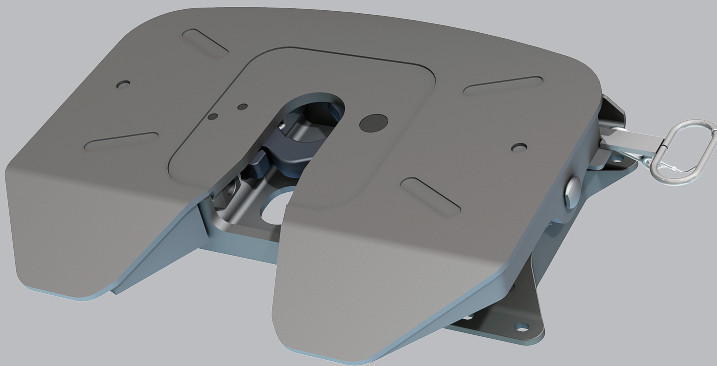


Owner's Manual

FW28 Series Fifth Wheel

Operation, Maintenance and Troubleshooting
Procedures; Warranty Information



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Introduction

This manual provides the information necessary for the proper operation and maintenance of HOLLAND® FW28 series fifth wheels.

NOTE: For HOLLAND® replacement components contact SAF-HOLLAND® Customer Service. Refer to this manual’s back cover for the nearest location.

Notes, Cautions, and Warnings

You **MUST** read and understand all of the procedures presented in this manual before operating or starting work on any HOLLAND® FW28 Series fifth wheel.

IMPORTANT: Keep this manual in a safe location for future reference.

Proper tools **MUST** be used to perform the maintenance and repair procedures described in this manual.

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

Fifth wheel serial tags are located on the release handle side of the fifth wheel top plate and positioned near the pickup ramps (**Figure 1**).

The part number and serial number are listed on the tag (**Figure 2**).

2. Decal Requirements

Decal XL-FW20005DC-en-US (**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. Position the decal as illustrated (**Figure 4**).

NOTE: Make sure surface is free of oil and grease. Clean and dry before applying 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 to order replacements immediately. Refer to this manual's back cover for the nearest location.

Figure 1

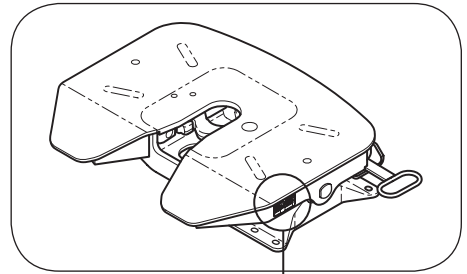


Figure 2

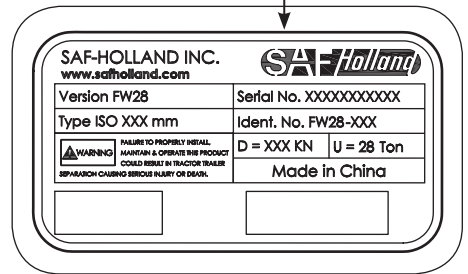


Figure 3

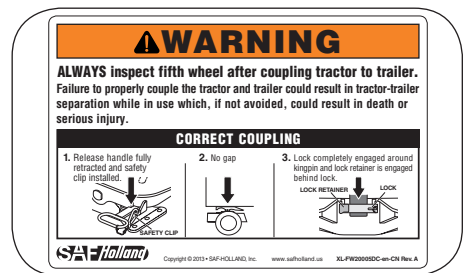
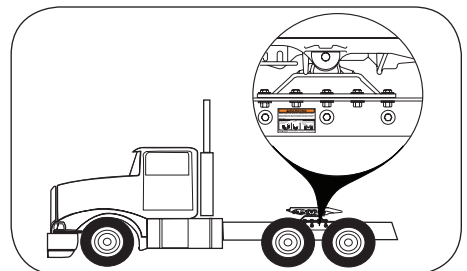


Figure 4



3. General Safety Instructions

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

All fifth wheel installation and maintenance **MUST** be performed by a properly trained technician using proper tools and safe procedures.

IMPORTANT: Prior to operation of the fifth wheel, you must be thoroughly satisfied that the fifth wheel has been appropriately 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.

For proper installation procedures, refer to SAF-HOLLAND® Installation Manual XL-FW10008BM-en-CN (available on the Internet at www.safholland.cn).

⚠ 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.

These instructions apply to the proper operation of your fifth wheel only. There are other important checks, inspections, and procedures listed in the Owner's Manuals for your tractor and trailer that are necessary, prudent, and/or required by law.

Only SAF-HOLLAND® Original Parts should be used.

A list of SAF-HOLLAND® technical support locations that supply SAF-HOLLAND® Original Parts can be found on the Internet at www.safholland.cn or contact Customer Service. Refer to this manual's back cover for the nearest location.

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

4. Fifth Wheel Intended Use

1. Pulling trailers with standard 90 mm kingpin as defined in ISO 4086, which are in good condition and securely mounted or locked in position in the trailer.
2. Transporting loads that are within the maximum fifth wheel rated capacities: 190 kN D-Value, 28 tonne vertical load.
3. In moderate duty applications.
2. Tow-away operations which damage or interfere with the proper operation of the fifth wheel.
3. The attachment of lifting devices.
4. The transport of loads in excess of rated capacity.
5. Applications other than those recommended in SAF-HOLLAND® literature available on the Internet at www.safholland.cn.

IMPORTANT: SAF-HOLLAND® definition of moderate duty fifth wheel applications is less than 10% off-road (gravel or crushed rock roads) with balance on-road (maintained concrete or asphalt roads).

4. As recommended in SAF-HOLLAND® literature available on the Internet at www.safholland.cn.

5. Fifth Wheel Non-Intended Use

1. Operating with a non-ISO 4086 compliant 90 mm kingpin, such as kingpins which are bent, improper size or dimensions, not secured to maintain ISO 4086 configuration, or which are installed in warped trailer bolster plates, or upper coupler and fifth wheel lube plates that do not maintain the ISO 4086 90 mm kingpin dimensions. Refer to SAF-HOLLAND® Service Bulletin XL-SB004-01 (available on the Internet at www.safholland.cn) for more information on fifth wheel lube plates.

⚠ WARNING Failure to couple with a ISO 4086 compliant standard 90 mm kingpin could result in improper coupling, allowing tractor-trailer separation, which if not avoided, could result in death or serious injury.

6. Coupling Preparation

1. Prior to coupling, you **MUST** inspect the fifth wheel and mounting. Perform and verify the following:
 - Tighten loose fasteners.
 - Replace missing fasteners.
 - Repair/replace missing, cracked or otherwise damaged components.
 - Clean grease grooves if a large amount of debris is present.
 - Lubricate fifth wheel-to-trailer contact surfaces, if needed.
 - Inspect fifth wheel mechanism. Lubricate dry or rusty components.
 - Make sure fifth wheel is in appropriate position for weight distribution on the tractor. For proper positioning of the fifth wheel, refer to SAF-HOLLAND® publication XL-FW10008BM-en-CN available on the Internet at www.safholland.cn.
2. Make sure coupling area is flat, level, and clear of persons and obstacles.

3. Tilt ramps of fifth wheel downward (**Figure 5**).
4. Make sure lock is open (**Figure 6**). If lock is closed:
 - a. Remove the safety clip from the fifth wheel release handle interface hole (**Figure 7**).
 - b. Grip handle securely and pull the release handle straight out to disengage lock.
 - c. Hook handle notch on fifth wheel (**Figure 8**).
 - d. Use a 90 mm pipe, or lever bar to manually open the lock jaw.
 - e. Visually inspect fifth wheel throat to ensure locks are completely open, free of snow or any debris, and the fifth wheel is ready to accept kingpin (**Figure 6**).
5. Verify that kingpin is not obstructed by a kingpin lock or other security device.

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

6. Inspect kingpin for excessive wear and damage (use HOLLAND® Kingpin Gage tool TF-0110) along with bolster plate bow (Refer to SAF-HOLLAND® Service Bulletins XL-SB020 and XL-SB033).

Figure 5

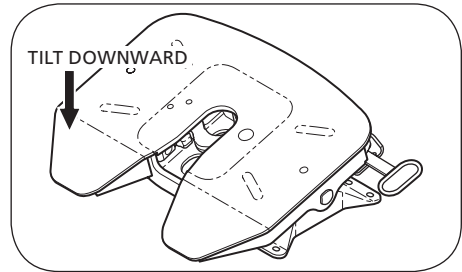


Figure 6

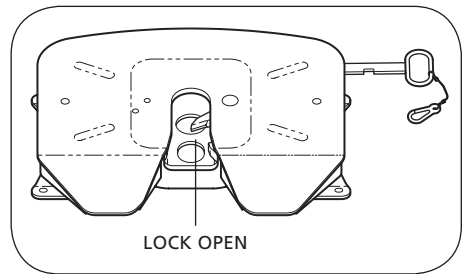


Figure 7

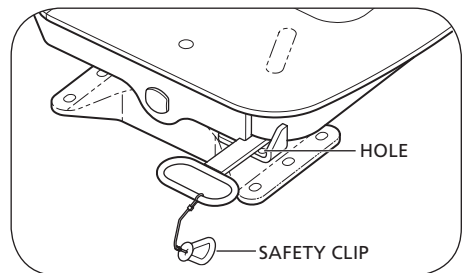
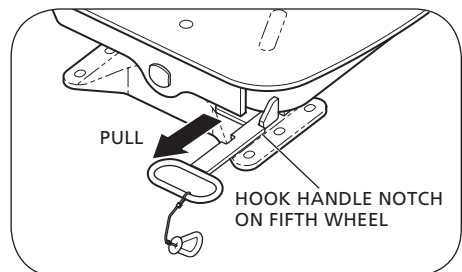


Figure 8



7. Coupling Procedures

1. Chock trailer wheels.
2. Position the tractor so the center of the fifth wheel is aligned with the kingpin (**Figure 9**).
3. Traveling in a straight line, slowly back tractor to trailer. STOP the tractor before making contact with the trailer (**Figure 10**).
4. Set tractor parking brake. Place vehicle in neutral and exit cab.
5. Adjust trailer height so that fifth wheel will lift trailer. Trailer should contact fifth wheel 100-150 mm behind fifth wheel bracket pin (**Figure 11**).

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

IMPORTANT: If trailer is too high the kingpin will not properly connect with the lock jaw.

6. Re-enter cab and slowly back into the trailer, engaging kingpin in the fifth wheel.

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

7. Exit cab and connect the air and electrical lines.
8. Raise the landing gear legs until the pads are just above the ground.
9. Re-enter the cab and perform a pull test as an INITIAL CHECK by locking the trailer brakes and pulling forward with the tractor to make sure that tractor-trailer separation does not occur (**Figure 12**).
10. Set the tractor parking brake.

Figure 9

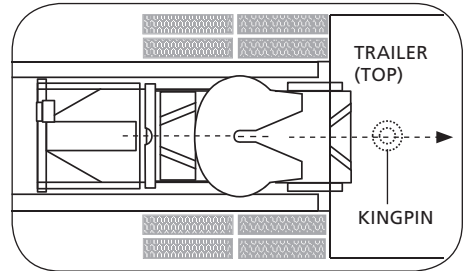


Figure 10

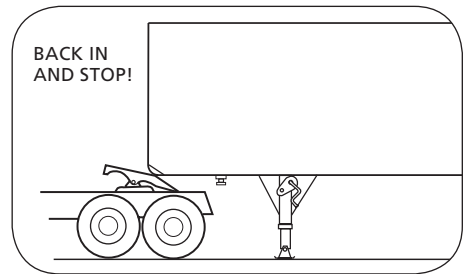


Figure 11

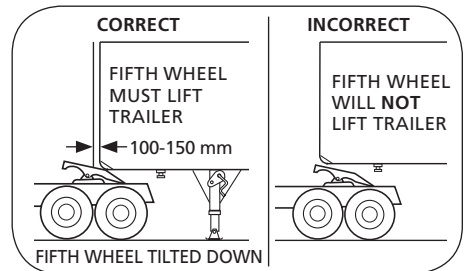
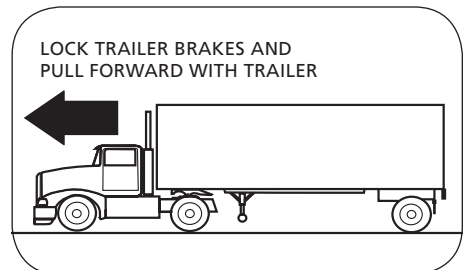


Figure 12



11. Exit the cab and visually inspect for the following to ensure that the lock is closed (**Figure 13**).
 - a. Release handle fully retracted.
 - b. No gap is permissible between the trailer upper coupler plate and the fifth wheel.
 - c. Lock completely closed around kingpin.
 - d. Lock retainer is engaged behind lock.
12. Install safety clip (**Figure 14**).
13. If you DO NOT achieve a proper couple, 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.

14. Fully retract the landing gear legs off the ground and secure the crank handle (**Figure 15**).

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

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

Figure 13

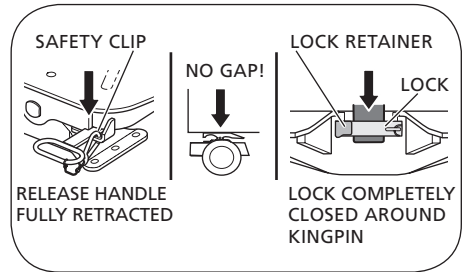


Figure 14

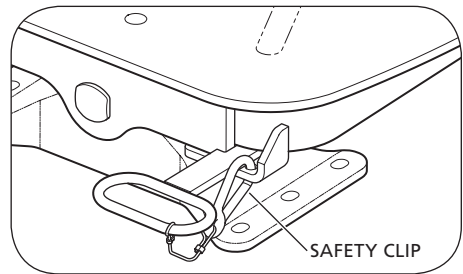
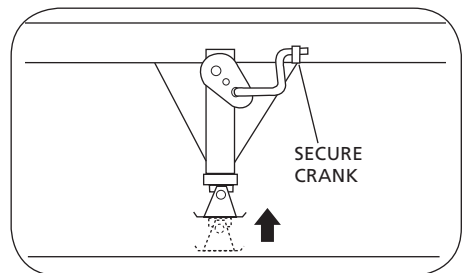


Figure 15



8. Uncoupling Procedures

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. Set the tractor parking brake.
5. Exit the cab and chock the trailer wheels.
6. Lower the landing gear until the pads just touch the ground (**Figure 16**).

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

7. Disconnect the air and electrical lines from the trailer and secure to tractor.
8.
 - a. Remove the safety clip from the fifth wheel release handle interface hole (**Figure 17**).
 - b. Grip handle securely and pull the release handle straight out to disengage lock.
 - c. Hook handle notch on fifth wheel (**Figure 18**).
9. Release the tractor parking brake and slowly pull away from the trailer.

Figure 16

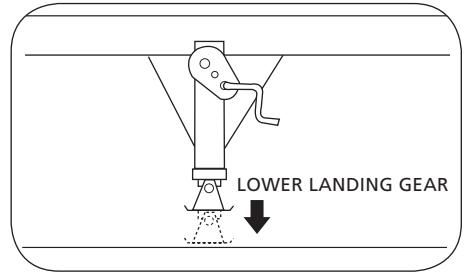


Figure 17

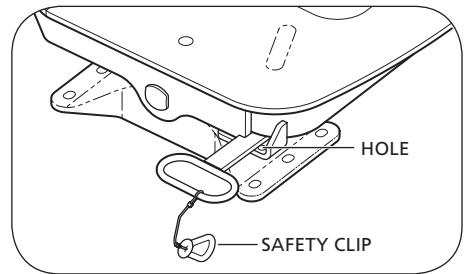
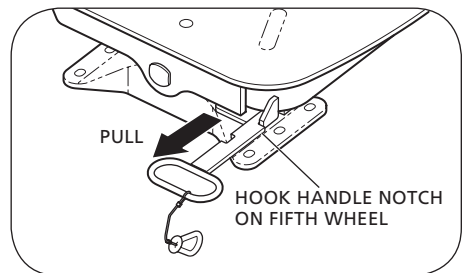


Figure 18



9. Fifth Wheel Maintenance

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

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

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

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

10. Top Plate Removal

1. Remove bracket pin retention clips from both sides of fifth wheel top plate (**Figure 19**).
2. Using a pry bar, pull bracket retention pins out of fifth wheel top plate (**Figure 20**).
3. Using a lifting device capable of lifting 500 lbs. (227 kg), remove the top plate from the mounting base. Place fifth wheel on a flat, clean working area.

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

Figure 19

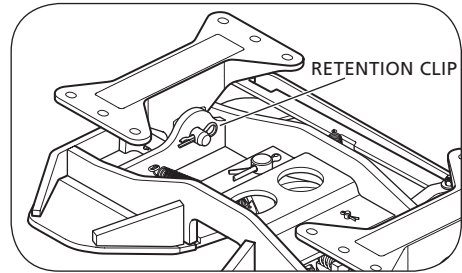
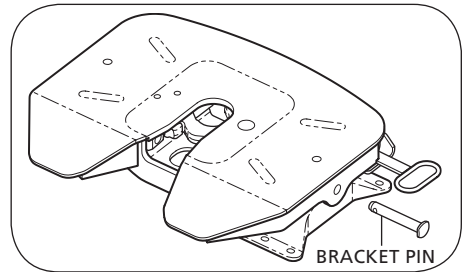


Figure 20



11. Fifth Wheel Lubrication

IMPORTANT: Fifth wheel lubrication is necessary to get the maximum service life from your FW28 series fifth wheel. Perform the following procedures at the intervals listed.

- Check the fifth wheel-to-trailer contact surfaces weekly or at 4,000 km, whichever is more frequent (**Figure 21**).
- Inspect the fifth wheel to kingpin contact surfaces, the fifth wheel front lock weekly or at 4,000 km, whichever is more frequent (**Figure 22**).
- Maintain a film of lubrication approximately 1 to 3 mm thick on all trailer to fifth wheel contact surfaces.
- Clean grease grooves if a large amount of debris is present.
- Lubricate using a water-resistant lithium-based grease.
- Lubricate the locking mechanism every three (3) months or 48,000 km at a minimum (**Figure 22**).
- Using grease fittings located under the fifth wheel, lubricate the fifth wheel top plate and bracket contact surfaces every three (3) months or 48,000 km at a minimum (**Figure 23**).
- Thoroughly clean and re-lubricate the locking mechanism every six (6) months or 96,000 km.

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

Figure 21

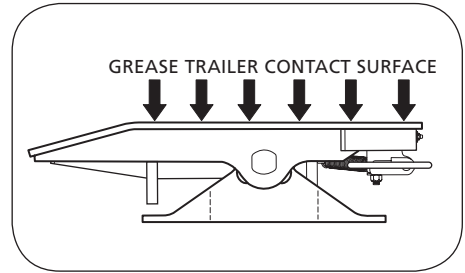


Figure 22

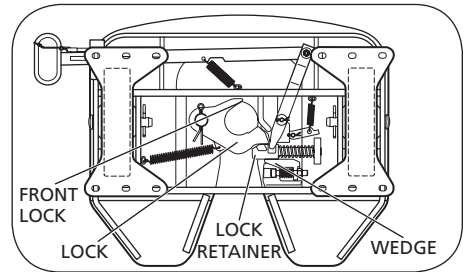
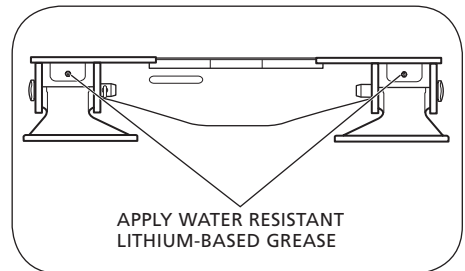


Figure 23



Proper Lubrication Method

1. Remove the old grease and debris from all fifth wheel-to-trailer contact and locking mechanism surfaces.
2. Using a water-resistant lithium-based grease, apply a film of lubrication approximately 1 to 2 mm thick to the lock, lock retainer, and wedge (**Figure 24**).
3. Using a light oil, lubricate all moving parts and mechanical pivot points.
4. Using a water-resistant lithium-based grease, apply a new film 1 to 3 mm thick to all fifth wheel-to-trailer contact surfaces (**Figure 25**).
5. Using grease fittings located on the underside of the fifth wheel, lubricate the fifth wheel top plate and bracket contact surfaces (**Figure 26**).

IMPORTANT: Clean and lubricate locking mechanism if operational difficulties arise during the service life of your fifth wheel (i.e. problems with coupling, uncoupling, or pulling the release handle) (**Figure 24**).

Figure 24

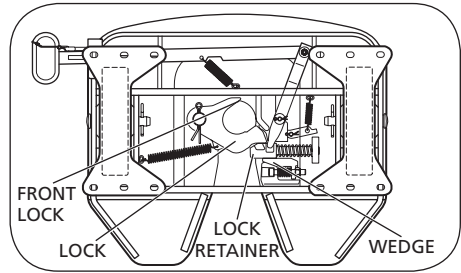


Figure 25

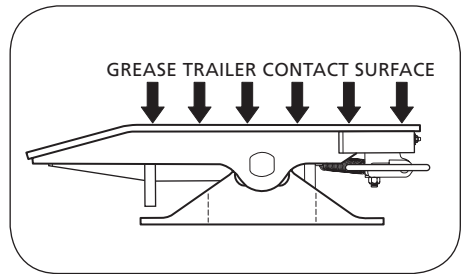
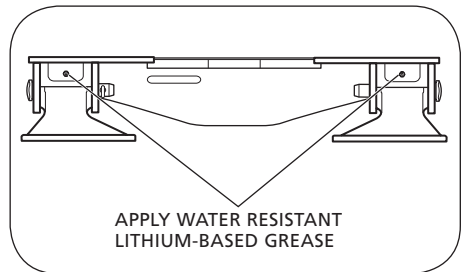


Figure 26



12. Fifth Wheel Adjustment

Fifth wheel adjustment should be performed at a minimum of every 96,000 km or if excessive movement between kingpin and fifth wheel is noticed when driving the vehicle.

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

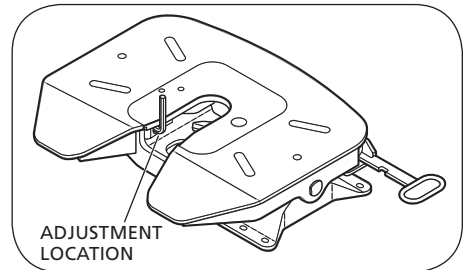
WARNING Failure to maintain proper fifth wheel adjustment could result in loss of vehicle control which, if not avoided, could result in death or serious injury.

NOTE: To obtain proper adjustment SAF-HOLLAND® recommends use of HOLLAND® lock tester Part No. TF-TLN-1500.

The following steps describe the appropriate method of fifth wheel adjustment.

1. If the fifth wheel is locked, remove the safety clip, pull the release handle, and unlock the fifth wheel.
2. Insert the lock tester into the fifth wheel and couple in accordance with the coupling instructions provided in this manual.
3. Using a 14 mm Allen wrench (**Figure 27**) or an Allen socket combination; Tighten the adjustment screw by turning clockwise until tight.
4. Now loosen the adjustment screw by turning counter-clockwise 1-1/2 turns to remove residual tension between components.

Figure 27



5. Verify that the adjustment is correct by coupling and uncoupling the fifth wheel several times. If the fifth wheel appears to have excessive movement repeat Steps 1-3.

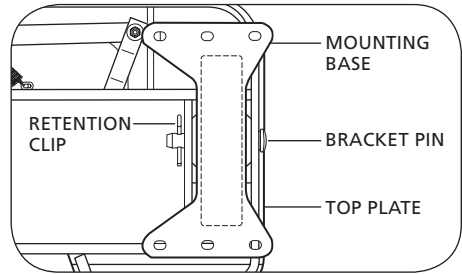
IMPORTANT: Before using your fifth wheel, you **MUST** verify that it is operating properly.

WARNING Failure to verify that fifth wheel is operating properly could result in tractor trailer separation which, if not avoided, could result in serious injury or death.

13. Top Plate Installation

1. Using a lifting device capable of lifting 500 lbs. (227 kg), install the fifth wheel top plate onto its mounting base.
2. Re-install bracket pins through fifth wheel and mounting base and secure by installing the bracket pin retention clips (**Figure 28**).

Figure 28



14. Troubleshooting

Difficult to Couple to Trailer:

✓	Possible Cause	Remedy
	Attempting to couple too fast.	Couple in accordance with the procedure in Section 7.
	The trailer may be too high; the kingpin is not entering the locks properly.	Lower the trailer in accordance with manufacturer's instructions.
	Locks are closed.	Remove the safety clip from the fifth wheel release handle interface holes. Pull the release handle all the way out. Use pry bar and open locks.
	Accumulated rust or grime interfering with the lock operation.	Thoroughly clean the fifth wheel and re-lubricate in accordance with the procedure in Section 11.
	The lock is adjusted too tightly.	Check lock adjustment in accordance with the procedure in Section 12.
	The locks may be damaged.	The fifth wheel MUST be rebuilt using the appropriate service kit.
	Damaged, bent release handle.	Replace release handle using the appropriate service kit.
	Bent kingpin, damaged upper coupler, or improper use of "lube plate" 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.

Difficult to Uncouple from Trailer:

✓	Possible Cause	Remedy
	The tractor may be putting pressure against locks.	Lock the trailer brakes and back the tractor tightly against the kingpin to relieve the pressure on the fifth wheel lock, set the brakes, then pull the release handle.
	The secondary lock is not released.	Remove the safety clip from the fifth wheel release handle interface holes.
	Accumulated rust or grime interfering with the lock operation.	Thoroughly clean the fifth wheel and re-lubricate in accordance with the procedure in Section 11.
	The lock is adjusted too tightly.	Check lock adjustment according to the procedure in Section 12.
	The release handle will not stay out or must be held out when unlocking.	The fifth wheel MUST be rebuilt using the appropriate service kit.
	Missing or damaged release system parts.	The fifth wheel MUST be rebuilt using the appropriate service kit.
	Top plate bent/damaged at throat area, restricting movement.	The entire fifth wheel top plate MUST be replaced.
	Bent kingpin, damaged upper coupler, or improper use of "lube plate" 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	Remedy
	Fifth wheel lock requires adjustment.	Follow the procedures contained in Section 12.
	Fifth wheel cannot be adjusted further.	The fifth wheel MUST be rebuilt using the appropriate service kit.
	Kingpin is loose.	Repair trailer.
	Kingpin is worn.	Check kingpin for acceptable wear with HOLLAND® TF-0110. Replace kingpin, if necessary.

Hard Steering or Binding:

✓	Possible Cause	Remedy
	Lack of lubrication on fifth wheel top surface.	Lubricate top of fifth wheel plate using a high pressure, lithium-based grease. Follow recommended lubrication schedule as described in Section 11.
	Warped trailer upper coupler plate.	Check upper coupler plate for flatness and replace, if necessary. Refer to HOLLAND® Service Bulletin XL-SB020.

15. Rebuild and Replacement Kits

REBUILD AND REPLACEMENT KITS	PART NUMBER
Rebuild Kit-Standard Right-Hand Release	RK-280-A



SAF-HOLLAND Group





SAF-HOLLAND Group



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. Non SAF-HOLLAND parts will only limit the performance potential and could possibly void SAF-HOLLAND's warranty. Always be sure to specify SAF-HOLLAND Original Parts when servicing SAF-HOLLAND products.

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