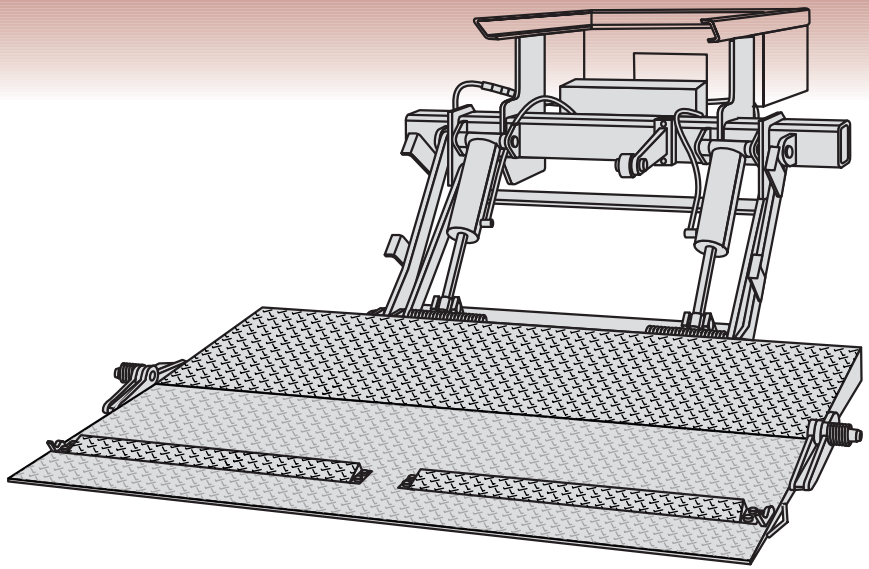
KEEP IN VEHICLE WITH LIFTGATE

ANTHONY LIFTGATES, INC.

INSTALLATION AND OPERATION MAINTENANCE & TROUBLESHOOTING

For Magnum Tuckunder™ Hydraulic Liftgates®



MODELS

MTU-GLR-3

MTU-GLR-4

ANTHONY LIFTGATES, INC.®

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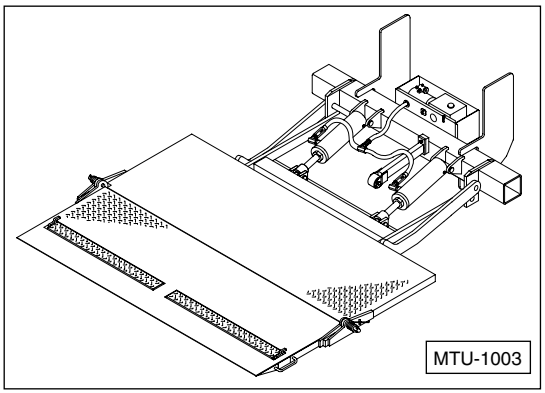
General Information Section

Introduction

Congratulations on selecting an Anthony Liftgates Magnum Tuckunder liftgate. Anthony liftgates are among the finest liftgates available on the market today. To ensure your liftgate will perform to your expectations we have provided the following manuals, designed to provide you with the necessary instructions and safety precautions to install and operate the Tuckunder models of Anthony liftgates.

1. Installation, Operation, Troubleshooting, and Maintenance manual for MTU-GLR Model Tuckunder Liftgates - Form No. MTU-GLR IO-10/04

2. Parts manual for MTU-GLR Model Tuckunder Liftgates - Form No. MTU-GLR P-10/04



Typical Anthony Liftgates' Magnum Tuckunder Liftgate.

This Installation, Operation, and Maintenance manual will provide you easy to follow instructions, along with photos and illustrations. We have included a series of Tips, which will facilitate the installation process. All Safety precautions have been clearly identified and detailed throughout each section.

In addition, a complete explanation of the safety words and rules are included in the Safety section of this manual. Please turn to this section and read thoroughly before proceeding to the next page.

At the bottom of each page is the Anthony Liftgates Inc. Product Support phone number. If you are unclear about any of the instructions, please phone Anthony Liftgates' Product Support.

All Anthony Magnum Tuckunder model liftgates are factory assembled, tested, and energized to assure the highest quality performance standards. MTU-GLR liftgates ship completely assembled on skids for fast, clean, and easy installation.

Even though the following goes without saying, we feel compelled to state:

Anthony liftgates should only be installed by those with sufficient skills to understand the installation and operation of the liftgate, along with the equipment required to install the liftgate. The installation instructions in this manual are intended to give typical installation instructions to the installer for both the operation and what we believe to be the most desirable sequence of installation. These instructions cannot replace a qualified person, or clear thinking and the basic knowledge that must be possessed by the installer.

We urge the installer (or anyone else) to call us if they have any questions. We have qualified personnel at our Pontiac, Illinois, plant to answer any questions that you may have. A detailed discussion on the phone can be far more satisfactory than a detailed written explanation.

It has been our experience that a knowledgeable journeyman following these installation instructions and observing the operation of the liftgate will have sufficient comprehension of the liftgate to enable this person to troubleshoot and correct all normal problems that may be encountered. However, again we urge you to call us at the Pontiac, Illinois, plant if you find the liftgate is not operating properly or if you do not know how to make the necessary repair.

If you have any doubts or questions, call us at:

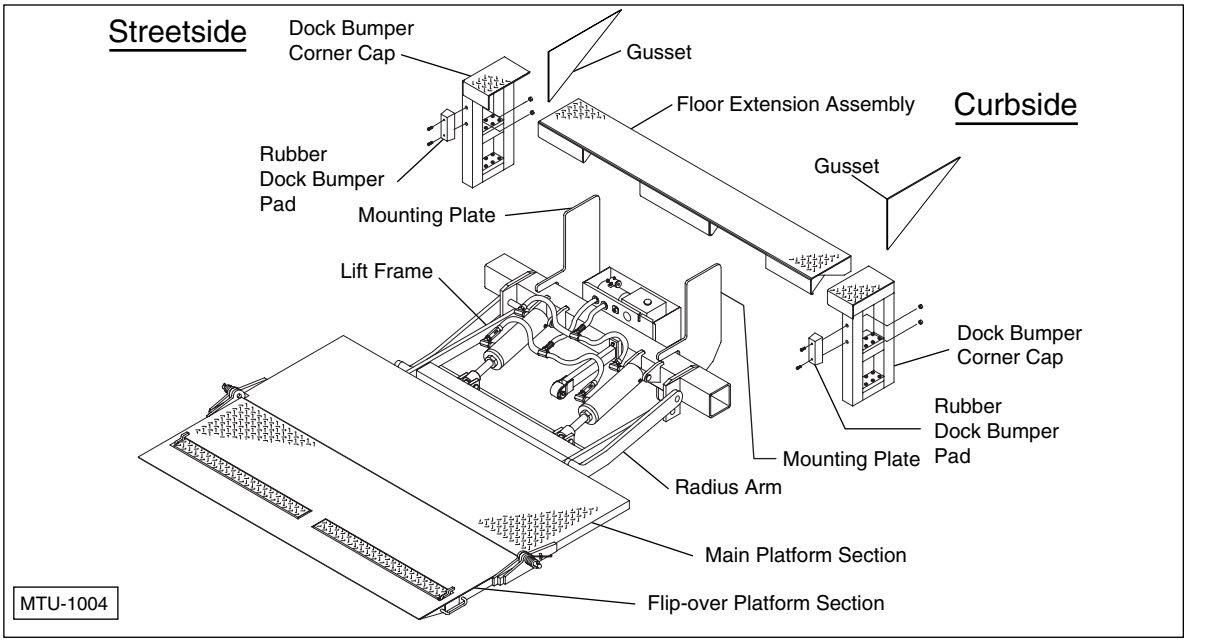
Anthony Liftgates, Inc.
1037 West Howard Street
Pontiac, Illinois 61764
(815) 842-3383
www.anthonyliftgates.com

⚠ DANGER

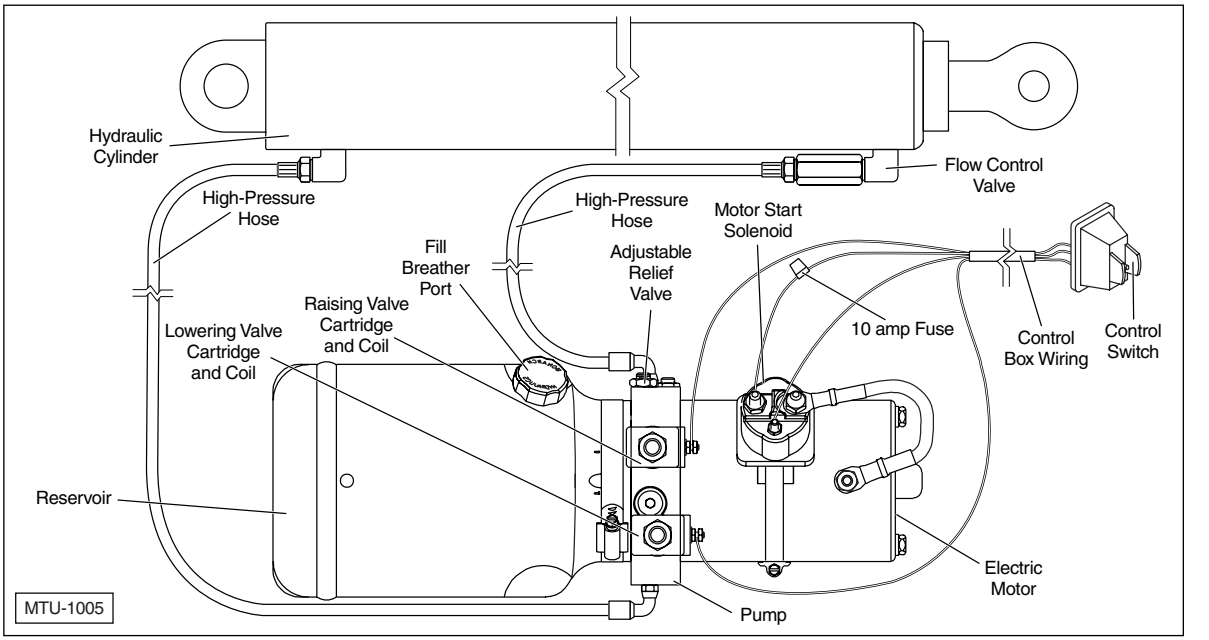
The success or failure of this liftgate to properly and efficiently operate will depend on a thorough and proper installation. Failure to read, understand, and follow the installation instructions and safety recommendations in this manual before installing the liftgate can result in serious injury or death. Also read and understand the operating instructions in the Operation section.

When installed, this liftgate must not alter nor prevent vehicle compliance to any existing state or federal standards, and especially FMVSS 105. Each chassis manufacturer's recommendations should be consulted for compliance. Also make sure the weight of the liftgate and its load will not overbalance the truck, possibly raising the front wheels off the ground.

Nomenclature



Platform nomenclature.



Power unit nomenclature.

Warranty

IMPORTANT NOTICE

The liftgate must be installed according to the installation instructions or the warranty will be void. Unauthorized modifications of the liftgate may cause it to improperly operate or cause other unforeseen problems or dangers. If any deviation is deemed necessary, written permission must first be obtained from Anthony Liftgates.

Fill out and mail in the Warranty Card to validate the warranty on your liftgate.

Decals

⚠ DANGER

Make sure all decals are attached to liftgate and/or truck and are legible at all times.

Safety decals provide a vital role in helping to reduce injuries and/or possibly even death. To ensure the greatest level of safety, all decals must be in place and legible at all times. Remember, it is the users responsibility to maintain these decals. For a complete part number list and illustration of the decals used on the Magnum Tuckunder liftgate, refer to the Decals section in the Parts manual for MTU-GLR Model Tuckunder Liftgates, form number MTU-GLR P-10/04.

For decal placement, also refer to the Decals section in this manual.

For replacement decals contact:
Anthony Liftgates, Inc.
1037 West Howard Street
Pontiac, Illinois 61764
(815) 842-3383
www.anthonyliftgates.com

Ordering Parts

We manufacturer a quality liftgate that requires very little maintenance or repair. However, should a part break, become damaged, or worn our knowledgeable staff can make sure you receive the part(s) to put your liftgate back into operation.

For questions or to order parts, contact:
Anthony Liftgates, Inc.
1037 West Howard Street
Pontiac, Illinois 61764
(815) 842-3383
www.anthonyliftgates.com

Tooling Required

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

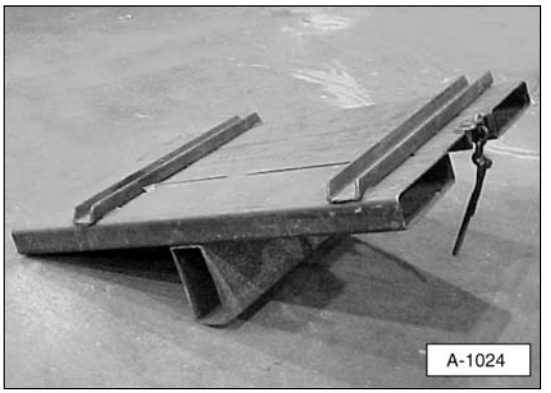
- Overhead Crane or Forklift
- Mig or Stick Welder
- Heavy-Duty C-Clamps
- Tape Measure
- Level (small, magnetic)
- Cutting Torch (in some applications)

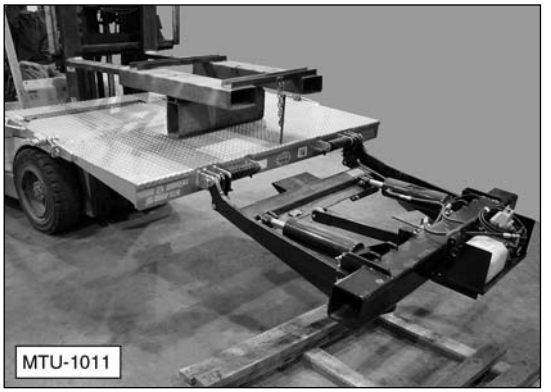
Installation Section

General Installation Information

Fabricated Tooling

Tip: *A lifting jig, as shown in these photos, can reduce installation time when installing more than one Anthony Magnum Tuckunder liftgate. A forklift or overhead crane can also be used with a bolt and chain.*





These photos show a sample lifting jig, but when you fabricate a lifting jig it :

- must be made specifically for the type and design of your particular forklift.
- must be wide enough to support the liftgate and to accommodate the width of the forks on the forklift.
- must be constructed from materials that are capable of lifting and supporting the Anthony Magnum Tuckunder liftgate.
- must be constructed from tubular steel at least 0.25 inches thick or thicker.
- must be securely fastened to the forklift.
- must have a lifting bolt that is long enough to go through the lifting hole in the liftgate and allow the lifting jig to remain level.

Tip: *Make the lifting bolt from a 5/8 inch threaded eyebolt. Use a washer and nut to fasten the lifting jig to the liftgate.*

- must satisfy the user that it is safe and properly constructed.

⚠ DANGER

The construction of the lifting jig must satisfy the user to be safe and properly constructed. Failure to use the proper materials or material thickness can result in serious injury or death to the user(s).

Prior To Installation

1. Place the truck on a flat, level surface. Block the wheels to prevent the truck from moving while installing a liftgate.

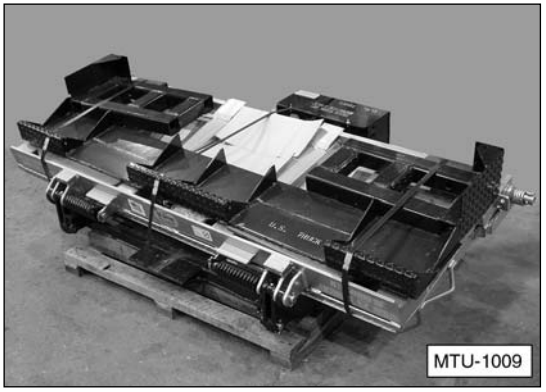
⚠ DANGER

Failure to prevent the truck from moving while installing a liftgate could result in serious personal injury or death from crushing the installer(s).

2. Use the Mounting Requirements chart and illustration to make sure there is enough clearance to properly install the liftgate.

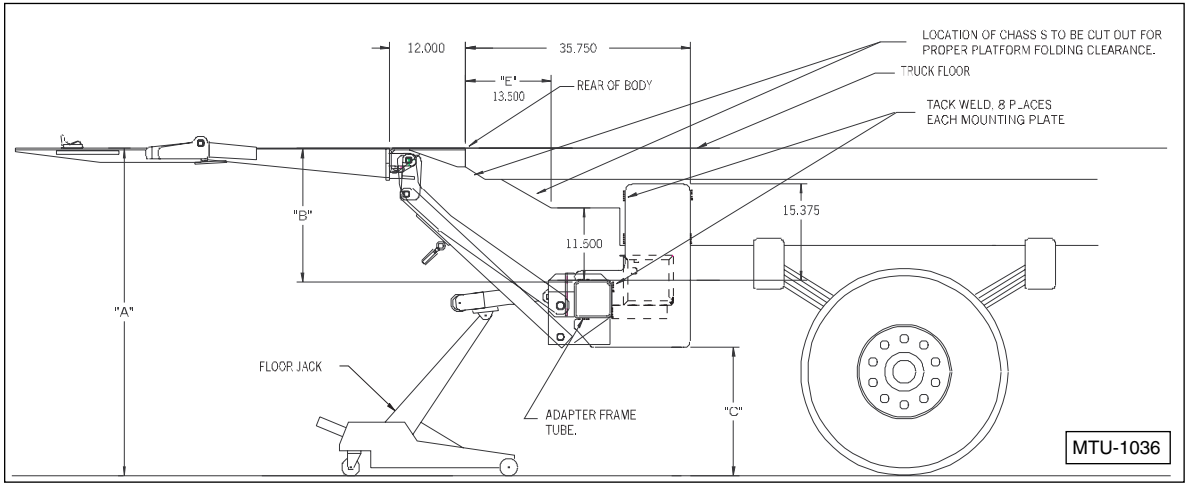
Mounting Requirements				
A Bed Height	**B Bed to top of Adapter Frame Tube**	**C Mounting Plate Clearance**	**D (maximum) Rear Sill Clearance**	**E Chassis and Body Cut out**
46”	19.5”	14-3/8”	4.5”	13.50”
48”	19.5”	16-3/8”	4.5”	13.50”
50”	19.5”	18-3/8”	4.5”	13.50”
52”	19.5”	20-3/8”	4.5”	13.50”
54”	19.5”	22-3/8”	4.5”	13.50”
57”	19.5”	25-3/8”	4.5”	13.50”

3. Remove the banding securing the liftgate and the loose parts to the pallet. Remove the curbside and streetside mounting plates, dock bumpers, and floor extensions that are stored on the liftgate. Unfold the liftgate platform.



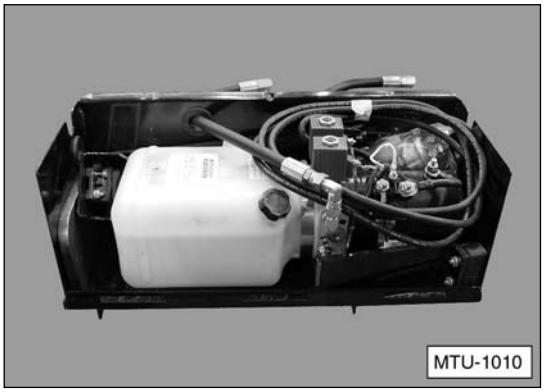
Tip: *Check the OEM vehicle manual for any special requirements prior to welding on the truck. If required, disconnect the battery cable before welding on the truck.*

Tip: *When installing multiple liftgates, consider making a lifting jig as shown in the Fabricated Tooling section of this manual.*



Step 1

Remove the cover from the power unit box. Remove all the parts and installation instructions from inside the box. Some units are shipped from the factory with a shipping plug in the power unit reservoir. If necessary, replace the shipping plug with a vent plug.

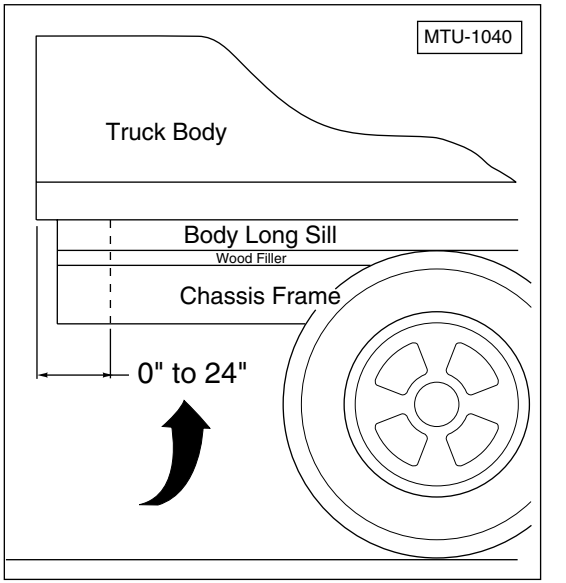


Tip: *The power unit box should contain plastic tie wraps for battery cable, two stop brackets, one latch plate, one 150 Amp circuit breaker, and one package containing decals, shims, and manuals.*

Step 2

Cut off or extend the chassis frame, wood filler, and body long sill, as shown. The frame must extend between 0 and 24 inches from the rear of the truck body.

Tip: *Before modifying the truck chassis, make sure any extensions meet the specifications of the truck manufacturer and that altering the frame will not void the truck warranty.*



Step 3

Make sure the "rear sill" of the trailer body is flat and straight all the way across the rear face of the body. Remove any obstructions before installation; such as, trailer hitches and brackets, dock bumpers, projections, etc.

Step 4

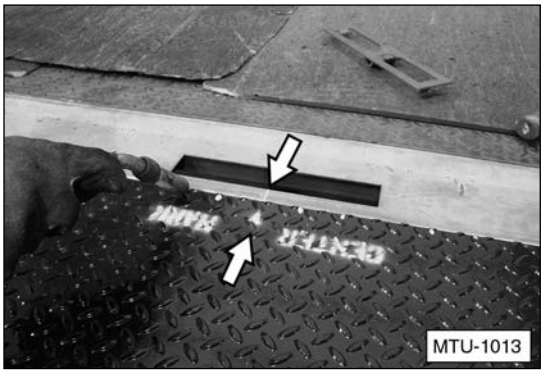
Measure and determine the center of the truck's rear sill. Mark this point.

Step 5

Install the floor extension.

Tip: *Two men can be used in the welding process to reduce the time.*

a. Align the "Center Mark" of the floor extension assembly with the center mark of the truck body.



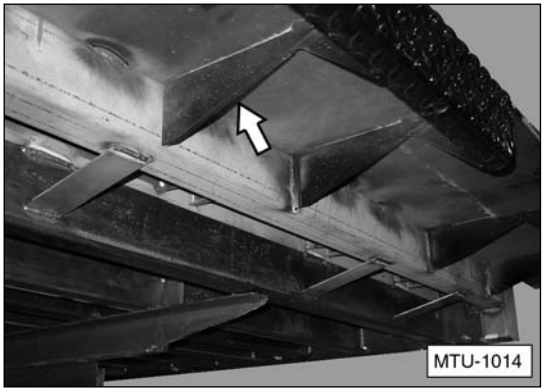
b. Level the floor extension assembly with the floor of the truck body and tack weld it in three locations (left, center, and right). Make sure the tack welds will hold the weight of the floor extension, approximately 200 pounds.

⚠ CAUTION

Tack welds must be strong enough to hold the weight of the extension and the dock bumpers. Insufficient welds may not hold the truck extension in place, resulting in bodily harm.

c. Use a long straight edge to make sure the floor extension is level and parallel to the floor of the truck body.

d. Tack weld the gussets under the floor extension to the truck body. If the rear sill is uneven, cut or shim the gussets or the sill, to maintain a level and parallel attitude between the floor extension and the floor of the truck body.



e. Finish welding the floor extension to the truck body. Weld between the white dots painted on the floor extension (2 inch long, 1/4 inch fillet welds, on 6 inch centers).

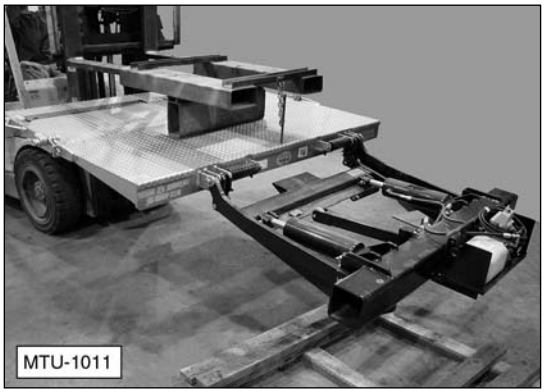
f. Weld the gussets under the floor extension to the truck body using 1/4 inch fillet welds on one side of the gusset.

Step 6

Lift and position the liftgate.

a. Attach a lifting device to the liftgate.

Tip: *While a lifting jig (as shown) is not required for liftgate installation, it can reduce installation time when installing more than one liftgate. Otherwise, any lifting device, such as a forklift or overhead crane, capable of lifting and holding the liftgate in position and level can be used with a bolt and chain.*



b. Raise the platform and position the liftgate bolster (front edge of platform) tight against the floor extension.

c. Center the platform from side-to-side with the truck body.

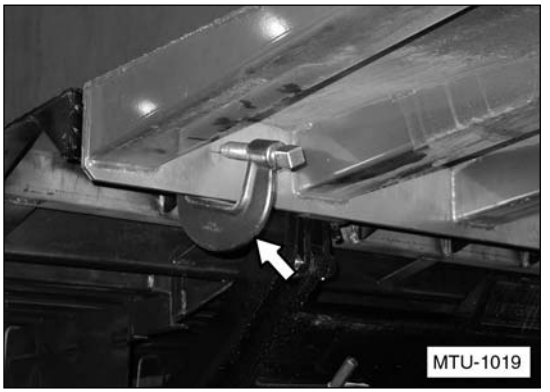
Step 7

Clamp the liftgate to the floor extension.

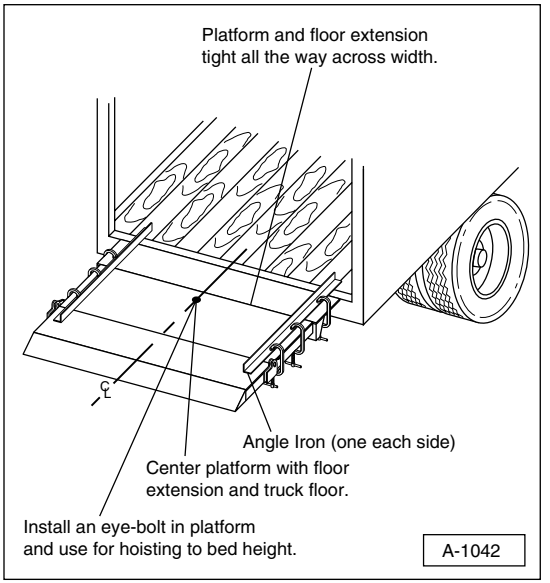
⚠ WARNING

Do not remove the hoist, fork lift, or other lifting device used to hold the liftgate in place during the installation procedure. NEVER WORK UNDER THE LIFTGATE OR FLOOR EXTENSION while installing or painting the unit. Work so that you would not be in the way if the clamps, weld, etc. should fail.

a. Use two large C-clamps, as shown, to hold the liftgate in place.



b. An alternate method of holding the liftgate is using two, 3 to 4 foot long pieces of heavy-duty angle iron. The size of the angle iron should be 3 x 3 x 1/4 inch minimum.



Step 8

Route the supplied power cable (with attached fuse assembly) from the battery to the liftgate power supply using one of the following procedures:

Step 9 - Direct Battery Connection (not recommended)

Step 10 - Cut-Off Solenoid Connection

Step 11 - Cut-Off Switch Connection

Only one method is required to complete the wiring installation.

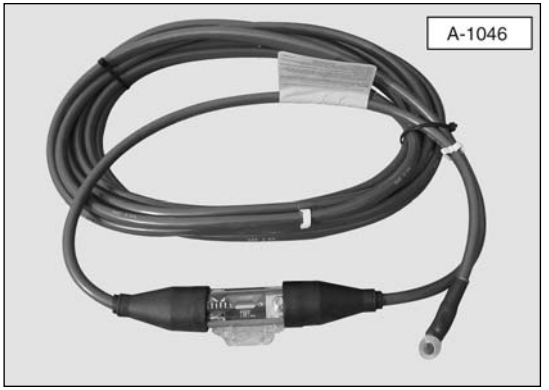


Illustration 7. Power cable and fuse assembly.

⚠ DANGER

Never secure the power cable to anything which allows it to contact sharp edges, other wiring, fuel tank, fuel lines, brake lines, air lines, exhaust system, or any other object that could cause the power cable to wear or be damaged. A direct short in the battery cable can cause sparks resulting in loss of vehicle control, serious injury, or even death.

⚠ DANGER

Anthony Liftgates strongly recommends the installation of a power cut-off solenoid or cab cut-off switch. Not cutting off power to the liftgate when unattended can result in serious injury or death to unauthorized users or others near the liftgate.

⚠ WARNING

The liftgate must be properly grounded. A ground wire, the same gauge or larger as the liftgate power cable, must be connected from the negative post of the battery or batteries to the truck's frame. Some trucks may have a properly sized ground wire from the battery to the frame and would require no change. If, however, there is no ground wire or it is undersize, add the correctly sized ground wire.

If this Warning is not followed, damage to the truck chassis may occur. Improper grounding can cause the electrical current to travel through brake lines, steel braided power steering hoses, or other chassis wiring causing failure to these components! Failure of these components could result in loss of vehicle control.

Step 9

Direct Battery Connection (not recommended)

IMPORTANT NOTICE

Using the standard wiring hookup is not recommended because it does not cut off power to the liftgate when the truck is left unattended. A cut-off switch or cut-off solenoid will disable the use of the liftgate when the truck is not in use.

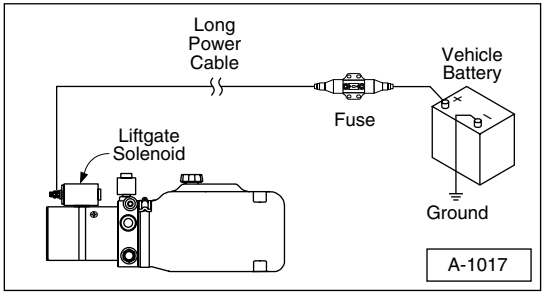


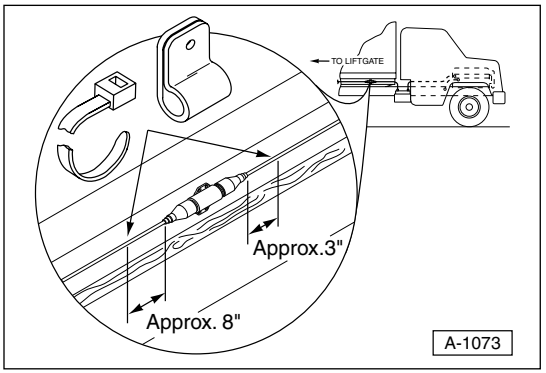
Illustration 9. Power cable connected to power unit and battery.

a. Position the fuse assembly near the battery so the short cable end will reach the positive terminal.

b. Attach the fuse holder to the truck body longsill using either Method A or B, shown in this step.

Tip: *There are several options for attaching the power cable from the plastic fuse assembly. It can be fastened using plastic tie wraps or wire clips. The fuse assembly can also be bolted directly onto the body longsill, if desired.*

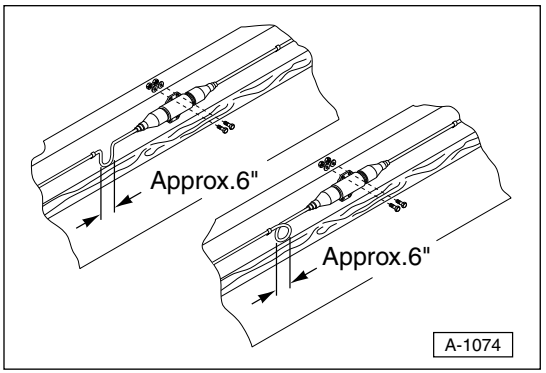
Method A



Fasten the power cable to the truck body. Locate one fastener (battery side) within 3 inches of the end of the fuse assembly. Locate the other fastener (power unit side) within 8 inches of the fuse assembly.

Using this method does not require the fuse assembly to be attached to the longsill.

Method B



Attach the fuse holder to the truck body longsill using #10 or #12 self-tapping screws or bolts, washers, and self-locking nuts. Fasten the power cable, as needed, to properly hold it in place. Using this method requires an extra length of cable on one side of the fuse assembly to permit removal of the fuse.

c. Run the long end of the power cable from the fuse to the motor solenoid. If the power cable is longer than required, cut it to the desired length and attach a cable lug according to instructions listed below.

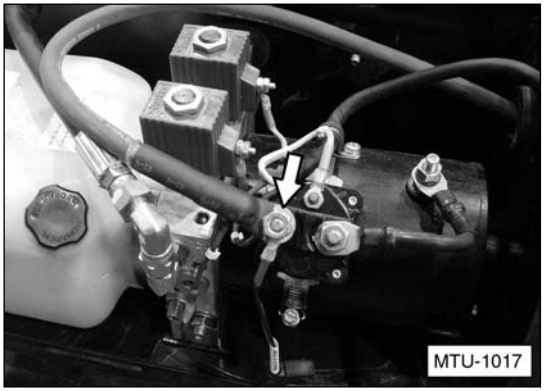


Illustration 9c. Connect power cable to motor solenoid.

d. Connect the power cable to the motor solenoid. Make sure the power cable is connected to the correct motor solenoid post (one not connected to the motor housing with a metal strap or wire cable.

e. Connect the short end of the power cable to the positive post of the battery.

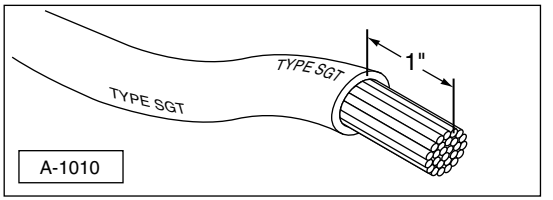
f. The power unit should now be operational.

g. Coat all terminal ends, studs, and nuts with a Teflon lubricant, grease, or other electrical connection sealant to prevent corrosion.

Tip: Do not apply undercoating to power cable or fuse holder! The power cable should be clean near the fuse holder to ensure easy removal of the rubber boot seals if fuse needs to be replaced. For fuse replacement, see the instructions in the Maintenance section of this manual.

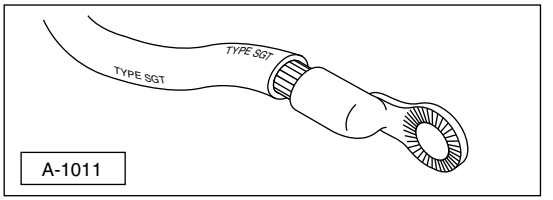
Cable Lug Installation

1). Strip insulation one inch back from the end of the cable to expose the copper wire.



Remove one inch of insulation.

2). Position the cable lug on the exposed wire, as shown. Crimp the cable lug using a cable crimping tool (hydraulic or manual).

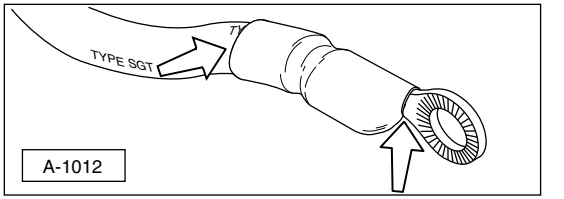


Install cable lug.

IMPORTANT NOTICE

Proper wire connections are crucial to the life of the liftgate's power unit. DO NOT smash the cable lug with a hammer to secure it to the cable. Poor connections can result in low voltage, and any attempt to operate below the minimum required voltage could cause system failure.

3). Use the supplied heat shrink tube to insulate the new connection. Heat the shrink tubing using a heat gun or propane torch until it shrinks around the cable insulation and cable lug, leaving only the mounting hole exposed. Do not overheat the heat shrink tubing.



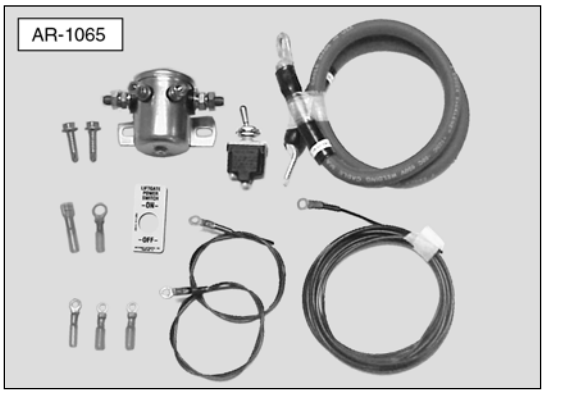
Put heat shrink tubing over connection.

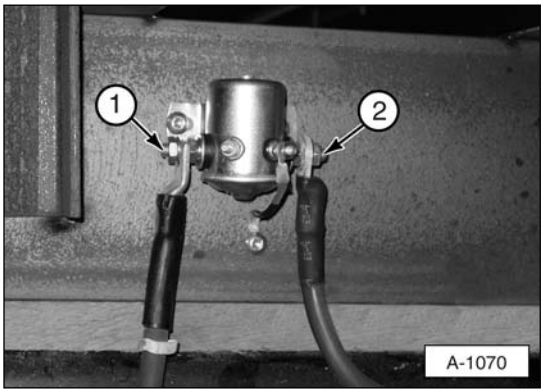
Step 10

Cut-Off Solenoid Connection

The installation of a cut-off solenoid is a recommended option, by Anthony Liftgates, for all 12 Volt electric liftgates. Installing a cut-off solenoid will help to prevent accidental or unauthorized use of the liftgate.

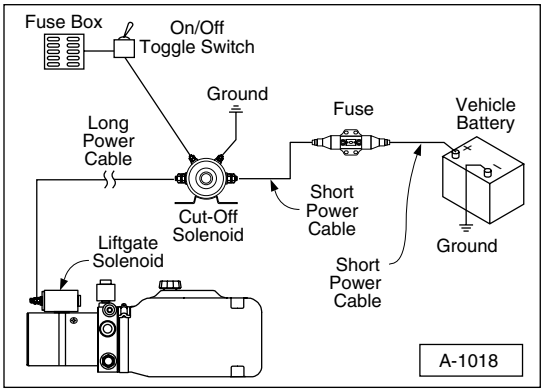
The optional A-133036 Cut-Off Solenoid Kit can be used in any truck, but is essential for tilt cab applications because it requires only a light weight wire running to the cab—not a large cable as required by the cut-off switch.





Cut-off solenoid installed between battery and fuse assembly.
(1) Short cable, part of solenoid kit. (2) Short end of power cable leading to fuse.

Follow the installation directions on the Installation Instruction sheet that comes with the kit.



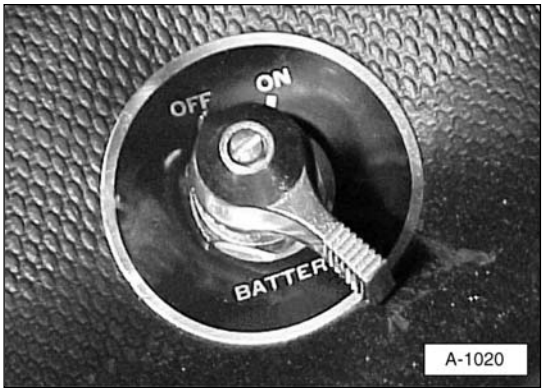
Wiring diagram with cut-off solenoid.

Step 11

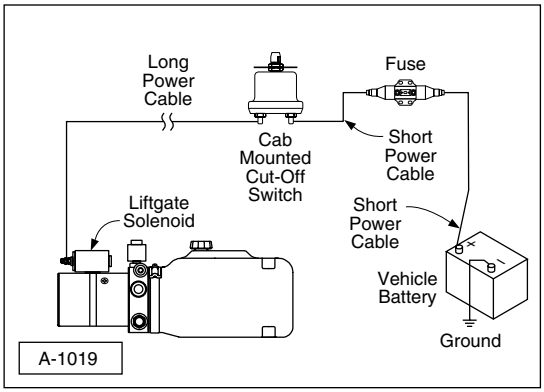
Cut-Off Switch Connection

The installation of a cut-off switch is also a recommended option, by Anthony Liftgates, for all 12 Volt electric liftgates. Installing a cut-off switch will help to prevent accidental or unauthorized use of the liftgate.

Follow the installation directions on the Installation Instruction sheet that comes with the kit.



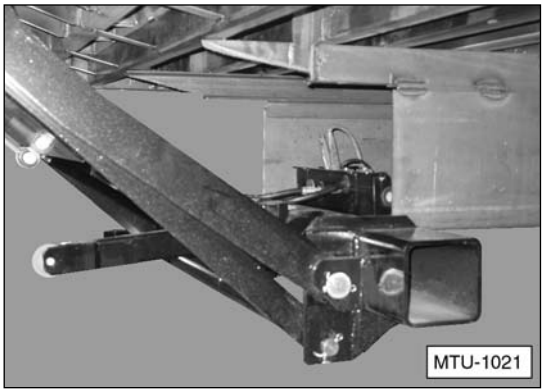
Cut-off switch mounted in cab of truck.



Wiring diagram with cab cut-off switch.

Step 12

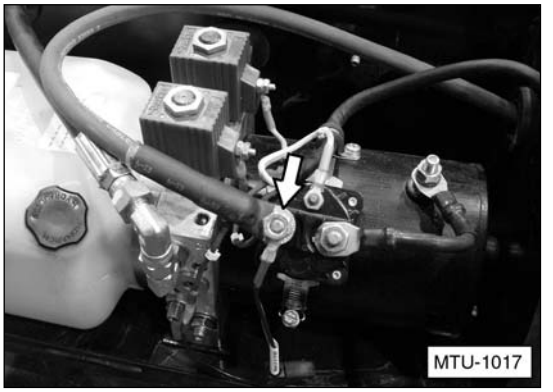
Roughly position the adapter frame tube (6" x 6" tube) to attain the dimensions shown in the table of Step 2 in the Prior to Installation section in this manual.



Step 13

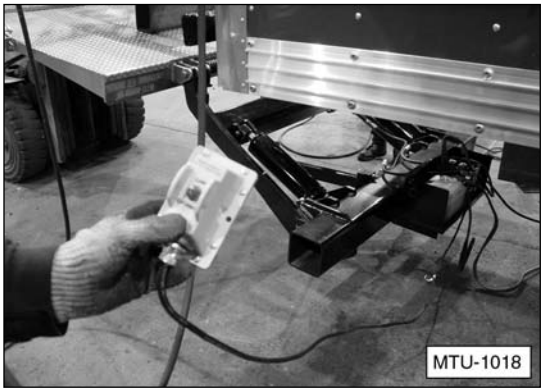
The liftgate is a power down model and can use the liftgate cylinder to position the adapter frame tube.

a. Make sure the power cable to the pump motor is connected.



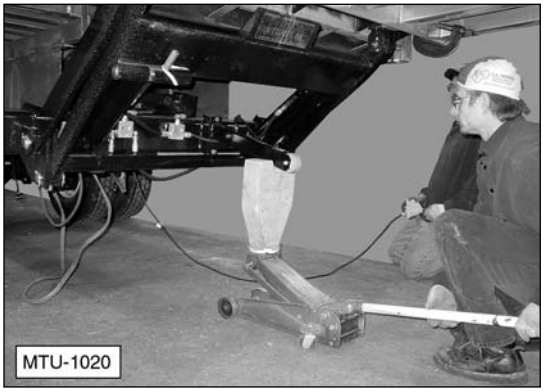
b. Connect a ground cable from somewhere on the pump (steel) to the frame of the truck. This ensures a good ground to run the pump motor.

c. Now the liftgate control switch can be used to help position the adapter tube. The functions of the control switch will be opposite from the way they are printed on the control switch, because the platform is clamped to the truck body.



Step 14

Position the adapter frame so the lift cylinder is extended at least a 1/4". This can be determined quickly by looking at the amount of "chrome piston rod" showing on the lift cylinder. The use of a floor jack can help position the adapter frame, as shown.



Tip: To achieve a 1/4” cylinder extension may require the mounting plates to be slightly tilted, forward or backward. The "tilt" does not affect the function of the liftgate. This step allows the platform to continue to raise to the "floor extension" level, even after the liftgate ages.

Step 15

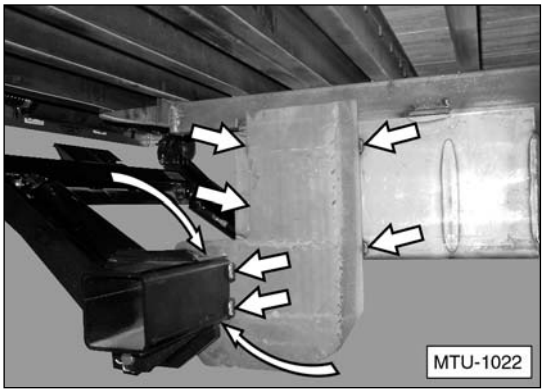
Slide the "mounting plates" over the adapter frame tube. The "mounting plate" goes toward the front of the vehicle, as shown in Step 16. The mounting plates can be trimmed off the top, if necessary, as long as a 9" minimum contact area is maintained.

IMPORTANT NOTICE

The height of the truck frame must be tall enough to achieve 9 inches (minimum) of vertical contact between "liftgate mounting plates" and "truck frame".

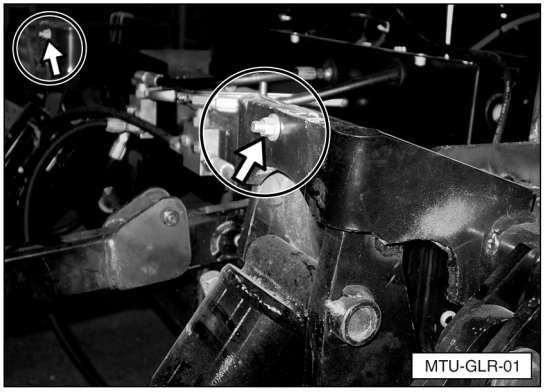
Step 16

When the mounting plates are approximately straight up and down, tack weld the plates to the frame as shown. The tack welds should be a minimum of 3/8" fillet x 1" long.



Step 17

Remove the C-clamps, angle iron (if this method was used), lifting device, and jack. Lower the platform near ground level and remove the two installation bolts from the rocker frame weldment, one on each side.



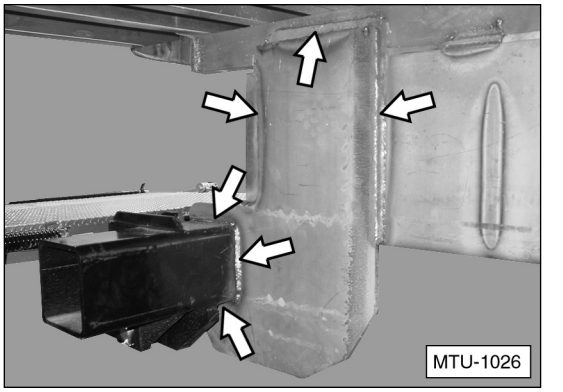
Step 18

The liftgate platform must travel correctly through its full cycle. (A full cycle is when you perform all of these functions, Up, Down, Open, Close, Tilt Down, & Tilt Up.) If it does not travel through the full cycle, replace the clamps and hoisting device. Break the tack welds on the mounting plates, and reposition the adapter tube assembly. Recheck the operation of the liftgate and repeat this step until the liftgate operates correctly.

Note: *This liftgate platform rides level until it meets the ground, then as you continue to power the liftgate Down, the platform tilts so the tapered edge meets the ground. The platform again levels itself before lifting during the Up cycle.*

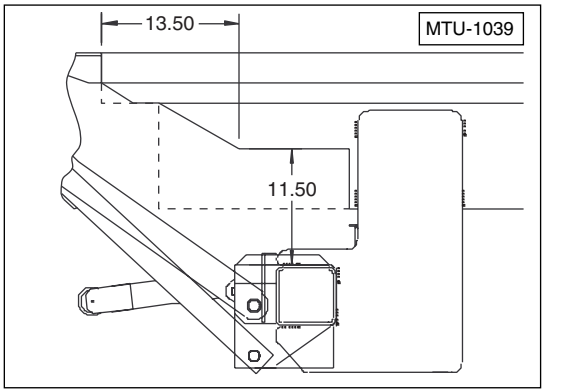
Step 19

Weld the liftgate while platform is lowered to the ground, not in raised position. Shield the lift cylinder's chrome piston rods, and hoses, to prevent damage by weld spatter. Use 3/8" fillet welds around the entire mounting plate.



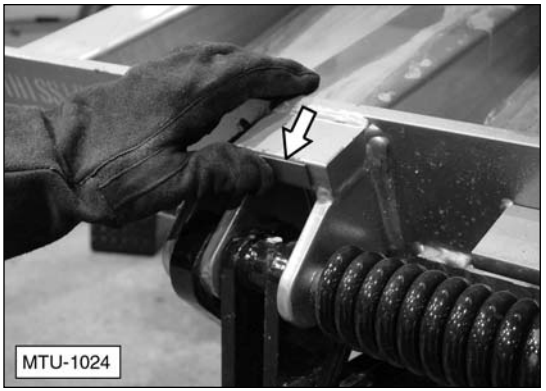
Step 20

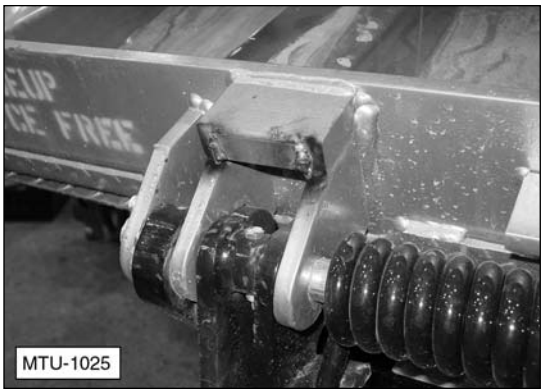
Cut the chassis frame and body long sill as shown. After making the cut out, make sure the liftgate operates properly without hitting the chassis frame or body long sill.



Step 21

If necessary, adjustment can be made to reposition the height of the platform in relation to the truck floor. When fully raised, the rear edge of the platform should stop “level" to 3/4 inch higher than the front edge of the platform. This extra height allows for deflection when the platform is fully loaded. Shims (approx. size 1/16" thick x 3/4" x 2-1/4" long) can be installed between the cam plates and the platform as shown (weld shims to cam plates).





Step 22

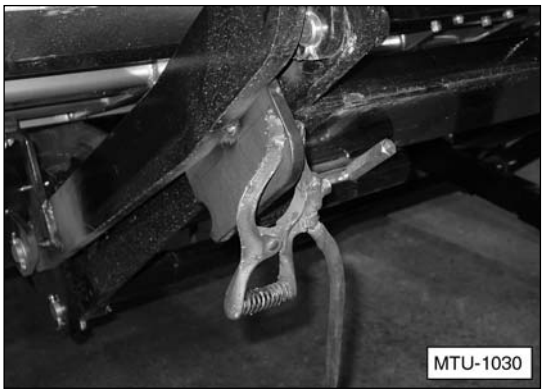
IMPORTANT NOTICE

The latch pin is only for in-transit locking of the liftgate. DO NOT slide the latch pin into the latched position when the platform is unfolded and/or raised. If this occurs, serious damage to the liftgate can occur when the liftgate is lowered.

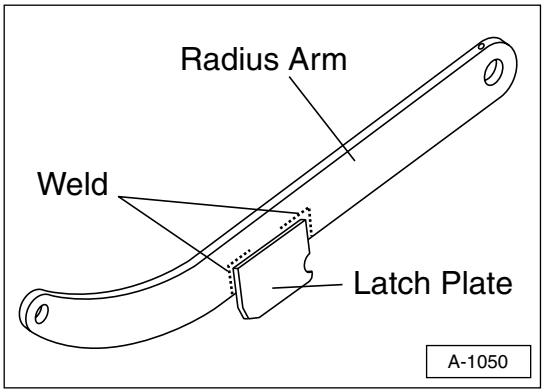
Attach the latch plate to the radius arm as follows:

a. Raise the liftgate to the stored position and slide the latch pin across the radius arm.

b. Position and tack weld the locking plate on the streetside radius arm as shown. There should be a 1/16” gap between the radius on the locking plate and the latch pin.



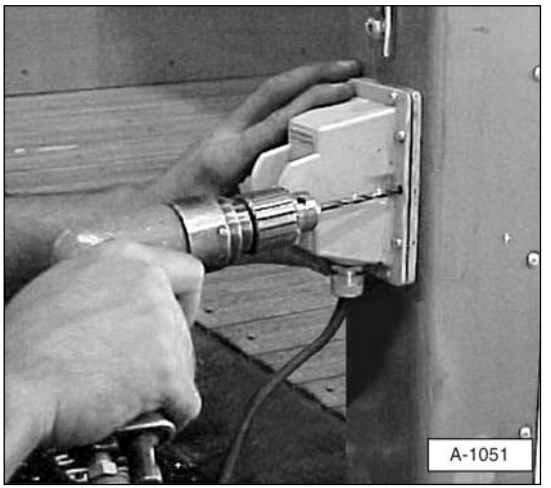
c. Lower the liftgate to the ground, attach the ground cable for the welder, and weld the locking plate in two places with 3/8” fillet welds, as shown in the following illustrations.



Step 23

Mount the control switch to truck’s rear curbside post so it can be reached while standing at the curbside of the truck away and from the liftgate platform.

Tip: *Mount the switch box before attaching the dock bumpers. This allows routing of the switch box wire through the slot in the dock bumper.*



Tip: To install a control switch on "flat bed" applications were there is no corner post, here are a few alternative locations:

a. Under the bed on the "dock bumper gusset" (this requires the gusset to be mounted further in from the side of the body, for protection).

b. Install a removable, hand-held control switch (this is a hand-held control that will allow the operator to move around while controlling the liftgate, this can also be removed and stored away from the liftgate).

c. Use a flush-mount control switch and recess it into the side of the body frame.

Step 24

Weld both the streetside and curbside dock bumpers onto the floor extension.

a. If necessary, route the control cable through the curbside dock bumper as mentioned in Step 24.

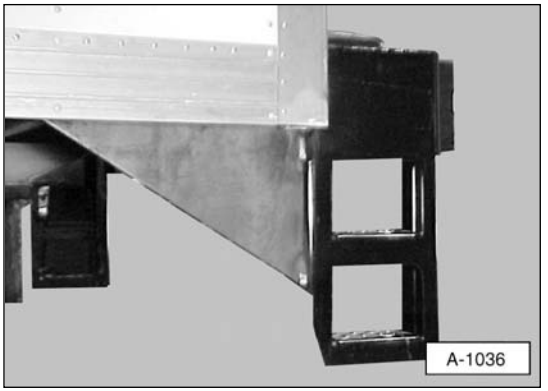
b. Position the top of each dock bumper flush with the floor extension and straight up and down, parallel with the sides of the truck body. Tack weld into position.

c. Weld dock bumper corners continuously to floor extension and truck body.

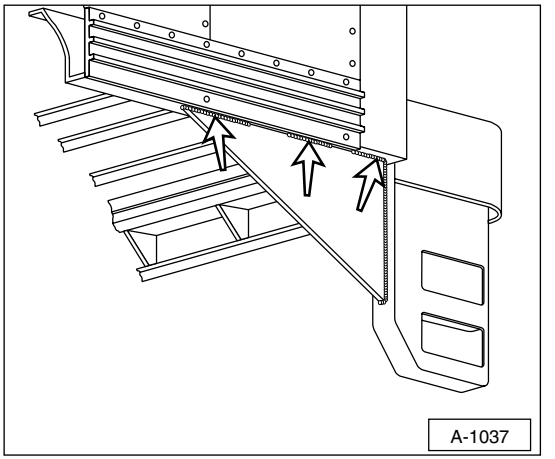
Tip: *Place a wet shop towel or rag around the switch box control cable when welding the curbside dock bumper to prevent burning or melting the control cable.*

Step 25

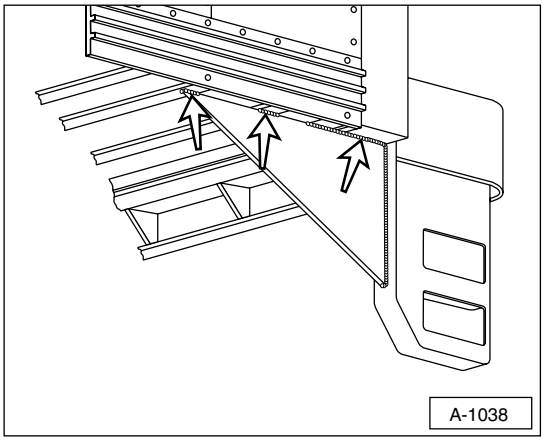
Weld the side gussets to the dock bumper corners and the steel side member of the truck body or the cross-members of the truck body. The step shown is a typical step and may look different from the actual step sent for installation.



a. The recommended method of attaching side gussets, is welding the gusset to the steel side member of the truck body.

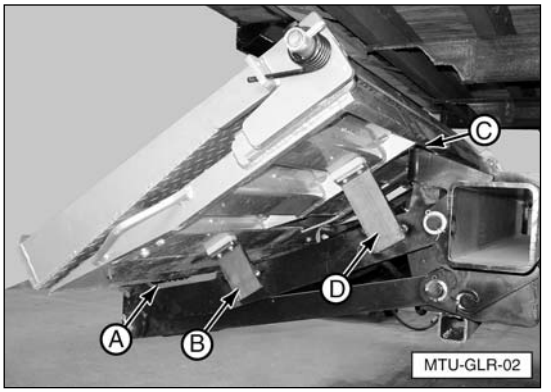


b. The alternate method of attaching the side gussets is to weld the gusset to the steel cross-members of truck body. Make sure gusset straddle at least three cross members. Weld both sides of each gusset.



Step 26

Attach the four platform support brackets. First, fold the platform in the position shown in the photo.



a. Raise the ramp edge of the platform (A) about 1/2” from touching the radius arm.

b. Tack weld a platform support bracket (B) to the outside of each radius arm. You may need to cut the bracket so the welded end does not extend beyond the radius arm.

c. Now adjust the platform UP or DOWN until the back edge of the platform (C) is about 1/2" from touching the frame structure.

d. Tack weld a rear support bracket (D) to the outside of each radius arm.

Make sure liftgate operates properly, then finish weld all four brackets in place on 3 sides of each bracket.

⚠ CAUTION

For safety purposes, weld the liftgate while the platform is on the floor, not in a raised position. Cover the cylinder rods to prevent weld spatter from damaging them.

Tip: Keep the hoisting device attached to the platform for safety. Lower the hoisting device just ahead of the platform as it lowers.

Step 27

Install lights or other electrical components, if needed.

Step 28

Install grab bars or hand rails, as may be necessary. Also, install license plate holder, as necessary.

IMPORTANT NOTICE

Some models of Anthony liftgates may be provided with step devices to assist in the ingress or egress of the rear of the truck or trailer. These devices are NOT to be considered all inclusive of any requirements or guidelines regarding proper ingress or egress of trucks and trailers. These items are provided only as an added feature for installers to help simplify the meeting of possible ingress or egress requirements. As there are many variables in truck sizes and shapes, it is the installers responsibility to determine proper ingress and egress requirements, such as steps, hand grips, grab bars, etc. for each vehicle receiving an Anthony liftgate.

Step 29

Make a final operation check. Remember that this liftgate is a power down model, therefore the pump will run while the platform is lowering.

a. Make sure the platform will travel through a complete cycle, up and down, smoothly and freely, with the platform completely open.

b. Make sure the platform will fold and tuck under the truck in a stored position, and latch. The liftgate must fold smoothly and freely.

c. Make sure hydraulic hose fittings are tight and hydraulic hose does not rub against the liftgate or other parts while cycling up, down, open, and closed. Adjust as necessary by loosening fittings and adjusting the position of the hose(s). Retighten fittings.

Step 30

Attach all decals, as shown in the Decal section of this manual.

Step 31

Complete the Final Checklist section.

Final Inspection Checklist

⚠ DANGER

Do not use the liftgate if any of the items in the Final Checklist are not checked and verified. If you have any questions, contact your nearest Anthony distributor, or the Anthony Liftgates main office.

- ❑ Check all welds to make sure they are done properly.
- ❑ Make sure all pins are in place and held with proper retainers.
- ❑ Make sure the power unit reservoir is filled.

Fill hydraulic tank to within 1/2 inch from the top of the tank.

The fluid level should be 1/2” from the top of the reservoir when the liftgate platform is in the **fully raised** position.

- ❑ Install cover on power unit box. Make sure it is secured with a padlock, lock pin, or wire (customer supplied).
- ❑ Operate the liftgate through its entire operational cycle (Up, Down, Open, Close) several times. Make sure the liftgate operates evenly, freely, and smoothly throughout the entire operating range and that there is no unusual noise or vibration while operating the liftgate.
- ❑ Make sure the platform is adjusted properly (0 to 3/4 inch rise) with the necessary shims.
- ❑ Make sure all decals are in place and legible.
- ❑ Make sure license plate bracket is properly installed, as required by law.
- ❑ Make sure lights are installed and operating properly, per FMVSS 108.
- ❑ Make sure reflectors are re-installed, if any.
- ❑ Make sure grab handles and other ingress/egress items are properly installed as may be necessary.
- ❑ Make sure the optional cab cut-off switch or power cut-off solenoid is installed.
- ❑ Put Installation, Operation, and Maintenance manual and Parts manual in the vehicle.

Decals

Safety decals provide a vital role in helping to reduce injuries and/or possibly even death. To ensure the greatest level of safety, all decals must be in place and legible at all times. Remember, it is the users responsibility to maintain these decals. For a complete part number list of the decals used on the Tuckunder liftgates, refer to the Decals section in the Parts manual for MTU-GLR Model Tuckunder Liftgates, form number MTU-GLR P-11/04.

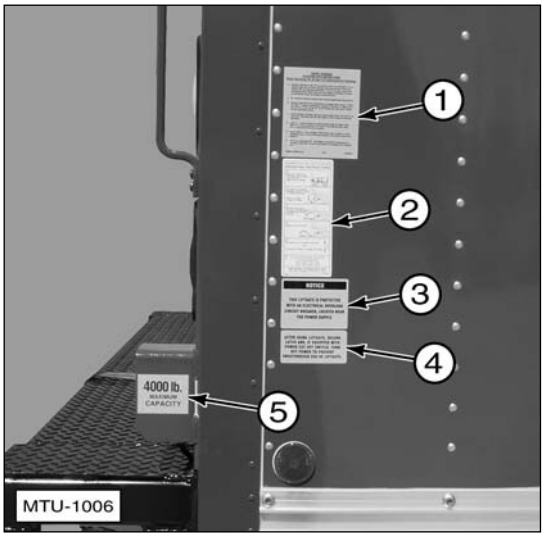
⚠ DANGER

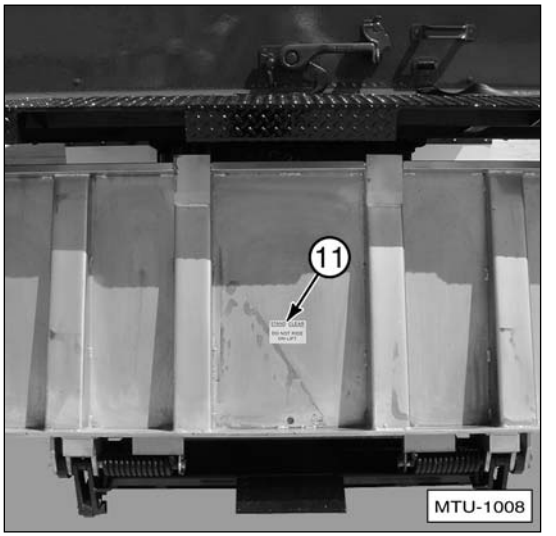
Make sure all decals are attached to the liftgate and/or truck and are legible at all times.

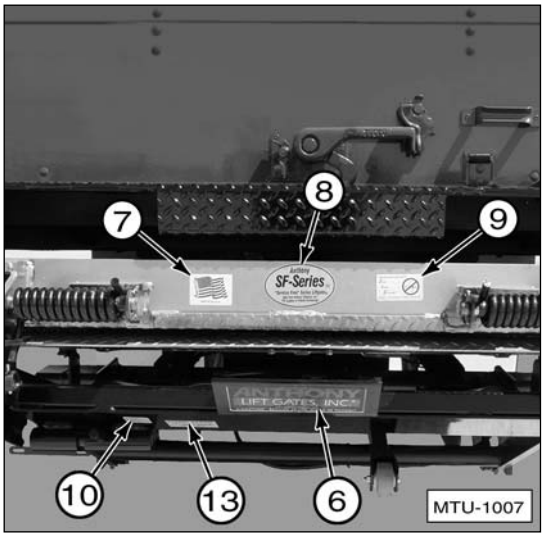
For replacement decals contact:
Anthony Liftgates, Inc.
1037 West Howard Street
Pontiac, Illinois 61764
(815) 842-3383
www.anthonyliftgates.com

MTU Tuckunder Liftgate
Safety Decals

Item	Part No.	Description	Qty	Remarks
1	Q-003013	Urgent Warning - Elevating Gate Instructions...	1	On side of truck body.
2	ATU-423	Operating Instructions	1	On side of truck body.
3	A-150238	Notice - This liftgate is protected...	1	On side of truck body.
4	ATU-141	After Using Liftgate, Secure Latch...	1	On side of truck body.
5	ATU-147	3000 lb. Maximum Capacity	1	On side of truck body on 3000 Models Only.
	A-171433	4000 lb. Maximum Capacity	1	On side of truck body on 4000 Models Only.
6	A-131034	Anthony Hydraulic Lift Gate label	1	On back of liftgate.
7	A-150601	Flag — Made in the USA	1	Inside edge of platform.
8	A-131003	SF Series	1	Inside edge of platform.
9	A-131026	Zero Leak Concept	1	Inside edge of platform.
10	A-131017	Note: Disengage “latch”...	1	On bottom of main platform.
11	ATU-146	Stand Clear Do Not Ride on Lift	2	On bottom of main platform and on bottom of flip-over section.
12	ATU-424	Reset Circuit Breaker (not shown)	1	On circuit breaker bracket.
13	ATU-143	Secure Latch While in Transit (not shown)	1	Place by latch assembly.







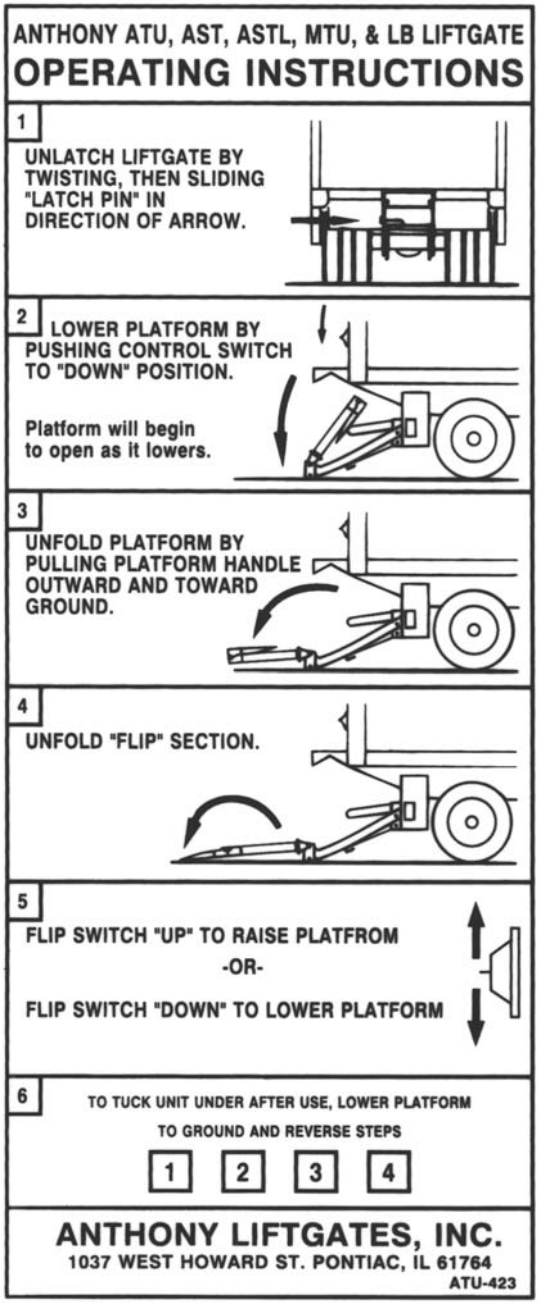
1. Q-003013

URGENT WARNING
ELEVATING GATE INSTRUCTIONS
Before Operating Lift, Be Sure You Understand the Following.

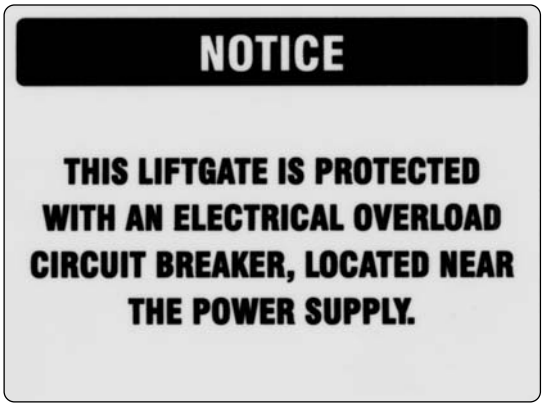
1. Improper operation of this lift can result in serious personal injury. Do not operate unless you have been properly instructed and have read and are familiar with, the operating instructions. If you do not have a copy of the instructions please obtain them from your employer, distributor, or lessor, as appropriate, before you attempt to operate the lift.
2. Be certain the vehicle is properly and securely braked before using the lift.
3. Always inspect this lift for maintenance or damage before using it. If there are signs of improper maintenance, damage to vital parts, or slippery platform surface, do not use the lift. Do not attempt your own repairs, unless you are specifically trained.
4. Do not overload. See Mfg. Literature and/or Rating Label on the unit for the rated load. Remember that this limit applies to both raising and lowering operations.
5. Each load should be placed in a stable position within the edges of the platform as near as possible to the center of the platform side to side, and as close to the truck sill as possible.
6. Never stand in or move through or allow anyone else to stand in or move through the area in which the lift may operate or into which an upset load might fall.
7. This is not a passenger lift. This liftgate is intended for loading and unloading of cargo only. Do not use this liftgate for anything but its intended use.

Anthony Liftgate, Inc. 6/95 Q-003013

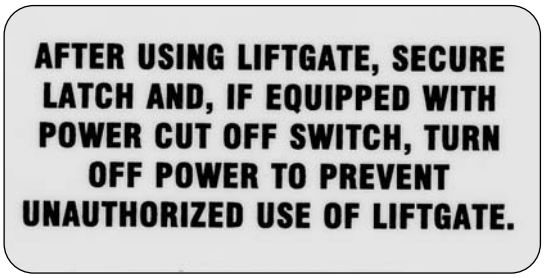
2. ATU-423



3. A-150238



4. ATU-141



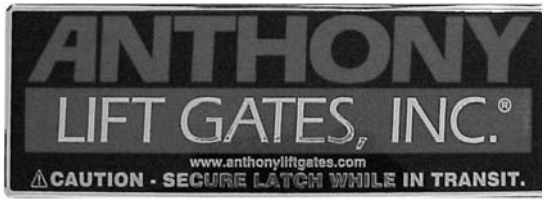
5. ATU-147

A-171433

IMPORTANT NOTICE

Make sure the proper "maximum capacity" decal goes on the appropriate liftgate. For example, "3000 lb. Maximum Capacity" decal goes on MTU-GLR 3000 models only. Do not put a higher rated decal (4000 pound) on a smaller liftgate; this could result in liftgate damage or possibly personal injury.

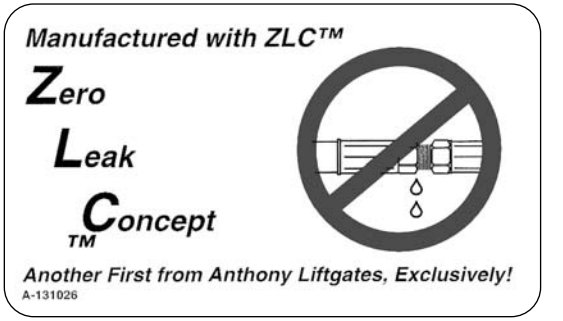
6. A-131034



7. A-150601

8. A-131003

9. A-131026



10. A-131017

11. ATU-146

12. ATU-424 (located on circuit breaker)

13. ATU-143

Operation Section

General Safety Operating Instructions

⚠ DANGER

Do not stand in the platform's work area while operating the liftgate. Serious injury or death could result if the load shifts or is unstable on the platform.

The following is a list of Do's and Don'ts for the operation of the liftgate.

✔ Do's

✔ Read and follow warning decals, operating decals, and owners manual.

✔ Keep all decals in place and legible and retain the owners manual in the vehicle or all Warranties are void.

✔ Make sure the vehicle is properly and securely braked before using the liftgate.

✔ Keep yourself clear of all moving parts.

✔ Make sure the area in which the platform will open and close is clear before opening, closing, raising, or lowering the platform.

✔ Make sure the platform area, including the area in which loads may fall from the platform, is clear before, during, and at all times while operating the liftgate.

✔ Always place the load as close to the center of the platform as possible. Also, position the load as close to the center of the truck's rear sill as possible.

✔ Only operate the liftgate with the push button/switch controls mounted on the truck body.

✔ Check the oil level in the hydraulic monthly. Change it if it is contaminated or dirty.

✔ Visually inspect your liftgate frequently and keep it properly adjusted.

✔ Repair any damage to the liftgate to prevent accidents.

✔ Lock the liftgate into the storage position with the latch pin when the liftgate is not in use.

✘ Don'ts

✘ Do not overload the platform. The maximum rated capacity is based on an evenly distributed load on the platform's flat surface.

✘ Do not ride on the liftgate. Always stand clear of liftgate when it is operating.

✘ Do not allow children to play around or operate the liftgate.

✘ Do not allow your liftgate to be used by persons not familiar with its operation.

✘ Do not use your liftgate if it shows signs of abuse or fails to operate freely.

✘ Do not allow the motor/pump to run after the liftgate is closed, or in the up position.

✘ Do not use brake fluid in the hydraulic reservoir.

✘ Do not bounce the platform by pushing and releasing the control button/switch abruptly.

✘ Do not use the liftgate for anything other than its intended use of loading and unloading cargo.

✘ Do not operate lift trucks on or over any part of the platform.

✘ Do not stand under or place any object under the liftgate work area.

Opening and Closing the Liftgate

Step 1
Twist and slide the latch pin toward curbside of the liftgate.

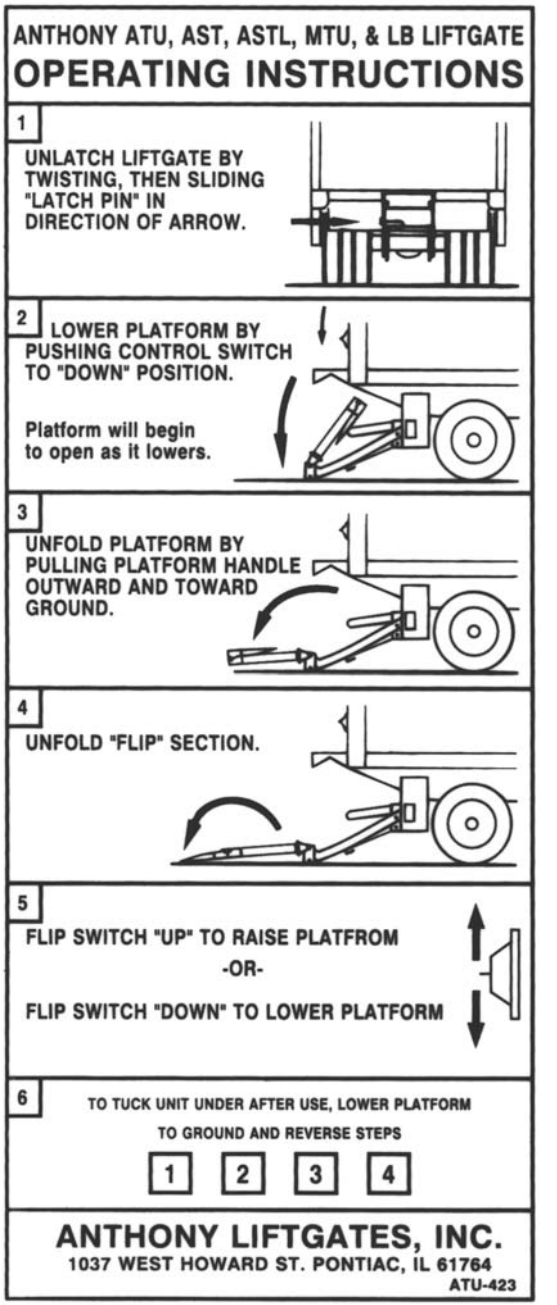
Step 2
Stand clear of the platform and lower the liftgate by pressing "Down" on control button/switch.

Step 3
Open the platform.

Step 4
Open the flipover ramp.

Step 5
Press the "Up" switch to raise platform or the "Down" switch to lower the platform.

Step 6
To tuck the liftgate into its storage position after use, reverse Steps 1 2, 3, and 4 from ground level.



Maintenance Section

Quick Check Maintenance Guide

Monthly Inspection

SPECIAL NOTE: As of December 1994 Anthony Tuckunder Liftgates are “Service-Free”. This means that newer liftgates have lubrication-free bushings at the major pivot points which, of course, do not require lubrication. Consequently these liftgates do not have grease zerks.

1. Make sure the liftgate operates freely and smoothly throughout its entire range of movement.

2. Check for damage to the liftgate such as bent or distorted members, or any cracked weld which may have resulted from overload or abuse. Check for excessively worn parts. Replace bushings and pins if extremely worn.

3. Check all pins and pivot points. Make sure they are secured with proper retainers.

4. Make sure platform is angled upward from truck bed 0 to 3/4 inch when raised to bed height. See Platform Adjustment for a shimming procedure.

5. Make sure all electrical wires, switches, and connections are in good working condition and operate properly.

6. Check for oil leaks in these areas:

- **a**. Hydraulic lift cylinder.
- **b**. Hydraulic hoses. Replace if they show signs of leakage or excessive abrasion of the covering.
- **c**. Check all hydraulic fittings for damage or leaks. Tighten fittings to stop leaks or replace if damaged.

7. Check reservoir oil level.

- **a**. Place liftgate in the fully raised, the oil level should be within 1/2 inch of the top of the reservoir.
- **b**. Fill as required with Penzoil AWX Automatic Transmission Fluid or equivalent.

IMPORTANT NOTICE

Use only Penzoil AWX Automatic Transmission Fluid or equivalent in the power unit reservoir. Do not use brake fluid.

8. Check the fluid level of the vehicle battery. Fill as required.

9. Examine all Warning, Capacity, and Operational Decals. If they are not readable they should be replaced. Decals may be obtained from Anthony Liftgates, Inc.

10. Oil the roller wheel and make sure it spins freely.

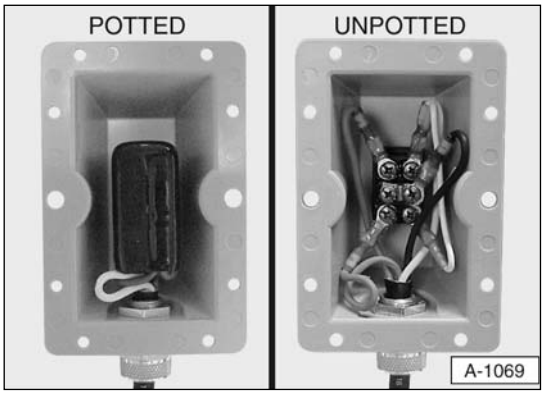
Checking Battery Cable

To check for a bad battery cable, run the motor directly from a spare battery using jumper cables.

1. Remove the battery connection to the motor.
2. Connect the negative jumper cable (ground) directly to the liftgate. Connect the positive cable to the terminal on the motor start solenoid.
3. Depress the switch, if the motor operates, the battery cable is bad and should be replaced.

Checking the Control Switch

Newer control switches, shown on the left side of the photo, are permanently sealed (potted) and cannot be checked. If these switches are not working properly, replace them.



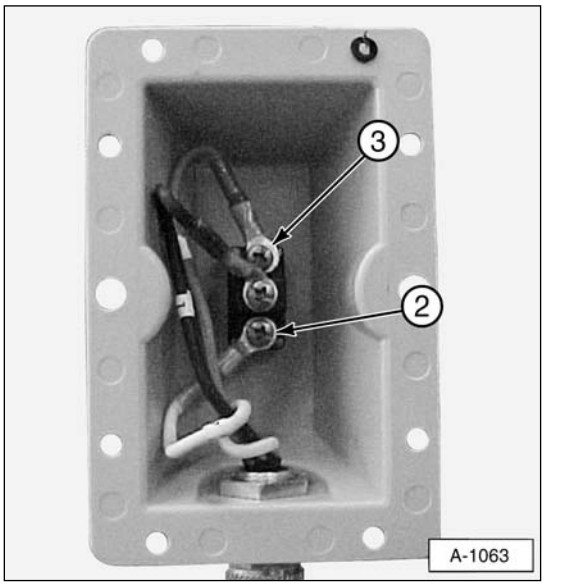
The older unpotted switch can be checked to make sure it is operating properly.

⚠ CAUTION

Stand clear of the liftgate when checking the control switch. It is possible for the liftgate to activate when testing the switch, which could lead to personal injury.

Gravity Down Models (unpotted)

1. Connect one end of a continuity tester to either top terminal (3) or bottom terminal (2).
2. Connect the other end of the continuity tester to a chassis ground or the body ground.



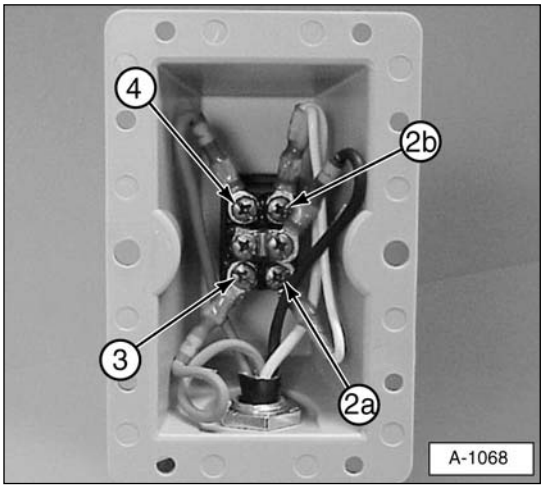
Inside of gravity down control switch.

3. Once connected, flip the switch for that function (up or down). If the switch is good, the tester will light to indicate good continuity. If the tester does not light, then that function of the switch is bad.

4. Repeat the procedure for the other terminal.

5. If the switch is bad, replace it.

Power Down Models (unpotted)



Inside of power down control switch.

1. Connect one end of a continuity tester to terminal [2 (a or b), 3, or 4].

2. Connect the other end of the continuity tester to a chassis ground or the body ground.

3. Once connected, flip the switch for that function (up or down). If the switch is good, the tester will light to indicate good continuity. If the tester does not light, then that function of the switch is bad.

4. Repeat the procedure for the other two terminals.

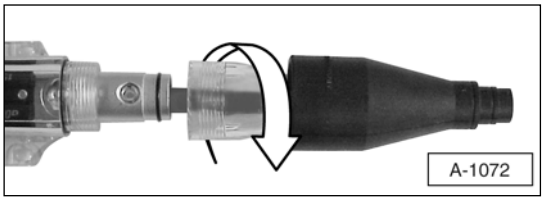
5. If the switch is bad, replace it.

Replacing the Fuse

To replace a fuse:

1. Pull back the rubber boots from the fuse holder.

2. Unscrew the fuse holder ends from the fuse holder body and pull it apart.



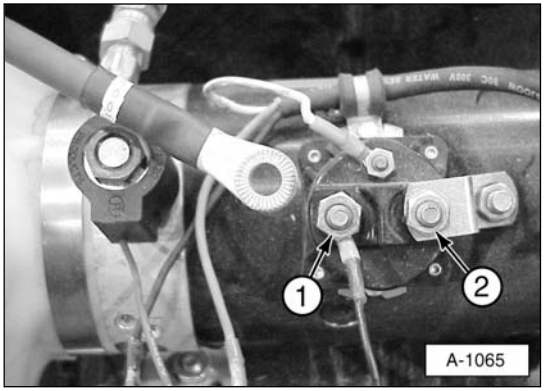
3. Slide the fuse holder body one direction (left or right) to expose the blown fuse.

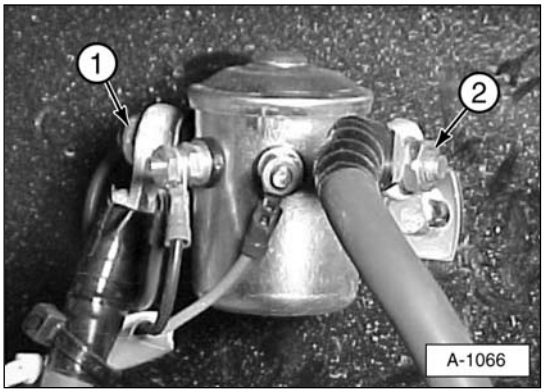
4. Loosen the screws from each end of the fuse and remove it. Replace the fuse with the same size (Amperage) fuse as the one removed. If you are unsure of the replacement fuse amperage, contact Anthony for your specific size fuse. Retighten the screws.

5. Re- assemble the fuse in reverse order. Be sure the rubber boots are sealed around the fuse holder and cable.

6. Re-connect power after you are certain liftgate area is clear.

Checking Motor Start Solenoid and Power Cut-off Solenoid



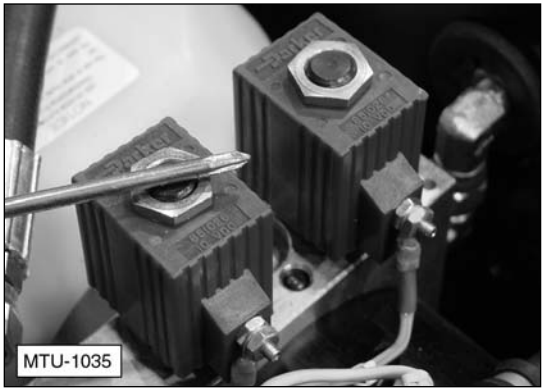


Both the motor start solenoid and power cut-off solenoid can be checked by bypassing the solenoid itself.

1. Use jumper cables for this test.
2. Connect one jumper cable to the battery side (2) of the solenoid. Connect the other cable to the motor side (1) of the solenoid.
3. If the liftgate is activated, the solenoid is bad and should be replaced.

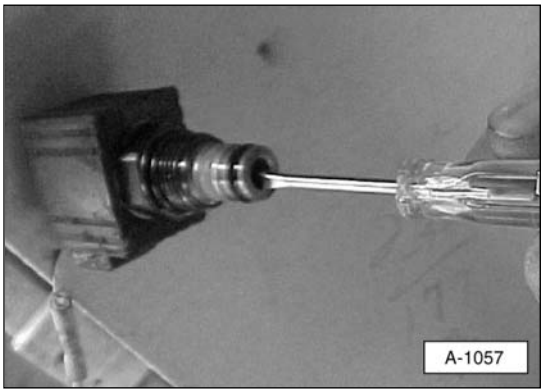
Checking Lowering Valve Cartridge and Solenoid

1. Place liftgate on the ground in the open position.
2. Place a steel screwdriver over the top of the lowering valve coil.



3. Momentarily activate the control switch in the DOWN position. The screwdriver should be attracted to the magnetic field created by the coil.
4. If no magnetic pull is produced, the coil is bad and should be replaced. If the coil is good, check the cartridge valve.
5. Remove the solenoid from the valve assembly.
6. Remove the valve cartridge from the pump body.
7. Clean the cartridge and blow it dry with compressed air (not greater than 30 psi). Also blow out the pump body.

8. Use a small screwdriver and carefully press on the spool inside the cartridge. If the spool moves freely, the cartridge is good. If it does not move, replace the cartridge, because the spool could be bent, pitted, or damaged in some other way.



Checking Cylinder Piston Seals (drifting - caused by seal leakage)

Piston Rod Seals (Power Down)

1. Check the lowering valve. Make sure it is operating correctly and the valve is not sticking or dirty.
2. If the lowering valve is operating properly, then the drifting is most likely caused by worn piston seals. Rebuild the cylinder and replace the piston seals.

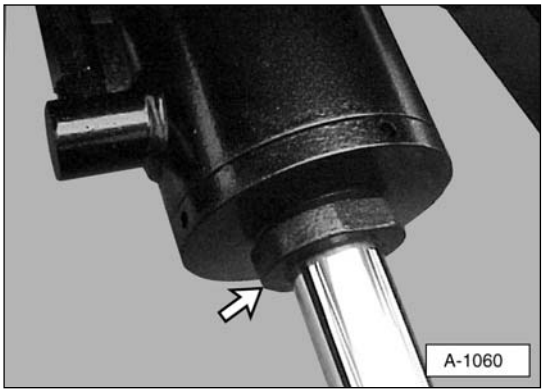
If the cylinder is under warranty, do not rebuild. In these cases the complete cylinder will be replaced.

Packing Gland Nut

On newer model cylinders, purchased after Spring of 2003, there is no packing seal adjustment. If a leak is found, rebuild the cylinder with a new seal kit.

On older models, if the packing seals are leaking and oil is flowing down the cylinder piston, this leakage can be stopped in most cases by tightening the gland nut.

1. Place the platform on the ground.
2. Use a pipe wrench or other suitable wrench to tighten the gland nut 1/4 to 1/2 of a turn. Do not tighten the nut more than 1/2 of a turn at a time.



3. If the packing gland nut continues to leak, tighten the nut again or rebuild the cylinder using a new seal kit.

IMPORTANT NOTICE

Do not overtighten the packing gland nut. If the cylinder does not extend or extends very slowly, the packing gland nut may be too tight. If the leak cannot be stopped by tightening the packing gland nut, rebuild the cylinder and replace the packing gland seal.

Checking and Adjusting System Pressure

Power down models have two relief valve settings; one for raising the platform (power up) and one for lowering the platform (power down).

To check the “power up” pressure setting:

1. Place the liftgate on the ground and remove the pressure hose from the power up port of the pump.
2. Install a tee (customer supplied) into the power up port.
3. Connect a pressure gauge and reconnect the hydraulic hose.

The pressure gauge must be rated above the maximum pressure of the liftgate. For example, use a 4000 psi pressure gauge on a 3000 psi maximum capacity liftgate.

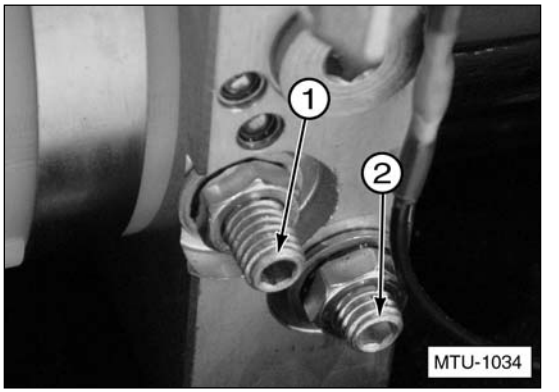
⚠ DANGER

Do not stand or work in the platform’s work area while operating the liftgate. Place the pressure gauge so it can be read while operating the liftgate from a safe location. Serious injury or death could result if this action is not followed.

4. Raise the liftgate and check the pressure. If the pressure is low, adjust the power-up pressure relief valve (1).
5. With the liftgate on the ground, loosen the locknut. Use an Allen wrench and turn the pressure adjustment screw counterclockwise to increase pressure and clockwise to decrease the pressure.

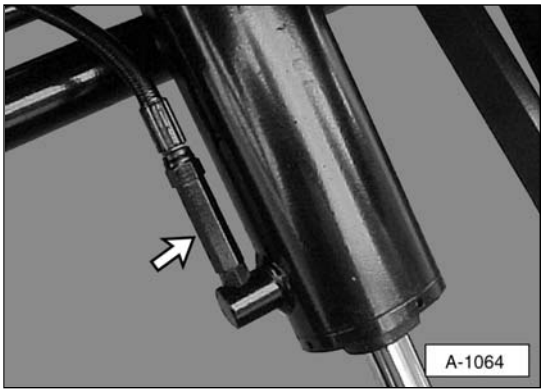
If the appropriate pressure cannot be reached, replace the pump.

6. Hold the valve adjustment screw in place and tighten the locknut. This method will prevent the adjustment screw from turning when the locknut is tightened.



7. Check the power down relief valve pressure (2) in the same way as the gravity down system by installing a tee and gauge.
8. The power-down pressure should not exceed 400 psi. Turn the adjusting screw counterclockwise to decrease the pressure and clockwise to increase the pressure.

Flow Control Valve



If the cylinders do not operate or operate slower than normal, remove the flow control valves and hook the hydraulic hoses directly to the cylinders. If the cylinders operate properly, replace the flow control valves.

⚠ DANGER

Do not operate the liftgate without the flow control valve. Serious injury or death could result if this action is not followed.

Safety

Safety is Your Responsibility

It is the responsibility of the installer/operator to understand and perform proper operating procedures. Be aware of the inherent dangers in the use of this product and the tools used to install it. Read and understand all Danger, Warnings, Cautions, and Important Notices in this manual and on the liftgate or truck.

Safety Signal Words

A signal word or words call attention to the safety sign and designate a degree or level of hazard seriousness. The signal words for Anthony Liftgates' product safety signs are DANGER, WARNING, CAUTION, and IMPORTANT NOTICE.

⚠ DANGER

DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

⚠ WARNING

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT NOTICE

Indicates that equipment or property damage can result if instructions are not followed.

Safety Rules

⚠ DANGER

To avoid personal injury or death, carefully read and understand all instructions pertaining to the Anthony Liftgates product. Do not attempt to install, operate, or maintain our product without fully understanding all our instructions and safety precautions. Do not operate or work on a truck or liftgate unless you read and understand the instructions and warnings in the Installation, Operation, and Maintenance manual. If any doubt or question arises about the correct or safe method of performing anything found in this or other Anthony Liftgates' manuals, contact your Anthony Liftgates' dealer or call the Inside Sales and Service representatives at our main headquarters. Proper care is your responsibility.

⚠ DANGER

To prevent injury, the liftgate should only be installed by a qualified installer having knowledge and skill in using welding equipment and a cutting torch.

Always weld in a well ventilated area and, if in an enclosed area, vent the fumes to the outside. Breathing welding smoke and paint fumes can cause serious injury.

Always follow all State and Federal health and safety laws and/or local regulations when using an arc welder, mig welder, or cutting torch. Also, follow all manufacturer's safety guidelines. If other people are present during the installation of the liftgate, make sure the welding area is shield from their view. This will help prevent serious eye injury from the bright light.

To avoid eye injury during welding, always wear a welding helmet with the proper lens to shield your eyes from the bright light.

Failure to prevent the truck from moving during the installation of the liftgate could result in serious personal injury or crushing of the installer(s).

⚠ DANGER

To prevent injury, make sure all decals are attached to the liftgate and/or truck and are legible at all times.

⚠ DANGER

To prevent serious bodily injury, keep sparks, lighted matches, and open flames away from the top of the battery, because battery gas can explode. Always follow all the manufacturers' safety recommendations when working around the truck's battery.

Take precautions to avoid sparks coming into contact with the truck's fuel tank, brake lines, or other flammable components. Sparks can cause an explosion of combustible materials, resulting in serious injury or death.

Never secure the power cable to anything which allows it to contact sharp edges, other wiring, fuel tank, fuel lines, brake lines, air lines, exhaust system, or any other object that could cause the power cable to wear or be damaged. A cut battery cable can cause sparks resulting in loss of vehicle control, serious injury, or even death.

⚠ WARNING

Use extreme caution if working under the liftgate during installation. Failure to safely secure the liftgate to the floor extension could cause serious personal injury. Do not remove the lifting device(s) until the liftgate is completely welded onto the truck.


To prevent personal injury, clean up any spilled fluids immediately. To avoid tripping, do not leave tools or components laying around in the work area.

Do not place hands or feet in pinch points.

Do not ride on the platform.

Do not place your feet under the liftgate.

Always use/set the truck's parking brake before operating the liftgate. Failure to follow this recommendation can result in injury.

⚠ WARNING

Most accidents involving the operation, maintenance, or repair of products made by Anthony Liftgates occur because the installer/owner/operator failed to observe basic safety rules or operating instructions. Accidents can often be avoided by being alert and recognizing potentially hazardous situations. Any individuals installing, operating, maintaining, or repairing products manufactured by Anthony Liftgates should have the necessary training, skills, and tools required to perform these functions properly and safely. The safety information in this manual serves as a basic guide in an attempt to prevent injury or death.

Anthony Liftgates cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the product itself are, therefore, not all inclusive. If tools, procedures, work methods, or operating techniques that are not specifically mentioned by Anthony Liftgates are used, you must satisfy yourself that they are safe for you and for others. Make sure the liftgate or truck it is mounted onto will not be damaged or made unsafe by any operation, lubrication, maintenance, or repair procedures that you choose.

DO NOT proceed, if any doubt arises about the correct or safe method of performing anything found in this or other Anthony Liftgates' manuals. Seek out expert assistance from a qualified person before continuing.

⚠ CAUTION

Many liftgate models provide drivers' steps as a convenience feature. When steps are present, customer-supplied grab handles and other ingress/egress items should be installed.

Even though the Anthony liftgate is easy to install, the installation should be done with at least two people.

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.

Tack welds must be strong enough to hold the weight of the individual components being held in place. Insufficient tack welds may not hold the parts in place, resulting in possible bodily harm.

IMPORTANT NOTICE

Use only Penzoil AWX Automatic Transmission Fluid or equivalent in the power unit reservoir. Do not use brake fluid.

Troubleshooting Section

Troubleshooting Guide

Troubleshooting Chart		
Problem	**Possible Cause**	**Possible Solution**
Motor does not run when control switch is activated.	Cab cut-off switch.	Turn switch to ON position.
	Dead battery.	Make sure battery is fully charged. Check for loose or corroded battery connections. Replace or recharge battery.
	Main power cable circuit protection tripped or blown.	Reset circuit breaker or replace fuse.
	10 Amp fuse in power unit box.	Replace, if fuse is blown. If problem continues, check for shorts in the electrical system.
	Control box switch.	Check switch using Checking Control Switch procedure in Maintenance section.
	Motor start solenoid.	Check solenoid using the procedure in the Maintenance section.
	Optional power cut-off solenoid.	Check solenoid using the procedure in the Maintenance section.
	Battery cable.	Connect motor directly to a spare battery using the procedure in the Maintenance section.
	Motor.	If the motor is determined to be bad, it should be replaced. Bad motors are typically caused by weak batteries (low voltage), loose connections, corrosion, or a poor ground.
	If liftgate is installed on a semi trailer make sure the battery wire is two gauge or heavier. Smaller wires can reduce the voltage, resulting in motor failures.	
	If the motor dose not operate in freezing conditions, make sure the motor housing does not contain water.	

Troubleshooting Chart (continued)		
Problem	**Possible Cause**	**Possible Solution**
Motor runs, but liftgate will not open or lower to the ground.	Structural damage. Check clearance between platform and dock bumpers.	Fix damage. Replace worn parts.
	Latch pin.	Slide the latch pin to the open position.
	Control switch box.	Check DOWN terminal using the procedure in the Maintenance section.
	Lowering valve coil.	Check the coil using the procedure in the Maintenance section.
	Lowering valve cartridge.	Check, remove, and clean valve cartridge using the procedure in the Maintenance section.
	Flow control valve.	Remove flow control valve and hook hydraulic hose directly to the cylinder. If the cylinder operates properly, install a new flow control valve.
Motor runs, but platform will not raise will not raise rated capacity, or raises, but drifts down when control switch is released.	Load capacity has been exceeded.	Verify load capacity and adjust load weight.
	Structural damage.	Replace damaged parts.
	Low fluid level.	Fill reservoir.
	Low Voltage.	Inspect the battery connection terminals and check the battery's Voltage (9 Volts minimum).
	Lowering valve.	Coil or cartridge may need cleaning or replacement. See Maintenance section.
	Bad piston seals.	See Maintenance section for Checking Cylinder for Leakage.
	Pump relief valve needs adjusted.	See Maintenance section for Checking and Adjusting System Pressure.
	Hydraulic pump is worn.	Replace hydraulic pump.
Sagging platform.	Normal wear. section for Platform Adjustment.	Add shims to platform. See Maintenance
	Bushing wear where lift arms connect to platform.	Replace bushings.
	Structural damage.	Replace damaged parts.

Troubleshooting Chart (continued)		
Problem	**Possible Cause**	**Possible Solution**
Foaming oil.	Air in the hydraulic hose(s).	Check oil level in reservoir.
	Broken or loose fluid return tube.	Remove the oil reservoir and make sure the return tube is below the oil level. If the tube has turned or fallen out, reinstall it into the pump housing. Use a center punch to “stake” the tube into position.
Hydraulic fluid is leaking from packing gland.	Loose packing gland nut, if so equipped.	Tighten gland nut.
Latch pin is broken or bent.	Operator has lowered platform without releasing latch pin.	The latch pin is only used to prevent the liftgate from opening due to a pressure leak or pressure bleed-off over an extended period of time. Always release latch before opening liftgate.
Liftgate raises truck when lowered to the ground.	Power down system pressure is set too high.	See Maintenance section for Checking and Adjusting System Pressure.
Liftgate will not open.	Platform operating area is not clear.	Clear platform operating area.
	Pin will not slide free.	Activate the “UP” switch and raise the liftgate to the fully stored position. Open the latch pin free.
Platform lowers extremely slow.	Low oil level on power down models.	Fill reservoir.
	Improper oil in hydraulic reservoir.	See Monthly Inspection.
	Bushing wear where lift arms connect to platform.	Replace bushings.
	Damaged or kinked hydraulic hose.	Repair or replace.
	Cylinder rod is scored, pitted, or bent.	Repair or replace.
	Flow control valve.	Remove flow control valve and hook hydraulic hose directly to the cylinder. If the cylinder operates properly, replace the valve.
	Lowering valve.	Solenoid or cartridge may need cleaning or replacement. See Maintenance section.
Platform raises partially and stops.	Load capacity has been exceeded.	Verify load capacity and adjust load weight.
	Structural damage.	Replace damaged parts.
	Low Voltage.	Recharge battery (if less than 9 volts).
	Low fluid level or pressure.	Refill reservoir. Check relief valve.
Platform will not lower.	Platform operating area is not clear.	Clear area.
	Structural damage.	Replace damaged parts.
	Low Voltage.	Recharge battery (if less than 9 volts).
	Lowering valve.	See Maintenance section.
	Hydraulic pump and motor.	Replace power unit.

NOTES

NOTES

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