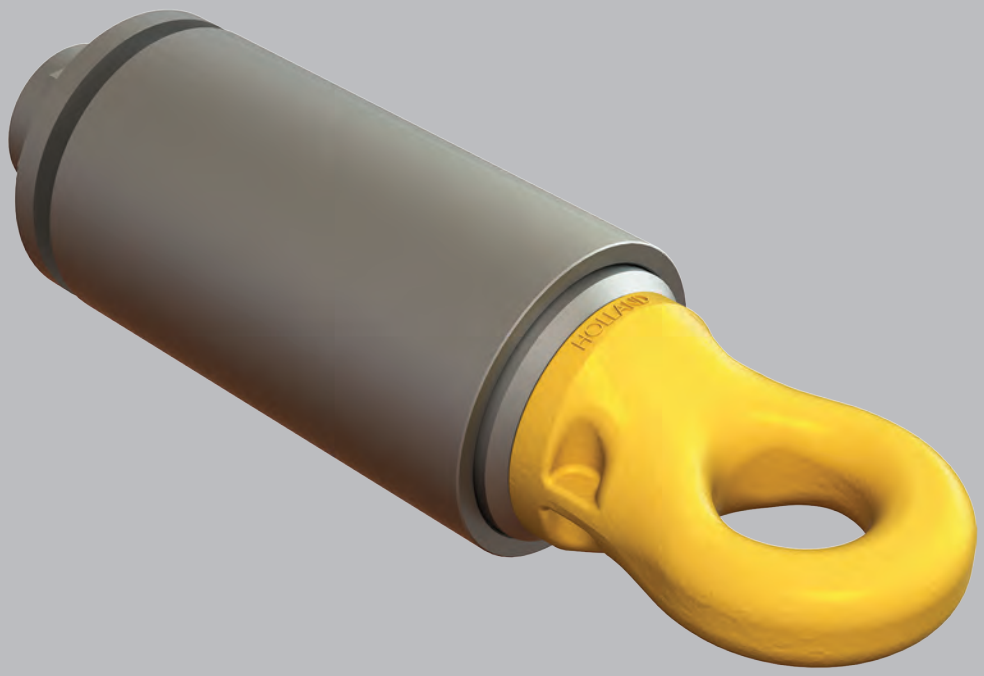
SAF-HOLLAND Group

Owner's Manual

DB-090BW1 Swivel Mount Weld-On Drawbar

Installation, Operation and Maintenance Procedures

- For on/off-road applications
- Weight: DB-090BW1 (approx.) 45 lbs. (20.4 kg)



For Load Ratings, Refer to Section 4

XL-DB20021UM-en-US

SAF-HOLLAND Group

Introduction

This manual provides information necessary for the proper installation, operation and maintenance of the SAF-HOLLAND® DB-090BW1 drawbar.

NOTE: For HOLLAND® replacement components contact SAF-HOLLAND Customer Service at 1-888-396-6501.

Warranty

Refer to the complete warranty for the country in which the product will be used. A copy of the written warranty can be downloaded from our SAF-HOLLAND website (www.safholland.com).

Notes, Cautions, and Warnings

Read and understand all of the procedures presented in this manual before starting any work on the drawbar.

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

Proper tools MUST be used to perform the mounting and maintenance procedures described 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 Instructions

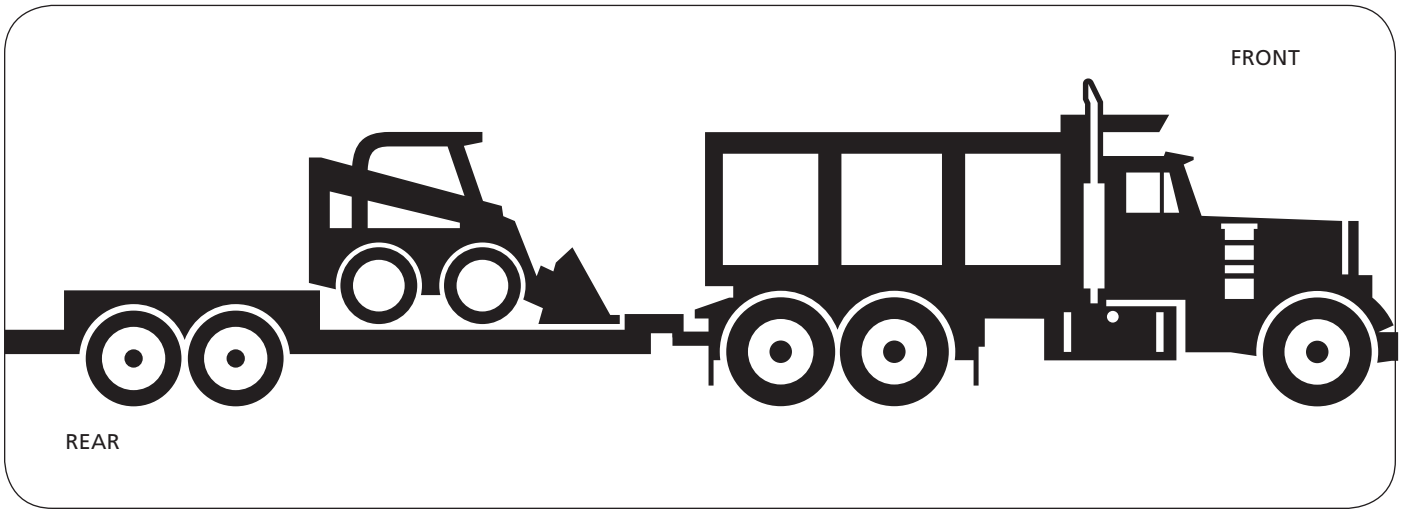
IMPORTANT: Read this manual before using this product. Keep this manual in a safe location for future reference.

⚠WARNING Failure to follow the instructions and safety precautions in this manual can result in equipment failure which, if not avoided, could result in death or serious injury.

Read and observe all warning and caution hazard alert messages in this publication. The information provided can help prevent death, serious injury and/or damage to components.

NOTE: In this manual, all descriptions of orientation are relative to the vehicle.

Orientation



2. Welding Standards

2.1 Scope

When welding, please observe the requirements below. Customers may NOT weld on SAF-HOLLAND drawbars without prior approval, including the application of the American Welding Society standards by SAF-HOLLAND, unless required for installation. 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.

2.2 Material

The SAF-HOLLAND drawbar has been manufactured from a modified AISI weldable grade steel, and is intended for welded installation with AWS filler metal specification AWS A5.18, filler metal classification ER-70S-3, ER-70S-6 or equivalent, unless otherwise specified.

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

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

The recommended welding gas for gas metal arc welding (GMAW) is 90% Argon/10% CO2. If a different gas is used, welds MUST comply with penetration requirements as illustrated in ***Figure 1***. Where the installation directions specify different than above, the directions shall prevail.

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 mm) of a sufficient amount to prevent craters at the end of the weld. Where weld is shown to go around corners, it is assumed the corner represents a stress concentration area. DO NOT start or stop weld within 1" (25 mm) of the corner. Particular care should be taken to prevent undercutting in this area.

Take precautions and ensure NOT to damage the vehicle electrical system during welding by disconnecting any power sources, properly grounding the vehicle, and shielding any exposed wiring.

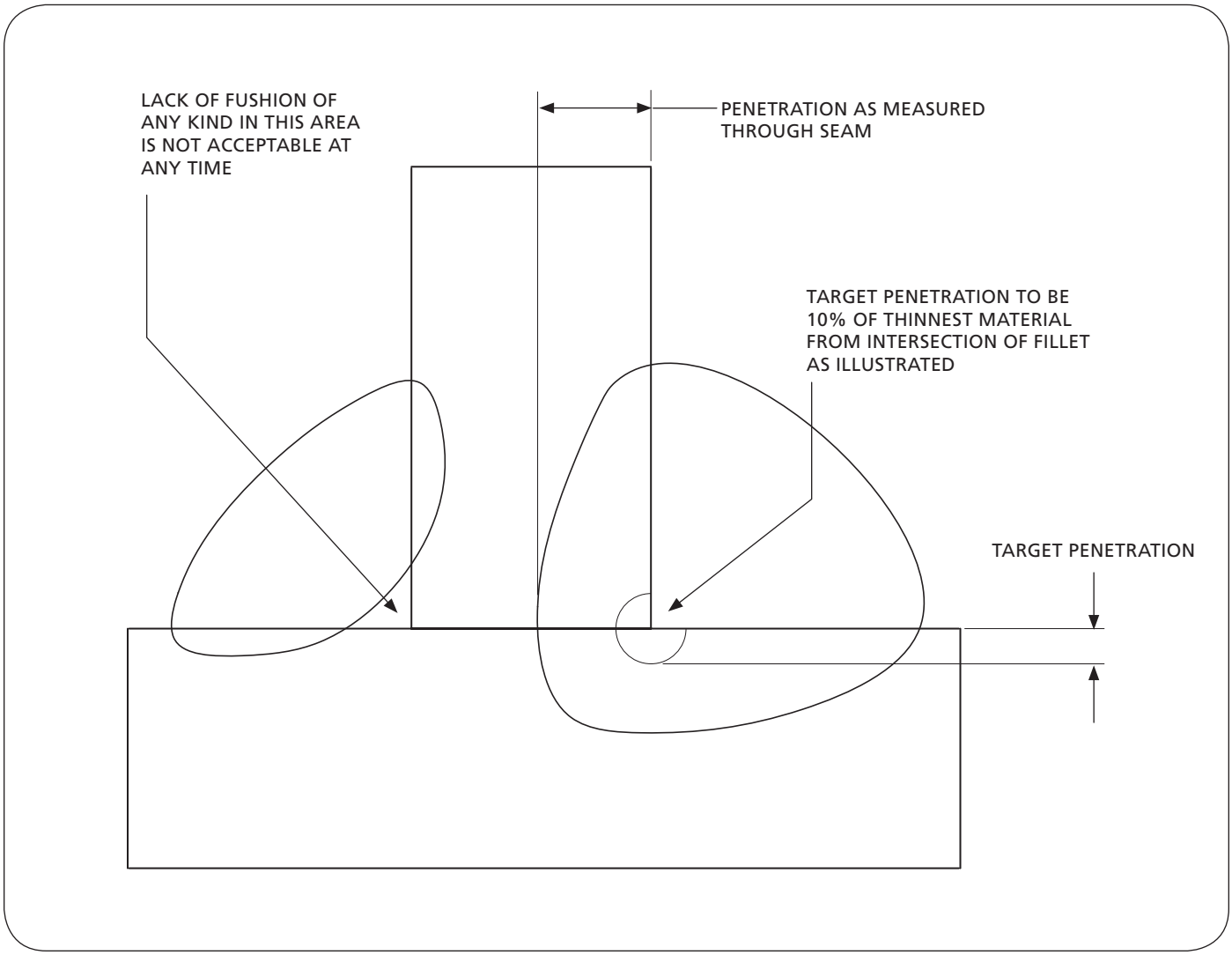
2.4 Workmanship

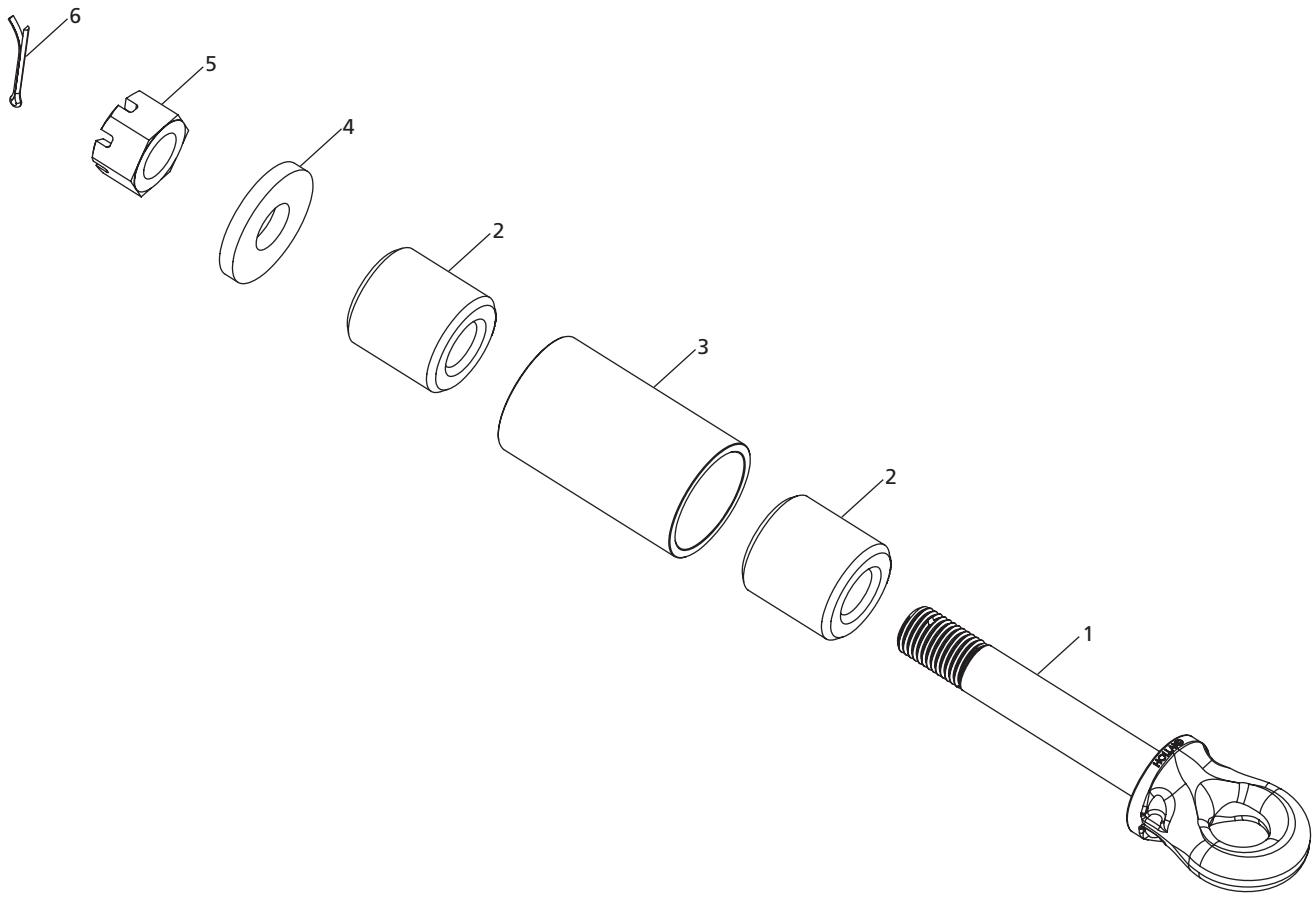
It is the responsibility of the customer to provide good workmanship when attaching components with welds.

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



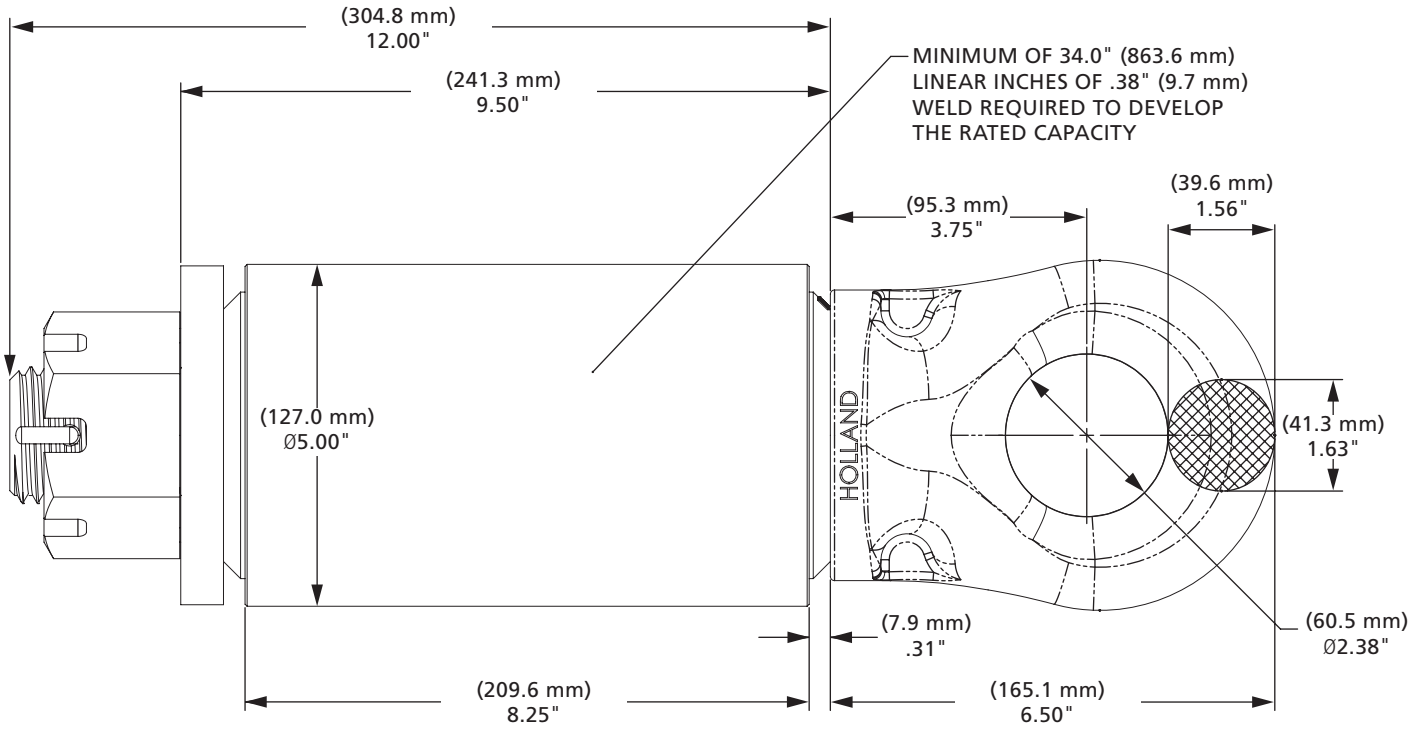


DB-090BW1 PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Drawbar, 2-3/8" I.D. Eye	XA-05833-S1-P	1
2	Rubber Bushing, 4-3/16" O.D.	XB-05813	2
3	Housing, 5" O.D.	XA-05799-P	1
4	Washer, 5" O.D.	XA-05798	1
5	Heavy Hex Nut, Slotted, 2"- 4-1/2	XB-T-316-A	1
6	Cotter Pin, Ø1/4" x 3-1/2" LG	XB-770-1	1

3. Drawbar Eye Dimensions

3.1 DB-090BW1

2.38" (60.5 mm) I.D. with 1.63" (41.3 mm) x 1.56" (39.6 mm) diameter cross section.



4. Load Ratings

Model: DB-090BW1

Maximum GTW: 90,000 lbs. (40,823 kg)

Maximum Vert. Load: 2,500 lbs. (1,134 kg)

5. Towing Applications

For general on/off road towing. For severe off-road applications, reduce the above capacities by 25%.

IMPORTANT: Off-road refers to terrain on which a tow/towed vehicle will operate that is ungraded, rough or undulating, with no maintained travel surface, generally considered to NOT be part of the public road system. Examples include agricultural fields, construction sites, utility right-of-way, temporary logging roads, and what is commonly referred to as 'two-track' roads.

6. General Information

1. DO NOT modify or add to the product.
2. This product is covered by SAF-HOLLAND'S Commercial Warranty. SAF-HOLLAND reserves the right, without giving prior notice, to change specifications and dimensions as are altered or improved.
3. Inspect the coupling device on the tow vehicle and trailer for proper operation. DO NOT use any coupling device that DOES NOT operate properly.

⚠WARNING Failure to inspect and identify a coupling device that is not operating properly could result in coupling failure which, if not avoided, could result in death or serious injury.

4. It is the responsibility of the user to become familiar with coupling and uncoupling procedures that are provided by various governments, industry associations and mating component manufacturers instructions.

7. General Safety Information

This equipment MUST NOT be used in a careless manner.

During Operation:

1. Maintain adequate vertical (tongue) load to properly control the towed unit (generally 10% of maximum GTW) but DO NOT exceed the rated capacities.
2. DO NOT damage the coupling components. Be particularly careful during coupling and uncoupling.
3. NEVER strike any part of the item with a steel hammer.

⚠CAUTION Hitting steel parts with a steel hammer could cause parts to break, sending flying steel fragments in any direction creating a hazard which, if not avoided, could result in minor to moderate injury.

8. Mounting Instructions

1. Use a mounting structure of sufficient strength to support the rated capacity of the drawbar in accordance with SAE J849 and SAE J847 respectively.
2. Install the drawbar in compliance with all federal, state, or local agency regulations or laws governing the installation and use of the product. Consult with these agencies prior to installation or use.
3. Remove and retain the cotter pin (XB-770-1) ***(Figure 2)***.
4. Remove and retain the lock nut (XB-T-316-A) ***(Figure 3)***.
5. Remove and retain the washer (XA-05798) ***(Figure 4)***.
6. Remove and retain the drawbar (XA-05833-S1-P) ***(Figure 5)***.

continued

Figure 2

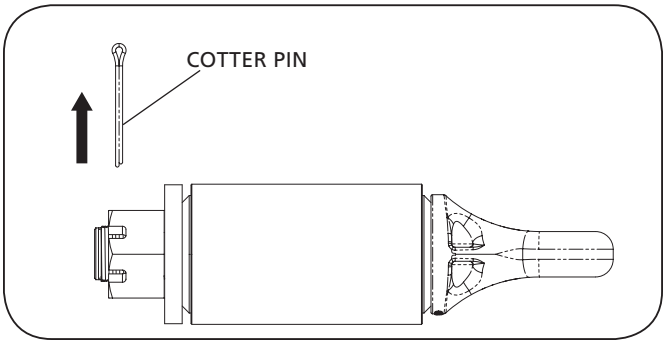


Figure 3

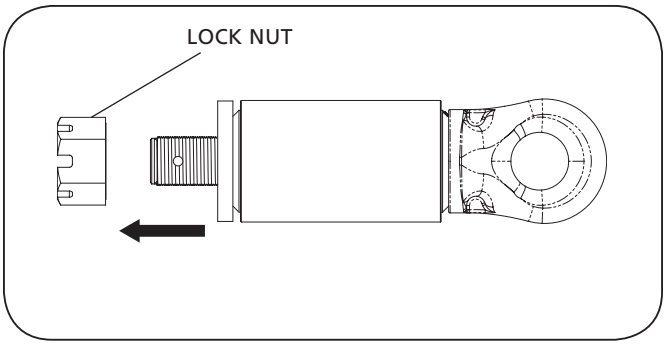


Figure 4

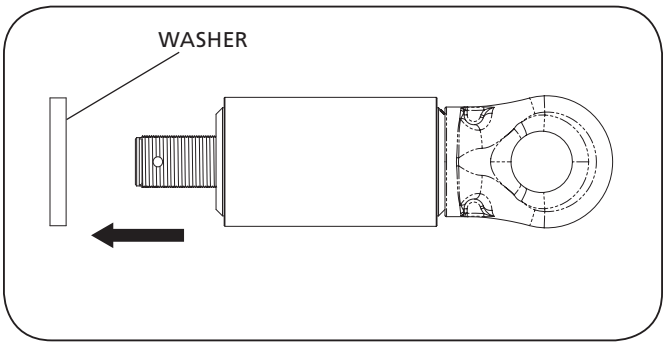
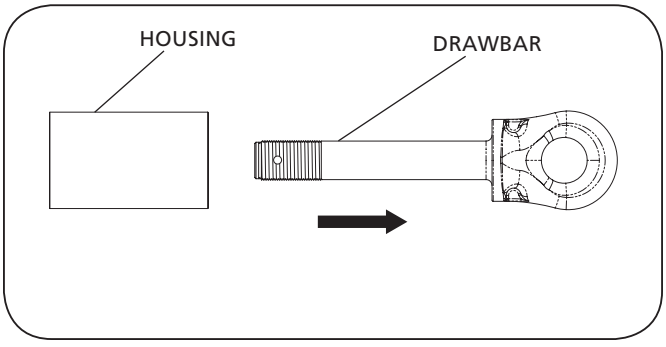


Figure 5



8. Mounting Instructions *continued*

7. Remove and retain the two (2) rubber bushings.
8. Weld the housing to the mounting structure using a minimum of 34.0" (863.6 mm) linear inches of .38" (9.7 mm) weld to develop the rated capacity.

⚠WARNING Failure to install in accordance with these instructions (using a certified welder) could result in trailer separation which, if not avoided, could result in death or serious injury.

9. Install the two (2) rubber bushings into the mounted housing ***(Figure 6)***.
10. Install the drawbar into the housing ***(Figure 7)***.

continued

Figure 6

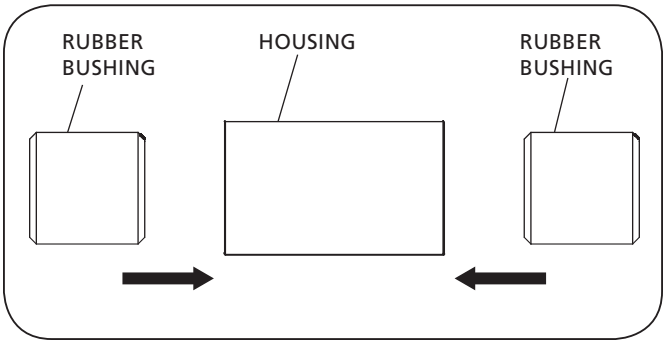
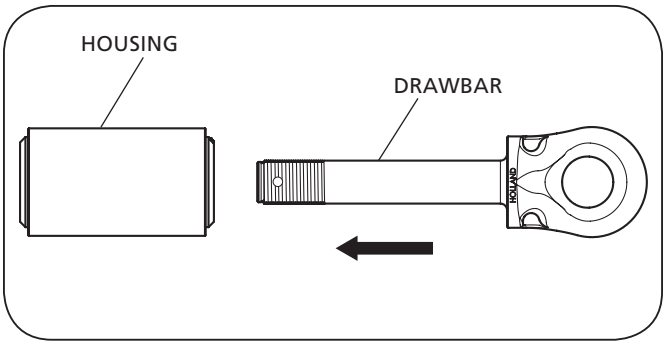


Figure 7



8. Mounting Instructions *continued*

11. Install the washer back onto the drawbar ***(Figure 8)***.
12. Grease or lubricate the face of the lock nut before installation ***(Figure 9)***. Install the lock nut and turn until the nut is .50" (12.7 mm) past the end of the drawbar shaft ***(Figure 10)***.
13. Install the cotter pin by rotating the lock nut clockwise until the hole in the drawbar shaft appears in one of the nut castellations.
14. Insert the cotter pin into the drawbar shaft hole and spread the ends to retain.

Figure 8

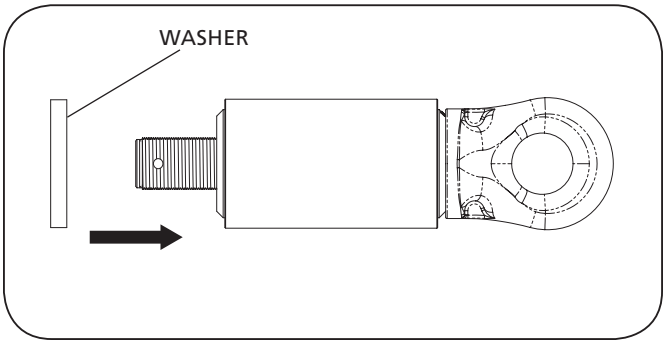


Figure 9

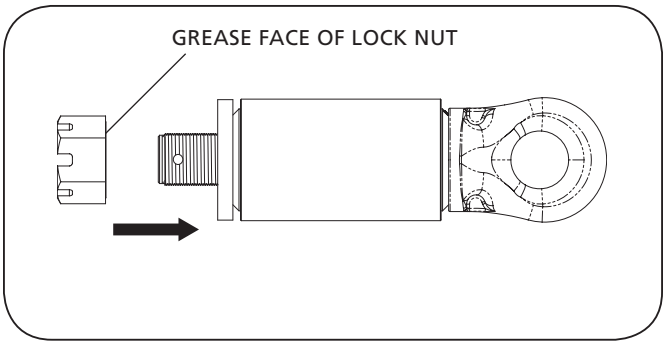
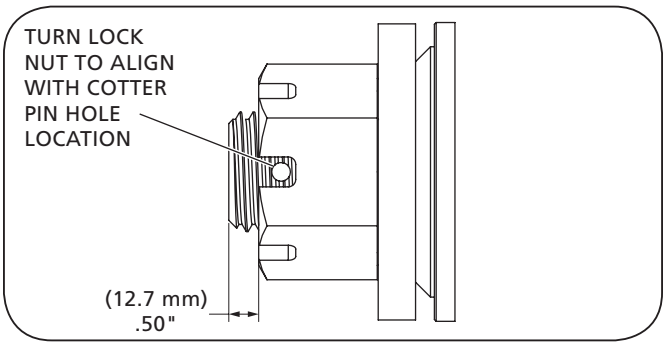


Figure 10



9. Operating Instructions

1. Before operating, inspect for wear, damaged, or missing parts and a secure mount. Correct as required before use.
2. Position the drawbar eye over the horn of the pintle hook and lower into place ***(Figures 11 and 12)***.
3. Engage the drawbar with the coupling device per the manufacturers instructions.

⚠WARNING Failure to correctly secure the drawbar can result in separation of the pintle hook and drawbar which, if not avoided, could result in death or serious injury.

Figure 11

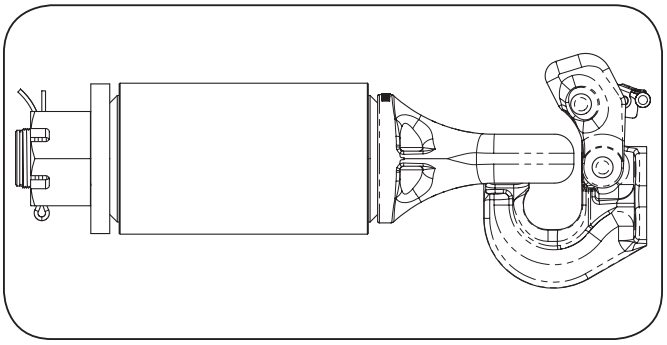
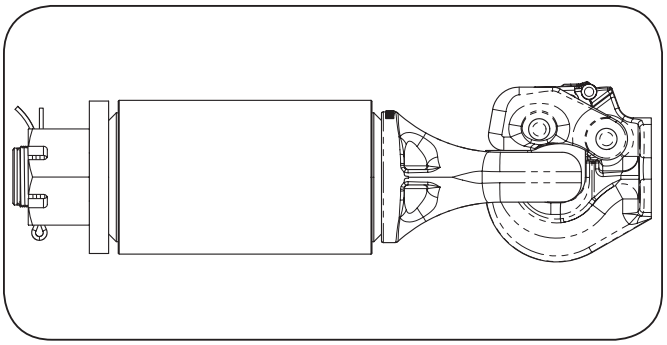


Figure 12



10. Maintenance

For proper performance, the following maintenance steps should be performed every 30,000 miles (48,280 km) or three (3) months, whichever comes first.

⚠WARNING Failure to inspect and maintain the drawbar could result in separation of the pintle hook and drawbar, which, if not avoided, could result in death or serious injury.

1. Clean and check for wear, damaged, or missing parts, and a secure mount. Inspect for worn, damaged or missing parts. Replace as required using only SAF-HOLLAND Original Parts.
2. Inspect, in particular, the coupling contact area of the drawbar. Inspect for any nicks, gouges and deformation, which could interfere with or affect the safe use of the drawbar. If cracks are visible, the drawbar MUST be replaced.
3. Using calipers or SAF-HOLLAND Drawbar Gages (Part No. TF-11887), measure the cross section of the drawbar eye. Replace the complete product when wear exceeds 0.125" (3.18 mm) from the original surface profile. For original profile dimensions, refer to Section 3.
4. Inspect the housing welded connections for soundness by referring to Section 2 in this manual. Inspect the drawbar mounting for looseness. In addition to being a safety hazard, a loose drawbar will cause excessive "chucking" and rapid wear. If the drawbar is loose, check the following:
   - Check for a proper gap between the end of the drawbar shaft and the face of the lock nut by referring to ***Figure 10*** in Section 8. Check the ends of the rubber bushings for wear and check for excessive vertical play.
   - If the rubber bushings are in good condition but the distance between the end of the drawbar shaft and the face of the lock nut is less than .50" (12.7 mm), tighten the lock nut until there is a MINIMUM of .50" (12.7 mm) between the end of the drawbar shaft and the face of the lock nut. If the drawbar still feels loose, another turn can be made.
   - If the rubber bushings look worn, they MUST be replaced. If no rubber bushings are on hand, the following steps can be made as a temporary fix until new rubber bushings are made available:
     a. Remove the cotter pin, lock nut, washer and drawbar. Remove the rubber bushings and flip them around so the worn outer edges are now inside the housing.
     b. Reinstall the drawbar, washer, lock nut and cotter pin. (Refer to Section 8.) There must be a MINIMUM distance of .62" (15.7 mm) between the end of the drawbar shaft and the face of the lock nut.

ORIGINAL PARTS™

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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