

Installation and Operation Manual

Air Release Pin Pull Mechanism

- For Air Ride and Mechanical Slider/Suspensions



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Introduction

This manual provides the necessary information for the installation, adjustment, inspection, and operation of the SAF® air release pin pull mechanism on trailer sliding suspensions.

The air release pin pull mechanism operates with an air spring brake service chamber design to retract and engage the slider pins with a pull/push of a knob enabling faster slide relocation.

Air release is available on all SAF® slider models – new and retrofit.

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.
- 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 the recommended routine maintenance and inspections described in this manual. These procedures are designed so that optimum performance and operational safety are achieved.

2. Welding Standards

2.1 Scope

This specification applies to all components supplied by SAF-HOLLAND®, and its products. The customer assumes full responsibility for weld integrity if weld material and procedures differ from those listed below.

2.2 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.

2.3 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 shown **(Figure 1)**. Where the installation drawing specifies different than above, the drawing shall prevail.

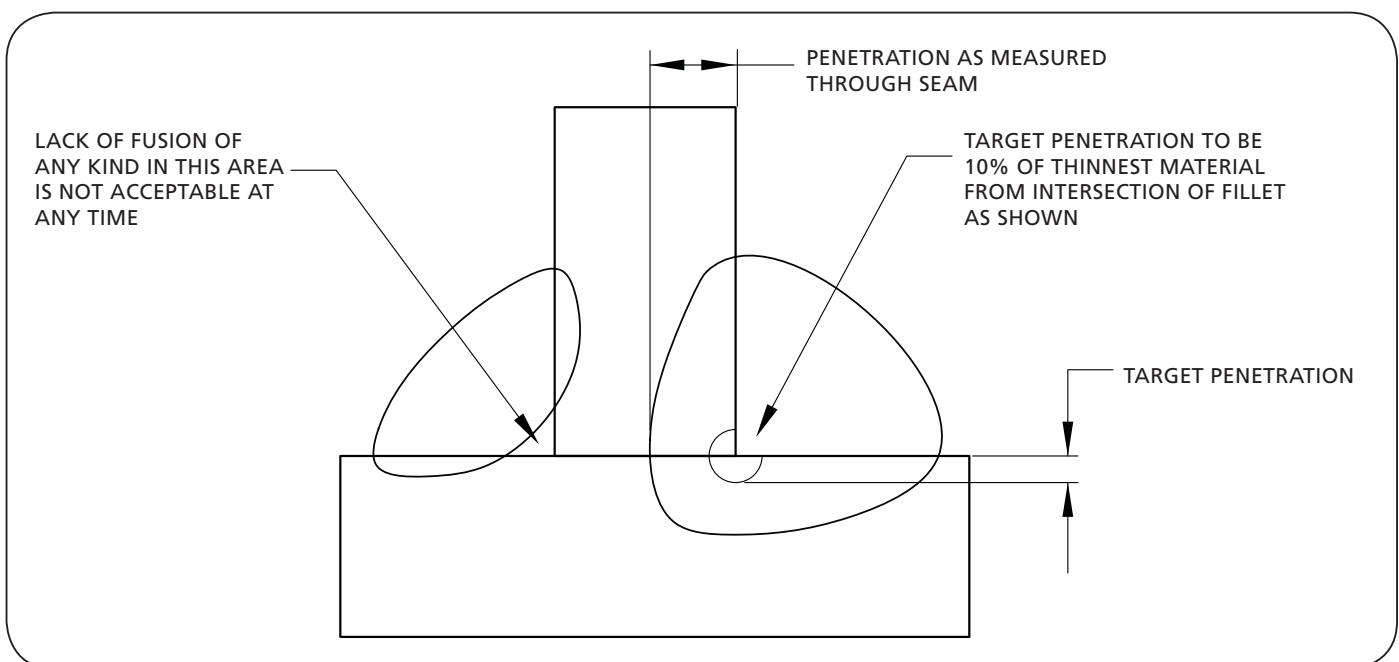
2.4 Procedures

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 shown 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.

2.5 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 1)**.

Figure 1



3. Installation

IMPORTANT: The trailer must be unloaded and on a level surface before beginning installation procedures.

1. If this is an air suspension, exhaust all of the air.

NOTE: The slider/suspension (bogie) MUST be removed from under the trailer for installation of the air release pin pull mechanism.

2. Support the front of the trailer on a tractor or with the landing gear (**Figure 2**).
3. Set parking brakes, and chock the wheels. Disconnect the tractor from the trailer.
4. Remove the hold down clips on all four (4) corners of the slider.
5. Retract the slider lock pins.
6. Place multiple jack stands under the vehicle's frame per OEM specified locations, then raise the trailer to a height that allows easy removal of the bogie from under the trailer.

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

7. Remove the tire chocks, and remove the bogie.

Installation for air ride (**Figure 3**) and mechanical (**Figure 4**) suspension systems are slightly different. Follow the appropriate procedures per the specific suspension system.

FIGURE 2

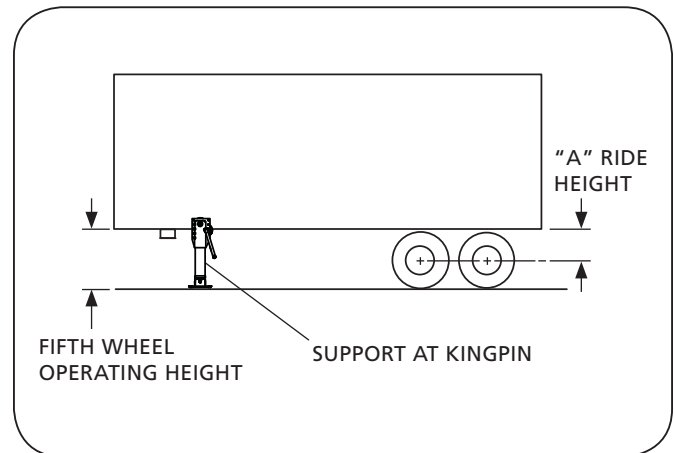


FIGURE 3

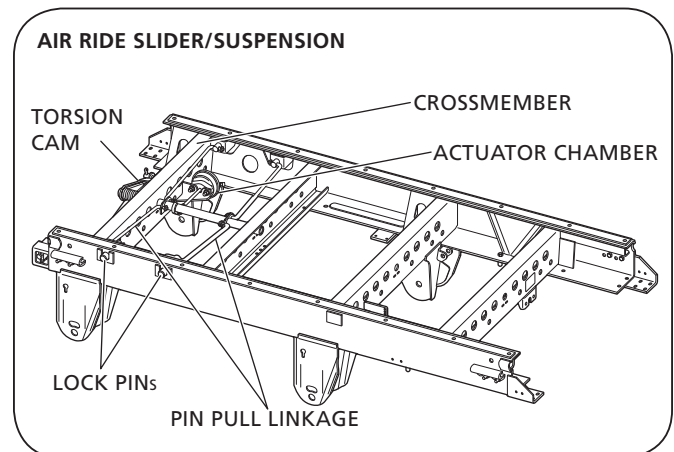
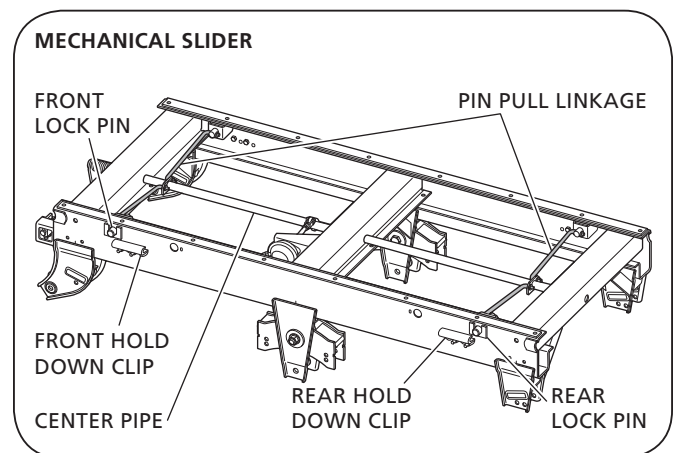


FIGURE 4



Air Ride Suspension

1. Place the actuator chamber bracket on the backside of the front crossmember and weld in place (**Figure 5 and 6**).
2. Position the spring brake cam on the cam shaft to the backside of the front crossmember and weld in place (**Figure 6 and Figure 6A**).

NOTE: The spring brake actuator rod and clevis **MUST** be horizontal when attached. Prior to finish welding, verify the angle of the spring brake cam. The cam pin **MUST** be lower than the cam shaft to provide uninterrupted rotation of the suspension.

Continue to Step 3, positioning the valve bracket.

Figure 5

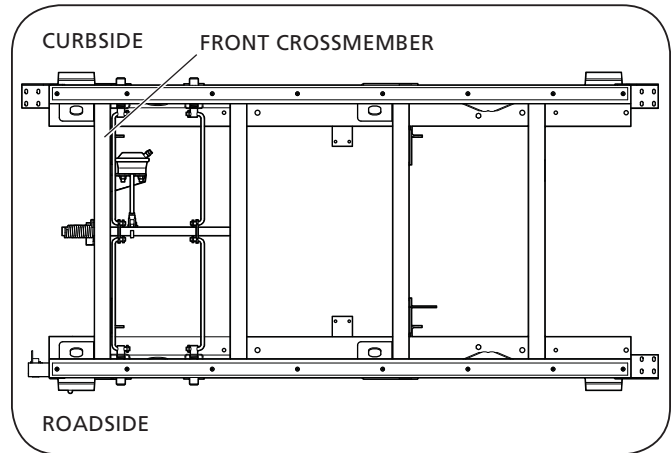


Figure 6

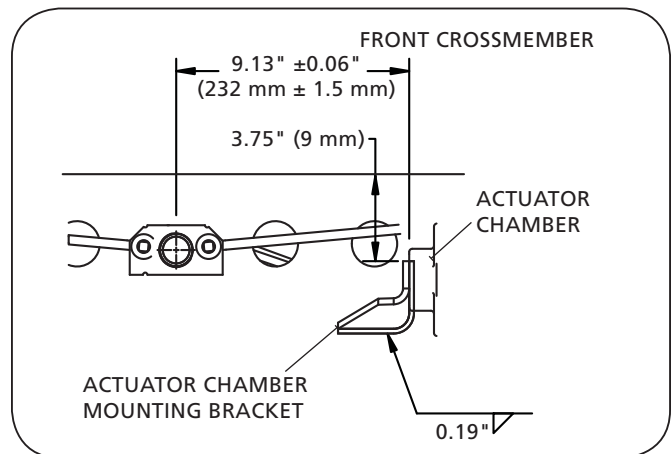
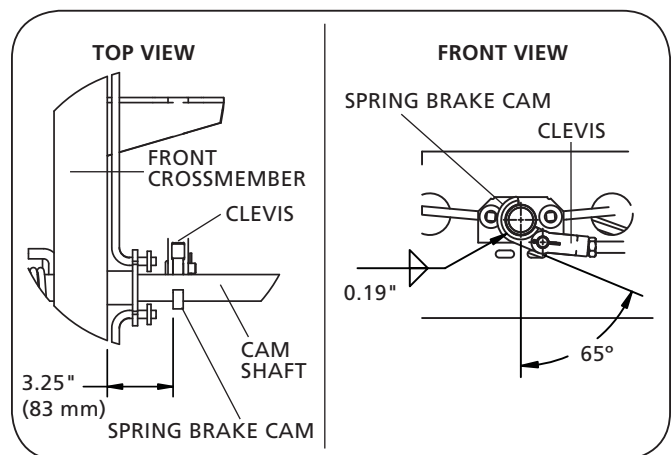


Figure 6A



Mechanical Suspension

1. Position the actuator chamber bracket on the front side of the middle crossmember and weld in place (**Figure 7 and Figure 7A**).
2. Position the spring brake cam on the cam shaft to the front side of the middle crossmember and weld in place (**Figure 7A and Figure 7B**).

Figure 7

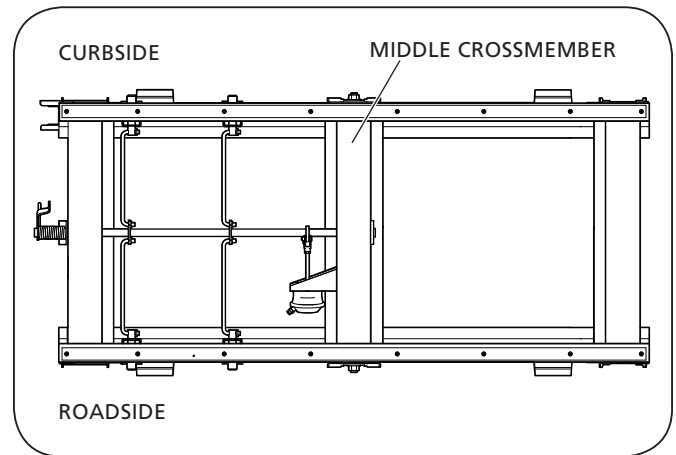


Figure 7A

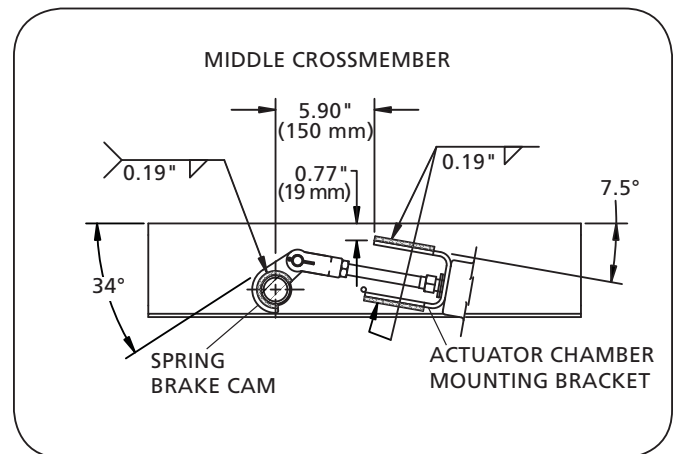
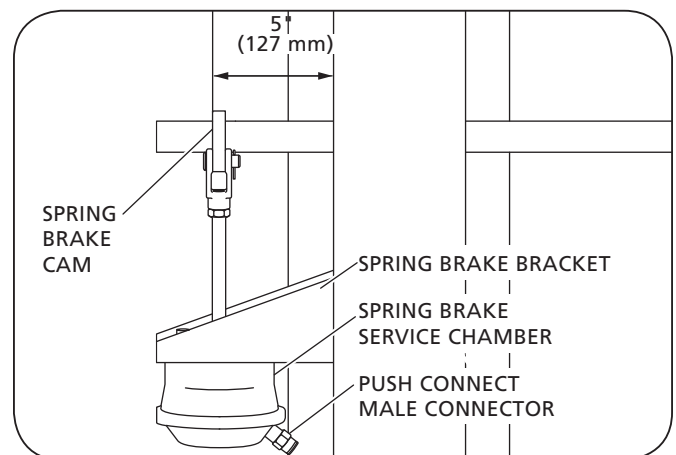


Figure 7B



3. Remove existing pull handle.
4. Position the valve mounting bracket on the front of the roadside sill and weld accordingly (**Figure 8 and Figure 9**).
5. Install the actuator chamber and male connector. Torque all air chamber 1/2" mounting bracket nuts included on the assembly to 50-60 ft.-lbs. (68-81 N•m) (**Figure 7B**).

Figure 8

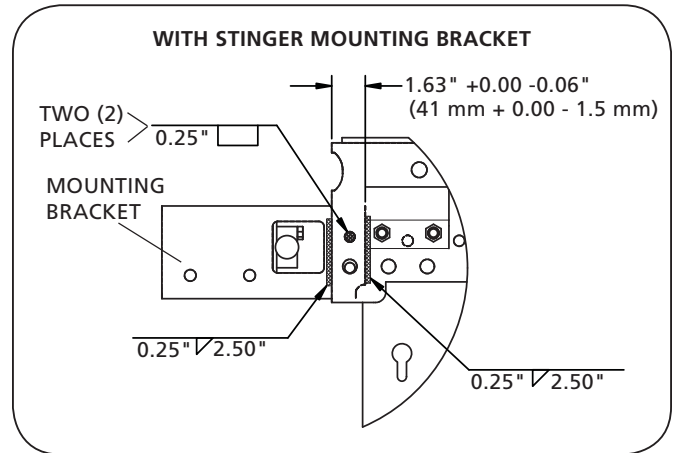
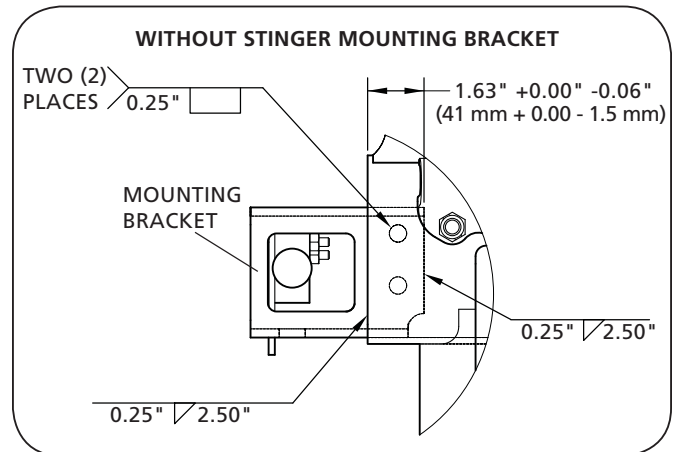


Figure 9



6. Install the air release control valve to the valve mounting bracket. Torque mounting brackets to 10-20 ft.-lbs. (14-27 N•m). Refer to the air release plumbing diagram for proper plumbing (**Figure 10**).
7. Re-install the bogie by attaching the hold down clips on all four (4) corners of the slider.
8. Engage the slider lock pins.
9. Remove the jack stands and chokes from the tires.

4. Air Release Retrofit Kit Contents

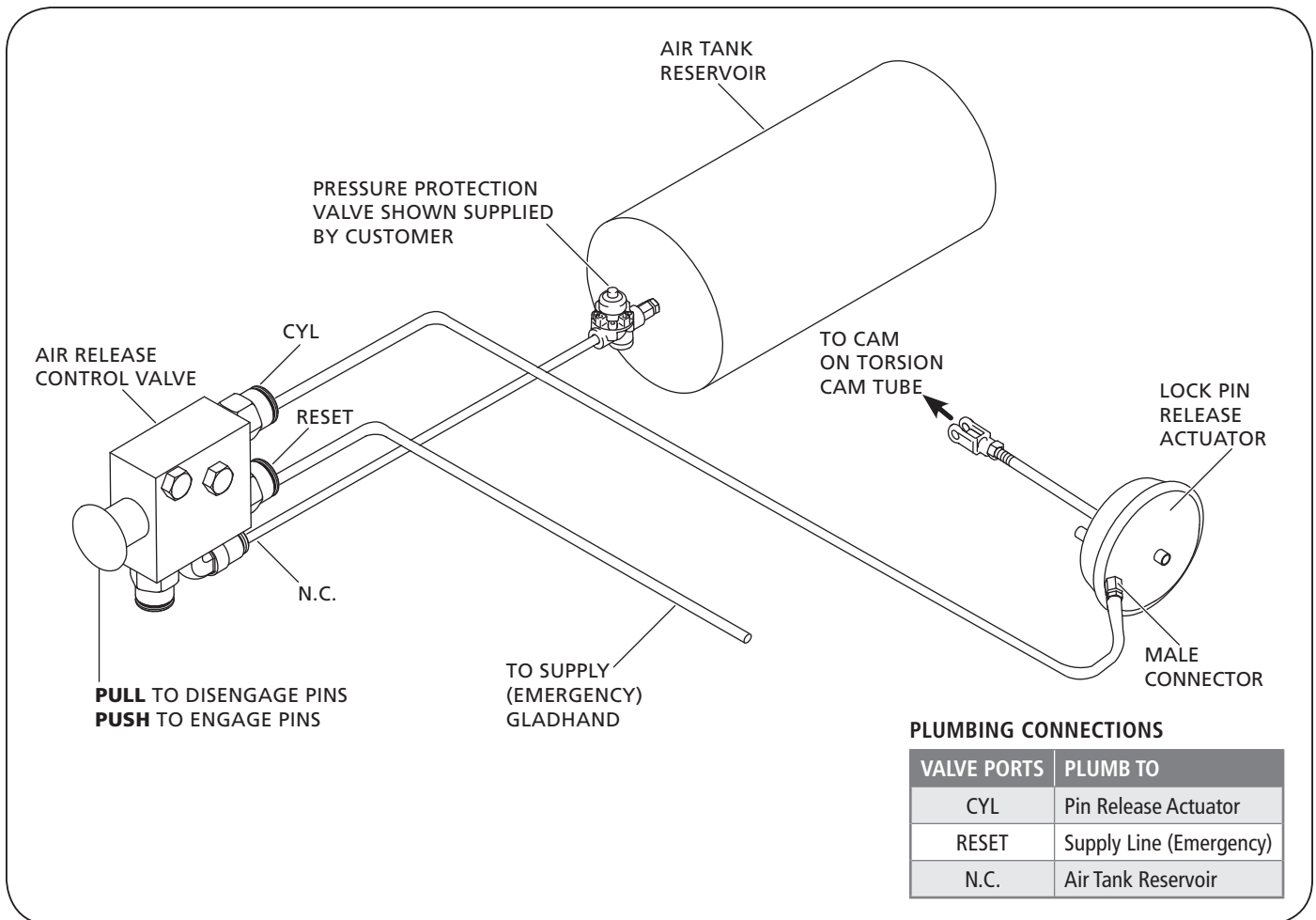
Air Suspension Air Release Retrofit Kit Parts SPK-0055

ITEM	DESCRIPTION	PART NO.	QTY.
1	Bracket Assembly, Valve	SL0A1484	1
2	Cam, Spring Brake	90045547	1
3	Bracket, Spring Brake	90026227	1
4	3/2 Push Pull with Air Pilot Reset	90560012	1
5	Spring Brake Service Chamber	90548040	1
6	Connector, Male, Push Connect	93800329	1
7	Literature Decal	XL-AR429	1

Mechanical Suspension Air Release Retrofit Kit Parts SPK-0052

ITEM	DESCRIPTION	PART NO.	QTY.
1	Bracket Assembly, Valve	SL0A1484	1
2	Cam, Spring Brake	90045516	1
3	Bracket, Spring Brake	90034640	1
4	3/2 Push Pull with Air Pilot Reset	90560012	1
5	Spring Brake Service Chamber	90548040	1
6	Connector, Male, Push Connect	93800329	1
7	Literature Decal	XL-AR429	1

Figure 10



5. Slider Repositioning Instructions

1. With the vehicle on a level surface, set the tractor and trailer brakes and locate the air release control valve (**Figure 23**).
2. To reposition the slider, remove the manual stop bar and relocate to desired location – rearward of slide box if moving rearward, or forward of slide box if moving forward (**Figure 23**).

If repositioning the slider forward, remove the manual stop bar and relocate directly behind slide box after the slider is moved to final position.

3. Pull the air release control valve knob to disengage the lock pins.
4. Visually check to ensure the lock pins are in the disengaged position (**Figure 25**).

When lock pins have properly disengaged, proceed to Step 7.

If lock pins fail to disengage, proceed to Step 5.

5. When the control valve knob is in the pulled out position and the lock pins are still in the engaged position (**Figure 24**), the control valve is in an armed, ready to disengage position.

NOTE: The spring brake service chamber will automatically retract the lock pins when the pressure on the lock pins is released.

- a. Release the tractor brakes.

⚠ WARNING Failure to verify the area is clear of others before moving the vehicle could result in death or serious injury.

- b. Gently rock the tractor and trailer fore and aft while listening for the lock pins to disengage.
 - c. After the “metallic clang” of the lock pins disengaging is heard, reset the tractor brakes, and visually verify that the lock pins have been properly disengaged.
6. When the lock pins have disengaged – slowly reposition the tractor until the slide box contacts the manual stop bar (**Figure 23**).
 7. Set the tractor brakes.

NOTE: Trailer parking brakes should still be engaged.

Push the air release control valve knob to engage the lock pins (**Figure 24**).

Figure 23

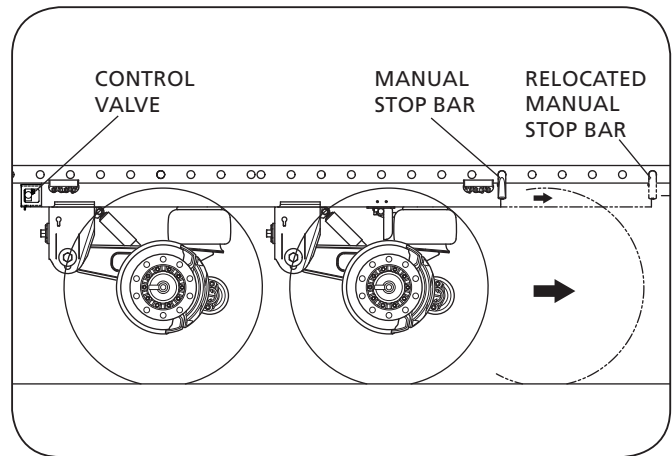


Figure 24

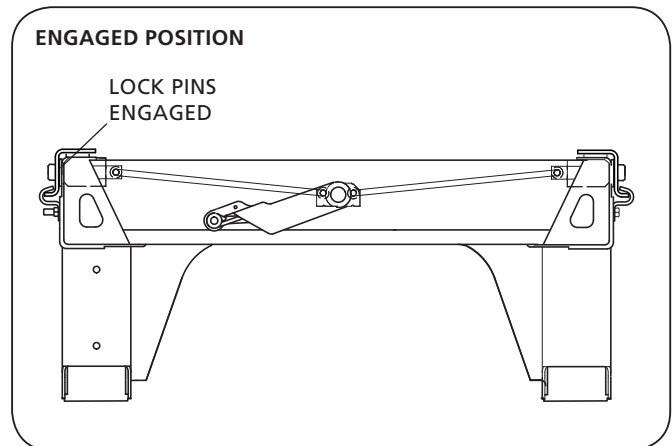
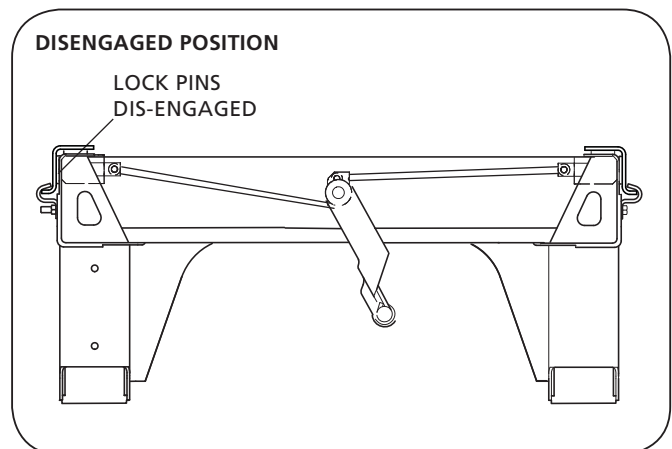


Figure 25



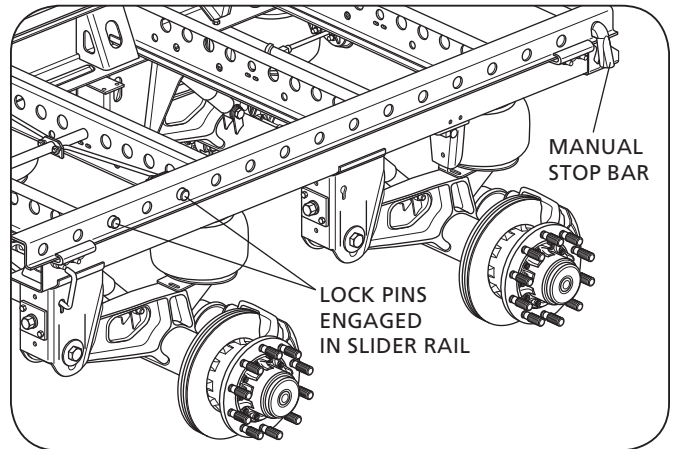
8. Visually check that the lock pins are fully engaged and extend through the holes in the upper rail (**Figure 28**).

WARNING An unsecured slider box can cause loss of vehicle control which, if not avoided, could result in death or serious injury.

9. Visually check that the manual stop bar is properly installed directly behind slide box (**Figure 28**).

CAUTION Failure to properly install or position the manual stop bar could result in improper trailer load distribution which, if not avoided, could result in damage to the suspension or trailer parts.

Figure 28





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

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