ANTHONY LIFTGATES, INC.®

MAINTENANCE MANUAL

MTU-GLR

MTU-GLR-WR-3
MTU-GLR-WR-4
MTU-GLR-EX-3
MTU-GLR-EX-4
MTU-GLR-25
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QUALITY, RELIABILITY, CUSTOMER SERVICE

MADE IN THE USA

Contents

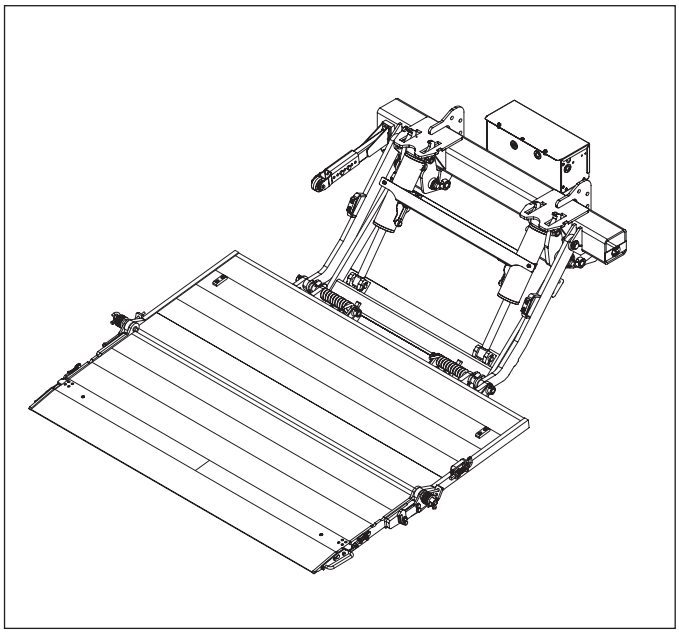
1. General Information

1.1 Introduction

Congratulations on selecting an Anthony Liftgates TuckUnder™ liftgate.

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

To ensure your liftgate will perform to your expectations, we have provided this Installation Manual, which is designed to provide you with the necessary installation instructions and safety precautions for the installation of the MTU-GLR TuckUnder™ liftgates.



Typical Anthony Liftgates Tuckunder Model.

1.2 General Safety

WARNING **Read, Understand, and Follow the Manual**

The success or failure of this liftgate to properly and efficiently operate depends on an ongoing preventative maintenance program. Failure to read, understand, and follow the maintenance instructions and safety recommendations in this manual can result in serious injury or death.

Also, read and understand the operating instructions in the separate Operation Manual before performing any maintenance.

1.3 State and Federal Regulations

1.3.1 Lighting

WARNING **If any lighting is installed or changed, it must not alter or prevent vehicle compliance with any existing State or Federal standards such as FMVSS 108 – Lamps, Reflective Devices, and Associated Equipment.**

1.3.2 Rear Impact Guards

WARNING **When stored in the transport position, this liftgate must provide protection against rear impact and comply with State and Federal standards in your area. Anthony Liftgates offers a bolt-on bumper, which meets the requirements of this standard.**

1.4 If Maintenance Help is Required

1.4.1 Maintenance (Dealer)

For additional information on installation, refer to the MTU-GLR TuckUnder™ liftgate website www.anthonyliftgates.com. To find the most current version of the reference material, choose LIFTGATES, TUCKUNDER™, MTU-GLR, and then DOWNLOADS.

If you have any doubts or questions about installation, call us. Before doing so, have the serial number, model number, and lift capacity of your liftgate available.

Anthony Liftgates, Inc.
1037 West Howard Street
Pontiac, Illinois 61764
(815) 842-3383 or 800-482-0003

1.4.2 Customer Service and Parts (End User)

For service or ordering replacement parts, contact an authorized dealer by going to www.anthonyliftgates.com and selecting the FIND A DEALER tab. Enter your zip code to find the nearest authorized service location.

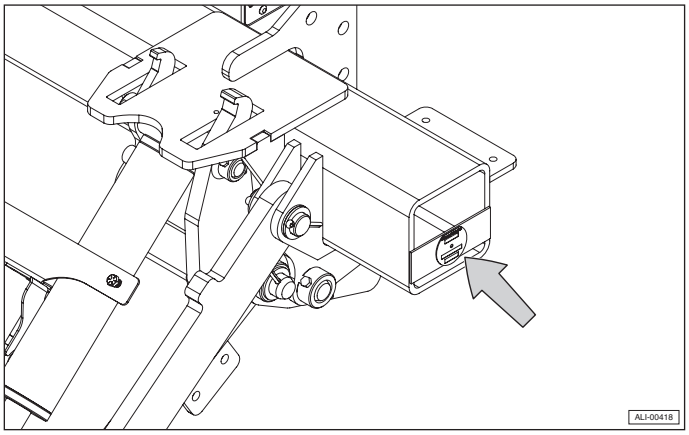
Being unaware of safety recommendations can lead to personal injury. The user must make sure all decals are attached to the liftgate and truck and are legible.

1.5 Registration

Refer to the Operation Manual for the serial number information.

1.6 Warranty

For a detailed copy of the Warranty Statement, refer to the Operation Manual. To make an online warranty claim, go to www.anthonyliftgates.com and select CUSTOMER SERVICE and then select WARRANTY CLAIM.



Before calling with questions or other product information requests, have the serial number, model number, and lift capacity of the liftgate available. This information is stamped into the identification plate on the side of the adapter frame tube.

NOTICE *The liftgate must be maintained according to these instructions or the warranty will be void.*

1. Unauthorized modifications may cause improper operation or other unforeseen problems or dangers. If any deviation is deemed necessary, written permission must be obtained from Anthony Liftgates.
2. All decals must be attached and legible, or all warranties are void.

2. Safety

2.1 Safety is Your Responsibility

It is the responsibility of the maintenance personnel to understand proper operating procedures. Be aware of the inherent dangers in the use of this product and the tools used to maintain it. Read and understand all Warnings, Cautions, Notices, Safety Instructions, and Notes in this manual, on the liftgate, or on the truck.

Accidents can often be avoided by being alert and recognizing potentially hazardous situations. 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 are used that are not specifically mentioned by Anthony Liftgates, you must satisfy yourself that they are safe for you and for others.

DO NOT proceed with any maintenance procedure if doubt arises about the correct or safe method of performing any procedure found in this manual. If you have any doubts or questions about installation, call your authorized dealer.

Safety Signal Words

Personal injury hazards are identified by the "Safety Alert Symbol" and followed by a signal word such as WARNING or CAUTION to indicate the severity of the hazard.

This safety alert icon surrounds an image showing a specific type of injury which should be avoided. These icons are shown in "2.2.3 Hazard Avoidance" on page 6.

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

CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.**

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

SAFETY INSTRUCTIONS **Indicates specific safety-related instructions or procedures.**

Note: *Contains additional information important to a procedure.*

2.2 Safety Icons Nomenclature

This manual and the equipment have numerous safety icons. These safety icons provide important operating instructions, which alert you to potential personal injury hazards.

2.2.1 Personal Protection/ Important Information


Read the manual


Eye protection


Face shield / welding helmet


Breathing protection


Head protection


Protective shoes


Hand protection


Use two people when lifting heavy objects


Use proper tools


Weight rating


Set parking brake


Remove key


Lockout / prevent use


Properly installed parts

OEM parts


Damaged safety sign

2.2.2 Prohibited Actions


Do not alter or modify


Do not weld


No smoking


No open flame


No alcohol


No drugs

2.2.3 Hazard Avoidance


Safety alert symbol


Slipping injury


Tripping injury


Pinch point hazard


Pinch hazard (foot)


Dangerous fumes


Adequate ventilation


Crush hazard


Crush hazard


Crush hazard (chock wheels)


Chock wheels /rollover hazard


Fall hazard (truck)


Fall hazard (platform)


Damaged parts hazard


Fire hazard


Sparks / fire hazard


Battery gas hazard

2.3 Safety Rules

2.3.1 Personal Protection

WARNING

Do not work under the liftgate while it is in a raised position. Unintentional lowering of the liftgate can cause serious crushing injuries.

CAUTION

When servicing this unit, wear appropriate personal protective equipment. This list may include, but is not limited to:

- **A hard hat.**
- **Protective shoes with slip resistant soles.**
- **Protective goggles, glasses, or face shield.**
- **Protective clothing.**

CAUTION   **Anthony Liftgates recommends not riding the liftgate; however, if the operation requires it, make sure your footing is stable before raising or lowering the platform. Always stand away from the edge. When on the ground, always stand clear of the liftgate when it is operating.**

 **Do not attempt to maintain the liftgate under the influence of drugs or alcohol. Consult your doctor before using the liftgate while taking prescription medications.**

 **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.**

 **Failure to prevent the truck from moving during the maintenance of the liftgate could result in a serious crushing injury.**

 **Always use/set the truck's parking brake and remove the ignition key before servicing the liftgate. Failure to follow this recommendation can result in injury.**

 **Do not place hands or feet in pinch points.**

 **Do not place your feet under the liftgate or between the platform and floor extension.**

 **To prevent injury, the liftgate and its related components should only be maintained by a qualified installer having knowledge and skill in using a lifting device, a cutting torch, and welding equipment.**

 **To prevent possible injuries due to improper operation, make sure all decals are attached to the liftgate and/or truck and are legible at all times.**

2.3.2 Equipment / Tools / Parts

CAUTION  **Do not operate this unit if it is damaged. If you believe the unit has a defect, which could cause it to work improperly, you should immediately stop and remedy the problem before continuing.**

 **Make sure the liftgate or truck will not be damaged or made unsafe by the maintenance or use of the liftgate.**

 **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 and/or component damage resulting in loss of vehicle control, serious injury, or even death.**

CAUTION  **If replacement parts are necessary, genuine factory OEM replacement parts must be used to restore the liftgate to the original specifications. Anthony Liftgates will not accept responsibility for damages as a result of using unapproved parts. If non-OEM replacement parts are used, the warranty will be voided.**

2.3.3 Battery / Fuel Tank Safety

WARNING    **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.**

2.3.4 Cutting Torch / Welding Safety

WARNING  **Take precautions to avoid sparks from contacting the truck's fuel tank, brake lines, or other flammable components. Sparks can ignite combustible materials, resulting in serious injury or death.**

   **Always weld or use a cutting torch 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 manufacturers' safety guidelines. If other people are present during the installation of the liftgate, make sure the assembly area is shielded from their view.**

 **To avoid eye injury during welding, always wear a welding helmet with the proper lens to protect your eyes.**

 **To avoid eye injury while using a cutting torch, always use eye protection with the proper lens to protect your eyes.**

SAFETY INSTRUCTIONS   **Do not modify safety devices. Do not weld on the liftgate assembly, except the adapter frame tube. Unauthorized modifications may impair its function and safety.**

 **Make sure all parts are in good working condition and properly installed. Replace any damaged parts immediately.**

2.4 Welding or Grinding Galvanized or Stainless Steel Material

2.4.1 Galvanized Metal

CAUTION

Follow all OSHA and other workplace safety standards when 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 proper breathing protection when grinding or welding. Use ventilation or vacuum systems to remove any contaminated air from the work area.

Metal Fume Fever:

When zinc vapor mixes with the oxygen in the air, it reacts instantly to become zinc oxide, which is non-toxic and non-carcinogenic.

Zinc oxide that is inhaled is absorbed and eliminated by the body without complications or chronic effects.

Exposure to zinc oxide fumes causes a flu-like illness called metal fume fever.

Symptoms include headache, fever, chills, muscle aches, nausea, vomiting, weakness, and tiredness.

There are no long-term health effects. Metal fume fever typically begins about four hours after exposure, and full recovery occurs within 48 hours.

2.4.2 Stainless Steel

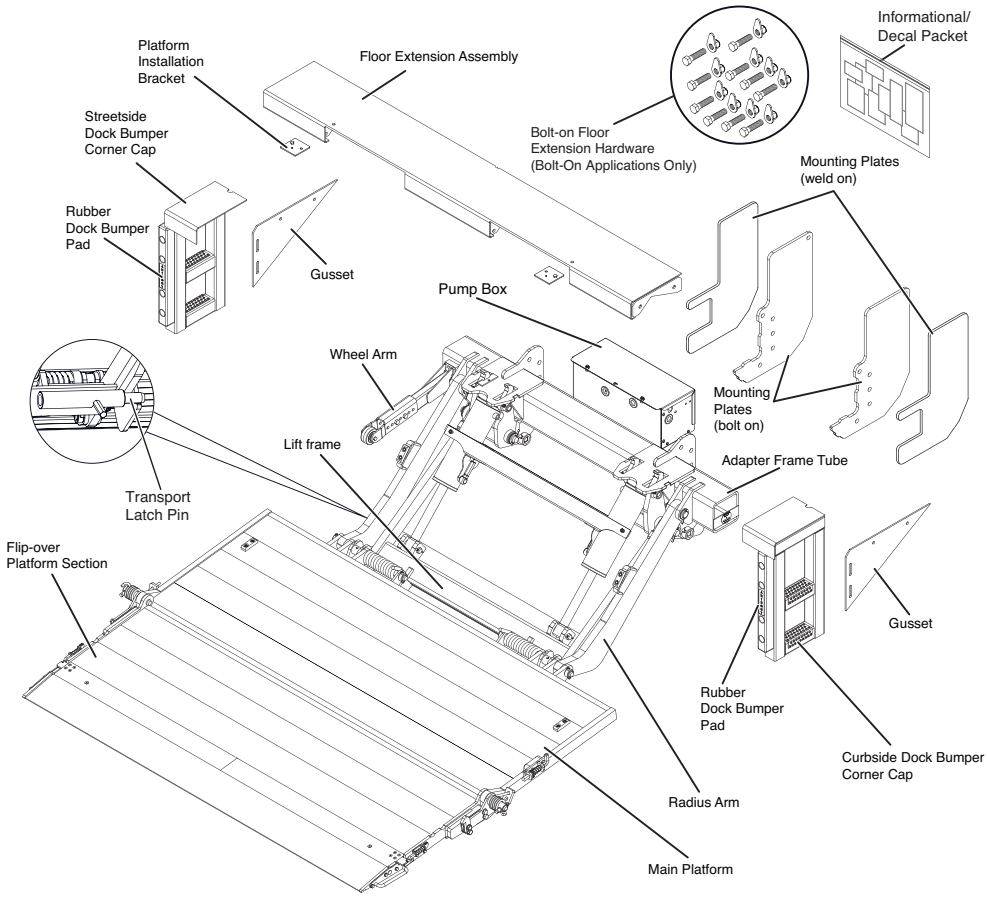
Follow all OSHA and other workplace safety standards when welding stainless steel, which creates hexavalent chromium fumes that can irritate the nose, throat, and lungs.

Repeated or prolonged exposure can damage the mucous membranes of the nasal passages and result in ulcers. In severe cases, exposure causes perforation of the septum (the wall separating the nasal passages).

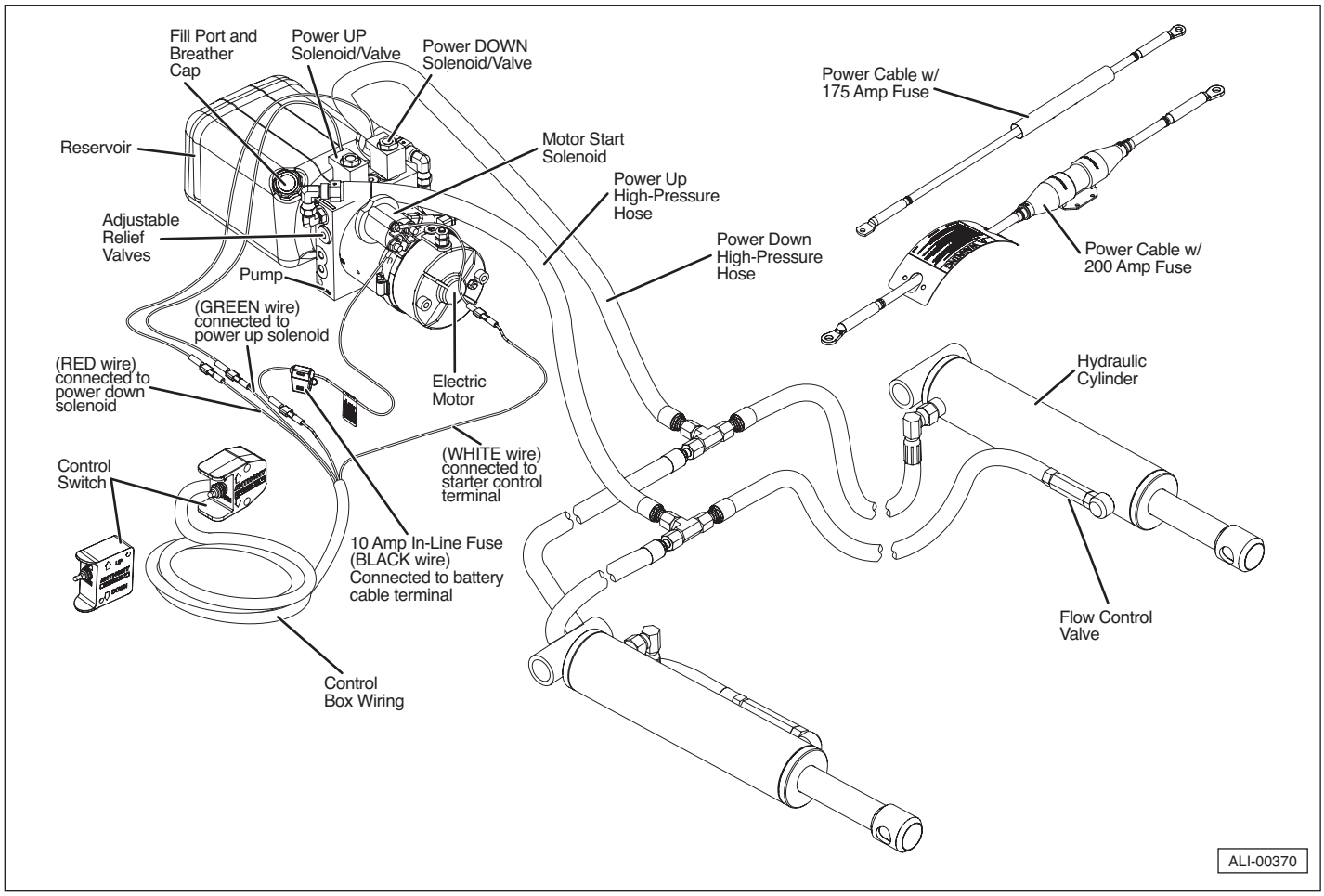
Always wear proper breathing protection when grinding or welding. Use ventilation or vacuum systems to remove any contaminated air from the work area.

3. Nomenclature

3.1 Liftgate Nomenclature



3.2 Power-Down Power Unit Nomenclature



4. Maintenance

4.1 Monthly Inspection

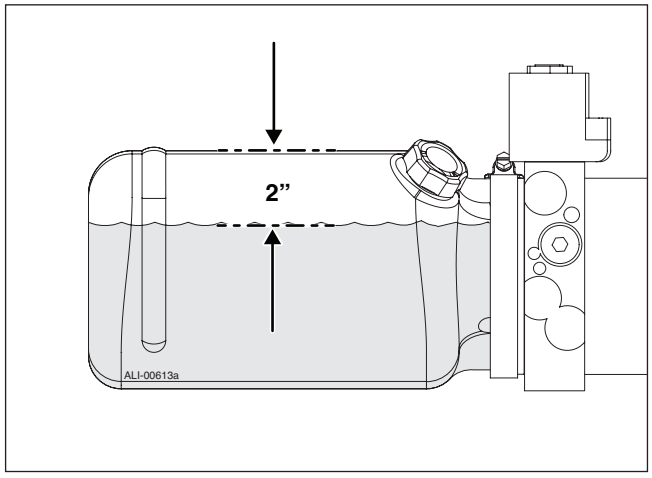
All Anthony Tuckunder Liftgates are “Service-Free” which means they have lubrication-free bushings at the major pivot points.

Mechanical Components

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 parts. Check for excessively worn parts.
3. Check for cracked welds which may have resulted from overload or abuse.
4. Check all pins and pivot points. Secure all pins with proper retainers. Replace worn bushings and pins.
5. Oil the roller of the wheel arm and make sure it spins freely.
6. Make sure the platform is angled upward from truck bed 1/2 to 3/4 inch when raised to bed height. See Platform Adjustment for shimming procedure, “3.3 Mechanical Platform Adjustment” on page 8.

Power Unit

7. Check for oil leaks in the following areas:
   a. Hydraulic lift cylinder.
   b. Hydraulic hoses. Replace any hose that shows signs of leakage or excessive abrasion of the covering.
   c. Check all hydraulic fittings for damage or leakage. Tighten fittings to stop leaks or replace if damaged.
8. Check reservoir oil level. The fluid level should be 2 inches from the top of the reservoir when the liftgate platform is in the fully raised position. Fill as required with Hyken Glacial Blu.



NOTICE *To prevent damage to the pump, use only the recommended Hyken Glacial Blu anti-wear, low-viscosity, hydraulic fluid in the power unit reservoir.*

In an emergency, use any anti-wear hydraulic fluid, but flush the system and replace it with our recommended fluid soon as reasonably possible. Do not mix hydraulic oil and automatic transmission fluid due to possible compatibility problems.

Use the appropriate viscosity of fluid based on the surrounding climate conditions. Viscosity is important because the pump will not cause a temperature increase to the oil in the reservoir, like a typical closed-loop hydraulic system.

DO NOT use brake fluid in place of our recommended fluids.

Electrical Components

9. Make sure all electrical wires, switches, and connections are in good working condition and operate properly.
10. 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 incorrectly.
11. Check the fluid level of the vehicle battery. Fill as required.

Safety Signs and Informational Decals

12. Examine all warning, capacity, and operational decals. If they are not readable, replace them. Decals may be obtained free of charge your authorized dealer.

4.2 Semi-Annual Inspection

In addition to the items requiring monthly inspection, also inspect the condition of the hydraulic fluid.

If the oil in the hydraulic tank is dirty, drain the oil and flush the entire system. Refill the system with the recommended oil outlined in Step 8 of the “Monthly Inspection” section.

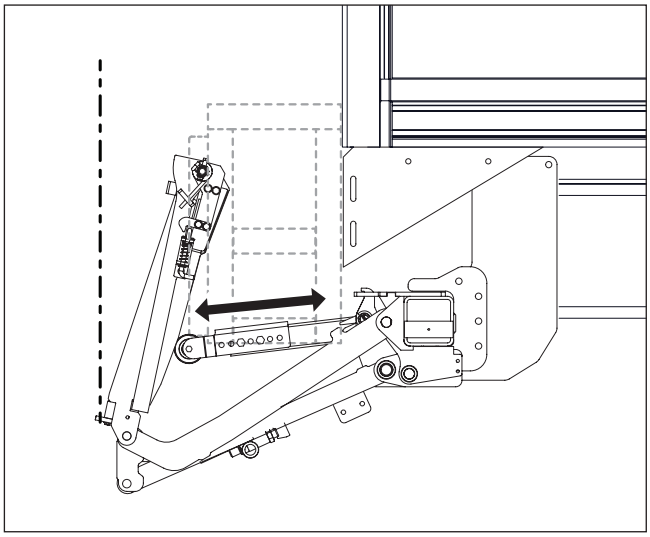
4.3 Adjusting Wheel Arm

The wheel arm helps unfold the platform as it is lowered from the stored position. The wheel arm can be adjusted, so the platform unfolds with either greater or lesser effort.

WARNING  **Never stand behind the liftgate when it is opened. Always stand to the side and away from the edge of the platform.**
When adjusting the position of the wheel arm, consider that the vehicle may be parked on an upward sloped surface. Adjust the wheel arm to prevent the platform from completely unfolding in this type of situation.

1. If adjustment is needed, remove the two bolts and nuts on the wheel arm.

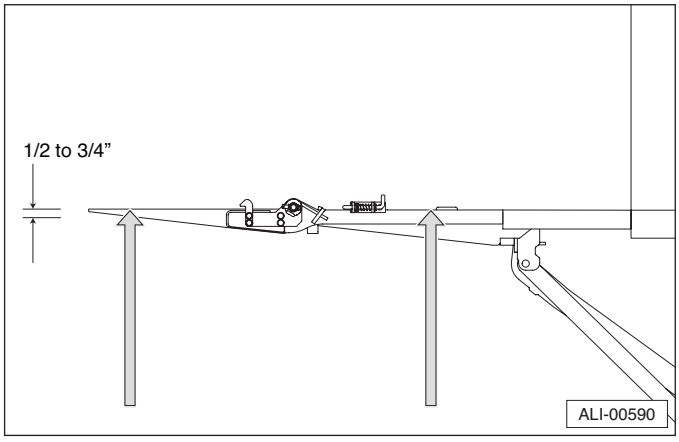
2. Lengthen or shorten the wheel and channel assembly on the tube, as desired.



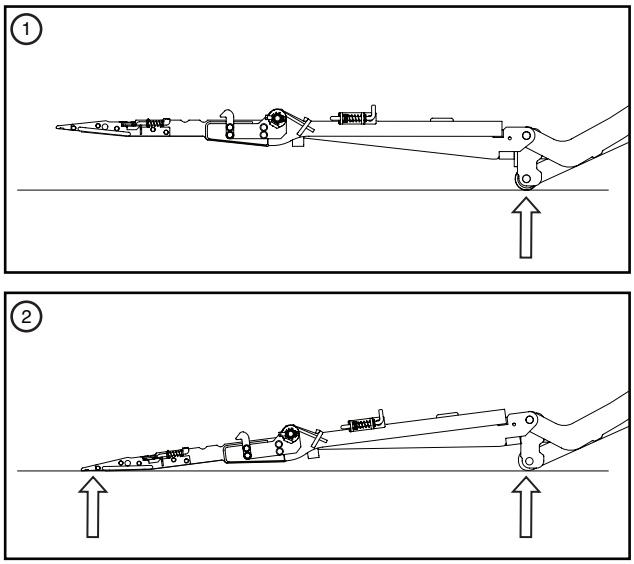
3. Align the two holes in the wheel and channel assembly with the holes in the tube nearest the desired position.
4. Re-install the two bolts and nuts. Tighten the nuts to secure the wheel and channel assembly.

4.4 Platform Adjustment

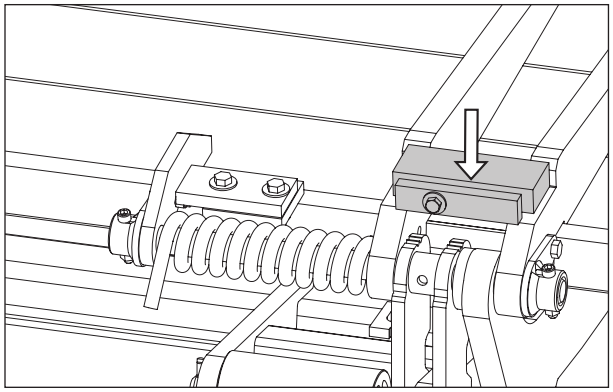
The ramp (outboard) end of the platform should be 1/2 to 3/4 inches higher than the truck floor when in the raised position. If the outboard end of the platform is sagging, add shims as described below. Shimming is a normal procedure as the liftgate ages, and the parts become worn.



1. The platform should lower parallel to the ground until the back portion nearest the truck touches. It should then tilt forward until the front edge touches the ground.



2. To raise the ramp end:
   a. Temporarily position a shim plate in the contact area (arrows), between the cam plates and platform, with tape.



Note: *One shim can move the ramp end of the platform as much as 1/2 inch.*

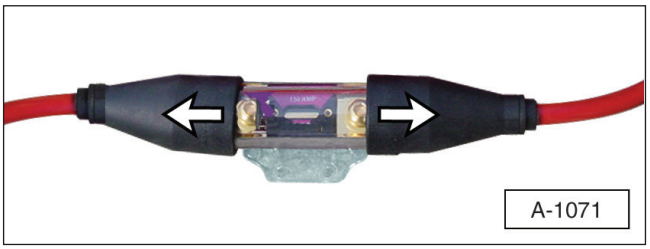
   b. Raise and lower the platform to recheck its position.
   c. On steel or galvanized platforms, weld the steel shim plates to the blocks on the platform. On aluminum platforms, add the shim between the stop block and the platform.
3. To lower the ramp end, remove material from the contact area (arrows shown in Step 2) between the cam plates and platform.
4. If the platform does not align with the floor extension, contact Anthony Liftgates for a solution to correct the problem.

4.5 Replace the Power Cable Fuse

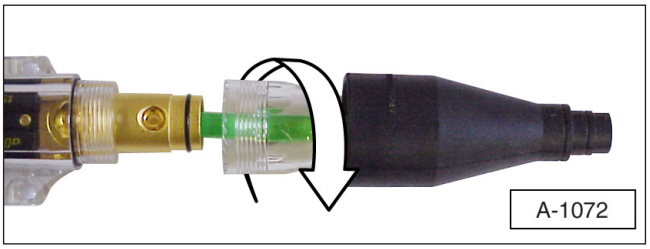
4.5.1 Replace the 200 AMP Fuse

WARNING **An electric arc can cause personal injury or property damage. To avoid personal injury, disconnect the power cable from the vehicle battery or batteries before replacing the fuse, or before disassembling the fuse holder.**

1. Slide the rubber boots away from the fuse holder.



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

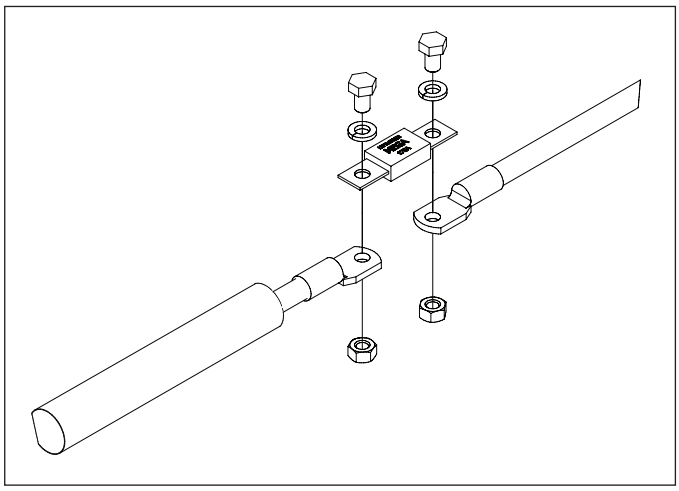


3. Slide the fuse holder body one direction (left or right) to expose the damaged fuse.
4. Loosen the screws from each end of the fuse, remove, and replace the fuse. Retighten the screws.
5. Re-assemble the fuse holder in reverse order. Be sure the rubber boots are sealed around the fuse holder and power cable.
6. Re-connect the power after you are certain the liftgate area is clear.

4.5.2 Replace the 175 AMP Fuse

CAUTION To avoid injury or property damage, disconnect the liftgate's power cable from the battery before starting to replace the fuse. An "arc" can occur, resulting in personal injury or property damage if the power cable is connected to the battery.

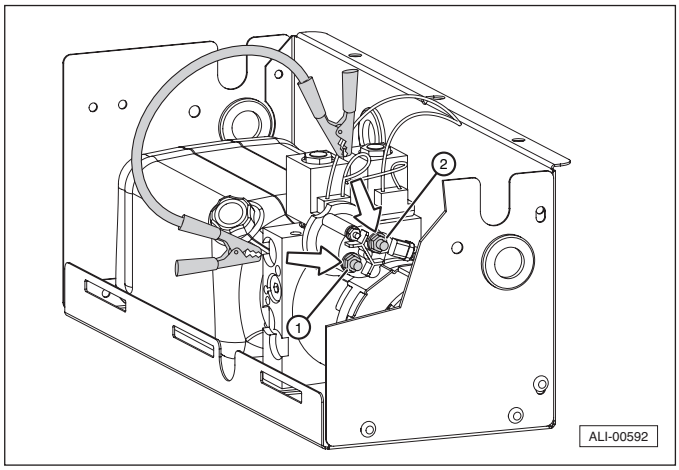
1. Cut the heat shrink tube to expose the fuse, mounting hardware, and lugs.
2. Remove the bolt, washer, and lock washer from each end of the fuse.
3. Use the A-133607, 175 Hi-Amp Fuse Replacement Kit for the replacement parts.
4. Slide the new heat shrink tube over one side of the wiring.
5. Bolt the new fuse to the cable lugs using the bolts, washers, and lock washer, as shown.



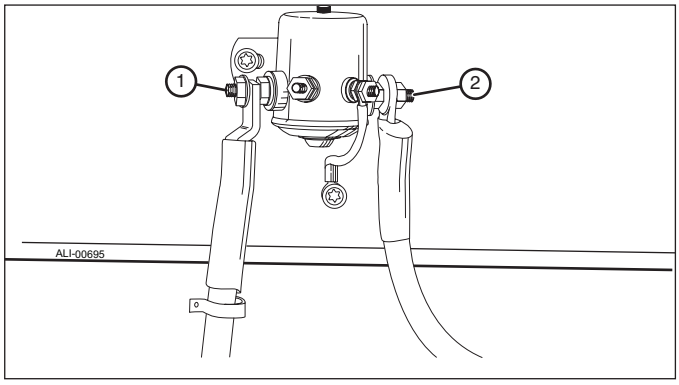
6. Slide the heat shrink tube over the fuse, hardware, and lugs. Using a heat gun apply heat evenly to shrink the tubing.
7. Reconnect the power cable to the battery after you are certain the platform area is clear.

Note: If the fuse continues to blow, contact your authorized dealer.

4.6 Checking Motor Start Solenoid and Power Cut-off Solenoid



Motor start solenoid.



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 battery side (1) of the solenoid. Connect the other cable to motor side (2) of the solenoid.
3. If the liftgate is activated, the solenoid is defective and should be replaced.

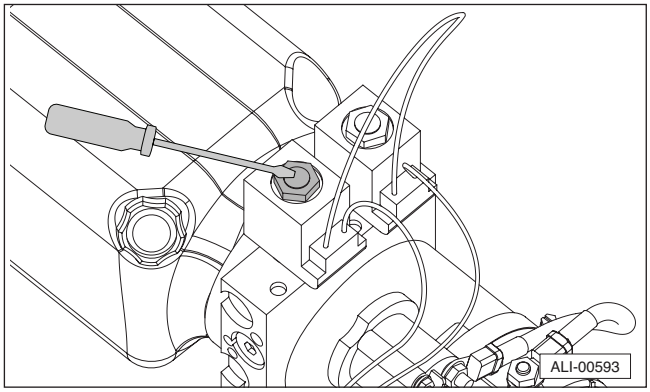
4.7 Checking the Power Cable

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

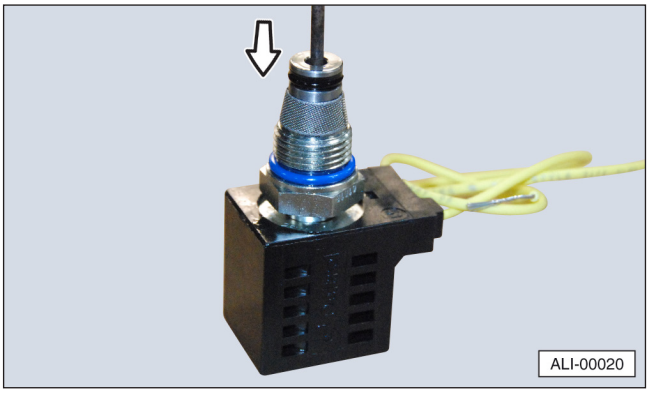
1. Remove the battery connection to the motor.
2. Connect the negative jumper cable (ground) directly to the liftgate. Connect the positive cable to the terminal on the motor start solenoid.
3. If the motor operates, the battery cable is defective and should be replaced.

4.8 Checking Lowering Valve Cartridge and Solenoid

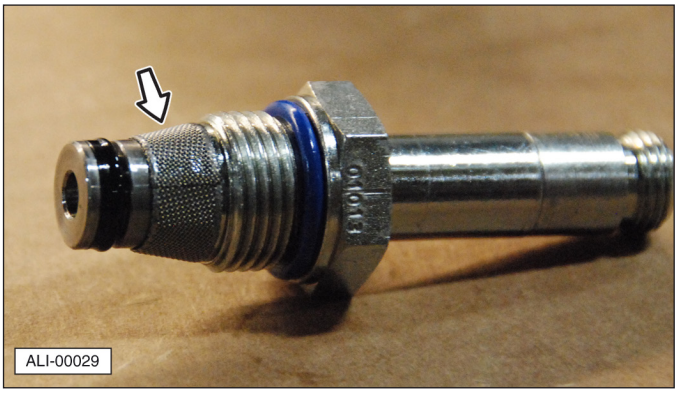
1. Place the liftgate on the ground in the open position.
2. Place a steel screwdriver over the top of the lowering valve solenoid.



3. Momentarily activate the control switch in the DOWN position. The screwdriver should be attracted to the magnetic field created by the solenoid.
4. If no magnetic pull is produced, the solenoid is defective and should be replaced. If the solenoid is activated, 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, as the spool could be bent, pitted, or damaged in some other way.

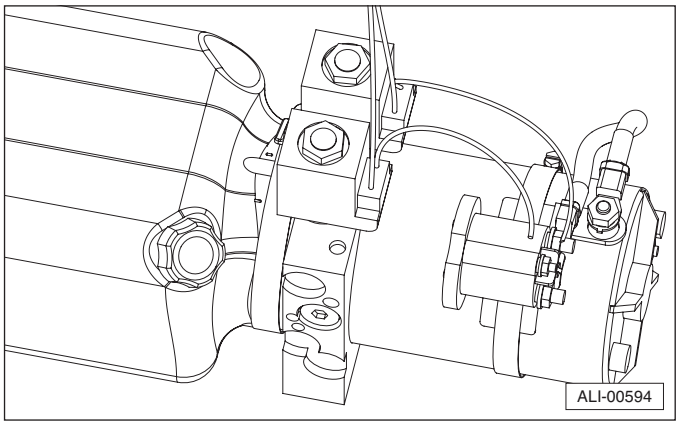


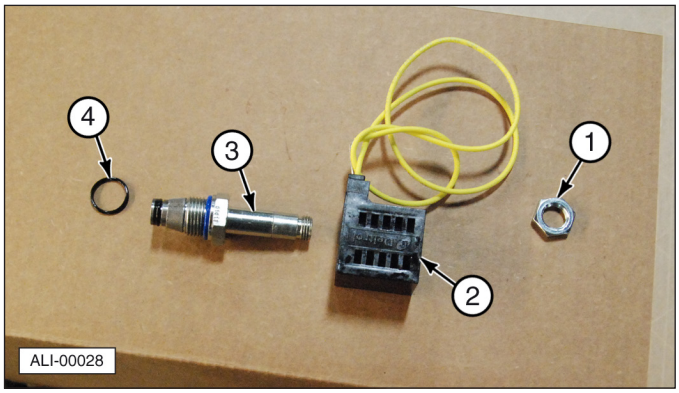
4.9 Solenoid Valve Screen



If the solenoid is working electrically, check the debris screen and clean if dirty.

4.10 Replacing Solenoid Valve





1. While installed in the pump, remove nut (1).
2. Remove coil (2) from cartridge (3).
3. Remove cartridge (3) from pump body.
4. O-ring (4) is not required on current models and can be discarded.

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

Power Down Models

1. Check the lowering valve. Make sure it is operating correctly, and the valve is not sticking or dirty. Refer to “4.8 Checking Lowering Valve Cartridge and Solenoid” on page 13.
2. If the lowering valve is operating properly, then the drifting is most likely caused by worn piston seals. Replace the cylinder.

4.12 Checking System Pressure

For gravity down systems, there is only one relief valve (power up). 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 T-fitting (customer supplied) into the power up port.
3. Connect a pressure gauge and reconnect the hydraulic hose.

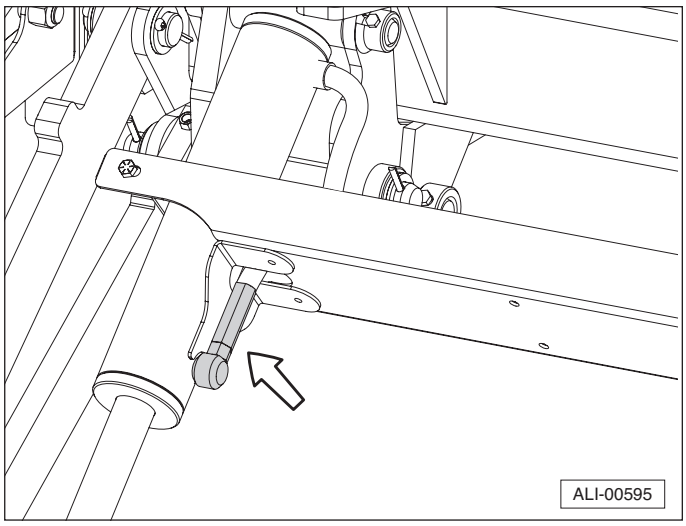
   The pressure gauge must be rated above the maximum pressure of the liftgate. For example, use a 4000 psi pressure gauge on a 3000 psi maximum capacity liftgate.
4. Raise the liftgate and check the pressure on the gauge.

Low Pressure Threshold Chart			
Model	**Power Up**	**Power Down**	**Cylinder Part Number**
2500	2300 psi	350 psi	A-130113
3000	2750 psi	350 psi	A-130113
4000	1700 psi	175 psi	A-130114
5000	2125 psi	175 psi	A-130114
6000	2550 psi	175 psi	A-103114

WARNING **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.**

5. Check the power down relief valve pressure in the same way as the gravity down system by installing a T-fitting and pressure gauge.

4.13 Checking Flow Control Valve

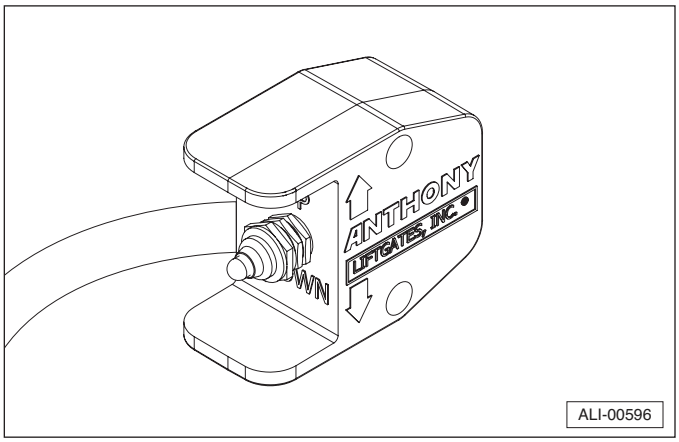


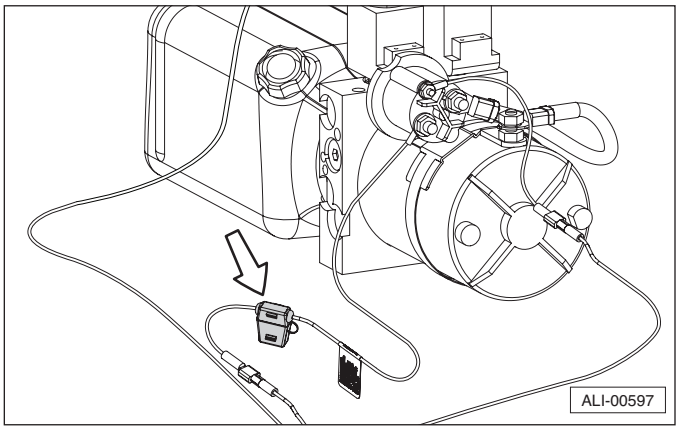
If the cylinder does not operate or operates slower than normal, remove the flow control valve and hook the hydraulic hose directly to the cylinder. If the cylinder operates properly, replace the flow control valve.

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

4.14 Checking Control Switch Fuse

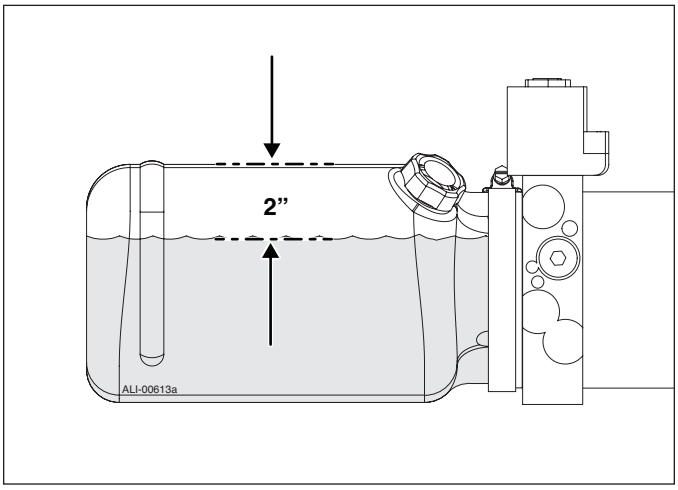
If the control switch is not operating the liftgate, check the in-line fuse located on the control cable inside the power unit box.





4.15 Power Module Fluid

Power down models - With the platform fully raised, the oil level should be within 2 inches of the top of the reservoir.



NOTICE

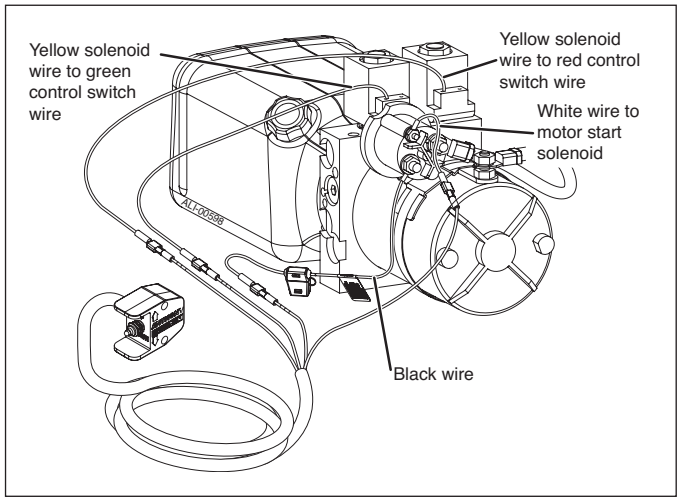
To prevent damage to the pump, use only the recommended Hyken Glacial Blu anti-wear, low-viscosity, hydraulic fluid in the power unit reservoir.

In an emergency, use any anti-wear hydraulic fluid, but flush the system and replace it with our recommended fluid soon as reasonably possible. Do not mix hydraulic oil and automatic transmission fluid due to possible compatibility problems.

Use the appropriate viscosity of fluid based on the surrounding climate conditions. Viscosity is important because the pump will not cause a temperature increase to the oil in the reservoir, like a typical closed-loop hydraulic system.

DO NOT use brake fluid in place of our recommended fluids.

4.16 Reattach Control Unit Wires to Appropriate Terminals



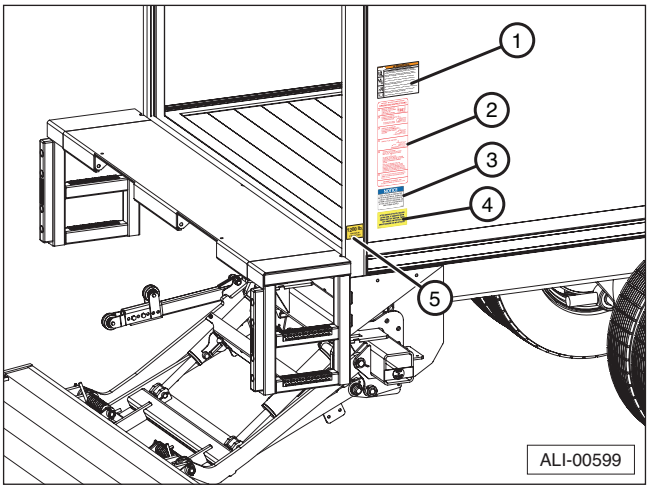
Power Down

5. Decals

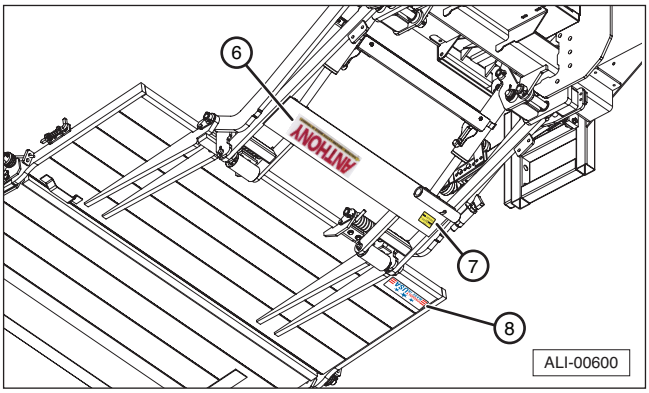
5.1 Installing Decals

SAFETY INSTRUCTIONS **To prevent possible injuries due to improper operation, make sure all decals are attached to the liftgate and truck and are legible.**

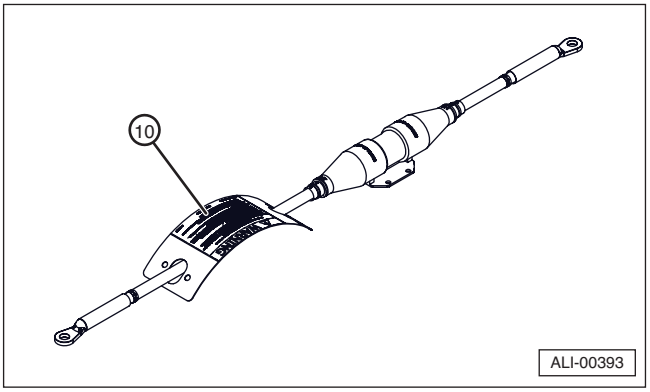
1. Attach decals 1, 2, 3, 4, and 5 to the truck body, as shown.



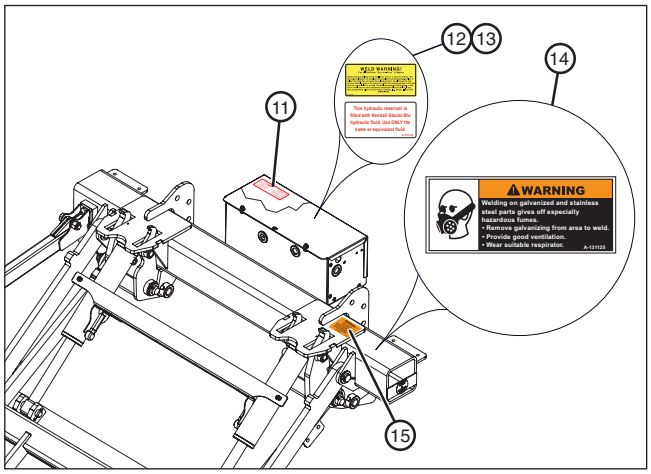
2. Make sure factory-installed decals 6, 7, and 8 are attached to the lift arms and platform.



3. Make sure the factory-installed fuse changing decal 10 is on the power cable and is visible near the location of the fuse. (attached only to A-133105 200 AMP Power Cable)



4. Make sure factory-installed decals 11, 12, 13, 14, and 15 are installed on the power unit and the adapter frame tube.



Item	Part Number	Description
1	A-131115	Warning, Personal Injury
2	ATU-423	Operating Instructions
3	A-150238	Notice - Protected With Electrical Overload Circuit Breaker
4	ATU-141	After Using Liftgate
5	A-131061 A-131062 A-171433 A-131120 A-131119	2500 Lb. Maximum Capacity 3000 Lb. Maximum Capacity 4000 lb. Maximum Capacity 5000 lb. Maximum Capacity 6000 lb. Maximum Capacity
6*	A-131034	Anthony Label
7*	A-131017	Note - Disengage Latch
8*	A-150601	Made In The USA
10*	A-131036	Warning, 200 Amp Fuse Changing Procedure (attached only to A-133105 200 AMP Power Cable)
11*	A-131001	10 Amp Fuse Changing Procedure (attached to control wiring in pump box)
12	A-131028	Weld Warning
13*	A-131133	Hydraulic Fluid
14*	A-131125	Warning, Galvanized Fumes Hazard (galvanized models only)
15	A-131106	Warning - Remove Bolts After Installation

*Factory Installed – Installer must make sure all decals are attached, as shown.

1 — A-131115

ANTHONY LIFTGATES, INC.

⚠ WARNING

PERSONAL INJURY HAZARD

Operation may require user to stand on platform. To prevent injury or death of operators or bystanders:

- **Read and follow operator/owner manual for safety, operation, inspection, and maintenance instructions.**
- **Do not place unstable or unsafe loads on platform.**
- **Do not allow loads to extend over edge of platform.**
- **Do not exceed capacity or use liftgate for anything other than intended purpose.**
- **Be aware of surroundings when operating liftgate.**
- **Do not allow body parts to contact moving components.**
- **Ensure footing is stable and stand away from edge before raising or lowering platform.**
- **Owner/operators must properly maintain liftgate.**

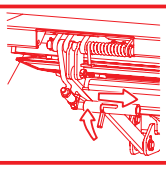
A-131115

2 — ATU-423

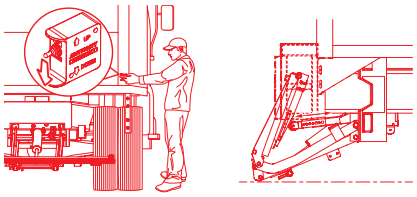
ANTHONY TUCKUNDER LIFTGATES

OPERATING INSTRUCTIONS

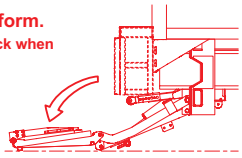
1. Raise (twist) latch pin handle upwards and then slide pin sideways to release.
   Do not force the latch. Liftgate may need to be slightly raised or lowered to release pressure on latch pin.



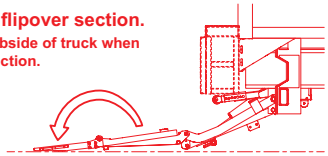
2. Press control switch DOWN until folded platform rests on ground.
   Always stand on curbside of truck when raising or lowering platform with control switch.



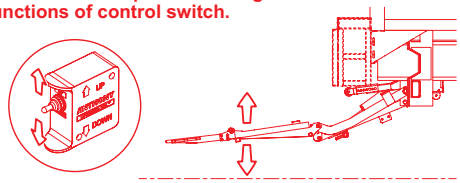
3. Manually unfold main platform.
   Always stand on curbside of truck when unfolding platform.



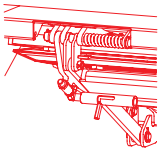
4. Manually unfold flipover section.
   Always stand on curbside of truck when unfolding flipover section.



5. Raise and lower platform using UP and DOWN functions of control switch.



6. Reverse steps to fold and store platform. Make sure platform is locked in storage position with latch pin after use.



ATU-423

3 — A-150238

NOTICE

THIS LIFTGATE IS PROTECTED WITH AN ELECTRICAL OVERLOAD CIRCUIT PROTECTION DEVICE, EITHER A CIRCUIT BREAKER, OR A FUSE, AND IS LOCATED NEAR THE POWER SUPPLY

A-150238

4 — ATU-141

AFTER USING LIFTGATE, SECURE LATCH AND, IF EQUIPPED WITH POWER CUT OFF SWITCH, TURN OFF POWER TO PREVENT UNAUTHORIZED USE OF LIFTGATE.

ATU-141

5 — A-131061, ATU-147, A-171433, A-131120, A-131119

2500 lb.
MAXIMUM CAPACITY
A-131061

3000 lb.
MAXIMUM CAPACITY
ATU-147

4000 lb.
MAXIMUM CAPACITY
A-171433

5000 lb.
MAXIMUM CAPACITY
A-131120

6000 lb.
MAXIMUM CAPACITY
A-131119

⚠ CAUTION

Make sure the proper "MAXIMUM CAPACITY" decal is placed on the truck for the appropriate lifting capacity of the liftgate being installed. Do not put a higher rated decal on a liftgate with a lower capacity; this could result in liftgate damage or possibly personal injury.

6 — A-131034

ANTHONY
LIFTGATES, INC.®
⚠ CAUTION SECURE LATCH WHILE IN TRANSIT.
A-131034

7 — A-131017

Note:

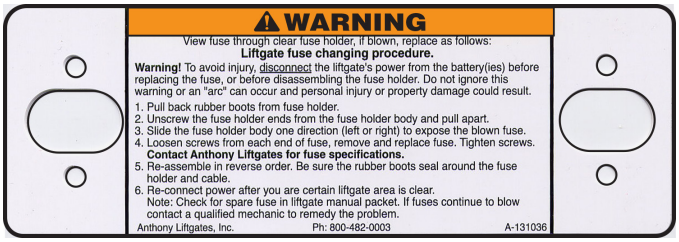
Disengage "latch" before attempting to use liftgate.

Engage "latch" after using liftgate.

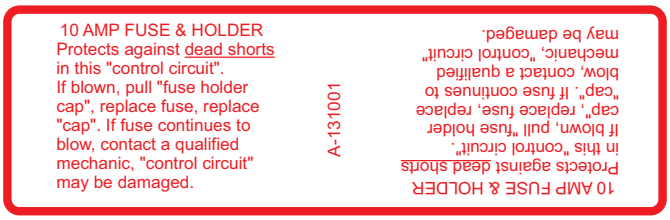
A-131017

8 — A-150601

10 — A-131036 (attached to power cable)



11 — A-131001 (attached to control cable)



12 — A-131028

WELD WARNING!
For all Anthony "Service-Free" Liftgates

When performing welding during installation, service, or repair on Anthony "SF" Service-Free liftgates, the actual part being welded must be grounded. Failure to follow this instruction can cause the welding ground to travel through the high pressure hydraulic hose as the source of ground, thus causing damage to the hose from the powerful electric current. The resulting damage to the hose may or may not be visible and can cause unexpected catastrophic failure of the lift. If you have any questions, please contact Anthony Liftgates, Inc., Pontiac, Illinois, USA (800-482-0003).

A-131028

13 — A-131133

This hydraulic reservoir is filled with Kendall Glacial Blu hydraulic fluid. Use ONLY the same or equivalent fluid.

A-131133

14 — A-131125 (attached only to galvanized liftgates)

15 — A-131106

WARNING
MUST REMOVE AND DISCARD INSTALLATION BOLTS ON "ROCKER ASSEMBLIES" BEFORE OPERATING LIFTGATE
A-131106

6. Welding Stainless Steel to Galvanized

If the installation requires welding galvanized steel parts to stainless steel, special procedures must be followed to ensure the safety of the welder and the integrity of the welds.

6.1 Safety

6.1.1 Welding or Grinding Galvanized Material

Follow all OSHA and other workplace safety standards when 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 proper breathing protection when grinding or welding. Use ventilation or vacuum systems to remove any contaminated air from the work area.

Metal Fume Fever:

> **When zinc vapor mixes with the oxygen in the air, it reacts instantly to become zinc oxide, which is non-toxic and non-carcinogenic.**
>
> **Zinc oxide that is inhaled is absorbed and eliminated by the body without complications or chronic effects.**
>
> **Exposure to zinc oxide fumes causes a flu-like illness called metal fume fever.**
>
> **Symptoms include headache, fever, chills, muscle aches, nausea, vomiting, weakness, and tiredness.**
>
> **There are no long-term health effects. Metal fume fever typically begins about four hours after exposure, and full recovery occurs within 48 hours.**

6.1.2 Welding or Grinding Stainless Steel

Follow all OSHA and other workplace safety standards when welding stainless steel, which creates hexavalent chromium fumes that can irritate the nose, throat, and lungs.

Repeated or prolonged exposure can damage the mucous membranes of the nasal passages and result in ulcers. In severe cases, exposure causes perforation of the septum (the wall separating the nasal passages).

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

6.2 General Guidelines

1. Welders should position themselves upwind of the airflow that removes the fumes so that fumes and dust do not collect inside the welding shield (helmet).
2. In addition to proper positioning, an effective method to prevent inhaling zinc oxide fumes or hexavalent chromium fumes is to wear a good fume-rated respirator.

6.2.1 Weld Wire

We recommend AWS E312T1 flux core wire, such as Midalloy Mastercor™ E312T1-1/4 or equivalent.
Do not use stainless steel weld wire.

6.2.2 Shielding Gas

100% CO^2 or 75/25 Argon/CO^2 mix can be used.

6.2.3 Welding Guidelines

1. The welding of galvanized steel is the same as welding bare steel of the same composition. It uses the same welding processes, Volts, amps, travel speed, etc.

Wire Diameter (inches)	Voltage (V)	Amperage (Amp) [Wire Feed Speed (ipm)]	
		Flat	Vertical & Overhead
.045	24-28	130-200 [250-425]	120-160 [225-300]
.062	25-30	180-250 [150-250]	180-220 [150-200]

2. Use a soft disc grinder to remove the galvanized coating in the area to be welded. This will improve weld quality and reduce the welder's exposure to zinc oxide fumes.
3. No preheating of the dissimilar metals is needed.
4. When welding is complete, and after the area has cooled, use a cold galvanizing spray to restore corrosion resistance.

7. Troubleshooting Chart

Troubleshooting Chart		
Problem	**Possible Causes**	**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.
	Circuit protection (fuse or breaker).	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 fuse. “4.5 Replacing the Fuse” on page 12.
	Motor start solenoid.	Check solenoid. “4.6 Checking Motor Start Solenoid and Power Cut-off Solenoid” on page 12
	Optional power cut-off solenoid.	Check solenoid. “4.6 Checking Motor Start Solenoid and Power Cut-off Solenoid” on page 12.
	Battery cable.	Connect motor directly to a spare battery using the procedure in the Maintenance section.
	Motor.	If the motor is determined to be defective, it should be replaced. Defective 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 2 gauge or heavier. Smaller wires can reduce the Voltage, resulting in motor failures.	
	If the motor does not operate in freezing conditions, make sure the motor housing does not contain water.	
Sagging platform.	Normal wear.	Add shims to platform. “4.4 Platform Adjustment” on page 11.
	Bushing wear where lift arms connect to platform.	Replace bushings.
	Structural damage.	Replace worn parts.
Foaming oil.	Air in the hydraulic hose(s).	Check oil level in reservoir. “4.1 Monthly Inspection” on page 10.
	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.

Troubleshooting Chart		
Problem	**Possible Causes**	**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.
	Lowering valve solenoid.	Check the solenoid. “4.8 Checking Lowering Valve Cartridge and Solenoid” on page 13.
	Lowering valve cartridge.	Check, remove, and clean valve cartridge using the procedure in the Maintenance section. “4.8 Checking Lowering Valve Cartridge and Solenoid” on page 13.
	Flow control valve.	Remove flow control valve and hook hydraulic hose directly to the cylinder. If the cylinder operates properly, replace the valve. “4.13 Checking Flow Control Valve” on page 14.
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. “4.1 Monthly Inspection” on page 10.
	Low Voltage.	Inspect the battery connection terminals and check the battery’s Voltage (9 Volts minimum).
	Faulty lowering valve.	Solenoid or cartridge may need cleaning or replacement. See Maintenance section. “4.8 Checking Lowering Valve Cartridge and Solenoid” on page 13.
	Defective piston seals.	See Maintenance section for Checking Cylinder for Leakage. “4.11 Checking Cylinder Piston Seals (drifting - caused by seal leakage)” on page 14.
	Hydraulic pump is worn.	Replace hydraulic pump.
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 System Pressure. “4.12 Checking System Pressure” on page 14.
Liftgate will not open.	Platform operating area is not clear.	Clear platform operating area.
	Latch pin will not slide freely to release liftgate.	Activate the “UP” switch and raise the liftgate to the fully stored position. The latch pin should slide freely.

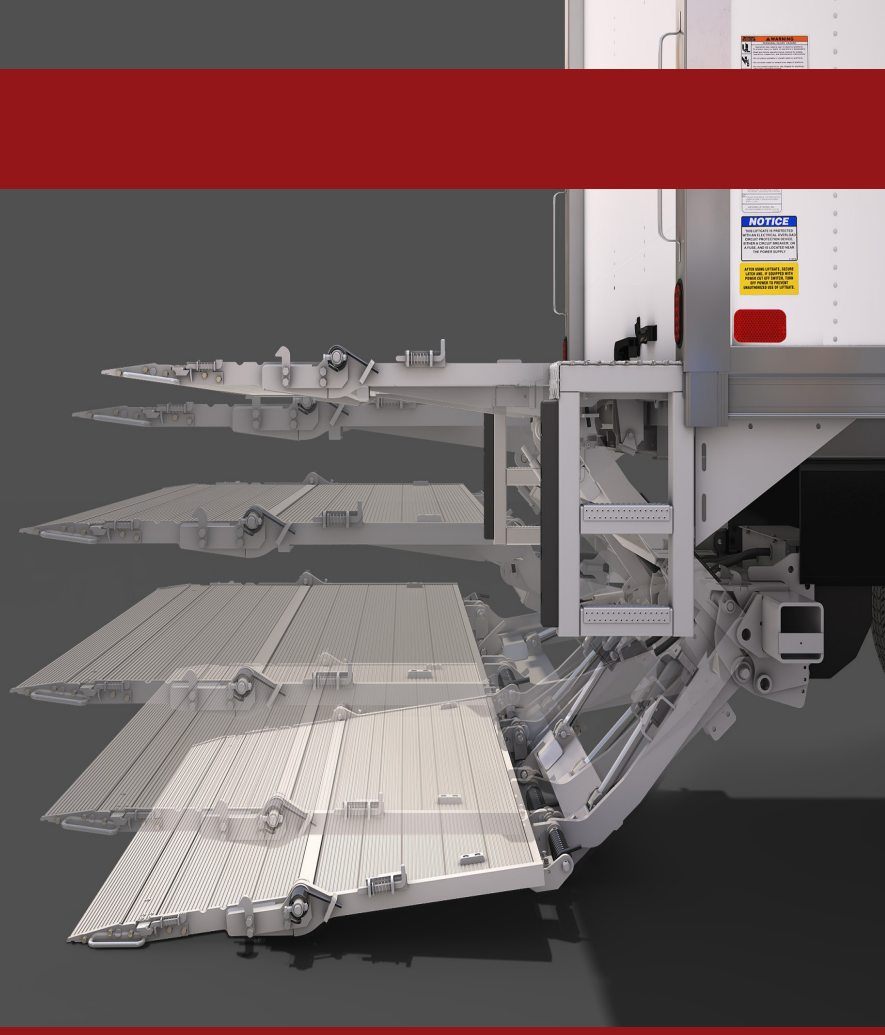
Troubleshooting Chart		
Problem	**Possible Causes**	**Possible Solution**
Platform lowers extremely slow.	Low oil level on power down models.	Fill reservoir. “4.1 Monthly Inspection” on page 10.
	Improper oil in hydraulic reservoir.	See Monthly Inspection. “4.1 Monthly Inspection” on page 10.
	Bushing wear where lift arms connect to platform.	Replace bushings.
	Damaged or kinked hydraulic hose.	Repair or replace.
	Cylinder rod is scored, pitted, or bent.	Replace cylinder.
	Flow control valve.	Remove flow control valve and hook hydraulic hose directly to the cylinder. If the cylinder operates properly, replace the valve. “4.13 Checking Flow Control Valve” on page 14.
	Lowering valve.	Solenoid or cartridge may need cleaning or replacement. See Maintenance section. “4.8 Checking Lowering Valve Cartridge and Solenoid” on page 13.
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 pressure.	Refill reservoir. Check pump and motor. “4.1 Monthly Inspection” on page 10.
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. “4.8 Checking Lowering Valve Cartridge and Solenoid” on page 13.
	Hydraulic pump and motor.	Replace power unit.

NOTES

ANTHONY
LIFTGATES, INC.®

Gentle Level Ride (GLR)

Our platform maintains a smooth, level up and down operation until the platform reaches the ground and then tilts gently forward. The platform then re-levels itself at the start of the lifting cycle.



THE ORIGINAL NAME IN LIFTGATES - SINCE 1941

ANTHONY
LIFTGATES, INC.®

MTU-GLR

1037 WEST HOWARD ST.
P.O. BOX 615
PONTIAC, IL 61764-0615
PH: 815-842-3383
FAX: 815-844-3612
TOLL FREE: 800-482-0003
WWW.ANTHONYLIFTGATES.COM

Form No. L-401A-MM (10-19)

Este manual en español también está disponsible en nuestro sitio Web.