

Installation Manual

TL Series Liftgate

4000 / 5000 Lb. Capacity



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Introduction

This manual provides you with information necessary for the installation of the SAF-HOLLAND TL Series Liftgate.

NOTE: For liftgate components replacement, contact SAF-HOLLAND Customer Service at:
 U.S. 888-396-6501
 Canada 800-503-9847

Warranty

Refer to the complete warranty for the country in which the product will be used. A copy of the warranty certificate is included with the product as well as on the SAF-HOLLAND website (www.safholland.us and www.safholland.ca). It may also be ordered directly from SAF-HOLLAND; the address is shown on the back cover.

Notes, Cautions, and Warnings

You must read and understand all of the safety procedures presented in this manual before operating or starting any work on the liftgate.

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

Proper tools must be used to perform the maintenance and repair procedures described in this manual. Many of these procedures may require special tools.

IMPORTANT: Read this manual before using this product. Keep this manual in a safe location for future reference.

⚠ WARNING Failure to follow the instructions and safety precautions in this manual could result in death or serious injury.

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 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 Precautions

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

Please observe the following safety instructions in order to maintain the operational and road safety of your SAF-HOLLAND Liftgate:

1. You must be fully trained on the capabilities and the limitations of this equipment to operate the equipment properly.
2. When operating the liftgate, always stand to one side of the platform. Make sure that the area is clear of obstacles, other personnel, fingers, arms, hands, legs, and/or feet.

⚠️ WARNING Failure to keep area near your liftgate clear could create a crush and/or pinch hazard which, if not avoided, could result in death or serious injury.

IMPORTANT: DO NOT exceed liftgate capacity when raising or lowering platform.

⚠️ WARNING Failure to avoid overloading the liftgate may result in platform failure which, if not avoided, could result in death or serious injury.

3. Make sure liftgate is in stowed position when not in use.
4. NEVER step off moving equipment. Only step off the platform when it is in contact with the ground or at deck height when entering the vehicle.

⚠️ CAUTION Failure to lower the platform to ground level before stepping on or off platform could result in mild to moderate injury.

5. Check for slippery surfaces before stepping off the liftgate platform.
6. NEVER jump off the liftgate.
7. In an emergency situation, release the control switch to stop the liftgate operation.
8. SAF-HOLLAND liftgates require routine service, inspection, and maintenance in order to maintain optimum performance, proper operation, and to identify normal wear.

⚠️ WARNING Failure to properly engage the vehicle parking brake prior to operating or maintaining liftgate could allow vehicle movement which, if not avoided, could result in death or serious injury.

We highly recommend the use of only SAF-HOLLAND Original Parts.

A list of SAF-HOLLAND Technical Support locations to supply SAF-HOLLAND Original Parts can be found at www.safholland.us or by contacting SAF-HOLLAND Customer Service at U.S. 1-888-396-6501 or Canada 1-800-503-9847.

Installation Safety Precautions

1. DO NOT work underneath the liftgate without properly supporting the raised platform and lift frame in accordance with workplace safety requirements.
2. Never strike any part of the liftgate with a steel hammer.
3. Safety protection should always be worn as protection from pressurized fluid spray, flying debris, and other airborne matter when working with tools, power tools, welding equipment, and dangerous chemicals.

NOTE: Never operate the liftgate with the vehicle running unless instructed to by this manual for specific service items.

⚠️ WARNING Failure to turn off vehicle motor before commencing work could allow vehicle to move which, if not avoided, could result in death or serious injury.

4. While servicing or repairing equipment, always disconnect the electrical power to the pump motor and ensure that the platform and lift frame is supported on the ground or secured in the travel lugs.

5. When welding is required, ensure that the battery ground cable is disconnected and that all electrical equipment is completely electrically isolated before welding is initiated (**Figure 1**).
6. Before starting any welding, ensure that the area to be repaired is cleaned of debris and combustible material. Have a charged fire extinguisher available and know how to use it.
7. When searching for an oil leak, wear work gloves and use a piece of cardboard or wood as a detector. Wear a safety face shield or goggles for eye protection. NEVER use your bare hands to check for fluid leaks (**Figure 2**).

⚠ WARNING Failure to properly protect yourself when searching for hydraulic leaks could result in fluid injection into the skin which, if not avoided, could result in death or serious injury.

8. Pressure can remain in a hydraulic system after the power source and pump have been shut down. Ensure that there is no pressure in any of the hydraulic cylinders or hoses before performing work on components, or disconnecting any hoses (**Figure 3**).

⚠ WARNING Failure to depressurize the hydraulic system could result in fluid injection into the skin which, if not avoided, could result in death or serious injury.

NOTE: Batteries contain acid that can burn and they also produce gas that can explode, follow battery manufacturers' provided safety instructions when working on your battery.

⚠ CAUTION Failure to follow manufacturers' safety instructions when handling batteries may result in explosion which, if not avoided, could result in minor to moderate injury.

9. Inspect the equipment daily for potential fire hazards and make any necessary repairs immediately.
10. Inspect electrical wiring and connections, and hydraulic hose runs to ensure they are secure and not rubbing against other components.
11. Clean up any excess grease, oil accumulation and spillage immediately. Use only non-flammable products for cleaning the liftgate or components.

Figure 1

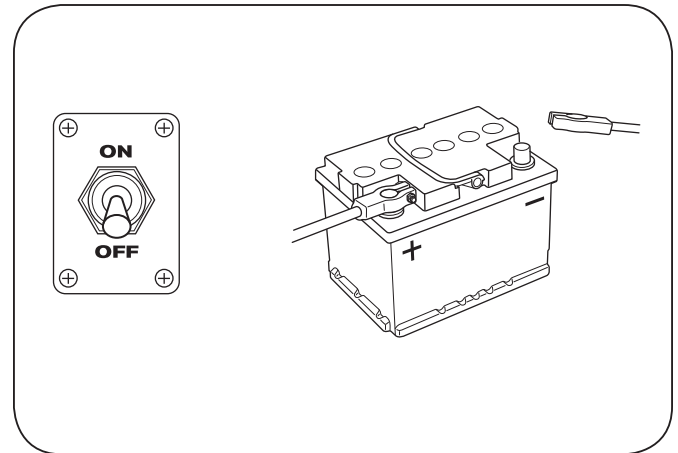


Figure 2

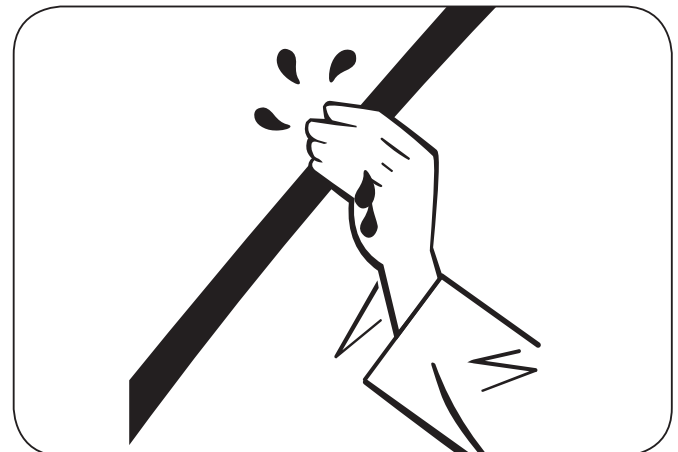


Figure 3



2. Welding Standards

2.1 Scope

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 - 20 ft.-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 shown **(Figure 4)**. Where the installation drawing specifies different than above, the drawing shall prevail.

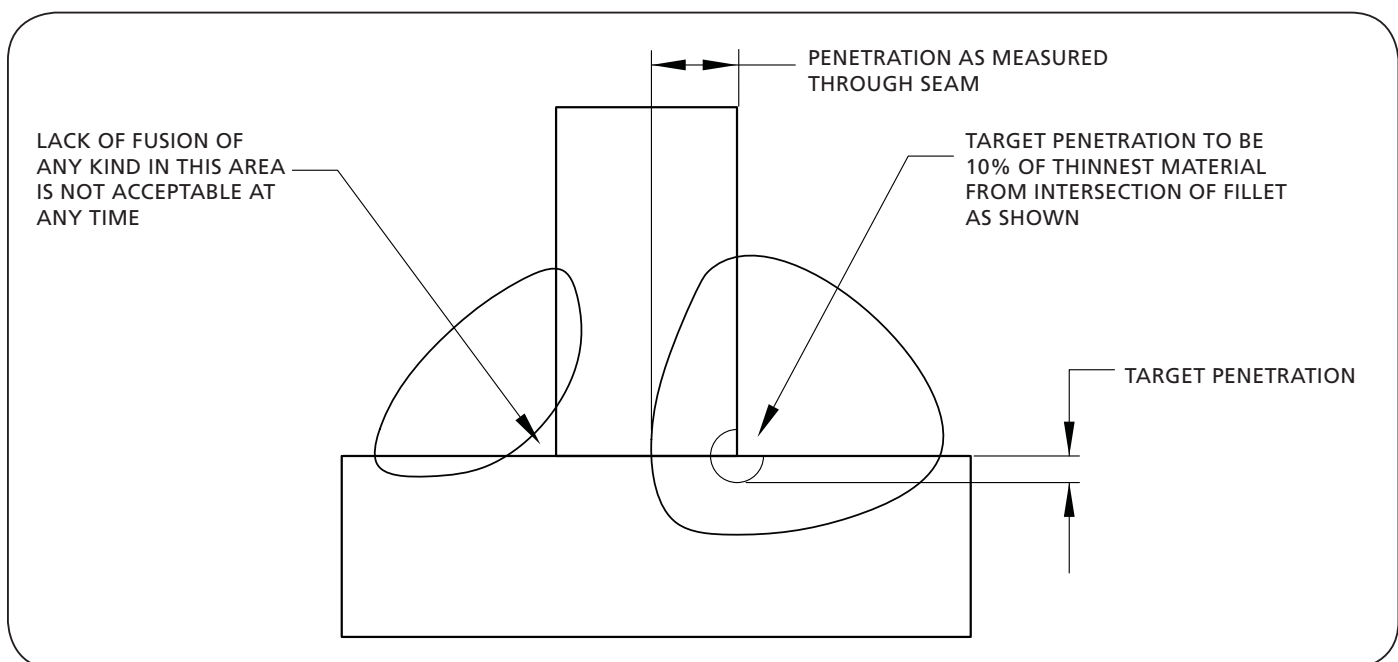
2.4 Procedures

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 4)**.

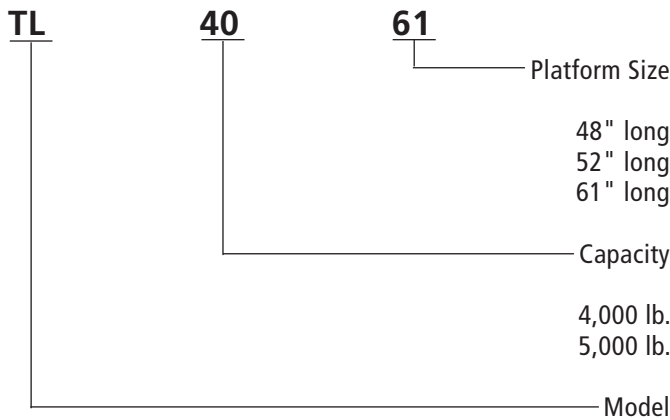
Figure 4



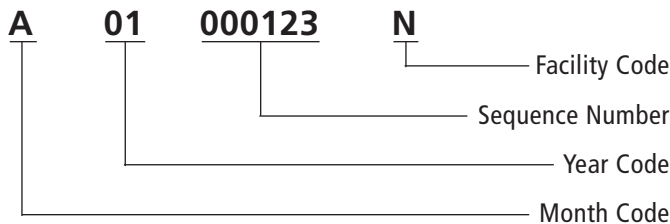
3. Liftgate Model and Serial Number Location

Each SAF-HOLLAND liftgate has a stamped metal tag that identifies the liftgate model and serial number (**Figure 5**). This tag is attached to the front roadside of the main tube (**Figure 6**). In order to properly identify your HOLLAND liftgate and its components when communicating with SAF-HOLLAND or your dealer, please record the model and serial numbers and refer to them when ordering replacement parts.

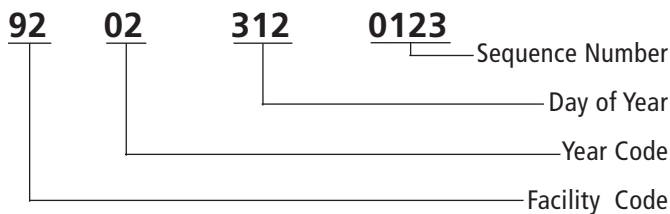
Model Number



Serial Number before November 1, 2008



After November 1, 2008



Equipment Model No.: _____

Serial No.: _____

Purchase Date: _____

Dealer: _____

Figure 5

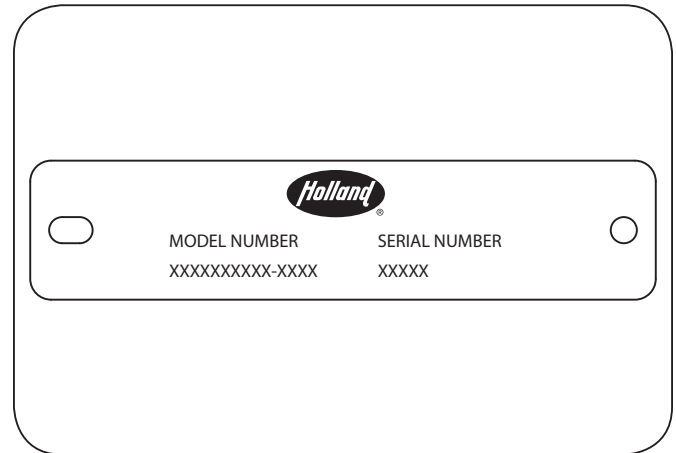
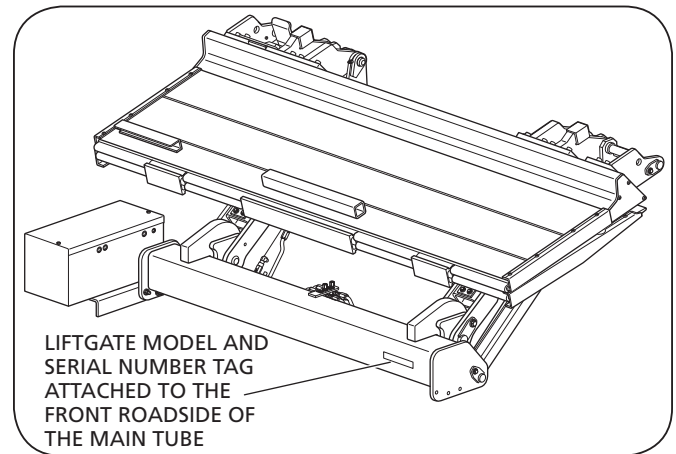
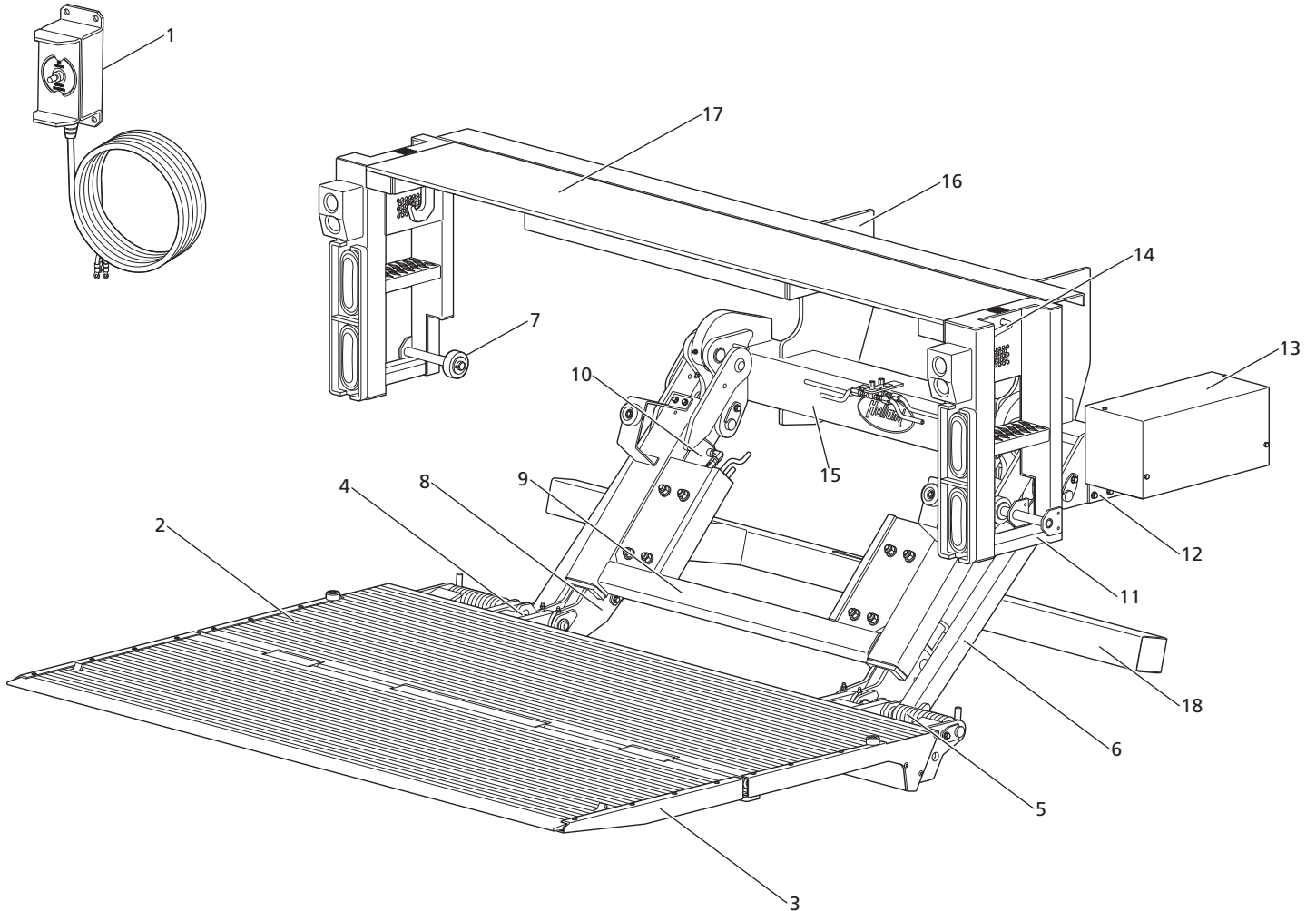


Figure 6



4. Liftgate Terminology



ITEM	DESCRIPTION
1	Control Station
2	Inner Platform
3	Outer Platform
4	Adjusting Bolts
5	Torsion Spring
6	Compression Member
7	Roller Opener
8	Parallel Arms
9	Lift Frame

ITEM	DESCRIPTION
10	Lift Cylinder
11	Step Braces
12	Pump Box Mount
13	Pump Box
14	Travel Latch
15	Main Tube
16	Attaching Plates
17	Deck Extension
18	Rear Impact Guard

5. Frame Preparation

Standard Mount

⚠ WARNING Failure to properly engage the vehicle parking brake prior to installing the liftgate may allow vehicle movement which, if not avoided, could result in death or serious injury.

NOTE: Prior to installation verify the vehicle rear doorsill will support required loads.

1. Remove bumper, step, or any protrusions that would prevent the deck extension from being mounted flush against the rear doorsill.
2. Follow the frame cutout requirements for your preferred installation (**Figures 7 or 8**).

NOTE: Standard Mount: Additional frame modifications may be necessary, depending on the application (**Figures 7 or 8**).

Figure 7

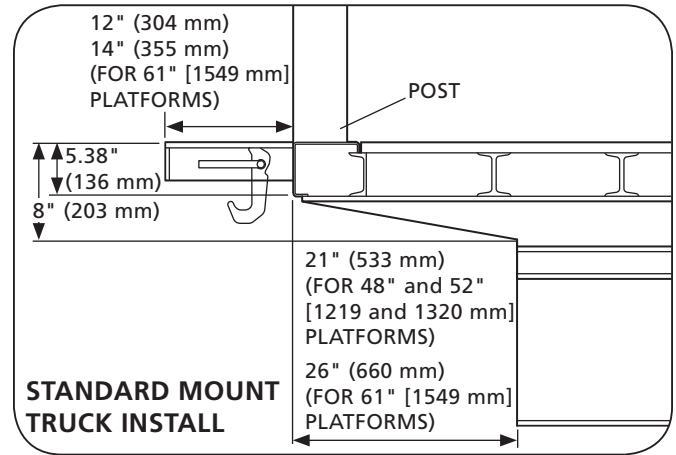
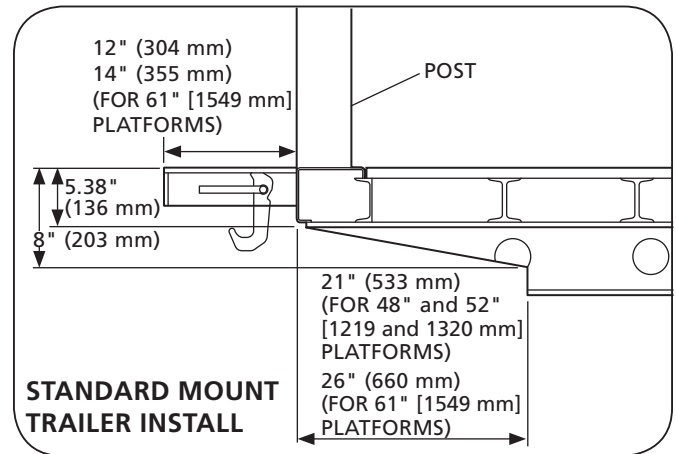


Figure 8



Flush Mount

⚠ WARNING Failure to properly engage the vehicle parking brake prior to installing the liftgate may allow vehicle movement which, if not avoided, could result in death or serious injury.

NOTE: Prior to installation verify the vehicle rear doorsill will support required loads.

1. Remove bumper, step, or any protrusions that would prevent deck extension from being mounted flush against the rear doorsill.
2. Follow the frame cutout requirements for your preferred installation (**Figures 9 or 10**).

NOTE: Flush Mount: Deck extension replaces the rear sill and is mounted flush with the rear frame posts (**Figures 9 or 10**).

Figure 9

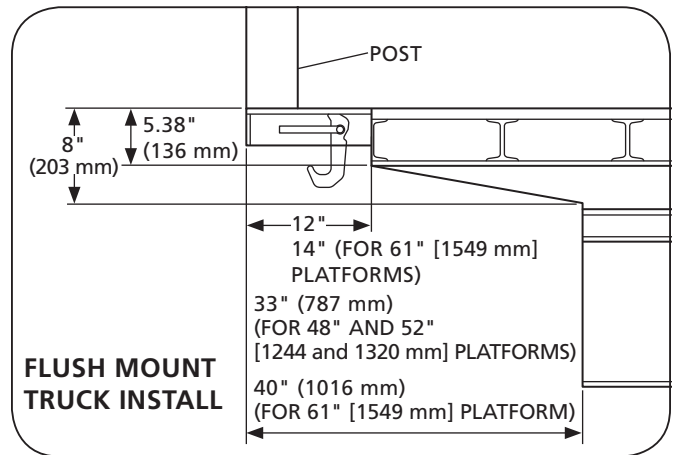
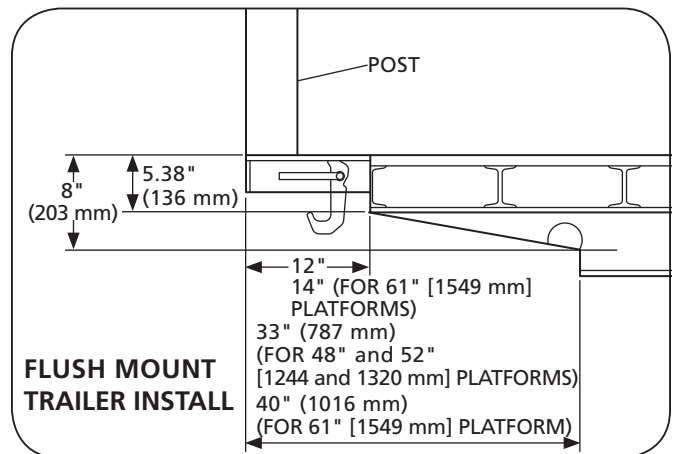


Figure 10



6. Deck Extension Installation

Position of Deck Extension, Standard Mount Only

1. Position and support the deck extension flush with the rear doorsill of the vehicle. Ensure the deck extension is flat and flush with the deck of the vehicle.

NOTE: Some vehicles may be higher at the back than the front or could be on unlevel ground; therefore, the deck of the truck may be sloped from the rear down to the front. Ensure that the deck extension is parallel to the truck deck.

2. The deck extension **MUST** be centered with respect to the vehicle chassis. This ensures that the liftgate is mounted on the centerline of the vehicle.
3. After the deck extension is positioned correctly, prep the vehicle frame. With a grinder, remove any galvanized paint within 1" to 4" (25 to 101 mm) of the weld surface.
4. Tack weld into position.
5. Weld per **Figures 11 and 12**.

NOTE: When welding is required, ensure that the battery ground cable is disconnected and that all electrical equipment is completely electrically isolated before welding is initiated.

CAUTION Failure to follow manufacturers' safety instructions when handling batteries may result in explosion which, if not avoided, could result in minor to moderate injury.

6. Touch up paint as required. For galvanized liftgates, touch up in accordance with the most recent release of ASTM A 780: Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings, which specifies the use of zinc-rich paints.

Figure 11

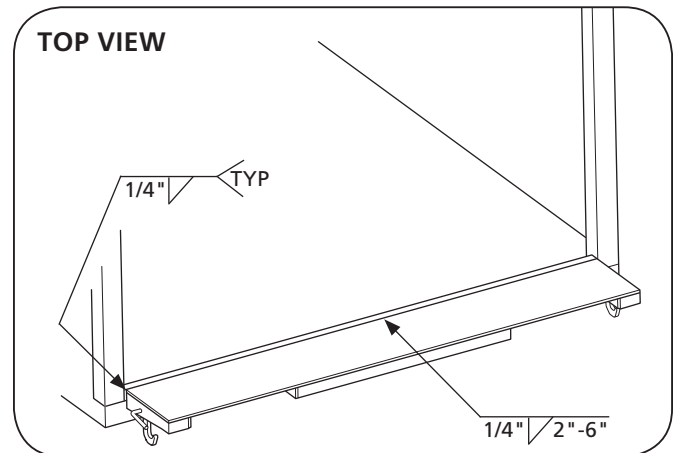
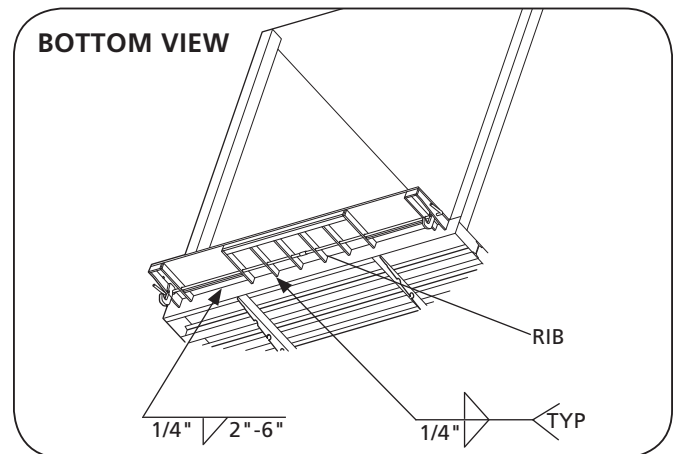


Figure 12



7. Liftgate Installation

Position of Deck Extension

NOTE: DO NOT work underneath the liftgate without properly supporting the raised platform and lift frame in accordance with workplace safety requirements.

WARNING Failure to properly support the raised platform and lift frame may result in the liftgate collapsing which, if not avoided, could result in death or serious injury.

1. Unfold the platform and flip over (**Figure 13**).
2. Tack weld two temporary 2" x 2" x 3/16" x 38" (50 x 50 x 4 x 965 mm) angle brackets to the deck extension with 18" (457 mm) of overhang. These brackets will help maintain alignment (**Figure 14**).

NOTE: When welding is required, ensure that the battery ground cable is disconnected and that all electrical equipment is completely electrically isolated before welding is initiated.

CAUTION Failure to isolate electrical equipment from ground prior to welding could result in overload which, if not avoided, could result in property damage.

3. Wrap a chain around the platform and attach the chain to a hoist with adequate capacity. Attach a "C"-clamp on both the roadside and curbside of the platform to ensure a chain does not slide out from under the platform (**Figure 15**).

WARNING Failure to wrap the chain around the platform may result in dropping the liftgate which, if not avoided, could result in death or serious injury.

Figure 13

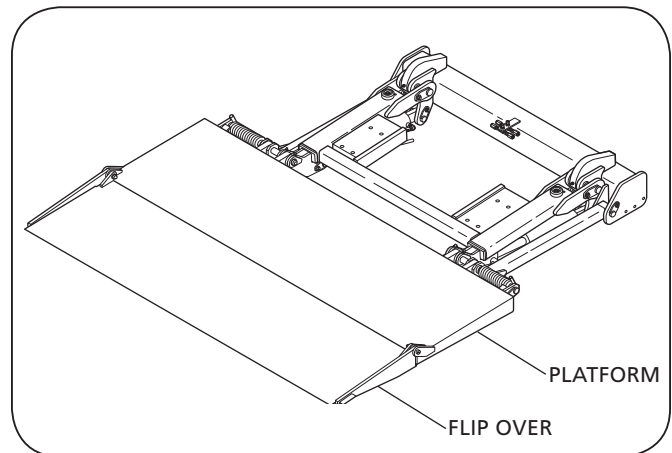


Figure 14

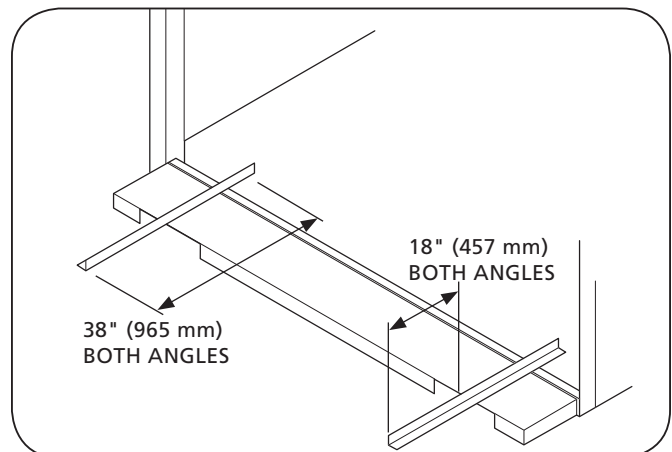
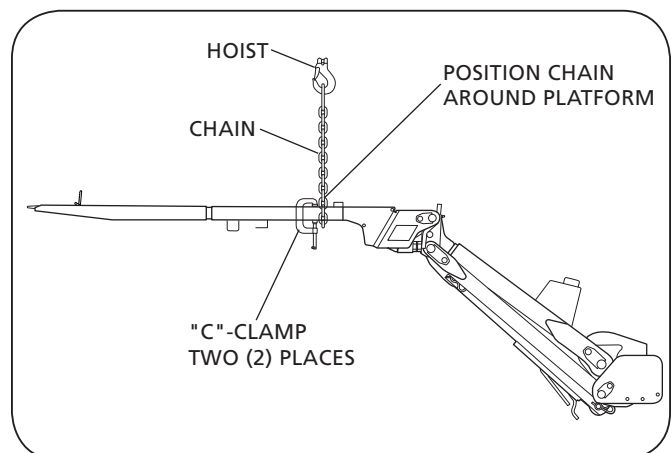


Figure 15



4. Lift the platform with the hoist and place a floor jack under the main tube (**Figure 16**).
5. While maintaining a 1/4" (6 mm) gap with a spacer between the deck extension and the platform, center the platform on the vehicle. Continue to support the platform with the floor jack.
6. The platform MUST be flush and parallel with the deck extension while maintaining a 1/4" (6 mm) gap between the deck extension and the platform (**Figure 17**).
7. Ensure the liftgate's entire length is positioned correctly from the top of the deck extension to the top of the main tube (**Figure 18**).
8. Use floor jacks to reposition the main tube parallel to the vehicle deck both front to rear and left to right.

Figure 16

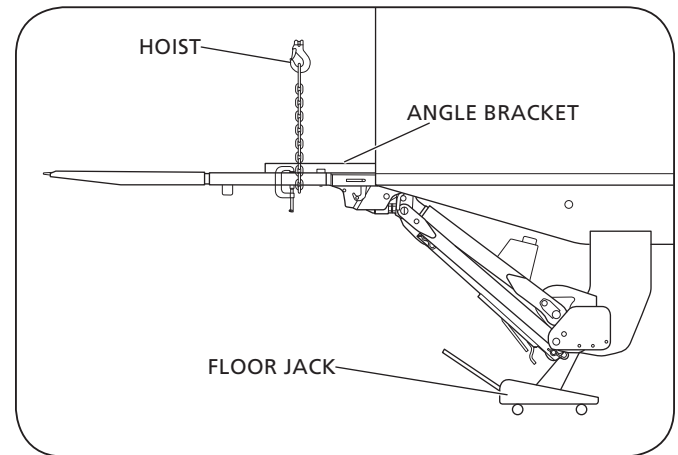


Figure 17

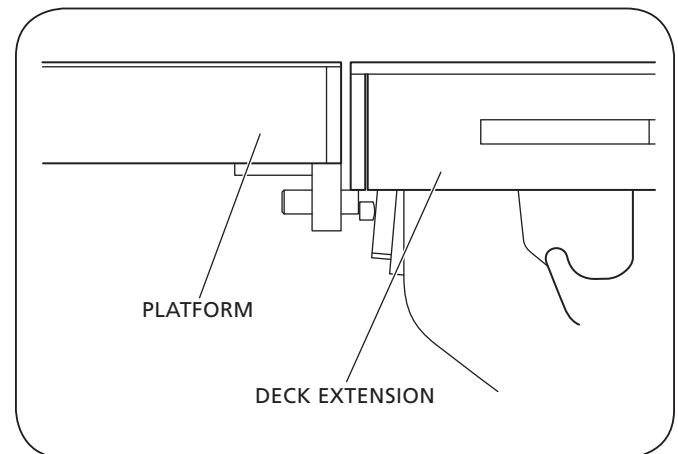
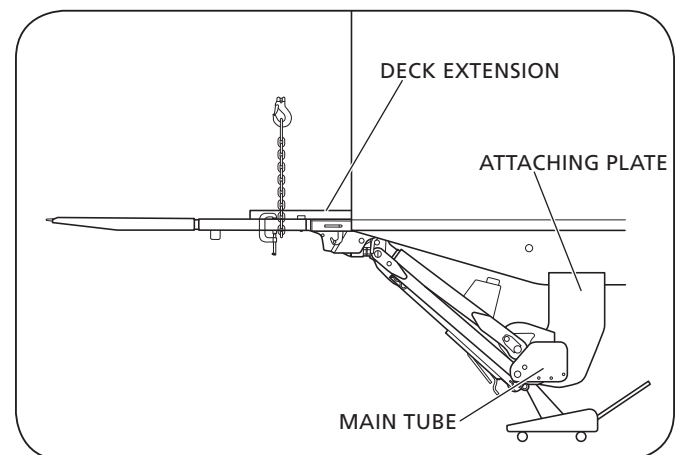
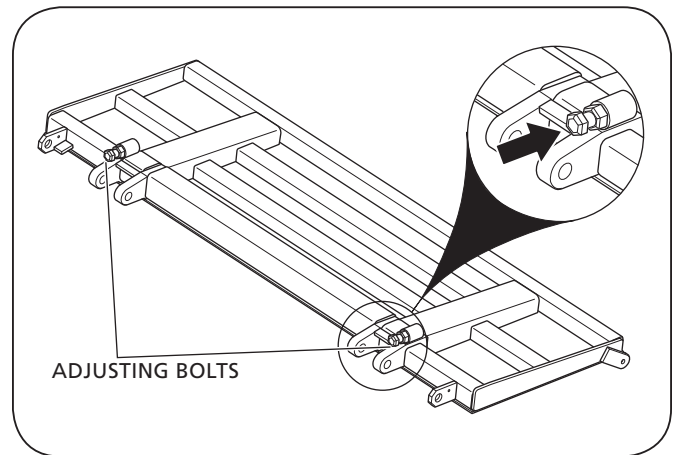


Figure 18



9. Use the platform adjusting bolts to lock the main tube in position (**Figure 19**).
10. After the main tube is positioned correctly, prep the vehicle frame. With a grinder, remove any paint or galvanizing within 1" to 4" (25-101 mm) of the weld surface.
11. Weld the liftgate attaching plates to the main tube and to the vehicle frame per **Figure 20**.

Figure 19

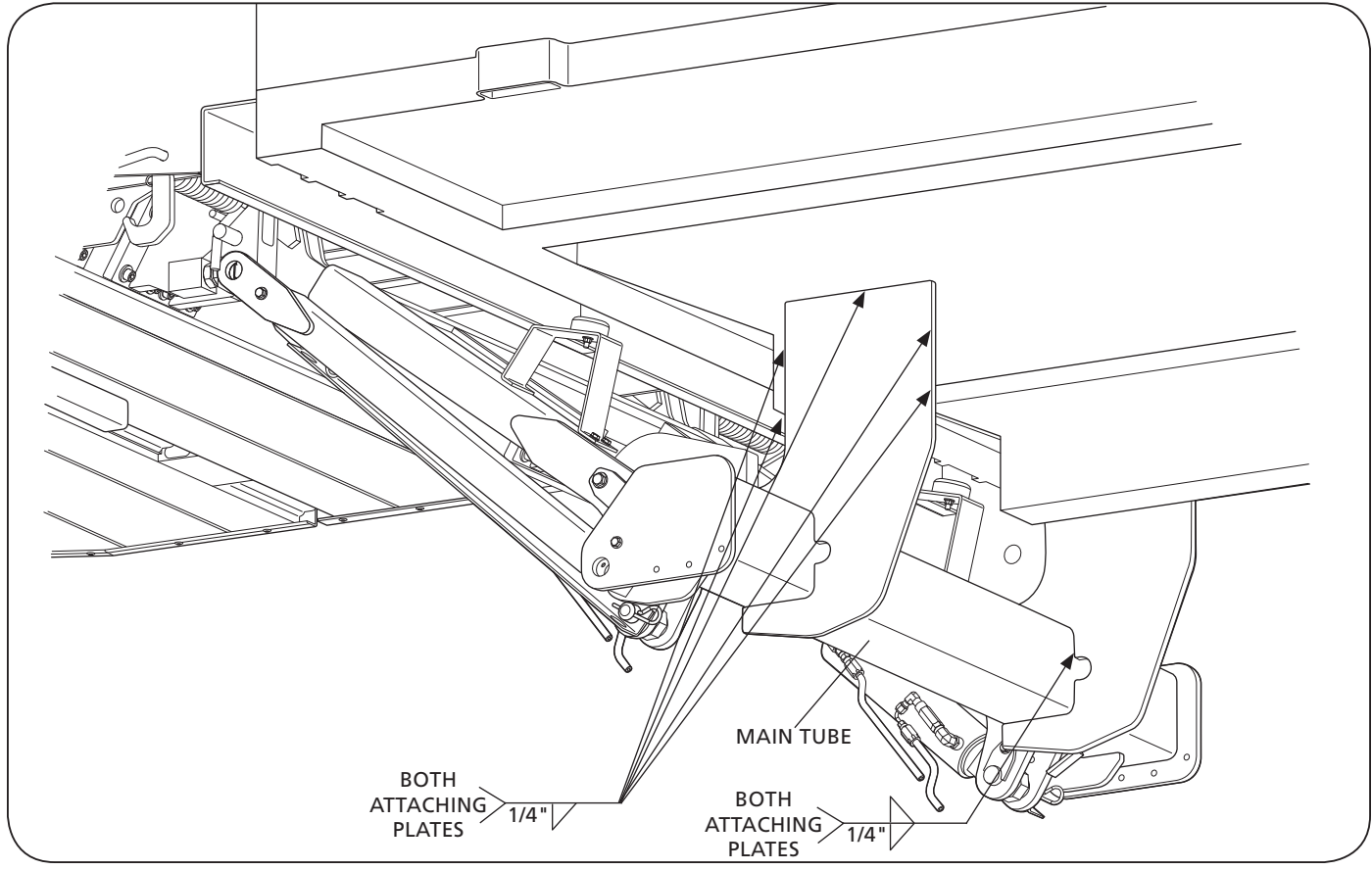


NOTE: When welding is required, ensure that the battery ground cable is disconnected and that all electrical equipment is completely electrically isolated before welding is initiated.

CAUTION Failure to isolate electrical equipment from ground prior to welding could result in overload which, if not avoided, could result in property damage.

12. Touch up paint as required. For galvanized liftgates, touch up in accordance with the most recent release of ASTM A 780: Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings, which specifies the use of zinc-rich paints.

Figure 20



8. Pump Assembly Installation

Main Tube Mount, Standard Option

Truck and Trailer Installation

1. Using the supplied fasteners, fasten the pump assembly to the end of the main tube (**Figure 21**).
2. Torque nuts to 30-40 ft.-lbs. (41-54 N•m).

Side Mount Box

1. Locate the pump box behind the curbside mud flap under the vehicle no more than 4' (1219 mm) from the back of the vehicle and 6" (152 mm) in from the curbside of the vehicle body (**Figure 22**).
2. Position the pump assembly brackets against the truck crossmembers.

NOTE: When welding is required, ensure that the battery ground cable is disconnected and that all electrical equipment is completely electrically isolated before welding is initiated.

CAUTION

Failure to isolate electrical equipment from ground prior to welding could result in overload which, if not avoided, could result in property damage.

3. After the main tube is positioned correctly, prep the vehicle frame. With a grinder, remove any paint or galvanizing within 1" to 4" (25-101 mm) of the weld surface.
4. Weld the pump box to the vehicle crossmembers (**Figure 23**).
5. Touch up paint as required. For galvanized liftgates, touch up in accordance with the most recent release of ASTM A 780: Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings, which specifies the use of zinc-rich paints.

Figure 21

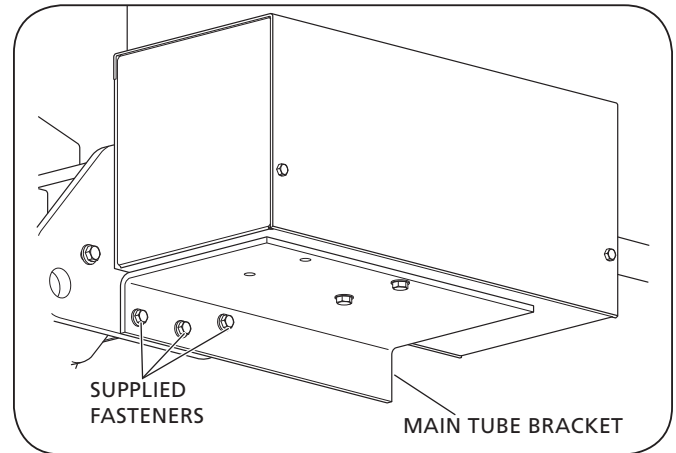


Figure 22

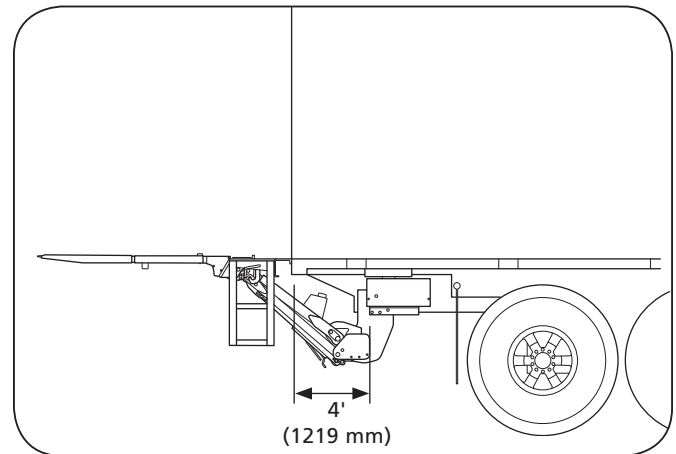
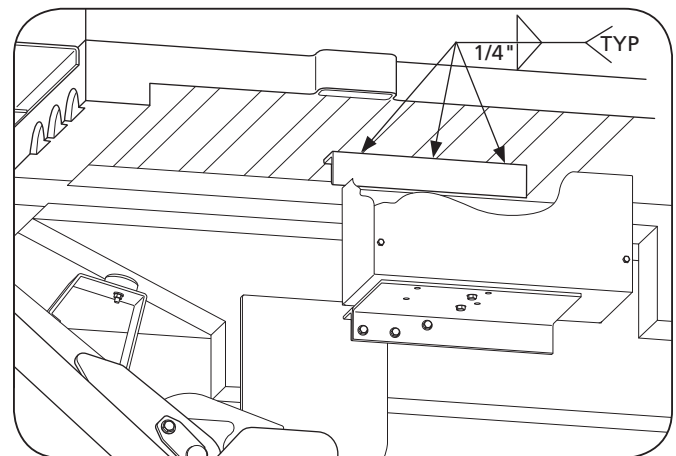


Figure 23



Side Mount and Battery Box

1. Locate the pump box assembly on the curbside under the vehicle on front of the sliding suspension but no more than 20' (6096 mm) from the back of the vehicle and 6" (152 mm) from the curbside of the vehicle body (**Figure 24**).
2. Position the pump assembly brackets against the trailer crossmembers.

IMPORTANT: Ensure the lid can be removed.

NOTE: When welding is required, ensure that the battery ground cable is disconnected and that all electrical equipment is completely electrically isolated before welding is initiated.

CAUTION Failure to isolate electrical equipment from ground prior to welding could result in overload which, if not avoided, could result in property damage.

3. After the main tube is positioned correctly, prep the vehicle frame. With a grinder, remove any paint or galvanizing within 1" to 4" (25-101 mm) of the weld surface.
4. Weld the pump and battery box to the vehicle crossmembers (**Figure 25**).
5. Touch up paint as required. For galvanizing liftgates, touch up in accordance with the most recent release of ASTM A 780: Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings, which specifies the use of zinc-rich paints.

Figure 24

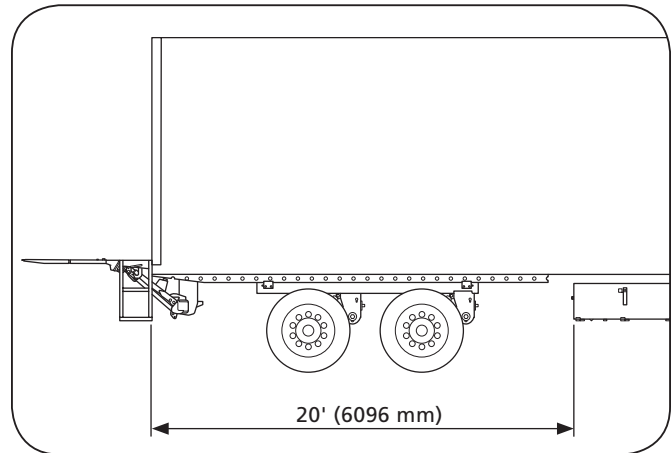
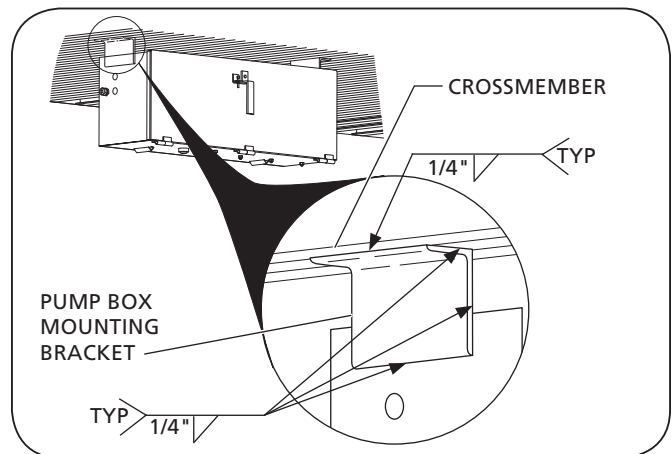


Figure 25



9. Hydraulic Hose Installation

NOTE: Packaged with your liftgate, there are two (2) hoses of equal length.

IMPORTANT: Hydraulic hoses and hydraulic fittings are shipped with end caps installed which **MUST** be removed before installation.

IMPORTANT: DO NOT remove the cylinder lock strap that supports the platform and lift frame.

⚠ WARNING Failure to support the platform and lift frame could result in a crush or pinch hazard, which if not avoided, could result in death or serious injury.

1. Connect a hose to the 'A' fitting on the main tube, feed through the supplied abrasive sleeve, then through the hole in the attaching plate (**Figure 26 and 27**).
2. Feed the hose through the grommet hole in the pump box. (**Figure 28**).
3. Connect the hose to the 'A' port on the power pack (**Figure 29**).
4. Connect a hose to the 'B' fitting on the main tube, feed through the supplied abrasive sleeve, then through the hole in the attaching plate (**Figure 26 and 27**).
5. Feed the hose through the grommet hole in the pump box (**Figure 28**).
6. Connect the hose to the 'B' port on the power pack (**Figure 28**).

Figure 26

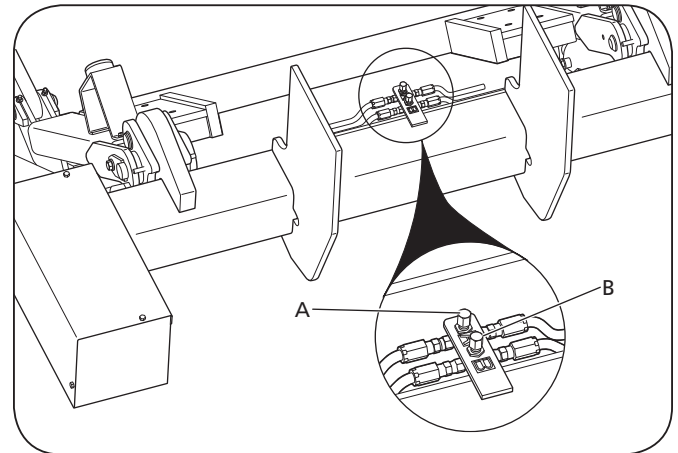


Figure 27

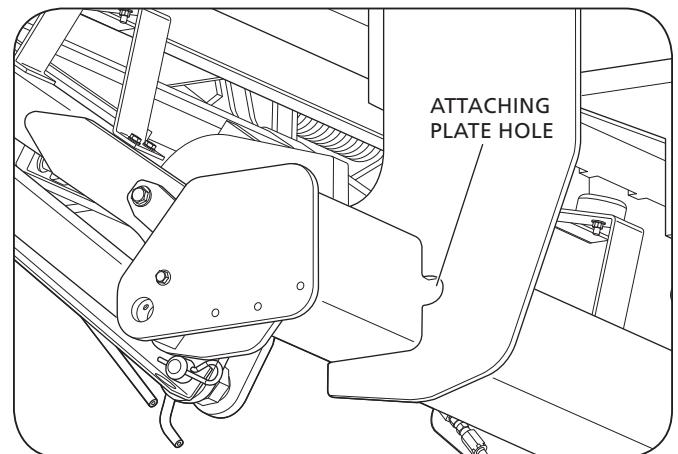
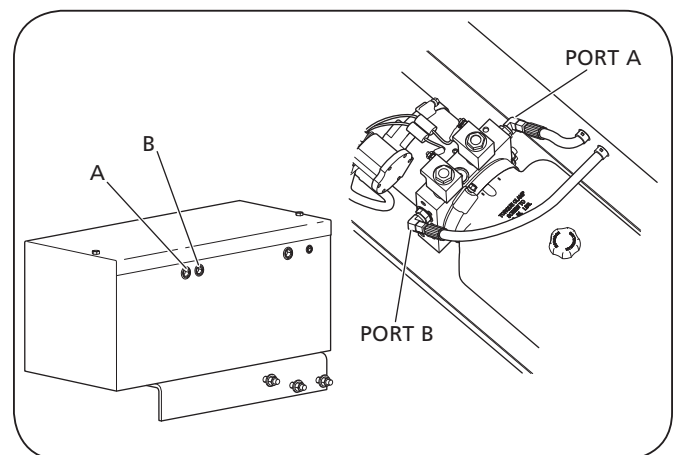


Figure 28



10. Toggle Installation

NOTE: Verify the vehicle power supply is disconnected prior to installing the toggle.

1. Position the toggle in a location that is accessible from the ground and deck level.
2. Run and secure the control station cable under the vehicle chassis to the pump box.
3. Feed the control station cable through the strain relief on the back of the pump box (**Figure 29**).
4. Connect the green wire from the control station cable to the power side terminal of the pump solenoid (**Figure 28**).
5. Connect the white wire from the control station cable to the coil with white wire from the diode harness (**Figure 30**).
6. Connect the black wire from the control station cable to the coil with black wire from the diode harness (**Figure 30**).
7. Coil the excess control station cable inside the pump box.

Figure 29

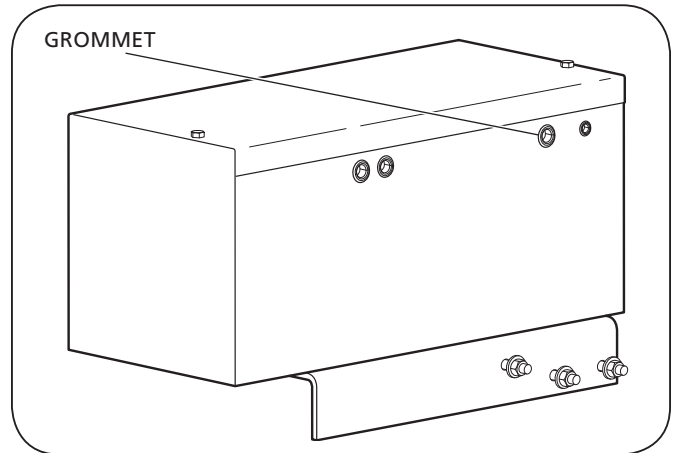
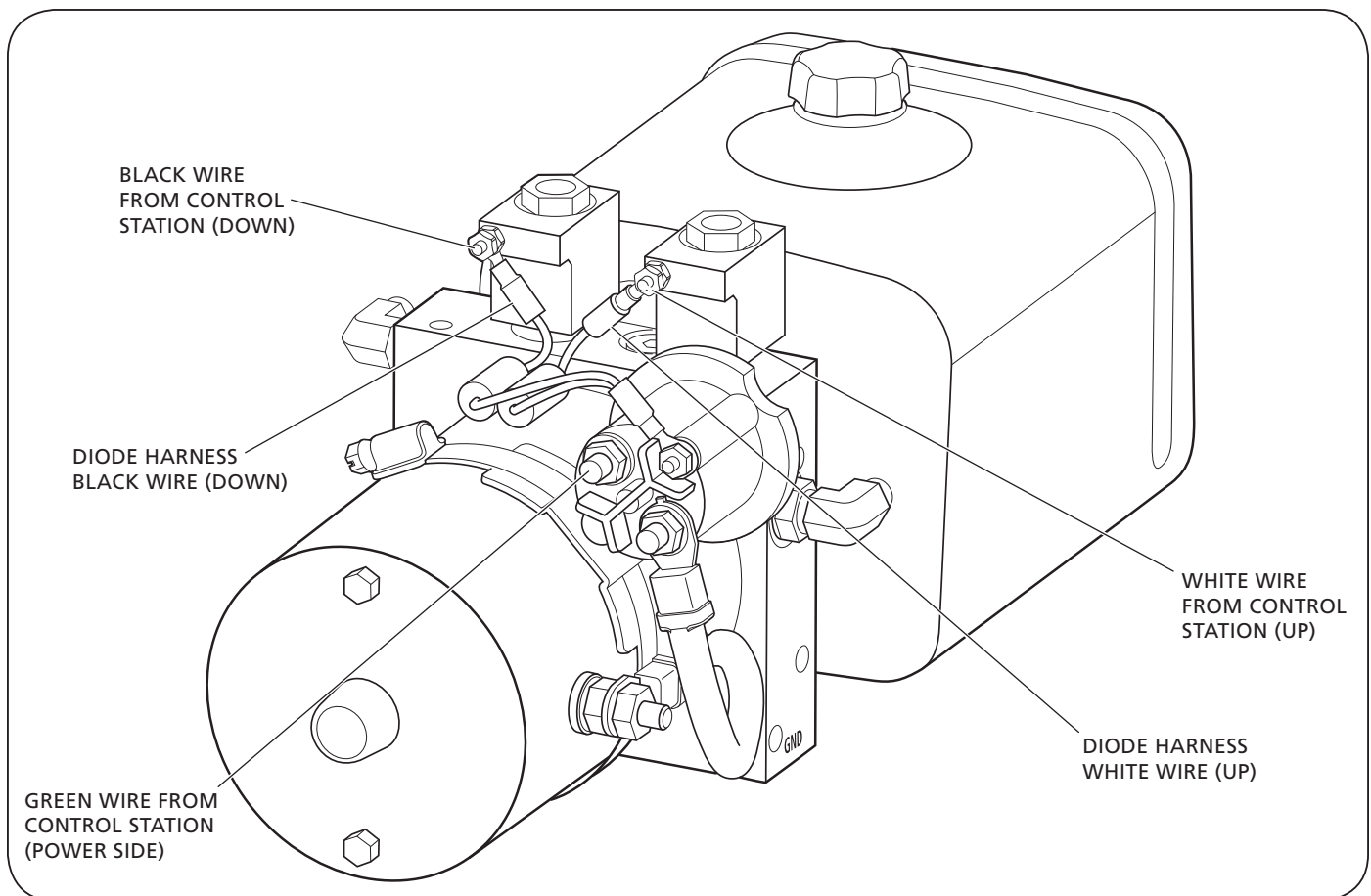


Figure 30



11. Electrical Installation

1. Identify the power source from either the truck or the connector at the front of the trailer on which your liftgate is to be installed.
2. Feed one end of the power cable through the strain relief in the pump box (**Figure 31**).
3. Strip the protective rubber coating from the end of the cable that's inside the pump box.
4. Install the cable end on the bare end of the cable and crimp securely into place.

CAUTION

Failure to properly secure the cable and may result in electrical overload which, if not avoided, could result in electrical component damage.

5. Connect the load end of the power cable as follows:
 - a. For a pump box without batteries connect the cable end to the power side of the motor start solenoid (**Figure 32**).
 - b. For a pump box with batteries connect the cable end to the power side of the 150A circuit breaker in the pump box (**Figure 33**).
6. Route the power cable along the underside of the vehicle to the front and secure to cross members.
 - a. For truck installations the cable needs to be long enough to reach the vehicle battery.
 - b. For trailer installations the cable needs to be long enough to reach the connector.

Figure 31

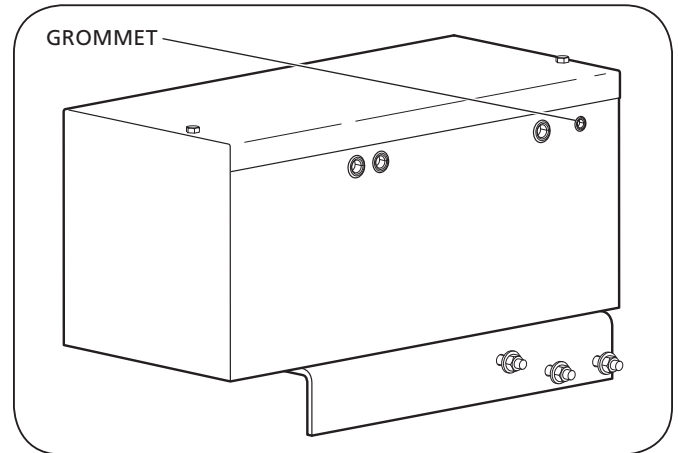


Figure 32

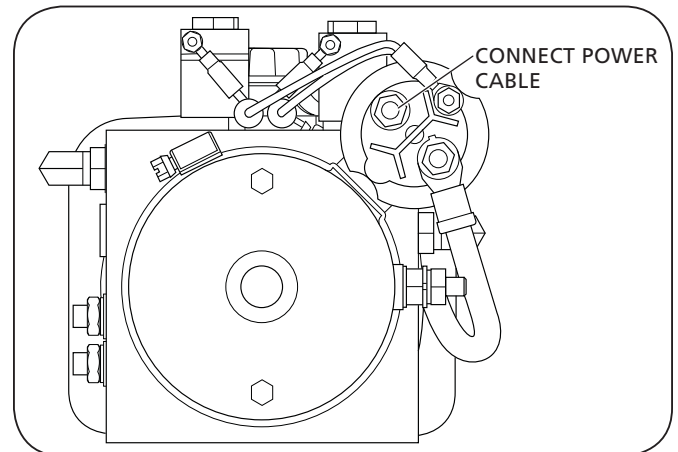
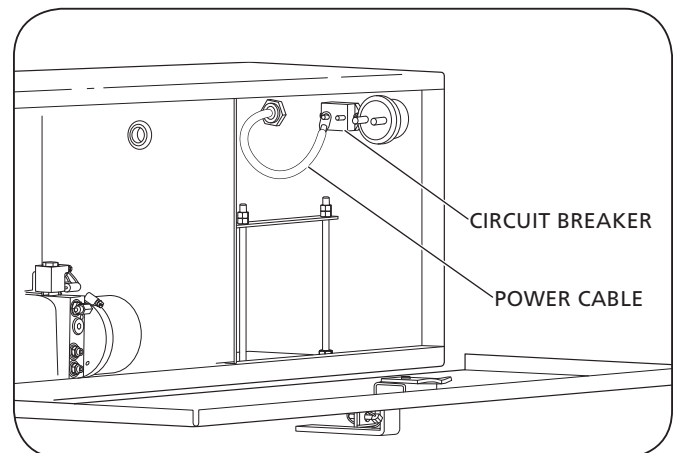


Figure 33



7. Connect the line end of the cable as follows:

For truck installation: (Figure 34).

- 7.1. Mount the circuit breaker as close to the truck battery as possible.
- 7.2. Mount the master disconnect switch in the cab where the driver can reach it.
- 7.3. Cut the cable at the master disconnect switch and circuit breaker positions. Prepare the cable ends per Steps 3 and 4.

NOTE: Ensure the master disconnect switch is in the "OFF" position prior to connecting the battery.

- 7.4. Connect the cable to the master disconnect switch, circuit breaker, and battery.

For truck installation: (Figure 35).

- 7.1. Mount the connector to the front of the trailer adjacent to the airline connections.
- 7.2. Cut the cable at the connector position and prepare the cable end per Steps 3 and 4.
- 7.3. Attach the cable to the connector.

IMPORTANT: Verify that the tractor's electrical system is properly designed to protect the liftgate and tractor from overload.

Figure 34

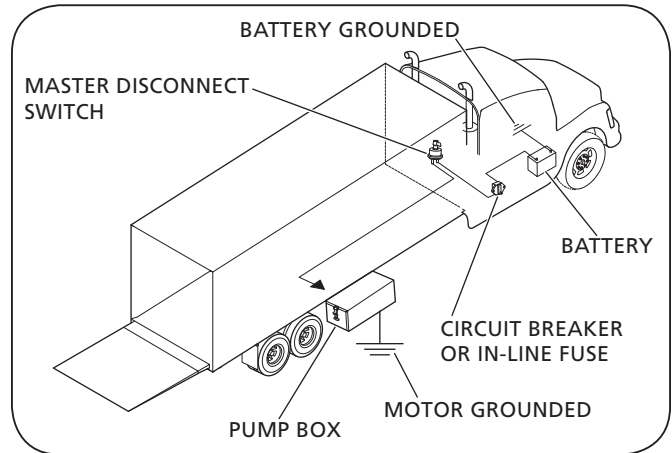
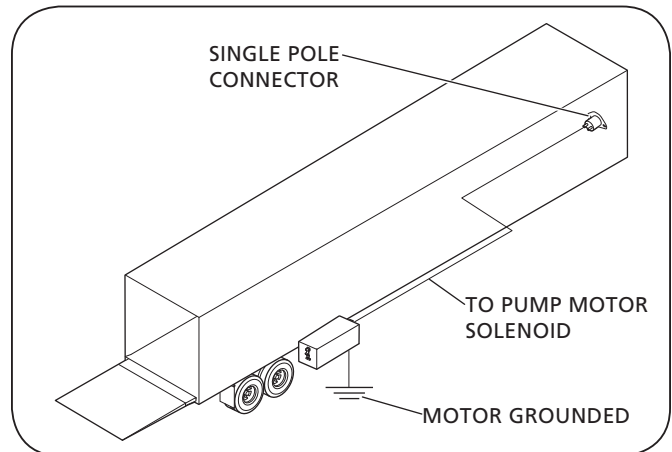


Figure 35



12. Auxiliary Battery and Cable Installation

IMPORTANT: SAF-HOLLAND recommends the use of 12V Group 31 Top Stud Post AGM or heavy duty dual purpose type batteries with a minimum of 170 reserve capacity/1000 CCA.

1. Position the auxiliary batteries so the positive terminals are towards the outside of the edge of the trailer.
2. Install the supplied battery tie down strap. Tighten the nuts on the threaded bars to ensure the batteries are securely seated.
3. Connect the red (positive) 12" (304 mm) battery cable to the positive terminals of the battery (**Figure 36**).
4. Connect the black (negative) 12" (304 mm) battery cable to the negative terminals of the battery (**Figure 36**).

IMPORTANT: Verify the master disconnect switch is "OFF" before connecting it to the battery.

CAUTION

Failure to turn the master disconnect switch off prior to connecting power may result in unintended pump operation which, if not avoided, could result in property damage.

5. Connect the red (positive) 18" (457 mm) battery cable that is already installed on the master disconnect switch to the positive terminal of the battery (**Figure 37**).
6. Connect the red (positive) 12" (304 mm) cable that is already installed on the circuit breaker to the positive terminal on the battery (**Figure 37**).
7. Disconnect the nut from the ground cable stud on the back of the pump box (**Figure 38**).

Figure 36

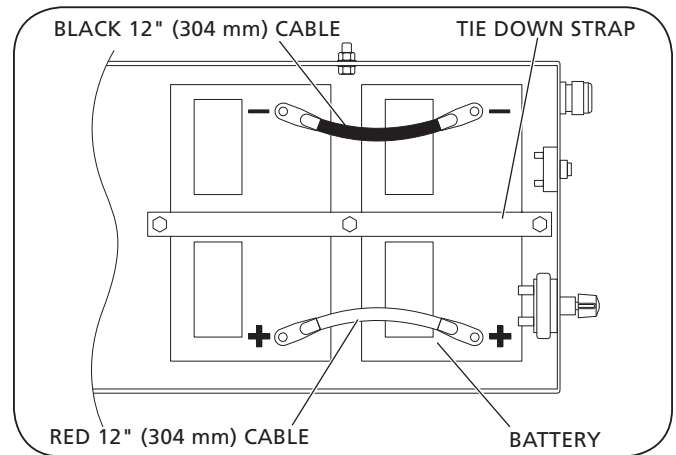


Figure 37

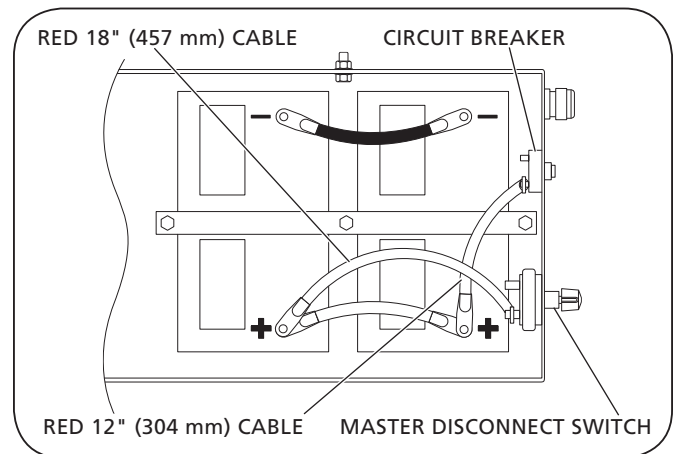
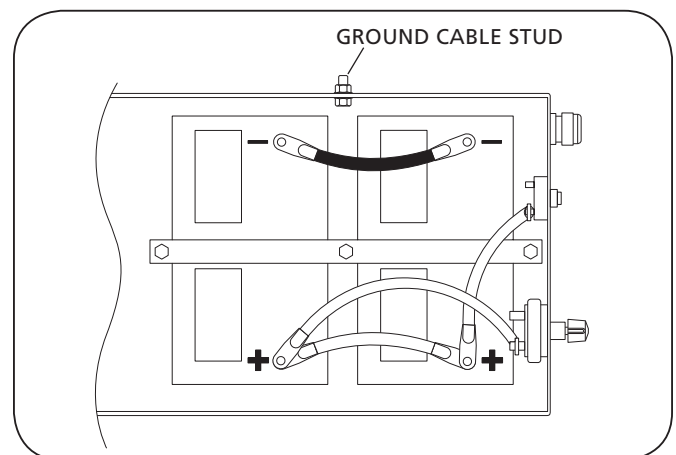


Figure 38



- 8. Connect the black ground cable from the ground cable kit to the ground cable stud on the back of the pump box (**Figure 39**).
- 9. Drill a 3/8" (9 mm) diameter hole in a crossmember close enough to the pump box to allow the ground cable end to be connected to the pump box and vehicle crossmember (**Figure 40**).
- 10. Install the other end of the ground cable onto the vehicle crossmember with the provided hardware (**Figure 41**).

Figure 39

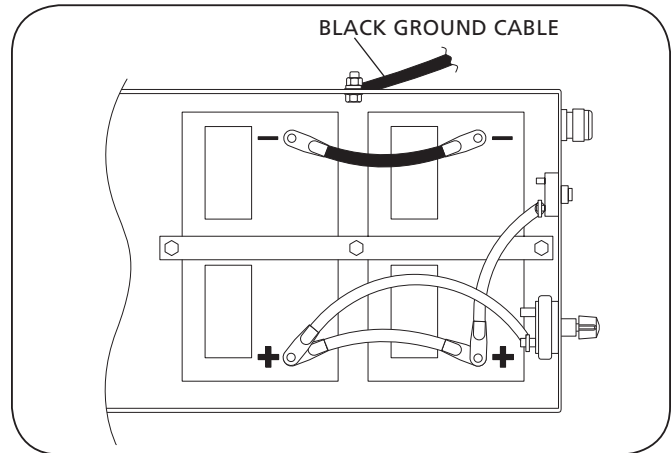


Figure 40

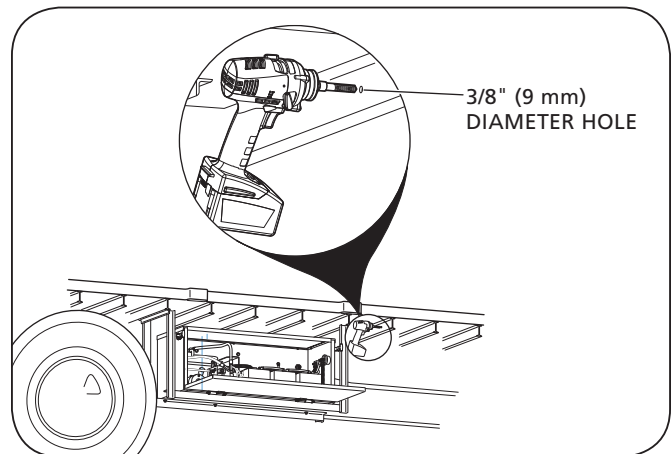
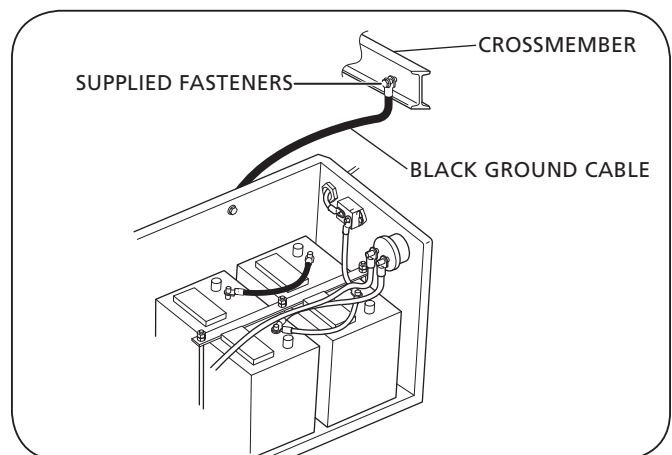


Figure 41



11. Connect the black ground cable that is already installed on the back of the pump box to a negative terminal on the battery (**Figure 42**).
12. Ensure that the battery connections are properly made (**Figure 43**).

NOTE: After tightening all electrical connections, apply a dielectric grease to prevent corrosion.

Figure 42

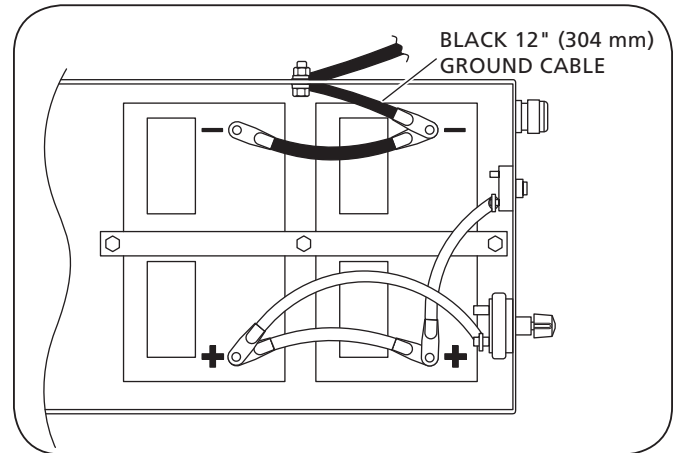
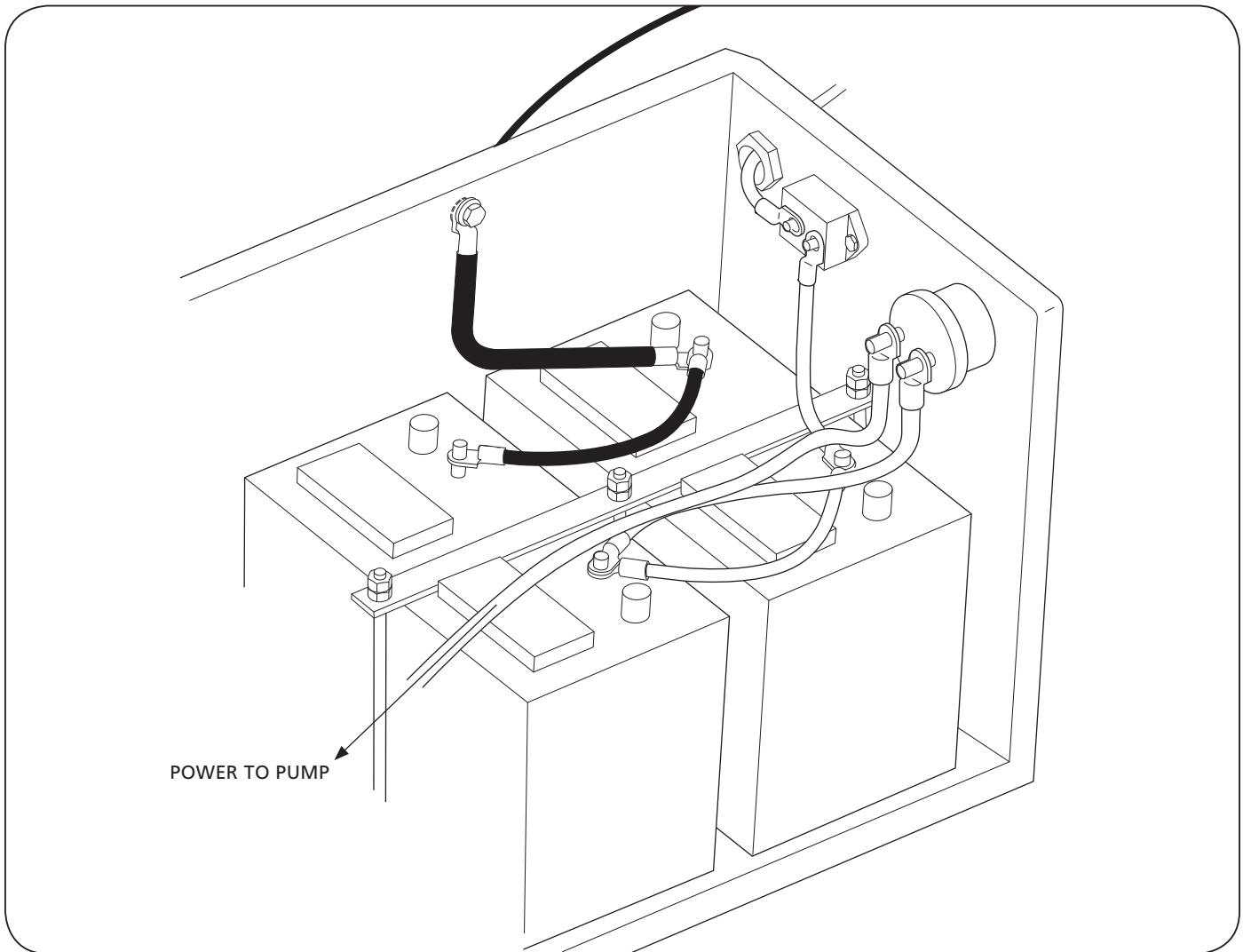


Figure 43



13. Initial Platform Lowering

1. Fill the pump reservoir with an approved fluid up to within 1/2" (12 mm) from the top of the reservoir. Refer to the approval table below.

TEMPERATURE RANGE	RECOMMENDED FLUIDS	
	MANUFACTURER	TYPE
Above 0° C (32° F)	Any	AW-32, ISO-32
-25 to 65° C (-15 to 150° F)	Esso, Exxon, Mobil, Shell	HYDRAUL 50, DTE 11, DONAX TD Low Viscosity
-35 to 50° C (-30 to 120° F)	Esso, Exxon, Shell, Petro-Can	UNIVIS N15 TELLUS T15 MV ARCTIC 15
-45 to 40° C (-50 to 100° F)	Esso, Exxon, Shell	MIL-H-5606, UNIVIS J-13 UNIVIS HV1 13, FLUID #4

2. Turn the master disconnect switch and circuit breaker to the "ON" position.
3. Push the control station toggle switch to the "UP" position to activate the pump. This will allow the pump to fill the hoses and cylinders with hydraulic fluid.
4. Release the switch, then refill pump reservoir to within 1/2" (12 mm) from the top of the reservoir.

IMPORTANT: DO NOT overfill the reservoir.

5. Remove all cylinder lock straps from the cylinder pins. There will be one (1) cylinder lock strap per cylinder (**Figure 44**).
6. Support the platform from underneath, and remove the temporary brackets that have been holding the platform in position that were installed in Section 6 (**Figure 14**).
7. Remove both roadside and curbside leveler lock straps from the front face of the main tube by grinding off the welds (**Figure 45**).
8. Remove the supports from underneath.
9. Push the control station toggle to the "DOWN" position and lower the platform to the ground.
10. Check the fluid level in the pump reservoir with the platform in the lowered position. If necessary, fill the pump reservoir to within 1/2" (12 mm) from the top of the reservoir.
11. Raise and lower the platform several times to check the operation of the unit.

Figure 44

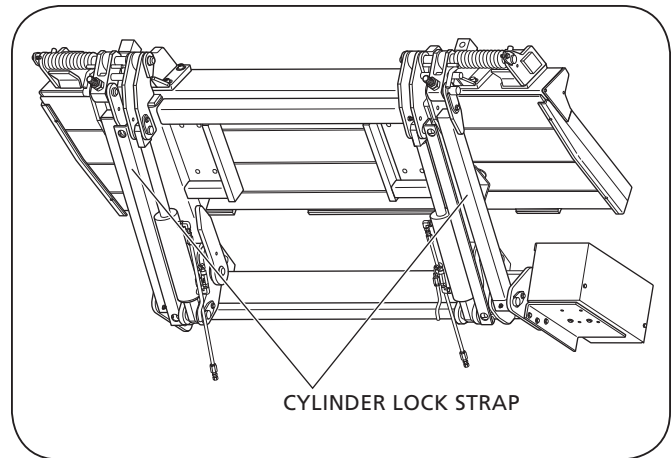


Figure 45

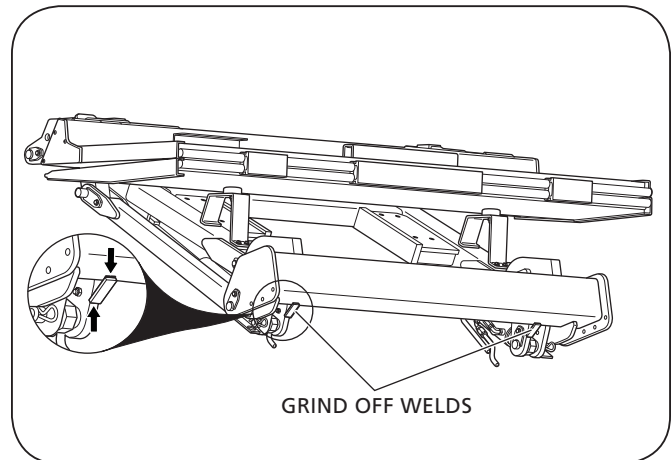
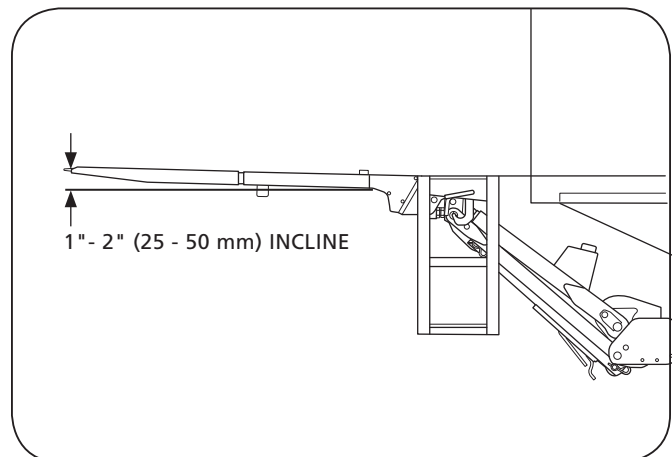


Figure 46



- With the platform in the "UP" position use the platform adjusting bolts to establish an incline of 1"-2" (25-50 mm) from platform base to platform tip (**Figure 46**).

IMPORTANT: Ensure that the hydraulic hoses do not interfere with the moving parts. Stretch or kink while the liftgate is in operation.

- Fold the platform in accordance with the operating instructions and check the clearances under the vehicle during the complete travel until the liftgate is fully stored.

14. Return Spring Installation

- Install one (1) return spring to each latch hook (**Figure 47**).

15. Latch Pin Installation

NOTE: When welding is required, ensure that the battery ground cable is disconnected and that all electrical equipment is completely electrically isolated before welding is initiated.

CAUTION Failure to isolate electrical equipment from ground prior to welding could result in overload which, if not avoided, could result in property damage.

- After verifying that the liftgate installation is proper, sound, and safe, install the two (2) latch pins that ensures safety when in the storage position.

IMPORTANT: When folded and fully raised, the liftgate **MUST** contact the rear doorsill or another rigid structural part of the vehicle, but not the extension plate.

- With the liftgate folded and fully raised, position the roadside and curbside latch pins (**Figure 48**).
- After the latch pins are in the correct position, prep the vehicle frame by grinding off any paint or galvanizing to within 1"-4" (25-101 mm) of the weld surface.
- Weld the latch pin to the liftgate (**Figure 49**).
- Touch up paint as required. For galvanized liftgates, touch up in accordance with the most recent release of ASTM A 780: Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings, which specifies the use of zinc-rich paints.

Figure 47

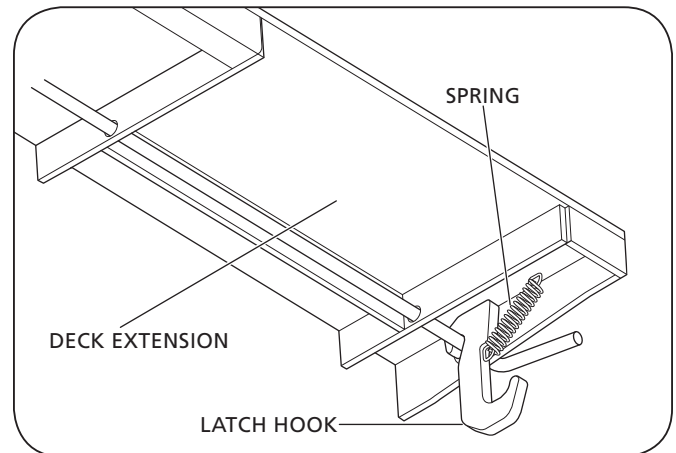


Figure 48

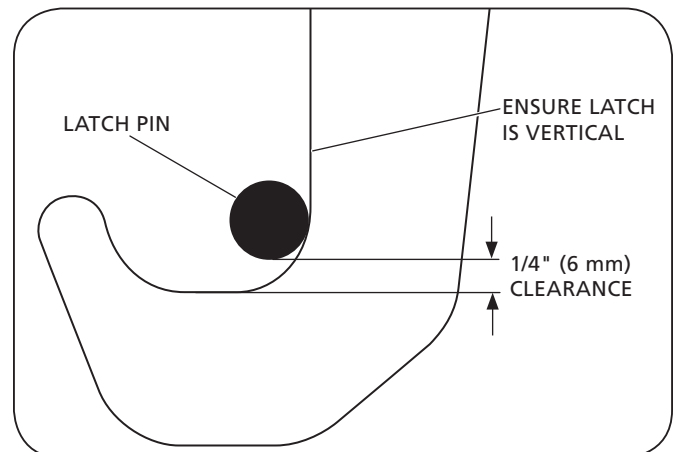
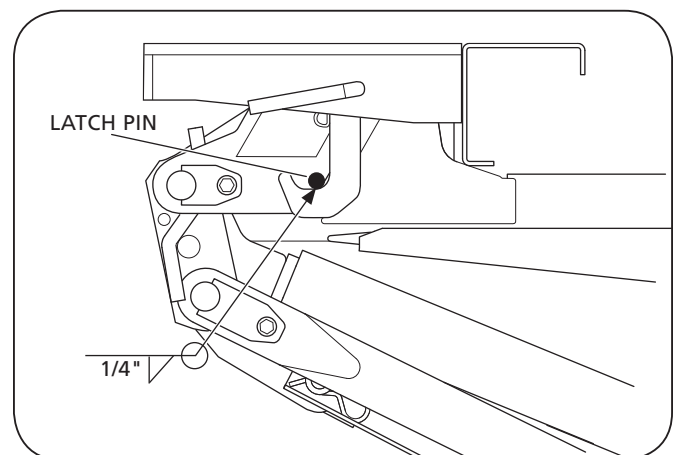


Figure 49



16. Step Brace Installation

IMPORTANT: SAF-HOLLAND requires that step braces be installed. The braces **MUST** be secured to the deck extension and to the vehicle crossmembers.

1. Ensure that the steps are straight and square so they do not affect the overall width of the vehicle or obstruct the operation of the liftgate.

CAUTION Failure to maintain proper clearance between steps and liftgate may interfere with proper operation which, if not avoided, could result in liftgate damage.

2. If installing the SAF-HOLLAND 5" (127 mm) notched step brace, skip to Step 4 (**Figure 50**).
3. If installing a rear impact guard, weld 2" x 2" x 1/4" wall x 3" (50 x 50 x 6 x 76 mm) long tube spacers on the ends of the deck extension **Figure 51**. These spacers will provide clearance for the rear impact guard while the liftgate is in operation.

IMPORTANT: Ensure the overall width of the deck extension and step braces is within vehicle regulations.

4. Position the steps so that the top of the step riser is flush with the top of the deck extension.
5. Prep the vehicle frame by grinding off any paint or galvanizing to within 1" to 4" (25-101 mm) of the weld surface.
6. Weld the steps to both the deck extension and rear sill (**Figure 52**).
7. Touch up paint as required. For galvanized liftgates, touch up in accordance with the most recent release of ASTM A 780: Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings, which specifies the use of zinc-rich paints.

Figure 50

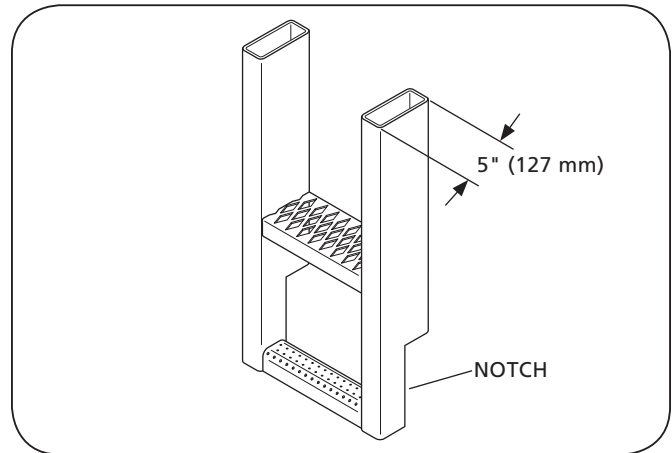


Figure 51

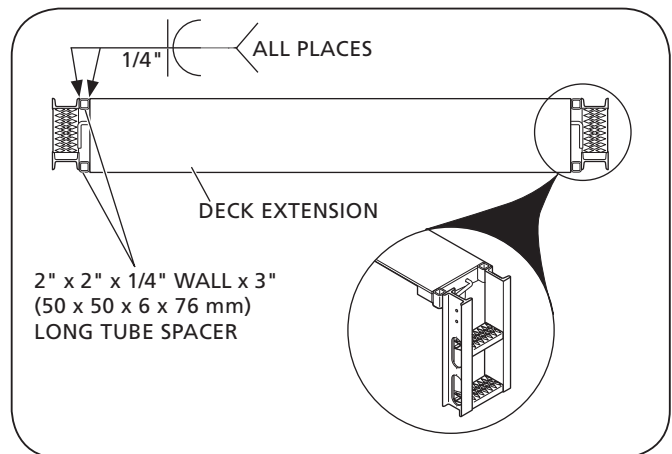
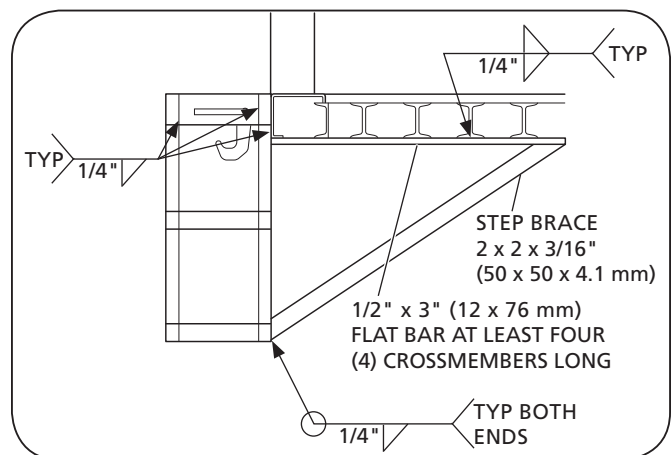


Figure 52



17. Roller Opener Installation

1. With the liftgate in the stored position, lower the platform and position the opener on the step so it contacts the tip of the ramp half of the platform (**Figure 53**).
2. After the roller openers are in the correct position, prep the vehicle frame by grinding off any paint or galvanizing to within 1"-4" (25-101 mm) of the weld surface.
3. Weld the roller opener into position (**Figure 54 and 55**). Repeat these Steps 1-3 for the opposite side.

NOTE: When welding is required, ensure that the battery ground cable is disconnected and that all electrical equipment is completely electrically isolated before welding is initiated.

CAUTION Failure to isolate electrical equipment from ground prior to welding could result in overload which, if not avoided, could result in property damage.

4. Touch up paint as required. For galvanized liftgates, touch up in accordance with the most recent release of ASTM A 780: Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings, which specifies the use of zinc-rich paints.

Figure 53

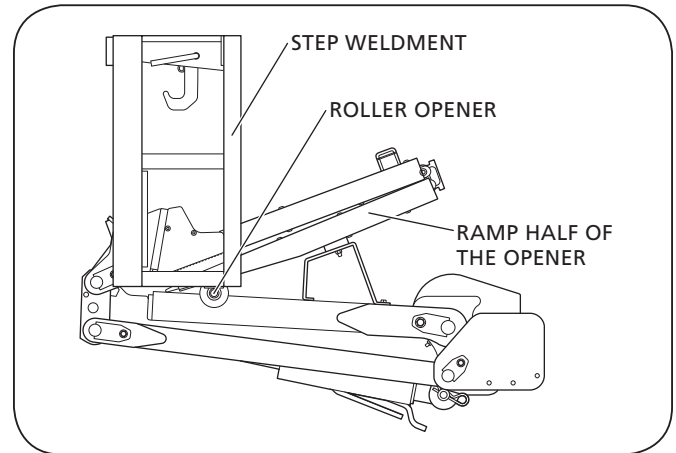


Figure 54

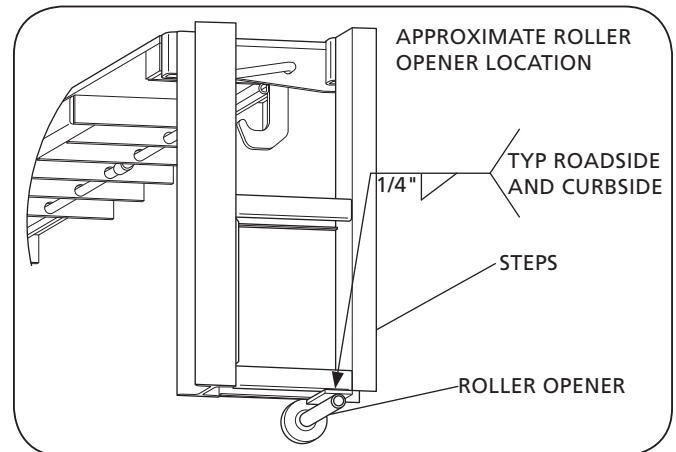
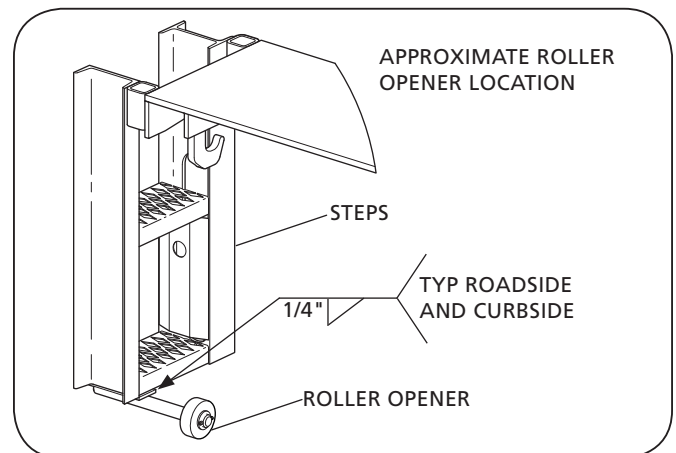


Figure 55



18. Rear Impact Guard Installation

IMPORTANT: DO NOT modify the rear impact guard in any way. Doing so may result in the rear impact guard becoming non-compliant with Federal Regulations.

1. Identify the TL liftgate MODEL that the rear impact guard will be installed.
2. Measure the VEHICLE DECK HEIGHT and VEHICLE WIDTH that the rear impact guard will be installed.
3. With the information obtained from Step 2, refer to the following table, to verify the correct rear impact guard is being installed (**Figure 56**).

MODEL	VEHICLE DECK HEIGHT	VEHICLE WIDTH	DIM X	DIM Y
TL5061	47" - 50"	102"	94"	15.5"
		96"	88"	
	51" - 53"	102"	94"	18.5"
		96"	88"	
	54" - 55"	102"	94"	20.5"
		96"	88"	
TL4061	47" - 50"	102"	94"	15.5"
		96"	88"	
	51" - 53"	102"	94"	18.5"
		96"	88"	
	54" - 55"	102"	94"	20.5"
		96"	88"	
TL4048/52	45" - 48"	102"	94"	16.1"
		96"	88"	
	49" - 51"	102"	94"	19.1"
		96"	88"	
	52" - 55"	102"	94"	23.1"
		96"	88"	

4. Using the control station, lower the liftgate to the ground and open the platform in accordance with the TL Operations and Maintenance Manual XL-TG10150UD-en-US supplied with your liftgate (**Figure 57**).
5. Turn the liftgate master disconnect switch to the "OFF" position.

WARNING Failure to turn the liftgate master disconnect switch to the "OFF" position before working under the liftgate could allow for the operation of the liftgate, which if not avoided, could result in death or serious injury.

6. Slide the rear impact guard under the liftgate lift frame and position the rear impact guard mounting plates (**Figure 57**).
7. Align the rear impact guard mounting plate holes with the lift frame rear impact guard mounting holes (**Figure 58**).
8. Install the provided 5/8" x 2-1/4" bolts, washers and nuts into the eight (8) rear impact guard mounting holes (**Figure 58**).
9. Torque each nut to 200 ft.-lbs. (271 N•m).

Figure 56

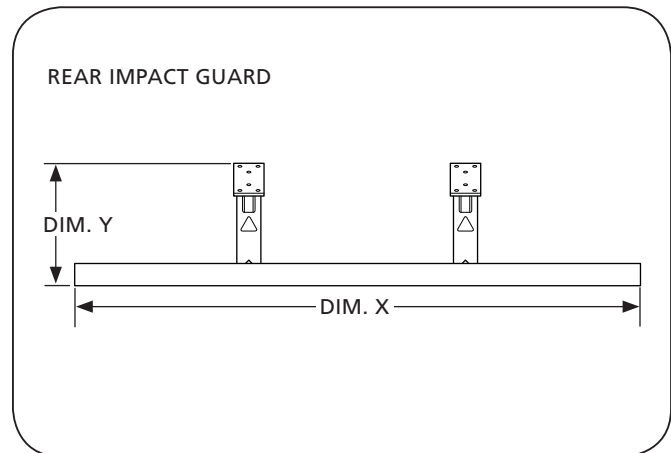


Figure 57

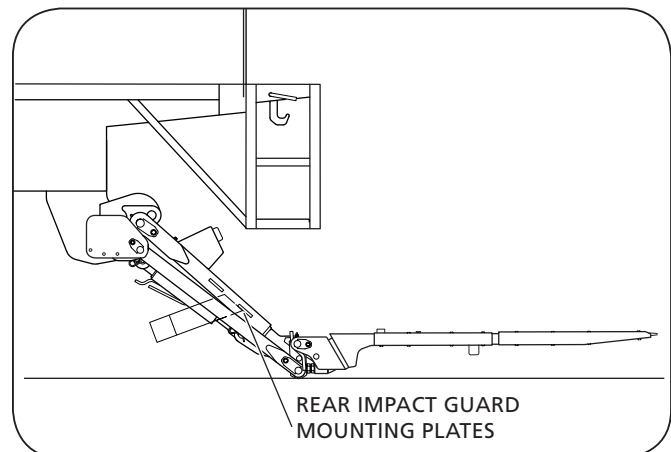
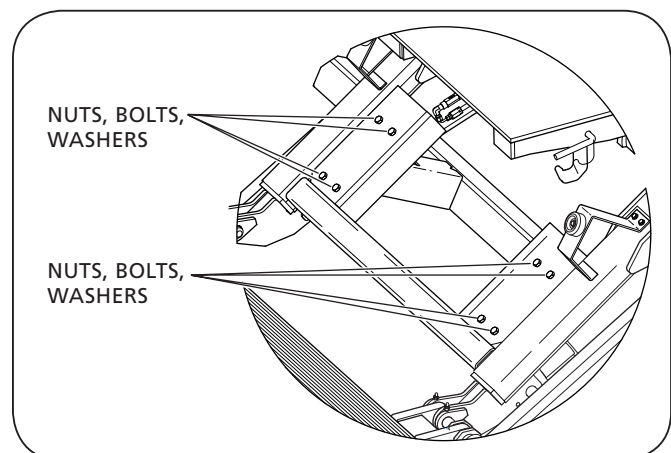


Figure 58



19. Decal Installation

IMPORTANT: All decals **MUST** be installed, maintained, and kept visible and legible.

Prior to putting the vehicle into service, install all supplied decals listed in the table below and **Figures 60 and 61**.

DECAL	QTY	ENGLISH	FRENCH	DESCRIPTION
A	2	XB-51913	XB-51914	Max. Capacity 4000
	2	XB-58882	XA-58883	Max. Capacity 5000
B	2	XB-51170	XB-57067	Pinch Point
C	1	XB-54995	XB-64388	High Pressure Fluid
D	2	XB-50528	XA-62611	Safety Latches
E	1	XB-50346	XB-50353	Warning
F	1	XB-62815	XB-62878	Warning - Riding Platform
G	1	XB-50345	XB-50352	Instructions
H	1	XB-50344	XB-50349	Caution - Always Stand Clear

Figure 60

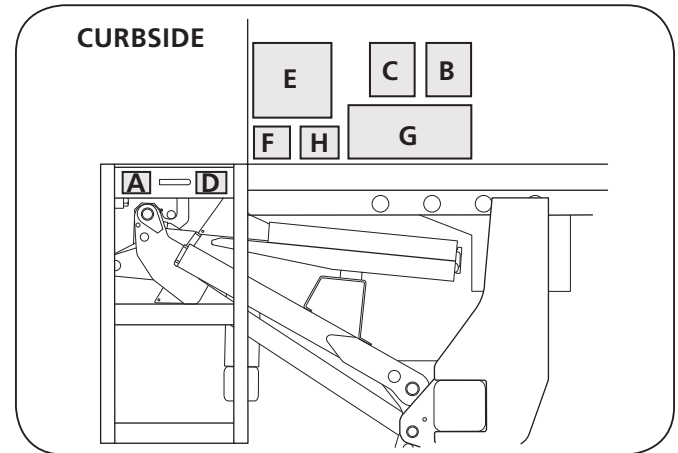
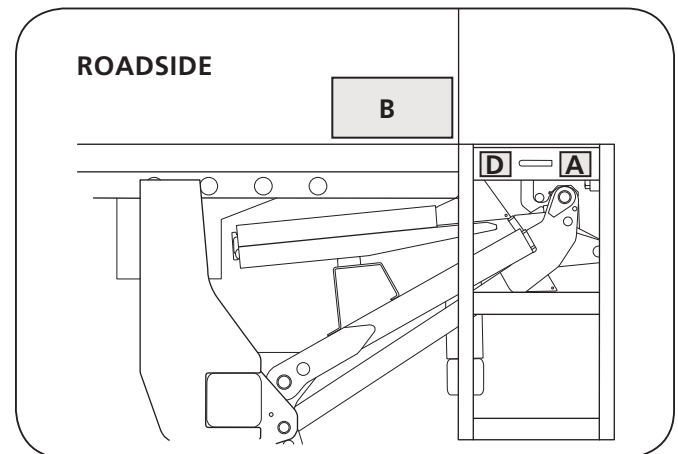


Figure 61









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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