Section 6.
	Air spring(s) worn out.	Replace air spring(s), refer to Section 9.
	Air leak or damaged line.	Locate and repair. Air spring punctured or leaking – replace with proper air spring. Then check for proper clearance around air spring, 1" (25 mm) minimum. Also check shock absorbers.
	"Temporary Operation."	If air loss occurs in the air suspension system and after attempts to repair have failed to correct the problem, it is recommended that the height control valve linkage be disconnected and all air exhausted from the system. There is an internal rubber bumper built into the air spring which makes it possible to operate the vehicle cautiously while driving at a reduced speed to the nearest repair facility.
	Restricted air line(s) between the height control valve and the air spring(s).	Disconnect the height control valve linkage and rotate the actuating lever to the 20° down position. If the air spring(s) remain inflated, check for pinched or blocked line(s).
Front pivot connection worn and loose.	Fixed frame bracket pivot wear washers worn.	If internal wear washers are worn, replace and realign axles.
	SwingAlign™ pivot alignment plates worn.	If alignment plates are worn, replace and re-align axles, refer to Section 8.
	Front pivot bolt loose.	Connection not properly tightened. Replace all worn or damaged components - refer to Section 11.
	Excessive lateral axle walk.	3/4" (19 mm) is maximum. Axle connection welds failed. Refer to Section 3 for welding specifications. Front pivot connection bushing worn – replace with proper Service Repair Kit refer to Parts Manual XL-AS11428PM-en-US.
Shock absorber failures.	Over-extending shock absorbers.	Suspension set at improper ride height – re-adjust height control valve, refer to Section 6. Suspension mounted at wrong ride height – check specification sheet, or refer to Section 6 for correct ride height and adjustment procedure. Wrong length or improper replacement shock absorber(s) replace if necessary, refer to Section 10.
Excessive tire wear.	Loose or worn bushings at pivot connection.	Inspect for damage and replace components as necessary, or if loose, tighten connection(s) to proper torque, refer to torque specifications listed in Section 19. Then, check axle alignment and re-align if necessary. If worn – replace with proper Service Repair Kit refer to the SAF-HOLLAND® Aftermarket Parts Catalog at www.safholland.us .
	Suspension not properly installed.	Contact SAF-HOLLAND® Customer Service and/or check trailer manufacturer for proper suspension installation; correct where necessary.



From fifth wheel rebuild kits to suspension bushing repair kits, SAF-HOLLAND Original Parts are the same quality components used in the original component assembly.

SAF-HOLLAND Original Parts are tested and designed to provide maximum performance and durability. Will-fits, look-alikes or, worse yet, counterfeit parts will only limit the performance potential and could possibly void SAF-HOLLAND's warranty. Always be sure to spec SAF-HOLLAND Original Parts when servicing your SAF-HOLLAND product.

SAF-HOLLAND USA • 888.396.6501 • Fax 800.356.3929
www.safholland.us

SAF-HOLLAND CANADA • 519.537.3494 • Fax 800.565.7753
WESTERN CANADA • 604.574.7491 • Fax 604.574.0244
www.safholland.ca

SAF-HOLLAND MEXICO • +(52) 55.5362.8743 • Fax +(52) 55.5362.8743
www.safholland.com.mx

info@safholland.com