

Rebuild/Repair Manual

AL Aluminum Low Lube Series Fifth Wheels

- FWAL Assembly Series
- XA-AL Top Plate Series



Contents	Page
Introduction	2
Notes, Cautions, and Warnings	2
Section 1 – General Safety Instructions	3
Section 2 – Model Identification.....	3
Section 3 – Generation Identification	4
Exploded Views and Parts Lists.....	5
Section 4 – Top Plate Removal.....	14
Section 5 – Front Lock Insert Installation.....	14
Section 6 – Disassembly and Inspection	15
Section 7 – Hook and Lock Installation.....	16
Section 8 – Cam Track Fastener Installation.....	20

Contents	Page
Section 9 – Manual Release Handle Installation	21
Section 10 – Air Release Handle and Cylinder Installation ..	22
Section 11 – Springs Installation	24
Section 12 – Upshock Cushions, Pocket Inserts and Brackets Inspection	25
Section 13 – Top Plate Installation (for fabricated mounting brackets)	27
Section 14 – Top Plate Installation (for cast mounting brackets).....	28
Section 15 – Fifth Wheel Adjustment	29

Introduction

This manual provides the information necessary to properly rebuild the HOLLAND® FWAL/XA-AL Series and FWAL/XA-AL-A-80-L Air Release Series Fifth Wheels.

Read this manual before using or servicing this product. Updates to this manual, which are published as necessary, are available on the internet at www.safholland.us.

When replacement parts are necessary, SAF-HOLLAND® requires 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.

Notes, Cautions, and Warnings

Before starting work on any SAF-HOLLAND fifth wheel assembly, 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 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 repair and maintenance **MUST** be performed by a properly trained technician using proper/special tools and safety procedures.

NOTE: In the United States, workshop safety requirements are defined by the federal and/or state Occupational Safety and Health Act (OSHA). 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.

NOTE: Before rebuilding the HOLLAND Fifth Wheel, review the model number on the identification tag. This rebuild procedure applies only to model numbers starting with FWAL/XA-AL.

IMPORTANT: All maintenance **MUST** be performed while the tractor is uncoupled from the trailer.

IMPORTANT: These instructions apply to the proper rebuild of FWAL/XA-AL Series and FWAL/XA-AL-A-80-L Air Release Series 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.

- For proper installation procedures, refer to Installation Manual XL-FW10008BM-en-US available on the internet at www.safholland.us.

IMPORTANT: Prior to operation of the fifth wheel, verify that the fifth wheel has been properly installed on the vehicle.

⚠ WARNING

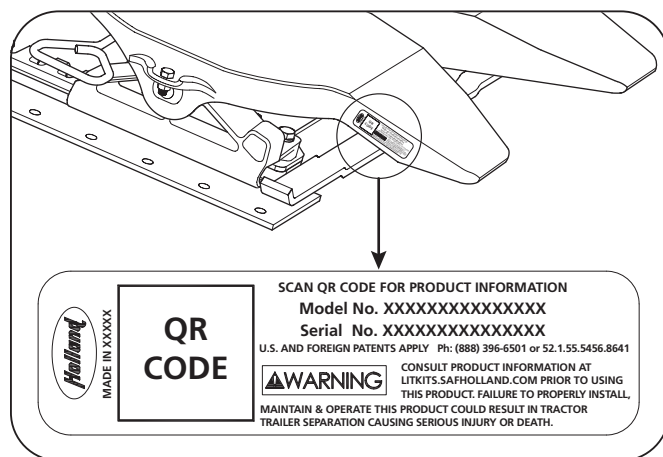
Failure to properly repair and install the fifth wheel could adversely affect performance resulting in tractor-trailer separation which, if not avoided, could result in death or serious injury.

2. Model Identification

The fifth wheel serial tag is located on the left side of the fifth wheel top plate above the fifth wheel bracket pin, or near the pickup ramps (**Figure 1**).

The fifth wheel model number and serial number are listed on the tag as illustrated (**Figure 1**).

Figure 1



3. Generation Identification

Determining the generation model of the fifth wheel is necessary for certain maintenance procedures and selecting the appropriate rebuild and replacement kits.

Use the criteria below to identify the generation of your fifth wheel:

1. **Generation 3** fifth wheels are equipped with a grease port near the left pickup ramp (**Figure 2**).
 - These fifth wheels were produced after May 2018.
2. **Generation 2** fifth wheels are not equipped with a grease port and have two (2) front lock insert retention blocks (**Figure 3**).
 - These fifth wheels were produced between May 2013 and April 2018.
3. **Generation 1** fifth wheels have one (1) front lock insert retention block (**Figure 4**).
 - These fifth wheels were produced before May 2013.

Figure 2

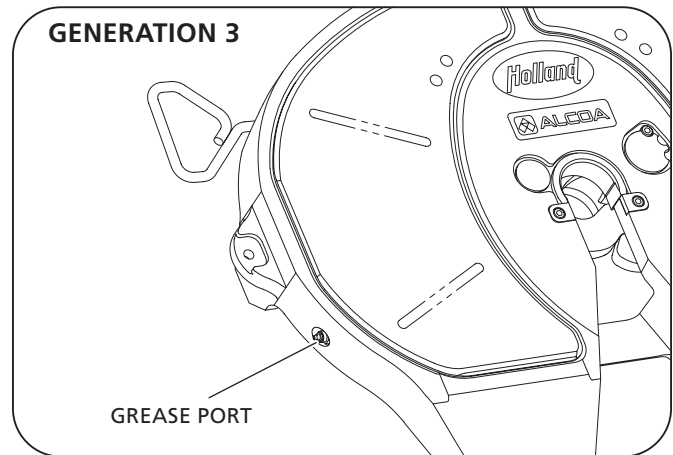


Figure 3

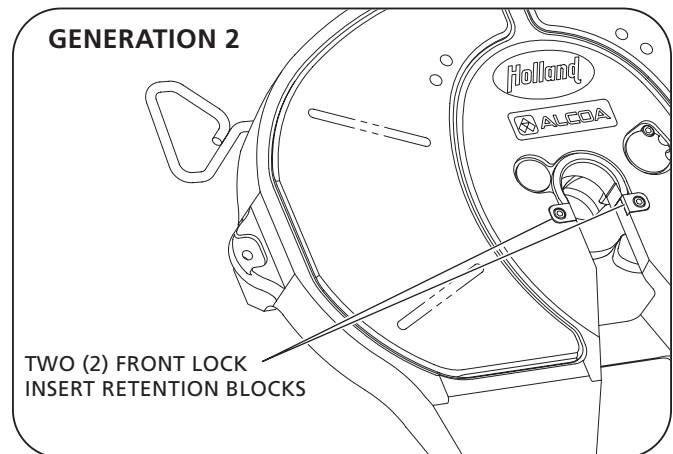
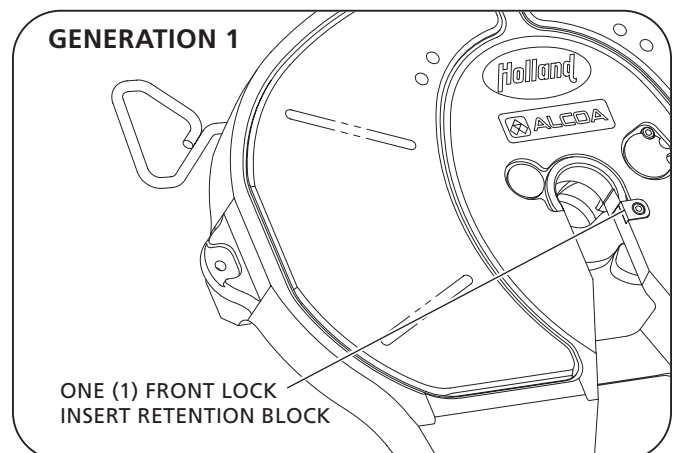
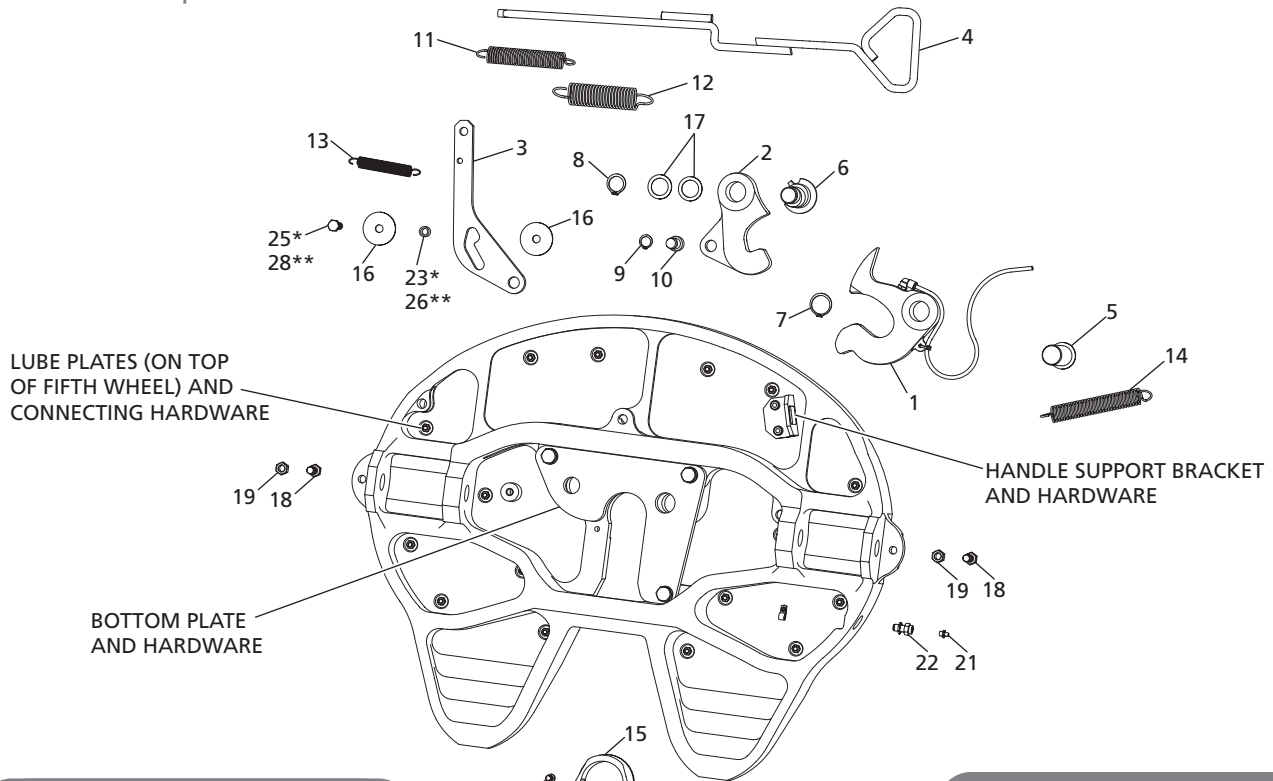
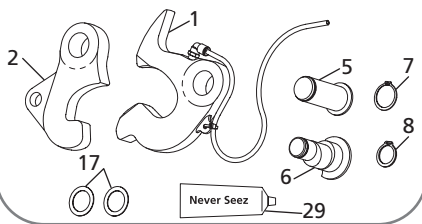


Figure 4

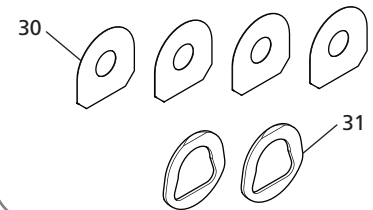




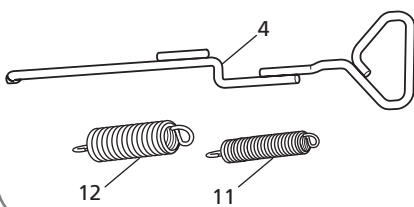
RK-AL-11078
Lock and Hook, Manual Release



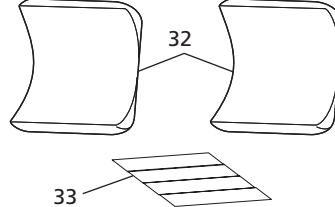
RK-AL-11798
Bracket Shims and Rubber Washers



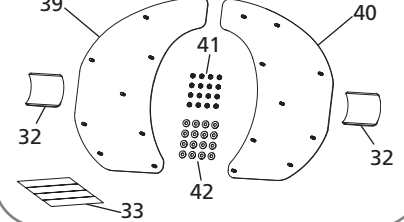
RK-10495-AL-P
Release Handle, Left-Hand



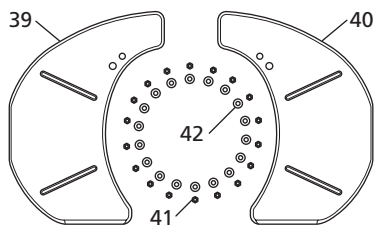
RK-PKT-2
Pocket Inserts



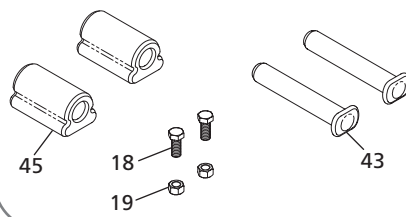
RK-AL-1
Lube Plate and Pocket Inserts



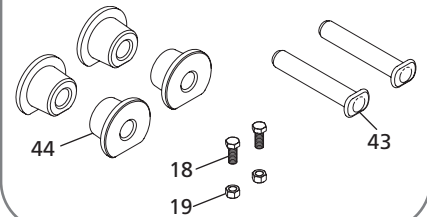
RK-331-1
Lube Plate



RK-06973-1
Bracket Pins and Cushions



RK-10605
Bracket Pins and Cushions, ILS



RK-AL-A-L PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Lock and Tube Assembly	XA-10486-A	1
2	Hook	XA-10487-P	1
3	Release Cam	XA-10483-AL	1
4	Release Handle - Standard	XA-10495-AL-P	1
5	Lock Pin	XA-06344-AL	1
6	Adjusting Pin	XA-10364-3-AL-P	1
7	Retaining Ring, 1-3/8" I.D.	XB-08905	1
8	Retaining Ring, 1-1/8" I.D.	XB-05855	1
9	Hook Pin	XA-10485-1	1
10	Retaining Ring, 3/4" I.D.	XB-05855-1	1
11	Extension Spring, 1-1/8" O.D.	XB-10489-P	1
12	Extension Spring, 1-1/2" O.D.	XB-10490-P	1
13	Extension Spring, 3/4" O.D.	XB-10563-1-P	1
14	Extension Spring, 1" O.D.	XB-05843-1-P	1
15	Front Lock Insert	XD-12335-P	1
16	Washer, 1/2" I.D. x 2-1/4" O.D., Stainless Steel	XB-10294	2
17	Shim Ring	XB-05859-2	2
18	Hex Head Cap Screw, 1/2"-20 x 1-1/4"	XB-C-95	2
19	Lock Nut, 1/2"-20	XB-T-69-A	2
20	Insert Keeper	XG-10706-P	2
21	Lube Fitting	XB-H-38	1
22	Bulkhead Union Fitting	XB-03124-BFU	1
23*	Cam Roller	XA-10810-1	1
24*	Low Head Socket Cap Screw, 3/8"-16 x 3/4"	XB-02724-1	2
25*	Hex Head Shoulder Bolt, 1/2"-20 (Cam Pivot Bolt)	XB-2083	1
26**	Cam Roller	XA-10810-P	1
27**	Low Head Socket Cap Screw, M10 x 1.5 x 16 mm	XB-02724-M	3
28**	Hex Head Shoulder Bolt, M12 x 1.75 (Cam Pivot Bolt)	XB-HCS-M12-40-Z	1
29	Never-Seez®, 7.5 gram Tube	XB-02967	1

RK-10495-AL-P PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
4	Release Handle - Standard	XA-10495-AL-P	1
11	Extension Spring, 1-1/8" O.D.	XB-10489-P	1
12	Extension Spring, 1-1/2" O.D.	XB-10490-P	1

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

* Contents of "Generation 1 Hardware" bag - For use in FWAL/XA-AL-A-L Generation 1 models only.
This hardware is NOT needed for Generation 2 or 3 fifth wheels.

** Contents of "Generations 2 or 3 Hardware" bag - For use in FWAL/XA-AL-A-L Generation 2 or 3 models only. This hardware is NOT needed for Generation 1 fifth wheels.

RK-AL-11078 PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Lock and Tube Assembly	XA-10486-A	1
2	Hook	XA-10487-P	1
5	Lock Pin	XA-06344-AL	1
6	Adjusting Pin	XA-10364-3-AL-P	1
7	Retaining Ring, 1-3/8" I.D.	XB-08905	1
8	Retaining Ring, 1-1/8" I.D.	XB-05855	1
17	Shim Ring	XB-05859-2	2
29	Never-Seez®, 7.5 gram Tube	XB-02967	1

RK-AL-11798 PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
30	Bracket Shim	XA-11798	4
31	Rubber Washer	XB-60144	2

RK-PKT-2 PARTS LIST (GEN 3 ONLY)			
ITEM	DESCRIPTION	PART NUMBER	QTY.
32	Pocket Insert	XD-08908-P0	2
33	Double Face Tape	XB-09422	4

RK-PKT-3 PARTS LIST (GEN 1 AND 2 ONLY)			
ITEM	DESCRIPTION	PART NUMBER	QTY.
33	Double Face Tape	XB-09422	4
34	Pocket Insert - Domed	XD-10923	2

RK-AL-12462 PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
21	Lube Fitting	XB-H-38	1
22	Bulkhead Union Fitting	XB-03124-BFU	1
35	Hex Head Cap Screw, M10 x 1.5 x 18 mm	XB-HCS-M10-18-Z	2
36	Lube Tube Bracket	XA-03124-3	1
37	Drill Bit, 8.5 mm	XB-12460	1
38	Tap, M10-1.5, 4-Flute D6 Bottoming	XB-12461	1

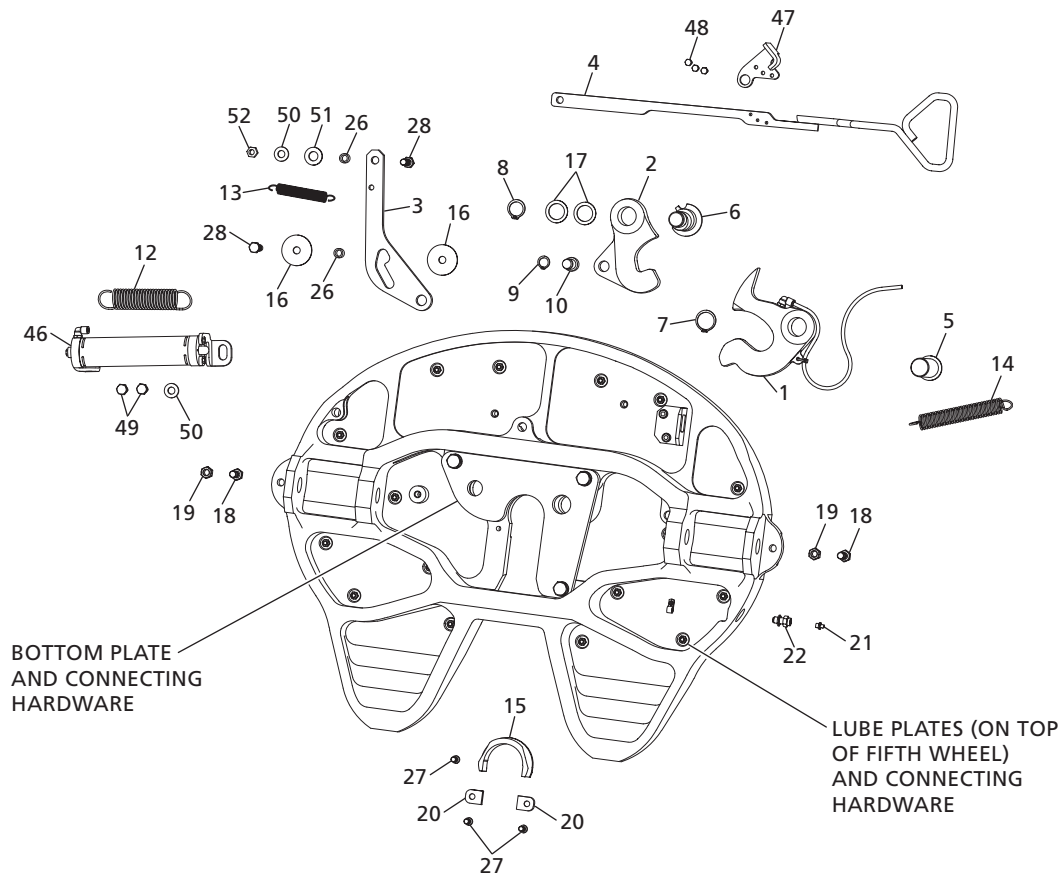
Note: Kits available from a local SAF-HOLLAND Distributor.

RK-AL-1 PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
32	Pocket Insert	XD-08908-P0	2
33	Double Face Tape	XB-09422	4
39	Lube Plate, Left-Hand	XA-08125-L	1
40	Lube Plate, Right-Hand	XA-08125-R	1
41	Lock Nut, 5/16"-18	XB-08931	16
42	Washer, 3/8" I.D. x 7/8" O.D.	XB-05635	16

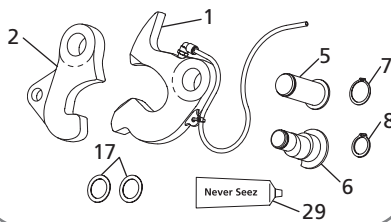
RK-331-1 PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
39	Lube Plate, Left-Hand	XA-08125-L	1
40	Lube Plate, Right-Hand	XA-08125-R	1
41	Lock Nut, 5/16"-18	XB-08931	18
42	Washer, 3/8" I.D. x 7/8" O.D.	XB-05635	18

RK-10605 PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
18	Hex Head Cap Screw, 1/2"-20 x 1-1/4"	XB-C-95	2
19	Lock Nut, 1/2"-20	XB-T-69-A	2
43	Bracket Pin	XE-06356-P	2
44	Rubber Cushion (for cast brackets)	XB-10605	4

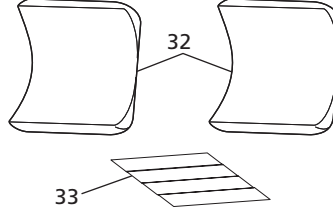
RK-06973-1 PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	QTY.
18	Hex Head Cap Screw, 1/2"-20 x 1-1/4"	XB-C-95	2
19	Lock Nut, 1/2"-20	XB-T-69-A	2
43	Bracket Pin	XE-06356-P	2
45	Rubber Cushion (for fabricated brackets)	XB-0011-2	2



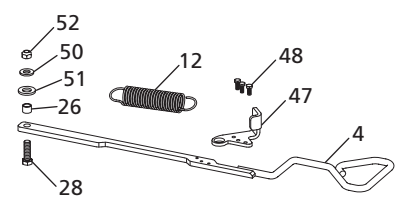
RK-AL-11925
Lock and Hook, Air Release



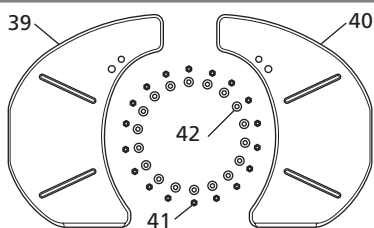
RK-PKT-2
Pocket Inserts



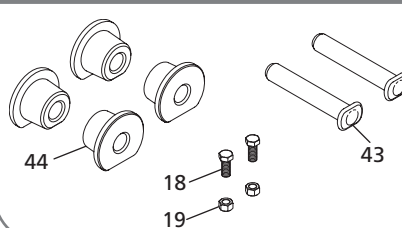
RK-AL-11384
Air Release Handle



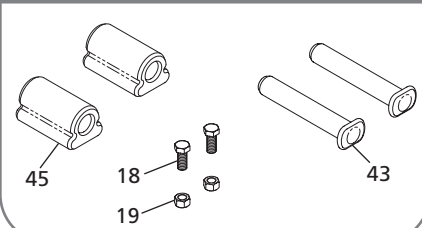
RK-331-1
Lube Plates



RK-10605
Bracket Pins and Cushions, ILS



RK-06973-1
Bracket Pins and Cushions



RK-AL-A-80-L PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Lock and Tube Assembly	XA-10486-A	1
2	Hook - Air Release	XA-10487-AR-P	1
3	Release Cam	XA-10483-ALA	1
4	Air Release Handle	XA-AL-11384-P	1
5	Lock Pin	XA-06344-AL	1
6	Adjusting Pin	XA-10364-3-AL-P	1
7	Retaining Ring, 1-3/8" I.D.	XB-08905	1
8	Retaining Ring, 1-1/8" I.D.	XB-05855	1
9	Hook Pin	XA-10485-1	1
10	Retaining Ring, 3/4" I.D.	XB-05855-1	1
12	Extension Spring, 1-1/2" O.D.	XB-10490-P	1
13	Extension Spring, 3/4" O.D.	XB-10563-1-P	1
14	Extension Spring, 1" O.D.	XB-05843-1-P	1
15	Front Lock Insert	XD-12335-P	1
16	Washer, 1/2" I.D. x 2-1/4" O.D., Stainless Steel	XB-10294	2
17	Shim Ring	XB-05859-2	2
18	Hex Head Cap Screw, 1/2"-20 x 1-1/4"	XB-C-95	2
19	Lock Nut, 1/2"-20	XB-T-69-A	2
20	Insert Keeper	XG-10706-P	2
21	Lube Fitting	XB-H-38	1
22	Bulkhead Union Fitting	XB-03124-BFU	1
26	Cam Roller	XA-10810-P	2
27	Low Head Socket Cap Screw, M10 x 1.5 x 16 mm	XB-02724-M	2
28	Hex Head Shoulder Bolt, M12 x 1.75 (Cam Pivot Bolt)	XB-HCS-M12-40-Z	2
29	Never-Seez®, 7.5 gram Tube	XB-02967	1
46	Air Cylinder	XA-10999-AL	1
47	Air Cylinder Pickup	XA-11384-ALA	1
48	Hex Head Cap Screw, 1/4"-20 x 5/8"	XB-10775	3
49	Hex Head Cap Screw, M12 x 1.75 x 20 mm	XB-HCS-M12-20-Z	2
50	Washer, 1/2" I.D. x 1" O.D., Hardened	XB-06378	2
51	Washer, 3/4" I.D. x 1-1/4" O.D., Hardened	XB-06180	1
52	Lock Nut, M12 x 1.75	XB-HLN-M12-Z	1

RK-AL-11384 PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY.
4	Air Release Handle	XA-AL-11384-P	1
12	Extension Spring, 1-1/2" O.D.	XB-10490-P	1
26	Cam Roller	XA-10810-P	1
28	Hex Head Shoulder Bolt, M12 x 1.75 (Cam Pivot Bolt)	XB-HCS-M12-40-Z	1
47	Air Cylinder Pickup	XA-11384-ALA	1
48	Hex Head Cap Screw, 1/4"-20 x 5/8"	XB-10775	3
50	Washer, 1/2" I.D. x 1" O.D., Hardened	XB-06378	1
51	Washer, 3/4" I.D. x 1-1/4" O.D., Hardened	XB-06180	1
52	Lock Nut, M12 x 1.75	XB-HLN-M12-Z	1

RK-AL-11798 PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY.
30	Bracket Shim	XA-11798	4
31	Rubber Washer	XB-60144	2

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

RK-PKT-2 PARTS LIST (GEN 3 ONLY)

ITEM	DESCRIPTION	PART NUMBER	QTY.
32	Pocket Insert	XD-08908-P0	2
33	Double Face Tape	XB-09422	4

RK-PKT-3 PARTS LIST (GEN 2 ONLY)

ITEM	DESCRIPTION	PART NUMBER	QTY.
33	Double Face Tape	XB-09422	4
34	Pocket Insert - Domed	XD-10923	2

RK-AL-12462 PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY.
21	Lube Fitting	XB-H-38	1
22	Bulkhead Union Fitting	XB-03124-BFU	1
35	Hex Head Cap Screw, M10 x 1.5 x 18 mm	XB-HCS-M10-18-Z	2
36	Lube Tube Bracket	XA-03124-3	1
37	Drill Bit, 8.5 mm	XB-12460	1
38	Tap, M10-1.5, 4-Flute D6 Bottoming	XB-12461	1

RK-331-1 PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY.
39	Lube Plate, Left-Hand	XA-08125-L	1
40	Lube Plate, Right-Hand	XA-08125-R	1
41	Lock Nut, 5/16"-18	XB-08931	18
42	Washer, 3/8" I.D. x 7/8" O.D.	XB-05635	18

RK-10605 PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY.
18	Hex Head Cap Screw, 1/2"-20 x 1-1/4"	XB-C-95	2
19	Lock Nut, 1/2"-20	XB-T-69-A	2
43	Bracket Pin	XE-06356-P	2
44	Rubber Cushion (for cast brackets)	XB-10605	4

RK-06973-1 PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY.
18	Hex Head Cap Screw, 1/2"-20 x 1-1/4"	XB-C-95	2
19	Lock Nut, 1/2"-20	XB-T-69-A	2
43	Bracket Pin	XE-06356-P	2
45	Rubber Cushion (for fabricated brackets)	XB-0011-2	2

RK-AL-11925 PARTS LIST

ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Lock and Tube Assembly	XA-10486-A	1
2	Hook	XA-10487-AR-P	1
5	Lock Pin	XA-06344-AL	1
6	Adjusting Pin	XA-10364-3-AL-P	1
7	Retaining Ring, 1-3/8" I.D.	XB-08905	1
8	Retaining Ring, 1-1/8" I.D.	XB-05855	1
17	Shim Ring	XB-05859-2	2
29	Never-Seez®, 7.5 gram Tube	XB-02967	1

4. Top Plate Removal

NOTE: FWAL fifth wheel assemblies have replaceable pocket inserts installed between the fifth wheel top plate and the mounting base. Take care when removing the fifth wheel top plate NOT to lose pocket inserts.

CAUTION

Failure to prevent pocket inserts from falling out of the top plate could cause a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

1. Remove the bracket pin retention bolts and nuts from both sides of the fifth wheel top plate and discard (**Figure 5**).

IMPORTANT: Some fifth wheel assemblies contain bracket shims between the top plate and the mounting base. Take care when removing bracket pins as the bracket shims could fall out.

2. Using a pry bar, pull the bracket pins out of the fifth wheel top plate and set aside (**Figure 5**).
3. Using a lifting device capable of lifting 500 lbs. (227 kg), remove the top plate from the mounting base. Mount the top plate on a HOLLAND Rebuild Stand, Part No. TF-04229-1, or place the top plate right-side up on a flat, clean working area.

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

4. Thoroughly steam clean the top plate surface and front lock region.

5. Front Lock Insert Installation

1. Remove and discard the low head socket cap screw(s), insert keeper(s), and front lock insert (**Figure 6**).
2. Rotate the front lock insert into the detent in the top plate. Secure with the insert keeper(s) and low head socket cap screw(s) (**Figure 7**). Torque to 11-13 ft.-lbs. (15-18 N•m).
3. Install a low head socket cap screw later used to secure the position of the adjusting pin (**Figure 7**). Torque to 11-13 ft.-lbs. (15-18 N•m).

Figure 5

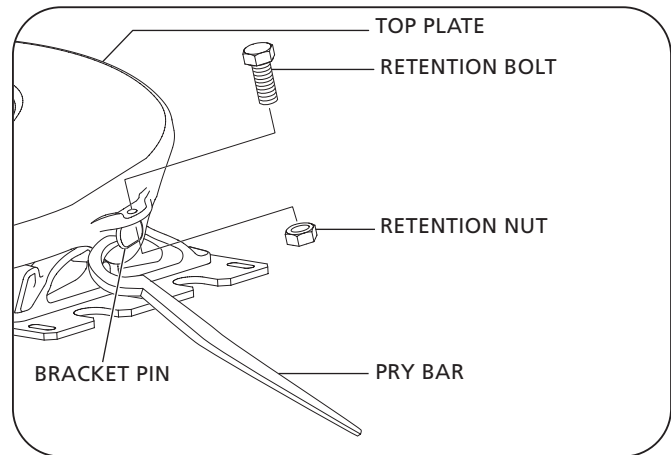


Figure 6

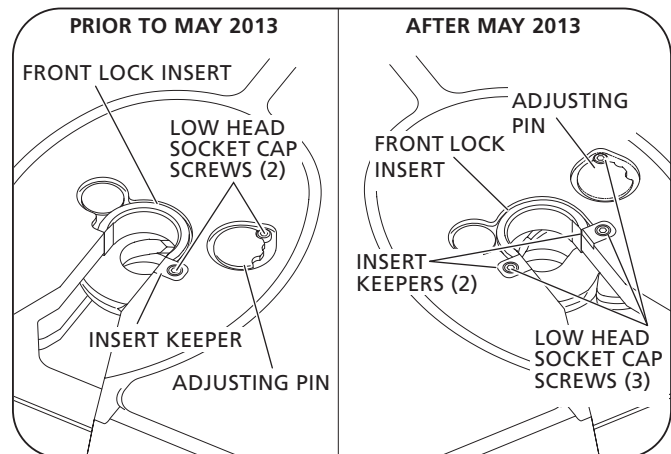
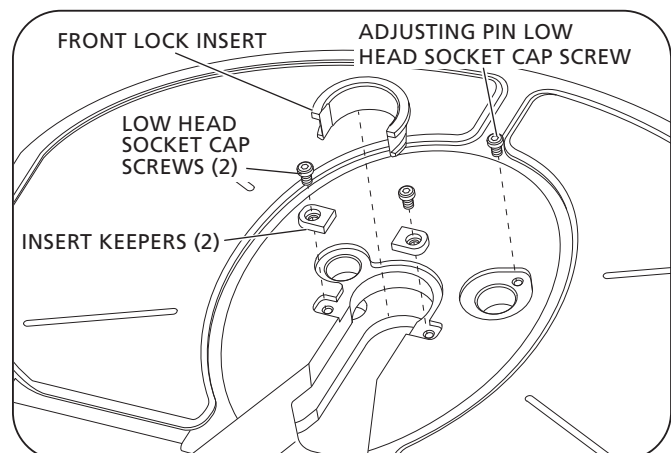


Figure 7



6. Disassembly and Inspection

1. Using a lifting device capable of lifting 500 lbs. (227 kg), place the fifth wheel upside down on a flat, clean working area. (This is not necessary if using a HOLLAND Rebuild Stand.).

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

2. Completely remove and discard all components from the top plate EXCEPT for the lube plates, bottom plate, and their connecting hardware. For **Generation 3 and 4** fifth wheels, DO NOT remove the loop clamp that is used to secure the lube line. Refer to the exploded view illustrations and parts lists for component identification.

IMPORTANT: DO NOT remove the pocket inserts unless they are cracked or worn. Refer to Section 12 for inspection information.

NOTE: Lock pin and adjusting pin could be difficult to dislodge and could require force to remove.

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

3. Thoroughly steam clean the remainder of the top plate.
4. Inspect the fifth wheel top plate for cracks and flatness. Fifth wheels with cracks MUST be replaced. If the lock pin hole, adjusting pin hole, or bracket pin holes are elongated, the top plate MUST be replaced.

NOTE: The maximum allowable lock pin hole diameter is 1.429" (36.30 mm). The maximum allowable adjusting pin hole diameters are 1.672" (42.47 mm) (top) and 1.172" (29.77 mm) (bottom).

⚠ WARNING Failure to replace fifth wheels with cracks, elongated lock pin holes or elongated adjusting pin holes could result in tractor-trailer separation which, if not avoided, could result in death or serious injury.

7. Hook and Lock Installation

1. Lubricate both holes of the hook with Never-Seez®. Also lubricate the areas that make contact with the lock with grease (**Figure 8**).
2. Lubricate both large holes of the cam with Never-Seez, and lubricate the cam track slot perimeter with grease (**Figure 9**).
3. Maneuver the hook into place under the bottom plate, and install the cam so that it is fed through the slot in the main rib of the top plate. Place the cam over the hook and align the holes as illustrated (**Figure 10**).

Figure 8

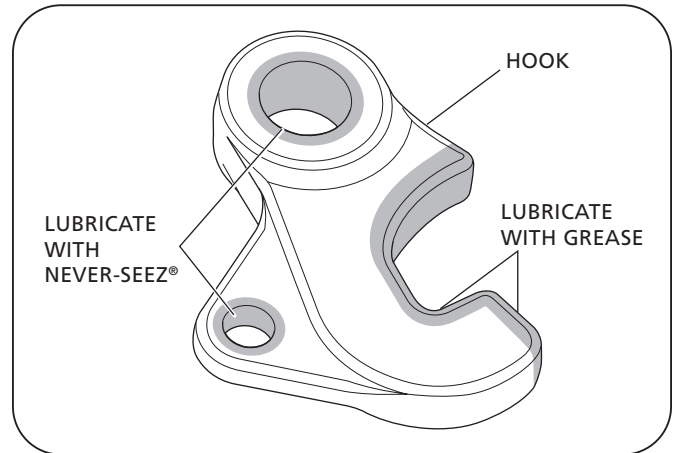


Figure 9

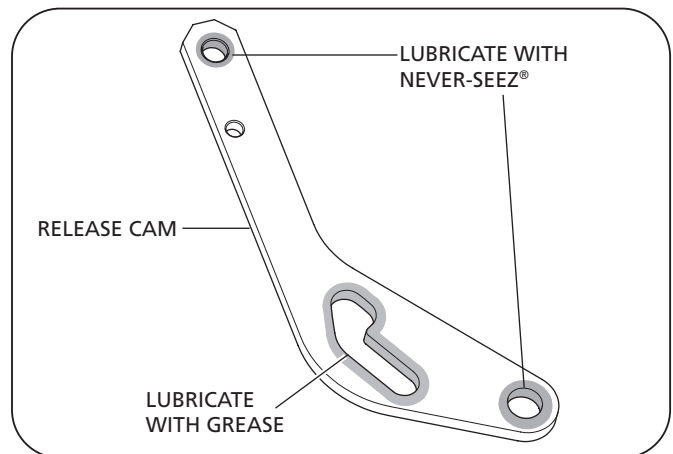
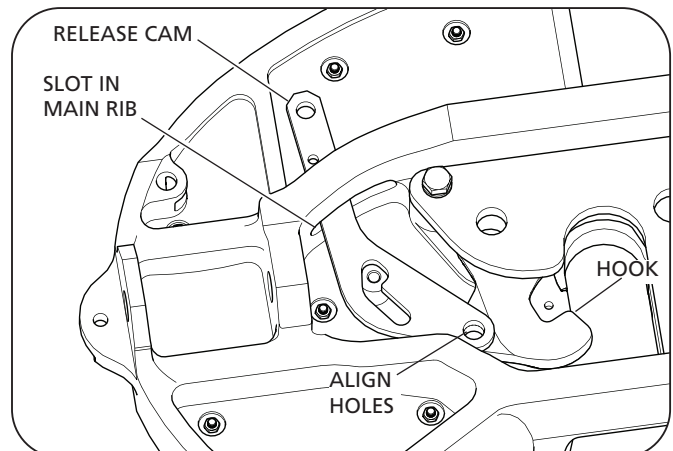
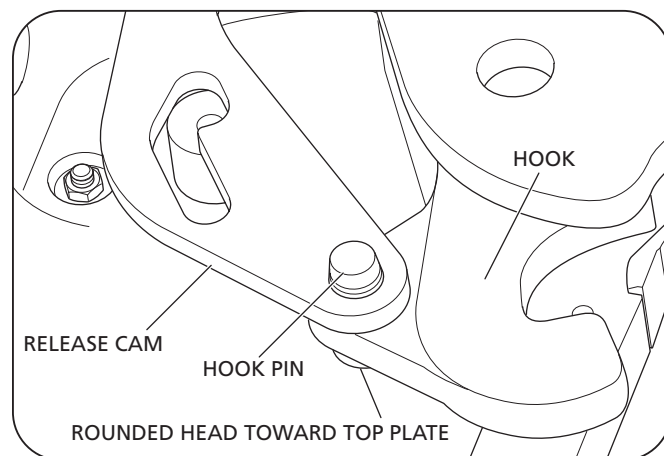
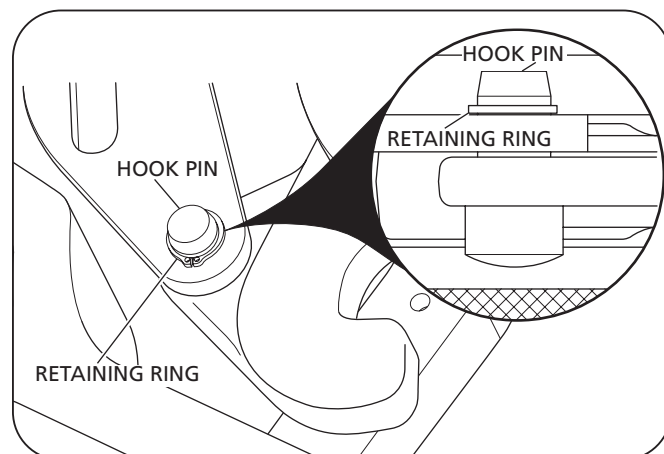
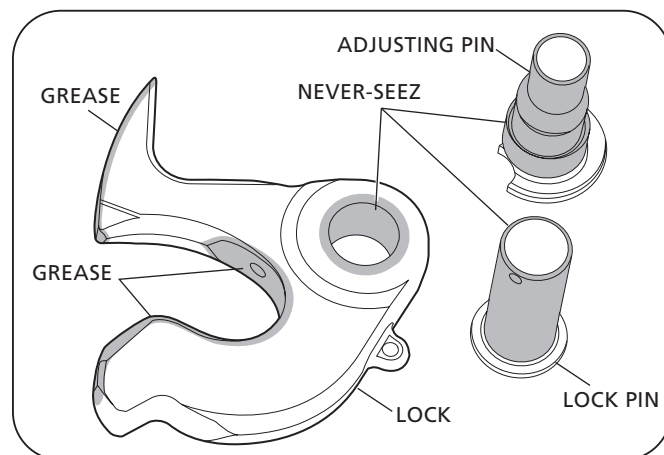


Figure 10



4. Feed the hook pin into the aligned holes of the cam and hook. Be sure to orient the head of the hook pin toward the top plate (**Figure 11**).
5. Install the 3/4" diameter retaining ring. Ensure the retaining ring is fully seated in the hook pin groove (**Figure 12**).
6. Lubricate the adjusting pin, the lock pin, and the lock (**Figure 13**).

NOTE: Tube and fitting preinstalled on lock are not shown in **Figure 13** for clarity purposes.

Figure 11

Figure 12

Figure 13


7. Align the large hole in the hook with the hole in the bottom plate (**Figure 14**).
8. Insert the adjusting pin from the top face of the fifth wheel so that it lines up with the first adjustment notch (**Figure 15**). The adjusting pin will turn counter-clockwise to adjust.
9. Install the 1-1/8" (28.6 mm) diameter retaining ring to secure the adjusting pin (**Figure 16**). If any gap exists between the bottom plate and the adjusting pin groove, use one (1) or both of the shim rings provided with the rebuild kits before installing the retaining ring.
10. Position the lock so the hole lines up with the holes in the top plate and bottom plate and insert the lock pin from the top face of the fifth wheel (**Figure 17**).
11. Secure the lock pin with the 1-3/8" I.D. (34.9 mm) diameter retaining ring (**Figure 17**).

IMPORTANT: For Generation 1 and 2 fifth wheels, a Low Lube Lock Retrofit Kit (RK-AL-12462) MUST be installed before proceeding to Section 8. Installation instructions are included with the kit.

Figure 15

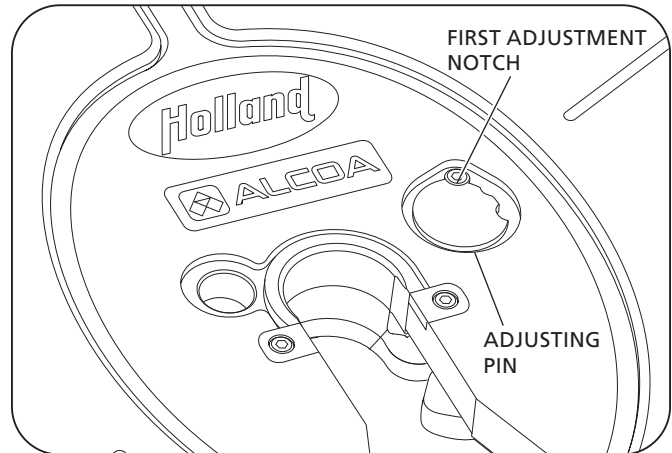


Figure 16

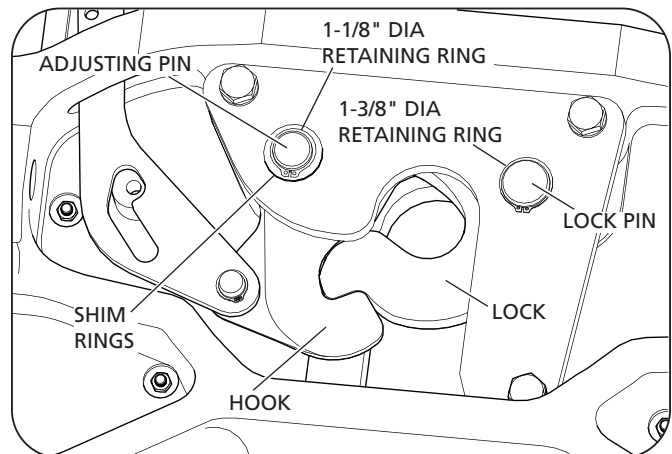


Figure 14

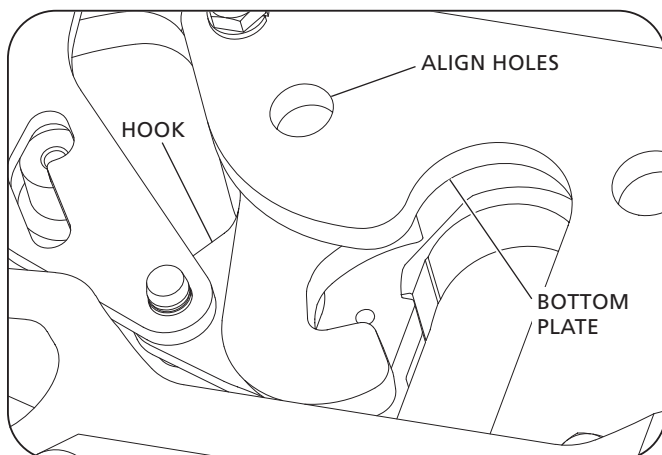
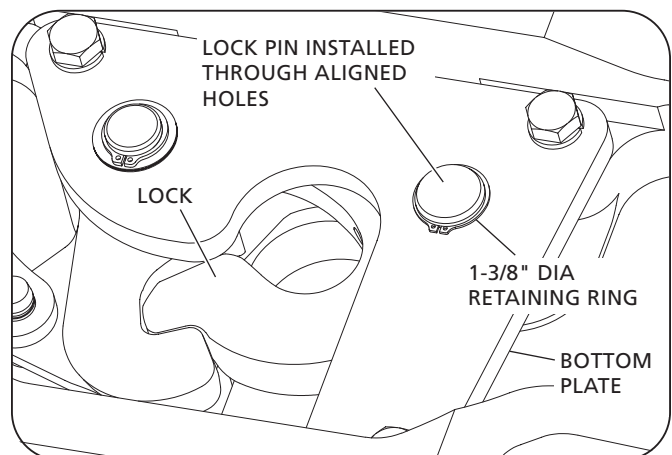
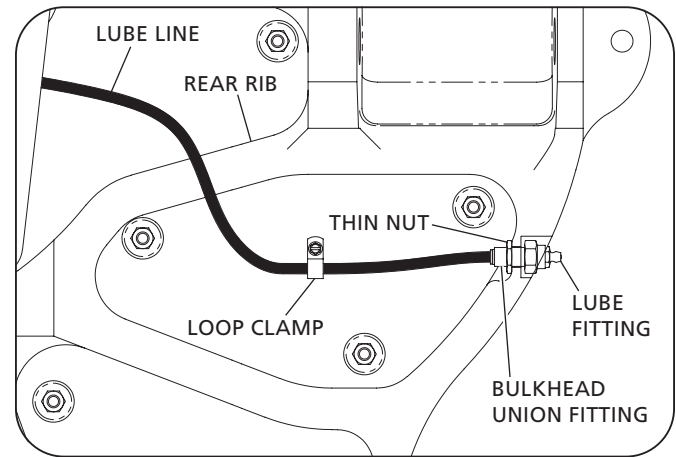


Figure 17



12. Install the lube fitting into the bulkhead union fitting (**Figure 18**).
13. Remove the thin nut from the bulkhead union fitting and insert the bulkhead union fitting into the top plate with the lube fitting facing the outside of the fifth wheel, as illustrated (**Figure 18**). Secure the bulkhead union fitting by re-installing the nut, tightening it against the top plate.
14. Run the lube line from the lock, over the rear rib, through the loop clamp and into the push-connect end of the bulkhead union fitting. Lightly pull on the lube line to ensure it is secure (**Figure 18**).

Figure 18

8. Cam Track Fastener Installation

Generations 1, 2 and 3

Refer to **Figures 19 and 20** for the following steps for cam track fastener installation:

1. Maneuver the cam so the cam track slot is over the tapped boss of the top plate.
2. Place a 5/8" I.D. x 2-1/4" O.D. washer (rounded edge toward the cam) between the cam and the boss of the top plate.
3. For **Generation 1** fifth wheels, use a 1/2"-20 shoulder bolt. For **Generation 2 and 3** fifth wheels, use a M12 x 1.75 mm shoulder bolt (**Figure 21**). Lubricate the **SHOULDER ONLY** of the shoulder bolt with Never-Seez.
4. Place a second 5/8" I.D. x 2-1/4" O.D. washer (rounded edge toward the cam) and the cam roller onto the lubricated shoulder bolt.
5. Secure the assembly by installing the shoulder bolt through the cam track slot and the bottom washer and into the tapped boss of the top plate. Tighten to 40-50 ft.-lbs. (54-68 N•m).

IMPORTANT: MAKE SURE the shoulder of the shoulder bolt fits through the inner diameter of the bottom washer (**Figure 20**).

Figure 19

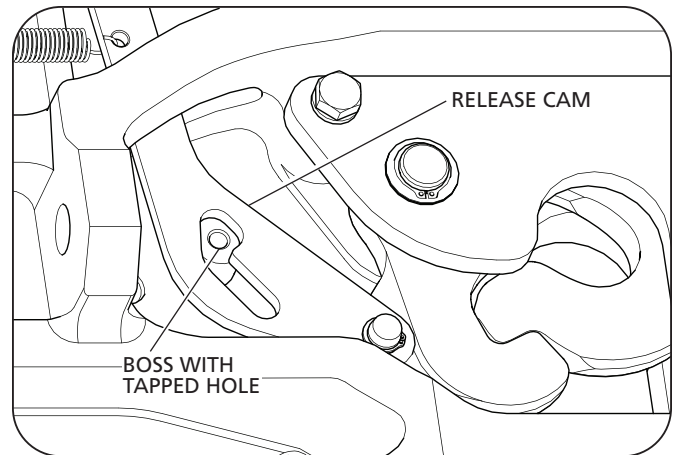


Figure 20

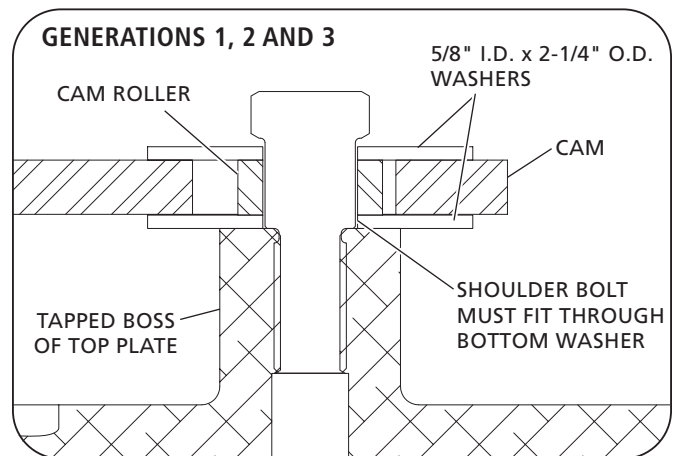
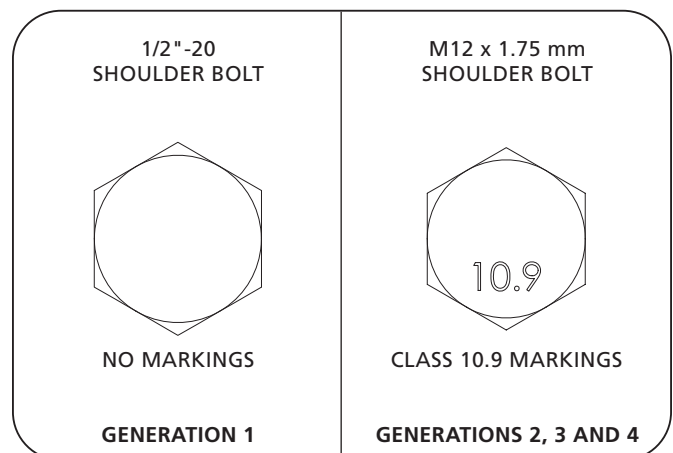


Figure 21



9. Manual Release Handle Installation

NOTE: For Air Release models, skip to Section 10.

Generations 1, 2 and 3

1. Feed the handle "S" bend through the handle window bracket (**Figure 22**).
2. Install the handle "S" bend through the end of the cam, with the "S" bend facing downward (**Figure 23**).
3. Secure the handle window bracket with two (2) low head socket cap screws (**Figure 24**). Torque to 11-13 ft.-lbs. (15-18 N•m).

Figure 22

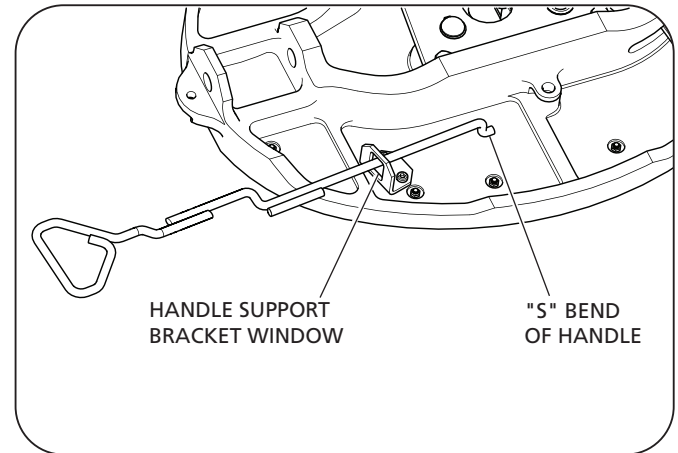


Figure 23

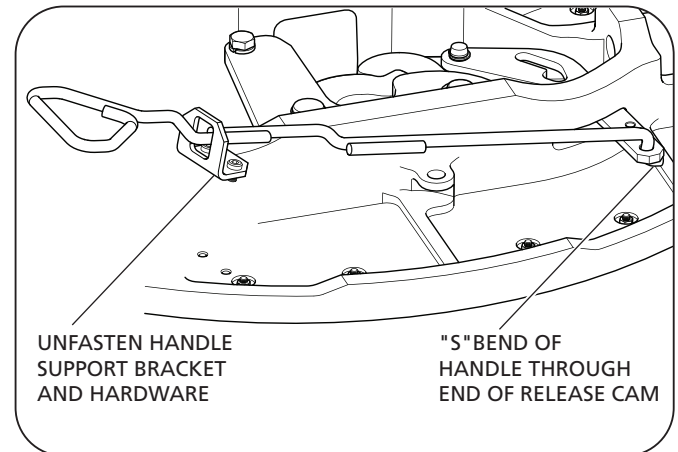
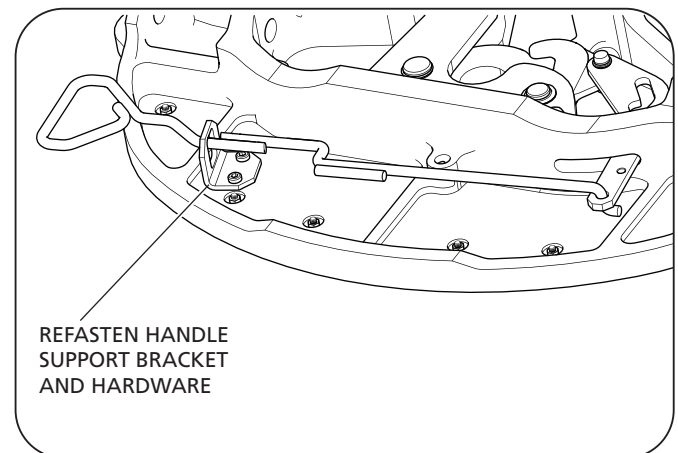


Figure 24



10. Air Release Handle and Cylinder Installation

Generations 2 and 3

1. Secure the handle window bracket with two (2) low head socket cap screws (**Figure 25**). Torque to 11-13 ft.-lbs. (15-18 N•m).
2. Secure the air cylinder to the top plate using the two (2) M12 x 1.75 x 20 mm hex head cap screws and two (2) 1/2" I.D. x 1" O.D. washers as illustrated in **Figure 26**. Torque to 40-50 ft.-lbs. (54-68 N•m).
3. Insert the handle through the handle window bracket with the bend of the handle facing up (**Figure 27**).
4. Maneuver the handle through the notch in the air cylinder bracket and place the end of the handle underneath the end of the cam, aligning the holes (**Figure 27**).
5. Refer to **Figure 28** for the following three (3) steps:
 - a. Lubricate the SHOULDER ONLY of the M12 x 1.75 mm shoulder bolt with Never-Seez.
 - b. Place the 5/8" I.D. x 1-1/4" O.D. heavy thick washer over the shoulder bolt.
 - c. Insert the lubricated shoulder bolt through the aligned holes of the handle and cam, as illustrated, with the bolt head facing toward the top plate.
 - d. Secure the assembly with the M12 x 1.75 mm lock nut and tighten to 40-50 ft.-lbs. (54-68 N•m).

Figure 26

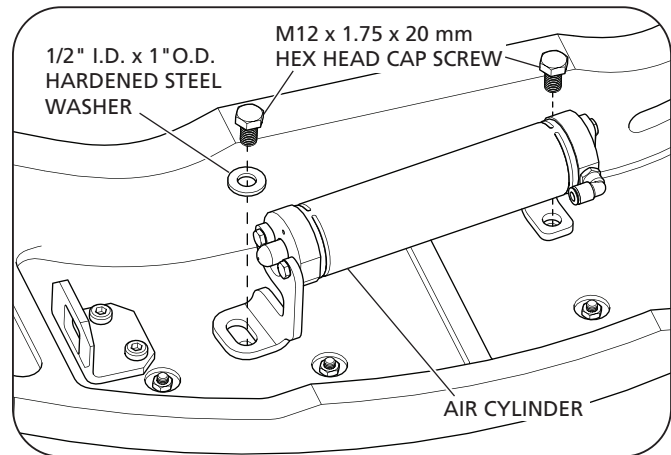


Figure 27

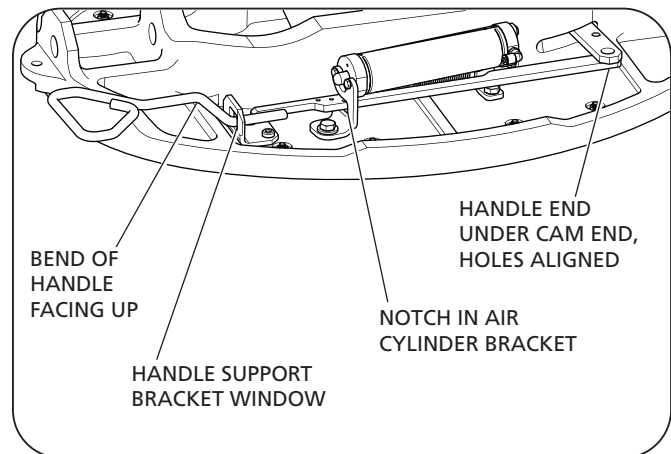


Figure 25

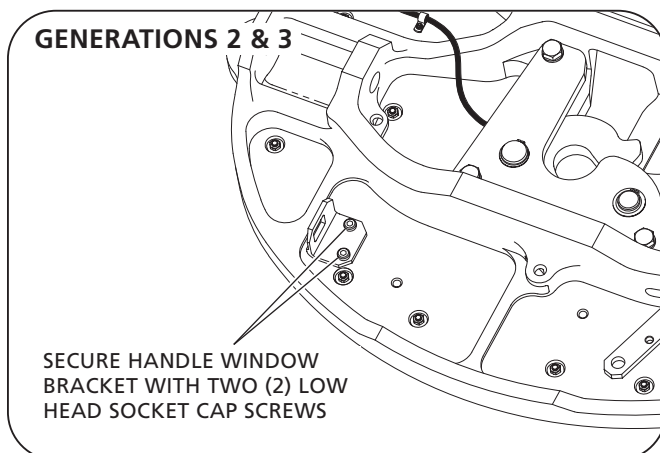
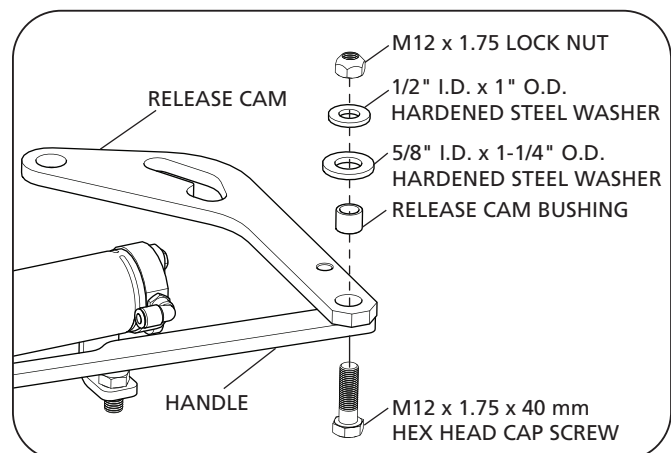
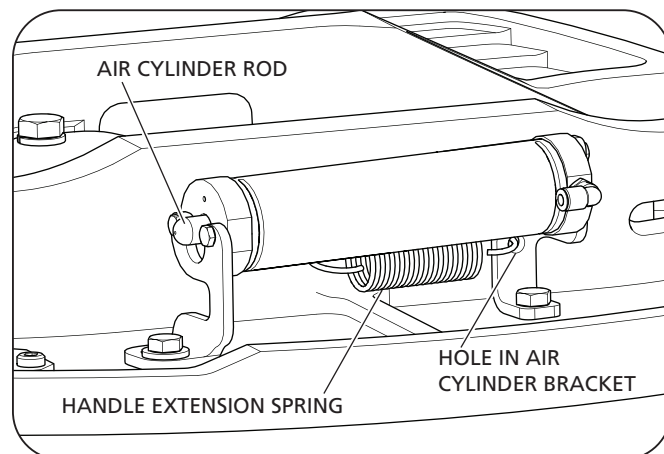
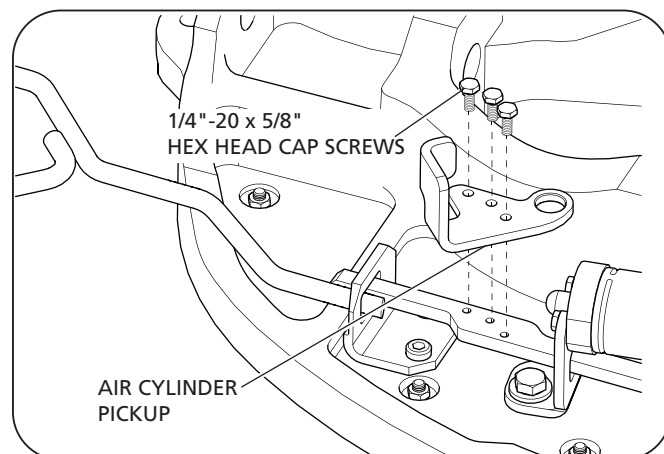
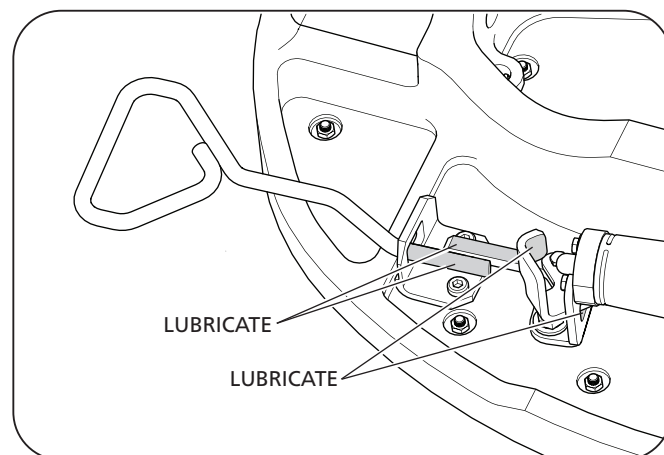


Figure 28



6. Begin installation of the air cylinder pickup by loosely securing the first M6 x 1.0 x 16 mm hex head cap screw.
7. Hook one end of the handle extension springs (smaller diameter spring inside the larger diameter spring) onto air cylinder bracket attachment point (**Figure 29**). Ensure the spring hook ends face away from the fifth wheel top plate.
8. Hook the opposite end of the handle extension springs to the air cylinder pickup (**Figure 29**). Ensure the spring hook ends face away from the fifth wheel top plate.
9. Rotate the air cylinder pickup to align the holes with the holes in the handle. Loosely install the remaining two (2) M6 x 1.0 x 16 mm hex head cap screws in the order illustrated (**Figure 30**) and then tighten all three (3) to 7-9 ft.-lbs. (9-12 N•m).
10. Lubricate the handle and air cylinder pickup in the areas illustrated (**Figure 31**).

Figure 29

Figure 30

Figure 31


11. Springs Installation

1. Manual Release: Hook one end of the handle extension springs (smaller diameter spring inside the larger diameter spring) onto the handle and the other end to the fifth wheel top plate (**Figure 32**). Ensure the spring hook ends face away from the fifth wheel top plate.
Air Release: Installation of air release handle extension springs already completed per steps outlined in Section 10.
2. Connect one end of the cam extension spring into the last hole of the cam and the other end to the fifth wheel top plate (**Figure 33**). Ensure the spring hook ends face away from the fifth wheel top plate.
3. Install the lock extension spring by hooking one end to the hole on the lock and the other end to the fifth wheel top plate (**Figure 34**). Ensure the spring hook end attached to the lock faces away from the fifth wheel top plate.

Figure 32

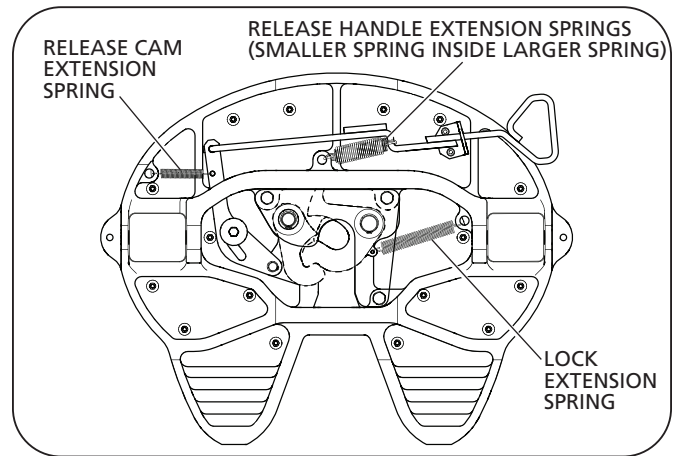


Figure 33

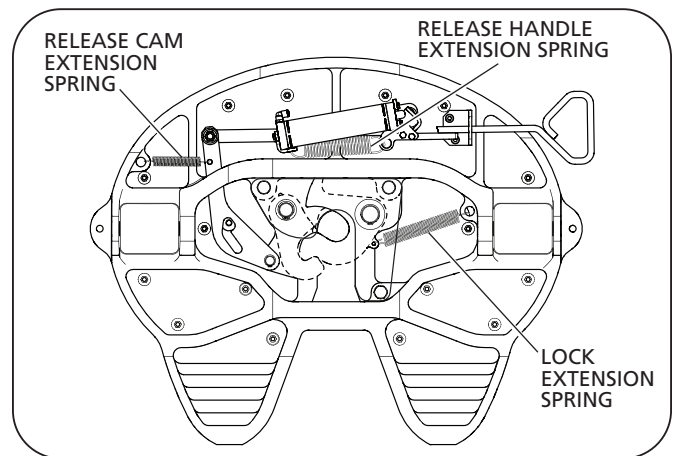
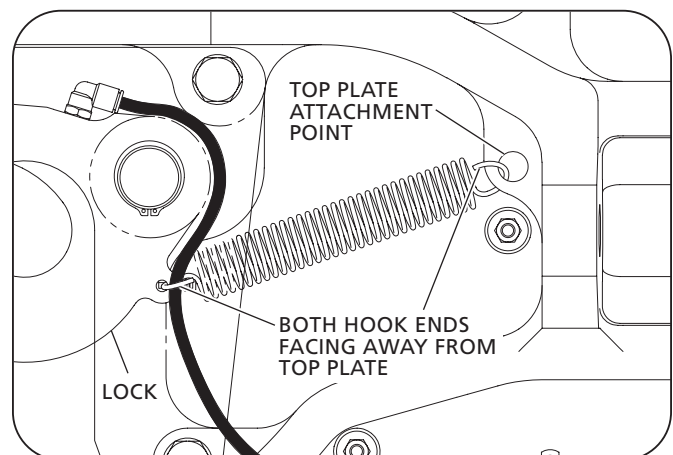


Figure 34



12. Upshock Cushions, Pocket Inserts and Brackets Inspection

To determine if upshock cushions, pocket inserts and/or brackets require replacement, pry up on the fifth wheel top plate pivot ear using a small bar (**Figure 35**). If there is more than 1/4" (6.4 mm) free vertical movement, the top plate should be removed for further inspection. (Refer to Section 4 for top plate removal instructions.)

Upshock Cushions:

1. Standard Cushion (**Figure 36**):

Replace if:

- The hole is elongated to more than 1-3/8" (34.9 mm).
- The upshock cushions are cracked, cut or otherwise severely damaged.

2. ILS-Style Cushion (**Figure 37**):

Replace if:

- The hole is elongated to more than 1-1/2" (38.1 mm).
- The upshock cushions are cracked, cut or otherwise severely damaged.

Figure 35

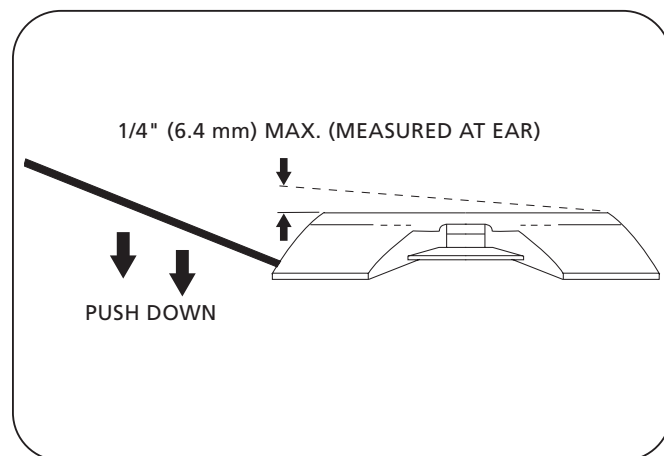


Figure 36

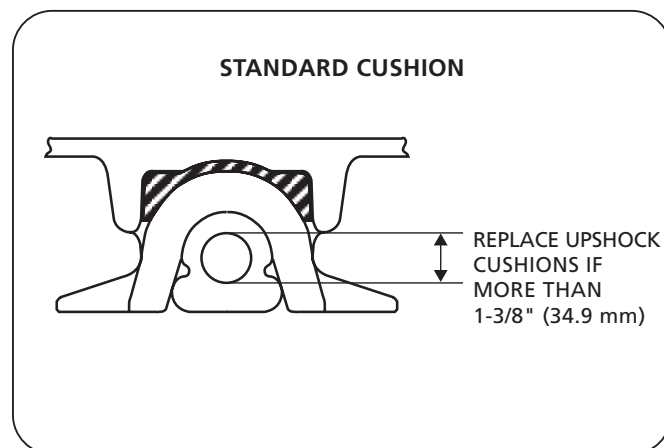
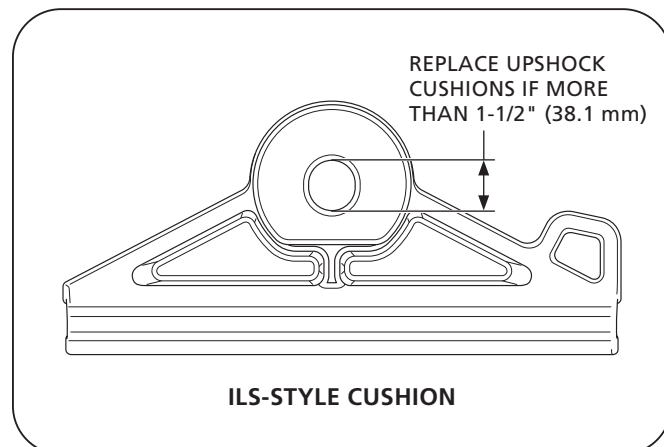


Figure 37



Pocket Inserts (Figure 38):

Replace if:

- The thickness of the pocket insert is 1/16" (1.6 mm) or less.
- The pocket inserts are severely chipped, cracked or gouged.

Brackets:

1. Standard Bracket (Figure 39) and ILS-Style Bracket (Figure 40):

Replace if:

- The thickness of the bracket cap at the top is less than 3/8" (9.5 mm) when measured approximately 1/4" (6.4 mm) in from the edge.
- The brackets are gouged, cracked or otherwise severely damaged.

Figure 38

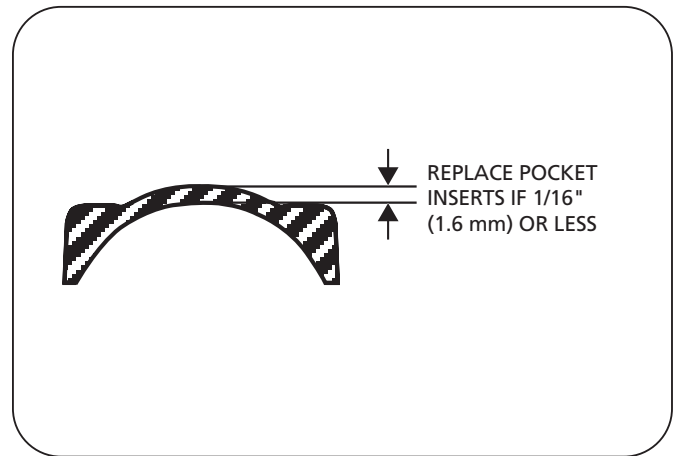


Figure 39

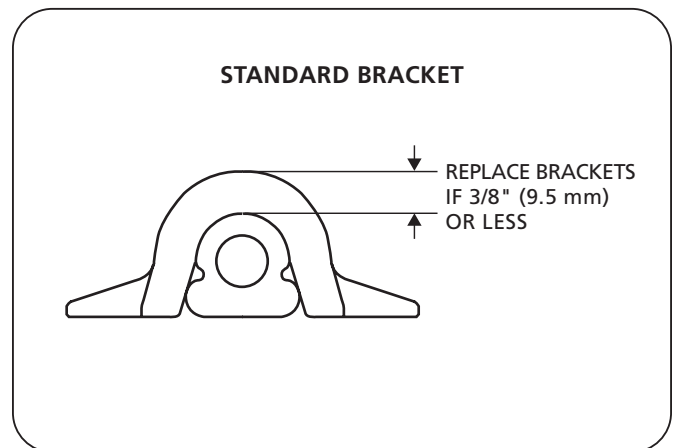
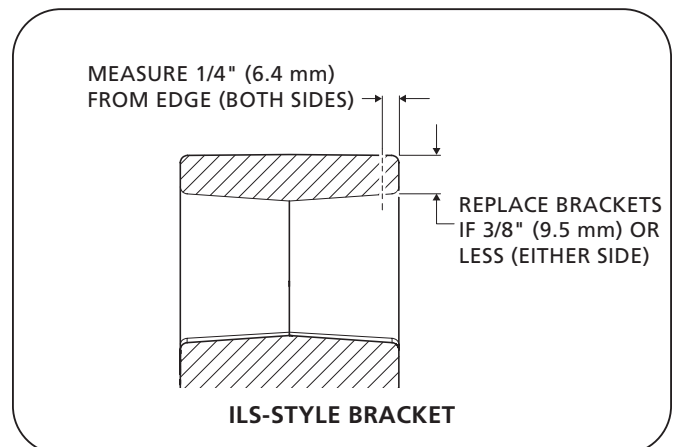


Figure 40



13. Top Plate Installation (for fabricated mounting brackets)

For mounting brackets with a one-piece rubber cushion, bracket shims are required on both sides of each mounting bracket. Replace bracket shims with kit RK-AL-11798 if:

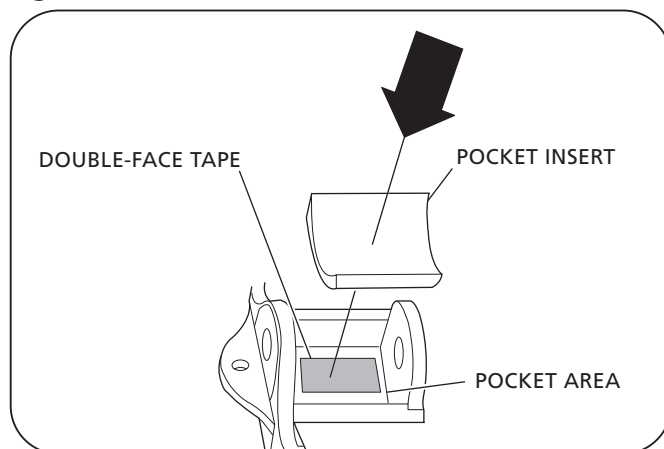
- Any of the bracket shims are missing.
- Bracket shims are cracked, severely bent or worn.

NOTE: For fifth wheels that DO NOT require bracket shims, refer to Section 14.

1. If the pocket inserts are dislodged from the fifth wheel top plate, clean the pocket areas of the top plate and apply a strip of double-face tape into the bottom of each pocket. Install the pocket inserts by pressing them down firmly into the pocket areas (**Figure 41**).
2. Using a lifting device capable of lifting 500 lbs. (227 kg), install the fifth wheel top plate onto its mounting base.

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

Figure 41



3. Line up the holes of a new metal bracket shim and rubber washer between the outside ear of the top plate and the mounting bracket. The rubber washer must be placed between the outside ear and the metal bracket shim (**Figure 42**).
4. Insert the bracket pin through the outside ear of the top plate, rubber washer, metal bracket shim, and halfway through the mounting bracket to hold the rubber washer and bracket shim in place (**Figure 42**).
5. Repeat Steps 3-4 for the opposite side of the top plate. If needed, the top plate can be pushed from side-to-side on the brackets to create space for the bracket shims.
6. Once the outside bracket shims (and rubber washers) are installed, line up the holes of a new metal bracket shim between one of the inside ears of the top plate and the mounting bracket.
7. Complete insertion of the bracket pin through the inner bracket shim and inside ear of the top plate.
8. Repeat Steps 6-7 to install the last remaining metal bracket shim between the opposite inside ear and mounting bracket.

IMPORTANT: If there is NOT enough room for the rubber washers to be installed, or if when installed the fifth wheel top plate DOES NOT freely articulate, remove the rubber washers and install the metal bracket shims only.

9. Secure the bracket pins by installing the 1/2"-20 x 1-1/4" hex head cap screws and 1/2"-20 lock nuts (**Figure 43**). Torque the hex head cap screws to 50-60 ft.-lbs. (68-81 N•m).

14. Top Plate Installation (for cast mounting brackets)

1. If the pocket inserts are dislodged from the fifth wheel top plate, clean the pocket areas of the top plate and apply a strip of double-face tape into the bottom of each pocket. Install the pocket inserts by pressing them down firmly into the pocket areas (**Figure 41**).
2. Using a lifting device capable of lifting 500 lbs. (227 kg), install the fifth wheel top plate onto its mounting base.

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

3. Install the bracket pins through the fifth wheel top plate and mounting base and secure by installing the 1/2"-20 x 1-1/4" hex head cap screws and 1/2"-20 lock nuts (**Figure 43**). Torque the hex head cap screws to 50-60 ft.-lbs. (68-81 N•m).

Figure 42

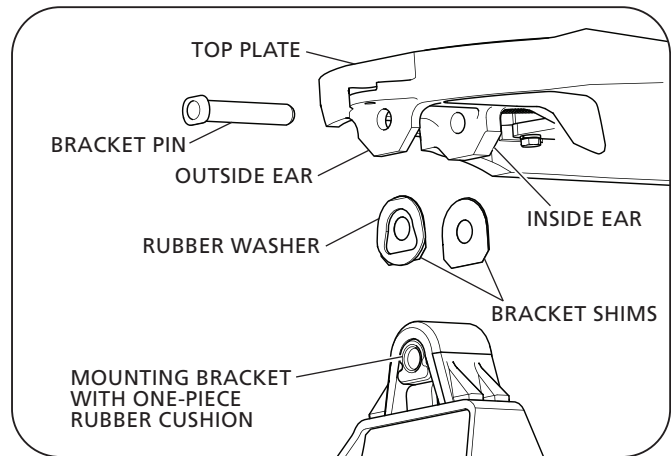
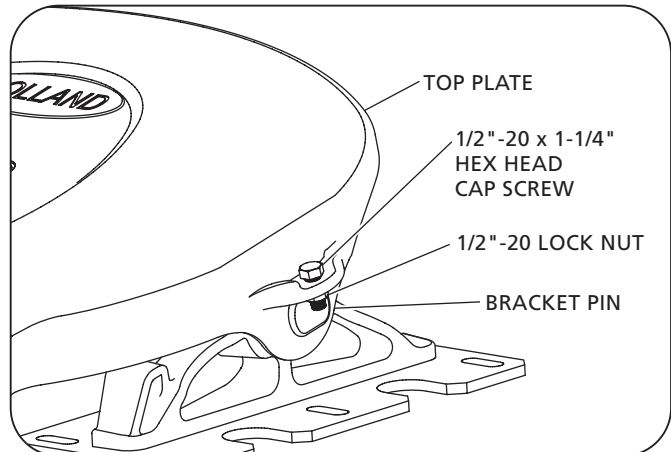


Figure 43



15. Fifth Wheel Adjustment

⚠ WARNING

Failure to maintain proper fifth wheel adjustment could result in loss of vehicle control which, if not avoided, could result in death or serious injury.

NOTE: To obtain proper fifth wheel adjustment, SAF-HOLLAND recommends the use of HOLLAND lock tester Part No. TF-TLN-5001, available from a local HOLLAND distributor.

1. If the fifth wheel is locked, slide the release handle to the left, pull it all the way out, and hook the handle catch on the handle window bracket so that the handle is retained in the open position (**Figure 44**). If equipped with air release, activate the fifth wheel air release valve until the locking mechanism opens and locks into place.
2. Set the lock tester on the fifth wheel top plate (**Figure 45**).
3. Push down and rotate the "J" hook on the lock tester to secure it under the front skirt of the fifth wheel top plate (**Figure 45**).
4. To lock the fifth wheel, rotate the handle on the lock tester clockwise until the lock closes around the kingpin (**Figure 46**).
5. Slide the lock tester forward and backward in the closed lock to check for free play between the lock and the kingpin. Ensure that the tool remains flat with full contact on the fifth wheel top plate. Use a pin gage to measure free play between the fifth wheel front lock and the kingpin. If free play exceeds 0.080" (2.03 mm), adjust the lock mechanism (**Figure 46**).

Figure 44

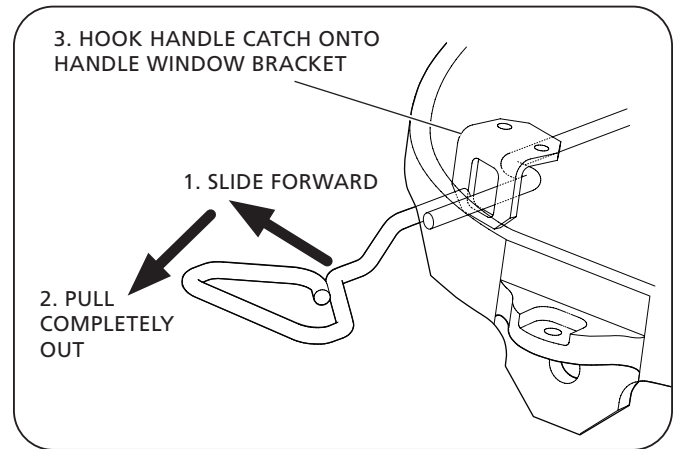


Figure 45

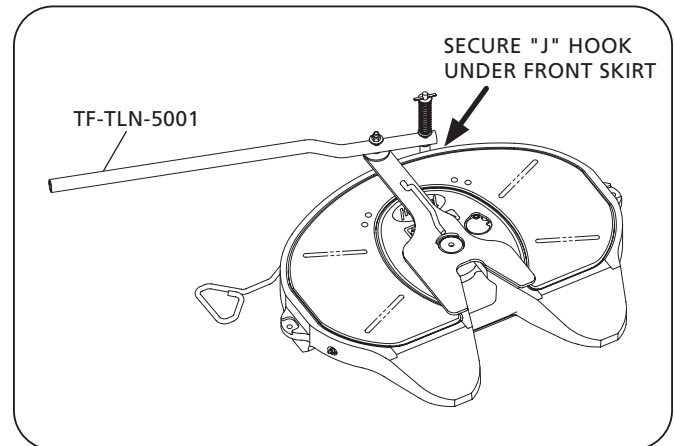
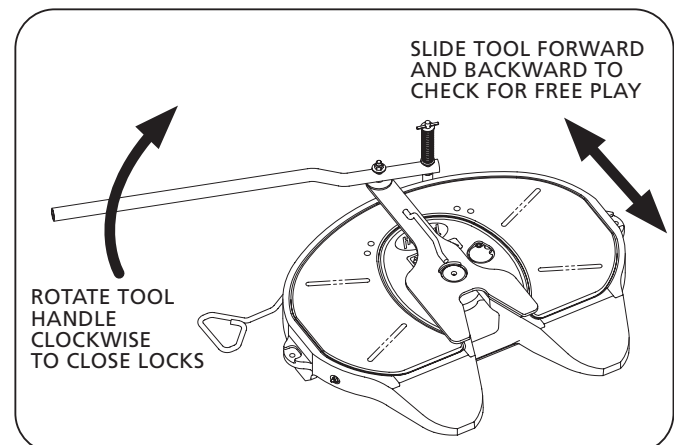


Figure 46



6. To adjust the lock, remove the low head socket cap screw and rotate the adjusting pin counter-clockwise until the next notch lines up with the tapped hole. Reinstall the low head socket cap screw. Adjust only one notch at a time (**Figure 47**).
7. Verify proper adjustment by locking and unlocking the fifth wheel a minimum of two (2) times with the lock tester. Check that the fifth wheel is properly locked (**Figure 48**).

NOTE: To unlock the fifth wheel, slide the release handle to the left, pull it all the way out, and hook the handle catch on the handle window bracket so that the handle is retained in the open position (**Figure 44**).

8. Disengage the "J" hook from under the front skirt of the fifth wheel top plate (**Figure 49**).
9. Rotate the lock tester from side to side to ensure that the lock is not overtightened. The lock should not grip the kingpin and the tool should rotate freely (**Figure 49**).
10. Re-check for free play in the lock by sliding the lock tester forward and backward using a pin gage to measure free play between the fifth wheel front lock and the kingpin (**Figure 45**). Free play should be 0.040" (1.02 mm) minimum. If free play still exceeds 0.080" (2.03 mm) in the lock, repeat the procedure and adjust one more notch.
11. Slide the release handle to the left, pull it all the way out, and hook the handle catch on the handle window bracket so that the handle is retained in the open position (**Figure 44**).

Figure 47

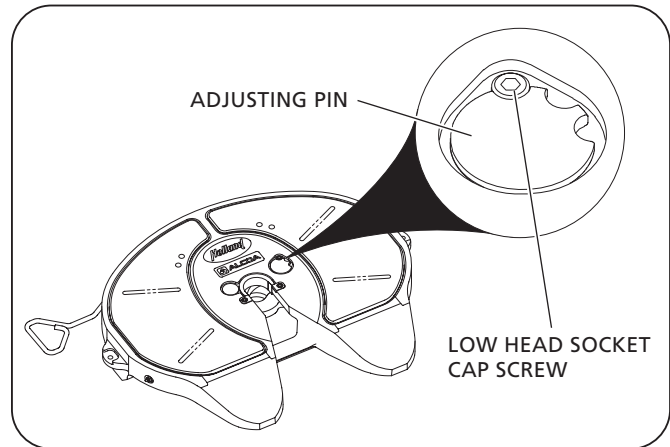


Figure 48

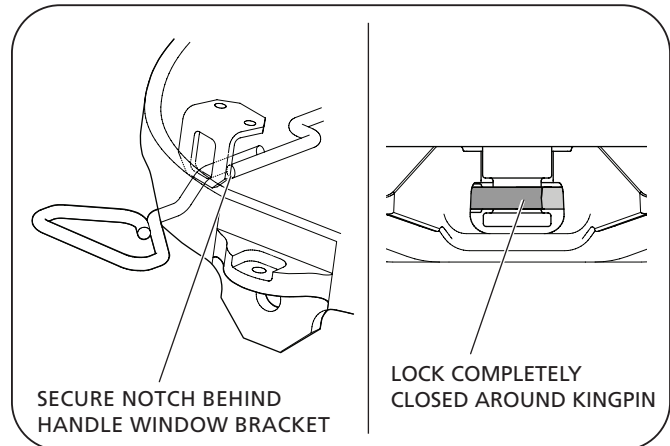
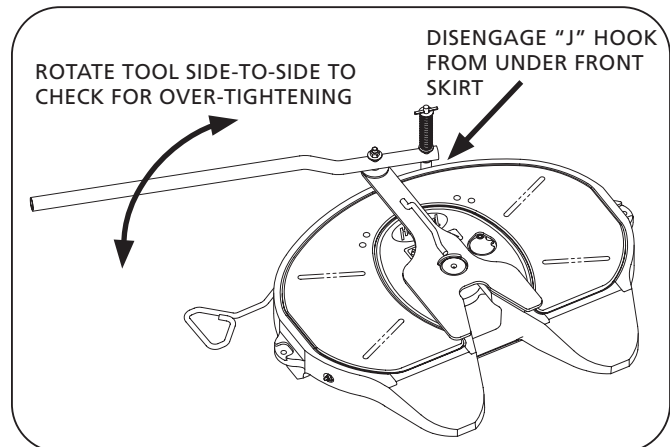


Figure 49



12. Push down and rotate the "J" hook on the lock tester to secure it under the front skirt of the fifth wheel top plate (Figure 50).
13. Pull the lock tester handle counter-clockwise to release the kingpin (Figure 51).
14. Disengage the "J" hook from under the front skirt of the fifth wheel top plate and remove the lock tester (Figure 51).

NOTE: If there is still excessive free play in the lock with the adjustment pin on the last (third) notch, the fifth wheel **MUST** be rebuilt using the appropriate SAF-HOLLAND service kit.

IMPORTANT: Before using your fifth wheel, you **MUST** verify that it is operating properly.

⚠ WARNING

Failure to verify that the fifth wheel is operating properly could result in loss of vehicle control which, if not avoided, could result in death or serious injury.

Figure 50

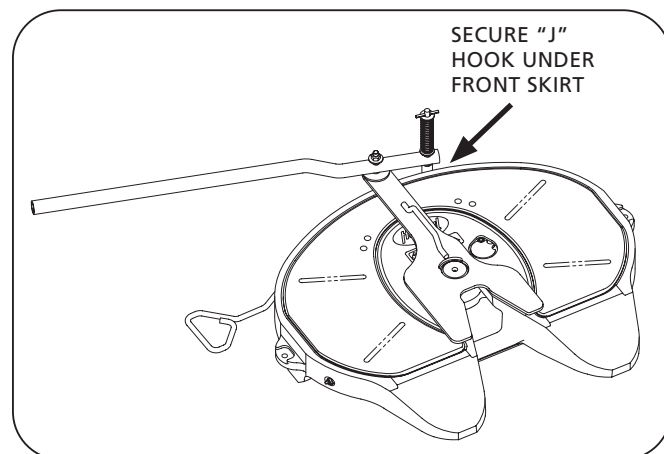
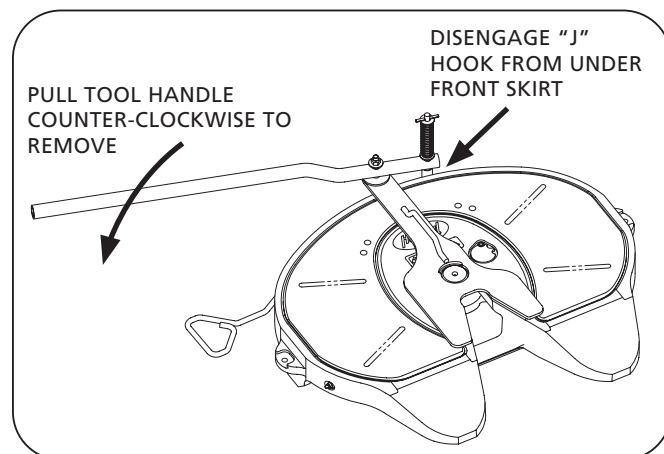


Figure 51





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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