SAF
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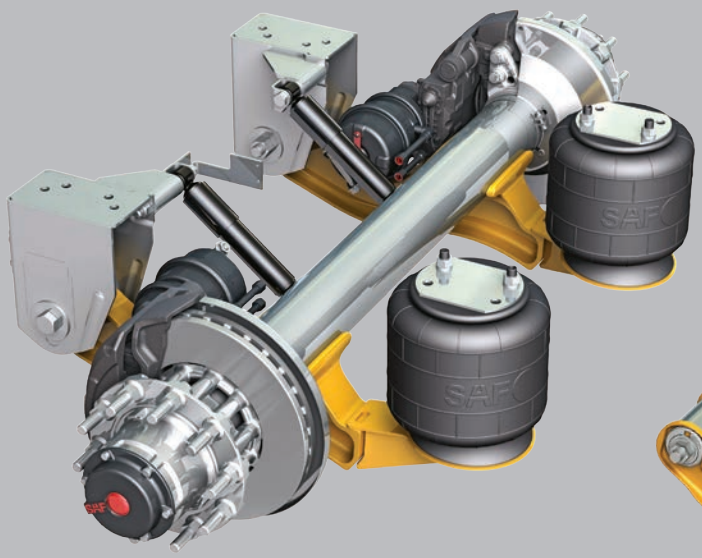
Maintenance Manual

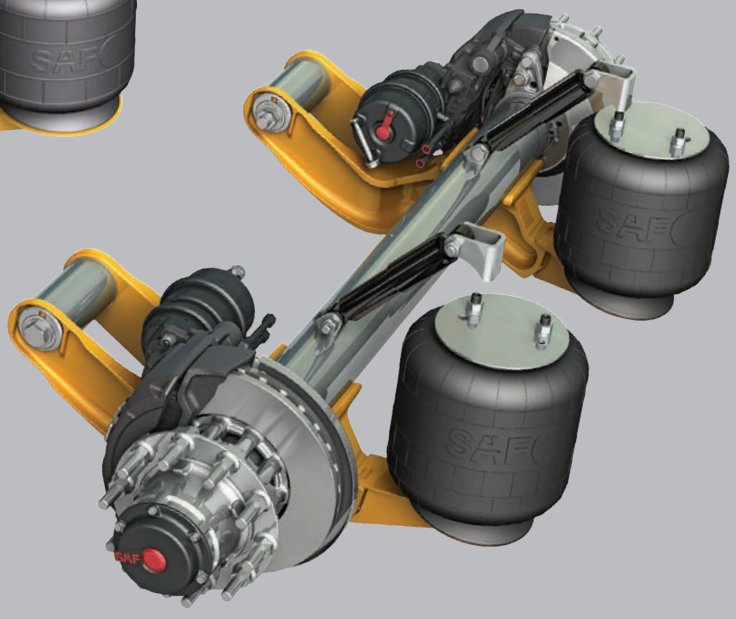
CBu/CBXu and CBy/CBXy Series

Fixed Frame Underslung and Yoke Mount Trailer Air Suspension

- For Disc and Drum Brake Applications



CBXU MODEL



CBXY MODEL

XL-AS20010MM-en-US Rev B

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Introduction

This manual provides the necessary information for the maintenance of the SAF® CBu/CBXu and CBy/CBXy fixed frame underslung trailer air suspension.

The CBXu and CBXy suspension includes a premium 5.75" diameter axle. The CBu and CBy suspensions include a standard 5.00" diameter axle. For axle end and/or brake servicing information or component replacements, refer to Drum Brake Manual XL-TA10006OM-en-US, Disc Brake Manual XL-SA10059OM-en-US or contact Customer Service at 888-396-6501.

Read this manual before using or servicing this product and keep it in a safe location for future reference. Updates to this manual, which are published as necessary, are available on the internet at www.safholland.us.

When replacement parts are required, SAF-HOLLAND® highly recommends the use of only SAF-HOLLAND® Original Parts. A list of technical support locations that supply SAF-HOLLAND® Original Parts and an Aftermarket Parts Catalog are available on the internet at www.safholland.us or contact Customer Service at 888-396-6501.

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 or available on the internet at 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 may 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.

- DO NOT 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. CBu/CBXu Model Identification

The CBu/CBXu suspension serial tag is located on the frame bracket ***(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 equalizing beam. The CBu/CBXu model will have a cast beam with a lower air spring mounting plate welded to it ***(Figure 1)***.

NOTE: This manual applies to the suspension models listed on the front cover. However, we urge you to determine the specific model number, write that information below and refer to it when obtaining information or replacement parts ***(Figure 2)***.

NOTE: CBu comes with the standard 5" diameter axle and the CBXu comes with the premium 5.75" diameter axle. ***(Figure 3)***.

3. CBu/CBXu Model Nomenclature

The sample tag shown will help interpret the information on the SAF-HOLLAND®, Inc. serial number 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)***.

CB X u 23 - 9

- 9 — Ride Height
  - 6" (152 mm)
  - 7" (178 mm)
  - 8" (203 mm)
  - 9" (229 mm)
  - 10" (254 mm)
  - 12" (305 mm)
- 23 — Axle Capacity Suspension Series
  - 23 – 23,000
  - 25 – 25,000
  - 25/30 – 25,000/30,000*
  - *30,000 at creep speed
- u — Underslung Mount
- X — 5.75" Diameter Premium Axle
- CB — Cast Beam Suspension

Figure 1

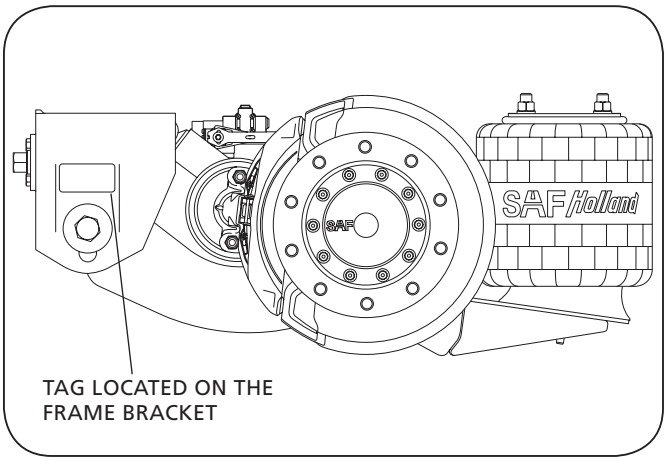


Figure 2

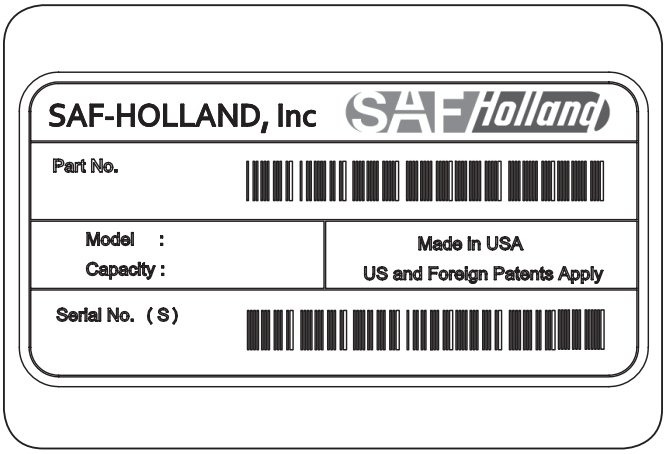
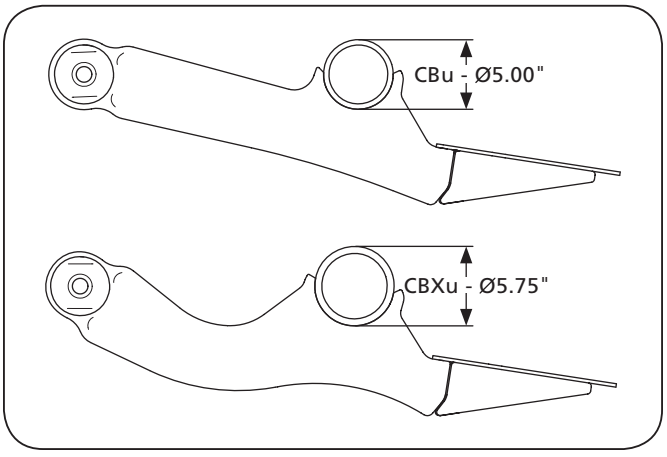


Figure 3



4. CBy/CBXy Model Identification

The CBy/CBXy suspension serial tag is located on the inner gusset of the roadside beam ***(Figure 4)***.

NOTE: If the suspension serial tag is NOT legible or is NOT available, It can be identified by the appearance of the equalizing beam. The CBy/CBXy model will have a cast beam with a lower air spring mounting plate welded to it ***(Figure 4)***.

NOTE: This manual applies to the suspension models listed on the front cover. However, we urge you to determine the specific model number, write that information below and refer to it when obtaining information or replacement parts ***(Figure 5)***.

5. CBy/CBXy Model Nomenclature

The sample tag shown will help interpret the information on the SAF-HOLLAND®, Inc. serial number 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 5)***.

CB X y 23 - 9

- **9** — Ride Height
  - 6" (152 mm)
  - 7" (178 mm)
  - 8" (203 mm)
  - 9" (229 mm)
  - 10" (254 mm)
  - 12" (305 mm)
- **23** — Axle Capacity Suspension Series
  - 23 – 23,000
  - 25 – 25,000
  - 25/30 – 25,000/30,000*
  - *30,000 at creep speed
- **y** — Yoke Mount
- **X** — 5.75" Diameter Premium Axle
- **CB** — Cast Beam Suspension

Figure 4

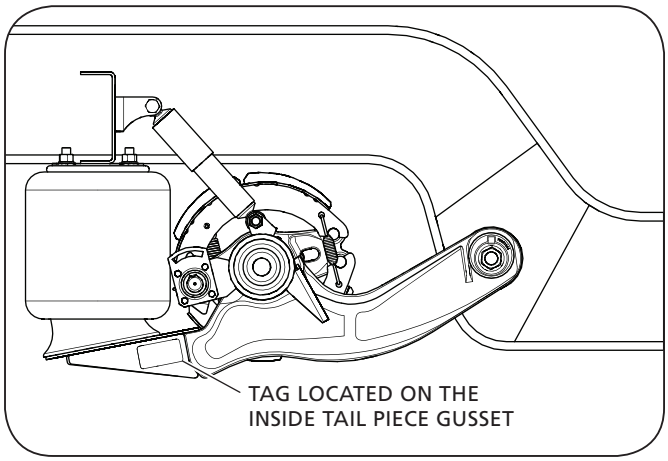
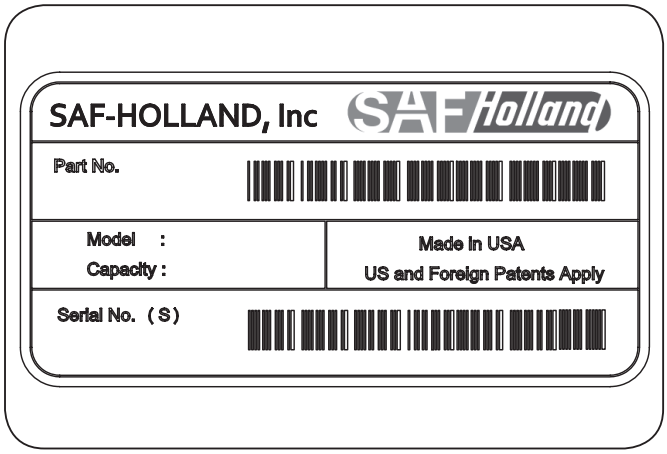


Figure 5



6 Welding Standards

6.1 Scope

When welding is required for the suspension repairs, observe the requirements below. 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.

6.2 Workmanship

All welding on SAF-HOLLAND® products MUST be performed by a welder qualified according to the appropriate AWS standard for the weld being made or an equivalent standard. It is the responsibility of the customer to provide good workmanship when welding on SAF-HOLLAND® products.

6.3 Material

Items to be welded that are 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 illustrated ***(Figure 6)***. Where the installation drawing specifies different than above, the drawing shall prevail.

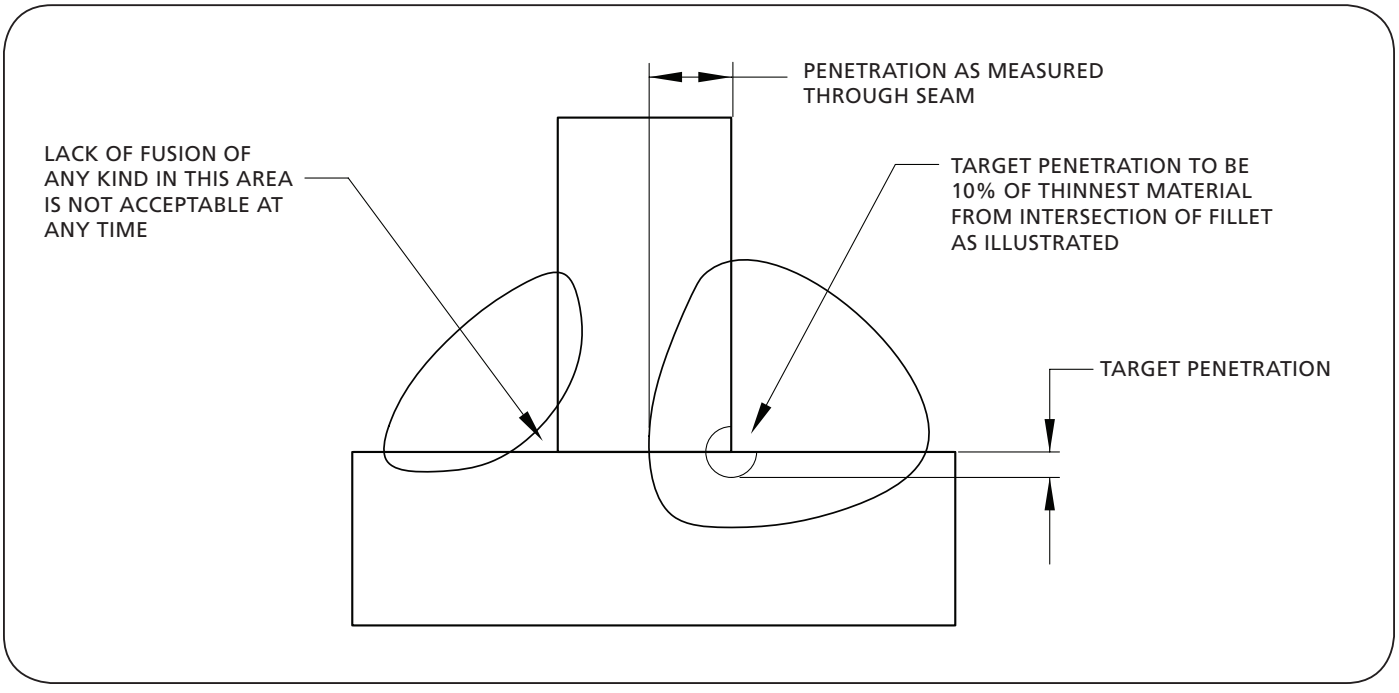
6.4 Procedures

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" (12.7 mm) or a sufficient amount to prevent craters at the end of the weld. Where weld is illustrated to go around corners, it is assumed the corner represents a stress concentration area. DO NOT start or stop weld within 1" (25.4 mm) of the corner. Particular care should be taken to prevent undercutting in this area.

6.5 Weld Size

If weld size is NOT specified, the effective throat of the weld MUST be no smaller than the thinnest material being welded ***(Figure 6)***.

Figure 6



7. Ride Height Adjustment

NOTE: Yoke mount suspensions DO NOT receive a height control valve.

IMPORTANT: 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 7)***.
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height ***(Figure 8)***.
3. Place multiple jack stands at the suspension's specified ride height ***(Table 1)*** under the vehicle frame at OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It may be necessary to shim jack stands to achieve specified ride 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.

Table 1

MODEL		"A" RIDE HEIGHT
CBu/CBXu-6	CBy/CBXy-6	6"
CBu/CBXu-7	CBy/CBXy-7	7"
CBu/CBXu-8	CBy/CBXy-8	8"
CBu/CBXu-9	CBy/CBXy-9	9"
CBu/CBXu-10	CBy/CBXy-10	10"
CBu/CBXu-12	CBy/CBXy-12	12"

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 the linkage from the control arm and lower axle mounting bracket ***(Figure 9)***.
6. Pin the height control valve so that the valve arm is in the center or neutral position ***(Figure 9)***.

Figure 7

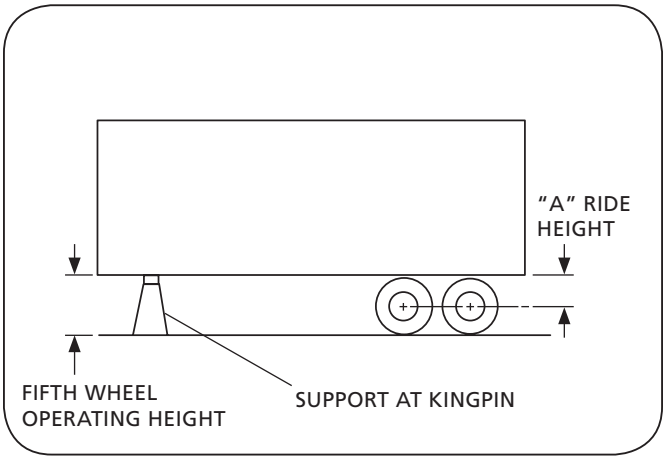


Figure 8

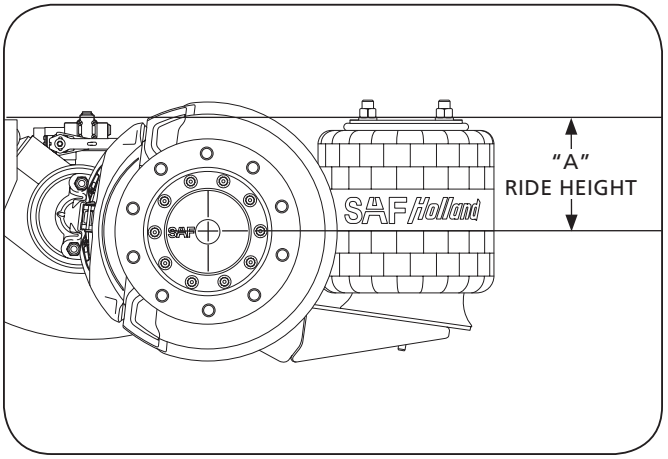
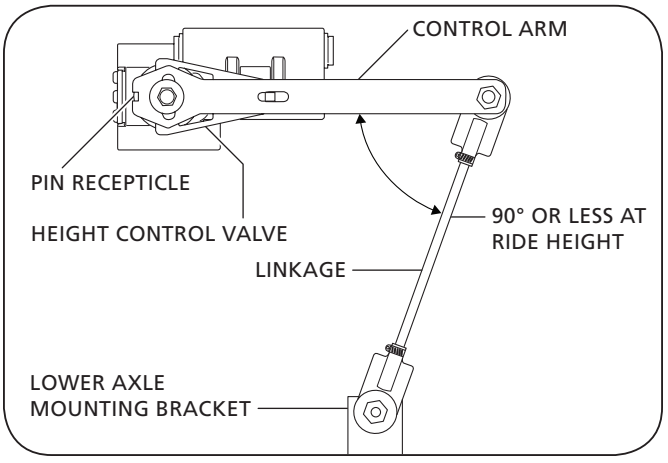


Figure 9



7. Measure distance "B" between the valve arm and mounting bracket holes to determine linkage length ***(Figure 10)***.
8. Adjust linkage to required length and install the hardware into the upper and lower connections ***(Figure 10)***. Torque hardware to 30-40 in.- lbs. (3-5 N•m)

NOTE: It may be necessary to cut linkage rod to achieve proper length. Be sure to de-burr rod to prevent link end damage.

9. Raise the trailer approximately 2" (51mm) above ride height and remove jack stands.
10. Slowly lower the trailer so that the trailer suspension is fully collapsed.
11. Pull the pin and apply air to the trailer, allowing the suspension to return to ride height.
12. With the suspension at rest, measure the ride height. Ride height MUST be within 1/4" (6.4 mm) of the suspensions specified ride height.
13. Remove wheel chocks.

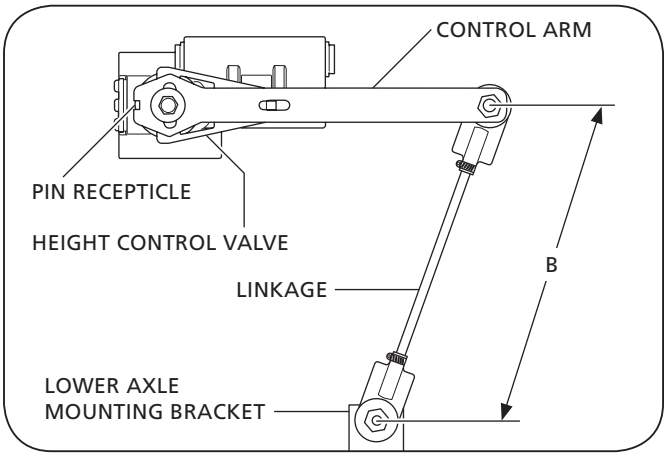
8. Height Control Valve Inspection

IMPORTANT: DO NOT grease height control valve.

1. Visually inspect the valve and linkage on a monthly basis for proper clearance, operation and adjustment.
2. Drain moisture from air tank periodically. In severe cold weather an air dryer and/or an alcohol evaporator is recommended to avoid valve freezing and damage.
3. Ensure air system is free of dirt and foreign particles as they may harm the valve.

CAUTION Failure to maintain the air system could compromise the suspension performance which, if not avoided, could result in property damage.

Figure 10



9. Height Control Valve Performance Check

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

1. Apply air system pressure in excess of 85 psig (5.9 bars).
2. Using multiple jack stands support the vehicle frame approximately 2" (51 mm) below ride height at 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. Disconnect the lower connection of the link assembly from mounting bracket.
4. Move the control arm up 45° for 10-15 seconds – air should flow to air spring(s) ***(Figure 11)***.
5. Move the control arm to center (neutral) position – valve should shut off air flow ***(Figure 11)***.
6. Move the control arm down 45° for 10-15 seconds – air should exhaust ***(Figure 11)***.
7. Move the control arm to center (neutral) position – valve should shut off air flow.

NOTE: The valve is operating correctly if it performs as described in Steps 4-7 above.

8. If the valve DOES NOT perform correctly, replace the valve.

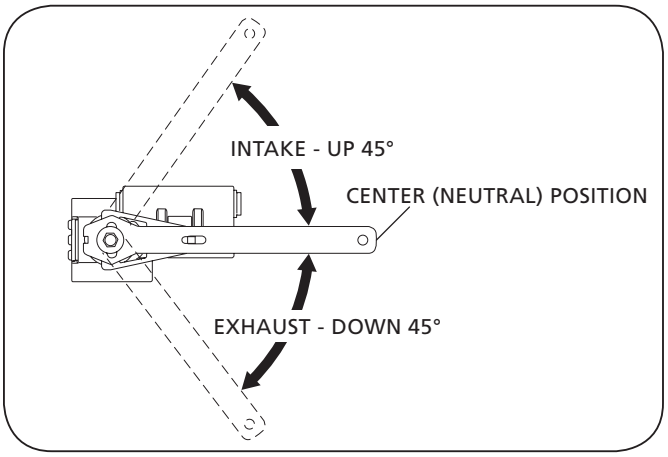
CAUTION Failure to replace a defective valve will compromise suspension performance which, if not avoided, could result in suspension damage.

9. Reconnect 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) 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 11



10. SwingAlign™ Axle Alignment

10.1 Alignment Preparation

1. Pull the trailer in a straight line for a sufficient distance to ensure there are no binds in the suspension.
2. Disengage the trailer parking brakes and it is recommended that the trailer be empty.
3. Manually measure or use an optical device specifically designed for the alignment measuring to determine the following:
   a. Measure the distance from the king pin to the centerline of the front axle spindles. It is recommended that spindle extensions be utilized.
   b. Dimensions A and B ***(Figure 12)*** MUST be equal to within 1/8" (3 mm).
   c. Measure the distance from the centerline of the front axle spindles to the centerline of the rear axle spindles.
   d. Dimensions C and D ***(Figure 12)*** MUST be equal to within 1/16" (1 mm).

10.2 Alignment Instructions

1. Using the measurements from Step 3, align each axle. Align by rotating the alignment bolt head using a 1-3/8" socket wrench on the front face of the roadside frame bracket. Rotate clockwise to move axle forward ***(A arrows)***; counterclockwise to move axle rearward ***(B arrows) (Figure 13)***. Approximately 250 ft.-lbs. (339 N•m) will be required.

IMPORTANT: DO NOT loosen the pivot bolts.

IMPORTANT: Two (2) 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." Inspect and repair trailer components as necessary and realign. ***(Figure 14)***.

IMPORTANT: The SwingAlign™ design maintains proper alignment without welding or without loosening of the pivot connection. DO NOT weld alignment bolt or pivot bolts ***(Figure 14)***. If connection requires tightening, refer to Section 20 Torque Specifications.

Figure 12

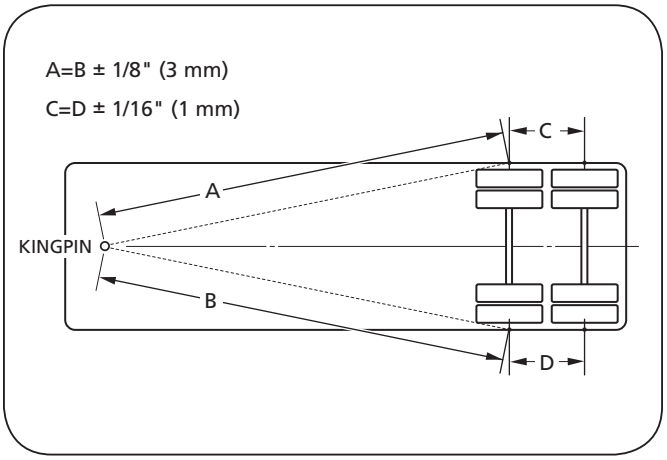


Figure 13

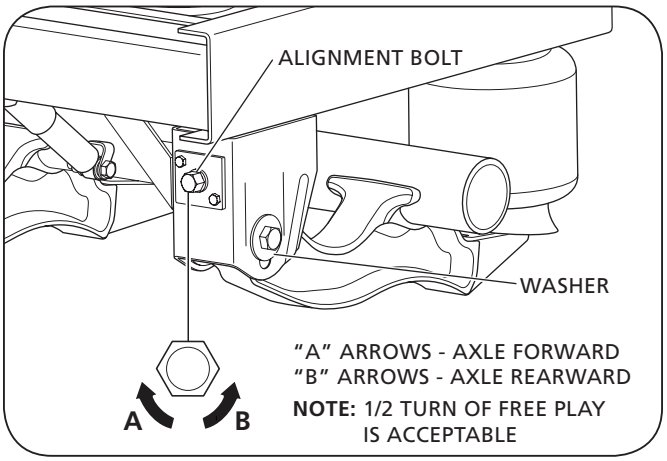
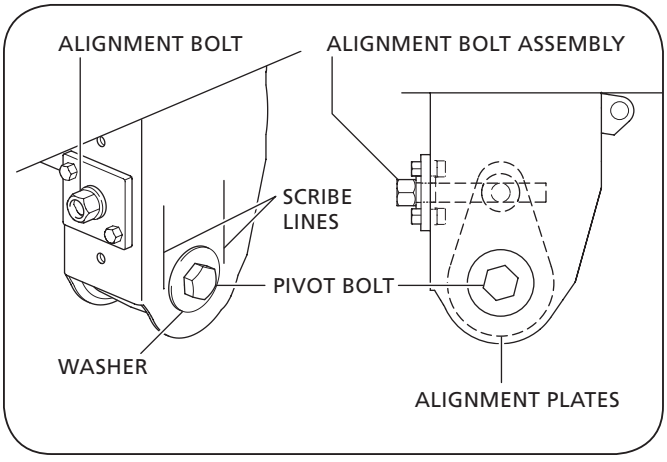


Figure 14



11 CBy/CBXy Axle Alignment Instructions

The CBy/CBXy suspension use four (4) eccentric style alignment collars in the pivot assembly. There are two (2) in the roadside pivot assembly and two (2) on the curbside. The collars allow the suspension beam to be adjusted for proper axle alignment using two (2) 1/2" drive ratchet style wrenches. The alignment collars can only be installed in one direction with the inboard side facing the cast beam and the outboard side facing outward ***(Figure 15)***.

11.1 Alignment Description

Fixed Side:

The Curbside pivot hardware is considered the "fixed" side of the suspension alignment system.

Adjustable Side:

The Roadside pivot hardware is considered the "adjustable" side of the suspension alignment system.

11.2 Adjustment Procedure

1. Set the "fixed" side of the suspension.
   a. To set the fixed side of the suspension, use two (2) 1/2" drive ratchet style wrenches (one on both sides of pivot assembly, inboard and outboard). Adjust the collars by placing the ratchet wrenches into the 1/2" square hole of the alignment collars and turning simultaneously in one direction, frontward to move the axle forward ***(Figure 16 Arrow A)*** and rearward to move the axle backward ***(Figure 16 Arrow A)***.

NOTE: There is .5" (13mm) of total allowable axle adjustment: .25" (6mm) forward and .25" (6mm) rearward.

NOTE: Improper bolt alignment and binding will occur if collars are NOT in line with each other on both sides of the cast beam. Collars will NOT be seated properly and applied torque will NOT hold ***(Figure 17)***.

Figure 15

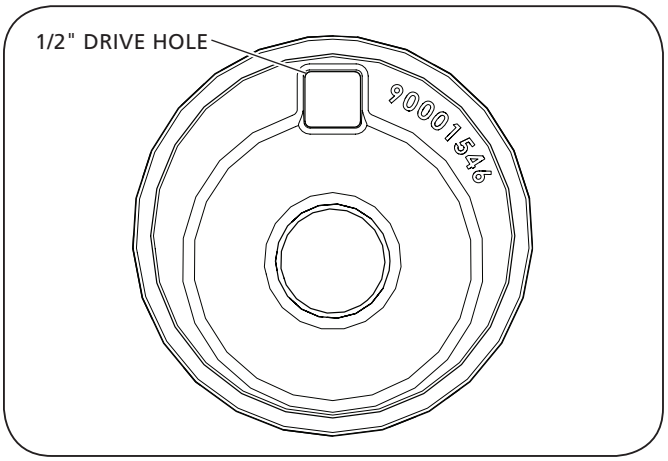


Figure 16

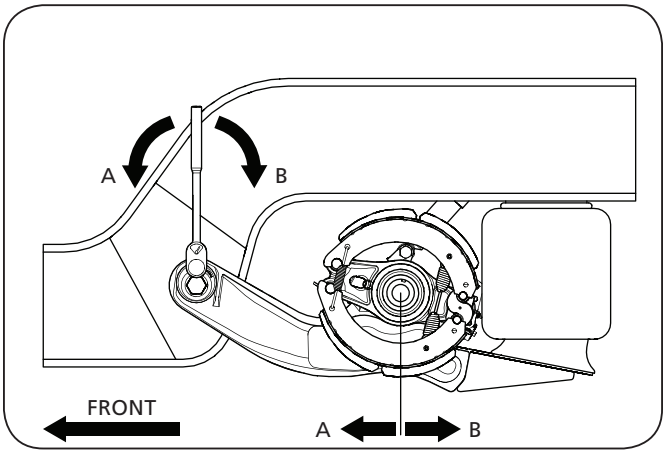
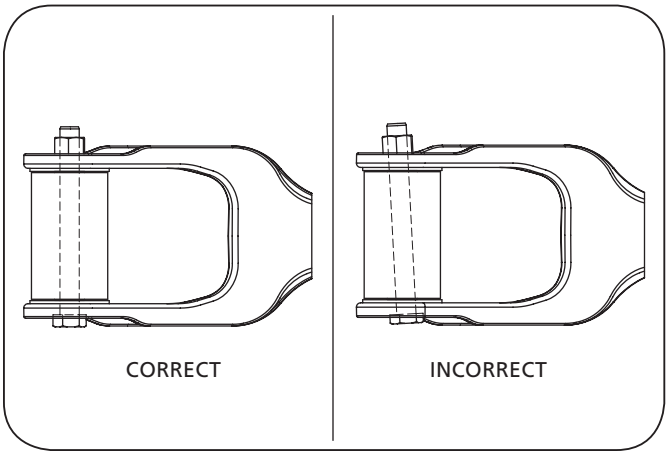


Figure 17



b. The collars should be centered with equal distance between the alignment tabs on the cast beam and the square ratchet hole on the collar itself. The pivot assembly is then in it's "centermost"position ***(Figure 18)***.

c. Once the fixed side assembly is set, the nut should be torqued to SAF-HOLLAND® provided torque specification Section 20.

NOTE: Applying torque to the nut will cause the alignment collars to rotate. Use 1/2" drive ratchet wrench to resist rotation while tightening pivot nut.

2. Set the "adjustable" side of the suspension.

a. Using the same procedure outlined above in Step 1.a, the roadside pivot assembly should be adjusted until the desired axle alignment is reached.

NOTE: If axle alignment cannot be achieved within the allowable adjustable distance from the roadside (adjustable) pivot assembly, the curbside (fixed) assembly can be adjusted to make up the difference needed to achieve proper alignment.

b. Once the adjustable side assembly is set, the nut should be torqued to SAF-HOLLAND® provided torque specification Section 20

IMPORTANT: DO NOT weld any components of the pivot assembly.

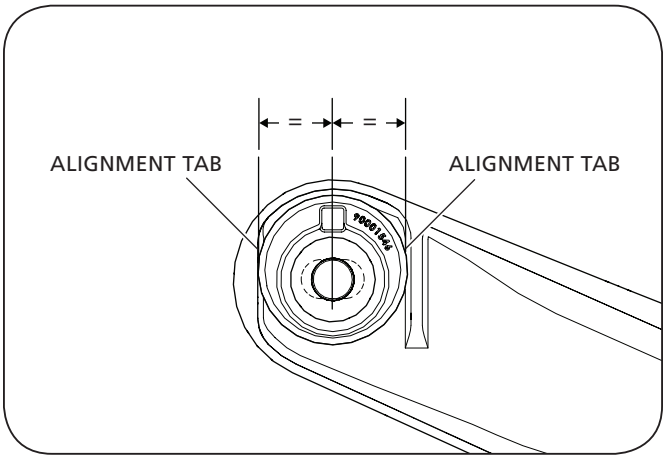
12. Brake Adjustment Instructions

The brakes should be adjusted per axle and brake manufacturer's specifications.

For the CBu/CBXu and CBy/CBXy Suspensions with Drum Brake Systems refer to SAF-HOLLAND® Drum Brake Service Manual XL-TA10006OM. Drum Brakes can be on a 5" or 5.75" axle.

For CBXu and CBXy Suspensions with Disc Brake Systems refer to SAF-HOLLAND® Disc Brake Service Manual XL-SA10059OM. Disc Brakes are on the 5" axle.

Figure 18



13. Air Spring Replacement

IMPORTANT: Air springs MUST be replaced with the proper air spring for this application. Check the flexible member and piston for the part number. If the part number cannot be found, consult the SAF-HOLLAND® Aftermarket Parts Manual at www.safholland.us.

NOTE: For further assistance with air spring part number identification, contact SAF-HOLLAND® technical assistance 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 19)***.
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height.
3. Place multiple jack stands at the suspension's specified ride height ***(Table 2)*** under the vehicle frame at OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It may 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 20).***

Figure 19

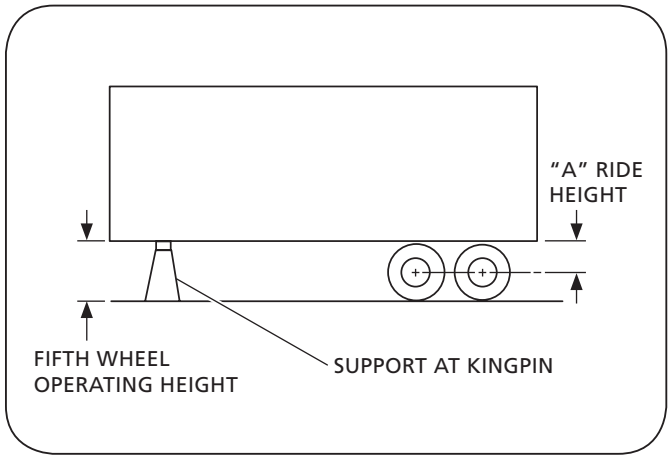
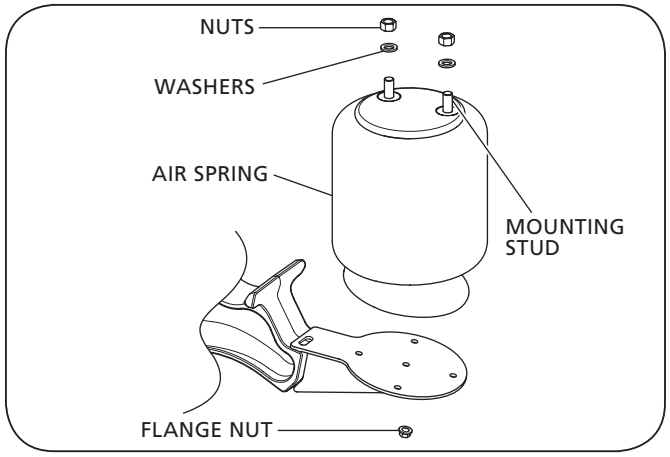


Table 2

MODEL		"A" RIDE HEIGHT
CBu/CBXu-6	CBy/CBXy-6	6"
CBu/CBXu-7	CBy/CBXy-7	7"
CBu/CBXu-8	CBy/CBXy-8	8"
CBu/CBXu-9	CBy/CBXy-9	9"
CBu/CBXu-10	CBy/CBXy-10	10"
CBu/CBXu-12	CBy/CBXy-12	12"

Figure 20



6. Install new air spring assembly and torque fasteners. Refer to the Torque Specifications listed in Section 20.
7. Reconnect air supply line.
8. Raise the trailer approximately 2" (51 mm) above ride height and remove jack stands.
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 as required.

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

12. Remove wheel chocks.

14. Shock Absorber Replacement

IMPORTANT: Shock absorber MUST be replaced with the proper shock absorber. Check shock for part number. If the part number cannot be found, consult the SAF-HOLLAND® Aftermarket Parts Manual 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 21)***.
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 may 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 21

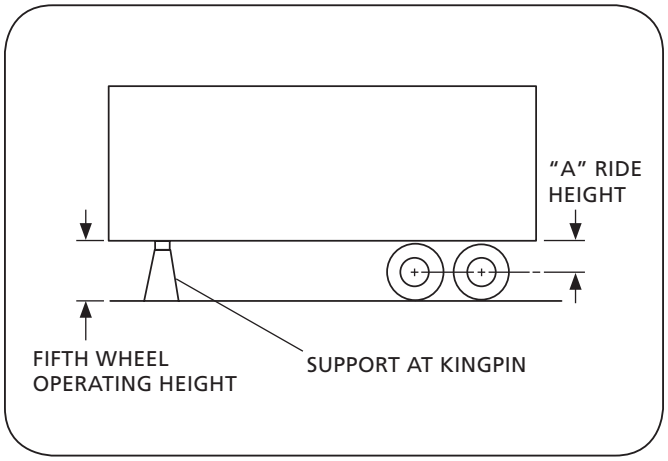


Table 3

MODEL		"A" RIDE HEIGHT
CBu/CBXu-6	CBy/CBXy-6	6"
CBu/CBXu-7	CBy/CBXy-7	7"
CBu/CBXu-8	CBy/CBXy-8	8"
CBu/CBXu-9	CBy/CBXy-9	9"
CBu/CBXu-10	CBy/CBXy-10	10"
CBu/CBXu-12	CBy/CBXy-12	12"

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.

6. Remove the upper and lower mounting bolts and remove the shock absorber ***(Figure 22)***.
7. Replace with correct shock absorber and fasteners and torque hardware per specifications listed in Section 20.
8. Raise the trailer approximately 2" (51mm) above ride height and remove jack stands.
9. Slowly lower the trailer so that the trailer suspension is fully collapsed.
10. Apply air to the trailer and allow suspension to return to ride height.
11. Remove the wheel chocks.

15. CBu/CBXu Pivot Connection Bushing Replacement

IMPORTANT: When replacing the rubber bushing at this connection be sure the proper SAF-HOLLAND® Service Repair Kit (SRK) is used as they contain all the necessary parts to service one axle (two (2) kits per tandem). Refer to the Service Repair Kit section of the Aftermarket Parts Manual XL-AS11428PM-en-US for proper SRK.

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 23)***.
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 may 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 22

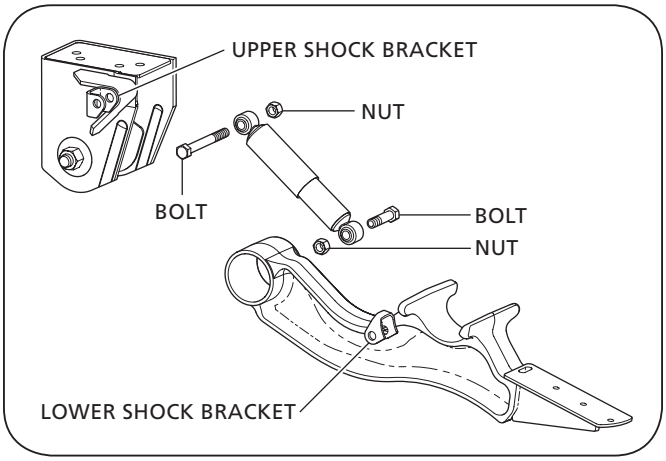


Figure 23

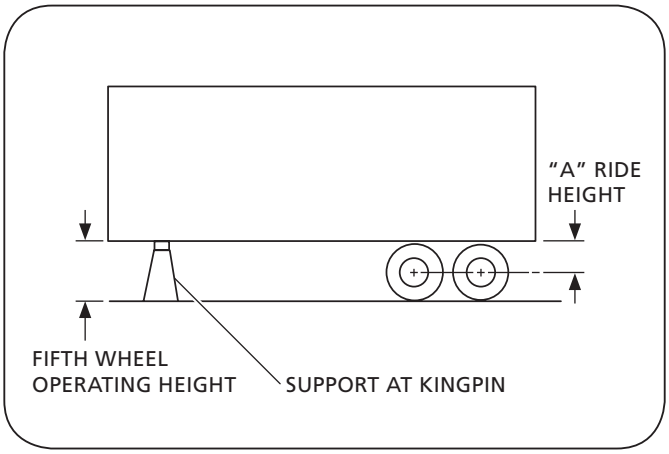


Table 4

MODEL	"A" RIDE HEIGHT
CBu/CBXu-6	6"
CBu/CBXu-7	7"
CBu/CBXu-8	8"
CBu/CBXu-9	9"
CBu/CBXu-10	10"
CBu/CBXu-12	12"

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

NOTE: The SAF-HOLLAND® Bushing Service Tool, Part No. 50544015 is available to ease removal and replacement of bushings ***(Figure 24)***. Contact the SAF-HOLLAND® distributor or Parts Manual for details.

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

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

8. Remove the tires.
9. Remove front pivot connection hardware and discard ***(Figure 25)***.
10. Rotate equalizing beams down until fully supported by the 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.

11. 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.

12. Press out old bushing ***(Figure 26)*** using a SAF-HOLLAND® Bushing Service Tool, Part No. 50544015 ***(Figure 24)***.

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

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.

Figure 24

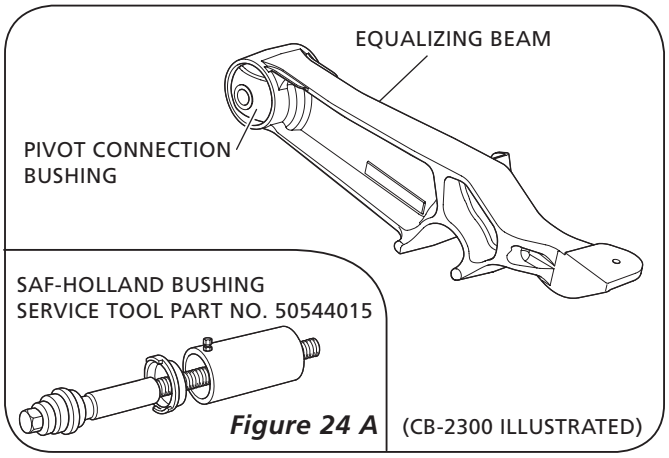
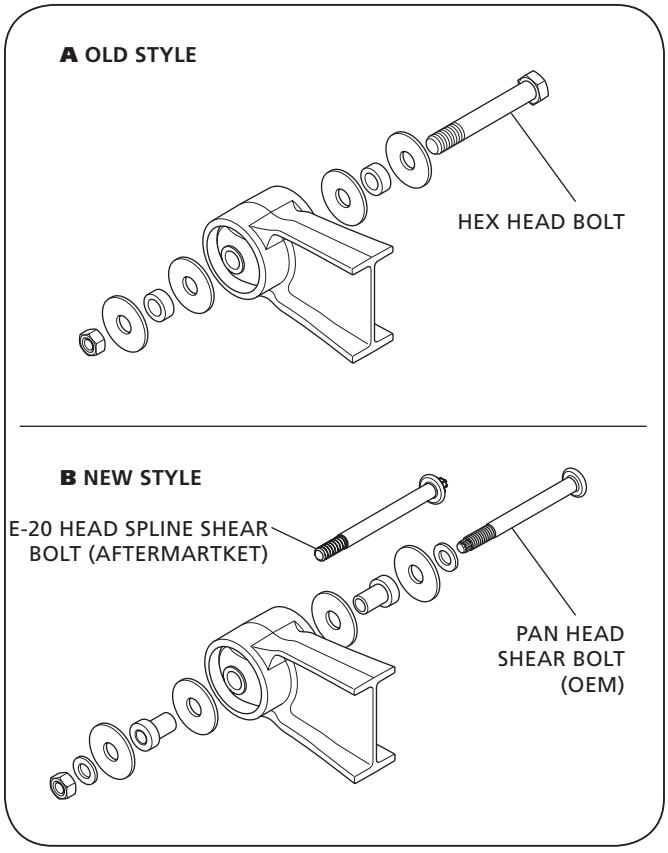


Figure 24 A (CB-2300 ILLUSTRATED)

Figure 25



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

14. Press new bushing into the beam. The bushing MUST be oriented, aligned and centered in beam receptacles:
    a. Orientate the bushings per ***(Figure 27)***.
    b. Press the bushings in beam receptacles and center them per ***(Figure 28)***.

IMPORTANT: It may be necessary to push bushing past center approximately 1" (25.4 mm) and then re-center the bushing to relieve the rubber ***(Figure 29)***.

    c. Inspect bushing's alignment ***(Figure 29)***. If the bushing is NOT aligned, press out bushing and repeat procedure.
15. Inspect frame brackets for excessive wear on inside wear washers or SwingAlign™ alignment plates. If wear is excessive, refer to Section 18 for replacement information.

    If only SwingAlign™ components need to be replaced, refer to Section 19 for replacement information.

    If only fixed frame bracket components need to be replaced refer to Section 18 for replacement information.
16. Rotate beams up into frame brackets and reinstall equalizing beam with new bolts and nuts. Position at ride height and torque fastening hardware according to the specifications listed in Section 20.
17. Reconnect air springs, shock absorbers and HCV linkage. Properly torque fastening hardware according to the specifications listed in Section 20.
18. Raise the trailer approximately 2" (51mm) 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. Remove the wheel chocks.

Figure 26

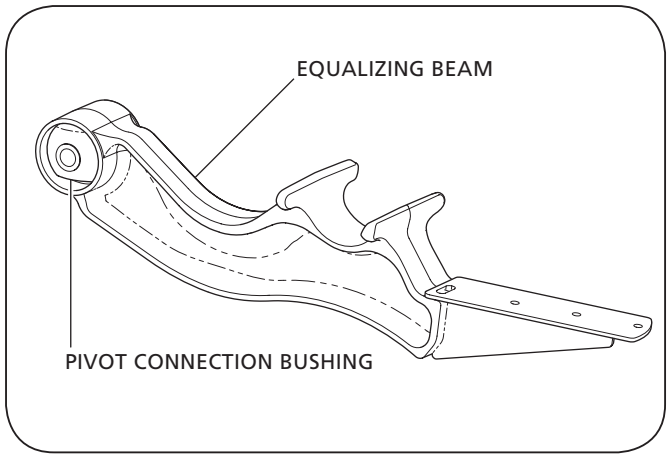


Figure 27

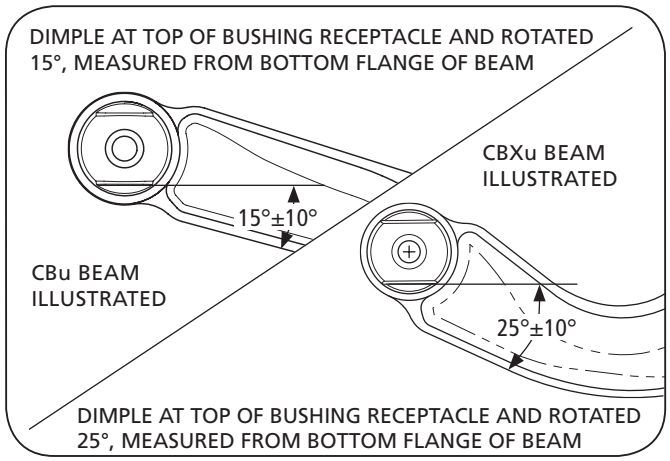


Figure 28

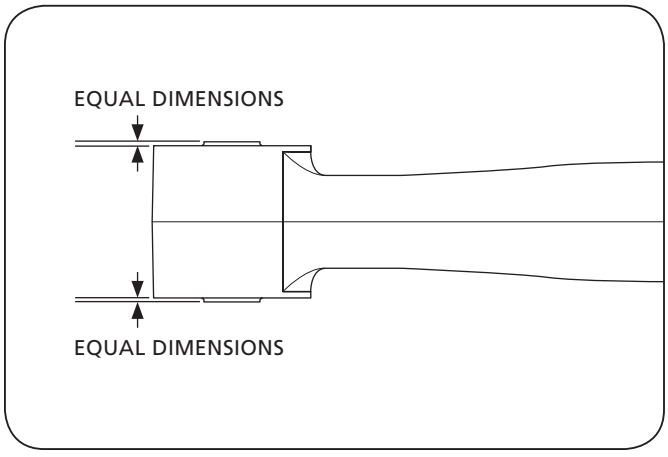
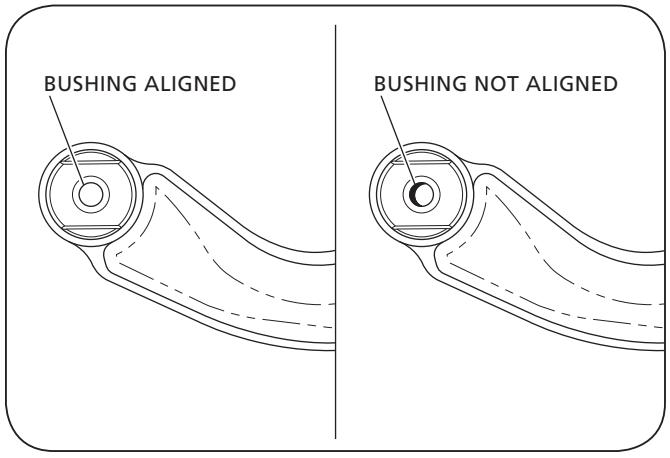


Figure 29



16. CBy/CBXy Pivot Connection Bushing Replacement

IMPORTANT: When replacing the rubber bushing at this connection be sure the proper SAF-HOLLAND® Service Repair Kit (SRK) is used as they contain all the necessary parts to service one axle (two (2) kits per tandem). Refer to the Service Repair Kit section of the Aftermarket Parts Manual for proper SRK.

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 30)***.
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 may 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 the 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 the air spring and shock absorber at lower connections on both roadside and curbside.
6. Disconnect the height control valve (HCV) linkage at lower connection.

NOTE: The SAF-HOLLAND® Bushing Service Tool, Part No. 50544015 is available to ease removal and replacement of bushings ***(Figure 31)***. Contact the SAF-HOLLAND® distributor or Parts Manual for details.

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

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

Figure 30

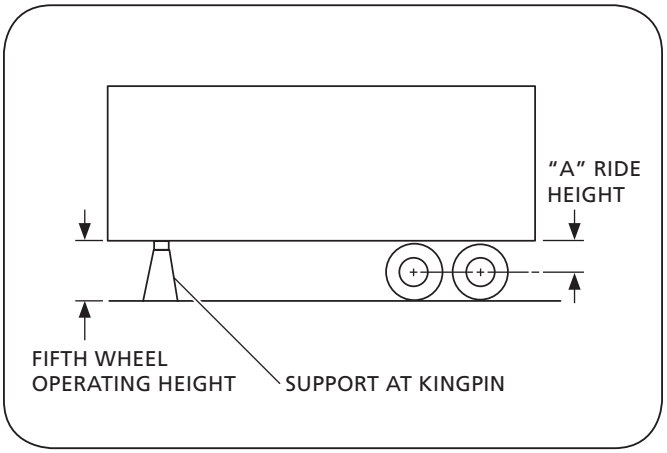
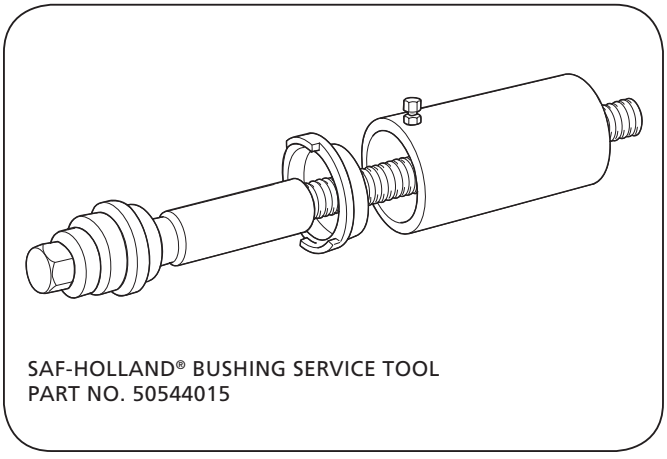


Table 5

MODEL	"A" RIDE HEIGHT
CBy/CBXy-6	6"
CBy/CBXy-7	7"
CBy/CBXy-8	8"
CBy/CBXy-9	9"
CBy/CBXy-10	10"
CBy/CBXy-12	12"

Figure 31



8. Remove the tires.
9. Disconnect the front pivot connection hardware and discard ***(Figure 32)***.
10. Rotate the equalizing beams down until fully supported by the 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.

11. Inspect the 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.

12. Press out old bushing ***(Figure 33)*** using a SAF-HOLLAND® Bushing Service Tool, Part No. 50544015 ***(Figure 34)***.

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

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.

Figure 32

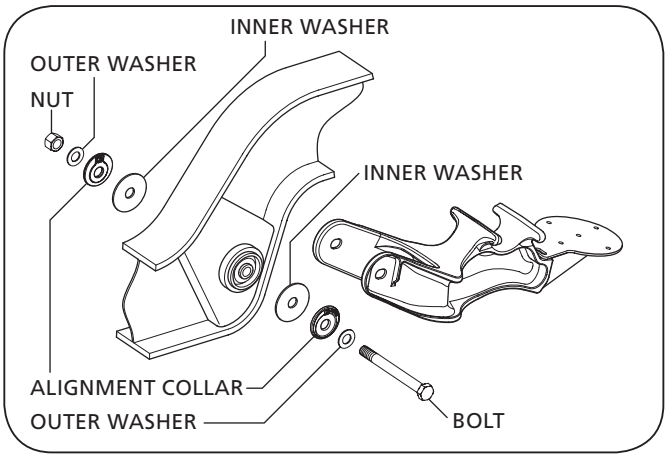


Figure 33

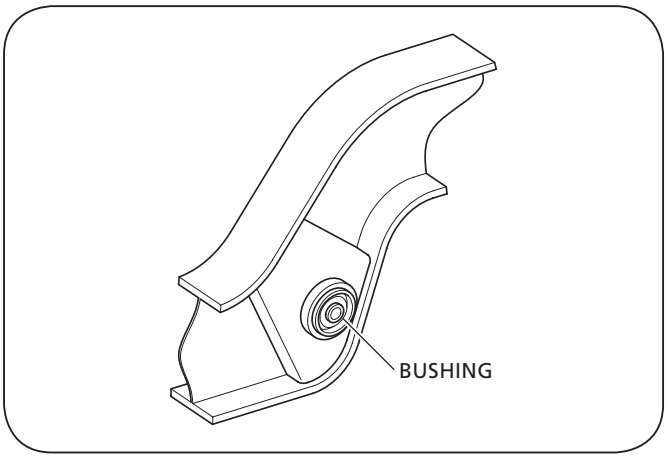
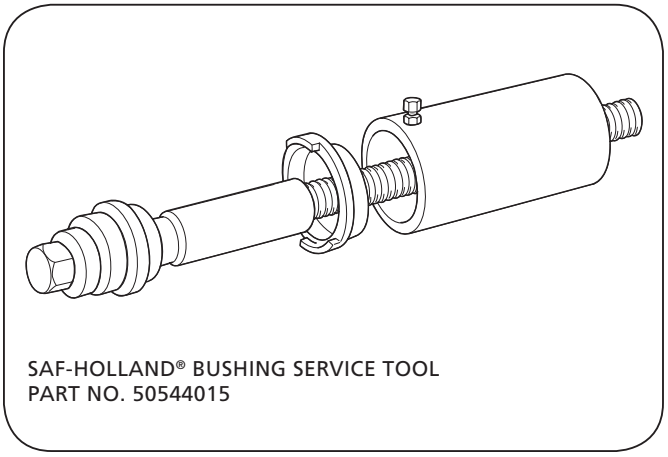


Figure 34



SAF-HOLLAND® BUSHING SERVICE TOOL
PART NO. 50544015

14. Press new bushing into the bushing tube on the trailer frame. Bushing MUST be oriented, aligned and centered in beam receptacles:
    a. Press the bushings into receptacle and center them as illustrated ***(Figure 35)***.

IMPORTANT: It may be necessary to push bushing past center approximately 1" (25.4 mm) and then re-center the bushing to relieve the rubber ***(Figure 36)***.

    b. Inspect bushing's alignment ***(Figure 36)***. If the bushing is NOT aligned, press out bushing and repeat procedure.
15. Rotate beams and reinstall equalizing beam with new bolts and nuts. Position at ride height and torque fastening hardware according to the specifications listed in Section 20.
16. Reconnect air springs and shock absorbers. Properly torque fastening hardware according to the specifications listed in Section 20.
17. Raise the trailer approximately 2" (51mm) above ride height and remove jack stands.
18. Slowly lower the trailer so that the trailer suspension is fully collapsed.
19. Apply air to the trailer and allow the suspension to return to ride height.
20. Remove the wheel chocks.

Figure 35

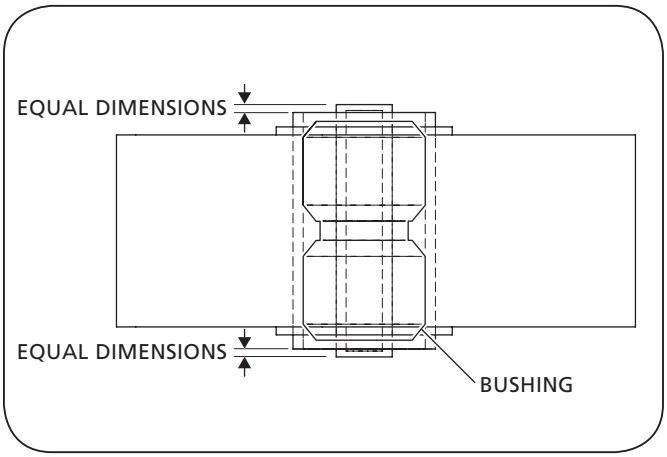
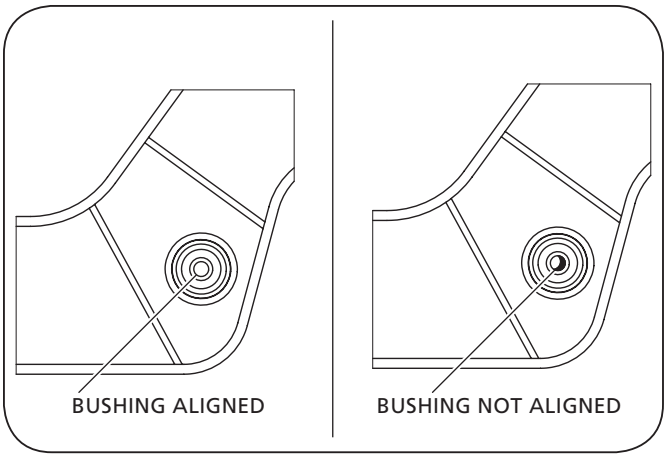


Figure 36



17. 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 37)***.
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 may 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.

5. 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.

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

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

7. Remove the tires.
8. Disconnect the air springs, shock absorbers and height control valve (HCV) linkage at the lower connections.
9. Remove brake equipment:
   - Drum Brakes – remove brake chambers, slack adjusters, and wheel end assemblies. Refer to the XL-TA10006OM-en-US service manual for detailed disassembly and reassembly procedures.
   - Disc Brakes – disconnect the brake chamber air supply lines. Refer to XL-SA10059OM-en-US service manual for detailed disassembly and reassembly procedures.

Figure 37

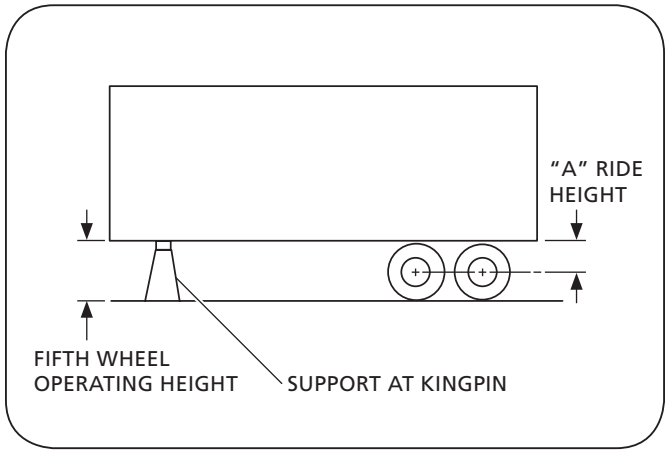


Table 6

MODEL		"A" RIDE HEIGHT
CBu/CBXu-6	CBy/CBXy-6	6"
CBu/CBXu-7	CBy/CBXy-7	7"
CBu/CBXu-8	CBy/CBXy-8	8"
CBu/CBXu-9	CBy/CBXy-9	9"
CBu/CBXu-10	CBy/CBXy-10	10"
CBu/CBXu-12	CBy/CBXy-12	12"

10. Remove pivot hardware from suspension and discard. For CBy/CBXy, refer to ***(Figure 38)*** for CBu/CBXu, refer to ***(Figure 39)***.
11. Remove axle and equalizing beam assembly.
12. Determine which pivot bolt style is being installed.
    - If 1-1/8" hex head bolt, verify torque on the nut is 550-600 ft.-lbs. (746-813 N•m) ***(Figure 39 A)***.
    - If 7/8" pan head shear bolt, verify spline has been sheared off ***(Figure 39 B)***.
13. Reconnect lower connections on the air springs, shock absorbers and HCV linkage. Properly torque hardware according to the specifications listed in Section 20.
14. Install brake components and wheel ends following the instructions in the appropriate manual referred to in Step 9.
15. Re-install tires, remove jack stands supporting the axle and equalizing beam assembly, and lower the axle.
16. Chock the wheels.
17. Raise the trailer approximately 2" (51mm) above ride height and remove jack stands.
18. Slowly lower the trailer so that the trailer suspension is fully collapsed.
19. Apply air to the trailer and allow the suspension to return to ride height.
20. With the suspension at rest, measure the ride height. Ride height MUST be within 1/4" (6.4 mm) of the suspensions specified ride height. Refer to Section 7 if ride height needs to be adjusted.
21. Remove the wheel chocks.
22. Re-align the axles using the axle alignment procedures listed in Section 15 for CBu/CBXu, and Section 16 for CBy/CBXy.

Figure 38

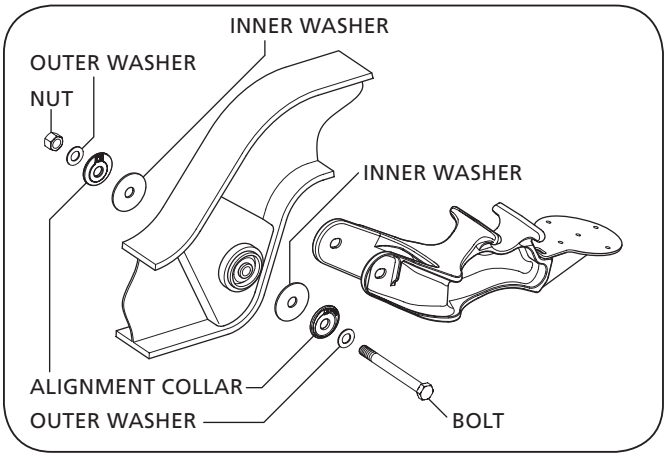
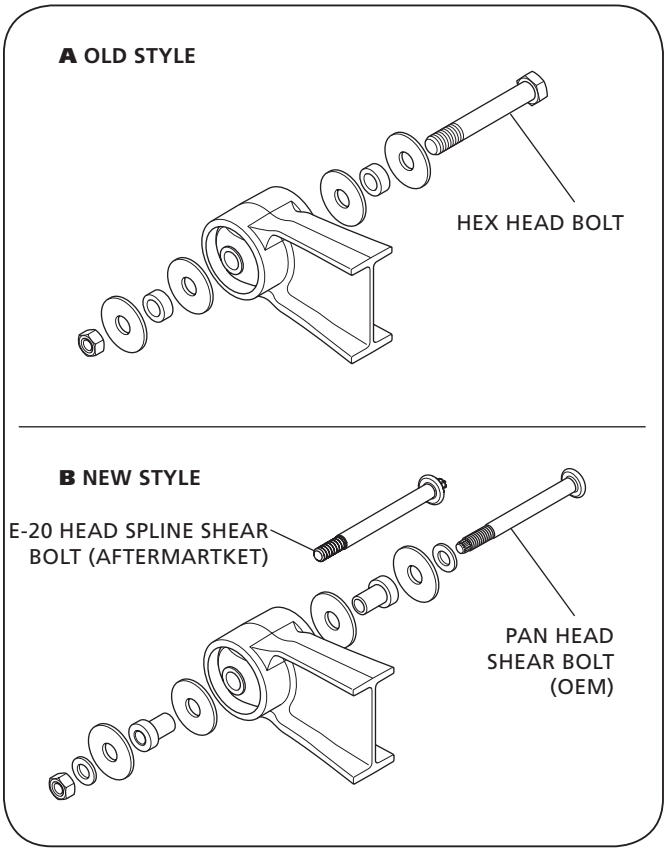


Figure 39



18. CBu/CBXu Frame Bracket Replacement

NOTE: When replacing frame bracket(s), refer to the SAF-HOLLAND® Aftermarket Parts Manual for the correct part number or Service Repair Kit.

IMPORTANT: If only SwingAlign™ frame bracket alignment plates and washers are to be replaced, refer to Section 10.

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 40)***.
2. Raise the trailer frame approximately 2" (51 mm) above the suspension's specified ride height.
3. Place multiple jack stands at the suspension's specified ride height ***(Table 7)*** under the vehicle frame at OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It may 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.

5. 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.

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

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

7. Remove the tires.
8. Remove front pivot hardware and discard ***(Figure 39).*** Rotate equalizing beams downward out of the frame brackets.
9. On the side of the frame rail mark the mounting location of the frame bracket to be replaced.

Figure 40

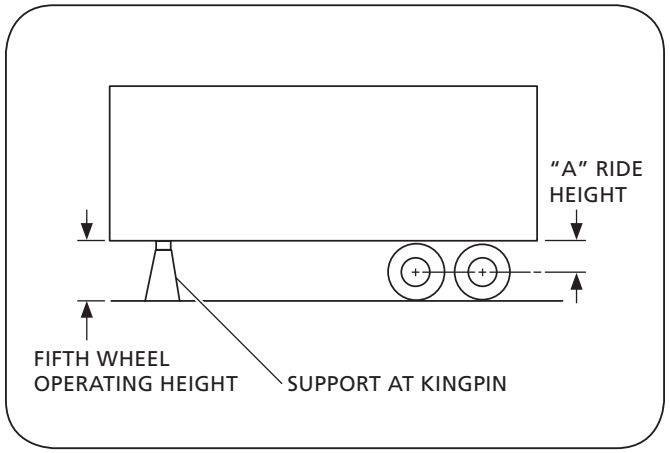


Table 7

MODEL	"A" RIDE HEIGHT
CBu/CBXu-6	6"
CBu/CBXu-7	7"
CBu/CBXu-8	8"
CBu/CBXu-9	9"
CBu/CBXu-10	10"
CBu/CBXu-12	12"

10. 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.

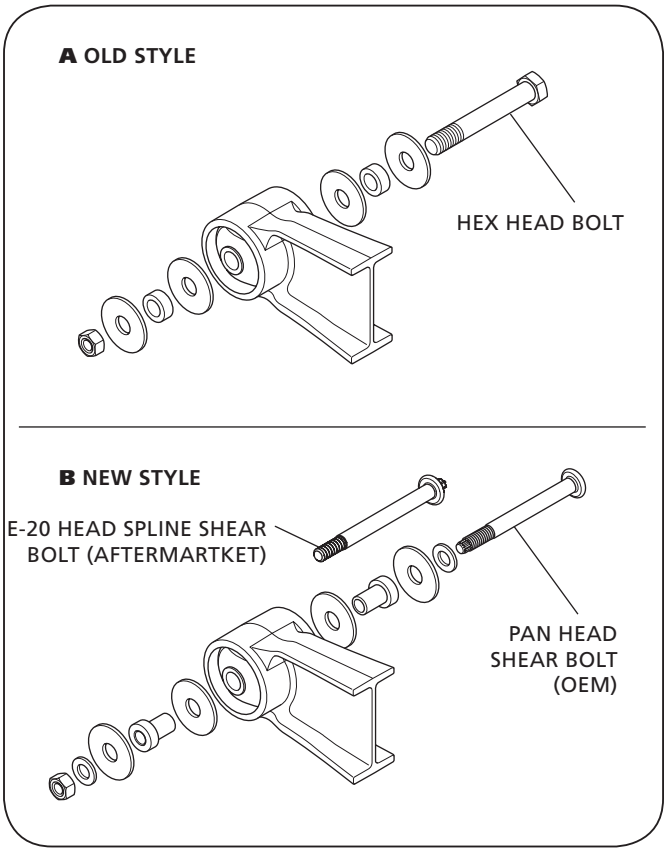
⚠WARNING Failure to repair a damaged frame could cause damage to the suspension with possible loss of vehicle control which, if not avoided, could result in death or serious injury.

11. Place the new frame bracket(s) on the frame rail at the locations marked in Step 9. 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 6.

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

12. If replacing the roadside SwingAlign™ frame bracket, refer to Section 19 for SwingAlign™ hardware installation procedures.
13. Determine which pivot bolt style is being installed.
    - If 1-1/8" hex head bolt, verify torque on the nut is 550-600 ft.-lbs. (746-813 N•m) ***(Figure 41 A)***.
    - If 7/8" pan head shear bolt, verify spline has been sheared off ***(Figure 41 B)***.
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" (51mm) 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" (6.4 mm) of the suspensions specified ride height. Refer to Section 7 if ride height needs to be adjusted.
20. Remove wheel chocks.
21. Re-align the axles using the axle alignment procedures listed in Section 10.

Figure 41



19. 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 42)***.
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 7)***, place multiple jack stands under the vehicle's frame per OEM specified locations, then lower the trailer onto the jack stands.

NOTE: It may 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.

5. 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.

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

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

7. Remove the tires.
8. Remove front pivot hardware and discard ***(Figure 41)***. 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 42

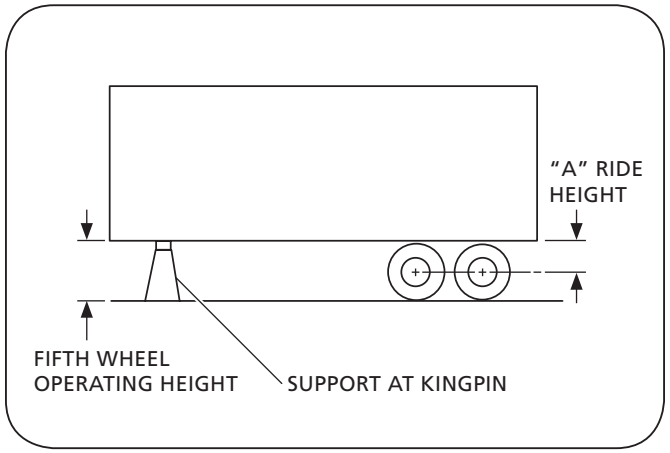


Table 7

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CBu/CBXu-9	9"
CBu/CBXu-10	10"
CBu/CBXu-12	12"

9. Remove and discard the SwingAlign™ mounting fasteners and rotate the threaded rod assembly counter-clockwise (CCW) until it disengages from the SwingAlign™ yoke ***(Figure 43)***.
10. Remove threaded rod assembly, alignment plates, and yoke ***(Figure 43).***
11. 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 43 and 44)***.

12. 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)***.
13. Rotate equalizing beams upward into the frame brackets. If necessary, adjust the 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 44)***.
14. Position the axle at ride height and determine which pivot bolt style is being installed.
    - If 1-1/8" hex head bolt, verify torque on the nut is 550-600 ft.-lbs. (746-813 N•m) ***(Figure 45 A)***.
    - If 7/8" pan head shear bolt, verify spline has been sheared off ***(Figure 45 B)***.
15. Re-install tires, remove jack stands supporting the axle and equalizing beam assembly, and lower the axle.
16. Chock the wheels.
17. Raise the trailer approximately 2" (51mm) above ride height and remove jack stands.
18. Slowly lower the trailer so that the trailer suspension is fully collapsed.
19. Apply air to the trailer and allow the suspension to return to ride height.
20. With the suspension at rest, measure the ride height. Ride height MUST be within 1/4" (6.4 mm) of the suspensions specified ride height. Refer to Section 7 if ride height needs to be adjusted.
21. Remove the wheel chocks.

Figure 43

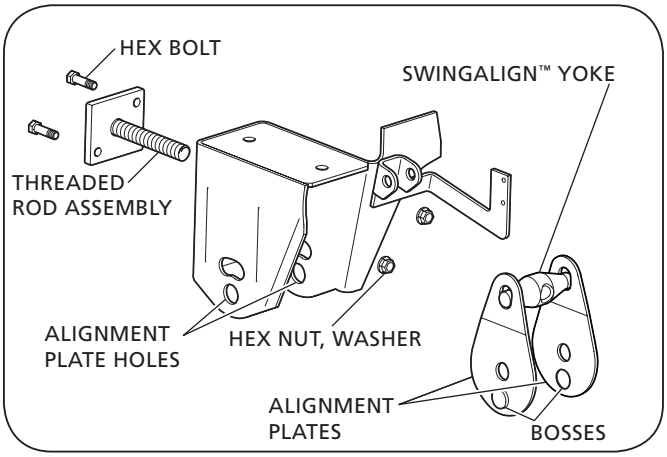
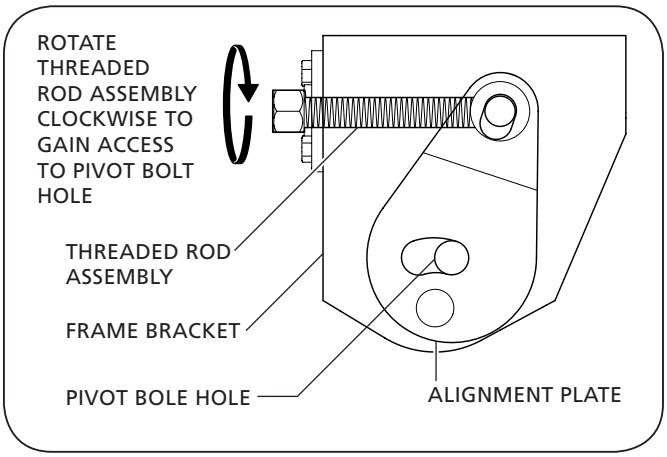


Figure 44



22. Rotate bolt head of the threaded rod assembly clockwise (CW) until the edge of the washer reaches the forward scribe line. Then rotate the threaded rod assembly counter-clockwise (CCW) until it reaches the rearward scribe line. Then rotate the threaded rod assembly clockwise (CW) until it is centered between the scribe lines. ***(Figure 46)***
23. Determine which pivot bolt style is being installed.
    - If 1-1/8" hex head bolt, verify torque on the nut is 550-600 ft.-lbs. (746-813 N•m) ***(Figure 45 A)***.
    - If 7/8" pan head shear bolt, verify spline has been sheared off ***(Figure 45 B)***.
24. Re-align the axles using the axle alignment procedures listed in Section 10.

Figure 45

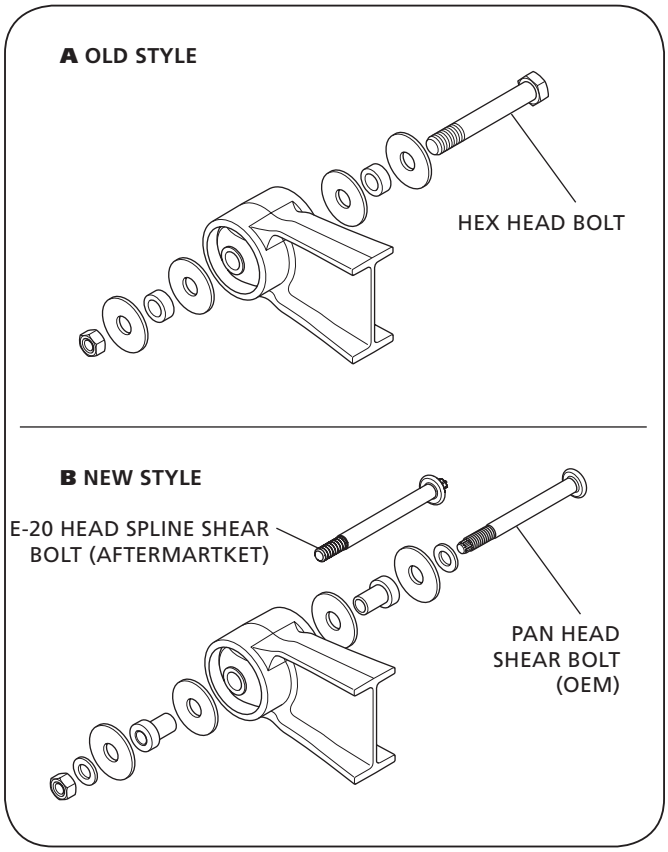
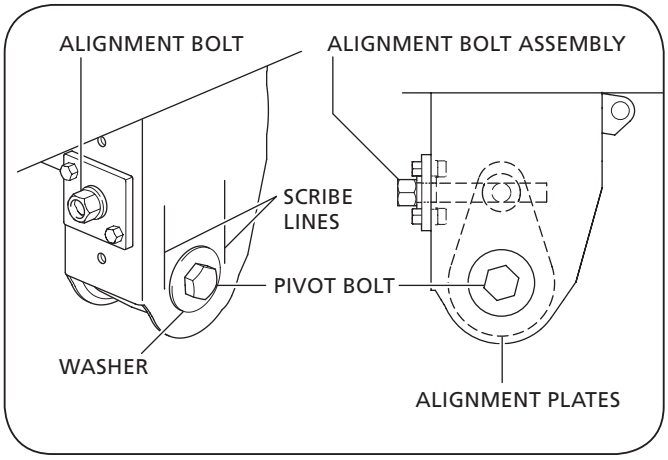


Figure 46



20. Torque Specifications

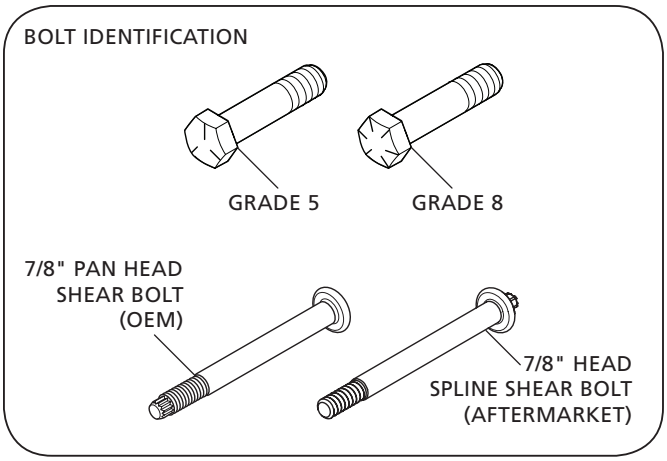
COMPONENT	TORQUE VALUE	FASTENER SIZE
Shock Absorber	140-175 ft.- lbs. (190-237 N•m)	3/4"
Pivot Connection, Hex Head Bolt	550-600 ft.- lbs. (746-813 N•m)	1-1/8"
*Pivot Connection, Pan Head Shear Bolt	Visual Inspection	7/8"
Lower Air Spring Nut	30-40 ft.- lbs. (40-45 N•m)	1/2"
Upper Air Spring Nut	40-45 ft.- lbs. (54-61 N•m)	3/4"
SwingAlign™ 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. (3-5 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.
* If equipped with 7/8" pan head shear bolt, ensure that the spline is sheared off and that there are no signs of movement.

NOTE: Torque specifications listed above are with clean lubricated/coated threads. All new SAF-HOLLAND® fasteners come pre-coated from the factory.

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.

Figure 47



General Information

1. The torque specifications listed throughout the manual are applied to the nut and NOT the bolt.

IMPORTANT: Most of the fasteners used in this suspension are Grade 8 bolts and Grade C nuts. These fasteners have the strength and hardness properties required for their particular function. They MUST be replaced with fasteners of the same grade, size and form as the original in order to prevent failure ***(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.

21. Routine Maintenance and Daily Inspection

1. Daily or before each trip, check the suspension to be sure it is fully operational.
2. Inspect all decals to ensure they are clearly legible and intact. Clean with a terry cloth towel, soap and water.
3. Visually inspect air springs for sufficient inflation and that the suspension is at proper ride height. For ride height details and measurements, refer to Section 7 of this manual.

21.1 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 ±1/4" (6 mm) of recommended design height. For instructions on measuring ride height, refer to Section 7.

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

2. After the first three (3) months or 5,000 miles (8,000 km) of service, whichever comes first, inspect the bolts and nuts at the pivot connections to ensure they are properly torqued. Check all other nuts and bolts for proper torque or that the spline is sheared off. Refer to the specifications listed in Section 20. 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.

21.2 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.

21.3 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.

22. Troubleshooting

PROBLEM	POSSIBLE CAUSE	RESOLUTION
All air springs flat (no air)	Insufficient air pressure to suspension	Make sure air pressure is in excess of 85 psig (5.9 bars).
		Test and verify that the air pressure protection valve is functioning properly using the instructions in Sections 8 and 9. Replace if necessary.
		Inspect and verify that the height control valve is functioning properly by following the inspection procedures in Section 9.
		Check air compressor, refer to manufacturer's service manual.
	Air leakage from the suspension air system or the air brake system	Test for air leakage from loose fittings or damaged air lines, air springs, brake actuators or height control valve – apply a soapy water solution to the connections and air springs, if necessary, and check for bubbles (leaks). 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 from loose fittings between air tank and air suspension or damaged air lines, air springs or height control valve – apply a soapy water solution to connections and air springs, if necessary, and check for bubbles (leaks). Tighten loose fittings to stop leakage and/or replace worn or damaged parts with new ones.
Air springs ruptured	Tire, tire rim or brake component rubbing air spring	Check inside to inside tire dimension. There MUST be 1" (25.4 mm) minimum clearance around air spring. If not, it may be necessary to re-install the suspension.
		Install tire rim back spacers to provide more clearance.
	Spring brake chamber rubbing air spring	Re-locate chamber or rotate clamp ring for more 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 7.
	Air spring(s) worn out	Replace air spring(s), refer to Section 13.
	Air leak or damaged line	Check air spring for punctured or leak and replace with proper air spring, check for proper clearance around air spring, 1" (25.4 mm) minimum.
		Test for air leakage from damaged air lines – apply a soapy water solution to the air lines and connections and check for bubbles (leaks). Tighten loose fittings to stop leakage and/or replace worn or damaged parts.
	Restricted air lines(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).
	"Temporary Operation"	If attempts to repair air loss have failed to correct the problem, disconnect the height control valve linkage and exhaust all air from the system. Cautiously drive at a reduced speed to the nearest repair facility. An internal rubber bumper built into the air spring will make it possible to temporarily operate the vehicle without air pressure.
Ride height too high or too low	Height control valve out of adjustment	Re-adjust the height control valve, refer to the height control valve adjustment procedures in Section 7.
Front pivot connection worn and loose	Fixed frame bracket pivot wear washers worn	Replace worn internal wear washers and realign axles.
	SwingAlign™ pivot alignment plates worn	Replace worn alignment plates and realign axles, refer to Section 19.
	Front pivot bolt loose	Tighten front pivot bolt connection. Replace all worn or damaged components, refer to Section 15 and 16.
	Excessive lateral axle walk – 3/4" (19 mm) is maximum	Re-weld axle connection, refer to Section 6 for welding specifications.
		Replace worn front pivot connection bushing with proper service repair kit. For proper kit, refer to SAF-HOLLAND® Aftermarket Parts Manual. For replacement procedures, refer to Section 15 and 16.
Shock absorber failures	Over-extending shock absorbers	Re-adjust height control valve to proper suspension ride height, refer to Section 7.
		Check suspension specification sheet to verify mounting height, or refer to Section 7 for correct ride height and adjustment procedure.
		Replace shock absorber(s) with correct length and/or proper replacement, refer to Section 14.
Excessive tire wear	Loose or worn bushings at pivot connection	Check pivot connection bushings for damage, wear and/or loose components. Replace damaged or worn components, refer to Section 15 and 16 tighten loose connections to proper torque specification, refer Section 20. For proper service repair kit, refer to SAF-HOLLAND® Aftermarket Parts Manual.
		Check axle alignment and re-align, if necessary.
	Suspension NOT properly installed	Contact SAF-HOLLAND® Service Department and/or the trailer manufacturer to address improper suspension installation.

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.

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