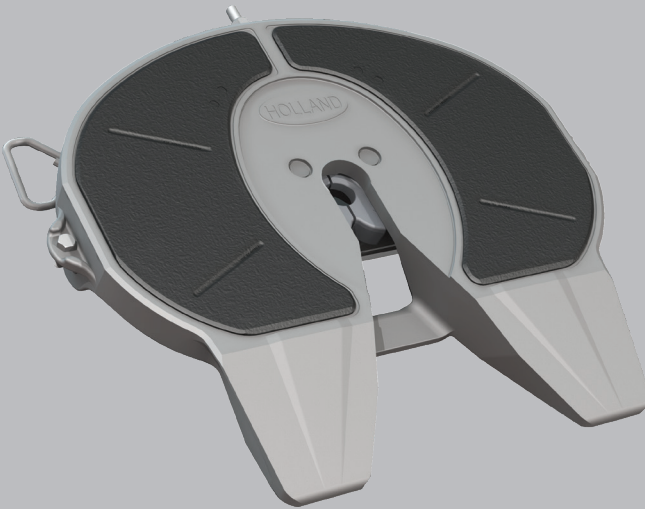


## Owner's Manual

# FW31 NoLube™ and FW33 Low Lube Series Fifth Wheels

Operation, Maintenance and  
Troubleshooting Procedures



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## Introduction

This manual provides the information necessary for the proper operation and maintenance of HOLLAND® FW31/XA-311 (NoLube) and FW33/XA-331 (Low Lube) Series Fifth Wheels.

Read this manual before using or servicing this product and keep it in a safe location for future reference. Updates to this manual, which are published as necessary, are available on the internet at [www.safholland.us](http://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](http://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 fifth wheel installation 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 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.

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

**⚠ WARNING** Failure to properly install the fifth wheel could result in tractor-trailer separation which, if not avoided, could result in death or serious injury.

**IMPORTANT:** These instructions apply to the proper operation of FW31/XA-311 (NoLube) and FW33/XA-331 (Low Lube) 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](http://www.safholland.us).

**⚠ WARNING** Failure to follow all the operating procedures contained in these instructions could result in a hazardous condition or cause a hazardous condition to develop which, if not avoided, could result in death or serious injury.

## 2. Model Identification

The fifth wheel serial tag is located on the handle side of the fifth wheel top plate near the pickup ramps (**Figure 1**).

The fifth wheel model number and serial number are listed on the tag (**Figure 2**).

## 3. Decal Requirements

Decal XL-FW350 (**Figure 3**) enclosed in the plastic bag with the Owner's Manual, **MUST** be installed near the fifth wheel and easily viewed by the operator. Place the decal on a flat surface such as the frame rail or on the back of the cab (**Figure 4**).

**NOTE:** Ensure that the surface is clean (free of oil and grease) before applying the decal.

It is the responsibility of the end user to periodically inspect the decal and ensure that it is clean and completely legible. If the label is missing, loose, damaged or difficult to read, contact SAF-HOLLAND Customer Service at 888-396-6501 to order replacements immediately.

Figure 1

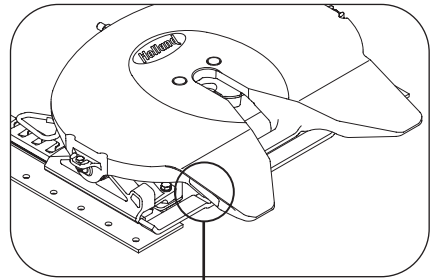


Figure 2

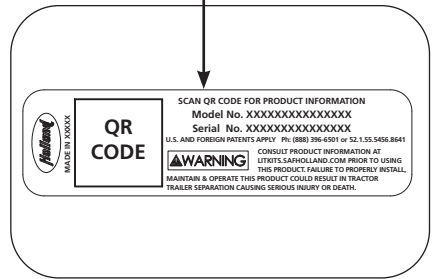
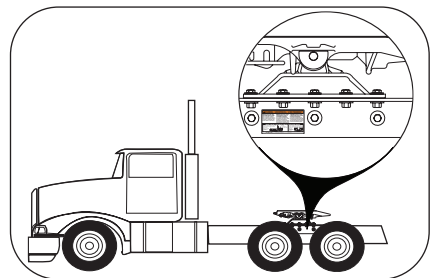


Figure 3



Figure 4



## 4. Fifth Wheel Intended Use

1. Pulling trailers with 2-inch diameter SAE-compliant kingpins which are in good condition and securely mounted to the trailer.
2. Transporting loads that are within the maximum fifth wheel rated capacities:
  - 55,000 lbs. Maximum Vertical Load on Fifth Wheel
  - Standard Duty - Less than 95,000 lbs Gross Combination Weight (GCW)
  - Moderate Duty (**FW33 only**) - Less than 115,000 lbs Gross Combination Weight (GCW)
3. In on-road applications.

**IMPORTANT:** SAF-HOLLAND definition of off-road refers to terrain on which a tractor-trailer operates which is unpaved and rough, or ungraded. Any terrain NOT considered part of the public highway system falls under this heading.

4. Approved applications:
  - Van Trailers
  - Tanker & Dry Bulk Trailers\*
  - Flatbed, Stretch & Pole Trailers
  - End Dump (Framed) Trailers - **FW33 only**
  - End Dump (Frameless) Trailers† - **FW33 only**
  - Bottom Dump Trailers\* - **FW33 only**
  - Lowboy Trailers\* - **FW33 only**
  - B-Trains (Van, Flatbed & Stretch Trailers)\*
  - B-Trains (Tank & Bottom Dump Trailers)\*\*
  - B-Trains (End Dump Trailers) - **FW33 only**
  - Converter Dollies\*

\*Kompensator fifth wheel mounting system available for FW33 only.

\*\*For Standard Duty applications, Kompensator fifth wheel mounting system is available for FW33 only. For Moderate Duty applications, Kompensator fifth wheel mounting system is required. (FW31 fifth wheels cannot be used for Moderate Duty applications.)

†No-Tilt fifth wheel mounting system required.

For additional details on the approved applications and mounting systems specified above, refer to the SAF-HOLLAND Fifth Wheel Catalog & Specification Guide (Document No. XL-FW10066SG-en-US), available on the internet at [www.safholland.us](http://www.safholland.us).

## 5. Fifth Wheel Non-Intended Use

1. Operating with a non-SAE compliant kingpin, such as kingpins which are bent, have improper size or dimensions, are not properly secured, or are installed on warped trailer bolster plates.

**⚠️ WARNING** Failure to couple with a SAE compliant kingpin could result in improper coupling, allowing tractor-trailer separation, which, if not avoided, could result in death or serious injury.

2. Operating with upper coupler and fifth wheel lube plates that do not maintain the SAE kingpin dimensions. Refer to SAF-HOLLAND Service Bulletin (Document No. XL-SB004-01), available on the internet at [www.safholland.us](http://www.safholland.us), for more information on fifth wheel lube plates.

**⚠️ WARNING** Failure to couple with a SAE compliant kingpin could result in improper coupling, allowing tractor-trailer separation, which, if not avoided, could result in death or serious injury.

3. Tow-away operations which damage or interfere with the proper operation of the fifth wheel.
4. The attachment of lifting devices.
5. The transport of loads in excess of rated capacity.
6. In off-road applications.
7. Applications other than those recommended in the SAF-HOLLAND Fifth Wheel Catalog & Specification Guide (Document No. XL-FW10066SG-en-US), available on the internet at [www.safholland.us](http://www.safholland.us).

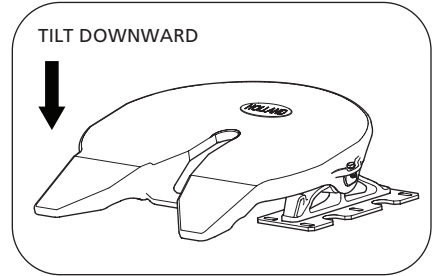
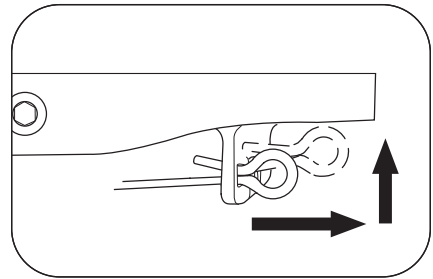
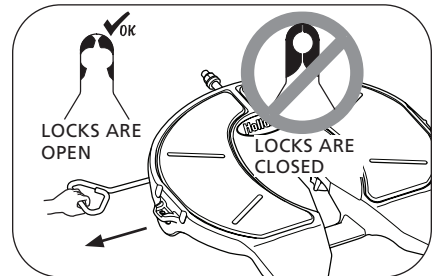
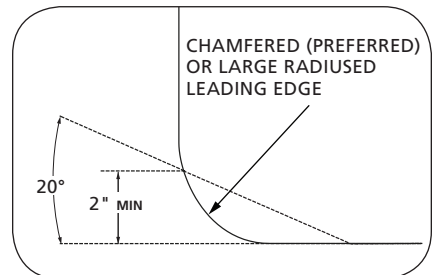
**⚠️ WARNING** Use of fifth wheel in non-intended applications could result in tractor-trailer separation which, if not avoided, could result in death or serious injury.

## 6. Coupling Preparation

1. Prior to coupling, an inspection **MUST** be performed on the fifth wheel and mounting to verify the following:
  - Confirm that lube plates are in place and firmly fastened.
  - Tighten loose fasteners.
  - Replace missing fasteners.
  - Repair/replace missing, cracked or otherwise damaged components.
  - FW33 - Inspect the fifth wheel mechanism. Lubricate dry or rusty components.
  - For a sliding fifth wheel, ensure that both plungers are fully engaged.
  - Inspect air line connections.
  - Ensure that the fifth wheel is properly positioned on the tractor to accommodate appropriate axle weight distribution. For proper positioning of the fifth wheel, refer to SAF-HOLLAND publication XL-FW10008BM-en-US available on the internet at [www.safholland.us](http://www.safholland.us).
2. Ensure that the coupling area is flat, level, and clear of persons and obstacles.

3. Tilt the ramps of the fifth wheel downward (**Figure 5**).
4. Ensure that the locks are open.  
If the locks are closed:
  - a. **Manual Release:** If equipped with a manual secondary lock, first pull the secondary release handle and hook on the top plate casting (**Figure 6**). Pull the release handle completely out (**Figure 7**).
  - b. **Air Release:** Set the tractor parking brake and pull the fifth wheel release valve until the locking mechanism opens and locks in place. Release the pull valve. Release the tractor parking brake.
5. Visually inspect the fifth wheel throat to ensure that the locks are completely open and ready to accept the kingpin (**Figure 7**).
6. If the locks are NOT completely open (**Figure 7**), check the following:
  - a. Nut and washer at the front of the fifth wheel are NOT snug against the fifth wheel.
  - b. Release handle is in the extended "open" position.

If both of these conditions exist, you will still be able to couple the fifth wheel even though the lock jaws appear closed. The movement of the kingpin into the fifth wheel lock jaws will allow them to open and successfully couple. If either of the above conditions DO NOT exist, repeat Steps 4-6.
7. Inspect the leading edge of the trailer bolster/skid plate. It MUST be free of any square or sharp edges (**Figure 8**).

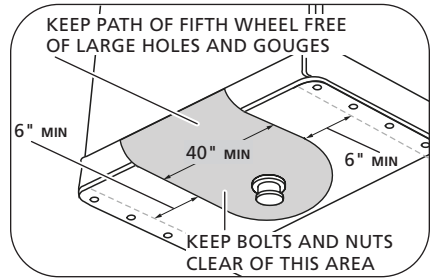
**Figure 5**

**Figure 6**

**Figure 7**

**Figure 8**


8. Ensure that there are no bolts or nuts extending below the bolster/skid plate within 6.0" (152 mm) of the fifth wheel travel path while coupling (**Figure 9**).
9. The area supported by the fifth wheel should be free of any large holes or gouges (**Figure 9**).
10. Any access holes that the fifth wheel passes beneath should have chamfered or radiused edges.
11. Check that any splits from the skid plate to the bolster plate are welded adequately, and that there are no sharp edges or abrupt changes in elevation (**Figure 10**).
12. The upper coupler should extend adequately rearward to maintain full contact with the fifth wheel during tight turning. If it DOES NOT, at a minimum, the rear edges should be chamfered or radiused edges.
13. Ensure that any upper coupler residual grease is free of heavy coarse grit.
14. Ensure that the upper coupler fifth wheel contact surface is free of rust and is NOT painted. The area should be conditioned with a rust inhibitor such as a light oil.
15. Verify that the kingpin is NOT obstructed by a kingpin lock or other security device.

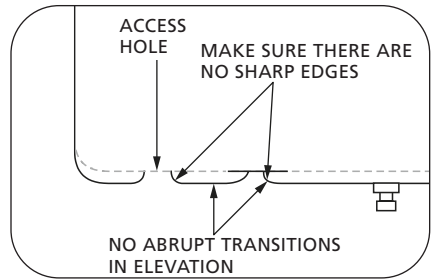
**⚠ WARNING** Failure to remove the kingpin lock prior to coupling may result in improper coupling which, if not avoided, could result in death or serious injury.

16. Inspect the kingpin for excessive wear and damage (using HOLLAND Kingpin Gage tool TF-0110) and inspect for any bowing of the bolster plate. (Refer to SAF-HOLLAND Service Bulletins XL-SB020 and XL-SB033.)

**Figure 9**



**Figure 10**





## 7. Coupling Procedures

**IMPORTANT:** Following proper coupling procedures for FW31 (NoLube) and FW33 (Low Lube) fifth wheels is extremely important.

**CAUTION** Failure to follow all of the procedures contained in these coupling instructions may result in damage to the lube plates.

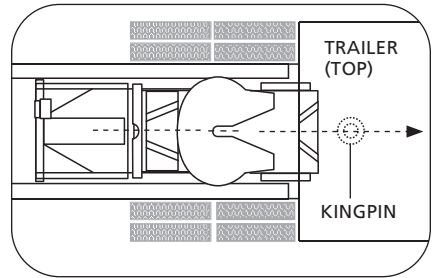
1. Chock the trailer wheels.
2. Position the tractor so the center of the fifth wheel is aligned with the kingpin.
3. Traveling in a straight line, slowly back the tractor to the trailer. **STOP** the tractor before making contact with the trailer (**Figure 11**).

**IMPORTANT:** DO NOT make contact between the fifth wheel and trailer or damage to the lube plates may occur.

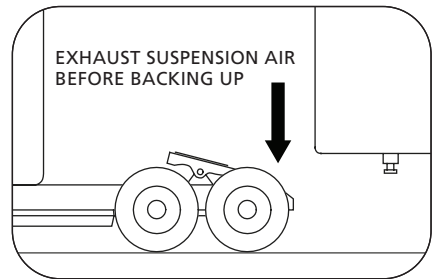
4. Place the tractor into neutral and set the parking brake.
5. Completely exhaust the air from the tractor suspension, ensuring that the fifth wheel is below the contact surface of the trailer (**Figure 12**).
6. Exit the cab and ensure that the fifth wheel is below the upper coupler plate. Verify proper fifth wheel height. If the trailer is too low, use the landing gear to raise the trailer height.

**NOTE:** For proper operation of landing gear, follow the instructions published by the landing gear manufacturer.

**Figure 11**

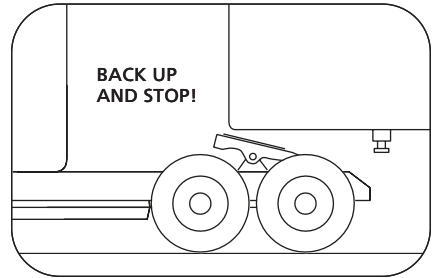


**Figure 12**

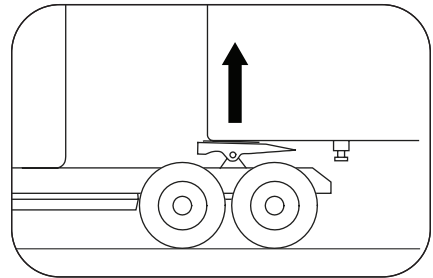


7. Slowly back up, using the lowest gear possible. Stop when the fifth wheel is under the leading edge of the trailer (**Figure 13**).
8. Place the tractor into neutral and set the parking brake. Exit the cab and verify proper fifth wheel-to-kingpin alignment.
9. Adjust the tractor suspension to ride height. The fifth wheel top plate face **MUST** make contact with the upper coupler plate (**Figure 14**). If the fifth wheel **DOES NOT** make contact with the upper coupler plate, use the landing gear to lower the trailer until the fifth wheel makes contact.

**Figure 13**



**Figure 14**



**IMPORTANT:** If the trailer is too high, the kingpin will **NOT** properly connect with the lock jaws.

**WARNING** Failure to couple with the trailer at the proper height could result in improper coupling, allowing tractor-trailer separation which, if not avoided, could result in death or serious injury.

**IMPORTANT:** **NEVER** inflate the tractor suspension when the kingpin is above the throat of the fifth wheel.

**CAUTION** Failure to avoid inflating the tractor suspension when the fifth wheel is **NOT** forward of the king pin, could result in damage to the kingpin and fifth wheel.

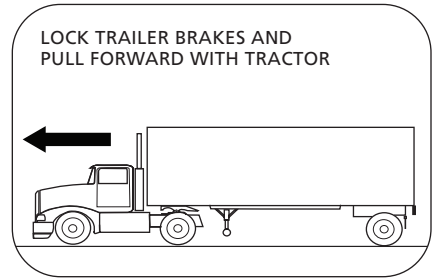
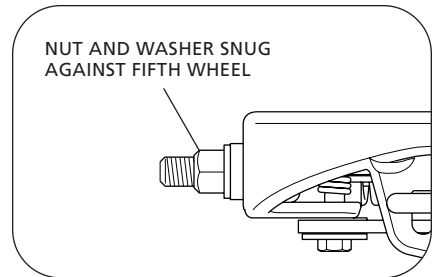
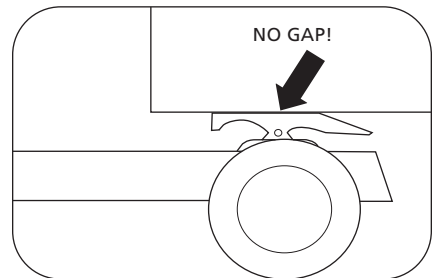
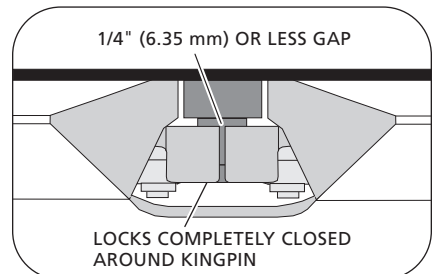
10. Slowly back into the trailer, engaging the kingpin into the fifth wheel.
11. Connect the air and electrical lines.
12. Raise the landing gear legs until the pads are just above the ground.

13. Perform a pull test as an INITIAL CHECK by locking the trailer brakes and pulling forward with tractor to ensure that tractor-trailer separation DOES NOT occur (**Figure 15**).
14. Place the tractor into neutral and set the parking brake.
15. Exit the cab and visually inspect for the following to ensure that the lock is closed:
  - a. Nut and washer MUST be snug against the fifth wheel (**Figure 16**).
  - b. No gap is permissible between the trailer upper coupler plate and the fifth wheel (**Figure 17**).
  - c. Fifth wheel locks MUST be closed around the trailer kingpin with 1/4" (6.35 mm) or less gap visible between the lock jaws (**Figure 18**).
16. If proper coupling has NOT been achieved, repeat the coupling procedure.

**⚠ WARNING** Failure to properly couple the tractor and trailer could result in tractor-trailer separation while in use which, if not avoided, could result in death or serious injury.

**IMPORTANT:** DO NOT use any fifth wheel that fails to operate properly.

**⚠ WARNING** Failure to repair a malfunctioning fifth wheel before use could result in tractor-trailer separation which, if not avoided, could result in death or serious injury.

**Figure 15**

**Figure 16**

**Figure 17**

**Figure 18**


17. Fully retract the landing gear legs off the ground and secure the crank handle (**Figure 19**).

**NOTE:** For proper operation of landing gear, follow the instructions published by the landing gear manufacturer.

18. Remove the wheel chocks and continue with the pre-trip inspection.

**NOTE:** For no-tilt fifth wheels used with rigid upper couplers, always remove the no-tilt shaft assembly for on-road use.

## 8. Uncoupling Procedures

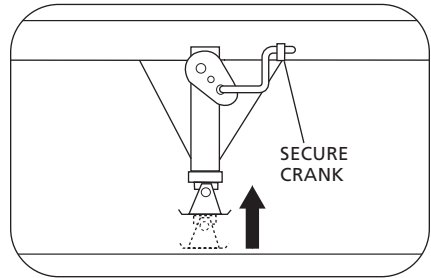
**IMPORTANT:** Following proper uncoupling procedures for FW31 (NoLube) and FW33 (Low Lube) fifth wheels is extremely important.

**CAUTION** Failure to follow all of the procedures contained in these uncoupling instructions may result in damage to the lube plates.

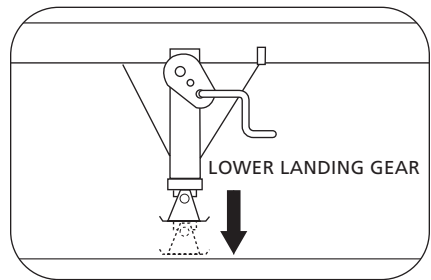
1. Position the tractor and trailer, in straight alignment, on firm, level ground clear of obstacles and persons.
2. Set the trailer brakes.
3. Slowly back the tractor tightly against the trailer to relieve pressure on the fifth wheel locks.
4. Place the tractor into neutral and set the parking brake.

**IMPORTANT:** DO NOT exhaust air from the tractor suspension before uncoupling.

**Figure 19**



**Figure 20**



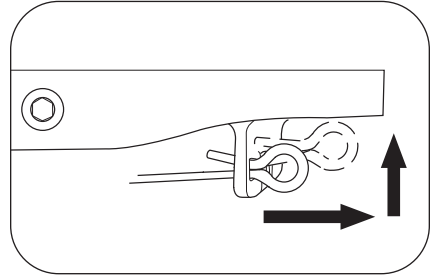
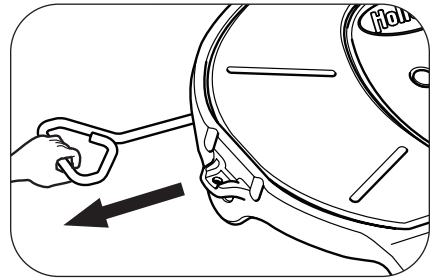
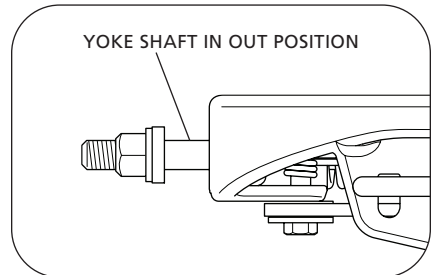
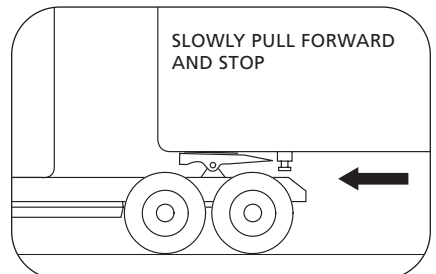
**CAUTION** Failure to avoid exhausting air from the tractor suspension before uncoupling could result in difficulty uncoupling the tractor from the trailer which, if not avoided, could result in damage to the fifth wheel and kingpin.

5. Chock the trailer wheels.
6. Lower the landing gear until the pads just touch the ground (**Figure 20**).

**NOTE:** For proper operation and ability to transfer the trailer weight from the fifth wheel, follow the instructions published by the landing gear manufacturer. DO NOT raise the trailer off of the fifth wheel.

7. Disconnect the air and electrical lines from the trailer and secure to the tractor.
8. If equipped, pull the secondary lock release handle and hook on the top plate casting (**Figure 21**).
9. Pull the release handle (**Figure 22**). If air release is equipped, pull and hold the fifth wheel release valve until the locking mechanism opens and locks into place.
10. Ensure that the locking mechanism is open and the yoke shaft is in the out position (**Figure 23**).
11. Release the tractor parking brake and slowly pull forward 12" - 18" (306-457 mm) to disengage the kingpin from the fifth wheel. The fifth wheel should be between the front edge of the trailer and the kingpin (**Figure 24**).

**IMPORTANT:** DO NOT drive the tractor free of the trailer.

**Figure 21****Figure 22****Figure 23****Figure 24**

12. Place the tractor into neutral and set the parking brake. Completely exhaust the air from the tractor suspension, ensuring that the fifth wheel is below the contact surface of the trailer (**Figure 25**).
13. Visually inspect uncoupling. Ensure that the trailer is completely supported by the landing gear.
14. Release the tractor parking brake and slowly pull away from the trailer.
15. Apply air to the tractor air suspension and allow the suspension to return to ride height (**Figure 26**).

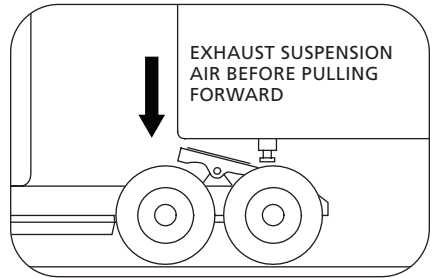
## 9. Positioning Sliding Fifth Wheels

**⚠ WARNING** NEVER reposition a sliding fifth wheel while the tractor-trailer is in motion or on public roads. Failure to avoid could cause loss of vehicle control or tractor-trailer separation which, if not avoided, could result in death or serious injury.

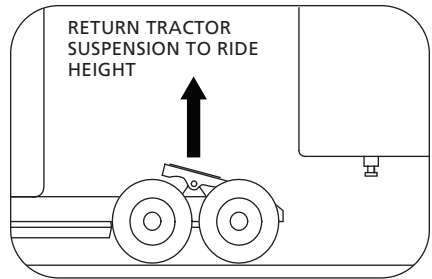
1. Position the tractor and trailer, in straight alignment, on firm, level ground clear of obstacles and persons.
2. Place the tractor into neutral and set the tractor and trailer parking brakes.

**⚠ CAUTION** Failure to stop and properly lock the tractor and trailer brakes could cause uncontrolled sliding of the fifth wheel which, if not avoided, could result in component damage to the tractor or trailer.

**Figure 25**



**Figure 26**

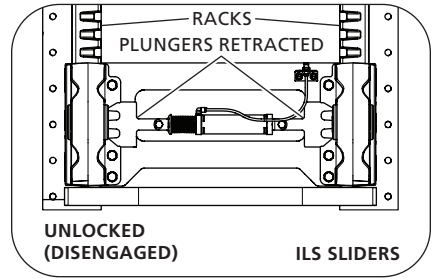


- Release the slide locking plungers by moving the cab switch to the unlock position (**Figure 27**). If equipped with manual slide release (Traditional Sliders only), pull the release lever. If the plungers DO NOT come out, lower the landing gear to relieve pressure on the fifth wheel. This will allow the fifth wheel to slide easier.

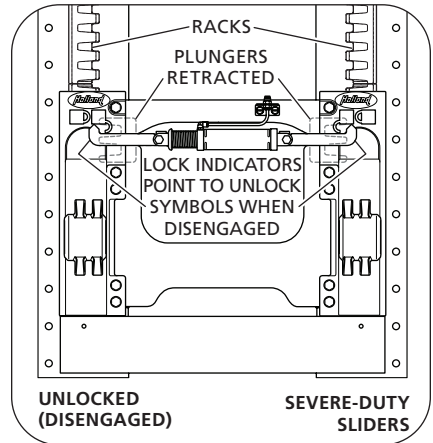
**NOTE:** Cab switch style may differ by OEM.

- Visually inspect and verify that the plungers are disengaged.
  - **Figure 28 - ILS Sliders**
  - **Figure 29 - Severe-Duty Sliders**
  - **Figure 30 - Traditional Sliders**
- Release the tractor parking brake while keeping the trailer brakes engaged.
- Slowly drive the tractor forward or backward to position the fifth wheel. Stop the tractor at the desired position.
- Re-engage the slide locking plungers by moving the cab switch to the lock position (**Figure 31**). If equipped with manual slide release (Traditional Sliders only), pull the release arm to allow the plungers to retract.

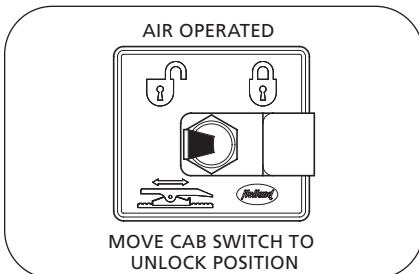
**Figure 28**



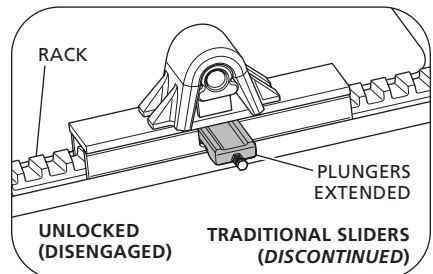
**Figure 29**



**Figure 27**



**Figure 30**

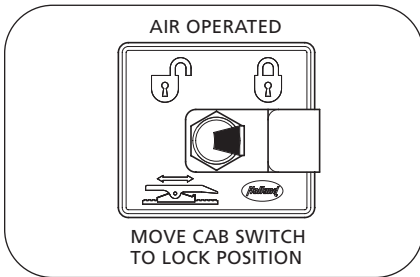


8. Place the tractor into neutral and set the parking brake.
9. Visually inspect the plungers to ensure proper engagement.
  - **Figure 32 - ILS Sliders**
  - **Figure 33 - Traditional Sliders**
  - **Figure 34 - Severe-Duty Sliders**
10. Retract the landing gear legs, if lowered.
11. Verify that the slide locking plungers have been re-engaged by performing a pull test (**Figure 35**).

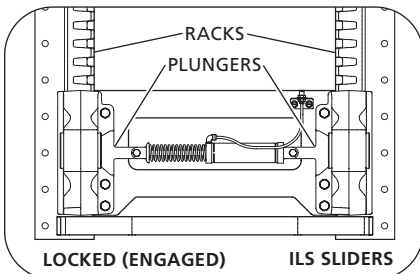
**IMPORTANT:** DO NOT operate the vehicle if the plungers are NOT fully engaged (locked).

**WARNING** Failure to properly engage the plungers and slide base could cause loss of vehicle control which, if not avoided, could result in death or serious injury.

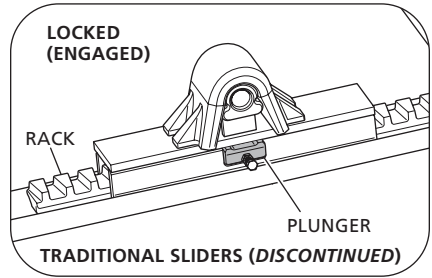
**Figure 31**



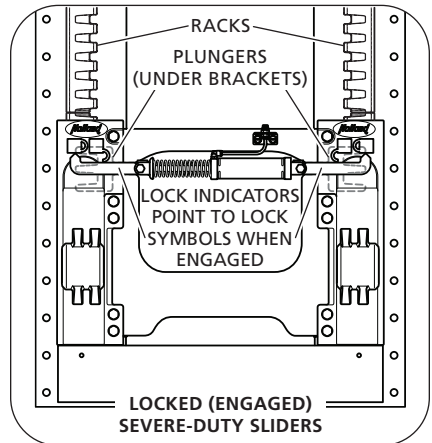
**Figure 32**



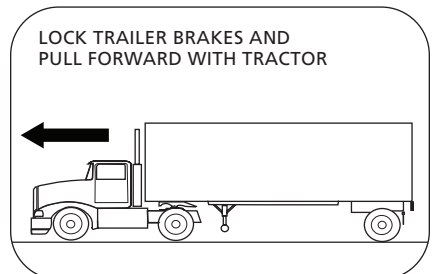
**Figure 33**



**Figure 34**



**Figure 35**





## 10. Fifth Wheel Maintenance

**IMPORTANT:** All maintenance **MUST** be performed by a properly trained technician using proper tools and safety procedures.

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

**⚠ WARNING** Failure to properly maintain the fifth wheel could result in tractor-trailer separation which, if not avoided, could result in death or serious injury.

1. For steps required for fifth wheel maintenance, refer to Step 1 of Section 6 and all steps in Sections 11 through 18.

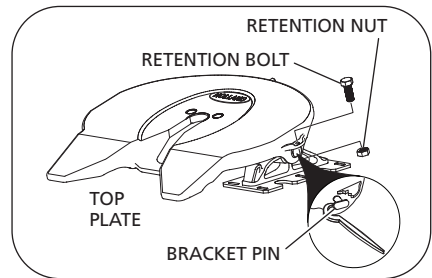
**NOTE:** Removal of the fifth wheel top plate is **NOT** required for maintenance but may be required when performing repairs.

## 11. Top Plate Removal

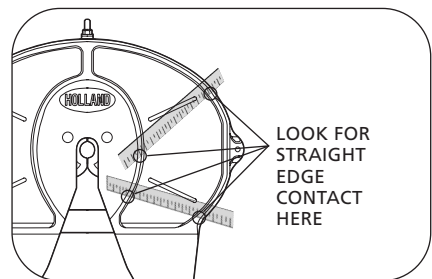
**IMPORTANT:** FW31 (NoLube) and FW33 (Low Lube) fifth wheel assemblies have replaceable pocket inserts installed between the fifth wheel top plate and mounting base. When removing the top plate, take care **NOT** to lose the pocket inserts.

**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.

**Figure 36**



**Figure 37**



1. Remove the bracket pin retention nuts and bolts from both sides of the fifth wheel top plate (**Figure 36**).
2. Using a pry bar, pull the bracket pins out of the fifth wheel top plate (**Figure 36**).
3. Using a lifting device capable of lifting 500 lbs. (227 kg), remove the top plate from the mounting base. Place the fifth wheel on a flat, clean working area.

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

## 12. Lube Plate Inspection

Thoroughly steam clean the top surface of the fifth wheel for visual inspection. Replace the lube plates if:

- One or both lube plates is missing.
- A straight edge laid across the lube plate contacts any metal portion of the fifth wheel surrounding the lube plates (**Figure 37**).
- Lube plates are severely chipped, worn, cracked, gouged or bent.
- 20% (40 sq. in.) or more of lube plate coating is missing from one or both plates due to normal wear or damage.

## 13. Fifth Wheel Lubrication

- FW31 and FW33 Series fifth wheels are both equipped with NoLube lube plate inserts that eliminate the need to lubricate the fifth wheel-to-trailer contact surfaces.
- Thoroughly clean the locking mechanism every six (6) months or 60,000 miles.

### 13.1 FW31 (NoLube) Series:

- FW31 Series fifth wheels are equipped with NoLube lock coating technology. The lock components are protected with a low-friction coating which provides long wear life and corrosion protection, eliminating the need for lubrication. The locking mechanism of a new FW31 Series fifth wheel assembly has a thin layer of grease applied by SAF-HOLLAND to aid the components for an initial "break-in" period. Grease will not adversely affect a FW31 Series NoLube fifth wheel.

**IMPORTANT:** If the FW31 Series NoLube fifth wheel operates in snowy or icy winter conditions, maintenance should be performed every spring to ensure optimum operation. FW31 Series NoLube fifth wheels that are exposed to harsh and dry chemicals and/or road salt should be steam cleaned and the (B) cam profile, (D) secondary lock where contact is made with the cam plate, and (E) release handle should be lubricated per Section 13, Step 1.a.

### 13.2 FW33 (Low Lube) Series:

**IMPORTANT:** Fifth wheel lubrication is necessary to get the maximum service life from the FW33 Series fifth wheel. Perform the following procedures at the intervals listed.

- FW33 Series fifth wheel locking mechanisms require periodic lubrication.
- Lubricate the FW33 Series fifth wheel locking mechanism every three (3) months or 30,000 miles.

**IMPORTANT:** If the FW33 Series fifth wheel operates in snowy or icy winter conditions, lubrication should be performed every spring in addition to routine lubrication (as noted above) to ensure optimum operation.

## 1. Proper Lubrication Method:

- a. Using water-resistant lithium-based grease, lubricate (A) the yoke tips where contact is made with the locks and top plate casting, (B) cam profile, (C) yoke shaft in area that slides in and out of the top plate casting, (D) secondary lock where contact is made with the cam plate, (E) release handle, and (F) lock jaws where contact is made with the kingpin (**Figure 38**).
- b. Using a light oil, lubricate the (G) cam pivot point (**Figure 38**).

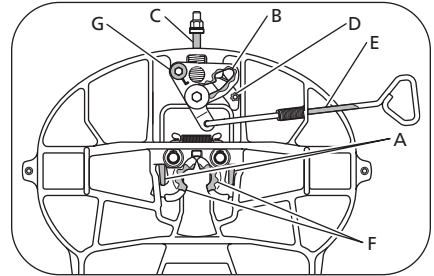
If equipped with air release, follow Steps "c" through "h" for lubrication of the air cylinder.

- c. Inspect the air cylinder tube and shaft for dents, bending, or other damage and replace as necessary.
- d. Activate the air cylinder control to extend the piston and shaft to its full travel length (**Figure 39**).
- e. Clean the exposed piston shaft with penetrating oil and a clean shop towel. DO NOT use any abrasives on the exposed shaft as they could damage the piston shaft.
- f. De-activate the air cylinder.
- g. Remove the supply air line and add two to four (2-4) drops of air tool oil to the cylinder through the supply fitting. Re-install the supply air line (**Figure 40**).
- h. Activate and de-activate the air cylinder two to three (2-3) times to work the air tool oil into the cylinder and onto the piston and verify proper operation.

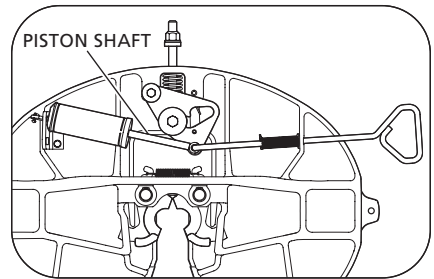
## 2. As-Needed Lubrication:

- Clean and lubricate the locking mechanism if operational difficulties arise during the service life of the fifth wheel (i.e., problems with coupling, uncoupling, or pulling the release handle) (**Figure 41**).

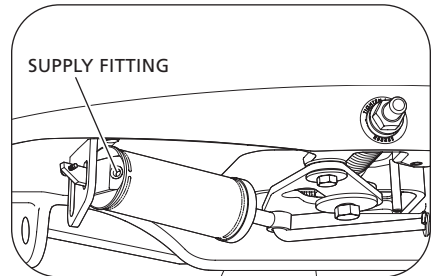
**Figure 38**



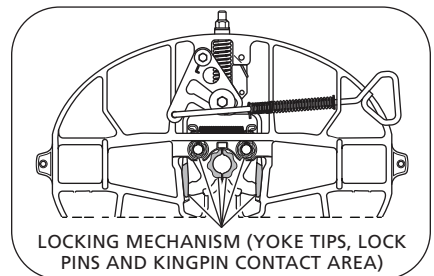
**Figure 39**



**Figure 40**



**Figure 41**



## 14. Slide Base Lubrication

**NOTE:** Slide base should be moved fore and aft at least once a year to maintain optimum performance.

**IMPORTANT:** If equipped with air release, lubricate the air cylinder every three (3) months or 30,000 miles whichever comes first.

### ILS (Integrated Low-Weight) Sliders:

1. Spray the spring-covered piston shaft thoroughly with penetrating oil (**Figure 42**).

**IMPORTANT:** DO NOT use any abrasives on the exposed shaft as they could damage the piston shaft.

2. Remove the supply air line and add two to four (2-4) drops of air tool oil to the cylinder through the supply fitting. Re-install the supply air line (**Figure 43**).
3. Activate and de-activate the air cylinder two to three (2-3) times to work the air tool oil into the cylinder and onto the piston and verify proper operation.

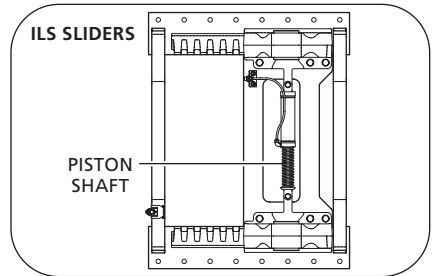
### Severe-Duty Sliders:

1. Spray the spring-covered piston shaft thoroughly with penetrating oil (**Figure 44**).

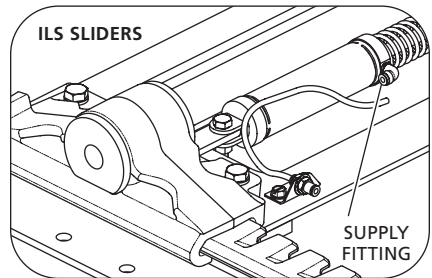
**IMPORTANT:** DO NOT use any abrasives on the exposed shaft as they could damage the piston shaft.

2. Remove the supply air line and add two to four (2-4) drops of air tool oil to the cylinder through the supply fitting. Re-install the supply air line (**Figure 45**).
3. Activate and de-activate the air cylinder two to three (2-3) times to work the air tool oil into the cylinder and onto the piston and verify proper operation.

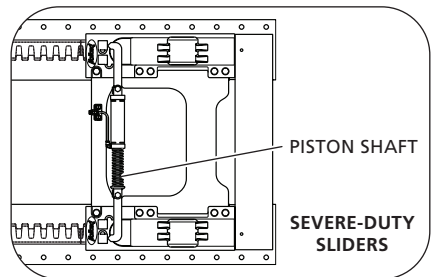
**Figure 42**



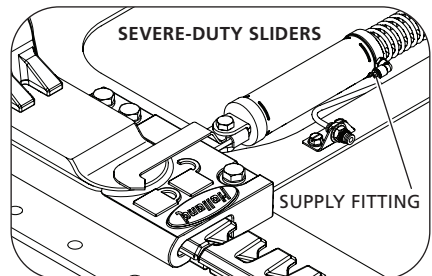
**Figure 43**



**Figure 44**



**Figure 45**



### Traditional Sliders (*discontinued*):

1. With the piston shaft in the exposed position, clean with penetrating oil and a clean shop towel (**Figure 46**).

**IMPORTANT:** DO NOT use any abrasives on the exposed shaft as they could damage the piston shaft.

2. Remove the supply air line and add two to four (2-4) drops of air tool oil to the cylinder through the supply fitting. Re-install the supply air line (**Figure 47**).
3. Activate and de-activate the air cylinder two to three (2-3) times to work the air tool oil into the cylinder and onto the piston and verify proper operation.

## 15. Fifth Wheel Adjustment

Fifth wheel adjustments should be performed at a minimum of every 60,000 miles or if excessive movement between the kingpin and fifth wheel is noticed while driving the vehicle.

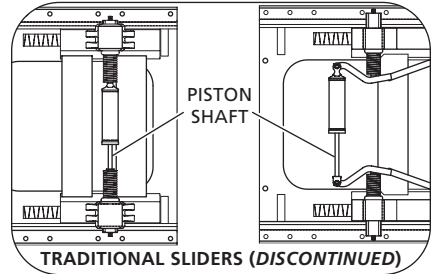
**IMPORTANT:** Excessive movement between the tractor and trailer can affect vehicle handling.

**⚠ 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.

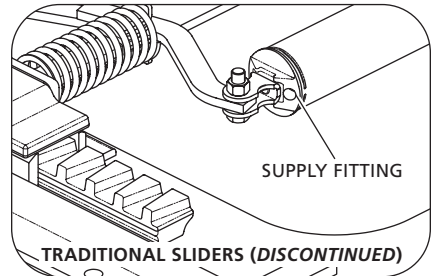
**NOTE:** To obtain proper fifth wheel adjustment, SAF-HOLLAND recommends the use of HOLLAND lock tester Part No. TF-TLN-5001, available from a local HOLLAND distributor.

1. Back off the adjustment nut five to six (5-6) turns (**Figure 48**).

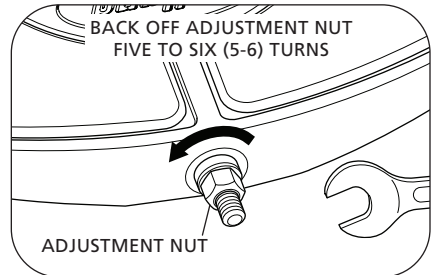
**Figure 46**



**Figure 47**

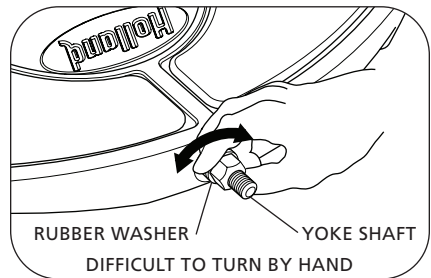


**Figure 48**

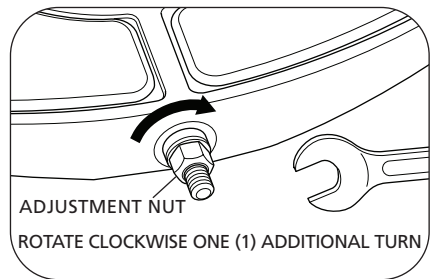


2. If the fifth wheel is locked, pull the release handle to unlock the fifth wheel. If equipped with a manual secondary lock, first pull the secondary release handle and hook on the top plate casting.
3. Use the lock tester to couple and uncouple the fifth wheel two to three (2-3) times to help "seat" the yoke. (Refer to Document No. XL-FW10082ST-en-US, available on the internet at [www.safholland.us](http://www.safholland.us), which contains specific lock tester instructions).
4. With the locks closed around the lock tester, position the adjustment nut on the yoke shaft so that it is slightly compressing the rubber washer, making it difficult to turn by hand (**Figure 49**).
5. Turn the adjustment nut one (1) additional turn clockwise to further compress the rubber washer (**Figure 50**).

**Figure 49**



**Figure 50**



**IMPORTANT:** Over-compressing the rubber washer with additional turns will take the fifth wheel out of proper alignment and degrade the performance of the fifth wheel.

6. Repeat the coupling and uncoupling process with the lock tester at least twice to help "seat" the yoke.
7. Confirm that the rubber washer cannot be turned by hand. If it can, repeat the adjustment procedures.
8. Remove the lock tester from the fifth wheel.

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

**⚠ WARNING**

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

## 16. Slide Base Adjustment (Traditional Sliders Only - discontinued)

**NOTE:** ILS slider and Severe-Duty slider locking plungers DO NOT require adjustment.

Some HOLLAND slide bases are equipped with adjustable locking plungers. Adjustment should be performed at a minimum of every 60,000 miles or if excessive movement is noticed while driving the vehicle. To obtain proper adjustment, follow these procedures:

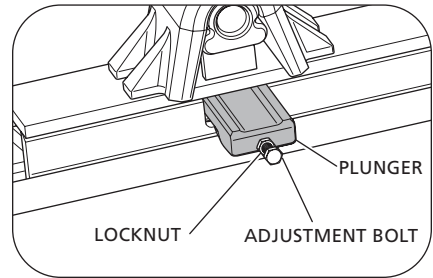
1. Loosen the lock nut and turn the adjustment bolt counterclockwise (**Figure 51**).
2. Disengage and engage the locking plungers. Verify that the locking plungers have engaged properly (**Figures 52 and 53**).
3. Tighten the adjustment bolt until it contacts the rack.
4. Turn the adjustment bolt clockwise an additional 1/2 turn, then tighten the lock nut securely.

If the locking plungers DO NOT release fully to allow the fifth wheel to slide:

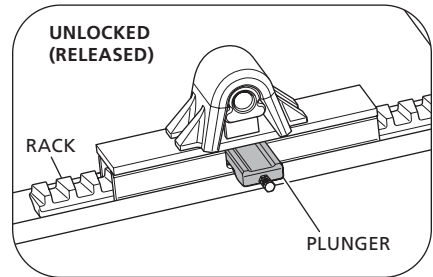
- Check the air cylinder for proper operation. Replace if necessary.
- Check the locking plunger adjustment as explained above.
- If a locking plunger is binding in the plunger pocket, remove the locking plunger using a HOLLAND TF-TLN-2500 spring compressor. Grind the top edges of the locking plunger 1/16" (1.5 mm) (**Figure 54**). Re-install and adjust the locking plungers as explained above.

**NOTE:** If problems persists, contact SAF-HOLLAND Customer Service: 888-396-6501.

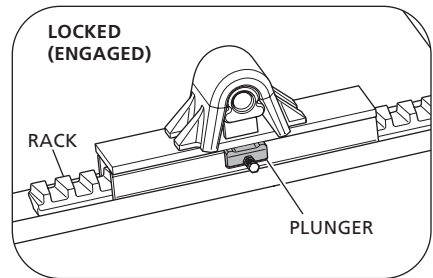
**Figure 51**



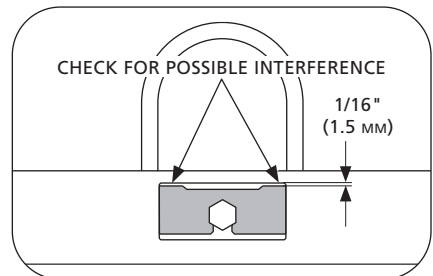
**Figure 52**



**Figure 53**



**Figure 54**



## 17. 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 55**). 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 11 for top plate removal instructions.)

### Upshock Cushions:

#### 1. Standard Cushion (**Figure 56**):

Replace if:

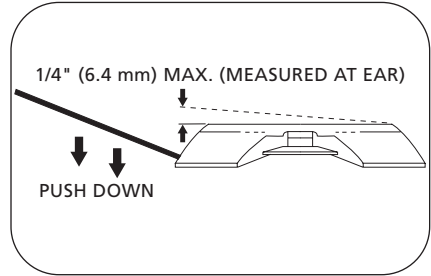
- The hole is elongated to more than 1-3/8" (34.9 mm).
- The upshock cushions are cracked, cut or otherwise severely damaged.

#### 2. ILS-Style Cushion (**Figure 57**):

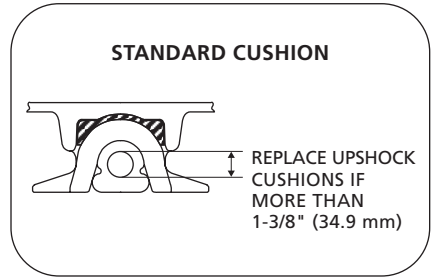
Replace if:

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

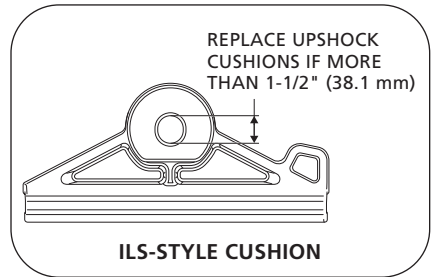
**Figure 55**



**Figure 56**



**Figure 57**





**Pocket Inserts (Figure 58):**

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.

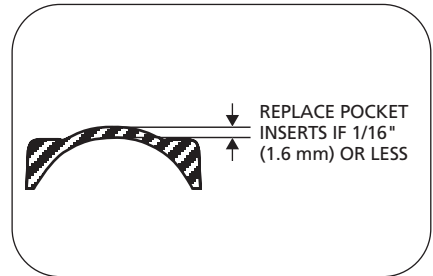
**Brackets:**

1. Standard Bracket (Figure 59) and ILS-Style Bracket (Figure 60):

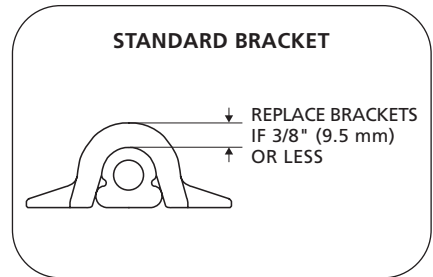
Replace if:

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

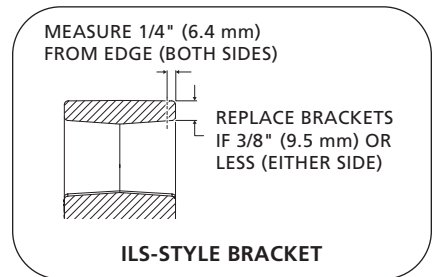
**Figure 58**



**Figure 59**



**Figure 60**



## 18. Top Plate Installation

1. If the pocket inserts are dislodged from the fifth wheel casting, clean the pocket areas of the casting 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 61**).
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 casting and mounting base and secure by installing the bracket pin retention bolts and nuts (**Figure 62**). Torque the retention fasteners to 50-60 ft.-lbs. (68-81 N•m).

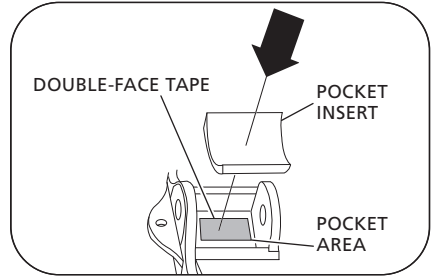
### 18.1 No-Tilt Fifth Wheels:

After installing the top plate onto the mounting base, re-install the no-tilt shaft assembly by orienting the top plate so the top plate and mounting base no-tilt brackets are aligned. Insert the no-tilt shaft assembly from the left side of the fifth wheel, making sure the chain assembly is positioned on the outside of the right-hand bracket. Attach the chain assembly to the bracket.

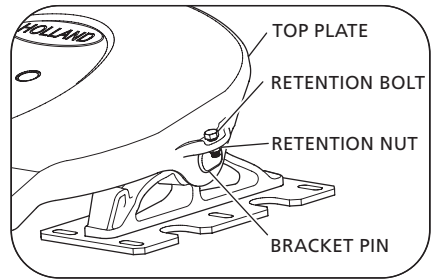
**NOTE:** Always remove the no-tilt shaft assembly for on-road use.

For Severe-Duty slider fifth wheels, there is a built-in location at the front of the slide base where the no-tilt shaft may be stored.

**Figure 61**



**Figure 62**



## 19. Troubleshooting

### Difficult to Couple to Trailer:

✓	POSSIBLE CAUSE	SOLUTION
	Attempting to couple too fast.	Couple in accordance with the procedures in Section 7.
	The trailer may be too high; the kingpin is not entering the locks properly.	Lower the trailer in accordance with the manufacturer's instructions.
	The locks are closed.	<p>If equipped with a manual secondary lock, pull the secondary release handle and hook on the top plate casting. Pull the release handle all the way out. If equipped with air release, set the tractor brakes and actuate the fifth wheel control valve/switch to open the locks.</p> <p>The locks may be open even if they still appear closed. Check to make sure the nut and washer at the front of the fifth wheel are not snug against the fifth wheel and that the release handle is in the extended "open" position. If both of these conditions exist, you will still be able to couple the fifth wheel. Movement of the kingpin into the fifth wheel lock jaws will allow them to open and successfully couple.</p>
	Accumulated rust or grime are interfering with the lock operation.	Thoroughly clean the fifth wheel and re-lubricate in accordance with the procedures in Section 13.
	The locks are adjusted too tightly.	Check lock adjustments in accordance with the procedures in Section 15.
	The locks may be damaged.	The fifth wheel <b>MUST</b> be rebuilt using the appropriate service kit.
	The release handle may be damaged or bent.	Replace the release handle using the appropriate service kit.
	The air cylinder tube and/or shaft (on air release-equipped fifth wheels) may be dented, bent, or otherwise damaged.	Replace the air cylinder using the appropriate service kit.
	The air release system on the tractor is not functioning properly.	Disconnect the air line at the air cylinder and operate the fifth wheel manually. If the fifth wheel functions properly, contact the truck dealer/service for instructions on troubleshooting the air release control system.
	The yoke shaft may be damaged or bent from improper coupling.	The fifth wheel <b>MUST</b> be rebuilt using the appropriate service kit.
	Bent kingpin, damaged upper coupler, or improper use of lube plates may be interfering with lock movement.	Check the kingpin and upper coupler plate as detailed in HOLLAND® Service Bulletin XL-SB020. Repair/replace as required. Remove any improperly installed or improperly specified lube plates. Refer to HOLLAND® Service Bulletin XL-SB004-01 for lube plate warnings.

### Hard Steering or Binding:

✓	POSSIBLE CAUSE	SOLUTION
	Warped trailer upper coupler plate.	Check the upper coupler plate for flatness and replace, if necessary. Refer to HOLLAND® Service Bulletin XL-SB020.

## Difficult to Uncouple from Trailer

✓	POSSIBLE CAUSE	SOLUTION
	The tractor may be putting pressure against the locks.	Lock the trailer brakes and back the tractor tightly against the kingpin to relieve pressure on the fifth wheel lock. Set the brakes, then pull the release handle or activate air release.
	The tractor is too low.	Raise the tractor suspension to the proper ride height.
	The secondary lock is not released.	If equipped with a <b>manual secondary lock</b> : pull the release handle out and up and lock open by hooking the handle on the top plate casting. If equipped with an <b>automatic secondary lock</b> : inspect for missing or broken parts and repair/replace as required using the appropriate service kit.
	Accumulated rust or grime are interfering with the lock operation.	Thoroughly clean the fifth wheel and re-lubricate in accordance with the procedures in Section 13.
	The locks are adjusted too tightly.	Check lock adjustments in accordance with the procedures in Section 15.
	The release handle will not stay out or must be held out when unlocking.	Replace the cam and release handle spring using the appropriate service kits.
	Missing or damaged release system parts.	The fifth wheel <b>MUST</b> be rebuilt using the appropriate service kit.
	The air cylinder tube and/or shaft (on air release-equipped fifth wheels) may be dented, bent, or otherwise damaged.	Replace the air cylinder using the appropriate service kit.
	The air release system on the tractor is not functioning properly.	Disconnect the air line at the air cylinder and operate the fifth wheel manually. If the fifth wheel functions properly, contact the truck dealer/service for instructions on troubleshooting the air release control system.
	The top plate casting is bent/damaged at the throat area, restricting movement.	The entire fifth wheel top plate <b>MUST</b> be replaced.
	Bent kingpin, damaged upper coupler, or improper use of lube plates may be interfering with lock movement.	Check the kingpin and upper coupler plate as detailed in HOLLAND® Service Bulletin XL-SB020. Repair/replace as required. Remove any improperly installed or improperly specified lube plates. Refer to HOLLAND® Service Bulletin XL-SB004-01 for lube plate warnings.

## Excessive Movement between Fifth Wheel and Kingpin:

✓	POSSIBLE CAUSE	SOLUTION
	The fifth wheel lock requires adjustment	Follow the procedures contained in Section 15.
	The fifth wheel cannot be adjusted further.	The fifth wheel <b>MUST</b> be rebuilt using the appropriate service kit.
	The kingpin is loose	Repair the trailer.
	The kingpin is worn.	Check the kingpin for acceptable wear with HOLLAND® Kingpin Gauge TF-0110. Replace the kingpin if necessary.

**Lock Pins Raising:**

✓	POSSIBLE CAUSE	SOLUTION
	The kingpin is too short or the lube plates are improperly installed.	Check the kingpin and upper coupler plate as detailed in HOLLAND® Service Bulletin XL-SB020. Repair/replace as required. Remove any improperly installed or improperly specified lube plates. Refer to HOLLAND® Service Bulletin XL-SB004-01 for lube plate warnings. Check to see if there is evidence on the bottom of the locks, of the kingpin making contact and “lifting” the locks.
	The locks are too tight around the kingpin	Check lock adjustment in accordance with the procedures in Section 15.
	The kingpin is worn.	Check the kingpin for acceptable wear with HOLLAND® Kingpin Gauge TF-0110. Replace the kingpin if necessary.
	The kingpin/locks are not lubricated enough.	Re-lubricate in accordance with the procedures in Section 13.
	The lock pins are not lubricated enough.	Lubricate the lock pins with Never-Seez®.
	If issues persist:	Order grease-able lock pin repair kit with retaining rings and shims, RK-07292-82.

## 20. Rebuild and Replacement Kits

REBUILD AND REPLACEMENT KITS	FW33	FW31
Rebuild Kit: Standard Left-Hand Release	RK-351-A-L	RK-311-A-L
Rebuild Kit: Standard Right-Hand Release	RK-351-A	RK-311-A
Rebuild Kit: Left-Hand Release with Manual Secondary Lock	RK-351-A-02-L	RK-311-A-02-L
Rebuild Kit: Right-Hand Release with Manual Secondary Lock	RK-351-A-02	RK-311-A-02
Rebuild Kit: Air Release	RK-351-A-80-L	RK-311-A-80-L
Lock and Pins Replacement Kit	RK-351-07296	RK-311-07296
Lock and Greaseable Lock Pins Replacement Kit	RK-351-07296-82	n/a
Yoke/Yoke Shaft/Cam Replacement Kit: Left-Hand	RK-351-12415-L	RK-311-12415-L
Yoke/Yoke Shaft/Cam Replacement Kit: Right-Hand	RK-351-12415-R	RK-311-12415-R
Yoke/Yoke Shaft/Cam Replacement Kit: Air Release	RK-351-12415-L80	RK-311-12415-L80
Release Handle Replacement Kit (Left or Right-Hand)	RK-08415-1	
Small Parts Kit (including Lock Adjustment Tag and Hardware)	RK-351-12416	
Lube Plate Inserts (Pair)	RK-331-1	
Pocket Inserts (Pair)	RK-PKT-2	







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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