

Installation Instructions

TG Series Liftgate



TG 25 Main Tube Cylinder Bushing Kit

Introduction

These instructions provide the information necessary for the installation of the TG 25 main tube cylinder bushing kit.

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 USA or 800-503-9847 Canada.

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. General Safety Precautions

- DO NOT work underneath the liftgate without properly supporting the raised platform and lift frame in accordance with workplace safety requirements.
- NEVER strike any part of the liftgate with a steel hammer.

CAUTION

DO NOT hit steel parts with a steel hammer as parts could break, sending flying steel fragments in any direction creating a hazard which, if not avoided, could result in minor or moderate injury.

- Safety protection should always be worn as protection from pressurized fluid spray, flying debris, and other airborne matter when working with tools, power tools, welding equipment, and dangerous chemicals.

NOTE: NEVER operate the liftgate with the vehicle running unless instructed to by these procedures.

WARNING

Failure to turn off vehicle motor before commencing work could allow vehicle to move which, if not avoided, could result in death or serious injury.

- While servicing or repairing equipment, ALWAYS disconnect the electrical power to the pump motor and ensure that the platform and lift frame is supported on the ground or secured in the travel lugs.
- Clean up any excess grease, oil accumulation and spillage immediately. Use only non-flammable products for cleaning the liftgate or components.
- Before starting any welding, ensure that the area to be repaired is cleaned of debris and combustible material. Have a charged fire extinguisher available and know how to use it.
- Pressure can remain in a hydraulic system after the power source and pump have been shut down. Ensure that there is no pressure in any of the hydraulic cylinders or hoses before performing work on components, or disconnecting any hoses.

WARNING

Failure to depressurize the hydraulic system could result in fluid injection into the skin which, if not avoided, could result in death or serious injury.

- Additional safety and operational precautions can be found in the TL and TG Series Operation and Maintenance Manual XL-TG10150UD-en-US.
- Avoid contact with electrical connections inside the pump box which are not isolated.

WARNING

Failure to avoid contact with electrical connections will result in shock which, if not avoided, could result in death or serious injury.



2. Welding Standards

2.1 Scope

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 that listed below.

2.2 Material

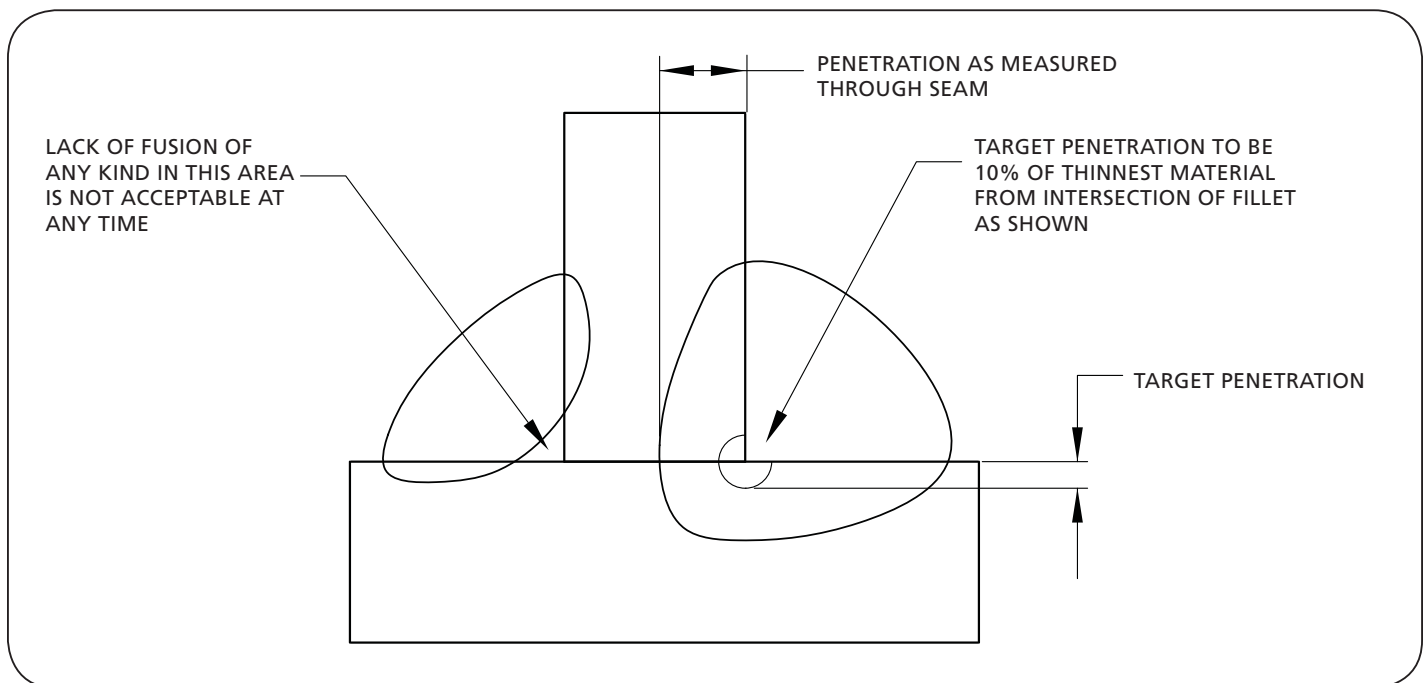
Frame attachment components made from low carbon or high-strength alloy steel are to be welded with AWS filler metal specification AWS A5.18, filler metal classification ER-70S-3, ER-70S-6 or equivalent unless specified on the installation drawing.

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

Figure 1



2.3 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" (12.7 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.

2.4 Workmanship

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

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**).

3. Kits Contents (Figure 2)

Bushing Kit Part Number: 207430000090

ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Lift Frame Boss	2112100004580	2
2	Sleeve, 1-5/16" O.D. x 1" Long	XA-50194	1
3	Hydraulic Cylinder Mounting Pin, 1" Diameter x 8-1/2" Long	XA-50020	1
4	Pin, Spring 1/4" x 1-1/2", Plated	XB-21-S-250-1500P	1

4. Bushing Installation

1. Open and lower the liftgate to the ground in accordance with the TL and TG Series Operation and Maintenance Manual XL-TG10150UD-en-US. Avoid contact with electrical connections inside the pump box which are not isolated.

⚠ WARNING Failure to avoid contact with electrical connections will result in shock which, if not avoided, could result in death or serious injury.

2. Disconnect the power to the motor.
3. With a punch, remove the spring pin from the hydraulic cylinder mounting pin (**Figure 3**).
4. Remove the pin and rotate the hydraulic cylinder clevis out of the mounts (**Figure 3**).
5. With a grinder, remove the sleeve from the cylinder mount (**Figure 3**).
6. Align the new parts. Insert the new pin through one lift frame boss, both cylinder mount plates and then through the second lift frame boss (**Figure 4**).
7. Prep the cylinder mount surfaces where the lift frame bosses will be welded. With a grinder, remove any paint or galvanizing within 1" to 4" (25-101 mm) of the weld surface. Position the lift frame bosses and align the top and leading edge of the lift frame bosses flush with the top and leading edge of the cylinder mounts (**Figure 4**).

Figure 2

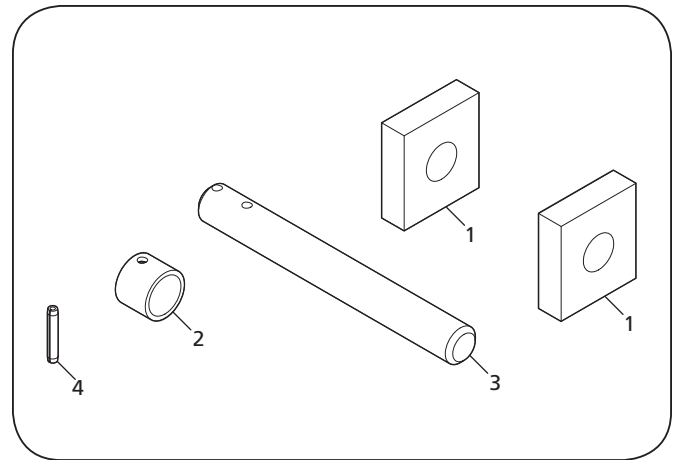


Figure 3

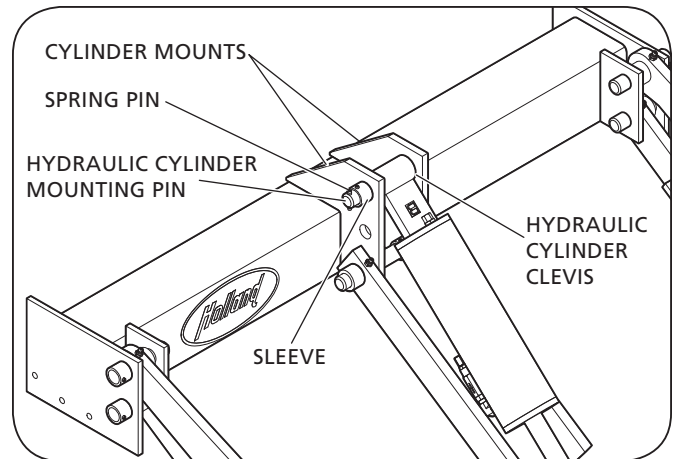
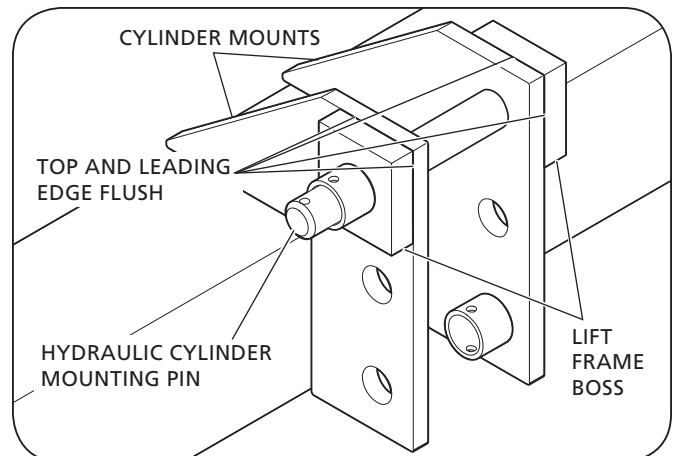


Figure 4



Bushing Installation



SAF-HOLLAND Group

8. Weld the lift frame boss as illustrated (**Figure 5**).

NOTE: When welding is required, ensure that the battery ground cable is disconnected and all electrical equipment is completely electrically isolated before welding is initiated.

CAUTION Failure to follow manufacturers' safety instructions when handling batteries may result in explosion which, if not avoided, could result in minor to moderate injury.

9. Align the hole of the new sleeve so it will line up with the hole of the new pin, and weld as illustrated (**Figure 5 and 6**).
10. Touch up paint as required. For galvanized liftgates, touch up in accordance with the most recent release of ASTM a 780: standard practice for repair of damaged and uncoated areas of hot dip galvanized coatings, which specifies the use of zinc-rich paints.
11. Remove the previously installed new pin.
12. Rotate the hydraulic cylinder clevis back into position between the cylinder mounts. Re-install the new pin, ensuring the pin hole aligns with the newly installed sleeve hole (**Figure 6**).
13. Install the newly supplied spring pin into the newly installed sleeve hole.

Figure 5

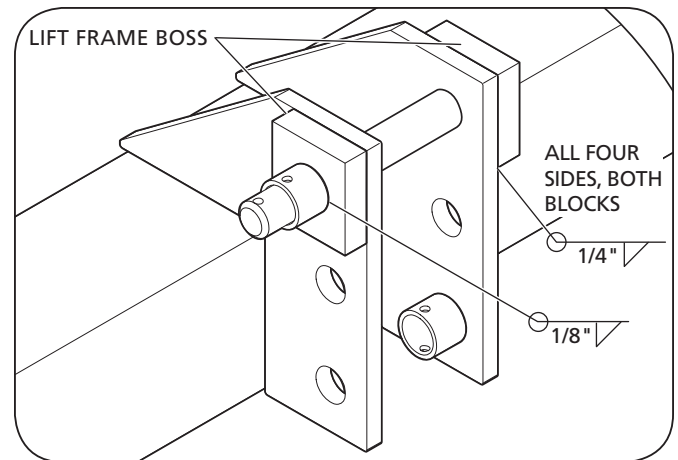
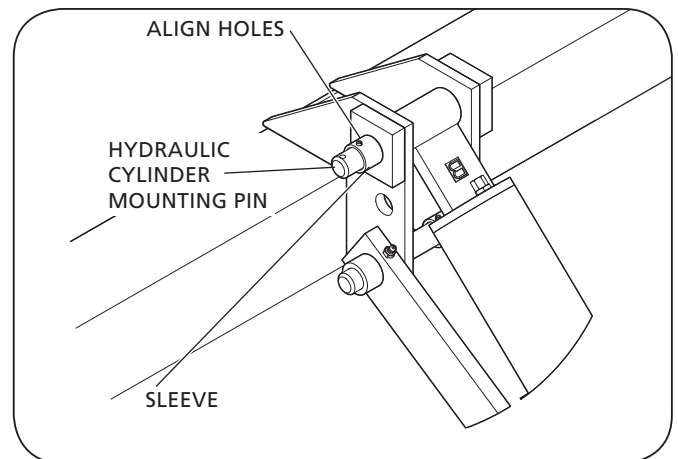


Figure 6



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