

QUICK REFERENCE GUIDE

MODELS

AST-1500

AST-2000

AST-2500

AST-3000

AST-3500

AST-L-1800

AST-L-2500

AST-PLUS-2500

AST-PLUS-3000



For Serial Number XXXXXX and Greater



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INTRODUCTION

This Quick Reference Guide is an overview of the installation process and will assist in the installation of the Anthony Liftgates AST, AST-L, and AST-PLUS models. This guide must be used with the Installation Manual and the Operator Manual, found in the informational packet, inside the pump box, in order to safely install the liftgate.





bystander.

Read, Understand, and Follow the Installation and Operation Manuals.

The success or failure of this liftgate to properly and efficiently operate will depend on a thorough and proper installation. Failure to read, understand, and follow the installation instructions and safety recommendations in this Quick Reference Guide and in the complete Installation manual, before installing the liftgate, can result in serious injury or death to the installer or

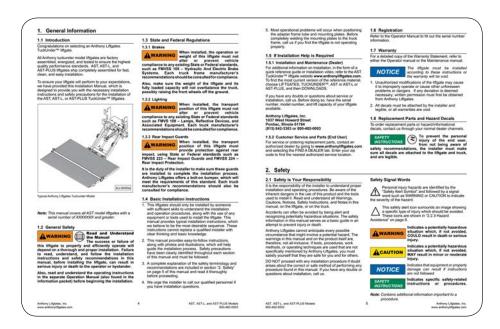
Also, read and understand the operating instructions in the Operation Manual before beginning the installation.

You will find an Installation Manual, Operator Manual, and a Maintenance Manual in the informational packet, located inside the pump box. This Quick Reference Guide and the Parts Book are not part of the informational packet but are available at anthonyliftgates.com.





The Installation Manual contains the complete and very important Safety Section, containing full details on how to avoid hazardous situations.



We cannot overemphasize the importance of reading, understanding, and following all the safety related material in the liftgate manual, as well as the truck's Owner Manual.





We strongly recommend using two people to safely install the liftgate.

NOTICE

Check the vehicle's Owner's Manual for any special requirements prior to welding on the truck's frame. Some trucks require the battery cable to be disconnected prior to welding to protect sensitive electronic equipment.



PHASE 1 - PREPARATION AND TRUCK FRAME MODIFICATIONS

Tools Required

The following is a list of suggested tools that should be used to install the liftgate:

- Band Cutters
- Overhead Crane or Forklift
- Mig or Stick Welder
- Heavy-Duty C-Clamps
- Tape Measure
- Level (small, magnetic)
- Cutting Torch (in some applications)
- Wrenches (bolt-on models only)
- Grinder (removing galvanized surface before welding)
- 1/2 inch Impact Wrench (bolt-on floor extension)
- Battery Cables and Slave Battery (for temporary power to liftgate)
- Heat gun or propane torch for shrink tube (cable lug)
- Crimping tool (cable lug)



We want to emphasize the proper and safe use of the tools and equipment used to install the liftgate. Improper use of tools and equipment can result in serious injury and/or possibly death to you the installer or other bystanders.



Before proceeding, make sure all the parts have been received.

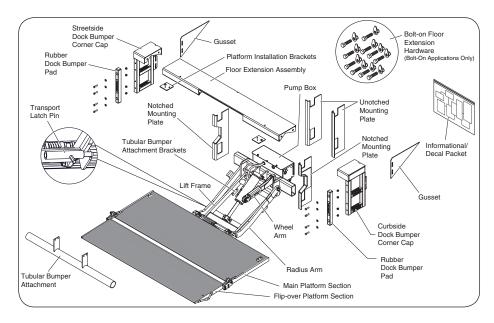
Tools RequiredBand Cutters

Liftgate Installation Package		
Description		
Located on Pallet		
Floor Extension	1	
Streetside Step and Dock Bumper Assembly	1	
Curbside Step and Dock Bumper Assembly		
Streetside Mounting Plate		
Curbside Mounting Plate		
Power Cable with 200 Amp Fuse		
Located Inside Pump Box		
Information Packet (contains decals, manuals, shims, and other related installation information)		
Plastic Tie Wraps		



2

To help you better understand the installation process, an illustration containing the name and location of the parts of the liftgate can be found in the Installation manual.



3

Park the truck on a flat, level surface.

Apply the parking brake.

SAFETY INSTRUCTIONS



4

Remove the key to prevent unwanted movement of the truck.





NOTICE

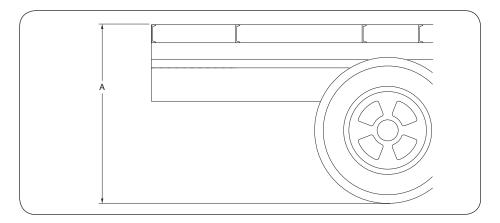
To prevent damage to the truck and/or the liftgate, make sure the model being installed is compatible with the maximum and minimum bed heights of the truck by following Steps 5 and 6.



Be aware that as part of the installation preparation, the liftgate will not operate properly if the truck bed height falls beneath dimension (A). This reduced height can be the result of a fully loaded truck and/or a variety of other reasons.

Do not proceed if the truck will not meet the minimum height requirement.

Truck Bed Height Fully Loaded				
Model Bed Height (A)				
AST	42"			
AST-L	36"			
AST-PLUS	38"			





Measure the actual height of the unloaded truck. Do not proceed if the truck exceeds the maximum height requirement.

Tools Required

Tape Measure

Truck Bed Height Unloaded				
Model	Bed Height (A)			
AST	57"			
AST-L	44"			
AST-PLUS	56"			

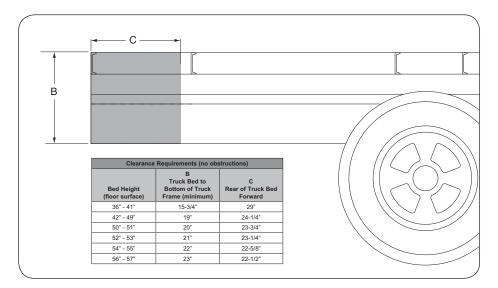




Make sure the truck frame and any OEM truck components in the installation area will not interfere with the installation in the shaded area, as shown.

Tools Required

Tape Measure





Use two people to safely install the liftgate.



Remove the banding securing the liftgate to the pallet. Remove the floor extension, both dock bumpers, the two mounting plates, and the two side gussets. Remove the information packet and any other parts from the pump box.





Safety Concerns





Tools RequiredBand Cutters



Carefully unfold the liftgate using two people. To keep the liftgate somewhat level once it's unfolded, a wooden block, approximately 12 inches tall, can be placed under the platform.



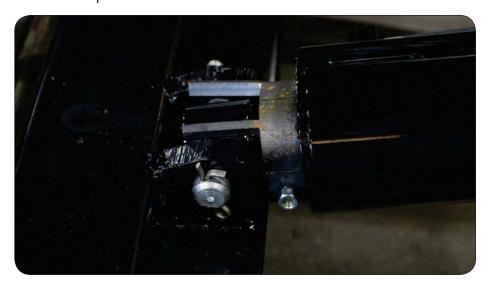








You will also see a spacing guide installed over the end of the cylinder rod. Do not remove this guide until later in the installation procedure.



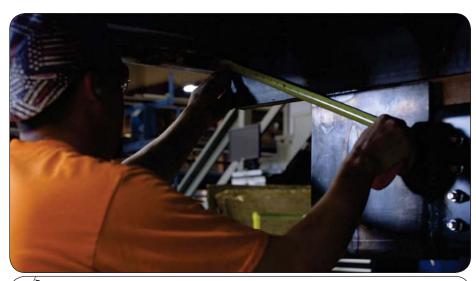


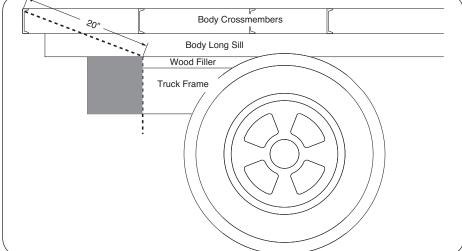
Most truck bodies require the frame to be either extended or cut back in order to properly install the liftgate.

Tools Required

Tape Measure

Simply measure 20 inches from the rear edge of the truck body frame to the long sill. Make a mark on the long sill and either add or remove material from the frame.







If you are extending the truck frame, make sure the extension meets the specifications of the truck manufacturer and that altering the frame will not void the truck's warranty.

PHASE 2 - INSTALLING THE FLOOR EXTENSION



This section of the guide shows the process of welding the floor extension to the truck. An alternative version of bolting the floor extension to the truck is shown in the Bolt-on Floor Extension section.



Find and mark the center of the truck's rear sill and the center of the floor extension.





Tools RequiredTape Measure

2

Use a white marker to mark the center of the floor extension. Also mark the finish weld locations with a repeating 2 inch continuous weld with a 4 inch gap.

Tools Required

Tape Measure

White Paint Marker

Make your marks from both ends inward towards the middle.



3

If desired, spray the parts of the truck body near the areas to be welded with anti-spatter spray.

Tools Required

Anti-Spatter Spray









Take precautions to avoid welding sparks or the flame from a cutting torch coming into contact with the truck bed's wooden floor or other flammable components.



Using a lifting device, center the white mark on the floor extension with the white mark on the truck body.

You may notice that the floor extension has a natural bow in it. It must be straightened as it is installed.

With the center of the floor extension level with the floor of the truck bed, begin tack welding at the center and work outward.

Make sure the extension remains level and flush with the floor of the truck bed.





Safety Concerns







Tools RequiredLifting Device Welder Level

(5)

Tack weld both dock bumpers to the floor extension and the truck body. Make sure the dock bumpers are both parallel to the floor extension and perpendicular to the truck body.











Welder Level



6

Once you have verified the floor extension is straight and level, finish welding it to the sill of the truck body with 2 inch long welds, every 4 inches.

Weld the dock bumpers to the floor extension and the truck body sill using a continuous weld.





Safety Concerns





Tools Required

Welder







If a galvanized floor extension and dock bumpers are being installed, the galvanized material must be removed prior to welding. Refer to the Installation manual for the proper procedure.

There is also a special procedure to follow when welding galvanized material to a stainless steel truck body sill.

Follow all OSHA and other workplace safety standards when grinding or welding galvanized steel, which creates zinc oxide fumes. Always grind the coating off in the area to be welded and provide adequate ventilation to avoid breathing the fumes.

Always wear the proper breathing protection when grinding or welding. Use a ventilation or vacuum system to remove any contaminated air from the work area.



Weld across the bottom of the floor extension in seven to eight locations.



Safety Concerns







Tools Required

Welder



If a walk ramp floor extension is being installed, weld both sides of the support gussets to the truck body sill.



Safety Concerns







Tools RequiredWelder



If not already installed, weld several installer-supplied strengthening plates between the top and bottom edges of the truck body sill.



Safety Concerns







Tools Required

Welder Installer-supplied Strengthening Plates



Weld and/or bolt the side gussets to the dock bumper and the truck body.

If welding to the truck body cross-members, make sure it spans at least three of them.



Safety Concerns







Tools Required

Welder Wrenches

PHASE 3 - POSITION THE LIFTGATE



The use of a forklift and the lifting fixture, makes the installation process easier and safer.

Refer to the Installation Manual for fabrication details of the lifting fixture used in this video.









Do not work under the liftgate while it is suspended from the lifting device. The liftgate can weigh up to 1,100 pounds and failure of the lifting device could cause serious crushing injuries and even death.



For steel platforms, place the lifting fixture over the liftgate.

Place the threaded rod through the lifting hole in the platform.

Install a washer and nut on the threaded rod.

Raise the liftgate, making sure the platform is almost parallel with the ground. Use the threaded rod and nut to make the required leveling adjustments.



Safety Concerns





Tools Required

Lifting Device Lifting Fixture (optional)



WARNING

Make sure the lifting capacity of the chains or straps is strong enough to support the load of the liftgate.

NOTICE

To prevent damage to the aluminum liftgate, use wood or other protective material between the lifting chains/straps and the platform.



For aluminum platforms, place the lifting fixture over the liftgate.

Place chains or lifting straps around the lifting fixture and the platform.

Adjust the chains/straps until the platform is almost parallel with the ground.



Safety Concerns





Tools Required

Lifting Device Lifting Fixture (shown)



Center the platform on the floor extension and position it against the floor extension installation brackets.



Safety Concerns





Tools Required

Lifting Device Lifting Fixture (shown)



If the liftgate has an aluminum platform, use wood or other protective material to prevent damaging the platform.

(5)

For steel platform models, use two large C-clamps, one on each side, to hold the liftgate against the installation brackets.



Safety Concerns





Tools Required

Larger C-clamps

(6)

Place a lifting device, such as a floor jack, under the wheel arm and begin raising the adapter frame tube.



Safety Concerns





Tools Required

Floor Jack

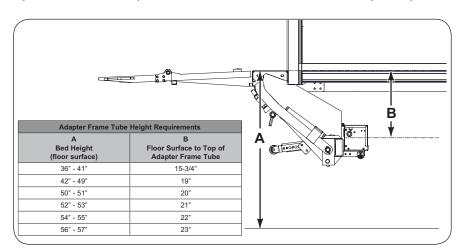


Raise the adapter frame tube to the correct height of dimension (B), which is based on the height of the truck bed.

Tools Required

Tape Measure

If the adapter frame tube does not easily raise, it may be necessary to actuate the control valve to release hydraulic pressure in the cylinder if the adapter frame tube will not raise completely.



NOTICE

Do not bend the wheel arm during this process.

NOTICE

To prevent electrical arcing, place a piece of rubber or cardboard between the clamp of the jumper cable and the pump body.

8

To actuate the control valve, it's necessary to connect a 12 Volt slave battery to the motor start solenoid.

Connect the red jumper cable from a 12 Volt slave battery to the positive (+) terminal of the motor start solenoid. Connect the black (-) cable to a ground on the pump box.



Tools Required

Slave Battery Jumper Cables







Example of Gravity-Down Connection

Example of Power-Down Connection



For gravity-down models, simply press and hold the control switch in the DOWN position to release the pressure in the cylinder.

For power-down models, briefly press and release the control switch in the UP position. Remember that pressing the UP control will hydraulically raise the adapter frame tube.

Once the adapter frame tube is at the proper height, the top of the tube should be slightly angled toward the back of the truck.



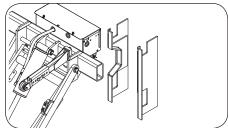


PHASE 4 - ATTACH THE LIFTGATE TO THE FRAME



Slide the mounting plate over the adapter frame tube on each side.





The top of the mounting plate must extend AT LEAST 9 inches above the bottom of the truck frame. Extend or shorten the mounting plates, as needed.

9" MIN



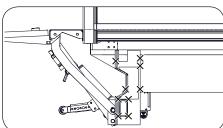
Tools Required
Cutting Torch

Other Type of Cutting Device

3

Tack weld the mounting plates to the frame in locations marked "X" with 3/8 inch fillet welds that are 1 inch long.





Safety Concerns





Tools RequiredWelder



ACAUTION

The tack welds must be strong enough to hold the weight of the liftgate, which can be up to 1100 lbs. Insufficient welds may break, resulting in possible injury.



Remove the floor jack.



(5)

If not already done, temporarily connect the power unit to a 12 Volt power source.



Tools RequiredSlave Battery
Jumper Cables



Press the UP control to raise the platform. Raising the platform prevents it from slightly lowering when the clamps are removed.

Remove the C-clamps and the lifting device.





Make sure the latch pin is in the open position.





The latch pin is only for in-transit locking of the liftgate.

To prevent damage, DO NOT slide the latch pin into the locked position when the platform is raised or lowered.





Always stand to the side of the liftgate when it is raised / lowered.

8

Lower the platform to the ground and remove the spacing guide from the lift cylinder.



Safety Concerns CAUTION

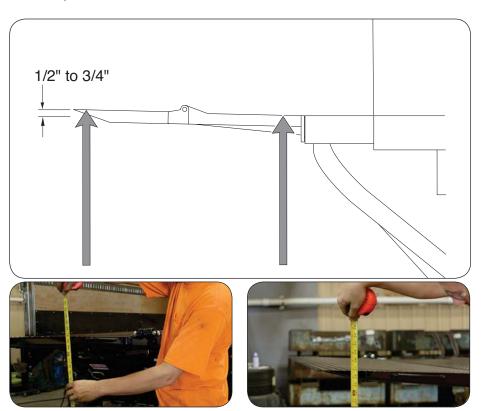


Tools RequiredWrenches



Completely raise the platform.

The outboard edge of the flip-over section should be 1/2 to 3/4 inches higher than the platform section, as shown, when correctly installed.



Safety Concerns





Tools Required

Tape Measure



Lower the platform to the ground.

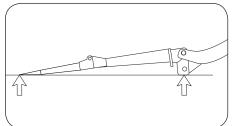
Safety Concerns



The platform should contact the ground at the points shown.



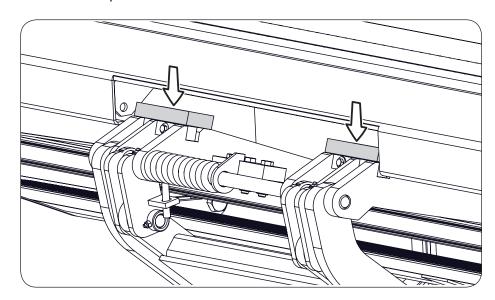




11

If the end of the platform does not contact the ground, adding a shim to the stop block will raise the outboard end of the flipover section. **Tools Required**Welder

Removing material from the stop blocks will lower the outboard end of the flipover section.









For safety purposes, finish welding the liftgate while the platform is on the ground, not in a raised position.

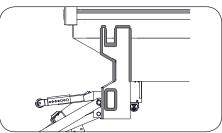
NOTICE

Cover the cylinder, cylinder rod, and pump box to prevent damage from weld spatter.



With the platform on the ground, finish welding the mounting plates to the truck frame and adapter frame tube. Use a continuous weld around all sides of the adapter frame tube and on both sides of the mounting plates.





Safety Concerns





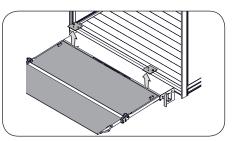


Welder



Remove the installation brackets.





Tools Required

Wrenches

PHASE 5 - INSTALLING AN OPTIONAL BUMPER



If desired, install the optional tubular bumper using the supplied hardware. Make sure the installation is in compliance with all State and Federal regulations.

Tools RequiredWrenches





With the liftgate in the stored position, attach the red and white reflective tape.



PHASE 6 - INSTALL THE CONTROL SWITCH AND POWER CABLE



Remove the slave battery's jumper cables and disconnect the wires of the control switch from the power unit.



2

Mount the control switch in a location so it can be reached while standing at the curbside of the truck.



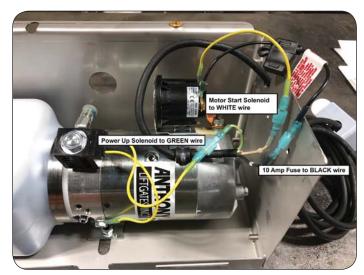
Tools RequiredCustomer-supplied
Mounting Hardware

Disconnect the wires of the control switch from the power unit.

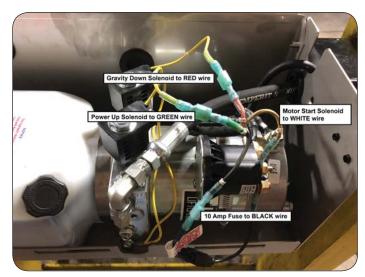
3

Install the protective rubber grommet in the dock bumper and route the wire through the dock bumper.

Reattach the control unit wires to the appropriate terminals.



Gravity Down



Power Down



To prevent personal injury, Anthony Liftgates strongly recommends the installation of a power cut-off solenoid or an optional cab cut-off switch connection. Refer to the Installation Manual for additional information.



Connect the long section of the power cable to the proper motor start solenoid.

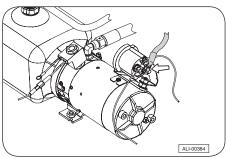


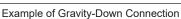


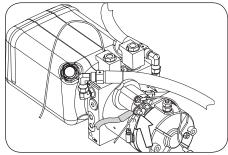
If needed, attach a ground strap, the same gauge or larger as the liftgate power cable, between the pump box and the truck frame.











Example of Power-Down Connection



Route the power cable along the truck frame to the battery box attaching it with plastic tie wraps or wire clips.

Tools Required

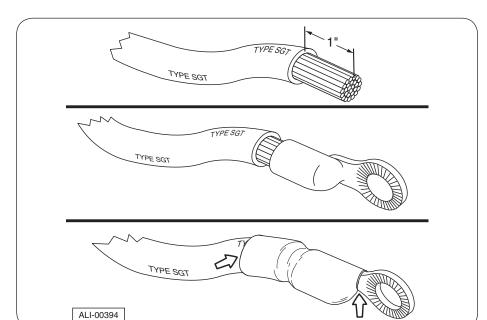
Cable Cutter

If the cable is too long, cut it to the desired length.

Reconnect the newly cut end to the fuse.

6

If the power cable requires a new cable lug on the end refer to the Installation Manual.



Tools Required

Cable Cutters Cable Lug Heat Shrink Tubing



Proper wire connection is crucial to the life and dependability of the liftgate's electrical components. A poor connection can result in low voltage causing the liftgate to work improperly.



Mount the fuse in a desired location.



Tools RequiredCustomer-supplied
Mounting Hardware

8

Route the short, 3 foot section of cable into the battery box and connect the end to the positive (+) post of the truck battery.



9

Use the control switch to raise and lower the platform.



Coat any terminal ends, studs, and nuts in the liftgate electrical system with a suitable corrosion inhibiting lubricant.

Tools Required

Customer-supplied Lubricant

Replace the battery box cover and lock it in place.





Do not apply petroleum-based lubricant to the liftgate motor start solenoid.

Use only a dry film lubricant on this component.

PHASE 7 - FINAL ADJUSTMENTS



ACAUTION

Always stand to the side of the liftgate as it is being lowered or opened.



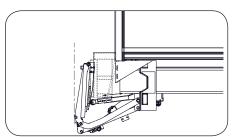
Adjust the wheel arm so the folded platform is leaning slightly inward.

2

Adjust the wheel arm to prevent the platform from completely unfolding when it is lowered.

Consider that when the truck is used it could be parked on a hill, allowing the platform to unfold by itself if the wheel arm is not properly adjusted.





Close the platform and recheck its vertical position.

3

Adjust the latch pin plate allowing a 1/16 to 1/8 inch gap between the latch plate and the latch pin.

Insufficient clearance can allow binding of the latch pin as the liftgate is used, while too much clearance will not properly secure the liftgate.

If the latch pin will not easily open, press the UP control button to release any tension on the latch pin.







Install any DOT lighting or other electrical components, the license plate bracket, grab bars or handrails, and any other devices need to meet customer requirements as well as local, state, and federal regulations.

Tools Required

Wrenches

Tools Required

Impact Wrench with Socket Adjustable Wrench

PHASE 8 - HAZARD AND INFORMATIONAL DECALS



To prevent possible injuries due to improper operation, make sure all decals are attached to the liftgate and the truck according to the Installation Manual and are legible.



Make sure the factory installed decals are attached to the platform, as shown in the Installation manual. Attach the supplied decals to the truck body, as shown.



Safety Concerns

SAFETY INSTRUCTIONS



(2)

Attach the fuse changing decal onto the power cable or near the location of the fuse.



Safety Concerns

SAFETY INSTRUCTIONS





The installation process is now complete.

Move the truck to a suitable location to make your final inspection.

Open the latch pin and operate the liftgate through its entire operational cycle (Up, Down, Fold In, Fold Out) several times. Make sure the liftgate operates evenly, freely, and smoothly, without unusual noise or vibration.

Make sure the latch pin slides easily into place and locks.













The installation procedure is not complete until all items on the Final Checklist in the Installation Manual are checked and verified. If you have any questions, contact Anthony Liftgates.



PHASE 9 - INSTALLING THE BOLT-ON FLOOR EXTENSION



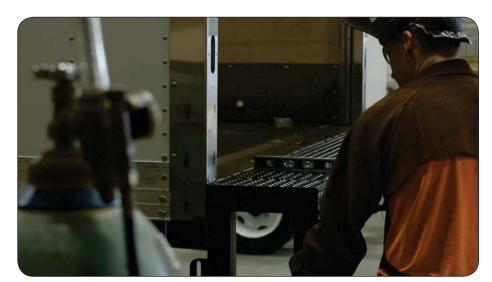
Using a lifting device, align the holes in the floor extension with the pre-drilled holes in truck body sill. **Tools Required**Lifting Device

A dimensional drawing showing the hole location can be found in the Installation manual.



2

Bolt the dock bumpers to the floor extension.



Tools RequiredWrenches

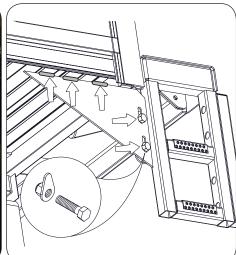


Bolt the side gussets to the dock bumper and weld them to the truck body. If welding to the frame members, make sure the gusset spans at least three of them.

Tools Required

Wrenches Welder







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