

Owner's Manual

Electronic Lock Indicator - Technology Enhanced (ELI-te™) Coupling Monitor System for FW35, FW33 and FW31 Series Fifth Wheels

Operation and Maintenance Procedures



Contents Page

Introduction.....2

Notes, Cautions, and Warnings.....2

Section 1 – General Safety.....3

Section 2 – Components.....4

Contents Page

Section 3 – Operation.....5

Section 4 – Maintenance.....6

Section 5 – Verification of ELI-te Function....7

Section 6 – Troubleshooting.....8

Introduction

The HOLLAND® Electronic Lock Indicator - Technology Enhanced (ELI-te) coupling monitor system provides automatic illumination of a kingpin within the fifth wheel locking mechanism and produces a visual warning to alert drivers if an incomplete coupling occurs. Drivers are required to verify with a pull test and visual inspection that trailers are properly coupled. The ELI-te shall NOT be used as exclusive indication of coupling.

NOTE: For HOLLAND replacement components, contact SAF-HOLLAND® Customer Service at 888-396-6501.

Notes, Cautions, and Warnings

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

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.

NOTE: In the United States, work shop safety requirements are defined by federal and/or state Occupational Safety and Health Acts. Equivalent laws may exist in other countries. This manual is written based on the assumption that OSHA or other applicable employee safety regulations are followed by the location where work is performed.

Throughout this manual, take note of the terms "NOTE," "IMPORTANT," "CAUTION," and "WARNING" followed by useful 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

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

The Electronic Lock Indicator - Technology Enhanced (ELI-te) coupling monitor system installation and maintenance must be performed by a trained technician using proper tools and safety procedures.

IMPORTANT: The Electronic Lock Indicator - Technology Enhanced (ELI-te) coupling monitor system is a tractor-trailer fifth wheel coupling aid and is intended as an additional safety check to assure the driver of a safe and complete coupling. It does NOT eliminate the requirement for a visual inspection of the fifth wheel. ALWAYS get out of the tractor cab and visually inspect the fifth wheel coupling before proceeding.

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

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.

Refer to SAF-HOLLAND Installation Manual, Document No. XL-FW10008BM-en-US (available on the internet at www.safholland.us) for proper installation procedures.

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

These instructions apply to the proper operation of the Electronic Lock Indicator - Technology Enhanced (ELI-te) coupling monitor system on FW35, FW33 and FW31 Series fifth wheels ONLY. For proper operation and maintenance of FW35 Series fifth wheels, refer to Document No. XL-FW10009UM-en-US, available on the internet at www.safholland.us. Refer to Document No. XL-FW10028UM-en-US for FW33 and FW31 Series fifth wheels.

SAF-HOLLAND highly recommends the use of only SAF-HOLLAND Original Parts.

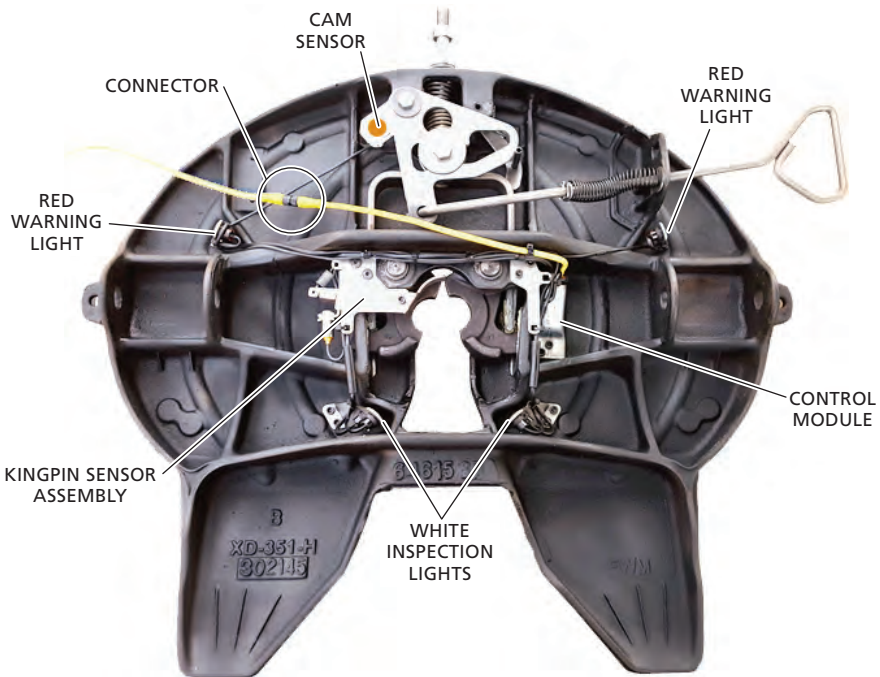
A list of technical support locations that supply SAF-HOLLAND Original Parts can be found at www.safholland.us or contact Customer Service at 888-396-6501.

2. Components

The ELI-te coupling monitor system is part of the fifth wheel top plate. It includes a control module, kingpin sensor, cam sensor, four bright white inspection lights located near the throat of the fifth wheel, and two red warning lights which shine outward from near the release handle and the opposite side. The system also provides electrical outputs to transmit coupling and warning information.

The ELI-te coupling monitor system receives electrical power from the tractor or converter dolly to which it is mounted. Power should be from an ignition-switched circuit.

The kingpin sensor assembly consists of a flag lever that is held by a return spring and operated by the kingpin. The flag lever activates the kingpin sensor and allows it to be located away from the kingpin.



ELECTRICAL SPECIFICATIONS

PIN	CABLE WIRE COLOR	FUNCTION	SPECIFICATION
1	Brown	Ground	
2	White	Power Input	8-16 V, 2 A MAX, 0.5 A Active, 0.010 A standby
3	Blue	Couple Power Output	0.3 A MAX
4	Black	Warning Power Output	0.3 A MAX

3. Operation

ELI-te coupling monitor systems installed on tractors should be connected to an ignition-switched power source. Systems installed on converter dollies receive power through the SAE J560 connector. When power is applied, the red warning lights may briefly flicker and then the system will activate all of the lights for about two (2) seconds to indicate system functionality. If no kingpin is present and the fifth wheel locks are open, all of the lights will go off and the system will be waiting to couple.

If a trailer is properly coupled while power is applied, the white inspection lights will activate for about five (5) minutes and then automatically go off. The couple output signal will remain activated while the trailer is properly coupled (**Figure 1**).

If a kingpin enters the fifth wheel and the wheel mechanism does not lock within about ten (10) seconds, the red warning lights will flash and the warning output will pulse until the kingpin or power is removed (**Figure 2**).

If the fifth wheel mechanism is locked without a kingpin fully engaged into the lock jaws, the red warning lights will flash and the warning output will pulse until the fifth wheel lock is released or power is removed (**Figure 3**).

When a kingpin is coupled in the fifth wheel and the fifth wheel lock is released, the red warning lights will flash until the kingpin is removed. If the kingpin is not removed within about one (1) minute, the warning output will also pulse until the kingpin or power is removed. After five (5) minutes, the system will re-test the coupling condition.

NOTE: If the fifth wheel release handle is incompletely pulled, the red warning lights could begin flashing even if the fifth wheel is not unlocked.

Figure 1

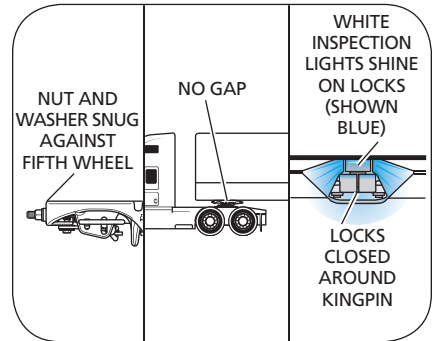


Figure 2

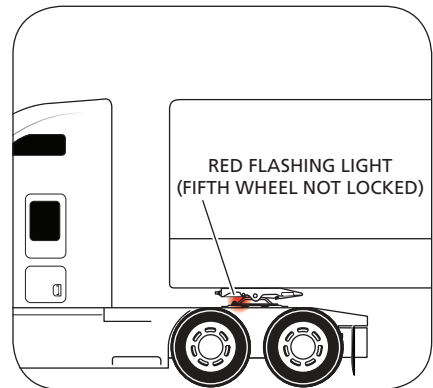
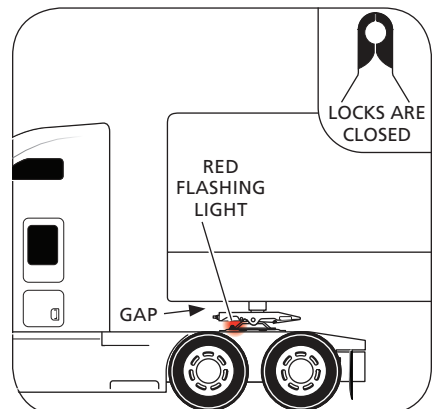


Figure 3



4. Maintenance

For proper operation and maintenance procedures for the FW35 Series fifth wheel, refer to Document No. XL-FW10009UM-en-US (available on the internet at www.safholland.us).

For proper operation and maintenance procedures for the FW33 and FW31 Series fifth wheels, refer to Document No. XL-FW10028UM-en-US (available on the internet at www.safholland.us).

The Electronic Lock Indicator - Technology Enhanced (ELI-te) coupling monitor system requires the following procedures at each fifth wheel preventative maintenance interval:

1. If the fifth wheel top plate is to be removed from the vehicle, first disconnect the ELI-te power cable by unscrewing and separating the M12 connectors. Use caution to prevent damage to the cables or contamination of the exposed electrical terminals.
2. Clean the front surface of the lights and sensors with soap and water. DO NOT use strong solvents. Keep the sensors clean of excess grease and debris.
3. Ensure that the kingpin sensor flag operates freely and is held in place by the return spring.
4. Check cables for chafing, tears, or damage.
5. Ensure the cable connections are secure.
6. For repair or replacement, contact SAF-HOLLAND Customer Service at 888-396-6501.

5. Verification of ELI-te Function

ELI-te operation can be verified using standard fifth wheel test procedures.

1. Ensure that the fifth wheel is unlocked and without a kingpin.
2. Apply power to tractor-mounted fifth wheels by turning on the ignition, and to dolly-mounted fifth wheels through the auxiliary/ABS circuit using a standard trailer testing power supply. Ensure that all lights turn on for 2 seconds, then off. (Red lights may flicker for up to 5 seconds before turning on.)

3. Use a HOLLAND lock tester TF-TLN-5001 to engage a kingpin into the fifth wheel. Ensure that only the white lights activate.

NOTE: Refer to Document No. XL-FW10082ST-en-US, available on the internet at www.safholland.us, which contains specific lock tester instructions.

4. Hold the kingpin in the forward position with the lever of the test tool and pull the fifth wheel release handle. Ensure that the red lights flash.

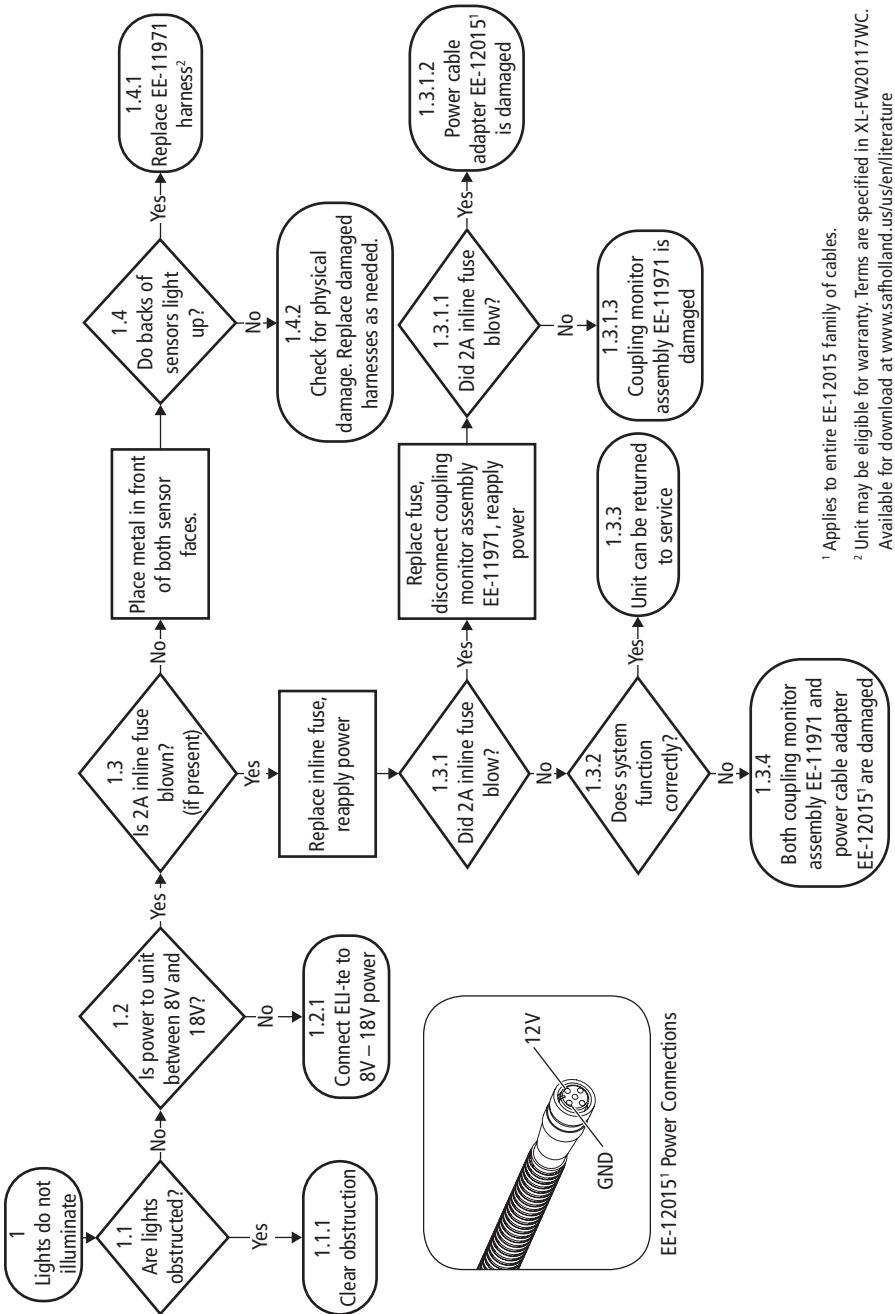
NOTE: When the fifth wheel is unlocked, the red lights will stop flashing when the kingpin moves back away from the locked position.

6. Troubleshooting

WARNING: While addressing any troubleshooting issues, **DO NOT** apply power to individual pins in the yellow M12 plug. Doing so can cause overheating and become a dangerous fire hazard.

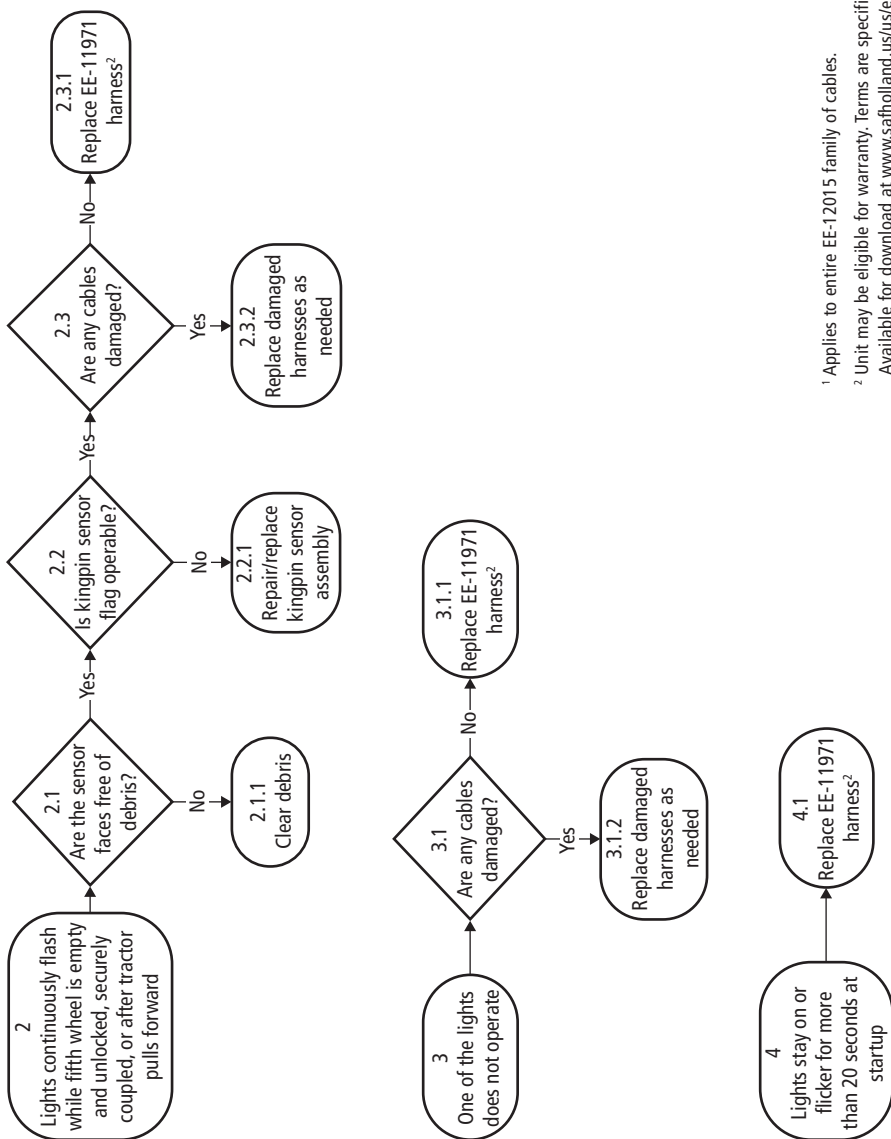
ELECTRICAL SPECIFICATIONS		
PROBLEM	POSSIBLE CAUSE	SOLUTION
Lights do not illuminate at startup.	Lights are obscured by foil masking, paint or dirt.	Remove debris and clean the lights.
	Power supply is absent or below 8 volts.	Ensure ignition switch is on and cables are connected. Test voltage at fifth wheel connector. Repair or replace faulty wiring and fuses, as needed.
	Power supply is above 18 volts.	Connect ELI-te to a 12-volt system.
	Kingpin sensor may not be getting power.	With power connected, place metal near the lock or kingpin sensor face and look for the indicator light on the cable-end (back side) of the kingpin sensor. If the indicator light illuminates, the ELI-te module has malfunctioned. Contact SAF-HOLLAND.
	Logic Box Module needs to be reprogrammed.	Contact SAF-HOLLAND.
Warning lights stay on steadily or flicker for more than 20 seconds at startup.	Module has malfunctioned.	Contact SAF-HOLLAND.
	Logic Box Module needs to be reprogrammed.	Contact SAF-HOLLAND.
Warning lights continuously flash while fifth wheel is empty and unlocked.	Metal particles may be stuck to the kingpin sensor or cam sensor face.	Clean grease and metallic debris off of plastic sensor faces.
	Kingpin sensor flag may be stuck or missing the spring.	Repair/replace Kingpin Sensor Assembly as needed.
	Sensor cable may be crushed and shorted.	Repair/replace faulty wiring, as needed.
	Logic Box Module needs to be reprogrammed.	Contact SAF-HOLLAND.

ELECTRICAL SPECIFICATIONS		
PROBLEM	POSSIBLE CAUSE	SOLUTION
Warning lights continuously flash while fifth wheel is securely coupled.	Kingpin sensor activated late due to slow lock mechanism. Flashing stops after 5 minutes.	Service lock mechanism in accordance with procedures in the FW35 Fifth Wheel Owner's Manual (Document No. XL-FW10009UM-en-US) or the FW33/31 Fifth Wheel Owner's Manual (Document No. XL-FW10028UM-en-US), both available on the internet at www.safholland.us .
	Flag on Kingpin Sensor Assembly may be damaged, loose and/or corroded and not fully activating the sensor.	Inspect the Kingpin Sensor Assembly for damaged flag, corrosion, loose sensor or missing spring. Repair/replace Kingpin Sensor Assembly as needed.
	Kingpin sensor may not be getting power.	With power connected, place metal near the lock or kingpin sensor face and look for the indicator light on the cable-end (back side) of the kingpin sensor. If the indicator light illuminates, the ELI-te module has malfunctioned. Contact SAF-HOLLAND.
	Logic Box Module needs to be reprogrammed.	Contact SAF-HOLLAND.
Warning lights continuously flash after tractor pulls forward.	Flag on Kingpin Sensor Assembly may be damaged, loose and/or corroded and not fully activating the sensor.	Inspect the Kingpin Sensor Assembly for damaged flag, loose sensor or missing spring. Repair/replace Kingpin Sensor Assembly as needed.
	Logic Box Module needs to be reprogrammed.	Contact SAF-HOLLAND.
One of the lights does not operate.	Cables may be damaged.	Repair/replace faulty wiring, as needed.
	Logic Box Module needs to be reprogrammed.	Contact SAF-HOLLAND.



¹ Applies to entire EE-12015 family of cables.

² Unit may be eligible for warranty. Terms are specified in XL-FW20117WC. Available for download at www.safholland.us/us/en/literature



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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.

SAF-HOLLAND USA • 888.396.6501 • Fax 800.356.3929
www.safholland.us

SAF-HOLLAND CANADA • 519.537.3494 • Fax 800.565.7753
WESTERN CANADA • 604.574.7491 • Fax 604.574.0244
www.safholland.ca

SAF-HOLLAND MEXICO • 52.55.5362.8743 • Fax 52.55.5362.8743
www.safholland.com.mx

info@safholland.com

SAF-HOLLAND INC.
1950 Industrial Blvd., Muskegon, MI 49442
www.safholland.com

