



WALTCO

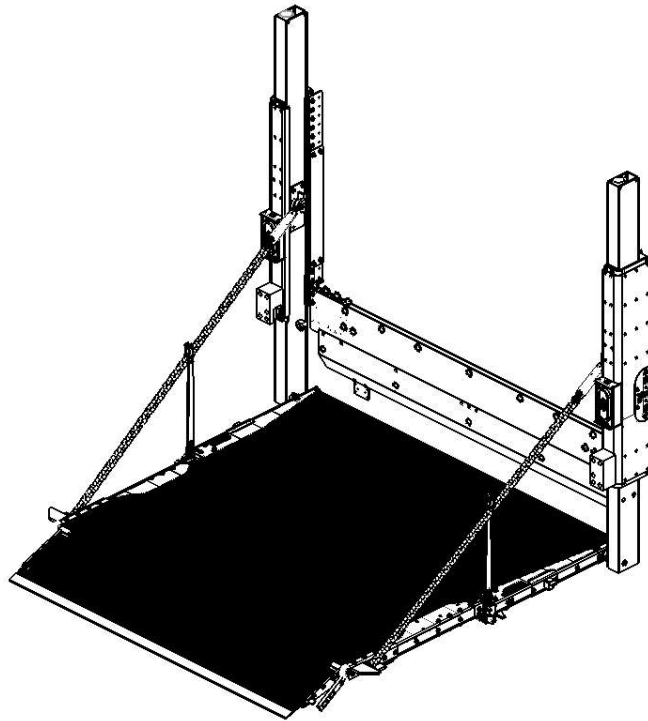
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Install Manual

MDV, MDVBG

2000 - 4000 lb. Capacity Rail-Type Liftgates



Last Change(s)

Date	Page(s)	Description

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Introduction

If anyone observes improper installation, improper operation, or damage, they should immediately contact a qualified person for assistance and correction. We strongly urge anyone that has any questions or doubts as to the installation, condition, use, operation, maintenance or repair of the liftgate to contact us at Waltco where we have qualified personnel that will be happy to assist you. Telephone numbers and addresses of these locations are listed in the Owner's Manual and Installation Instructions.

INSTALLATION

Waltco liftgates should only be installed by those with sufficient basic skills to understand the installation and operation of the liftgate, along with the equipment on which the liftgate is being installed. Waltco's installation instructions are not intended to give rationale for all the instructions that are given; however, it is the intent of these instructions to give the installer both the operations and what we believe to be the most desirable sequence of implementing these operations. These instructions can in no way expand into an area where they will replace a qualified person, or clear thinking and a basic knowledge that must be possessed by the installer.

It has been our experience that a knowledgeable journeyman following these instructions and observing the operation of the liftgate will have a sufficient comprehension of the liftgate to enable this person to troubleshoot and correct all normal problems that may be encountered.

Failure to follow the installation instructions, adjustments and mounting dimensions may result in improper and unsafe operation of the liftgate. Unauthorized alterations of the liftgate can cause an undesirable and dangerous condition.

OWNER'S MANUAL

The Waltco Owner's Manual is intended to act as a guide for operation and routine maintenance but is no way intended to encourage usage or repair of the liftgate by those who are not qualified to do so.

The contents of the Owner's Manual include, but are not limited to general operation instructions, routine lubrication, parts list, and an outline of things that should be checked but may not be obvious to those not technically qualified. The manual assumes the liftgate is properly installed, undamaged and operates correctly. Improper installation, improper operation, or damage should be immediately corrected by a qualified person.

INSPECTION

As part of the regular inspection of a liftgate and after damage or suspicion of an overload, inspect for wear or structural damage and make necessary repairs or replacements. Check all structural components and their attachment to the liftgate for cracked welds, loose fasteners, wear and part deformation. Check cylinder and hose for leaks. Inspections and repairs should be made by a qualified mechanic.

REPLACEMENT PARTS

Use only Waltco original equipment replacement parts. Components of other liftgate manufacturers may outwardly appear to be the same but are not interchangeable with Waltco products. Waltco components are specifically designed for safety requirements, reliability and compatibility with our products. Refer to your Waltco Parts Manual when ordering parts. NOTE: When ordering, give model and serial number for liftgate.

DECALS

It is important that every vehicle that has a WALTCO Liftgate have legible DECALS clearly posted on the vehicle and an OWNER'S MANUAL in the vehicle at all times as a guide for proper operation and maintenance. Additional DECALS and OWNER'S MANUALS can be obtained from WALTCO LIFT CORP.

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Rev 04 EO10758

Chapter 1 Safety Information



WARNING

Read, understand, and follow all of the warnings listed below.

Failure to follow these warnings could result in severe personal injury or death.

- * Read and understand the Owner's Manual, all decals and warnings on liftgate before operating liftgate.
- * Do not operate liftgate without a thorough knowledge and understanding of the operation of the liftgate.
- * Liftgate hazards can result in crushing or failing.
- * This liftgate is designed for loading and unloading cargo. If personnel are required to ride the liftgate, observe and familiarize yourself with the liftgate operation, decals and manuals. Ensure stable footing at all times.
- * Do not ride liftgate with unstable loads.
- * Wheeled loads must be properly retained from rolling.
- * Tall, high center of gravity loads must be retained from falling over.
- * **Never overload liftgate:**
Load platform as close to the vehicle and towards the middle of the platform as possible. Refer to Owner's Manual and capacity decal of liftgate for maximum load and load placement.
- * Keep hands and feet clear of all potential pinch points.
- * Never use liftgate if it shows any signs of structural damage such as cracked welds, bent or distorted members.
- * Do not attempt any repairs unless you are qualified to do so. Care should be taken when work is performed on a disabled liftgate located near moving traffic. When possible, the vehicle should be moved away from traffic areas for repair. Precautionary measures should be taken to ensure personal safety including those recommended in Federal Motor Vehicle Safety Standards 571.125.
- * When welding to liftgate, or liftgate components, take all necessary safety precautions, including using respiratory protection and other pertinent personal protective gear when welding harmful materials.
- * All protective covers, guards, and safety devices must be in place and access doors closed before operating liftgate.
- * Do not allow anyone to stand in or near area in which Platform will open and close before opening and closing Platform.
- * Do not allow anyone to stand near the Platform where a falling load could land on them.
- * Platform is always to be properly stored and secured for transit. See the Owner's Manual for details.
- * Take care to retain cargo during transit for liftgate Platforms which function as the tailgate or door of the cargo area. Small objects can fall through the space between the vehicle and the folded Platform.
- * A Lock-Out device or Shut-Off Switch should always be used to prevent unauthorized use of liftgate.
- * For liftgates with Runners, never use liftgate if Runners do not travel up or down freely and smoothly.
- * For liftgates with Roller Lifting Chain, the Chain should be replaced every (5) five years or 15,000 cycles, whichever comes first. Replace only with Waltco approved Roller Chain.
- * Never transfer loads which exceed lifting capacity on or over any part of the Platform or Bed Extension unless the liftgate is equipped with a special reinforced Platform and Platform Support Bars for use when the Platform is used as a loading ramp (dock board). Refer to the "Using Platform as a loading ramp" Chapter in the Operation Instructions of the BZ/RZ series Owner's Manual.
- * For liftgates equipped with Trailer Hitches, never exceed the rated capacity of the hitch. Do not exceed the vehicle's weight rating. Refer to the vehicle's Owner's Manual.
- * Vehicle must comply with all state and federal standards.
- * Follow the "Maintenance Guide" chapter in the Owner's Manual.

Chapter 1 Safety Information

Liftgates with Tilt Function

- * Proper use of the Control Switches is of extreme importance.
- * Improper use of Tilt Switch could cause load to fall from the Platform or damage the liftgate.
- * Platform should be in a generally horizontal position when raising or lowering with a load.
- * In any tilt position, the Platform may vary from level while raising or lowering the Platform.

Liftgates equipped with spring operated Cam Closer

- * Replace Cam Release Spring every (5) five years or 15,000 cycles, whichever comes first.

RGL Series Liftgates

- * Make certain Platform Brake mechanisms are operating properly.
- * The Runners are always to remain powered up against the Upstop Pins when in transit.
- * Inspect cables every (3) three months or 750 cycles, whichever comes first. Cables must be replaced if they show signs of wear, distortion, kinking or if any broken wires are visible.
- * Replace cables every (5) five years or 10,000 cycles, whichever comes first.

MDL Series Liftgates

- * Make certain Platform Brake mechanisms are operating properly.
- * The Platform Retaining Bar should be lowered into H-Frame Storage Plate when in transit.
- * Inspect Roller Chains every (3) three months or 750 cycles, whichever comes first. Roller Chains must be measured and checked for signs of stretching. If the chain is stretched by more than 3% they should be replaced.
- * Replace Roller Chains every (5) five years or 15,000 cycles whichever comes first. Replace only with WALTCO APPROVED Roller Chain.
- * Check that all connecting links at each end of Roller Chain are properly secured with proper cotter pins monthly.



This is the Safety Alert Symbol. This manual uses this symbol to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid personal injury or death.

SIGNAL WORDS

WARNING

Indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.
Black letters on an orange background.



WARNING

CAUTION

Indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury.
May also be used to alert against unsafe practices.
Black letters on an yellow background.



CAUTION

NOTICE

Indicates a potentially hazardous situation, which if not avoided, could result in property damage.


NOTICE

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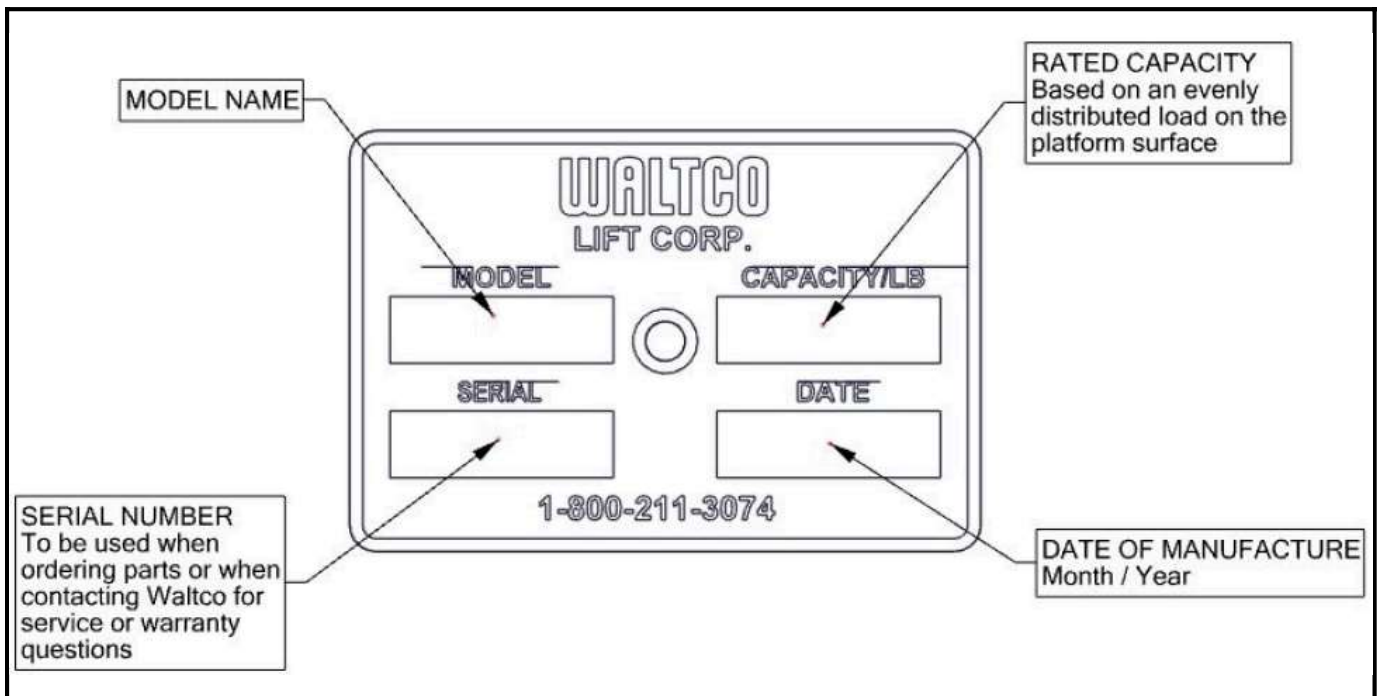
Improper operation and maintenance of this liftgate could result in severe personal injury or death.

Read and understand the contents of this manual and all warning and operation decals before operating and/or performing maintenance on this liftgate.

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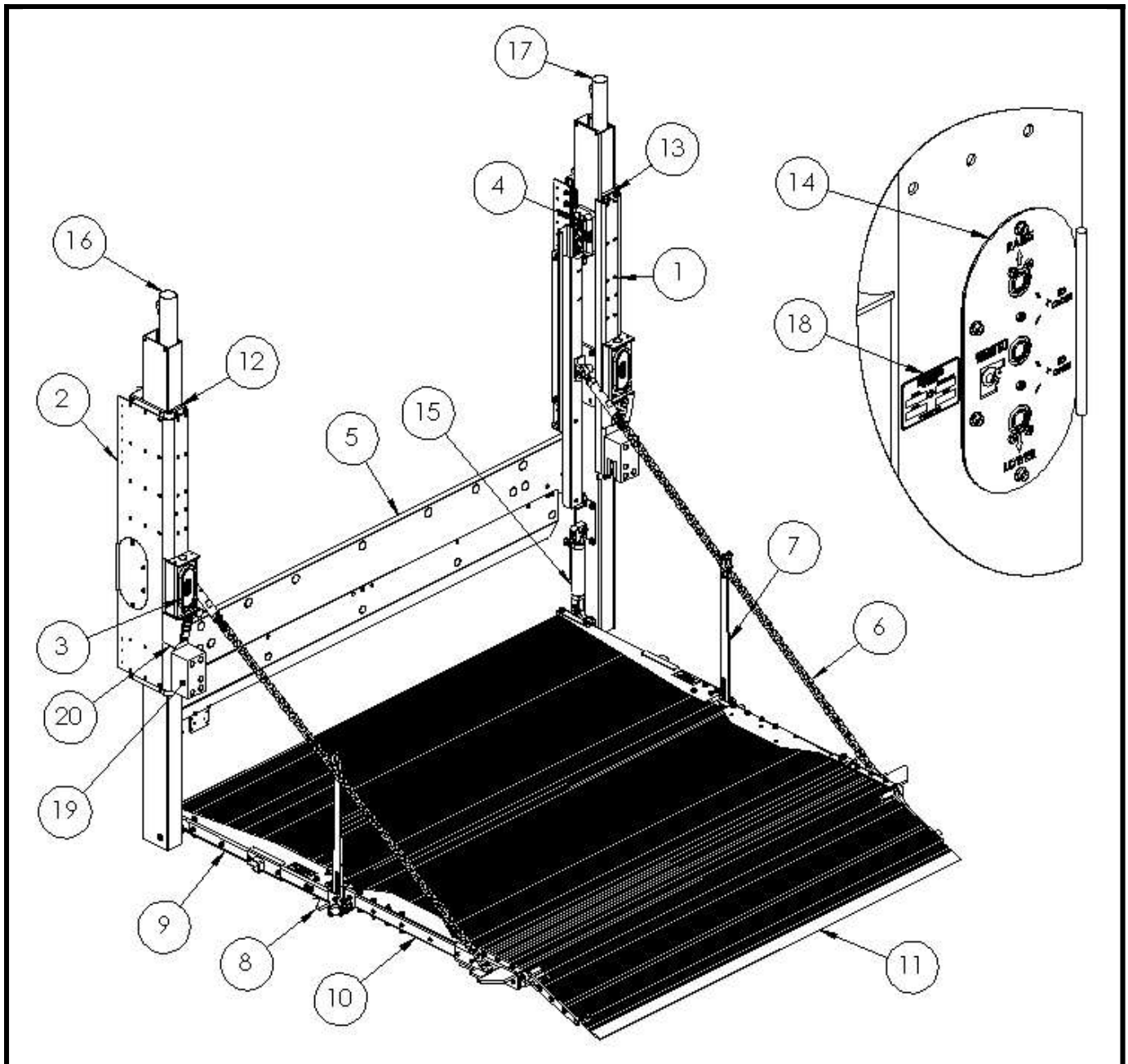
Chapter 2 Liftgate Terminology

MODEL NAME	DESCRIPTION	CAPACITY
MDV-20	MDV-20 Series	2000 lb.
MDV-30	MDV-30 Series	3000 lb.
MDV-40	MDV-40 Series	4000 lb.
MDVBG-40	MDVBG-40 Series	4000 lb.



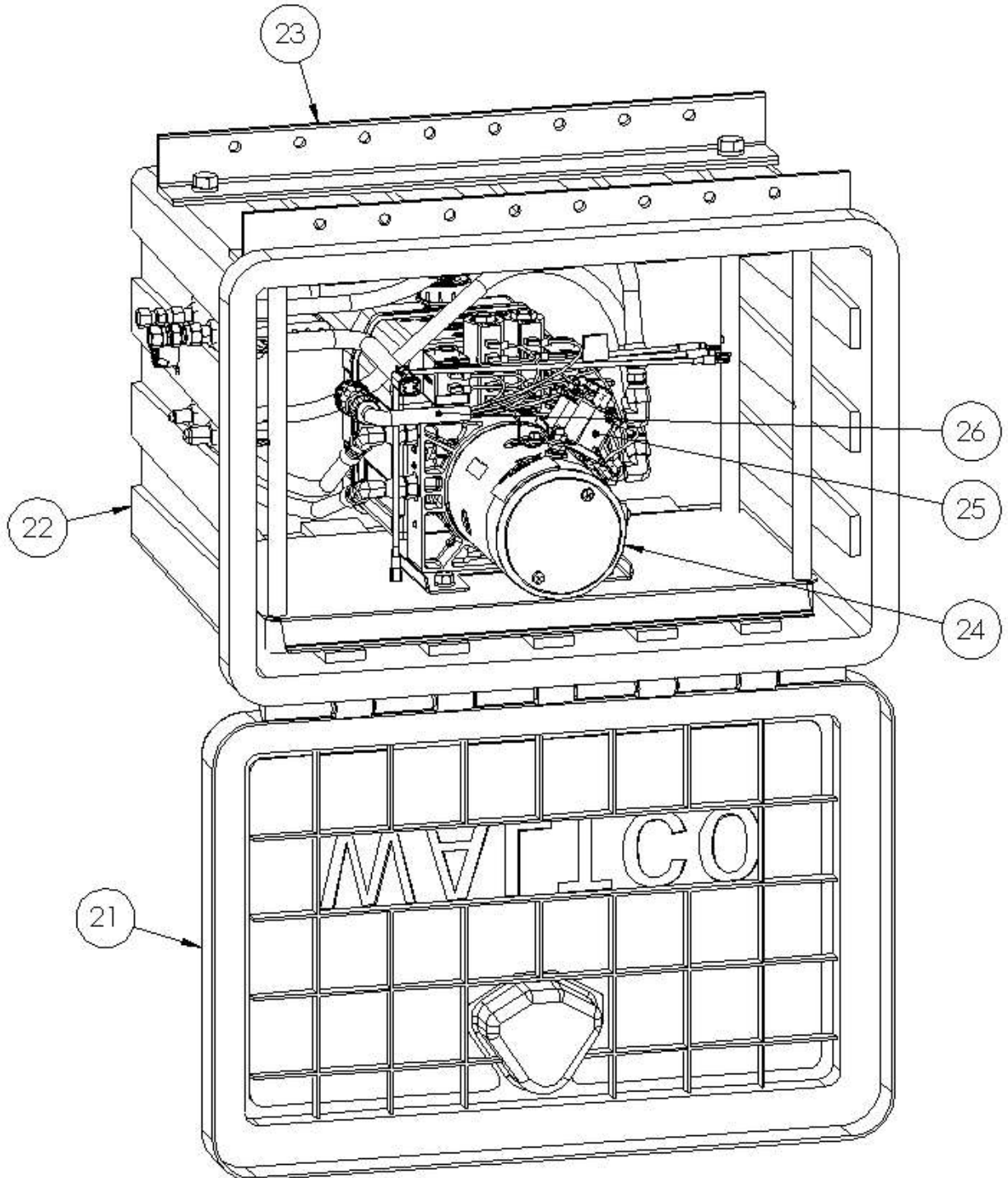
Chapter 2 Liftgate Terminology

- | | | |
|------------------------|---------------------------|--------------------------------|
| 1. Curb Side Column | 8. Bottom Stop Catch | 15. Power Open-Close Cylinder |
| 2. Drivers Side Column | 9. Deck | 16. Drivers Side Lift Cylinder |
| 3. Lights | 10. Deck Extension | 17. Curb Side Lift Cylinder |
| 4. Inside Switch | 11. Flip Ramp Assembly | 18. Specification tag |
| 5. Sill Extension | 12. Drivers Side Runner | 19. Dock Bumper |
| 6. Support Chain | 13. Curb Side Runner | 20. Work Light |
| 7. Swing Arm | 14. Outside Column Switch | |



Chapter 2 Liftgate Terminology

- | | |
|-------------------|--------------------------|
| 21. Pump Box Lid | 24. Pump and Motor |
| 22. Pump Box Base | 25. Motor Start Solenoid |
| 23. Mounting Rail | 26. Control Harness |



Chapter 3 Basic Mounting Requirements



NOTE: It is the requirement of the installer to:

Verify the vehicle is compatible with the mounting and strength requirements of the liftgate.

Ensure the vehicle meets all Federal, State and Local standards and regulations after installation.

MOUNTING DIMENSIONS

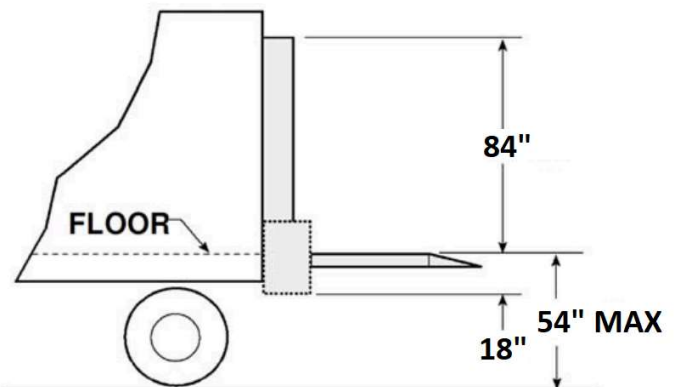
Determine bed height by taking the measurement from the ground to the floor level of the vehicle.

The maximum unloaded bed height is 54"

The minimum bed height depends on

- Liftgate Platform Size
- Whether dock loading capability is required

The table below details the allowable bed height ranges per platform size.



Platform Depth	Bed Height			
	Bed Height Range Without Dock Loading Capability		Bed Height Range With Dock Loading Capability	
	Minimum (loaded)	Maximum (unloaded)	Minimum (loaded)	Maximum (unloaded)
48" + 12" Fixed Ramp	34"	54"	34"	54"
60" + 16" Flip Ramp	34"	54"	34"	54"
60" + 12" Fixed Ramp	34"	54"	42"	54"
72" + 16" Flip Ramp	34"	54"	42"	54"

Chapter 3 Basic Mounting Requirements

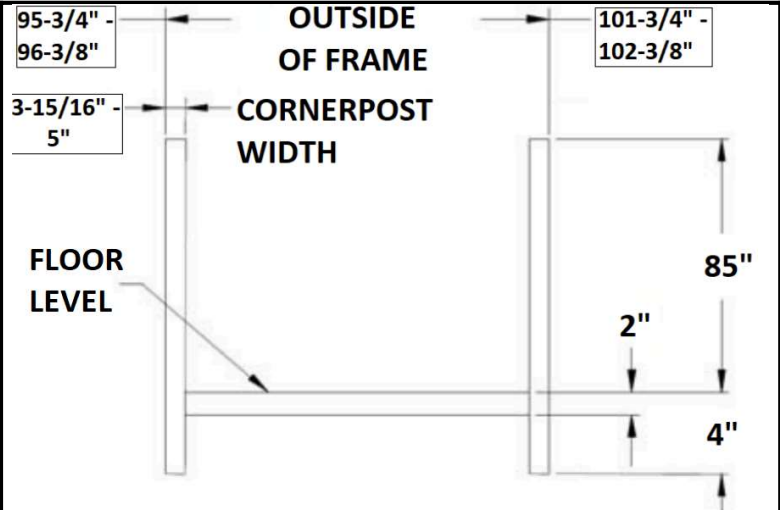
MOUNTING DIMENSIONS (CONTINUED)

The MDV is offered in two widths:

For 96" wide vehicles with actual outer widths across the cornerposts between 95-3/4" to 96-3/8"

For 102" wide vehicles with actual outer widths across the cornerposts between 101-3/4" to 102-3/8"

Cornerpost widths should be between 3-15/16" and 5". Widths outside this range will require special mounting kits.



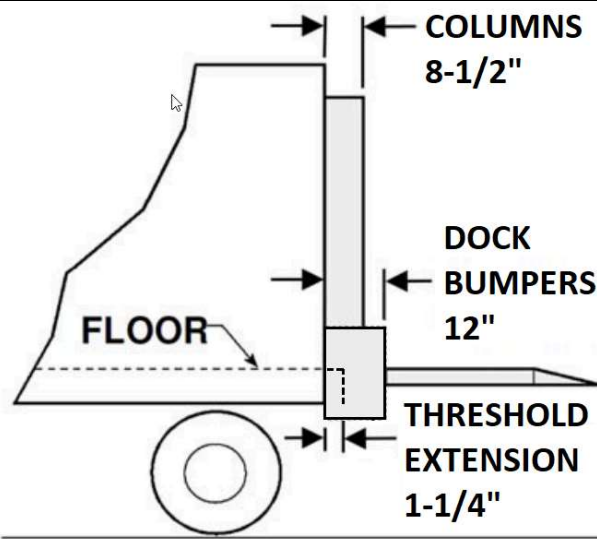
MOUNTING OPTIONS

The MDV is designed to be fastened to the vehicle using stainless steel monobolts.



Use only the monobolts provided by Waltco to attach the MDV to the vehicle. Use of non-Waltco parts could result in severe personal injury or death.

The dimensions off the rear of the vehicle are shown to the right:



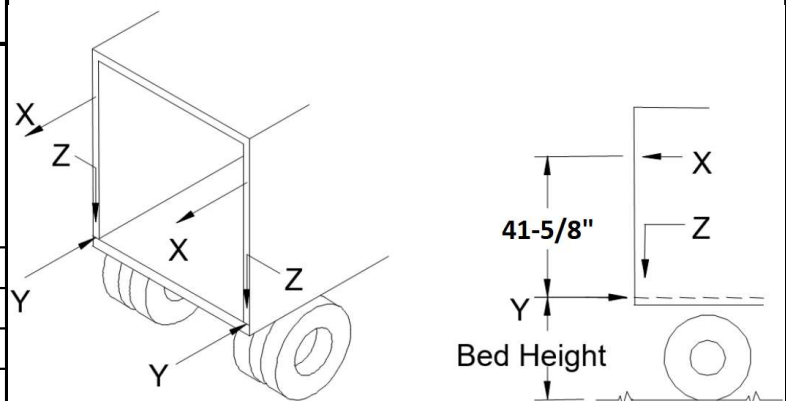
Vehicles must be capable of supporting forces shown.

X = Each side wall tension

Y = Each side wall compression

Z = Each side wall shear

Model	X & Y lbs.	Z lbs.
MDV-20	1725	2800
MDV-30	2480	3800
MDV-40, MDVBG-40	3960	4900



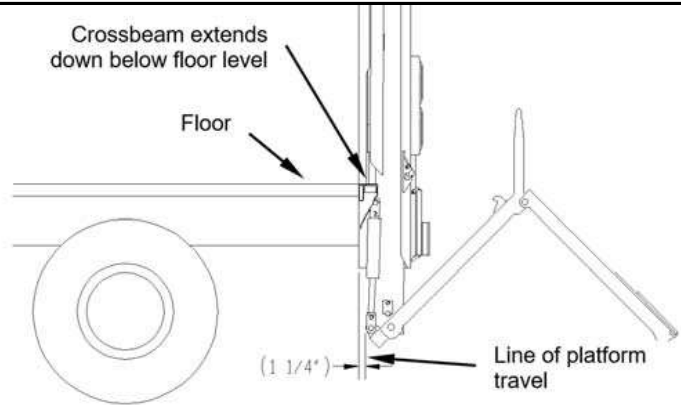
Chapter 4 Liftgate Installation

PREPARATION OF VEHICLE BODY

NOTICE: review Chapter 3 for liftgate mounting requirements.

Remove all obstructions that will interfere with Liftgate mounting or operation such as dock bumpers, lights, projections, etc.

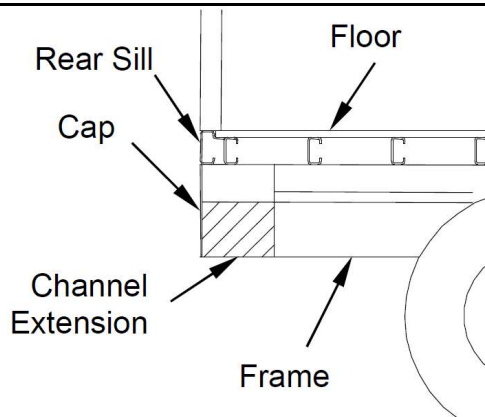
NOTICE: Trailer hitches are not to extend beyond the rear body sill or be attached to any part of the Liftgate.



On vehicles with a short frame (frame does not extend back to rear sill), frame must be extended as shown.

Add channel to vehicle frame & cap so frame extension is flush with rear sill.

Construct a cap from 1/4" x 2" strap or larger to tie sill and frame together.



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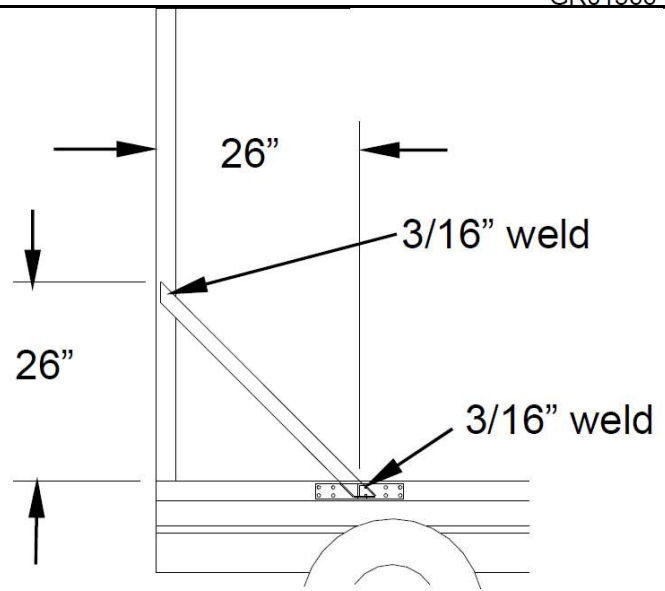
If side walls of vehicle do not meet minimum strength requirements add support straps from corner posts down to side rails as shown.

Locate strap in line with a cross member on side rail

1/4" x 3" bar or heavier material to be used for straps

Reinforce side rail with 1/4" thick steel plate if necessary.

Use 3/16" welds 100% at side rail and corner posts.



Chapter 4 Liftgate Installation

PREPARATION OF LIFTGATE FOR INSTALLATION

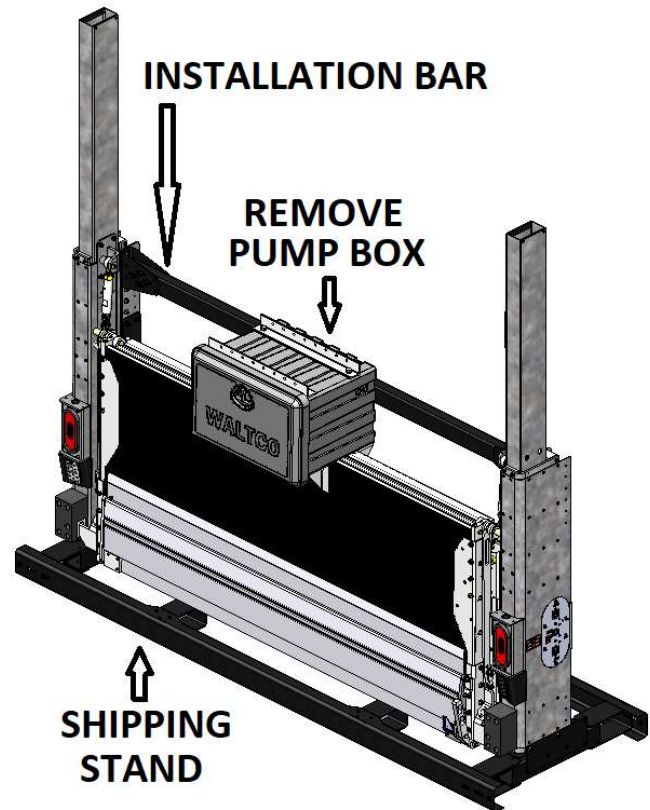
Remove the Hydraulic/Battery enclosure and any other boxes from the Liftgate.



Support hydraulic enclosure with forklift or suitable heavy lifting device before removing shipping straps. Enclosure may be unbalanced!



Do not remove any other shipping straps, supports, or braces from liftgate until instructed to do so.



Set Column Clevis Widths

Measure the vehicle cornerpost widths.

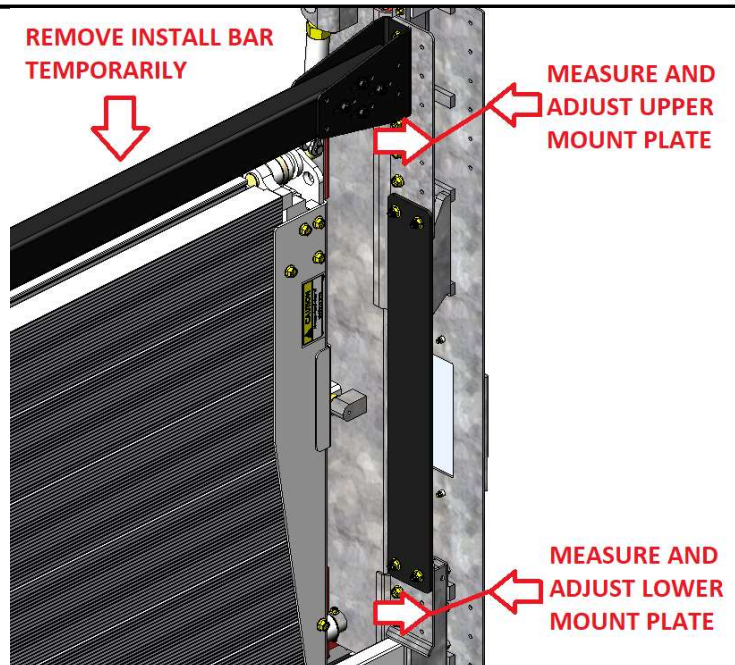
Compare the cornerpost width to the width of the column clevises.

If the cornerpost width is not within 1/32" of the clevis, the clevis requires adjustment.

Adjust the clevis width to match the cornerpost:

- 1.) Locate and set aside the shim kit
- 2.) Temporarily remove the installation bar.
- 3.) Remove the upper mount plates and add/remove shims to reinstall at the correct width
- 4.) Repeat prior step for the lower mount plates

The mount plate spacing should now match the cornerpost width



Chapter 4 Liftgate Installation

PREPARATION OF LIFTGATE FOR INSTALLATION

Set Column Overall Widths

Measure the vehicle overall width at the cornerposts.

Measure the width shown on the right and compare to the vehicle measurement.

Adjust the liftgate width to match the vehicle:

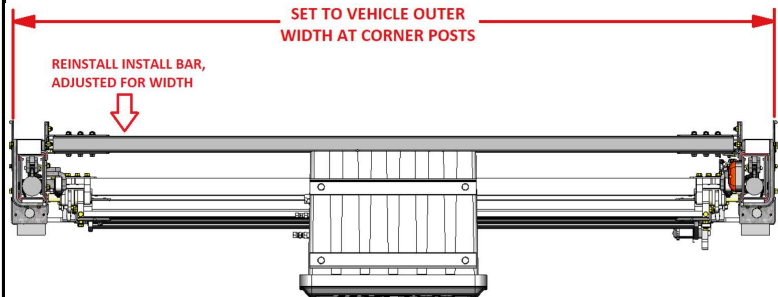
- 1.) Install the shipping brace (if previously removed)
- 2.) Loosen the shipping brace adjustment bolts.
- 3.) Loosen the bolts on the corner of the shipping stand.



Do not remove or disassemble the shipping stand at this time!

- 4.) Adjust the width of the liftgate to match the vehicle.

The liftgate should now be adjusted for install.



Use forklift or crane to raise Liftgate by Installation Brace as shown.

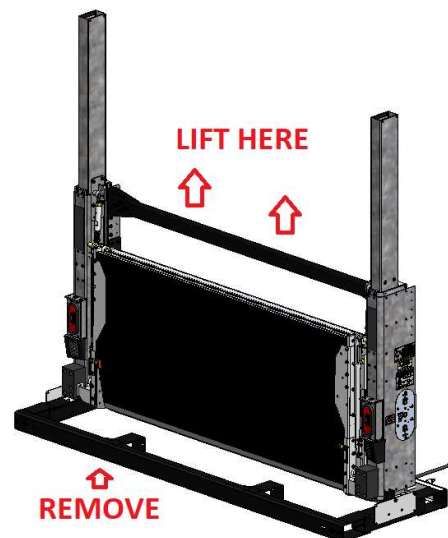
Remove bolts securing liftgate to the shipping cradle. Remove shipping cradle and discard.



Do not remove Installation Brace until Liftgate is fully fastened to vehicle.



Do not remove any other components besides the Shipping Cradle.



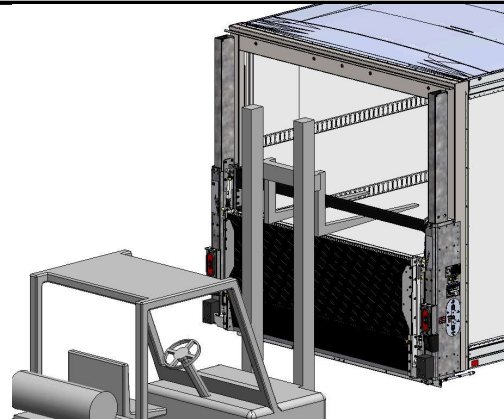
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Use forklift to raise Liftgate by Installation Brace as shown.

Slip mounting plates over the vehicle corner posts. The back of the liftgate should be flush with the front of the corner posts.



STAND CLEAR of installation area while positioning Liftgate.



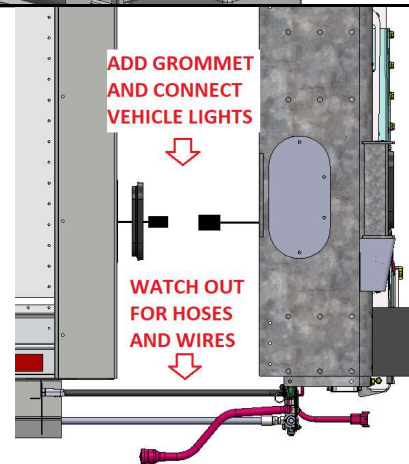
Connect the vehicle lights to the lights on the liftgate.

Test vehicle lights for proper function.

Install protective grommet in cornerpost if not present.

Route light wiring into vehicle cornerpost.

Untie and route hoses and wires away from threshold. Take care not to pinch hoses and wires against back of vehicle.



Lower the liftgate until the lower inside mounting plates are resting on the rear sill.



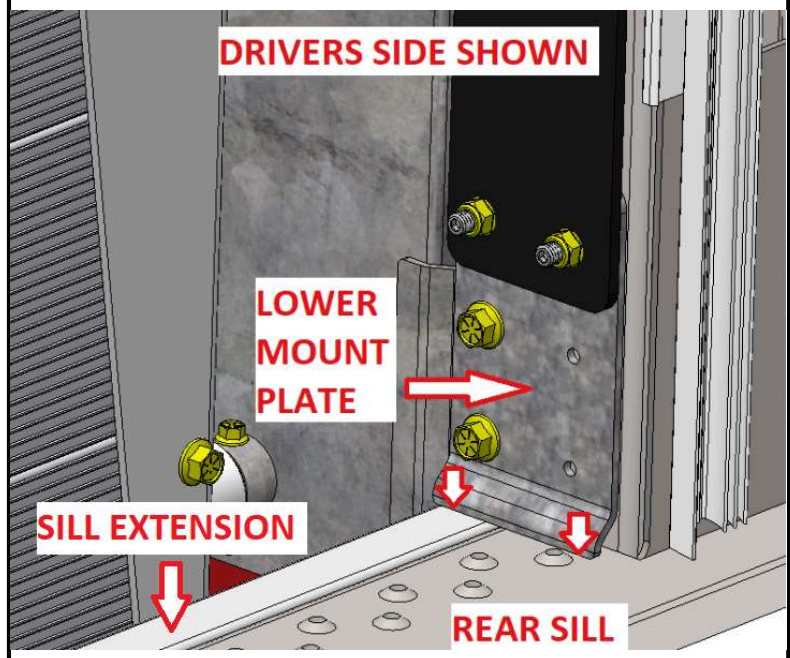
STAND CLEAR of installation area while positioning Liftgate.

NOTICE: Failure to set mounting plates level with rear sill may result in the platform not being level.

Grind back any welds or raised areas that would prevent the mount plates from sitting level.

Examine the rear sill of the vehicle. It should be flush with the sill extension across the entire width.

NOTICE: The platform is set to be level with the Sill Extension. If the Sill Extension is too high or low, the platform will not raise to the desired level.



Chapter 4 Liftgate Installation

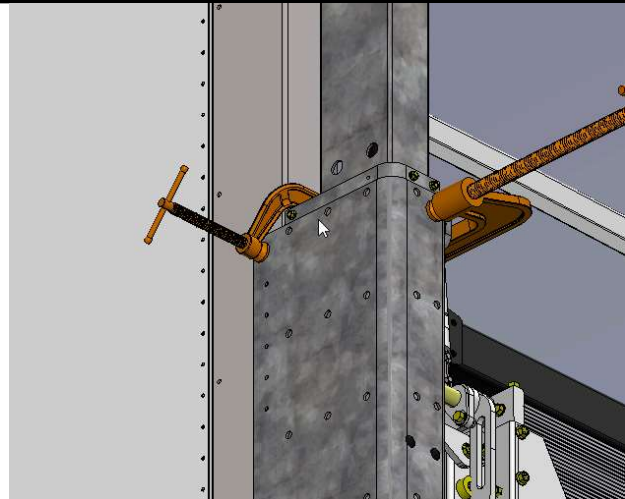
PREPARE FOR MONOBOLT INSTALLATION

Clamp top of both curb and street side columns to the corner posts using large clamps as shown

NOTICE: Be careful not to overtighten the clamps. Damage to liftgate columns or vehicle corner posts may occur!

Clamp the front of the liftgate columns to the cornerpost. The back of the column should be flush with the cornerpost.

Clamp the outside of the column to the cornerpost. The flange of the column should be flush with the cornerpost.



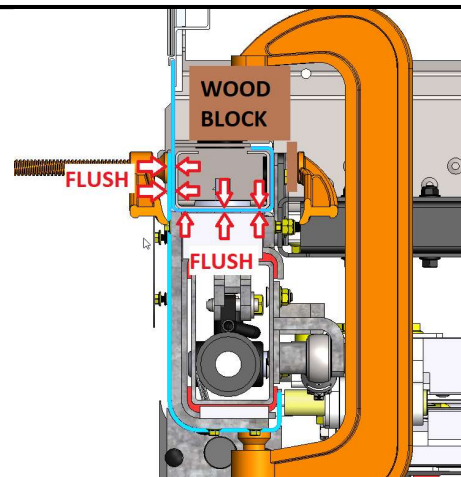
DRIVERS SIDE SHOWN

TOP OF COLUMNS

The columns need to be installed square to the cornerposts, and the areas that will be monobolted must be tight to the cornerposts.

Examine the side of the cornerpost and adjust clamping until the cornerpost is flush to the outside of the column.

Examine the back of the cornerpost where the column rests on it's face. Ensure the column is square to the body by also making it flush.



BOTTOM OF COLUMNS

Examine the side of the cornerpost and adjust clamping until the cornerpost is flush to the outside of the column.

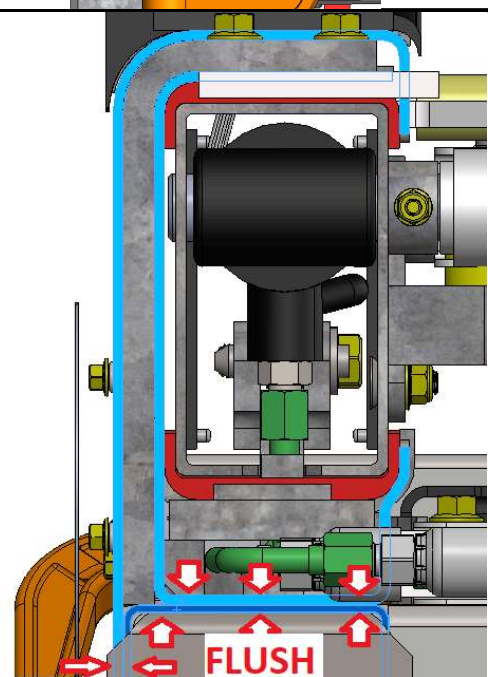
Examine the back of the cornerpost where the column rests on it's face. Ensure the column is square to the body by making it flush.



Ensure the columns are square and tight to the cornerposts before proceeding. See the images to the right for critical surfaces.



Ensure the surfaces being rivetted are flush with no gaps. Failure to properly clamp may result in an inadequate joint.



Chapter 4 Liftgate Installation

Double check position of Liftgate on the vehicle. Check the following:

- Sill Extension is flush with vehicle rear sill
- Column assemblies are vertical and tight against corner posts
- Columns are parallel and square to each other.

DRILL AND INSTALL OUTER MONOBOLTS

With a Size "F" (0.257") bit, drill through the vehicle corner posts (9) places, both left and right columns.

NOTICE: The use of a drill guide is recommended.



Do NOT oversize the holes. Take care to drill holes perpendicular to column.

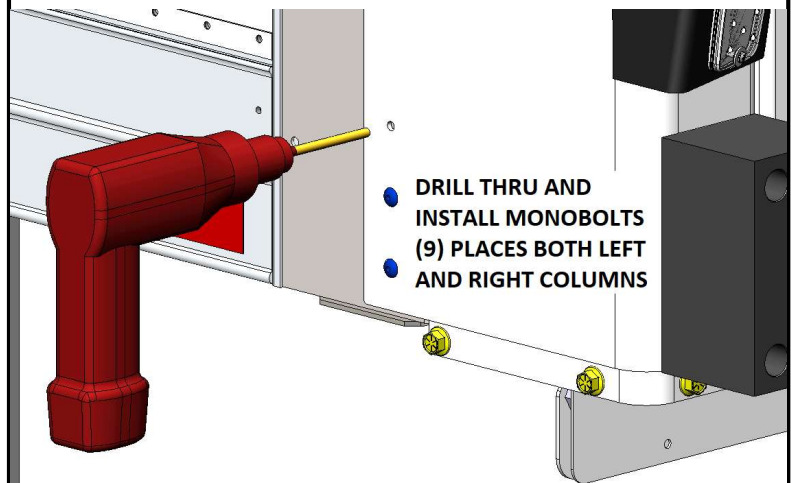


Understand what is on the other side of the area being drilled. Move wires and other internal features back where possible.

Install the 1/4" stainless steel monobolts from the installation kit.



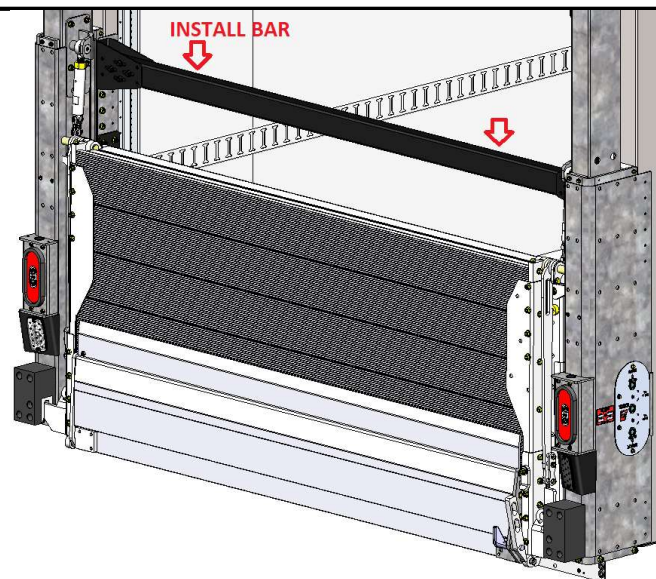
Use the proper rivet gun for stainless steel monobolts. If you are unsure what to use, contact Waltco technical support.



After installing outer monobolts, remove support from install bar.

Remove the installation bar to allow the inner mount plates to be installed with monobolts.

NOTICE: Do NOT remove clamps until inner mount plates have been installed. Early removal may result in a poor quality install.



Chapter 4 Liftgate Installation

DRILL AND INSTALL INNER MONOBOLTS

Loosen the mount plate bolts.

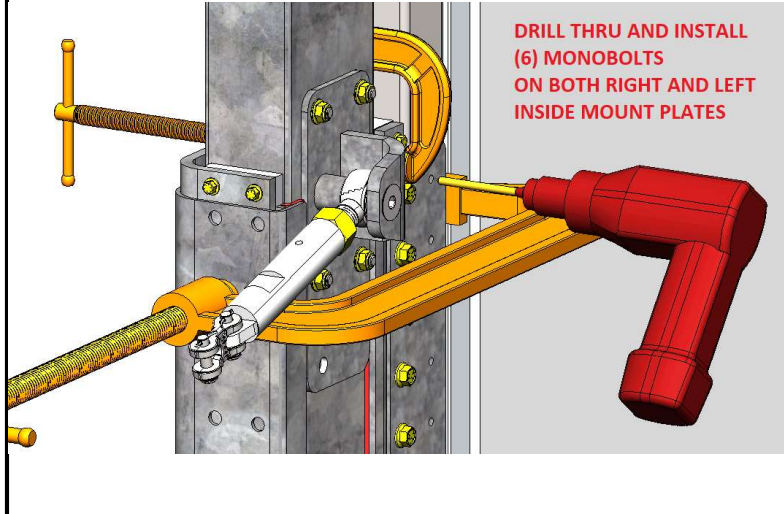
Hold the upper mount plate flush to the cornerpost

If the mount plate is not flush, add or remove shims until less than a 1/32" gap is present.

NOTICE: The inner mount plates must be flush with the cornerpost before installing monobolts. If fitup leaves a gap, it must be as small as possible (<1/32") on the bolted side of the plate.

With a Size "F" (0.257") bit, drill through the vehicle corner posts (6) places, both left and right columns.

NOTICE: The use of a drill guide is recommended.



Do NOT oversize the holes. Take care to drill holes perpendicular to column.



Understand what is on the other side of the area being drilled. Move wires and other internal features back where possible.

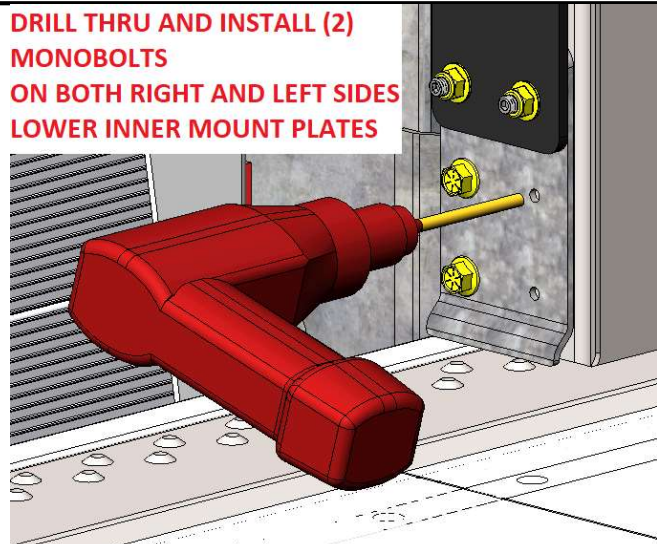
Install the 1/4" stainless steel monobolts from the installation kit.



Use the proper rivet gun for stainless steel monobolts. If you are unsure what to use, contact Waltco technical support.

Repeat the above steps for the Lower Inner Mount Plates.

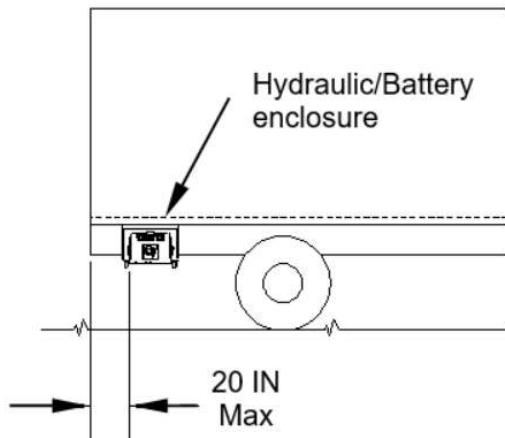
Examine the install for squareness, and that the threshold extension is still level with the vehicle rear sill.



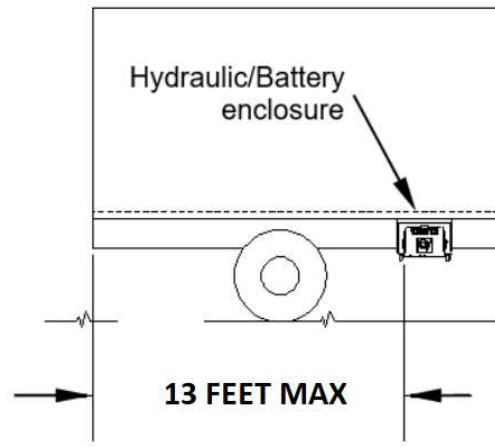
Chapter 4 Liftgate Installation

INSTALLATION OF PUMP AND BATTERY BOXES

PUMP BOX INSTALLED BEHIND REAR AXLE



PUMP BOX INSTALLED IN FRONT OF REAR AXLE



Locate a position for hydraulic/battery enclosure. This position should make the best use of the hose lengths supplied with the Liftgate to avoid having to coil up extra hose.

In choosing the mounting position, you must ensure that:

- Pump Box cover opens toward curb-side of vehicle.
- If installing behind the rear axle, hydraulic hoses from liftgate reach Pump Box without strain.
- 2ga or thicker charge line(s) from front of vehicle reaches pump / battery box without strain.
- Optional 13 ft. extension hoses and charge lines are required for installing the pump box in front of the rear axle(s).

The Pumpbox Installation Kit uses a clamping method to attach the Pumpbox Assembly to Vehicle crossmembers With 12" Spacing.

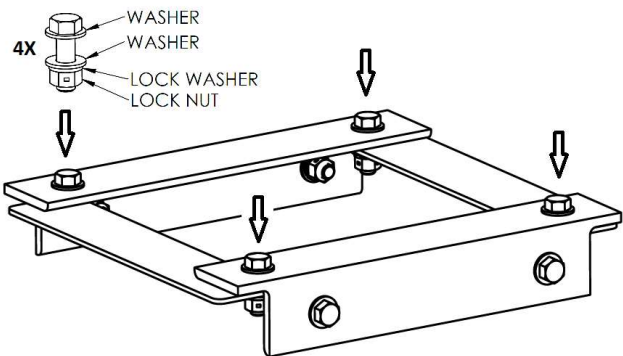
Place the angles between two crossmembers. Note orientation on the left (cutout face on outside of structure).

Install the flat bars underneath each crossmember. Note orientation on the left (hole on inside of structure).

NOTICE: Ensure angles are parallel and square, or misalignment may occur.

Tighten each nut to 44 ft-lbs.

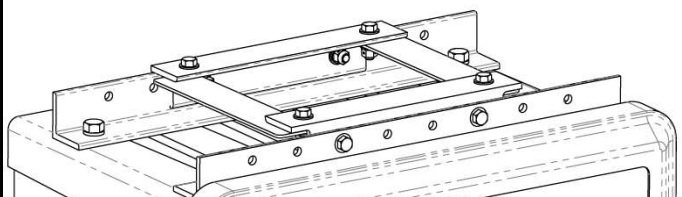
MDV PUMP BOX INSTALL KIT



Use a lift cart, jack or other lifting device to position the pump box in place.

Using the same bolt/hardware configuration, attach the pumpbox to desired holeset as shown below. Tighten the nuts to 44 ft-lbs. (4x)

Note that the mounting angle on the top of the pump box is designed to allow some side-side adjustment. The install kit can be bolted to any pair of holes along its length.



Chapter 4 Liftgate Installation

HYDRAULIC HOSE ROUTING AND CONNECTIONS

HYDRAULICS HOSES & LINES

Familiarize yourself with key components using this diagram.

Refer back to this diagram as needed during hydraulic hookup.



Keep hydraulic hoses, fittings, and other components free from contamination and debris.

Contamination of the Hydraulic System will cause the Liftgate to operate unevenly and can lead to damage of hydraulic components.



Take care to avoid cross threading hydraulic fittings, and use proper tightening practices to avoid over or under tightening each connection. Overtightening JIC fittings will damage the fitting, and can lead to leakage.

NOTICE: The 1/4" and 3/8" hydraulic hoses have been connected together to prevent oil from draining from the cylinders and to minimize the amount of bleeding needed when installation is complete.

Disconnect the 3/8" hydraulic hoses at the liftgate.

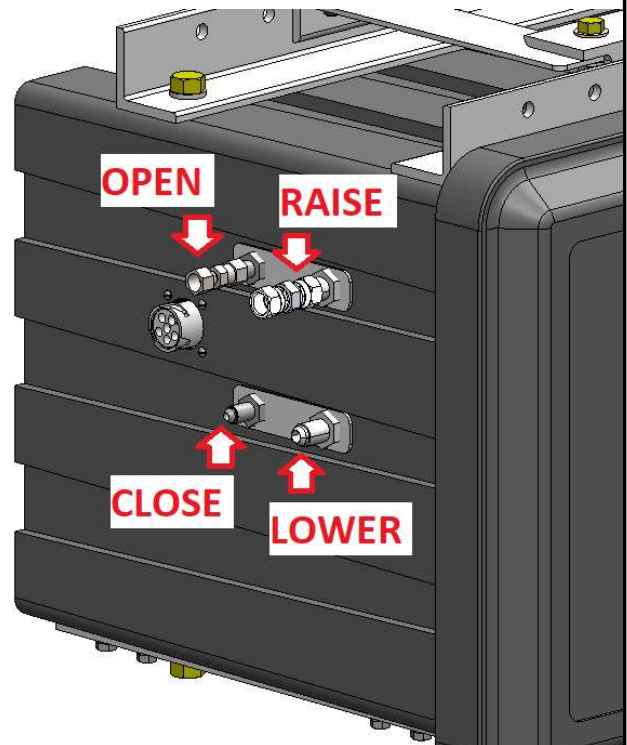
Connect hose with 3/8" female swivel to the male 3/8" fitting on the pump box. This port **lowers** the platform.

Connect hose with 3/8" male fitting to the 3/8" female swivel fitting on the pump box. This port **raises** the platform.

Disconnect the 1/4" hydraulic hoses at the liftgate.

Connect hose with 1/4" female swivel to the male 1/4" fitting on the pump box. This port **closes** the platform.

Connect hose with 1/4" male swivel to the 1/4" female swivel fitting on the pump box. This port **opens** the platform.



Chapter 4 Liftgate Installation

HYDRAULIC HOSE ROUTING AND CONNECTIONS



Take care when routing hoses to avoid situations that will damage or shorten the life of hydraulic hoses. Damage to liftgate and / or serious injury or death may result from improper hose routing.

The following are a list of best practices to follow when routing hydraulic hoses:

Avoid twisting of hoses. Observe the lay line on the hose to ensure it remains straight.

Avoid sharp bends when routing hoses. Observe the following minimum bend radii:

3-3/4" for 1/2" hoses

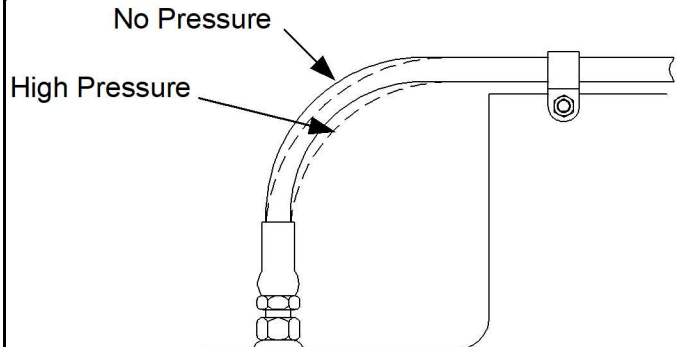
2" for 1/4" hoses

Allow **plenty of slack between connecting points.** Hoses will contract under pressure.

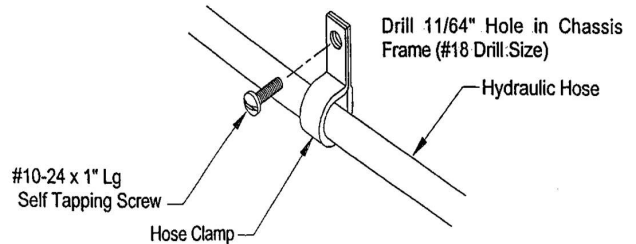
Do not clamp hoses at bends to allow for length changes when hose is pressurized.

NOTICE: Secure hoses to vehicle every 24" or less to prevent chafing from road vibration.

Do not allow hoses to contact sharp or abrasive surfaces.



GR00717



GR00265

Chapter 4 Liftgate Installation

TRUCK WIRING INSTRUCTIONS

Liftgate running off auxiliary battery box:

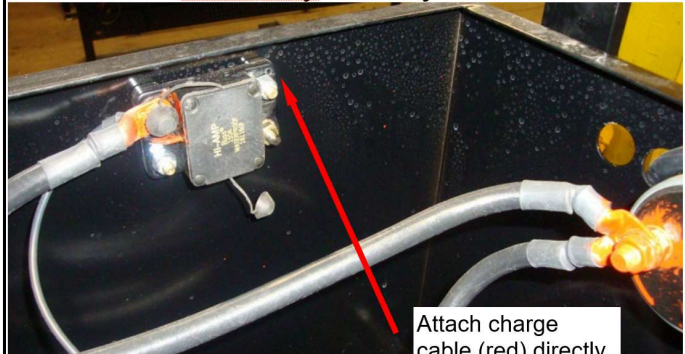
- a. In liftgate battery box, attach ground cable (black) directly to the negative terminal on the liftgate battery.
- b. In liftgate battery box, attach charge cable (red) directly to the auto reset circuit breaker BAT terminal.
- c. Route power cable and ground cable from auxiliary battery box to truck starting batteries, securing them every 24". Be certain cables are protected with grommets when passing through metal holes or over sharp edges.
- d. In truck starting battery box, mount the 150A auto reset circuit breaker.



Failure to securely mount and connect 150A circuit breaker may result in an unsafe condition.

- e. In truck starting battery box, attach positive end of charge cable
- f. In truck starting battery box, attach a jumper cable from the positive battery terminal to BAT terminal on 150A circuit breaker.
- g. In truck starting battery box, attach negative end of ground cable (black) to ground terminal on truck starting battery.
- h. Apply dielectric grease to all bolted connections.
- i. In liftgate pump box, attach ground cable (black) directly to pump ground stud.
- j. In liftgate pump box, attach power cable (red) directly motor start solenoid.

Auxiliary Battery Box



Attach charge cable (red) directly to the auto reset circuit breaker BAT terminal.

Chapter 4 Liftgate Installation

TRUCK WIRING INSTRUCTIONS

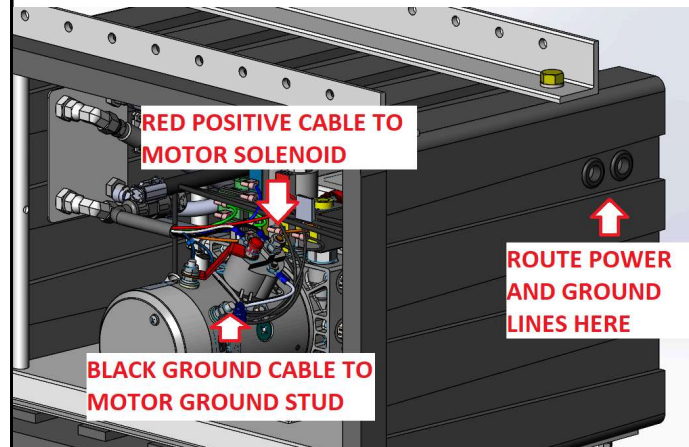
Liftgate running off truck batteries only:

- In liftgate pump box, attach ground cable (black) directly to pump ground stud.
- In liftgate pump box, attach power cable (red) directly motor start solenoid.
- Route power cable and ground cable along truck chassis, securing them every 24". Be certain cables are protected with grommets when passing through metal holes or over sharp edges.
- Mount the 150A circuit breaker in the truck battery box.



Failure to securely mount and connect 150A circuit breaker may result in an unsafe condition.

- Attach positive end of power cable to AUX terminal on 150A circuit breaker.
- Attach a cable from the positive terminal of the vehicle starter battery to BAT terminal on 150A circuit breaker.
- Attach negative end of ground cable to ground terminal on vehicle starting battery.
- Apply dielectric grease to all bolted connections.



Chapter 4 Liftgate Installation

BATTERY CABLE ROUTING AND CONNECTIONS

Verify vehicle ignition switch is off.

If installing a battery box with the liftgate, turn the master disconnect on battery box to the "OFF" position, otherwise disconnect vehicle battery ground cable.

Refer to installation instructions provided with wiring kit when connecting battery cable(s) and circuit breaker(s).



Original equipment ground cable on vehicle must be at least a #2 gage to ensure proper operation of pump unit.



If engine is not adequately grounded to vehicle frame, an auxiliary ground cable must be added between engine block and vehicle frame.



Protect wires from any sharp edges or holes that may abrade insulated covering of wires.

Secure battery cable so it does not come near, or in contact with, other vehicle wiring, fuel lines, brake lines, air hoses, exhaust system, etc.

Reconnect battery ground cable(s). DO NOT operate pump unit at this time.

BATTERY SELECTION

A minimum of two **Group 31 Dual Purpose, 700 CCA, minimum 180 minute RC (reserve capacity) batteries** are required.

NOTICE: The number of batteries required may vary by the application. Solar charging kits are available to extend battery life.

NOTICE: Batteries must be the same size and type.

Install batteries in the battery box next to the pump (or in the optional auxiliary battery box for truck applications). A battery clamp is provided to secure the batteries.

For applications requiring high number of cycles or repeated lifting of heavy loads, additional batteries linked in parallel are recommended.

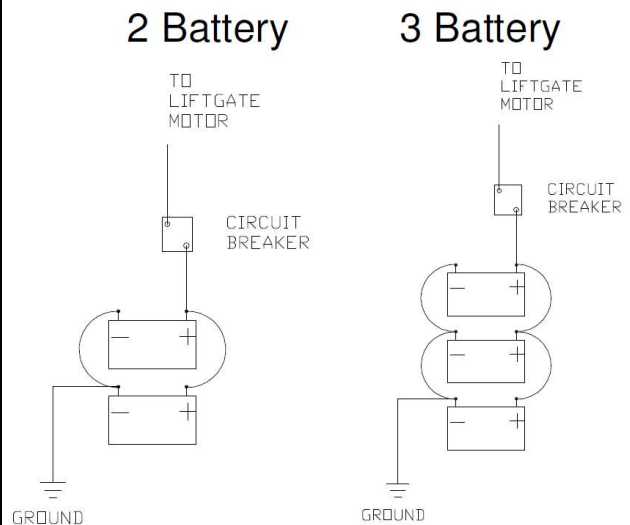
When batteries are in parallel, ensure the type of battery matches. Follow all battery manufacturer's recommendations.

NOTICE: When connecting batteries in parallel, use the diagram to the right. **Do not connect positive and ground wires to same battery!** Uneven battery life will result.

A trail charger or other liftgate charging system is highly recommended for all applications to extend battery life and vehicle uptime.

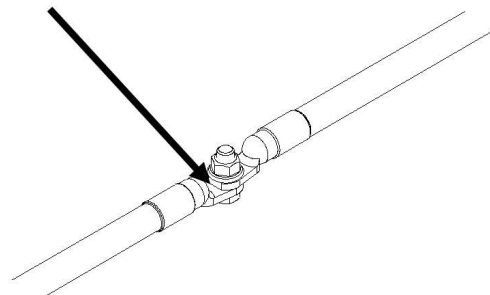
DIELECTRIC GREASE

Add dielectric grease generously to ALL electrical connections.



**GROUP 31 DUAL PURPOSE BATTERIES, 700 CCA OR MORE
MINIMUM RESERVE CAPACITY: 180 RESERVE MINUTES
BATTERIES IN PARALLEL MUST BE SAME SIZE / TYPE**

**FOR APPLICATIONS WITH SHORT TRAVEL BETWEEN
STOPS, MORE RESERVE CAPACITY AND / OR SOLAR
CHARGING MAY BE REQUIRED**



Chapter 4 Liftgate Installation

Once power is connected to the pump box, the liftgate should be active.

One the control switch mounted to the column, the middle button should light up, indicating the controls are active.



BLEEDING OF HYDRAULIC SYSTEM



**Stand clear of sides and end of platform while bleeding hydraulic system.
Do not place anything on the platform until bleeding is complete!**

Bleeding the lift cylinders

- a. Turn on power to liftgate.
- b. Raise platform to bedheight (platform will stop moving upwards). Keep switch held down continually for 60 seconds.
- c. Let power unit rest for 2-5 minutes to allow heat to dissipate or switch to the Auxiliary Pump if available.
- d. From bed height, run platform upwards again for another 60 seconds.
- e. Check up and down motion for even motion. If liftgate moves erratically or unevenly, repeat above steps.

Bleeding the Power Open-Close (POC) cylinder

- a. Open platform and lower to ground.
- b. Locate POC cylinder. Remove lower pin and disconnect from platform.
- c. Using the "open" switch, fully retract the cylinder.
- d. Remove the hose from the upper fitting of POC cylinder, and use a bucket to capture any spilled fluid.
- e. Hold down the "close" switch to purge the line of air. Stop when the fluid is running clear from the hose.
- f. Reinstall hose to upper cylinder fitting.
- g. Fully extend cylinder by holding down the "close" switch
- h. Remove the hose from the lower fitting of POC cylinder, and use a bucket to capture any spilled fluid.
- i. Hold down the "open" switch to purge the line of air. Stop when the fluid is running clear from the hose.
- j. Reinstall hose to lower cylinder fitting.
- k. Extend / retract cylinder to align cylinder clevis with platform. Reinstall the platform cylinder pin.
- l. Raise platform to bed height and open and close it several times. If platform moves erratically, repeat above steps.

NOTICE: Check hydraulic fluid level at reservoir after bleeding is complete. Top off as needed.

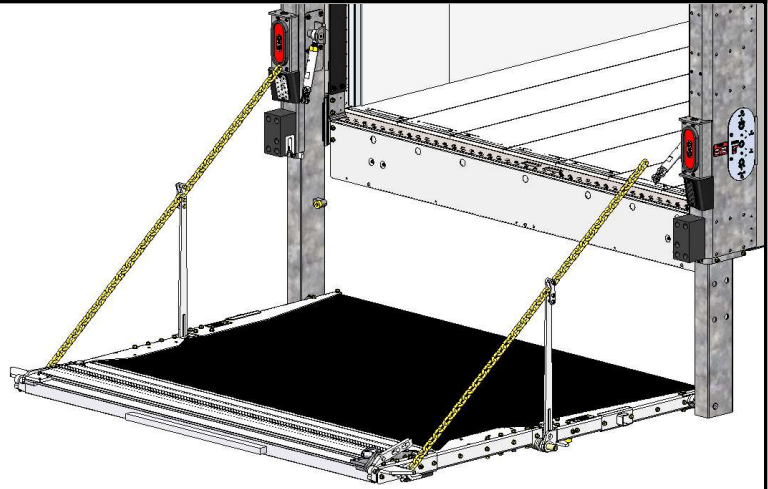
Chapter 4 Liftgate Installation

BOLT THRESHOLD EXTENSION TO REAR SILL

After all monobolts have been installed, the threshold extension must be secured to the rear sill.

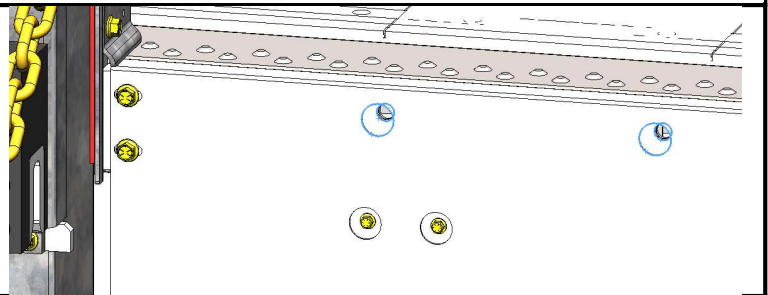
The hardware ships with the other kits. Find the correct kit with bolts, washer, lever nuts, and snap caps for the holes.

To access the mounting holes, open and lower the platform using the control switch on the column.



Many bodies have the mounting holes pre-drilled.

If the rear sill does not have the correct holes, use a centerpunch and a 9/16" drill to make the (7) holes in the rear sill.

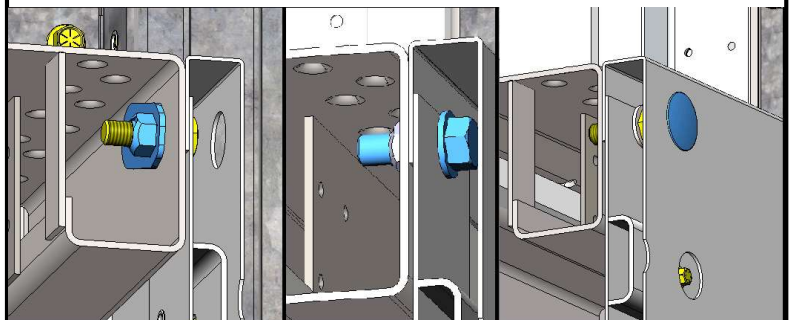


Install the bolts, washers and lever nuts to attach the threshold extension to the rear sill.

Note: the lever nuts are designed to allow installation from the outside, eliminating the need for a wrench inside the rear sill

Torque the bolts to 90 ft-lbs.

Install the (11) caps into the holes on the threshold, including the (4) holes which did not receive a 1/2" bolt.



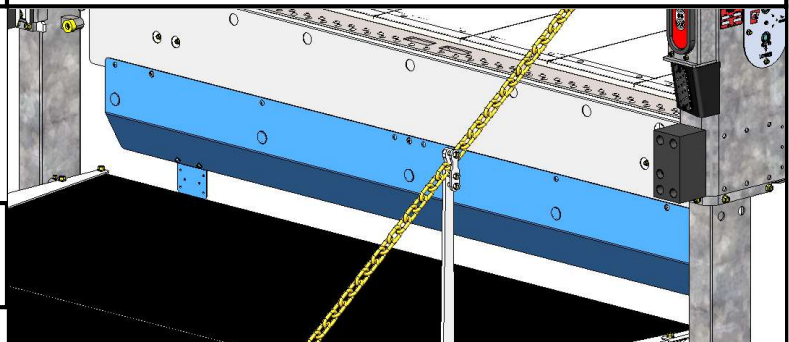
An unsafe condition may result if the caps are not installed to prevent possible injury.

Install the threshold using the rivets provided.

If backup sensors are not being installed in the cutouts, use the provided black plastic caps to fill the holes.



An unsafe condition may result if the caps are not installed to prevent possible injury.



Chapter 4 Liftgate Installation

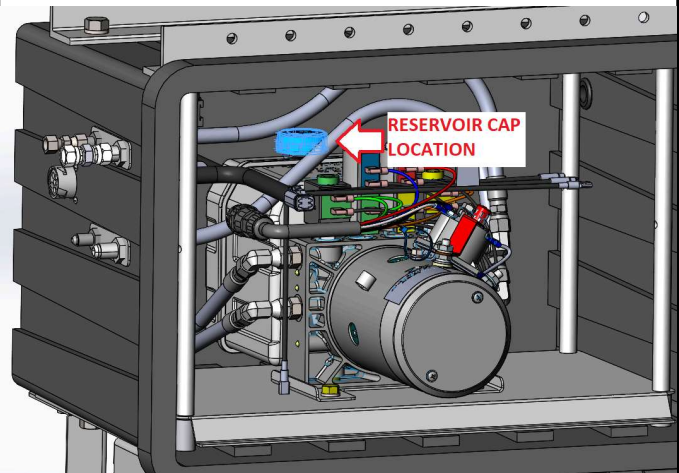
CHECK OIL LEVEL


Open platform and raise to bed height.

The pump reservoir is pre-filled by Waltco at the factory. Check oil level in hydraulic reservoir. Add oil, if required, to fill it to within 2" of top of reservoir.

A transfer pump or funnel with a hose can be used to reach the reservoir opening.

NOTICE: Do **NOT** fill reservoir to top. Oil may overflow into pump box while bleeding hydraulic system.



	
Purchase in 1 gallon containers from Waltco Parts Hotline 1-800-411-5685 www.waltco.com	
Hydraulic Fluid Chart	
Temp Range °F	Waltco Fluid Part #s and Acceptable Fluids
0° to 120°	Waltco Biodegradable LiftLube Part # 85803860 Shell Tellus S2 VX 32 Chevron Rando HDZ 32
-20° to 90°	Waltco Biodegradable LiftLube Arctic Part # 85803866 Waltco All Season Hyd Oil Part # 85803867 Shell Tellus S2 VX 15 Mobil DTE 10 Excel 15 Chevron Rando HDZ 15

7/16 80101494

Fill reservoir

- Fill with recommended fluid or equivalent.
- Fill the reservoir to within 2" from the top. (Oil level instructions above)
- Fluids are available from the Waltco Parts Dept. 1-800-411-5685 www.waltco.com

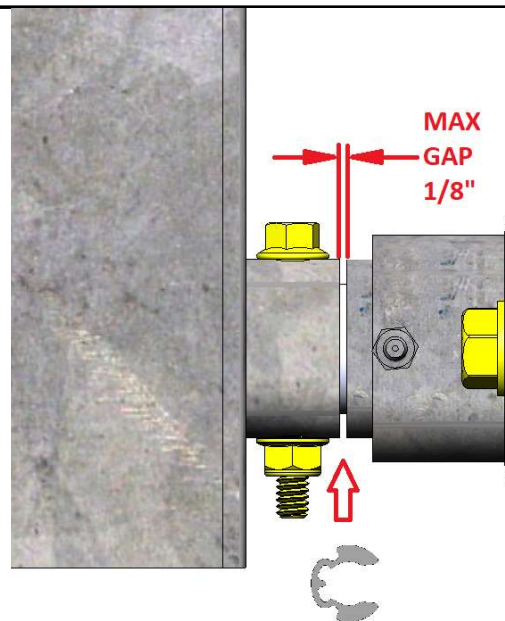
Note:

Do not use the following fluids:

- Brake Fluid
- Power Steering Fluid
- Automatic Transmission Fluid (ATF)
- Motor Oil

INSTALLING PLATFORM RETAINING RINGS

- Retaining rings are required to center the platform properly after install. Because of the wide range of body widths available, multiple rings may be required.
- Lower platform to 20" above ground.
- Push platform towards passenger side to make room for retaining ring.
- Insert retaining ring between platform and runner hinge tube by snapping onto platform hinge pin.
- If the gap is greater than 1/8" add additional rings to close the gap.



Chapter 4 Liftgate Installation

VERIFY LIFTGATE OPERATION



Do not allow anyone to stand in, or near area in which platform will open and lower.



Keep hands and fingers clear of liftgate while it is in motion.

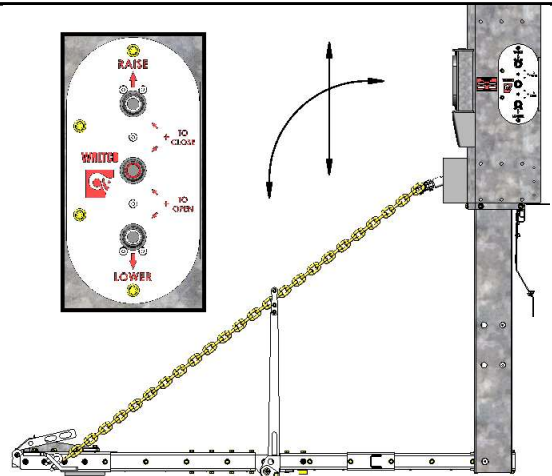
CHECK OPERATION OF LIFTGATE

Check that all controls operate correctly per following instructions. Check both Inside Raise/Lower switches and Outside column switches as follows.

Check that Liftgate operates freely and smoothly through operational cycle without unusual noise or vibration.

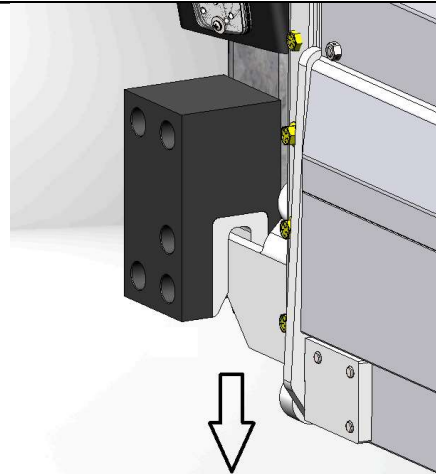
Check that platform opens in 7 to 9 seconds and closes in 8 to 10 seconds.

Check that platform raises and lowers within 20 seconds (for 54" bed height).



OPENING PLATFORM FROM STORED POSITION

- The light on the center button of the column switch indicates power is enabled to the liftgate. If the light is not on, use the cab shutoff switch turn on power first.
- Be certain operating area around platform is clear before opening platform.
- Using the "LOWER" button, power platform down so that it is completely out of the travel locks.

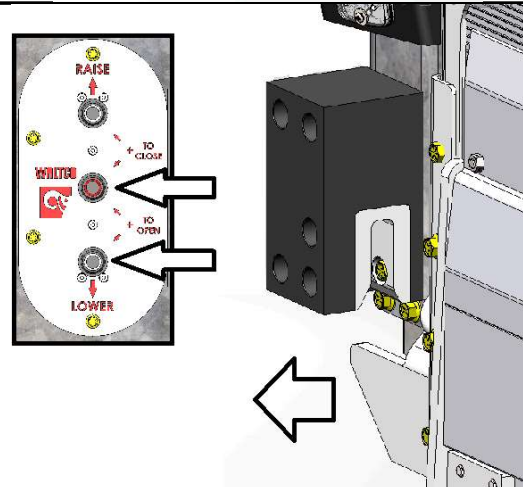


OPENING PLATFORM FOR LOADING

- Once the travel latch is clear, the platform can be opened.
- Using the "LOWER" and middle buttons together, power open the platform.



Ensure area behind vehicle is clear before opening platform.



Chapter 4 Liftgate Installation

VERIFY LIFTGATE OPERATION



Do not allow anyone to stand in, or near area in which platform will open and lower.



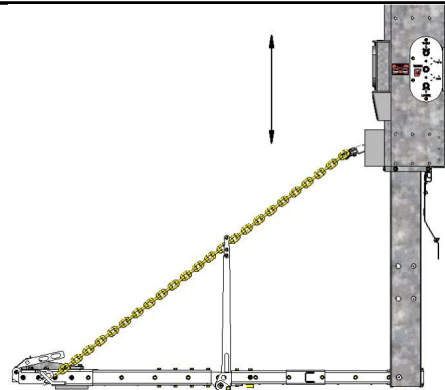
Keep hands and fingers clear of liftgate while it is in motion.

RAISING AND LOWERING PLATFORM

- Using the "LOWER" toggle switch, lower platform for use.
- Use the "RAISE" toggle switch to raise platform.



Ensure platform and flip ramp are fully lowered when loading and unloading platform at ground level.

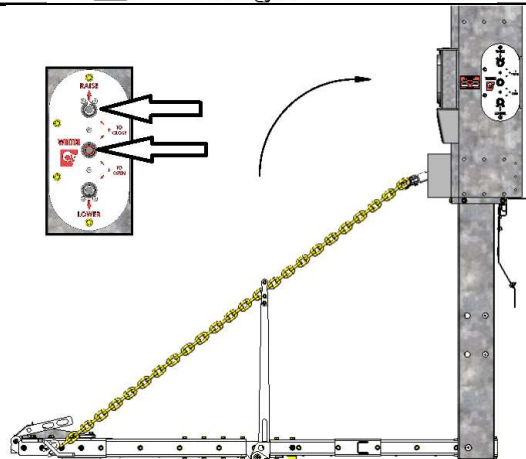


CLOSING PLATFORM

- With the platform open, power platform part way up, at least 30" from the ground.
- Using the "RAISE" and middle buttons together, power close the platform.



Ensure flip ramp is stowed and platform is clear of loose items before closing.

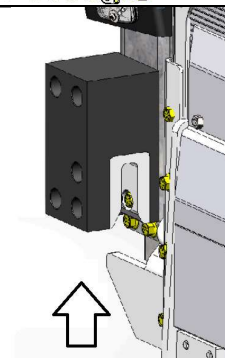


STORING PLATFORM FOR TRAVEL

- With the platform closed, use the "RAISE" button to power the platform up until the travel ear is stowed inside the latch.
- Turn off power to liftgate by turning the cab shutoff switch to the "OFF" position.



Failure to properly stow and latch the platform may result in damage to the liftgate.



Chapter 4 Liftgate Installation

VERIFY LIFTGATE OPERATION



Do not allow anyone to stand in, or near area in which platform will open and lower.

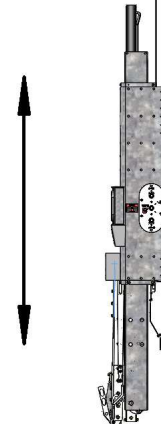


Keep hands and fingers clear of liftgate while it is in motion.

LOWERING PLATFORM FOR DOCK LOADING

- Use the cab shutoff switch turn on power.
- Using the "LOWER" switch, power platform down until the platform is level with the truck floor.
- When finished Dock Loading be certain to raise platform to travel position before pulling truck away from dock.

NOTICE: Dock storage position should not be used when driving outside of loading area. Return gate to transit latch before leaving dock area.



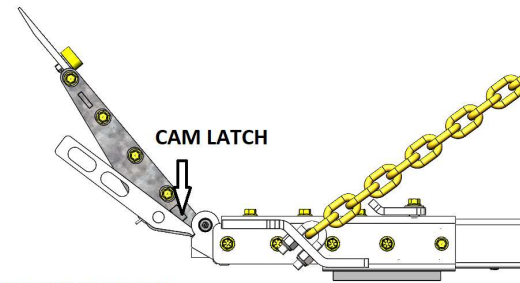
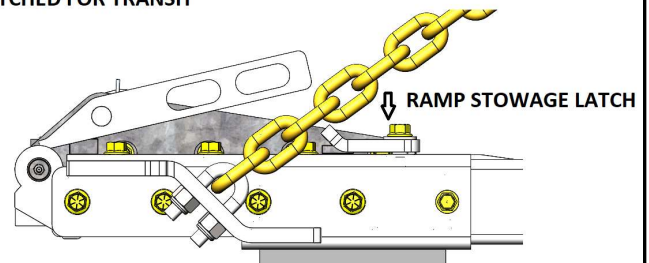
FOLDING RAMP OPTION OPERATION INSTRUCTIONS

- Unlatch ramp and unfold to loading position.
- Verify cam latch stops ramp as shown on left.



Ensure platform and flip ramp are fully lowered when loading and unloading platform at ground level.

LATCHED FOR TRANSIT



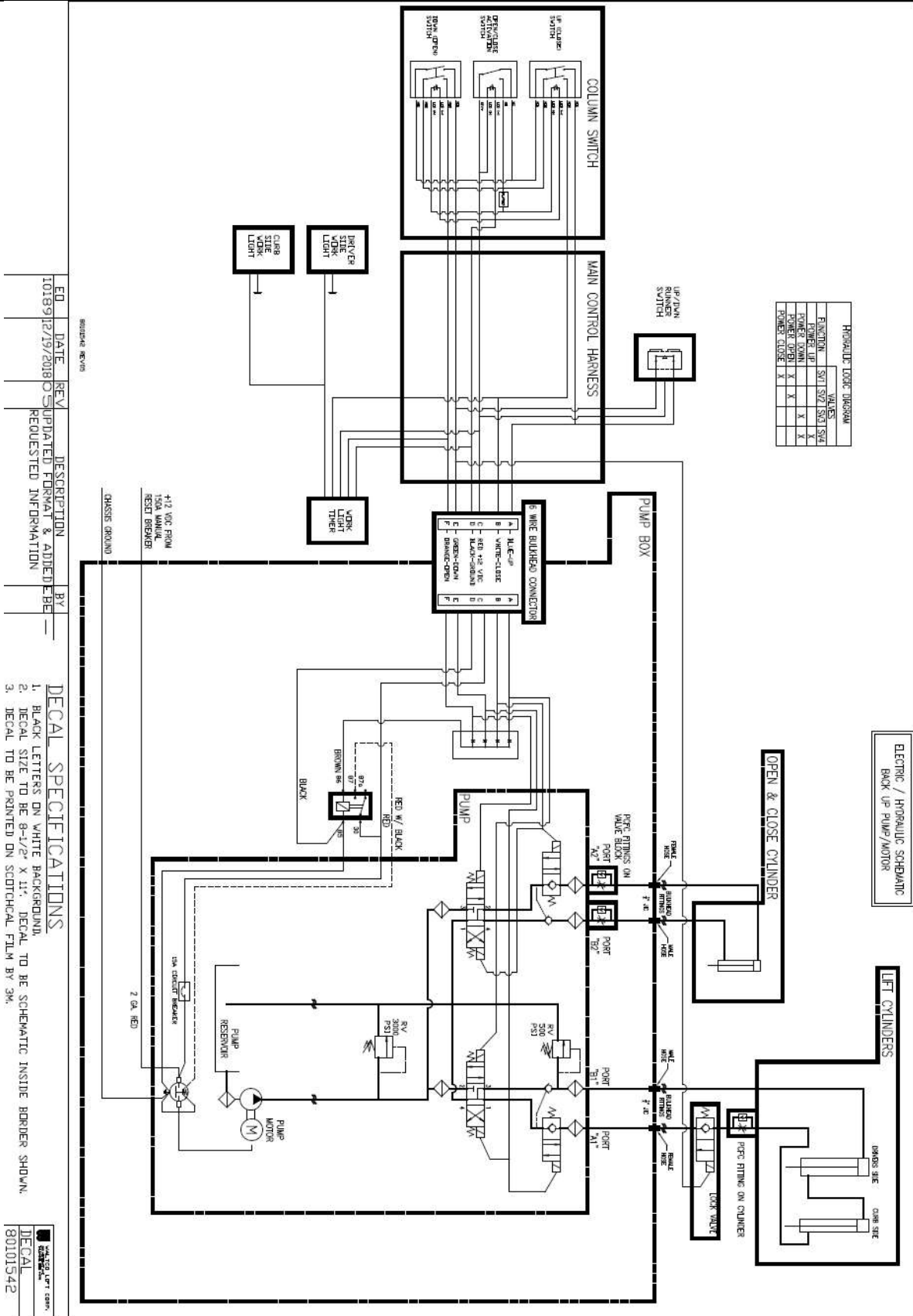
CART STOP POSITION

PERFORM FINAL CHECK OF LIFTGATE AND VEHICLE

- Double check that all hoses, wires and cables are secured and protected under vehicle.
- Welding is not required for a typical install. If anything was welded on the liftgate, clean up those areas. Galvanizing may be touched up with spray galvanizing. Paint may be touched up with a similar color.
- It is recommended (not required) that caulking be applied between uprights, crossbeam and vehicle body in all areas not welded to reduce corrosion between the Liftgate and the vehicle.

Chapter 7 PM's & Schematics

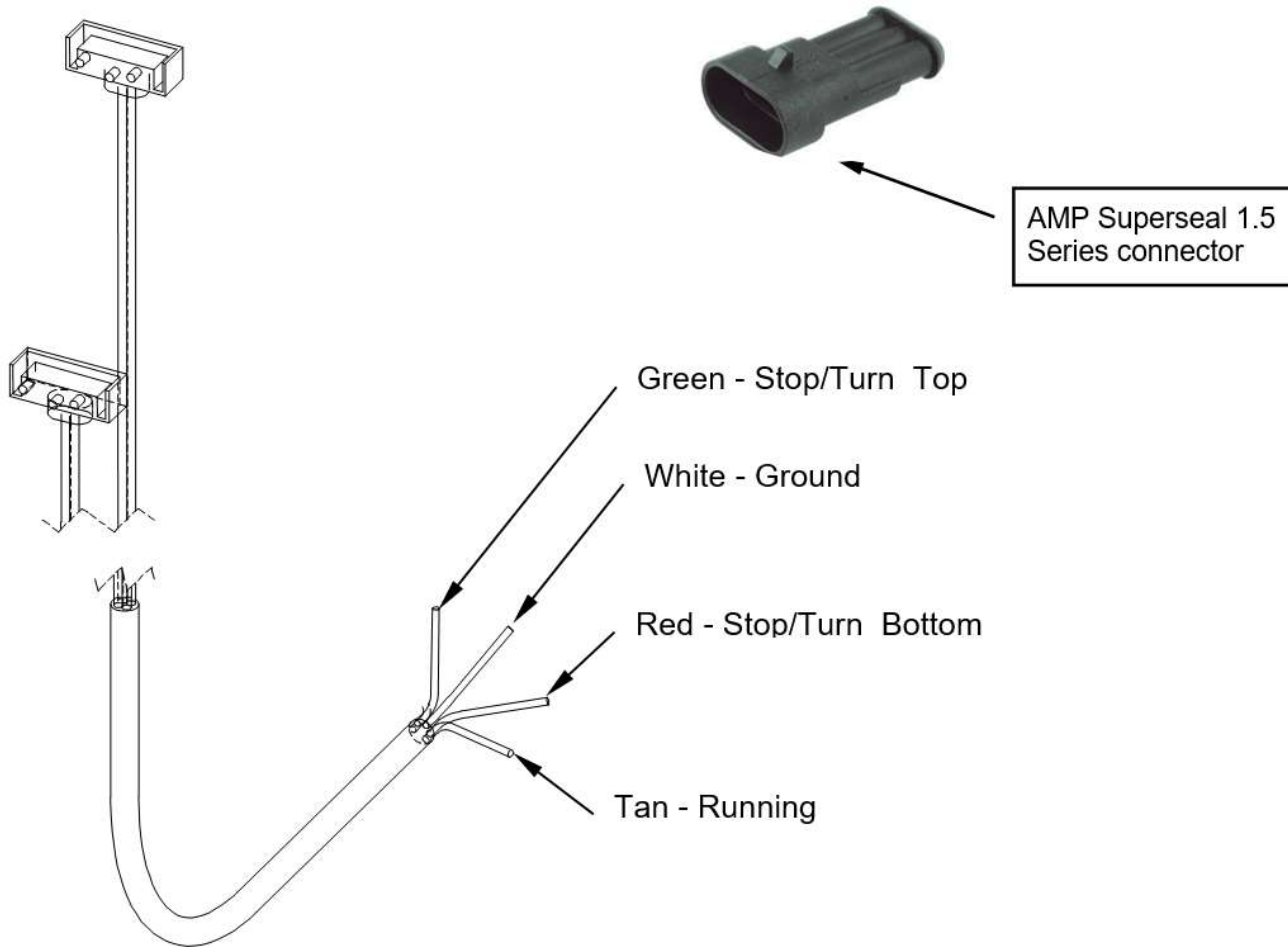
POWER UNIT HYDRAULIC/ELECTRICAL SCHEMATIC, SINGLE POWER UNIT – POWER DOWN



Chapter 4 Liftgate Installation

TRUCK AND TRAILER LIGHT HARNESS

The standard light harness comes with AMP Superseal 1.5 series connector that plugs directly into many O.E.M. light harnesses. Adapters are available for different harness connectors.



Chapter 5 - Placement of Decals



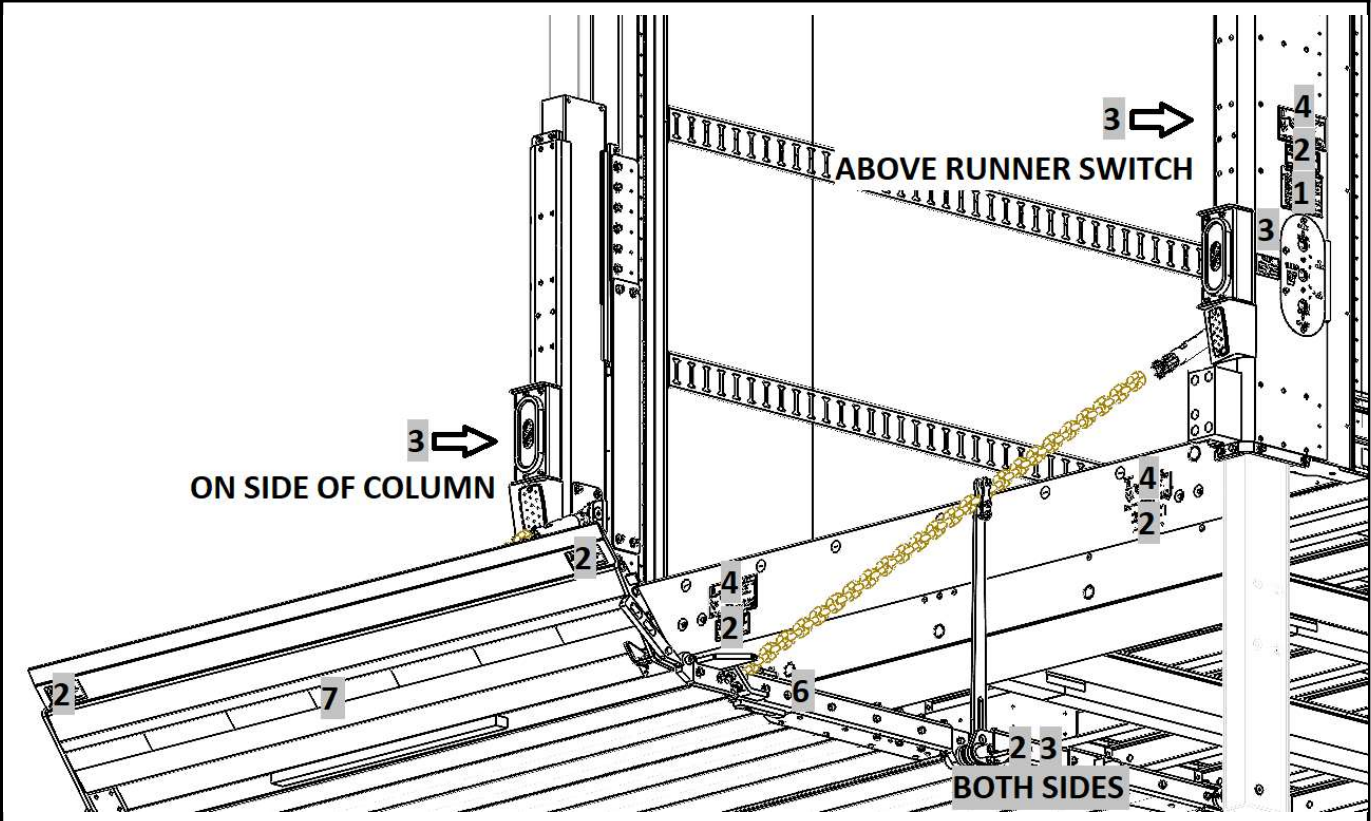
All decals must be in place and legible or all warranties are void.

Properly placed warning decals are an essential part of your safety program. Check that all safety decals are in place and are legible. Any missing decals **MUST** be replaced immediately. Replacement decals may be obtained **FREE** of charge from your distributor or by contacting Waltco Part Sales:

Phone: (800) 411-5685, Email: parts@waltco.com



If your liftgate is equipped with dual controls, an additional Safety Instruction decal (80100850) is to be placed in a conspicuous place near the second set of controls.



ITEM	DECAL	MDV-20	MDV-30	MDV-40 MDVBG-40	MDV w/ +16 FLIP RAMP	QTY
1	SAFETY INSTRUCTIONS			80100850		1
2	WARNING, KEEP CLEAR			75089296		3
3	WARNING, MAX CAPACITY	80100253	80100257	80100260		5
4	DANGER, LIFTGATE CAN CRUSH			80101370		3
5	WARNING, KEEP CLEAR				75089296	2
6	FLIP RAMP STORAGE				80100482	1
7	CONSPICUITY TAPE FOR 96" WIDE MDV				82021067 (76")	1
	CONSPICUITY TAPE FOR 102" WIDE MDV				82021067 (82")	1

TO MAXIMIZE DECAL ADHESION:

**SURFACE MUST BE ABOVE 65F (HEAT GUN MAY BE USED BEFORE APPLICATION)
 SOLVENT CLEAN SURFACE WITH LINT-FREE CLOTH BEFORE APPLYING DECALS
 APPLY FIRM PRESSURE ACROSS THE ENTIRE DECAL**

Chapter 6 - Lubrication

LUBRICATION INSTRUCTIONS

The following areas ONLY should be lubricated approximately once a month, or as outlined in the lubrication scheduled for heavier usage. If not sure of duty or cycles, always lubricate more frequently.

(For all wear pads use a low viscosity lubricant such as machine oil or equivalent. For pins with grease fittings, use grease gun and appropriate high viscosity grease)

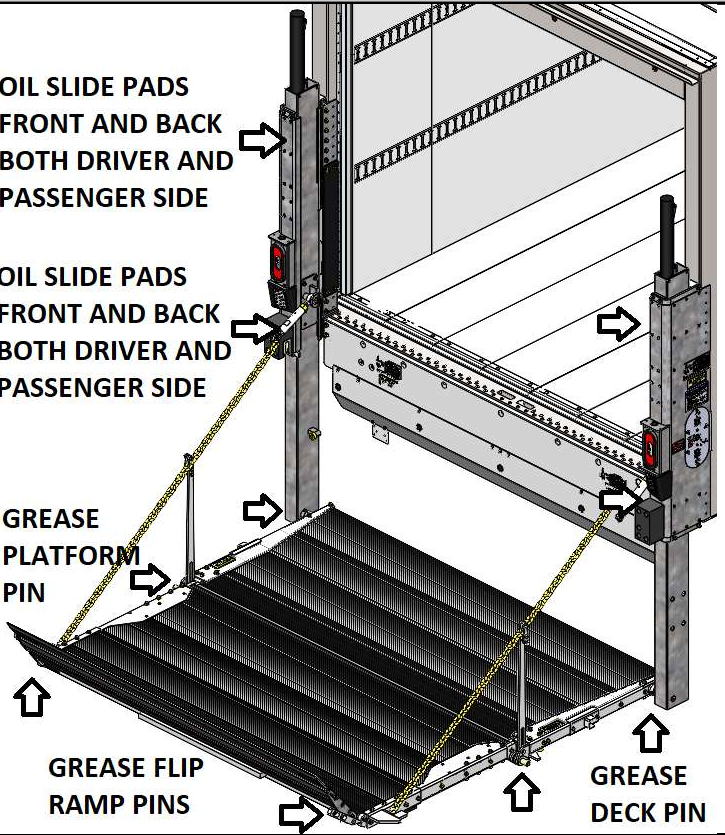
OIL SLIDE PADS
FRONT AND BACK
BOTH DRIVER AND
PASSENGER SIDE

OIL SLIDE PADS
FRONT AND BACK
BOTH DRIVER AND
PASSENGER SIDE

GREASE
PLATFORM
PIN

GREASE FLIP
RAMP PINS

GREASE
DECK PIN



Chapter 7 - Final Inspection List

IMPORTANT

All of the following items are to be checked and verified before installation is complete and liftgate is ready for service.

- 1. Does liftgate fold and unfold freely and properly?
- 2. Check that body side walls are strong enough to support MDV/MDVBG Series liftgate forces.
- 3. Check that uprights are square, parallel and travel ear engages the travel latch on both sides.
- 4. Check to be certain that all hydraulic fittings are tight and leak free.
- 5. Check that platform comes up level with the vehicle floor.
- 6. Chain attachment bolts and linkage bolts are in place and secured with locknuts.
- 7. Check all structural rivets to confirm that they are properly installed. Check that inside and outside rivets are installed.
- 8. Check all switches to see that they work properly and in the proper sequence.
- 9. Check that platform opens and closes properly and at the proper rate of speed.
- 10. Check to be sure hinge pins between the platform and the deck extension are retained with proper fasteners.
- 11. Check that all electrical connections are done properly and that battery cable is properly secured to frame.
- 12. Check that batteries are fully charged and grounded per instructions
- 13. Check that liftgate is properly lubricated.
- 14. Check to see that all decals are in place and legible.
- 15. Check that all nuts and bolts are tightened properly.
- 16. Check that hydraulic reservoir is properly filled.
- 17. Check that vehicle meets all state and federal standards.
- 18. Check that owner's manual is in vehicle.
- 19. Operate the liftgate throughout its entire operational cycle several times. Check that the liftgate operates freely and smoothly throughout the entire operating cycle and that there are no unusual noises while operating the liftgate.



DO NOT USE LIFTGATE IF ANY OF THE ABOVE ARE NOT CHECKED AND VERIFIED. IF YOU HAVE ANY QUESTIONS NOT COVERED IN THIS MANUAL, CONTACT YOUR NEAREST WALTCO DISTRIBUTOR, OR THE NEAREST WALTCO FACTORY.

How To Order Parts

Repairs should be made only by authorized mechanic using WALTCO Replacement parts.

When ordering repair or replacement parts, please include all of the information asked for below. If this information is not available, a complete written description or sketch of the required part will help WALTCO identify and deliver the needed part to you.

THE FOLLOWING INFORMATION MUST BE INCLUDED:

- 1 SERIAL NUMBER - [WALTCO liftgate serial numbers can be found on the Specification tag attached to the mount frame. (On older units, the Specification Tag is located on the side or bottom of the platform)]
- 2 MODEL NUMBER - [Or capacity]
- 3 PLATFORM SIZE

THEN INCLUDE THE FOLLOWING INFORMATION:

- 4 PART NUMBERS
- 5 DESCRIPTION
- 6 QUANTITY REQUIRED

MAIL, E-MAIL OR PHONE YOUR REQUEST TO :

Waltco lift Corp.
1777 Miller Parkway
Streetsboro, OH 44241
1-800-411-5685
FAX: 1-800-411-5684
E-MAIL: parts@waltco.com

ALL PARTS ARE F.O.B. FROM THE SHIPPING FACTORY

PLEASE NOTE:

To assure you of continuing and effective quality control, our warranty policy permits replacement of hydraulic cylinders, valves and motor pump units when their factory seals are intact. Parts under warranty will be exchanged after careful inspection of the returned assemblies.

80101389

EO10758

REV 03

IMPORTANT



WARNING

Improper operation and maintenance of this liftgate could result in severe personal injury or death.

Read and understand the contents of this manual and all warning and operation decals before operating and/or performing maintenance on this liftgate.

**For SAFETY information on this liftgate see
Chapter 1 of this manual**