

Rebuild/Repair Manual

Fifth Wheel Top Plates

- FW35-03344 / XA-351-03505 Series
- FW35-03344 / XA-351-UB Elevating Series



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Introduction

This manual provides you information necessary to properly rebuild FW35-03344/XA-351-03505 series top plates, and FW35-03344/XA-351-UB elevating fifth wheel top plates.

NOTE: For Holland Fifth Wheel replacement components contact SAF-HOLLAND Customer Service: 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 fifth wheel and can also be found on the SAF-HOLLAND Web Site (www.safholland.us).

Notes, Cautions, and Warnings

You must read and understand all of the procedures presented in this manual before starting work on any Holland fifth wheel.

NOTE: In the United States, work shop safety requirements are defined by federal and/or state Occupational Safety and Health Act. 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.

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 death or serious injury.

Proper tools must be used to perform the rebuild procedures described in this manual.

Throughout this manual, you will notice the terms “NOTE”, “IMPORTANT”, “CAUTION”, and “WARNING”, followed by useful product information. So that you may better understand the manual, those terms are 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, may result in property damage.

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

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

1. Model Identification

This manual contains the installation procedures for SAF-HOLLAND rebuild kit RK-351-03505 (-3 and -4) and RK-351-UB. Before rebuilding, verify that you have the correct rebuild kit for the fifth wheel top plate you are attempting to rebuild. The fifth wheel part number tag is located on the side of the fifth wheel "pick-up" ramp. **(Figure 1)**

XA-351-03505

Use the following Rebuild Kits for FW35-03344/XA-351-03505 Series fifth wheels **(Figure 2)**:

Rebuild Kit	Fifth Wheel/Top Plate
RK-351-0350	FW35-03344, (-1, -2, -3, -6, -7, -8) XA-351-03505, XA-351-03505-2
RK-351-03505-3	FW35-03344-4 (-9, -10) XA-351-03505-3
RK-351-03505-4	FW35-03344-5 XA-351-03505-4

XA-351-UB

Use the following Rebuild Kits for FW35-03344/XA-351-UB Series Fifth Wheels **(Figure 3)**:

Rebuild Kit	Fifth Wheel/Top Plate
RK-351-UB	FW69-12B XA-351-UB FW67-16B (-2, -3, -6) FW68-16 (-2)

Figure 1

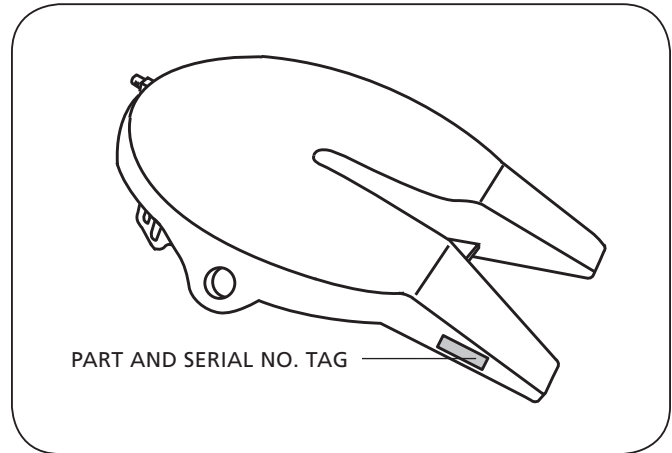


Figure 2

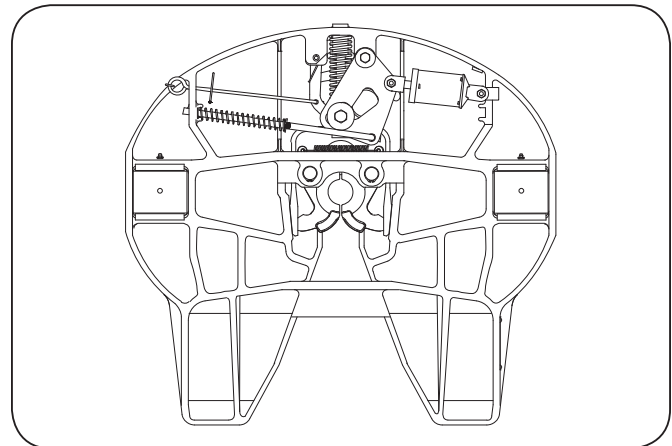
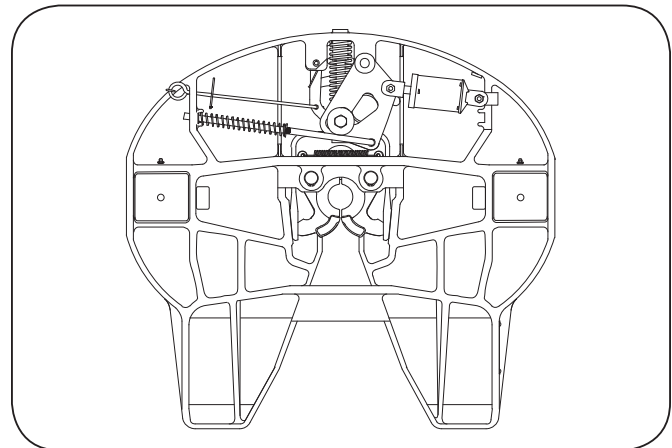


Figure 3



2. General Safety Instructions

Read and observe all Warning and Caution hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.

All fifth wheel repair and maintenance must be performed by a trained technician using proper tools and safe procedures.

NOTE: Before rebuilding your Holland Fifth Wheel review the model number on the identification tag. This rebuild procedure applies only to the FW35-03344/XA-351-03505 and FW35-03344/XA-351-UB elevating fifth wheel top plates.

IMPORTANT: You must read and understand all of the rebuild procedures contained in this manual before working on your fifth wheel.

WARNING

Failure to follow all the rebuild procedures contained in this manual may cause a hazardous condition to develop which, if not avoided, may result in death or serious injury.

IMPORTANT: These instructions apply to the proper rebuild of FW35-03344/XA-351-03505 and FW35-03344/XA-351-UB elevating fifth wheel top plates only. There are other important checks, inspections, and procedures not listed here that are necessary, prudent, and/or required by law.

WARNING

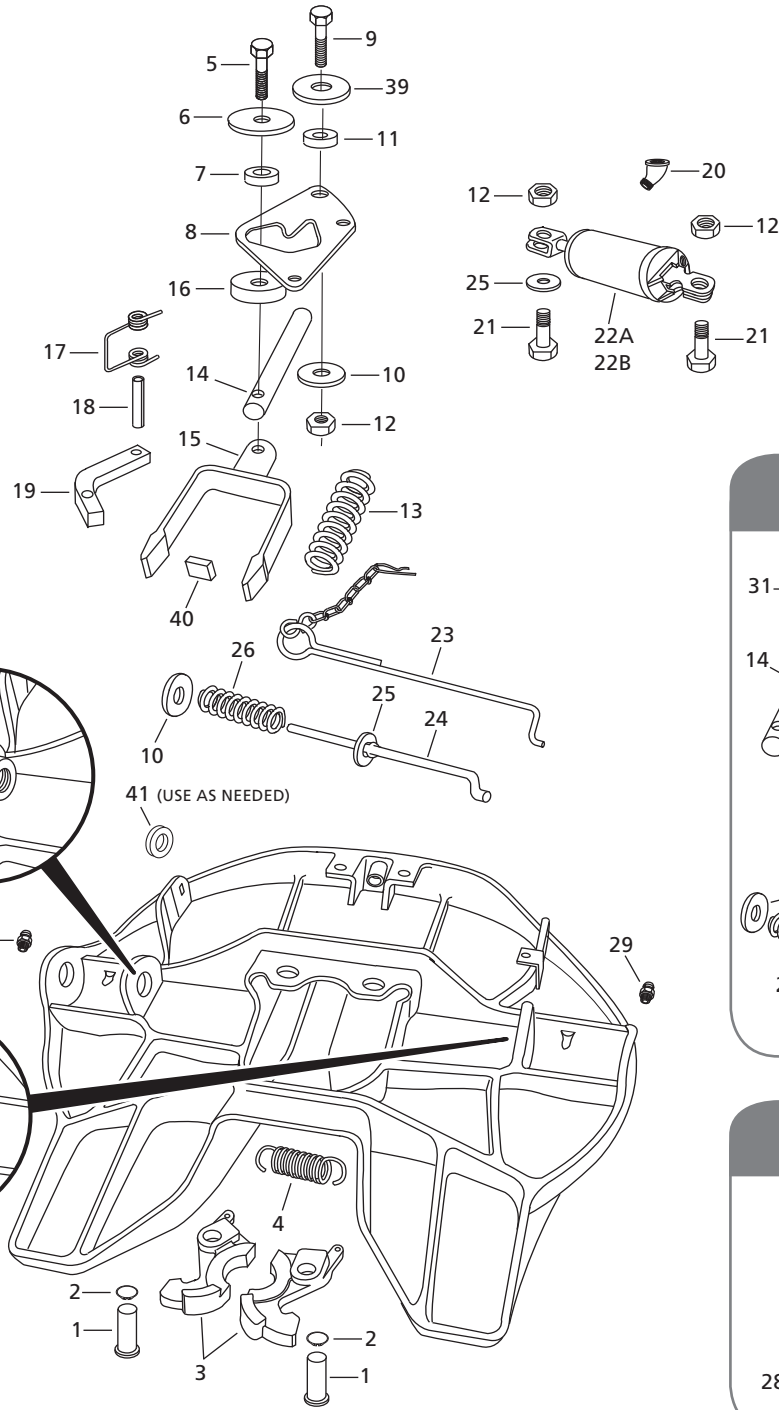
Failure to properly rebuild and install the fifth wheel can adversely affect performance resulting in tractor trailer separation which, if not avoided, may result in death or serious injury.

Refer to SAF-HOLLAND Installation Manual XL-FW10008IM-en-US (available on the Internet at www.safholland.us) for proper installation procedures.

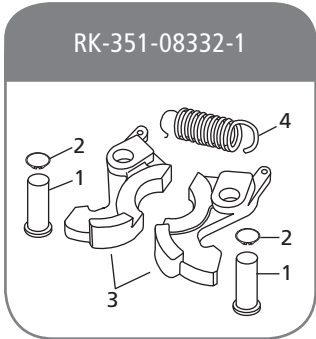
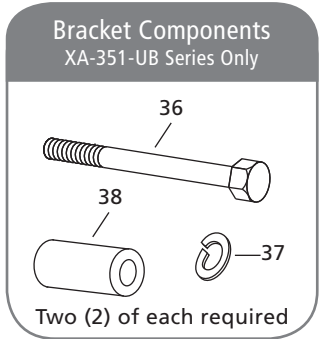
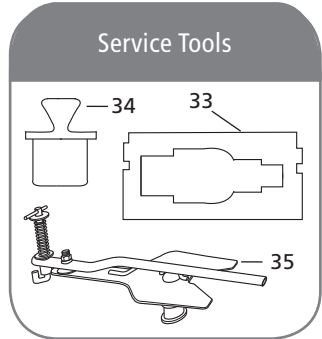
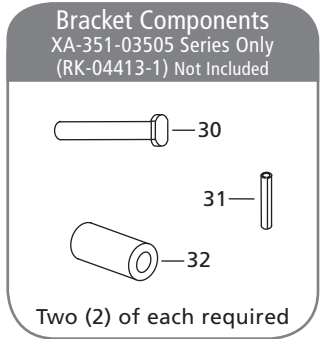
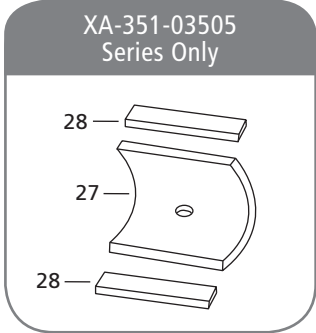
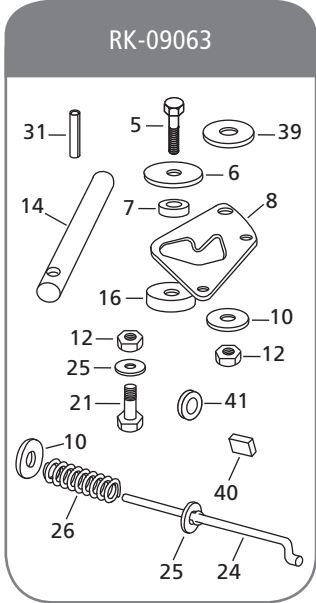
We recommend only the use of SAF-HOLLAND Original Parts.

A list of SAF-HOLLAND technical support locations to supply SAF-HOLLAND Original Parts can be found at www.safholland.us or contact our customer service group at 888-396-6501.

Updates to this manual will be published as necessary on the Internet at www.safholland.us.



XA-351-UB Series top plates have threaded inserts welded on the inside of the pocket ear





ITEM	DESCRIPTION	PART NUMBER	QTY
1	Lock Pin	XA-07292-1	2
2	Retaining Ring	XB-07398	2
3	Lock Jaw Set	XA-08332-1	1
4	Extension Spring	XB-07628	1
5	Hex Head Cap Screw 5/8"-18 x 2"	XB-10035	1
6	Washer 5/8" I.D. x 2-5/8" O.D.	XB-07431	1
7	Roller 5/8" I.D. - White	XA-1507-1	1
8	Cam Plate	XA-08988	1
9	Hex Head Cap Screw 1/2"-20 x 1-3/4"	XB-2083	1
10	Washer 1/2" I.D. x 1-3/4" O.D.	XB-08559	2
11	Roller 1/2" I.D.	XA-1029	1
12	Lock Nut 1/2"-20 (2 Add'l Req. For Brackets)	XB-T-69-A	3
13	Yoke Spring	XB-1505	1
14	Yoke Shaft	XA-1706-1	1
15	Yoke	XA-07295	1
16	Cam Spacer	XA-09040	1
17	Torsion Spring	XB-2149	1
18	Roll Pin 1/2" x 2-3/4"	XB-21-S-500-2750	1
19	Secondary Lock	XA-3528	1
20	45° Street Elbow	XB-698	1
21	Hex Head Cap Screw 1/2"-20 x 1-3/4" LG.	XB-T-89-5	2
22A*	Air Cylinder	XA-2524-R-13-1	1
22B*	Air Cylinder	XA-2524-R-13-4	1
23	Secondary Lock Handle	XA-3546	1
24	Release Handle	XA-09041	1
25	Washer 1/2" I.D. x 1" O.D.	XB-PW-1732-1-116	2
26	Compression Spring	XB-07291	1
29	Grease Fitting	XB-H-38	2
39	Washer 1/2" I.D. x 2-1/4" O.D.	XB-1030	1
40	Yoke Stop	XA-09043	1
41	Handle Guide	XA-09039	1
42	Never-Seez (Not Shown)	XB-02967	1

Note: Kits available from your local SAF-HOLLAND Distributor.

AIR CYLINDER TABLE

TOP PLATE ASSEMBLY	AIR CYLINDER COMPONENTS
XA-351-03505	Items 20 and 22A
XA-351-03505-2	Items 20 and 22A
XA-351-03505-3	Items 22B, omit item 20
XA-351-03505-4	Items 20 And 22B
XA-351-UB	Items 20 And 22A

* See Air Cylinder Table for proper air cylinder components.

PART NUMBER: RK-09063

ITEM	DESCRIPTION	PART NUMBER	QTY
5	Hex Head Cap Screw 5/8"-18 x 2"	XB-10035	1
6	Washer 5/8" I.D. x 2-5/8" O.D.	XB-07431	1
7	Roller 5/8" I.D. - White	XA-1507-1	1
8	Cam Plate	XA-08988	1
10	Washer 1/2" I.D. x 1-3/4" O.D.	XB-08559	2
12	Lock Nut 1/2"-20 (2 Add'l Req For Brkts)	XB-T-69-A	3
14	Yoke Shaft	XA-1706-1	1
16	Cam Spacer	XA-09040	1
21	Hex Head Cap Screw 1/2"-20 x 1-3/4" LG	XB-T-89-5	2
24	Release Handle	XA-09041	1
25	Washer 1/2" I.D. x 1" O.D.	XB-PW-1732-1-116	2
26	Compression Spring	XB-07291	1
31	Roll Pin 3/8" x 1-3/4"	XB-21-S-375-1750	2
39	Washer 1/2" I.D. x 2-1/4" O.D.	XB-1030	1
40	Yoke Stop	XA-09043	1

PART NUMBER: XA-351-03505

ITEM	DESCRIPTION	PART NUMBER	QTY
27	Bracket Bearing	XA-03423	2
28	Bearing Stop Block	XA-0268	4

PART NUMBER: RK-351-08332-1

ITEM	DESCRIPTION	PART NUMBER	QTY
1	Lock Pin	XA-07292-1	2
2	Retaining Ring	XB-07398	2
3	Lock Jaw Set	XA-08332-1	1
4	Extension Spring	XB-07628	1

BRACKET COMPONENTS (XA-351-03505 SERIES ONLY)

ITEM	DESCRIPTION	PART NUMBER	QTY
30	Bracket Pin	XA-2016	2
31	Roll Pin 3/8" x 1-3/4"	XB-21-S-375-1750	2
32	Rubber Bushing	XB-0011	2

SERVICE TOOLS

ITEM	DESCRIPTION	PART NUMBER	QTY.
33	Kingpin Gauge	TF-0110	1
34	2" Lock Gauge (Plug)	TF-0237	1
35	Kingpin Lock Tester	TF-TLN-5001	1

BRACKET COMPONENTS (XA-351-UB SERIES ONLY)

ITEM	DESCRIPTION	PART NUMBER	QTY
36	Hex Head Cap Screw 1-1/8"-7 x 7"	XB-BR-118-C-7	2
37	Washer, Lock 1-1/8"	XB-E-536	2
38	Rubber Bushing	XB-1604-5	2

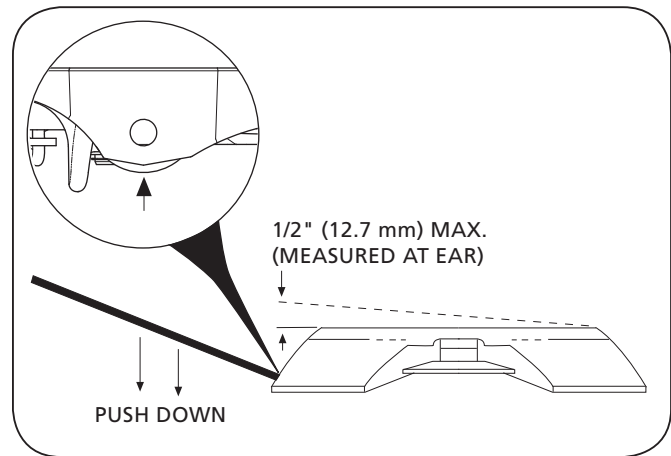
3. Bracket Bearing Inspection XA-351-03505 Only

In extremely abusive environments, the hardened steel bracket bearing may wear to the extent that removal and replacement is necessary. Before removing the fifth wheel from its mounting brackets, you should determine if it will be necessary to remove and replace the existing bearings.

Determine if removal and replacement is necessary by prying up on each pivot ear using a small bar. If, when pried up, more than 1/2" (12.7 mm) vertical movement is noted (**Figure 4**) removal and replacement should be considered.

For bracket bearing removal and replacement procedures, see Bracket Bearing Replacement, page 17 in this manual.

Figure 4



4. Top Plate Removal

1. Remove bracket pin roll pins from both sides of fifth wheel top plate (**Figure 5**).
2. Using a pry bar, pull bracket retention pins out of fifth wheel top plate (**Figure 5**).
3. Using a lifting device capable of lifting 500 lbs. (227 kg), remove top plate from mounting base. Place fifth wheel upside down on a flat, clean working area.

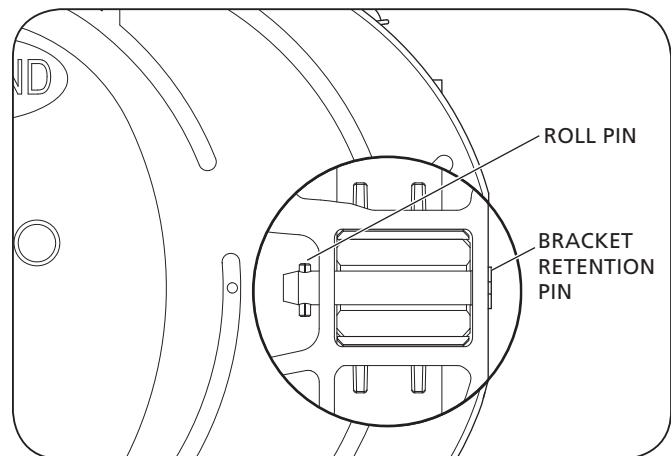
NOTE: Follow instructions published by lifting device manufacturer for proper operation of lifting device.

4. Completely remove all components from the fifth wheel and discard.

IMPORTANT: This procedure will result in several parts of your fifth wheel being replaced. "NEW" parts are included in the kit that came with this procedure. DO NOT reuse "OLD" parts that were removed during disassembly.

NOTE: Lock pins may be difficult to dislodge and may require force to remove.

Figure 5



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, may result in minor to moderate injury.

5. Thoroughly steam clean the top plate.
6. Inspect the fifth wheel top plate for cracks, damage, distortion, and loose lock pin holes. Fifth wheels with cracks, damage, distortion or loose lock pin holes must be replaced.

⚠ WARNING Failure to replace a cracked, damaged or distorted top plate could result in improper fifth wheel operation and trailer separation which, if not avoided, could result in serious injury or death.

5. Slotted Handle Hole Length Check

1. If the casting has a 2" (50.8 mm) slotted handle hole, a handle guide must be used (not required for a 1-1/4" (31.75 mm) long slotted handle hole). Remove the handle guide washer if present. (**Figure 6**).
2. Position the NEW handle guide on the inside rib of the fifth wheel and weld it in place (**Figure 7**).

NOTE: The handle guide has a 1-1/4" (31.75 mm) diameter, a 1/4" (6.3 mm) thick wall, and is 1/2" (12.7 mm) thick (**Figure 8**).

IMPORTANT: DO NOT use the white cam roller (Item 7, page 7) as a substitute for the handle guide.

IMPORTANT: When welding, use a procedure and filler metal which assures a sound, good quality weld which protects the welding operator and others. Overwelding may cause distortion or damage and underwelding may not develop sufficient strength. An AWS E70XX or E60XX filler metal, used in conjunction with either GMAW (gas shielded solid wire), FCAW (gas shielded flux core wire) or SMAW (AC or DC stick) is recommended.

Figure 6

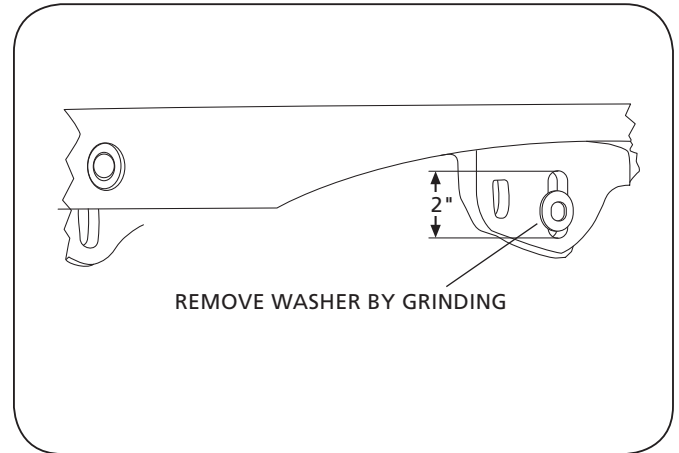


Figure 7

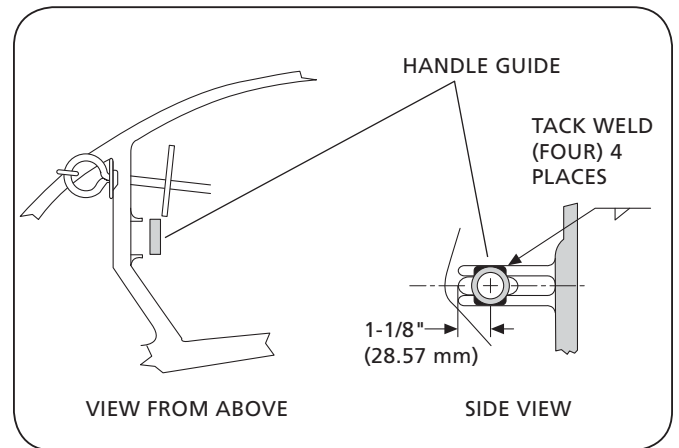
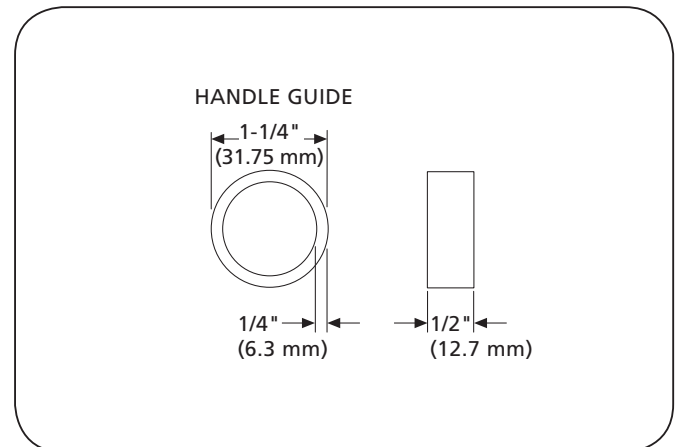


Figure 8



3. Measure the distance between the yoke stop block and the horizontal centerline of the lock pins (**Figure 9**).
If the distance is 3-3/4" (95.2 mm), the yoke stop location is correct. Proceed to reassembly page 11.
4. If the distance is 3-1/2" (88.9 mm) or less, you must tack weld a new yoke stop in front of the existing stop. Center the new stop side-to-side and flush with the existing stop so that it adds an additional 5/16" (7.94 mm) thickness (**Figure 10**).

Figure 9

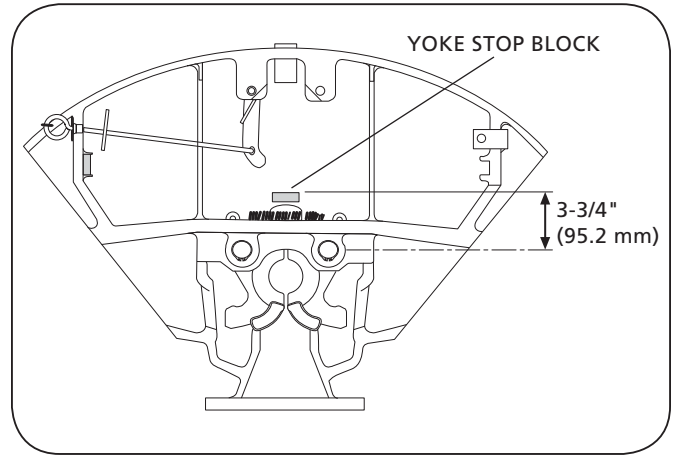
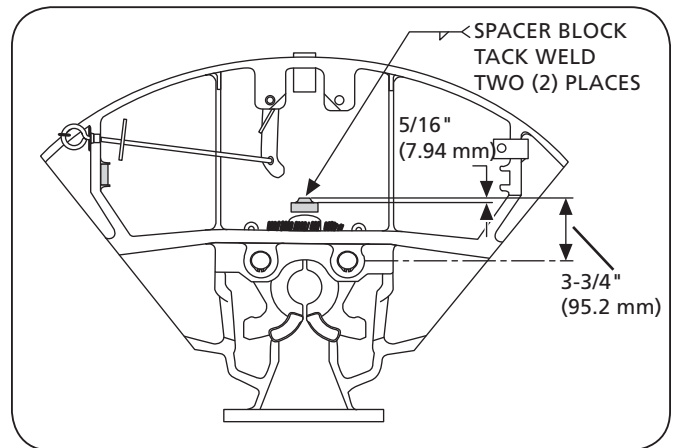


Figure 10



6. Lock Installation

1. Lubricate lock pin holes of lock jaws with Never-Seez (provided in kit) (**Figure 11**).

IMPORTANT: Only use Never-Seez when lubricating lock pin holes of lock jaws. Do not use a substitute lubricant.

2. With the fifth wheel top plate upside down, align lock pin hole of lock jaws with lock pin holes in casting. Be certain to position lock jaws with kingpin guides facing fifth wheel casting (**Figure 11**).
3. With lock jaws properly positioned in the fifth wheel casting, drive lock pins into lock jaws and casting holes until heads are flush with casting (**Figure 12**).
4. Install retaining rings on lock pins (**Figure 12**).
5. Insert a 2" (50.8 mm) diameter precision plug or the Holland Lock Gauge (Part No. TF-TLN-0237) into the lock jaws (**Figure 13**).

NOTE: You must use a Holland Lock Gauge (TF-0237) or a precision plug that is 2.000 +/- .005" (50.8 mm +/- .127 mm) for proper installation of the locking mechanism

Figure 11

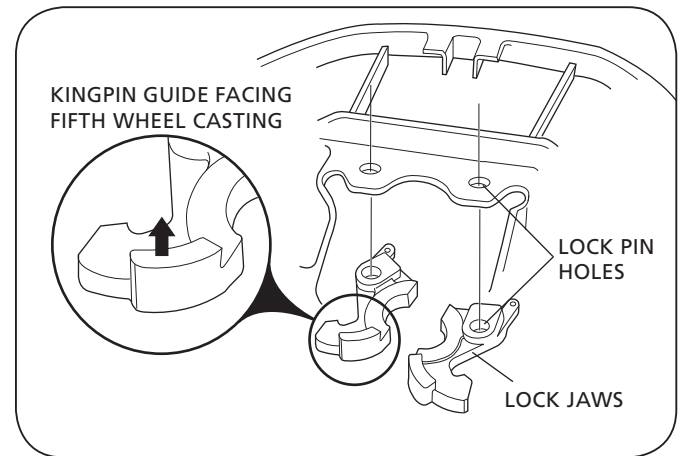


Figure 12

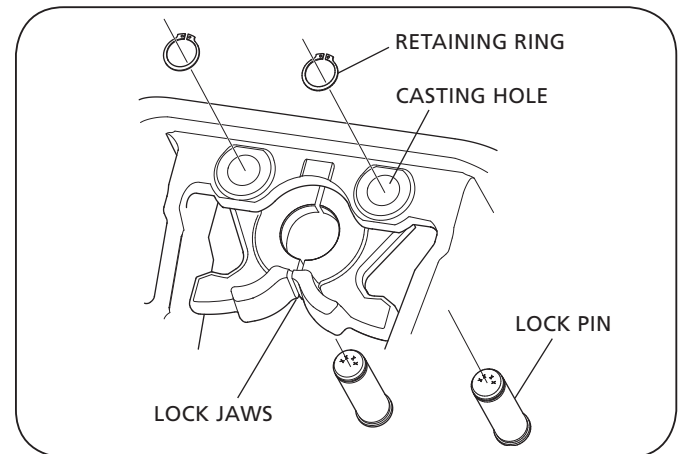
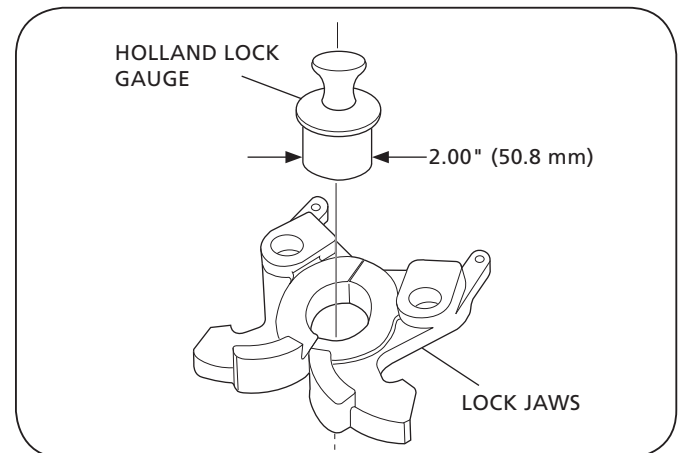


Figure 13



7. Yoke Installation

1. Lubricate tips of the yoke with a water-resistant lithium base grease (**Figure 14**).
2. With the threaded hole facing up, slide yoke into the casting. Tap lightly to seat yoke around lock jaws (**Figure 14**).
3. Inspect the amount of yoke tip engagement. The yoke tips must be flush with the end of the lock jaw or extend less than 1/2" (12.7 mm) beyond the lock jaw (**Figure 15**).

NOTE: If the new yoke extends more than 1/2" (12.7 mm) beyond the lock jaw DO NOT USE. Discard it and order Holland part number XA-07295-THK.

4. Install lock spring onto lock jaws (**Figure 16**).

Figure 14

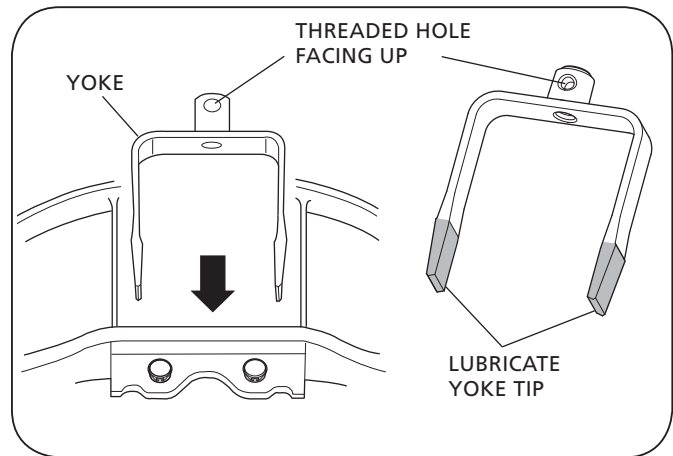


Figure 15

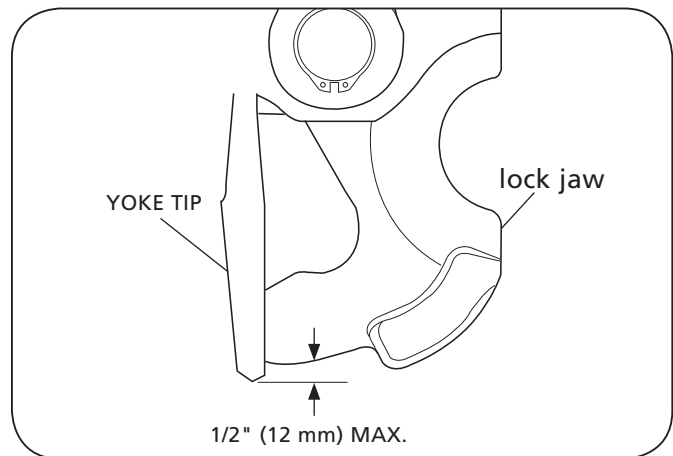
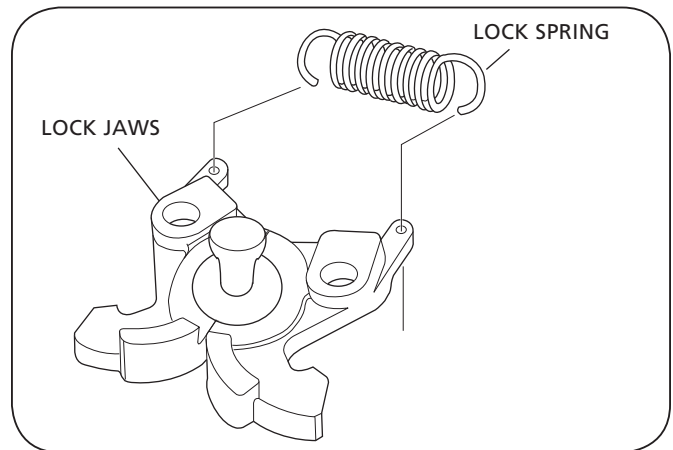


Figure 16



5. Install yoke spring (**Figure 17**).
6. Next, slide the yoke shaft into the casting, through the spring and into the yoke. Align the recessed hole in the shaft with the threaded hole in the yoke.
7. Remove Holland Lock Gauge from between lock jaws.

8. Cam Plate Installation

1. In this order, slide the 1" O.D. washer, 1" handle spring, and second 1-3/4" O.D. washer onto the release handle rod (**Figure 18**).
2. Next, slide the straight end of the release handle rod through the inside of casting hole "B", or handle guide (**Figure 18**).
3. Inspect cam plate for burrs. Service as necessary.
4. Lubricate cam plate track and pivot hole with a water resistant lithium base grease (**Figure 19**).
5. Insert the "S" bend of the release handle rod into the hole in the cam plate (**Figure 19**).

Figure 17

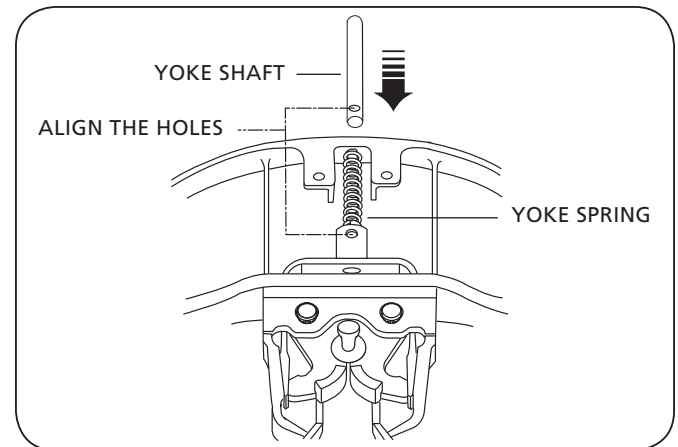


Figure 18

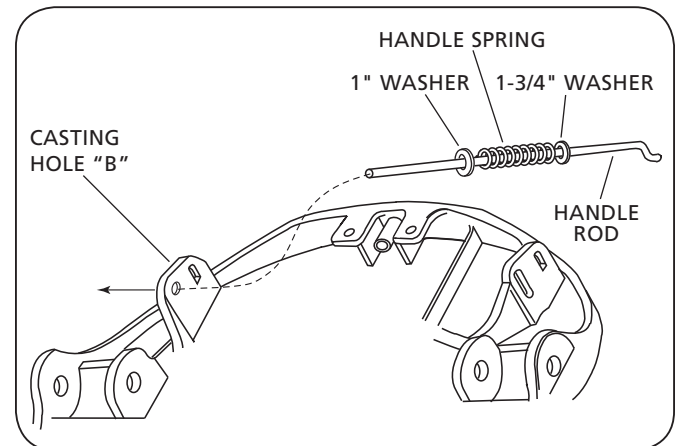
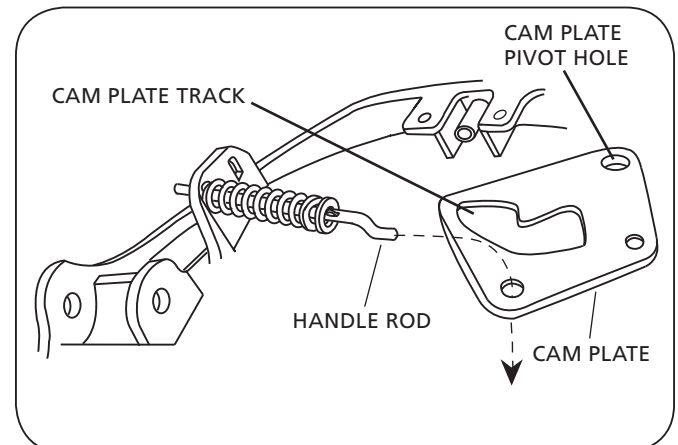


Figure 19



6. Position the cam plate pivot hole over the casting lug hole, as shown **(Figure 20)**.
7. Place a 1-3/4" O.D. washer between cam plate and casting lug hole with the rounded side of the washer facing cam plate **(Figure 20)**.

NOTE: When installing washers, the rounded edge of the washers must always face the cam plate.

8. Install the 1/2" I.D. roller into cam plate and place a 2-1/4" O.D. washer on top of roller with rounded side facing cam plate **(Figure 21)**.
9. Install 1/2" bolt through washers, roller and top plate lug **(Figure 21)**.
10. Secure bolt with a 1/2" nut and torque to 65 ft.-lbs. (88 N•m). Check for free movement of the cam plate **(Figure 21)**.
11. Align cam plate track over the threaded hole in the yoke **(Figure 22)**.
12. Place the 2-5/8" O.D. spacer between the yoke and the cam plate **(Figure 22)**.
13. Place a 5/8" I.D. roller into cam plate track, then place the 2-5/8" O.D. washer over the roller with the rounded side of washer facing the cam plate **(Figure 22)**.
14. Check the alignment of the recessed hole in yoke shaft.
15. Install 5/8" bolt through washer, roller, cam plate, spacer and into threaded hole in yoke **(Figure 22)**.

Figure 20

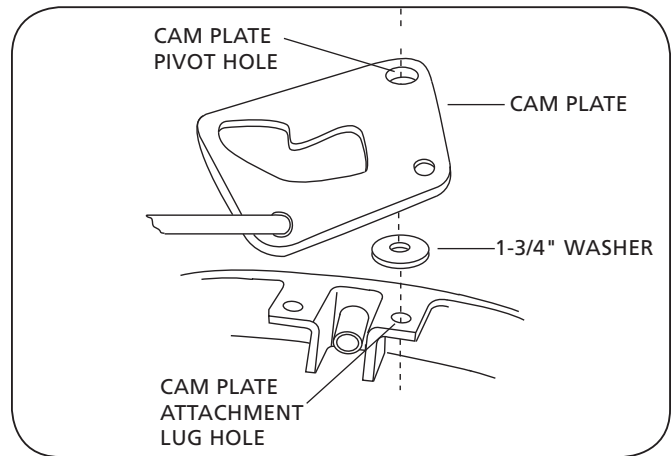


Figure 21

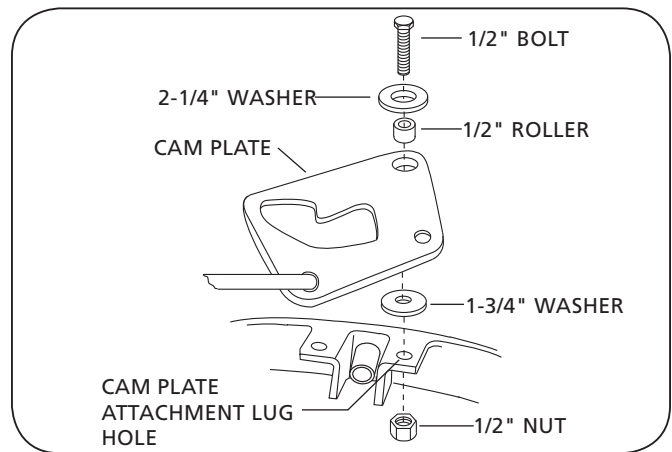
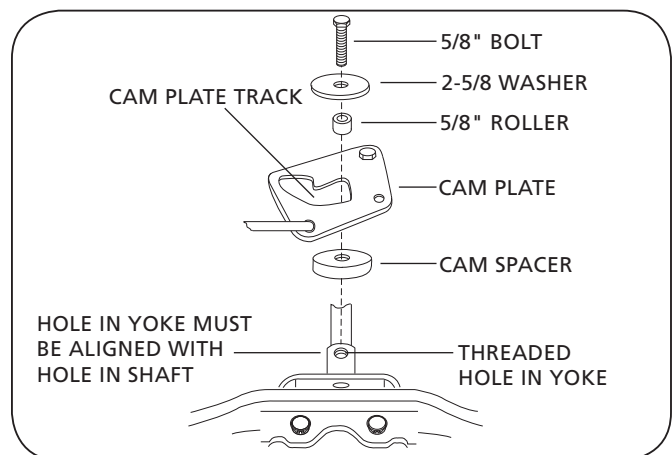


Figure 22



16. Install 5/8" bolt through washers, roller and cam plate and into the threaded hole in the yoke.

Make sure that the bolt enters the recessed hole in the yoke shaft (**Figure 23**).

17. Tighten the bolt securely. Make sure the gap between the washer and the cam plate is no more than .120" (3.04 mm) and no less than .06" (1.52 mm), then check for free movement of the cam plate.

9. Secondary Lock Installation

1. Pass the "S" bend of the manual secondary release handle through the casting guide hole (**Figure 24**).
2. Pass the "S" bend of the release handle through the large hole in the secondary lock (**Figure 24**).
3. Start the roll pin into the hole in the top plate opposite the cam attachment bolt (**Figure 25**).
4. Assemble the secondary lock to the torsion spring (**Figure 25**).
5. Drive the roll pin through the spring and lock until flush with the casting.
6. Check for proper spring tension and operation by pulling release handle and hooking it on casting, then unhooking handle and allowing spring to snap it closed.

Figure 23

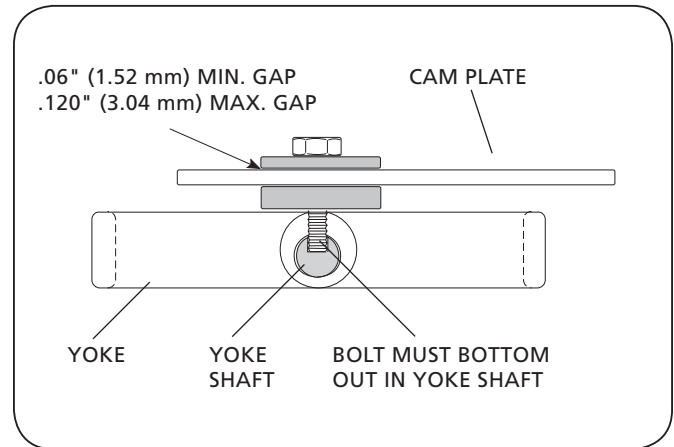


Figure 24

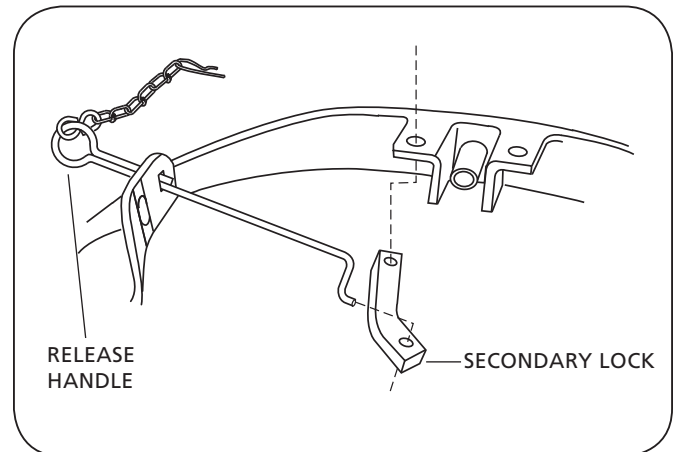
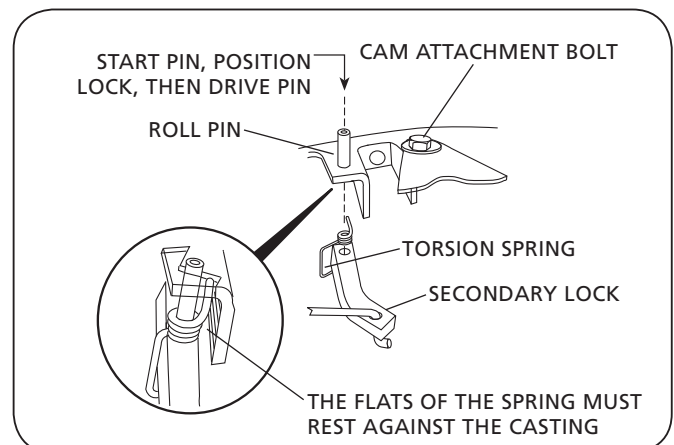


Figure 25

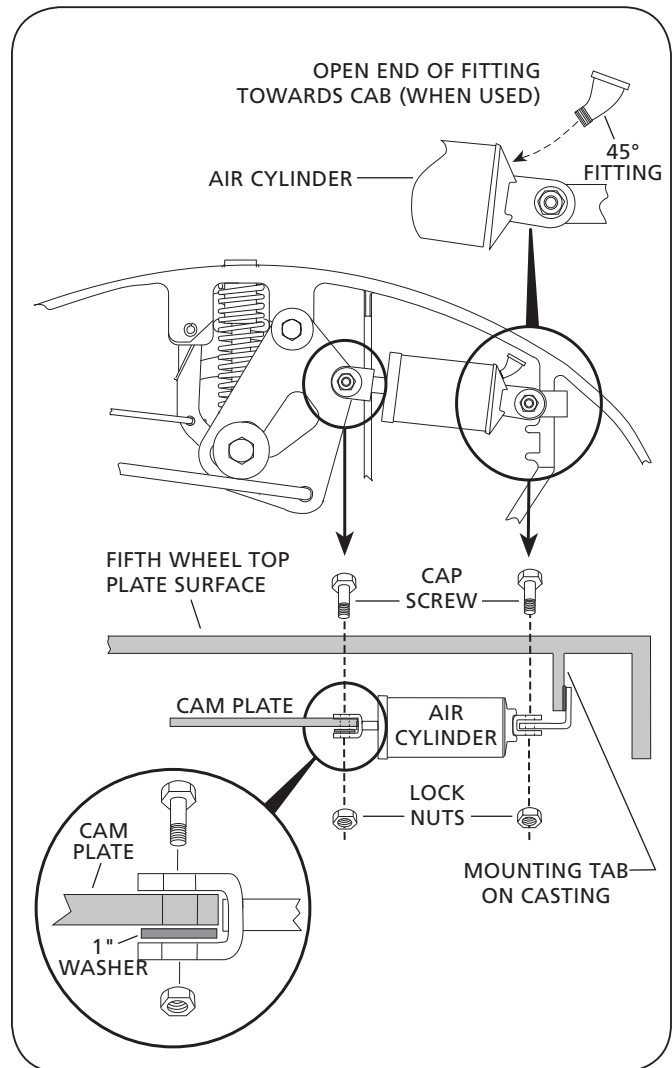


10. Air Cylinder Installation

1. Insert the 45° fitting into the hole in the end of the air cylinder and position it so that the open end of the fitting will face the tractor cab when the fifth wheel is installed (**Figure 26**).
2. Position the clevis on the rod end of the air cylinder over the hole in the cam plate tab (**Figure 26**).
3. Position the clevis on the fixed end of the air cylinder over the mounting tab on the fifth wheel casting rib (**Figure 26**).
4. Place a 1" O.D. washer between the cam plate and the air cylinder clevis. Then, secure the air cylinder using the socket head shoulder bolts and flange nuts (**Figure 26**).

NOTE: The bolts should be inserted so that the cap screw heads face the fifth wheel casting and the flange nuts face outward.

Figure 26



11. Bracket Bearing Replacement XA-351-03505 Only

1. Grind off the existing bearing block stops using care not to remove material from the fifth wheel top plate casting (**Figure 27**).
2. Remove the existing bracket bearing and discard all old parts.
3. Position the new bracket bearing in fifth wheel bracket "pocket" area.
4. Position the stop blocks flush with the edge of the bearing block (**Figure 28**).
5. Secure the new bearing by welding the new stop blocks in place with a continuous 3/16" (4.76 mm) fillet across the outside edge of the blocks (**Figure 28**).

IMPORTANT: When welding, use a procedure and filler metal with a sound, good quality weld which protects the welding operator and others. Overwelding may cause distortion or damage and underwelding may not develop sufficient strength. An AWS E70XX or E60XX filler metal, used in conjunction with either GMAW (gas shielded solid wire), FCAW (gas shielded flux core wire) or SMAW (AC or DC stick) is recommended.

⚠ WARNING Failure to properly weld stop block could allow parts to separate from the fifth wheel which, if not avoided, could result in serious injury or death.

Figure 27

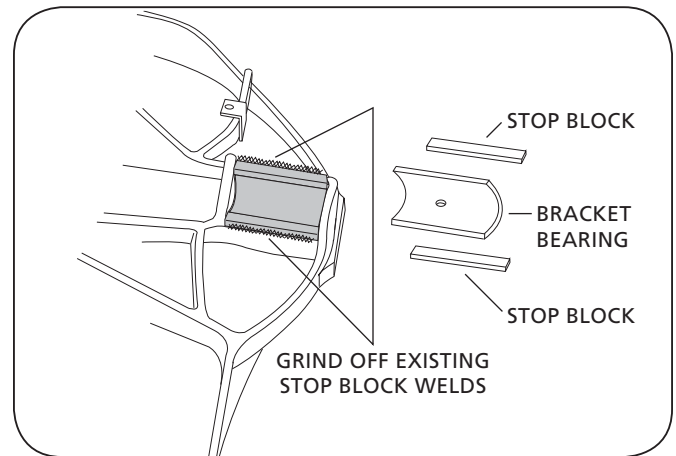
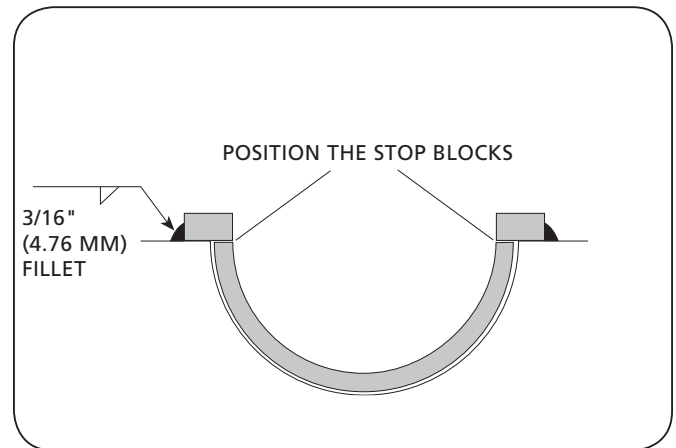


Figure 28



12. Top Plate Installation

Before you use your fifth wheel, you must verify that it, and the control system, are operating properly.

1. Check the air lines for signs of chafing or other damage, check the control valve for proper operation, and make certain the air breather hole on the air cylinder end cap is open. Repair as needed (**Figure 29**).
2. Using a lifting device capable of lifting 500 lbs., (227 kg), install fifth wheel top plate onto its mounting base.

NOTE: Follow instructions published by lifting device manufacturer for proper operation of lifting device.

3. Install bracket pins through fifth wheel casting and mounting base and secure by installing the bracket pin's roll pins (**Figure 30**).
4. Reattach air line.

13. Operation Check

1. Using a Holland lock tester (TF-TLN-5001), close the fifth wheel locks. Verify that the locks are properly closed around the lock tester. Activate the fifth wheel release switch and remove the lock tester. Repeat this step three times to verify proper operation (**Figure 31**).

After three (3) successful operational checks, your fifth wheel is ready for operation.

IMPORTANT: Before using your fifth wheel, visually inspect all components of fifth wheel for proper operation while coupling and uncoupling fifth wheel with lock tester.

WARNING Failure to repair an improperly operating fifth wheel may result in tractor-trailer separation which, if not avoided, could result in serious injury or death.

IMPORTANT: Be sure to read and understand Fifth Wheel Operation Instructions published in the Fifth Wheel Owner's Manual available on the internet at (www.safholland.us) prior to use.

WARNING Failure to read and understand Fifth Wheel Operation Instructions prior to use can result in improper operation of fifth wheel which, if not avoided, could result in death or serious injury.

Figure 29

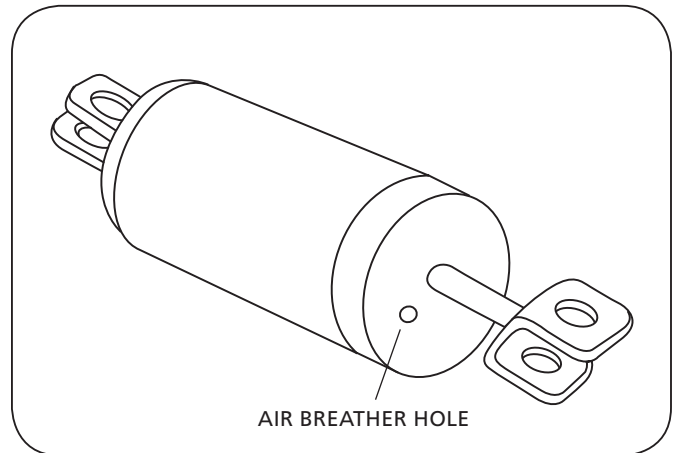


Figure 30

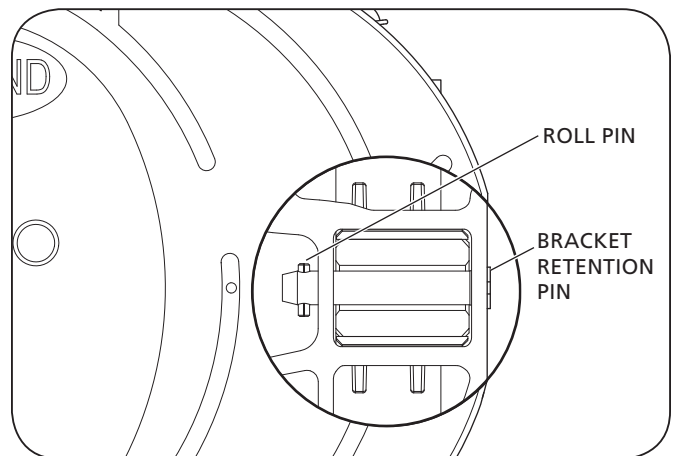
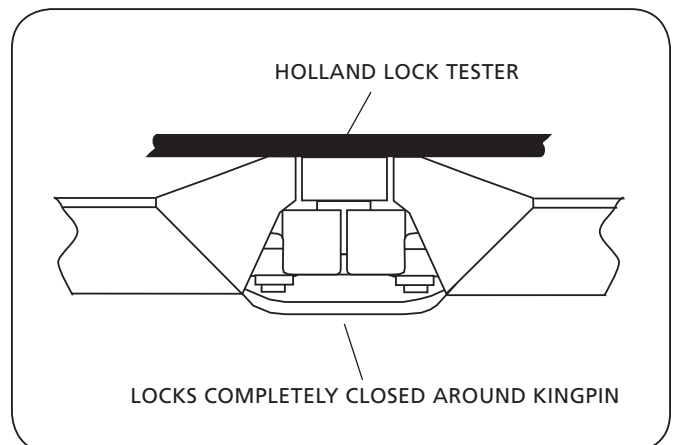


Figure 31







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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www.safholland.com.mx

info@safholland.com