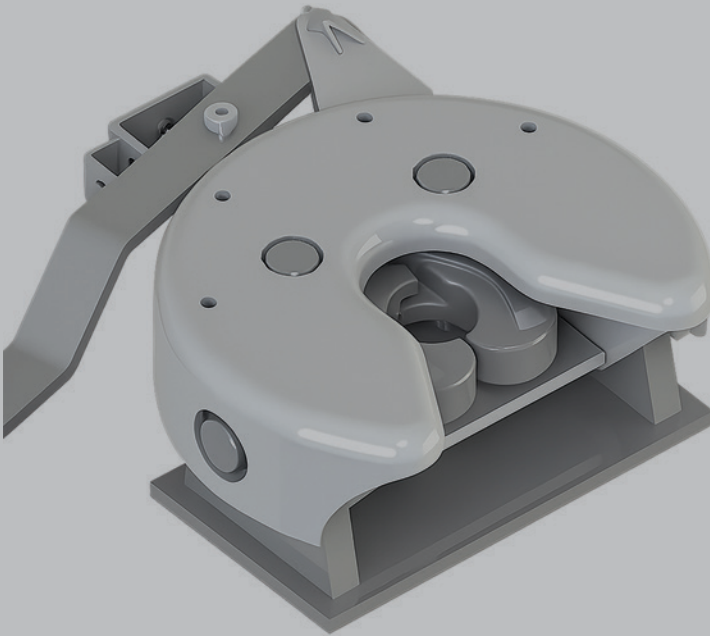


Owner's Manual

FW0001 Series Fifth Wheel

INSTALLATION, OPERATION,
AND MAINTENANCE MANUAL





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Introduction

This manual provides the information necessary for the proper installation, operation and maintenance of HOLLAND® FW0001 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.com.

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.com or contact Customer Service in USA at 888-396-6501. In Canada call 519-537-3494.

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 vehicle-trailer separation which, if not avoided, could result in death or serious injury.

IMPORTANT: These instructions apply to the proper operation of FW0001 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.

⚠ 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. Welding Standards

2.1 Welding Standards

This specification applies to all components supplied by SAF-HOLLAND, and its products. The customer assumes full responsibility for weld integrity if weld material and procedures differ from those listed below.

2.2 Workmanship

All welding on SAF-HOLLAND products MUST be performed by a welder qualified according to the appropriate AWS standard for the weld being made or an equivalent standard. It is the responsibility of the customer to provide good workmanship when welding on SAF-HOLLAND products.

2.3 Material

Items to be welded that are made from low carbon or high-strength alloy steel are to be welded with AWS filler metal specification AWS A5.18, filler metal classification ER-70S-3, ER-70S-6 or equivalent unless specified on the installation drawing.

NOTE: Any substitution for filler material from the above standard MUST comply, as a minimum, with the following mechanical properties: Tensile Strength - 72k psi (496 MPa) Yield Strength - 60k psi (414 MPa) Charpy V Notch - 20ft.-lbs. (27 N•m) at 0° F (-17.7° C)% Elongation - 22%.

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

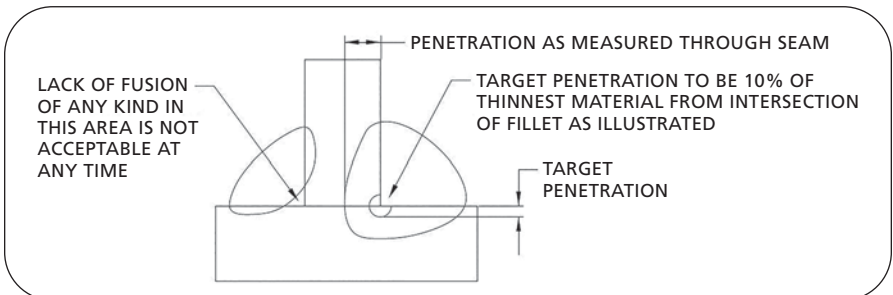
2.4 Procedures

Tack welds used for positioning components are to be located in the center of the final weld, where practical. Tack weld should be completely fused to the finish weld. DO NOT break arc at the end of the weld. Back up all finish welds at least 1/2" (12.7 mm) or a sufficient amount to prevent craters at the end of the weld. Where weld is shown to go around corners, it is assumed the corner represents a stress concentration area. DO NOT start or stop weld within 1" (25.4 mm) of the corner. Particular care should be taken to prevent undercutting in this area.

2.5 Weld Size

If weld size is NOT specified, the effective throat of the weld MUST be no smaller than the thinnest material being welded (**Figure 1**).

Figure 1



3. Model Identification

The fifth wheel serial tag is located on the side of the fifth wheel top plate (**Figure 2**).

The fifth wheel model number and serial number are listed on the tag.

4. Part Identification

Figure 2

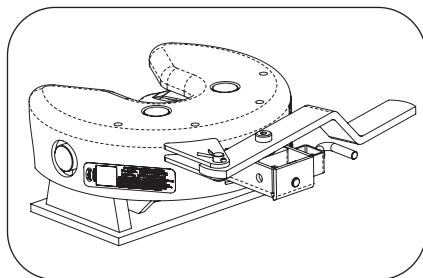
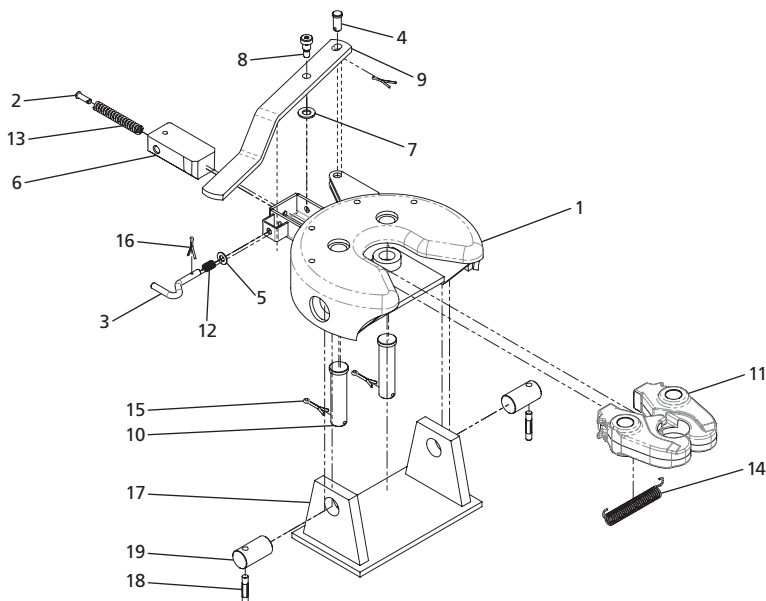


Figure 3



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	5th Wheel Housing	11	Lock Jaw
2	Channel Clevis Pin	12	Compression Spring
3	Secondary Release Handle	13	Compression Spring
4	Clevis Pin	14	Extension Spring
5	Washer	15	Cotter Pin
6	Locking Block	16	Cotter Pin
7	Washer	17	Mounting Base
8	Shoulder Bolt	18	Groove Pin
9	Release Handle	19	Mounting Pin
10	Lock Pin		

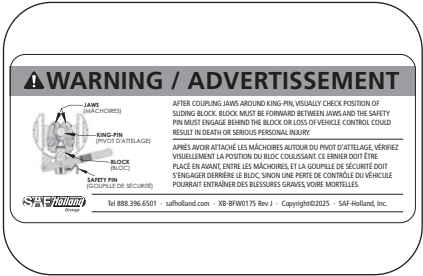
5. Decal Requirements

Decal XB-BFW0175 is located on the opposite side of the fifth wheel as the identification tag.

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 519-537-3494 to order replacements immediately (**Figure 4**).

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

Figure 4



6. 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:
 - 8,000 lbs. Maximum Vertical Load on Fifth Wheel.
 - 32,000 lbs. Maximum Gross Trailer Weight.
3. In both on-road and off-road applications.

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

7. 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 vehicle-trailer separation, which, if not avoided, could result in death or serious injury.

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.

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

8. Installation Instructions

The SAF-Holland fifth wheel is a weld-on product. The following is the recommended procedure for mounting onto a standard vehicle application.

1. Determine the proper fifth wheel position. Proper positioning of the fifth wheel is important for weight distribution, swing clearance, and handling characteristics (**Figure 5**).
 - a. Measure from the centerline of the kingpin to the furthest forward corner of the trailer (STEP A).
 - b. The fifth wheel should be positioned 3"-9" ahead of the vehicle rear axle centerline and centered laterally on the vehicle (STEP B).
 - c. Measure from the proposed centerline of the fifth wheel to the rearmost point of the vehicle cab (STEP C).
 - d. The Measurement from (STEP C) should be GREATER than the measurement from (STEP A).

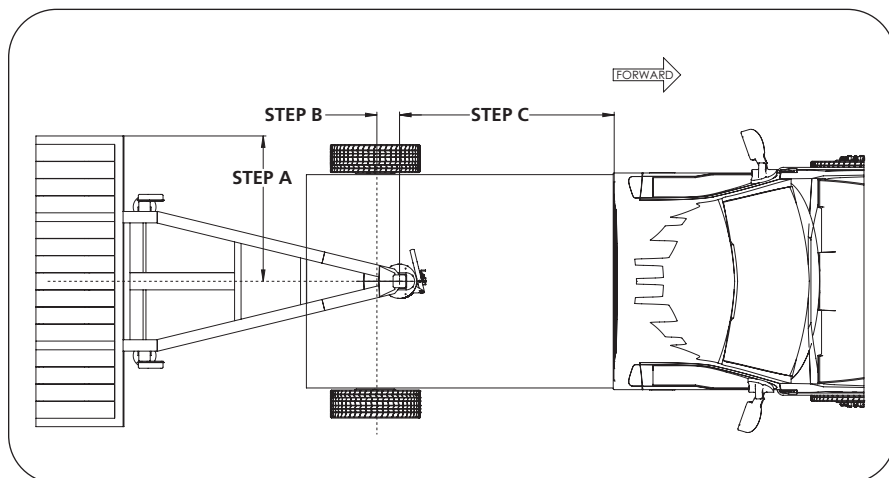
WARNING

Failure to properly locate the fifth wheel forward of the vehicle axle centerline can adversely affect steering stability, potentially causing the driver to lose control of the vehicle which, if not avoided, could result in death or serious injury.

WARNING

Failure to provide adequate swing clearance between the trailer and vehicle cab could adversely affect steering stability potentially causing the driver to lose control of the vehicle which, if not avoided, could result in death or serious injury.

Figure 5



2. Ensure there is adequate clearance to the sides and rear of the vehicle to accommodate pitch and roll.
3. Ensure the vehicle mounting base is adequate to support the imposed loads from the fifth wheel and trailer.

⚠ WARNING

Failure to provide an adequately supported mounting base on the vehicle to mount the fifth wheel assembly could result in vehicle-trailer separation which, if not avoided, could result in death or serious injury.

4. The entire base of the fifth wheel assembly **MUST** be mounted flush on the vehicle mounting base to prevent flexing and to give uniform weight distribution. It is recommended to chamfer or smooth sharp edges and corners of mounting materials wherever contact is made with the vehicle mounting base.

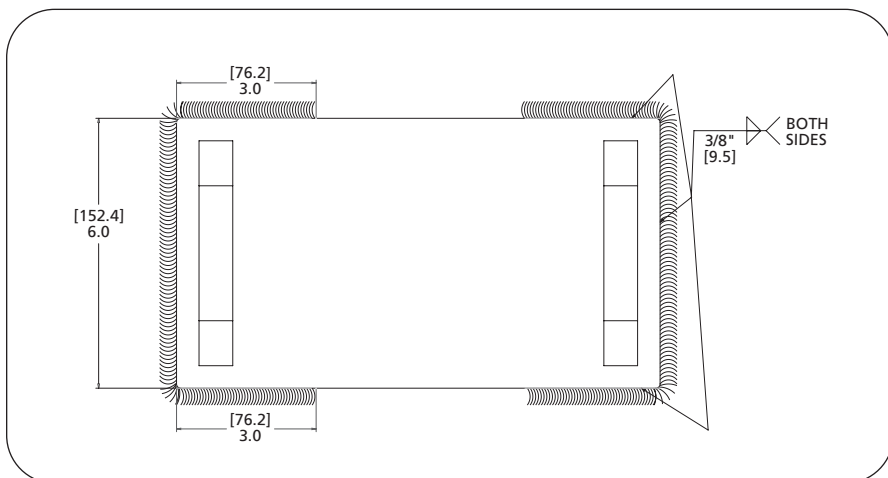
CAUTION

Failure to seat the fifth wheel assembly flush on the vehicle mounting base could result in excessive flexing of the fifth wheel mounting base, if not avoided, could result in damage to the fifth wheel.

5. The fifth wheel assembly is designed to be welded to a vehicle mounting base. Weld the fifth wheel mounting base per **(Figure 6)**.

⚠ WARNING

Failure to properly secure the fifth wheel to the vehicle frame could result in vehicle-trailer separation which, if not avoided, could result in death or serious injury.

Figure 6


9. Coupling Preparation

1. Prior to coupling, an inspection **MUST** be performed on the fifth wheel and mounting to verify the following:
 - Tighten loose fasteners.
 - Replace missing fasteners.
 - Repair/replace missing, cracked or otherwise damaged components.
 - Lubricate fifth wheel-to-trailer contact surfaces, if needed. Using dry film lubricant.
 - Inspect fifth wheel mechanism. Lubricate dry or rusty components.
2. Ensure that the coupling area is flat, level, and clear of persons and obstacles.
3. Ensure that the locks are open. If the locks are closed: pull out the secondary release handle until the release handle moves inward pushing the locking block against the back side of the locks. The locks remain open to allow entrance to the kingpin (**Figure 7**).
4. Visually inspect the fifth wheel throat to ensure that the locks are completely open and ready to accept the kingpin (**Figure 8**).

Figure 7

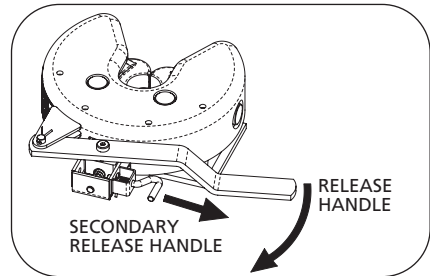
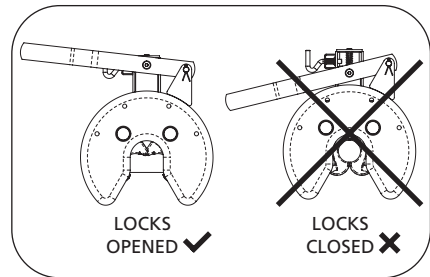


Figure 8



10. Coupling Procedures

1. Chock the trailer wheels.
2. Position the vehicle so the center of the fifth wheel is aligned with the kingpin (**Figure 9**).
3. Traveling in a straight line, slowly back the vehicle to the trailer. STOP the vehicle before making contact with the trailer approximately 1 foot away.
4. 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 trailer jack to raise the trailer height (**Figure 10**).

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

5. Slowly back up, using the lowest gear possible. Stop when the fifth wheel is under the leading edge of the trailer.
6. Place the vehicle into park and set the parking brake. Exit the cab and verify proper fifth wheel-to-kingpin alignment.
7. The fifth wheel top plate face **MUST** make contact with the upper coupler plate. 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.

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

Figure 9

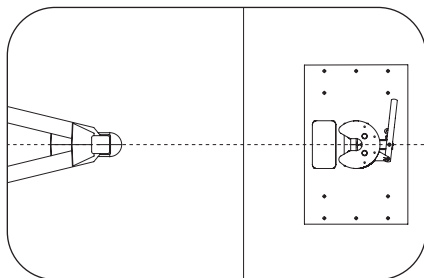
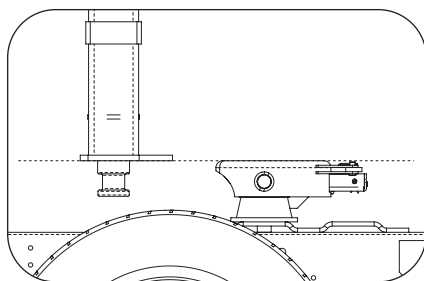


Figure 10



⚠ WARNING

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

8. Continue backing the vehicle up until the fifth wheel is automatically locked.
9. Perform a pull test as an INITIAL CHECK by locking the trailer brakes and pulling forward with the vehicle to ensure that vehicle-trailer separation DOES NOT occur.
10. Place the vehicle into park and set the parking brake. Exit the cab and visually inspect for the following to ensure that the lock is closed.
 - a. No gap is permissible between the trailer upper coupler plate and the fifth wheel.
 - b. Fifth wheel locks **MUST** be closed around the trailer kingpin (**Figure 11**).
 - c. Fifth wheel is locked with the secondary release handle behind the locking block (**Figure 12**).

Figure 11

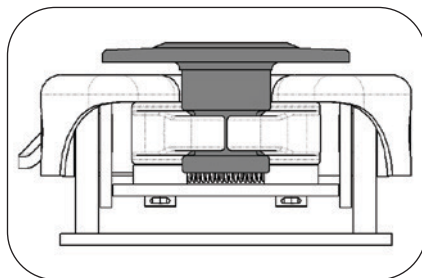
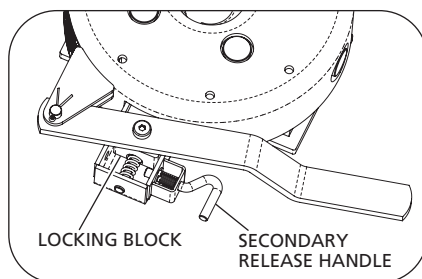


Figure 12



11. If proper coupling has NOT been achieved, repeat the coupling procedure.

⚠ WARNING

Failure to properly couple the vehicle and trailer could result in 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 trailer separation which, if not avoided, could result in death or serious injury.

12. Fully retract the trailer jack legs off the ground and secure the crank handle.

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

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

11. Uncoupling Procedures

1. Position the vehicle and trailer, in straight alignment, on firm, level ground clear of obstacles and persons.
2. Set the trailer brakes.
3. Slowly back the vehicle tightly against the trailer to relieve pressure on the fifth wheel locks.
4. Place the vehicle into park and set the parking brake.
5. Chock the trailer wheels.
6. Lower the trailer jack until the pads just touch the ground (**Figure 13**).
7. Open the fifth wheel locks by pulling out the secondary release handle and rotating open the release handle until the secondary release handle locks onto the locking block (**Figure 14**).
 - a. Ensure that the locking mechanism is open.
8. Disconnect any electrical lines from the vehicle to the trailer.

Figure 13

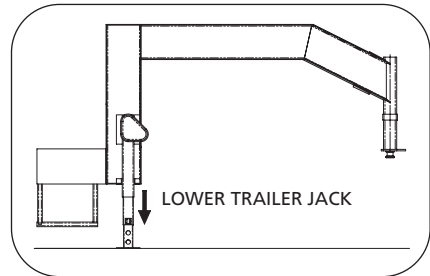
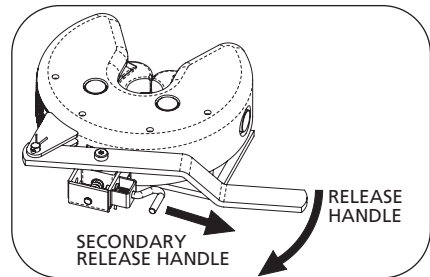


Figure 14



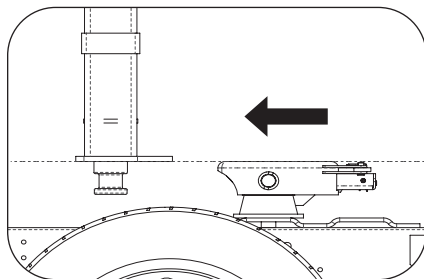
NOTE: For proper operation and ability to transfer the trailer weight from the fifth wheel, follow the instructions published by the landing gear manufacturer. DO NOT raise the trailer off of the fifth wheel.

9. Release the vehicle parking brake and slowly pull forward 12"-18" to disengage the kingpin from the fifth wheel. The fifth wheel should be between the front edge of the trailer and the kingpin (**Figure 15**).

IMPORTANT: DO NOT drive the vehicle free of the trailer.

10. Place the vehicle into park and set the parking brake.
11. Visually inspect uncoupling. Ensure that the trailer is completely supported by the trailer jacks.
12. Release the vehicle parking brake and slowly pull away from the trailer.

Figure 15



12. 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 vehicle is uncoupled from the trailer.

WARNING

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

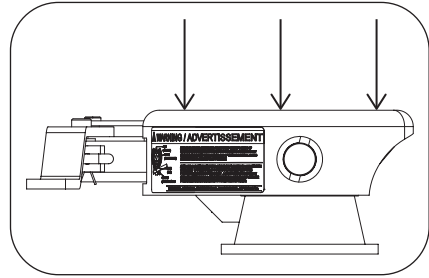
13. Fifth Wheel Lubrication

IMPORTANT: Fifth wheel lubrication is necessary to get the maximum service life from the FW0001 series fifth wheel. Perform the following procedures at the intervals listed.

- Lubricate the locking mechanism every three (3) months or 30,000 kms.
- Thoroughly clean the locking mechanism every six (6) months or 60,000 kms.

IMPORTANT: For fifth wheels that operate in snowy or icy winter conditions, lubrication should be performed every spring in addition to routine lubrication (as noted above) to ensure optimum operation.

Figure 16



13.1 Proper Lubrication Method

1. Remove old grease and debris from all fifth wheel-to-trailer contact surfaces. Apply new water-resistant lithium-based grease to all fifth wheel-to-trailer contact surfaces (**Figure 16**).
2. Using water-resistant lithium-based grease, lubricate lock jaws where contact is made with the kingpin.
3. Dry film lubricant to all fifth wheel contact surfaces.

14. Troubleshooting

Difficult to Couple to Trailer:

✓	POSSIBLE CAUSE	SOLUTION
	Attempting to couple too fast.	Couple in accordance with the procedures in Section 10.
	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.	Couple in accordance with the procedures in Section 10.
	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 release handle may be damaged or bent.	Replace the fifth wheel.
	Bent kingpin, damaged upper coupler, or improper use of lube plates may be interfering with lock movement.	Check the kingpin and upper coupler plate. Repair/replace as required. Remove any improperly installed or improperly specified lube plates.

Excessive Movement between Fifth Wheel and Kingpin:

✓	POSSIBLE CAUSE	SOLUTION
	The fifth wheel locks are worn.	Replace fifth wheel.
	The kingpin is loose.	Repair the trailer.
	The kingpin is worn.	Check the kingpin for acceptable wear. Replace the kingpin if necessary.

Hard Steering or Binding:

✓	POSSIBLE CAUSE	SOLUTION
	Lack of lubrication on the fifth wheel top surface.	Lubricate the top of the fifth wheel plate using a high pressure, lithium-based grease. Follow the recommended lubrication schedule as described in Section 13.
	Warped trailer upper coupler plate.	Check the upper coupler plate for flatness and replace, if necessary.

Difficult to Uncouple from Trailer:

✓	POSSIBLE CAUSE	SOLUTION
	The vehicle may be putting pressure against the locks.	Lock the trailer brakes and back the vehicle tightly against the kingpin to relieve pressure on the fifth wheel lock. Set the brakes, then pull the release handle or activate air release.
	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.
	Missing or damaged release system parts.	The fifth wheel MUST be replaced.
	The top plate casting is bent/damaged at the throat area, restricting movement.	The entire fifth wheel top plate MUST 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.





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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