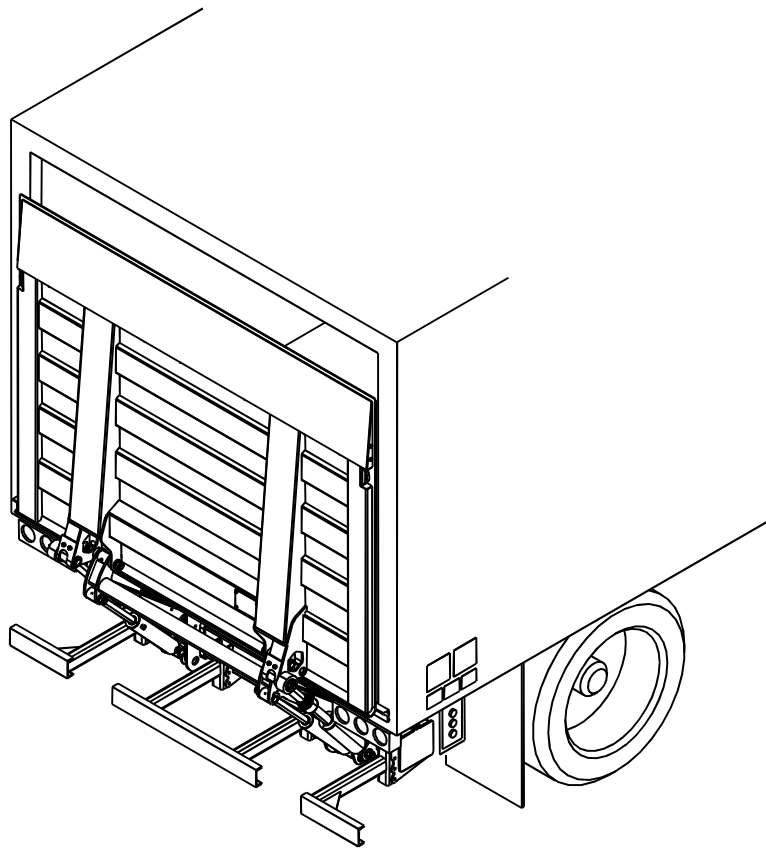


Owner's Manual

BZ-33, BZ-44 Gen 7

3300 lb. & 4400 lb. Capacity Cantilever Liftgates



GR02912

Last Change

Date	Pages	Description
03/20/2018	23-25	REVISED ELECTRICAL SCHEMATICS

Waltco Lift Corp.
Corporate Office United State
285 Northeast Ave.
Tallmadge, OH 44278
P: 330.633.9191
F: 330.633.1418

Waltco Lift Corp.
United States
620 S Hambledon Ave.
City of Industry, CA 91744
P: 626.964.0990
F: 626.964.0149

Waltco Lift Inc.
Canada
90 North Queen St.
Etobicoke, ON M8Z 2C5
P: 888.343.4550

Table of Contents

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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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 lists, and an outline of things that should be checked but may not be obvious to those not technically qualified. This 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 of 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.

80101388 Rev 03 EO 7820

Chapter 1 Safety Information

WARNING

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

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

- Read and understand the Owner's Manual, all decals and warning 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 falling.
- This liftgate is designed for loading and unloading of cargo. If personnel are required to ride 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 makes any unusual noise, has unusual vibration, raises or lowers unevenly, or fails to operate smoothly.
- 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 or 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 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 unless the liftgate is equipped with a special reinforced Platform and Platform Support Bars for use when the Platform is used as 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 five (5) 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 Upstops Pins when in transit.
- Inspect Cables every three (3) 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 five (5) years or 10,000 cycles, whichever comes first.



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

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 a yellow background.

NOTICE

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



WALTCO warrants its products free of defects in materials and workmanship.

WALTCO will replace components found defective during the warranty period. Labor will be reimbursed according to our flat rate labor schedule at the prevailing shop rate.

Contact our Sales or Warranty departments for the warranty period of your model or for information regarding our flat rate labor schedule.

WALTCO Warranty Claim Procedure

For consideration, all claims must be received within 30 days of repair and include the following information:

- Liftgate Serial Number
- Description of problem and corrective actions
- Itemization of the labor charge to include the number of hours and labor rate

Replacement warranty parts can be obtained by contacting Waltco's Parts Department. Parts must be returned for inspection when requested.

Exclusions:

Waltco's warranty does not include reimbursement for service calls, vehicle rental, towing, travel time, fabrication of parts available from WALTCO, damage from misuse or abuse, negligence, accidents, alteration, loss of income or overtime expense, oil, or normal wear.

Diagnosis and troubleshooting time are included in the flat rate labor times.

Warranty and technical information is available from WALTCO's toll free customer service lines from 8:00 a.m. to 5:00 p.m. EST.

Waltco Lift Corp

285 Northeast Ave, Box 354, Tallmadge, OH 44278

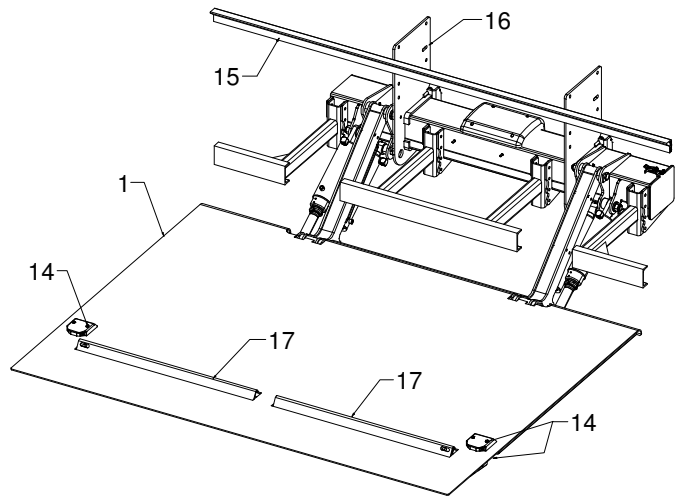
1-800-211-3074, 330-633-9191

Please visit our websites: <http://www.waltco.com> or <http://www.hiab.com>

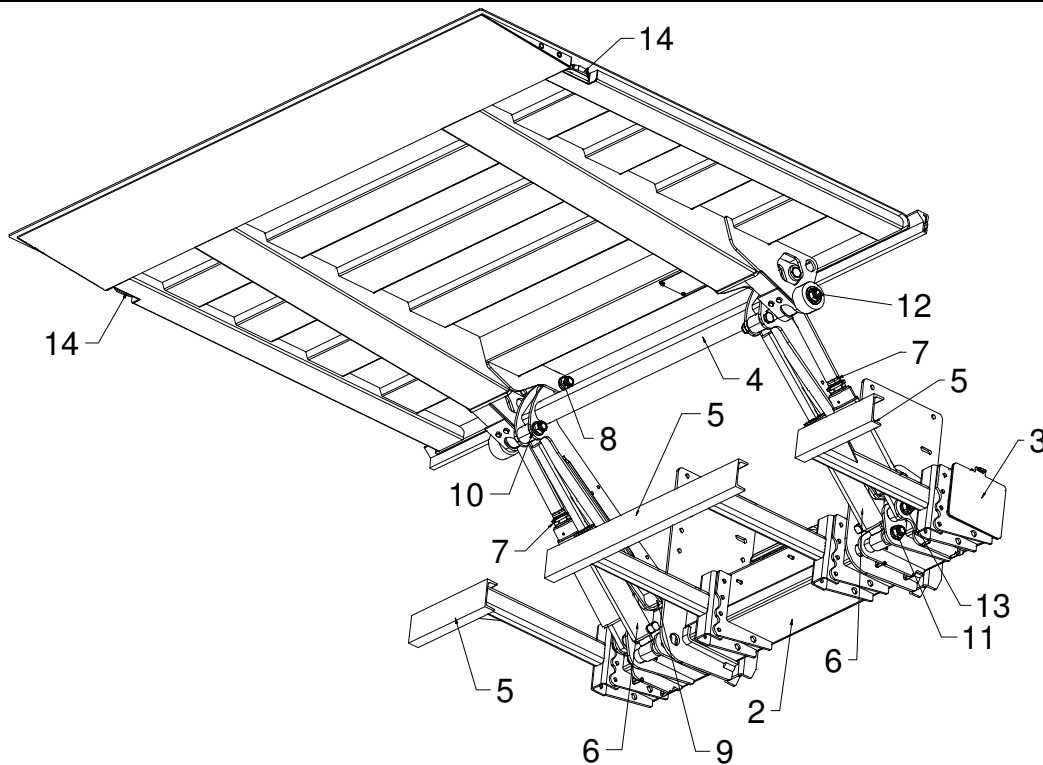
We're behind you all the way!

Chapter 2 Liftgate Terminology

1. Platform
2. Mount Tube
3. Pump and Motor Tray
4. Lift Arm
5. Bumper
6. Lift Cylinder
7. Tilt Cylinder
8. Upper Lift Arm Pin
9. Lower Lift Arm Pin
10. Upper Lift Cylinder Pin
11. Lower Lift Cylinder Pin
12. Upper Tilt Cylinder Pin
13. Lower Tilt Cylinder Pin
14. Marker Lights
15. Sill Extension
16. Mount Plates
17. Cart stop (optional)



GR00828



GR00829

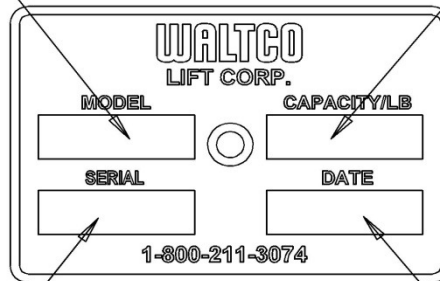
Chapter 2 Liftgate Terminology

Explanation of Specification Tag

BZ33 G7	Level Lift	3300 lbs.
BZ44 G7	Level Lift	4400 lbs.

MODEL NUMBER

RATED CAPACITY
Based on an evenly distributed load on the platform flat surface.



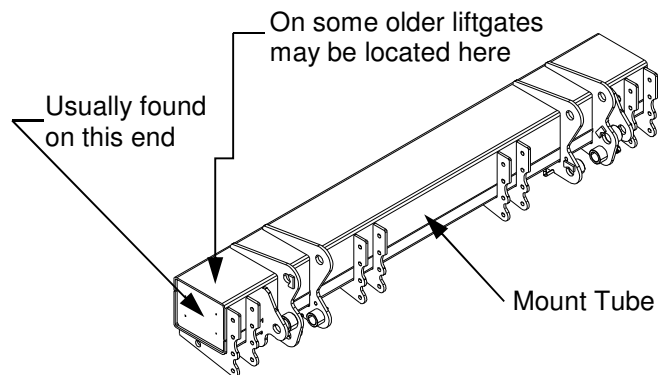
SERIAL NUMBER
of liftgate. To be used when ordering parts or when contacting Waltco for service or warranty questions

DATE OF MANUFACTURE
Month / Year

GR00241

LOCATION OF SPECIFICATION TAG

Can be found on driver's side, end of mount tube.



GR02226

Chapter 3 Operations Instructions

IMPORTANT

Understand these instructions before operating liftgate

When in transit, platform is to be closed

When not in use, electrical shut off switch is to be off.

In any tilt position, the attitude of the platform may vary from level while raising or lowering the platform.

Make certain area in which platform will open and close is clear before opening or closing, and at all times during operation.

Make certain platform area, including the area in which loads may fall from platform, is clear before and at all times during operation of liftgate.

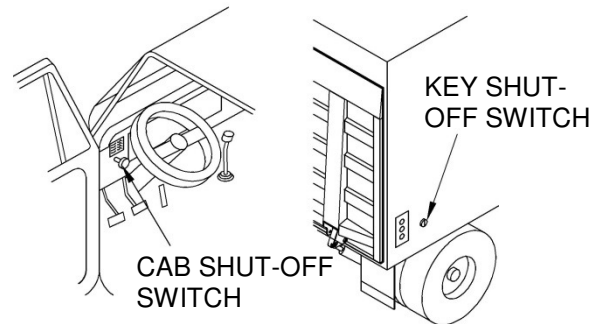
Never close liftgate with any objects on platform.

OPENING PLATFORM

Turn shut-off switch on.

Typically on trucks a toggle switch is located in cab.

Typically on trailers, a key switch is located near liftgate control switches.



GR00697

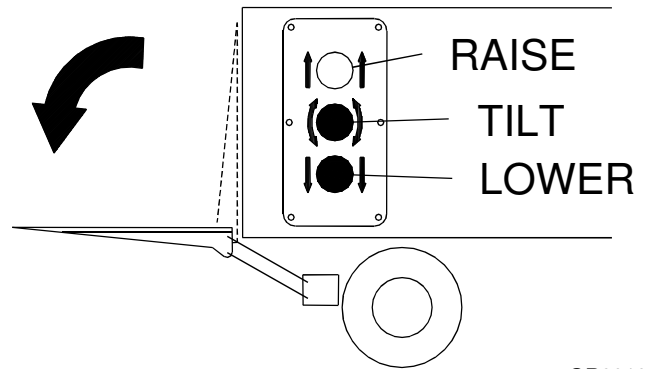
Chapter 3 Operations Instructions

TO OPEN PLATFORM

Turn shut-off switch on (located in cab or near controls).

Always make certain area in which platform will open is clear.

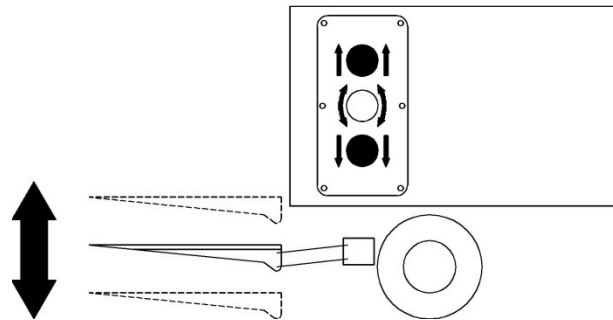
Push and hold tilt switch then lower switch to unfold platform.



GR00106

TO RAISE AND LOWER PLATFORM IN LOADING POSITION

Push raise switch to raise platform
Or
Push lower switch to lower platform



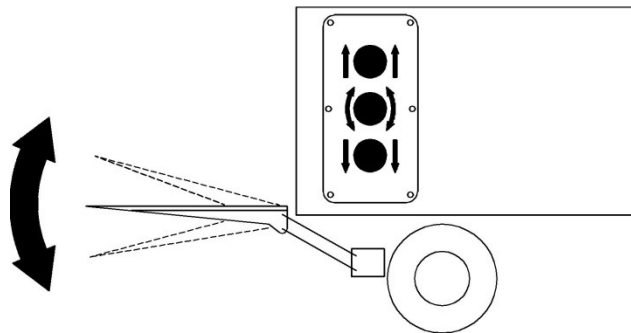
GR00107

TO TILT PLATFORM UP AND DOWN

First push and hold tilt switch, then simultaneously push raise switch to tilt platform up.

Or

First push and hold tilt switch, then simultaneously push lower switch to tilt platform down.



GR00108

TO FOLD PLATFORM TO CLOSED POSITION

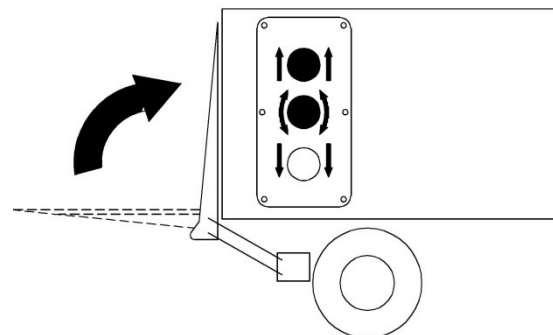
Make certain platform surface is clear of all objects.

Raise platform to bed level with raise switch.

Push and hold tilt switch then simultaneously push raise switch to close platform.

Turn shut-off switch off.

When in transit, platform must be closed vertically, and shut-off switch is to be turned "off."

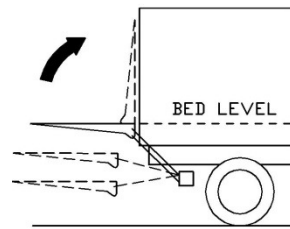


GR00110

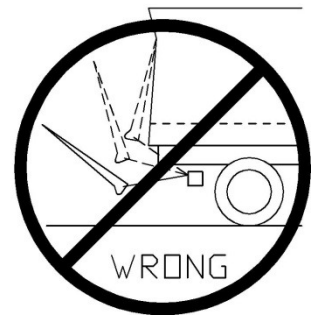
Chapter 3 Operations Instructions

IMPORTANT!

To avoid vehicle or liftgate damage, never attempt to close platform until platform is first at bed level.



RIGHT



WRONG

GR00705

SECURE PLATFORM FOR TRANSIT

Close platform.

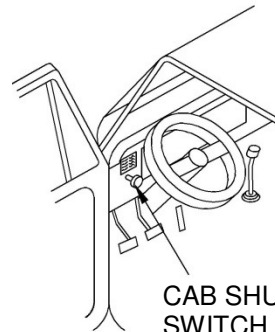
Turn shut-off switch off.

CAUTION!

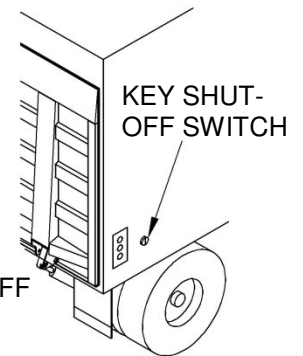
Keep hands away from pinch points.

IMPORTANT!

Electrical shut-off switch is a safety device and must be working properly at all times.



CAB SHUT-OFF SWITCH



KEY SHUT-OFF SWITCH

GR00697

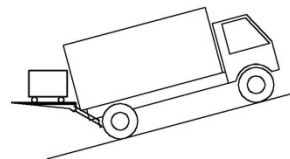
PROPER OPERATION OF TILT

Platform should always be in a generally level position.

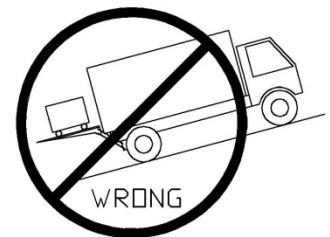
Load is to be stabilized to prevent rolling or falling off platform.

CAUTION! Improper use of tilt controls could cause load to fall from platform.

In any tilt position, the attitude of the platform may vary from level while raising or lowering the platform.



RIGHT

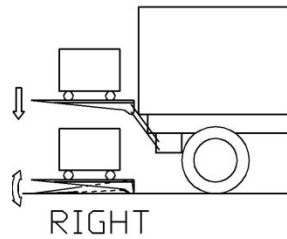


WRONG

GR00702

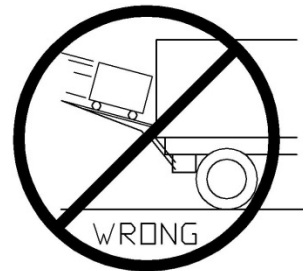
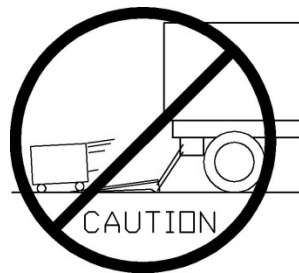
Chapter 3 Operations Instructions

Never tilt platform with a load except when loading and unloading cargo at ground, or to stabilize load.



GR00703

Tilting platform may cause an unstable load to roll off if unattended.



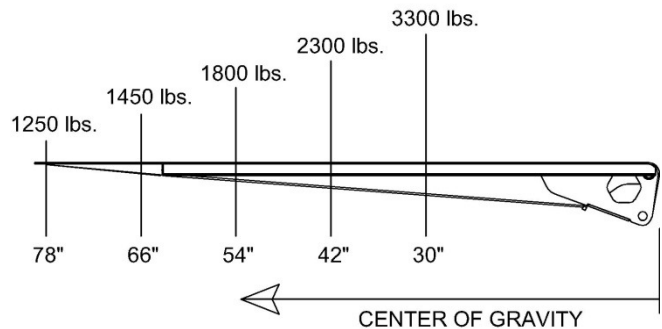
GR00704

BZ-33 Only

If the load is centered no farther than 30" out from the vehicle rear sill, the maximum capacity is 3300 lbs.

As the load is centered farther out on the platform, the maximum capacity is reduced, as shown.

IMPORTANT! Never over load platform.



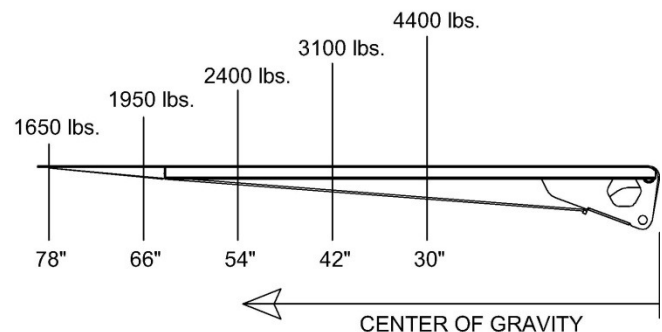
GR00490

BZ-44 Only

If the load is centered no farther than 30" out from the vehicle rear sill, the maximum capacity is 4400 lbs.

As the load is centered farther out on the platform, the maximum capacity is reduced, as shown.

IMPORTANT! Never over load platform.



GR00491

Chapter 3 Operations Instructions

LOADING OF PLATFORM

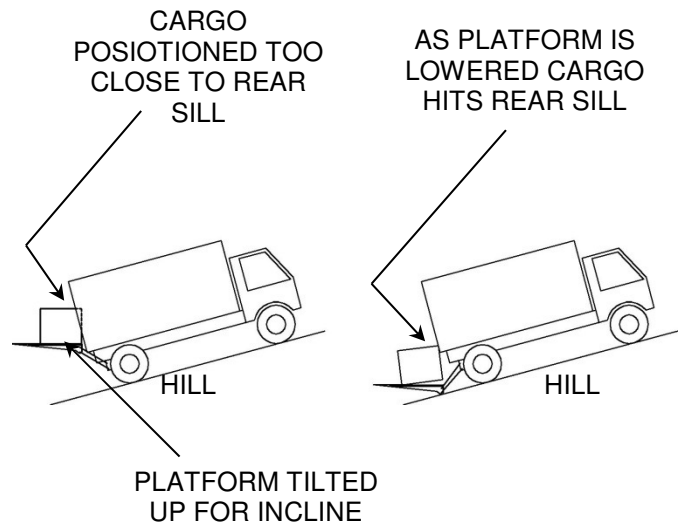
Before loading, tilt platform slightly upwards to compensate for load.

Always load as close to the center of the platform and as close to the vehicle as possible.

This liftgate is intended for loading and unloading of cargo only, do not use it for anything but it's intended use.

Never transfer loads which exceed rated capacity on or over platform unless liftgate is equipped with reinforced platform and platform support bars.

IMPORTANT! When platform is tilted up to compensate for an incline, make certain cargo does not contact rear sill of vehicle as liftgate is lowered.



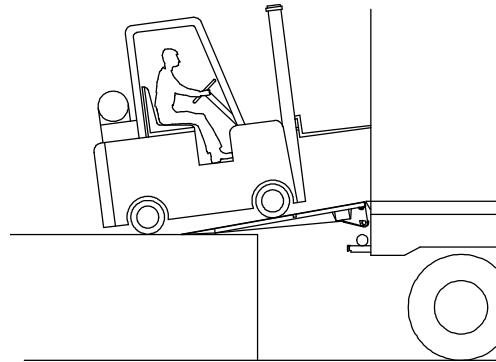
GR00709

DRIVE OVER OPTION

If properly equipped, platform may be used as a loading ramp.

IMPORTANT!

Maximum capacity as a loading ramp includes combined weight of cargo and cargo carrier.



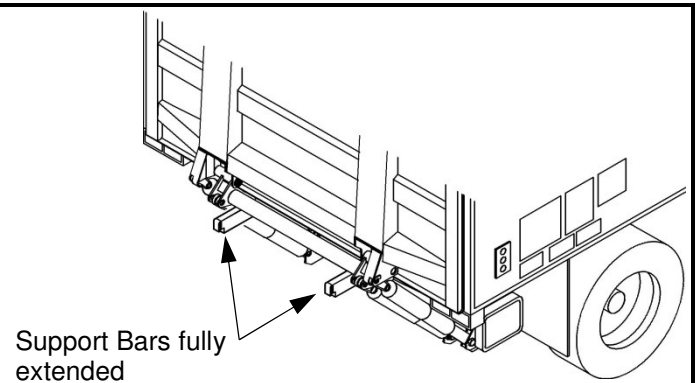
GR00700

Only use platform as a loading ramp if liftgate is properly equipped with these support bars and used as directed on Drive Over Operation Decal.

IMPORTANT! Maximum capacity:

5,500 lbs. for aluminum and non-reinforced steel platforms.

10,000 lbs. for reinforced steel platforms.



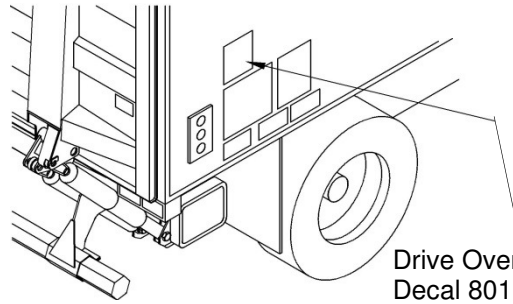
GR00493

Chapter 3 Operations Instructions

Locate Drive Over Operation Decal attached to vehicle for information on maximum drive over capacity.

Decal 80101499 will show max. capacity of 5,500 lbs.

Decal 80101330 will show max. capacity of 10,000 lbs.



Drive Over Operation Decal 80101499 or 80101330 would be attached in this area.

GR02227

Make certain vehicle is properly and securely braked.

Before opening platform, pull both support bars fully out (4-1/2").

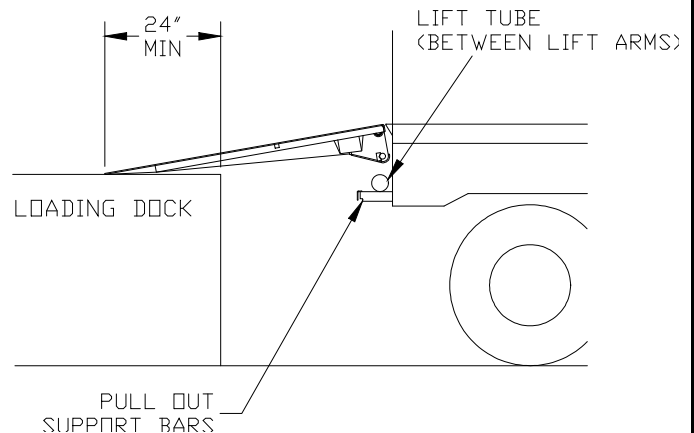
Tilt platform down to loading dock.

Loading dock must always support end of platform.

Platform must overlap loading dock at least 24".

Always use the center portion of the platform.

Cargo is to be positioned on cargo carrier so as to be stable when rolling over inclined platform.



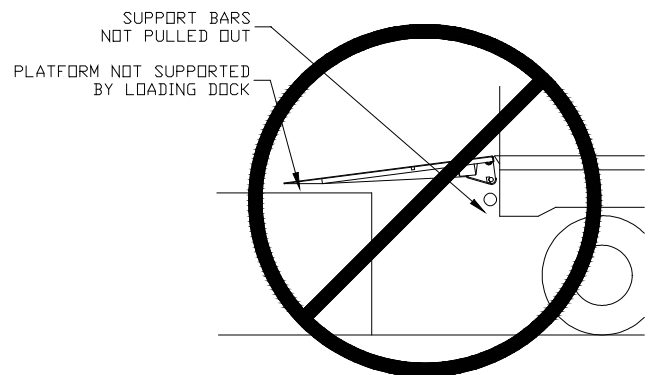
GR00698

Never roll a load onto the platform if:

The loading dock does not support the platform.

Both support bars are not pulled out.

IMPORTANT! It may be necessary to readjust tilt of platform as vehicle is unloaded. The vehicle suspension may cause the floor level to raise as load is removed.



GR00699

Chapter 4 Preventive Maintenance

Waltco recommends that the BZ-Series liftgate be inspected at 6 month or 3000 cycle intervals to help assure proper function and operation of the liftgate.

Note: Photocopy the following PM Checklist to help keep track of periodic maintenance on the liftgate. Keep completed form with maintenance records.

For more detailed instructions on the following checklist items, refer to the appropriate sections in this Owner's Manual.



Do not continue to use liftgate if any points of inspection listed at left, or below, may cause you to think the liftgate is unsafe. Repair immediately.

If liftgate is found to be in need of repair or adjustment not covered in this manual, contact your nearest Waltco Distributor.

WALTCO BZ-SERIES LIFTGATE PREVENTIVE MAINTENANCE CHECKLIST

PM Interval: 6 Months or 3000 Cycles Date: _____ Vehicle No. _____

Mechanic: _____ Liftgate S/N: _____ Model: _____

Check appropriate box below for each step:

6 Month Liftgate PM Procedures

1	OK	Repair Required	Corrected	Check for apparent damage to the lifting structure, such as bent or distorted members or cracked welds, which may have resulted from overloading or abuse.
2	OK	Repair Required	Corrected	Check that all pins, bolts and fasteners are tight and secure.
3	OK	Repair Required	Corrected	Check for worn or damaged bearings.
4	OK	Repair Required	Corrected	Check that controls operate properly.
5	OK	Repair Required	Corrected	Check all battery cables and connections (both positive and ground cables) to be sure they are tight and free of corrosion.
6	OK	Repair Required	Corrected	Check operation of lockout device.
7	OK	Repair Required	Corrected	Check for hydraulic leaks in hydraulic cylinder(s), hoses, fittings, and valves.
8	OK	Repair Required	Corrected	Check oil level in reservoir.
9	OK	Repair Required	Corrected	Check lowering speed of platform.
10	OK	Repair Required	Corrected	Check that all decals are in place and legible.
11	OK	Repair Required	Corrected	Lubricate the liftgate per the "Lubrication Instructions".

12 Month Liftgate PM Procedures (Includes steps 1-11 above)

13	OK	Repair Required	Corrected	Inspect Pump Motor for wear or damage.
14	OK	Repair Required	Corrected	Replace Hydraulic Fluid.

Chapter 4 Preventive Maintenance

MONTHLY INSPECTION

Operate the liftgate throughout its entire operational cycle. Check for:

- Damage to lifting structure such as bent or distorted members or cracked welds.
- Bent or distorted cylinder pins or damaged cylinder.
- All pivot and cylinder pins are securely in place, undamaged and retained by their proper fasteners.
- Damaged or worn bearings that pivot and cylinder pins rest in.
- Controls operate correctly (refer to chapter 3, "Operations Instructions")
- Check all power cables, ground cables, and connections.
- Clean and tighten all loose connections. Replace any damaged or corroded wires or connectors.



Do not continue to use liftgate if any points of inspection listed at left, or below, may cause you to think the liftgate is unsafe. Repair immediately.

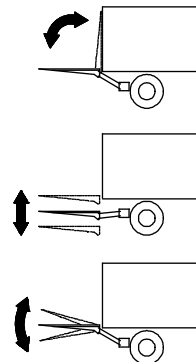
If liftgate is found to be in need of repair or adjustment not covered in this manual, contact your nearest Waltco Distributor.

Operate the liftgate throughout its entire operational cycles and check for the following:

Apparent damage to the lifting structure, such as bent or distorted members.

Cracked welds, which may have resulted from overloading or abuse.

Check that the liftgate operates freely and smoothly, and that there are no unusual noises or vibrations.



GR00407

Inspect for oil leaks in:

Hydraulic cylinders

Hydraulic hoses. Replace hoses if they show signs of excessive abrasion.

Hydraulic fittings and valves.

Tighten or replace all hydraulic components as may be required to stop oil leakage.

Inspect all hydraulic components

Chapter 4 Preventive Maintenance

Check oil level

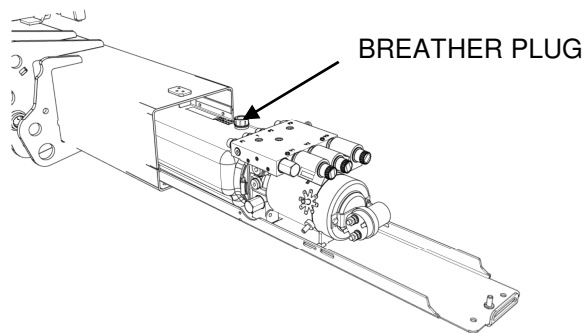
Lower platform to the ground and tilt down to the ground.

Open breather plug.

Oil should be 1/2" from top of reservoir.

Fill as may be required.

Obey oil recommendations.



GR03015

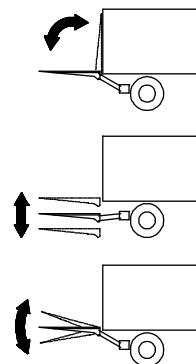
BLEEDING CYLINDERS

Lift cylinders:

Fully lower platform a few times. You may have to jack up vehicle to fully extend lift cylinders.

Tilt cylinders:

Fully lower the platform a few times.



GR00407

Recommended Fluids

Temperature Range	Acceptable Fluids
0° to 120° F	Waltco Biodegradable Liftlube™ part #85803860
	Shell Tellus S2 V 32
	Chevron Rando HDZ 32
-20° to 90° F	Waltco Biodegradable LiftLube Arctic part #85803866
	Waltco All Season Hyd Oil Part 85803867
	Shell Tellus S2 V 15
	Mobil DTE 10 Excell 15 Chevron Rando HDZ 15

Fill reservoir

- Fill with recommended fluid or equivalent.
- Fill the reservoir to within 1/2" from the top.
- 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)**

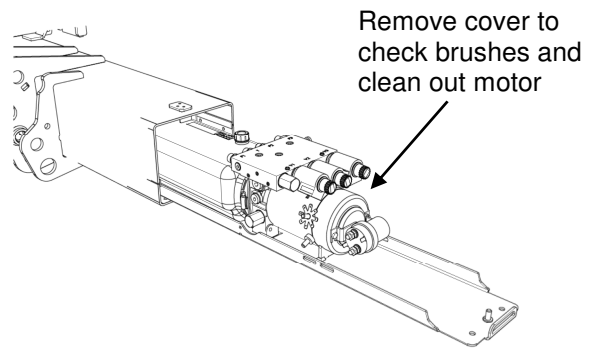
Rev 08

Chapter 4 Preventive Maintenance

SEMI ANNUAL INSPECTION

Inspect power motor:

- Disconnect battery cable.
- Remove end cover.
- Examine armature brushes for wear (motor should be replaced if brushes are less than 1/8" long).
- Clean out all residue inside of motor housing.
- Apply several drops of light weight machine oil to armature shaft bearing in motor end cover.
- Reassemble motor.



GR03015

Chapter 5 Placement of Decals

INSTALLATION OF CONTROL DECALS

Install all decals listed below. Be certain they are installed in the proper location and are legible.



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

Each of the following four (4) decals are to be positioned in a conspicuous place near the control switches as shown.

80100850 – Safety Instruction Decal

80101451 – Operation Decal

80100828 – Important Decal

80101370 – Hazard decal

One (1) of the following three (2) decals is to be positioned in a conspicuous place near the control switches as shown.

80101415 – BZ-33 Capacity Decal

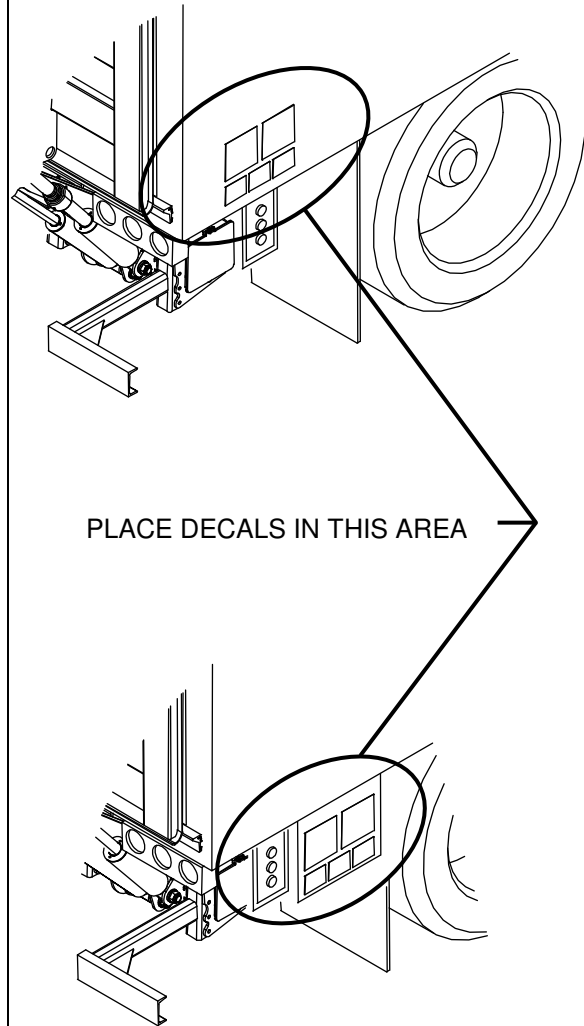
80101416 – BZ-44 Capacity Decal



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.

To maximize decal adhesion to surfaces:

- Surface must be dry and clean
- Firm pressure must be applied to decal
- Minimum surface temperature 65°
Heat gun may be used to heat surface



GR02913

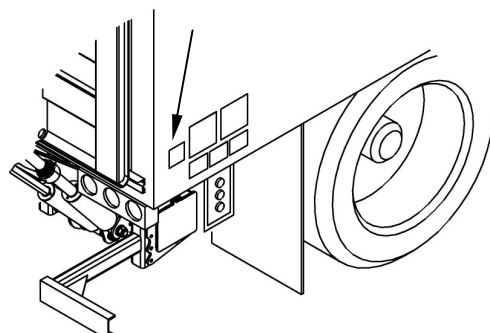
INSTALLATION OF DRIVE-OVER WARNING DECAL

The following decal is to be positioned in a conspicuous place near the control switches as shown.

80100592 – Drive Over Decal



If unit is equipped with drive over kit decal 80101330 must be used in place of decal 80100592.



GR02913A

Chapter 5 Placement of Decals

INSTALLATION OF PLATFORM DECALS

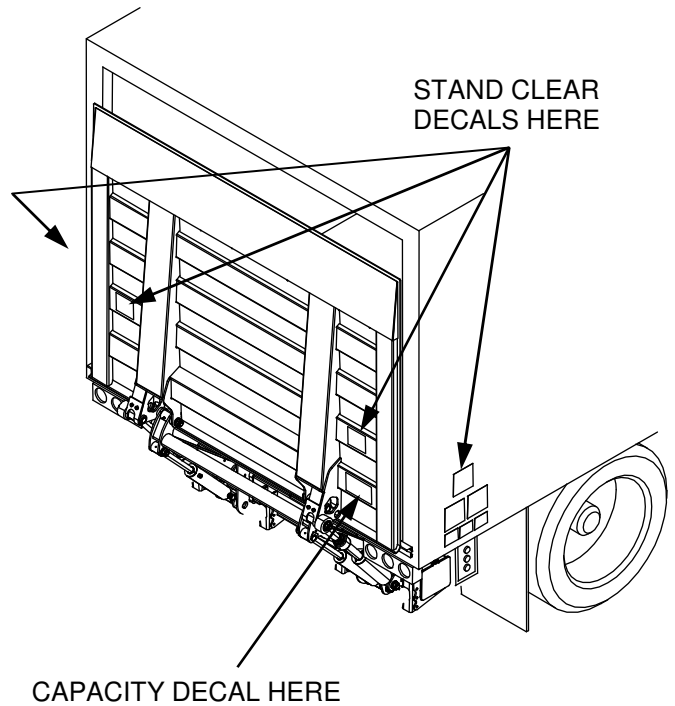
The following decals are to be placed on the underside of the platform and both sides of vehicle as shown.

75089296 – Stand Clear Decal (4)

One (1) of the following three (2) decals is to be positioned in a conspicuous place on the bottom of the platform as shown

80101415 – BZ-33 Capacity Decal

80101416 – BZ-44 Capacity Decal



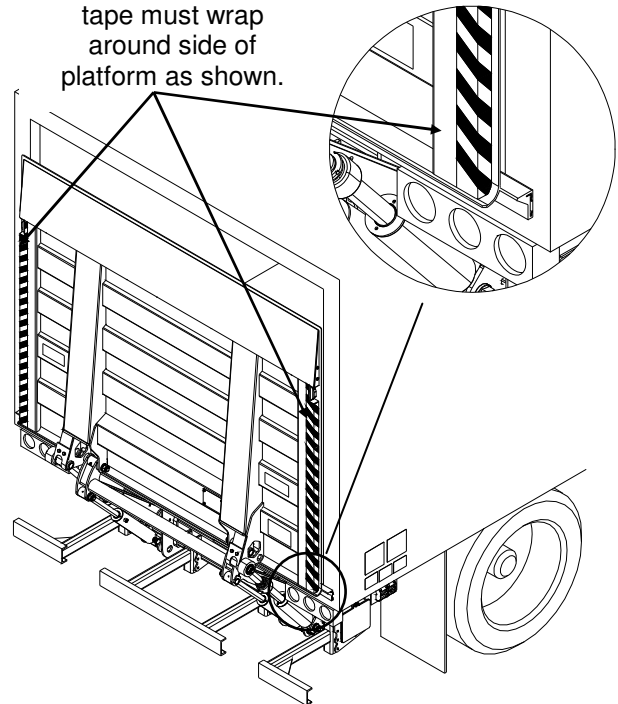
GR00511

INSTALLATION OF SAFETY TAPE

Tape (Z20290) is to be placed on the sides of platform so it is visible from the side and back of vehicle as shown.

IMPORTANT! Safety tape must wrap around side of platform as shown.

IMPORTANT! Safety tape must wrap around side of platform as shown.



Chapter 5 Placement of Decals

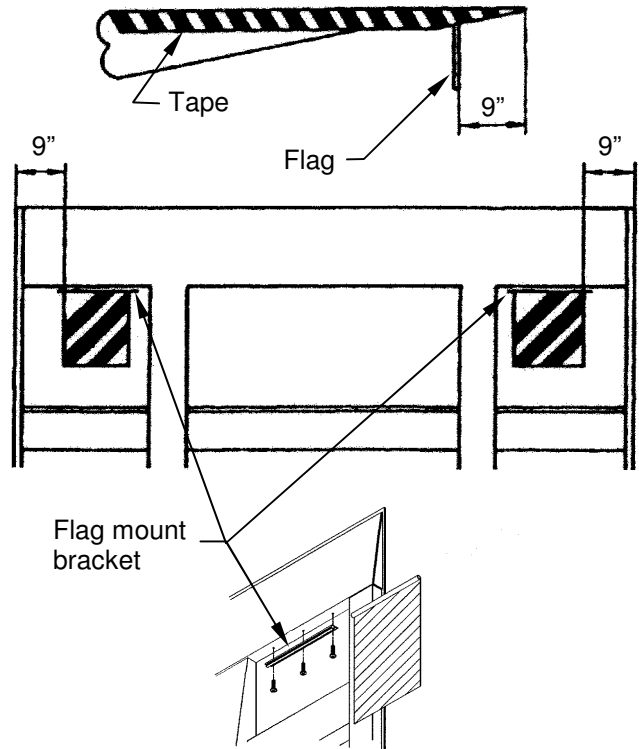
SAFETY TAPE AND FLAGS

Tape (Z20290) is to be placed on the sides of platform so it is visible from the side.

Locate corner flag mount brackets (Z20273), one on each side of platform and drill (3) holes per bracket into platform as shown. Use bracket as a template.

Using slotted head screws provided (three per bracket), install flag mount brackets as shown.

Slide flags (75089905) into mount brackets and crimp ends of each bracket to prevent flags from sliding out.

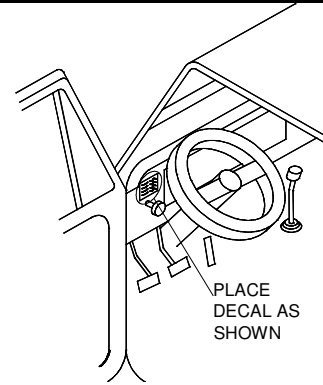


GR00043 & GR01761

SHUT-OFF DECAL

The following decal is to be placed next to the liftgate shut-off switch as shown.

75089267 – Liftgate Shut-Off Decal

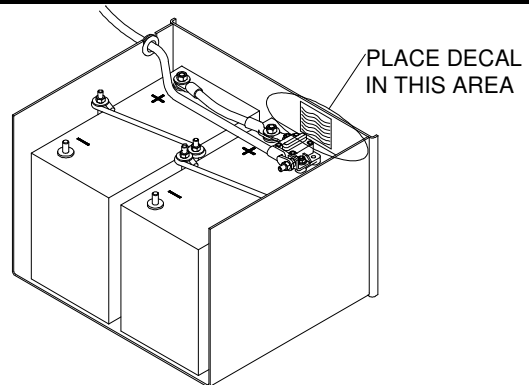


GR00121

CIRCUIT BREAKER DECAL

The following decal is to be placed next to the liftgate circuit breaker as shown.

80100829 – Circuit Breaker Decal



GR00122

Chapter 6 Lubrication

LUBRICATION INSTRUCTIONS

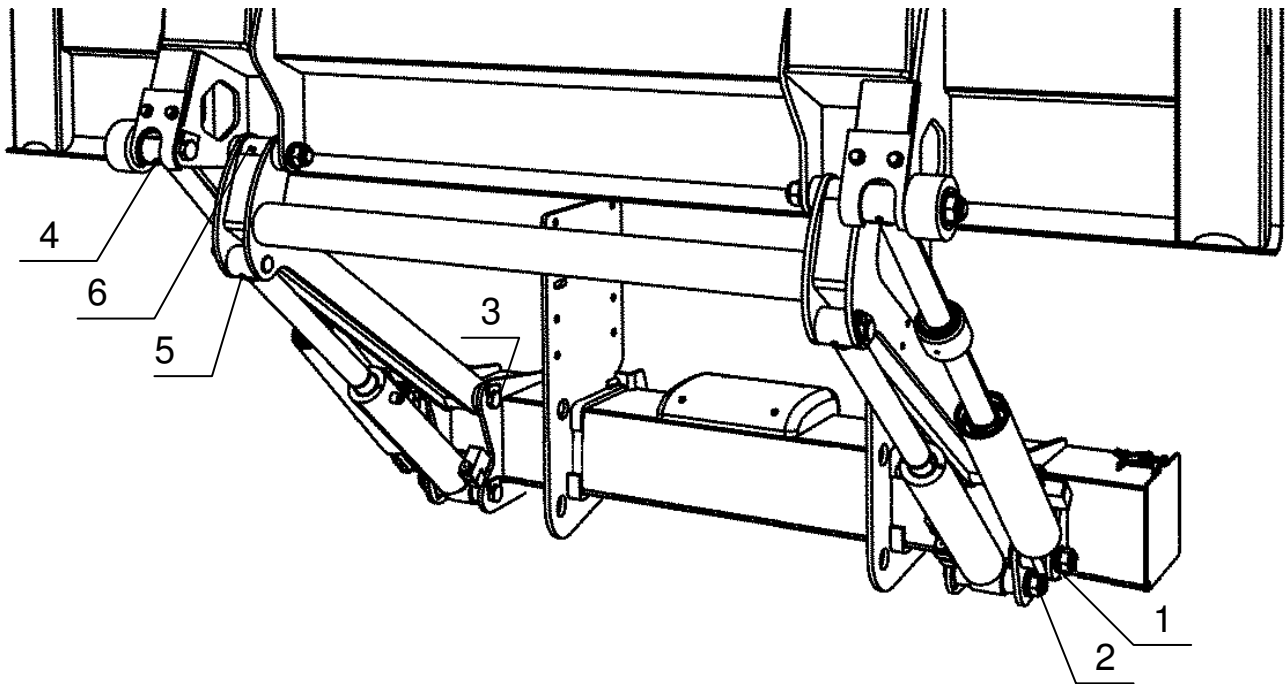
12 grease fittings should be lubricated with a grease gun per the lubrication schedule below.

Note: All fittings should be greased with the platform in the stored position.

SUGGESTED MINIMUM LUBRICATION SCHEDULE (IN DAYS)			
Monthly Cycles	Light Duty	Med. Duty	Heavy Duty
250 Or Less	45	30	21
250-350	30	21	14
350-450	21	14	7
More Than 450	Contact Factory for Instructions		

Note: If unsure of duty or cycles always lubricate more frequently.

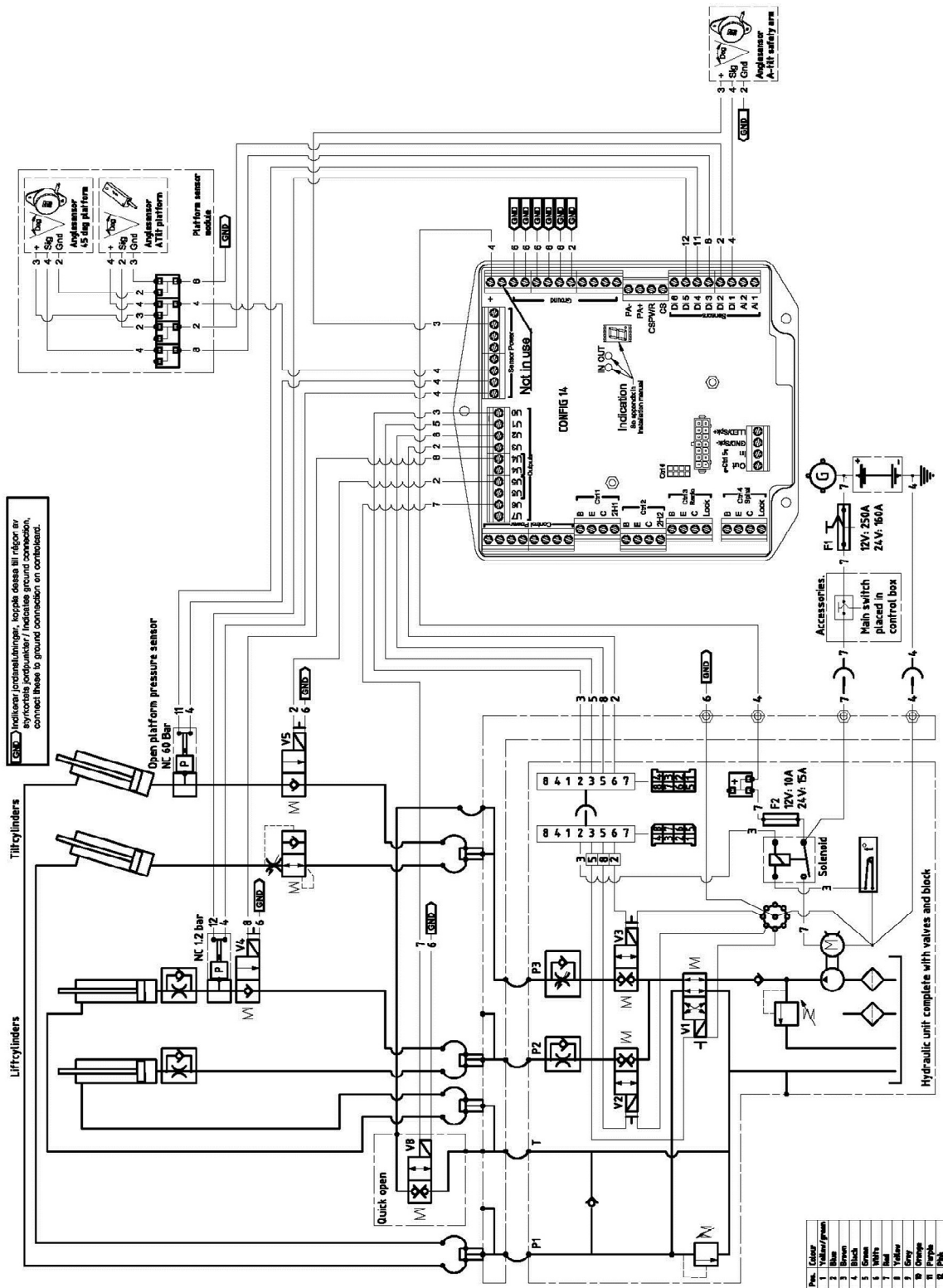
1. Tilt cylinder, lower pin
2. Lift cylinder, lower pin
3. Lift arm, lower pin
4. Tilt cylinder, upper pin
5. Lift cylinder, upper pin
6. Lift arm, upper pin



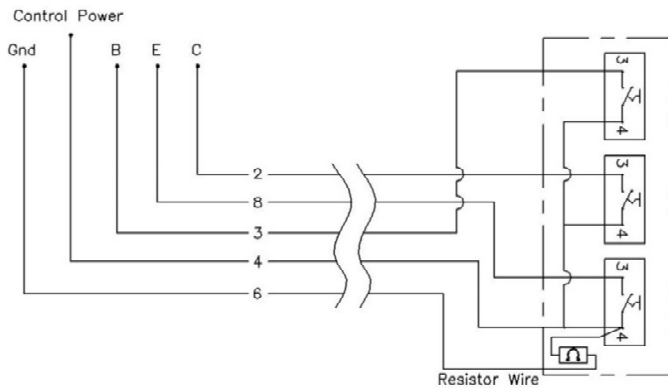
GR00508

Electrical Information

Electric and Hydraulic Diagram (with Auto-tilt)

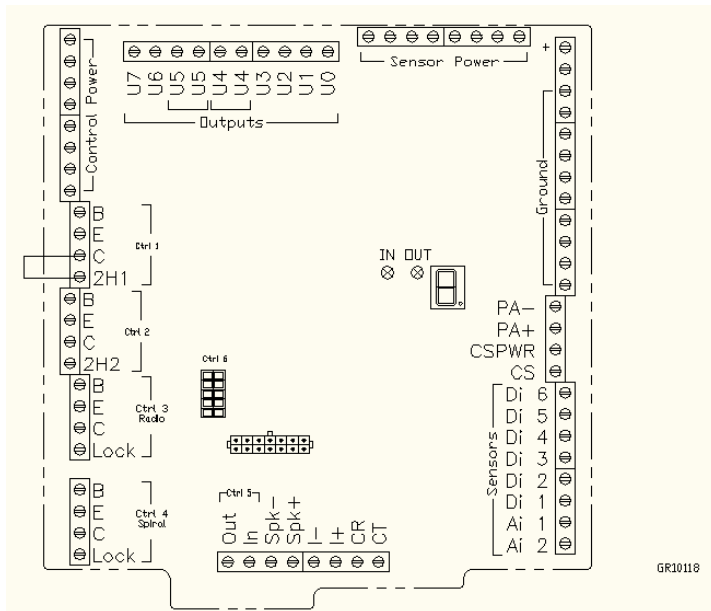


Electrical Information



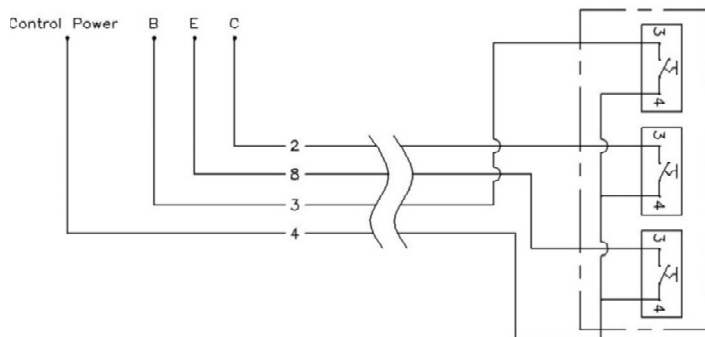
3-Button Control Unit (Permanent)

Note: The permanent switch control box comes with a resistor heater wire. It is recommended that this wire be removed and not used.



Install the main gate control in control bank 1.

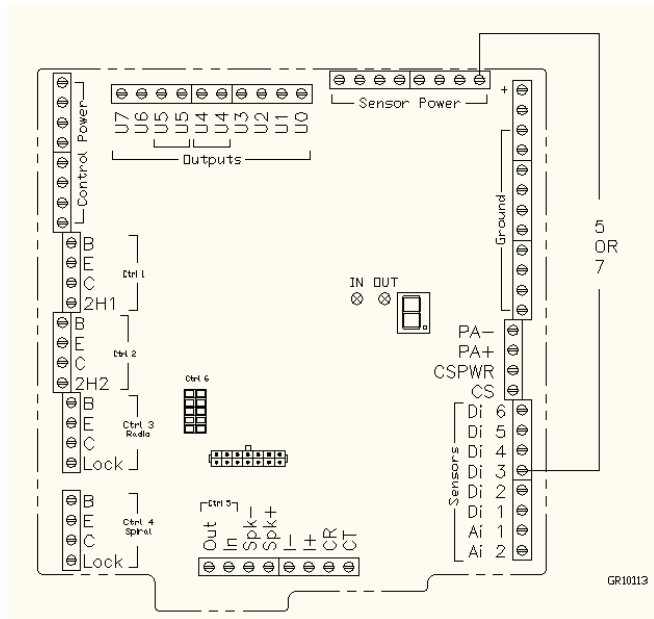
NOTE: For units without a 2 hand switch, connect a jumper between C and 2H1 in control bank 1.



3-Button Remote Switch (Spiral Cord)

Install the main gate control in control bank 4.

Electrical Information



For units without an inside of deck mounted angle sensor, verify there is a Green or Red jumper wire installed between "Sensor Power" and Di 3 terminals on circuit board.

Cable lead-through

In order to be able to install/remove/adjust the cables in the cable grommet, its protective cover must be removed and the five screws loosened.

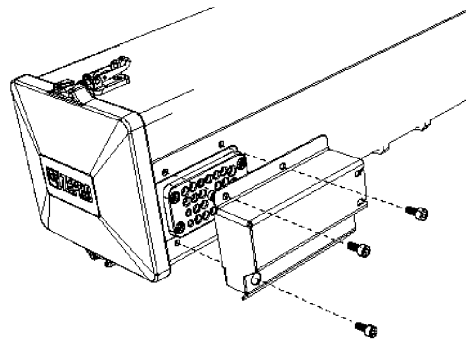
Remove the protective cover fastened with three screws on the cable grommet.

Loosen the five screws on the cable grommet. Cables can now be installed/removed/adjusted in the grommet.

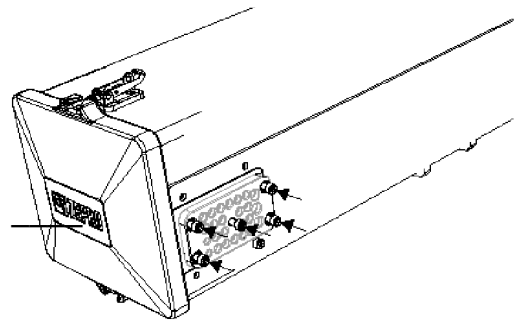
On installation, the cable must be installed together with existing cabling with cable ties. Ensure the length of the cable is sufficient for moving the control card. The outer sheathing on cable connected to the control card must be stripped 10 inches.

Once all the cables are in their appropriate places in the grommet, retighten the five screws.

Install the protective cover on the cable grommet with the three corresponding screws.



GR03025



Electrical Information

Hydraulic unit and control card

The lift's hydraulic unit and its control card are installed inside the lift's frame. For access during installation, service and repair, for example, the protective cap needs to be dismantled and the hydraulic unit pulled a little way out of the frame.

To access the control card, follow steps 1 to 3; refitting is performed in reverse order. To access the hydraulic unit and oil tank, follow steps 1 to 6; refitting is performed in reverse order.

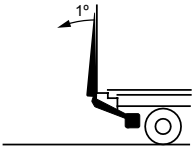
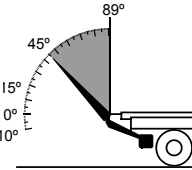
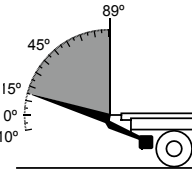
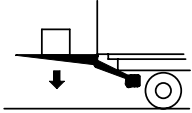
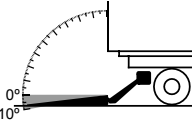
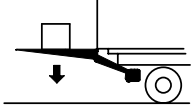
1. Remove the protective cap, which is secured with two quick-release locks.
2. Disconnect the hydraulic unit, which is secured with two bolts.
3. Pull out the hydraulic unit approx. 6 Inches to access the control card.
4. Remove the control card, which is secured with one wing nut.
5. Carefully place the control card to one side. Ensure that no cables are damaged.
6. Pull the hydraulic unit further out until the tank cap is accessible,

GR03025

GR03015

Functional schematic drawing

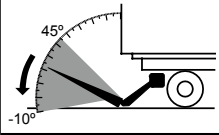
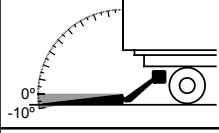
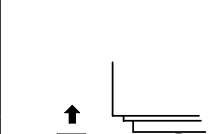
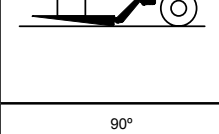
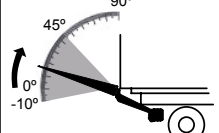
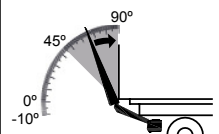
BZ Gen 7 (config 14)

Function	Input signal high	Input signal low (0V)	Output signal	Comment	Control device	Illustration	
Open	1	C+E+2H	Di2+Di3+Di4	U1+U3+U5	Safety, the platform is completely raised and does not move.	Ctrl 1 Ctrl 2	
	2	C+E+2H+Di4*	Di2+Di3*	U0+U1+U3+U5+U6**	Open from 89° down to approx. 45°. Quick opening is activated.	Ctrl 1 Ctrl 2	
	3	C+E	Di3	U0+U1+U3+U5	Opens the body from inside.	Ctrl 4	
Lower	1	E	Di5+Di6	U1+U2+U4		Ctrl 1 Ctrl 2 Ctrl 3 Ctrl 4 Ctrl 6	
	2	Di1+Di3+Di5*	Di6	U1+U2+U3+U4+U5	Autotilt down.	Ctrl 1 Ctrl 2 Ctrl 3 Ctrl 4 Ctrl 6	
	3	E+Di6		U1+U2+U4	Manual down, replaces lower 1 and 2 at jumpered Di6.	Ctrl 1 Ctrl 2 Ctrl 3 Ctrl 4 Ctrl 6	

* Only required at start of motion; after change of sensor, it is ignored until a re-run takes place.

** 0.2 second delay at output signal.

Electrical Information

Function	Input signal high	Input signal low (0V)	Output signal	Comment	Control device	Illustration
Tilt down	1 C+E+Di3*		U0+U1+U3+U5		Ctrl 1 Ctrl 2 Ctrl 3 Ctrl 4 Ctrl 6	
Raise	1 B+Di2	Di6	U0+U3	Autotilt up	Ctrl 1 Ctrl 2 Ctrl 3 Ctrl 4 Ctrl 6	
	2 B	Di2*+Di6	U0+U2		Ctrl 1 Ctrl 2 Ctrl 3 Ctrl 4 Ctrl 6	
	3 B+Di6		U0+U2	Manual up, replaces raise 1 and 2 at jumpered Di6.	Ctrl 1 Ctrl 2 Ctrl 3 Ctrl 4 Ctrl 6	
Tilt up	B+C+Di3		U0+U3	Tilting up to approximately 45°.	Ctrl 1 Ctrl 2 Ctrl 3 Ctrl 4 Ctrl 6	
Close	B+C+2H		U0+U3	Close against vehicle body.	Ctrl 1 Ctrl 2	

* Only required at start of motion; after change of sensor, it is ignored until a re-run takes place.

** 0.2 second delay at output signal.

Electrical Information

Restriction of use of control device

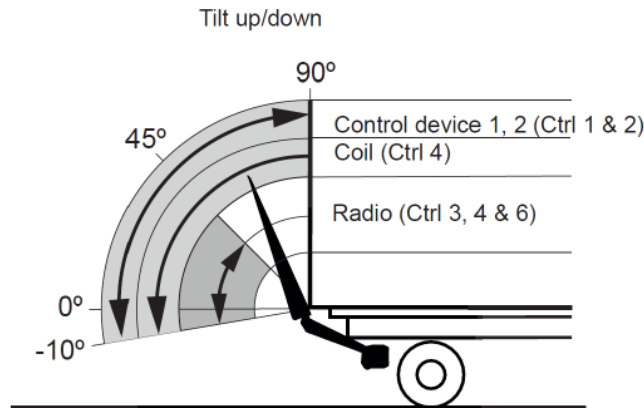


Image 1. Use of radio control device limited by the platform angle.

Sensor

Name	Position (standard)	Function	Description
Di1	Lift arm	Angle sensor	For autotilt, safety function.
Di2	Platform Module	Angle sensor	For autotilt, platform angle. There is some trimming allowance for the bracket in the platform in order to facilitate adjustment of the platform's autotilt angle.
Di3	Platform Module	Angle sensor	Non-actuated Di3 disables Tilt up with the secondary control device so that the operator must use the two-hand button - 2H along with the primary control device in order to continue to maintain the tilt up function.
Di4	Tilt cylinder	Open platform alarm	Pressure sensor for falling pressure connected to +side of tilt cylinder. In the actuated state, returns the connection signal (+) to Di4 and results in output signal (-) at Pa-. Also phase (+) signal out at Pa+. 60 Bar.
Di5	Lift cylinder	Pressure sensor	For autotilt. 1.2 Bar.
Di6	Control card	Jumper	Jumper for deactivation of Autotilt functions in event of up and down movement.
Cs	Cabin	Activation	No signal in at Cs results in blocked control device terminals. Signal to Cs usually comes from the cabin switch. In individual cases where the cabin switch is not used, the (+) signal comes in to Cs jumpered from (CS PWR) on nearby terminal.
2H	Control devices	Two-hand button	Activated in connection with opening and closing of vehicle body. Used for Quick opening.

Electrical Information

Information codes

Codes are shown on the display in a sequence. First a letter for identification of information, followed by figures or segments for further information and then ending with a pause:

When the CS (cabin switch) is switched on, the current program configuration (P) is displayed first, followed by configuration number. The number of volts detected is then displayed and, after this, the current software version (J), followed by version number.

As long as no control device is used, a scrolling sequence is then displayed, with sensor indication (C), followed by 0-6 segments showing which sensors have a signal.

When a control device is used, the control device being used (1-7) is displayed, followed by which button has been pressed, segments B, C, E or X (X symbolises the 4th button on the respective control device (2h1 for fixed control device 1, 2h2 for fixed control device 2, lock knob for radio control device and coil control device)).

The control devices are symbolised by the figures 1-7.

1. Fixed control device 1, including two-hand button 2h1
2. Fixed control device 2, including two-hand button 2h2
3. Radio control device, External
4. Coil control device
5. Truck slider control device
6. Radio control device, internal module
7. CS (cabin switch)

Once a button has been released, the control system for the current control device is locked for a while to ensure that no other person operates the lift from another control device. During the period the control system is locked for the current control device, its number (1-7) will flash on the display. This primarily applies to radio and coil control devices, as other control devices have such a short locking period that there is hardly time to see the indication.

Coil control devices can be equipped with a locking function. Once the control device has been used, the control system is locked for the current control device until it is unlocked manually from the respective control device's deactivation button. With some configurations, however, the coil control device can, for safety reasons, always tilt the platform down in the event of the operator getting shut inside.

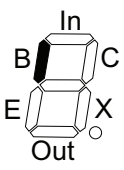
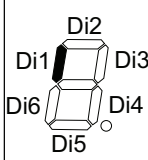
The radio control device is also equipped with a locking function. The control system can then be locked/unlocked by pressing and holding button 5. The lock's status is indicated by the locking function LED, which comes on when the lock is activated. In the event of a fault in the remote control, unlocking can be performed by turning the control power (CS) Off/On.

If the remote control is in the locked position and the lift has been unlocked by turning the control power (CS) Off/On, the lift will be locked again as soon as any button on the remote control is pressed.

NOTE.

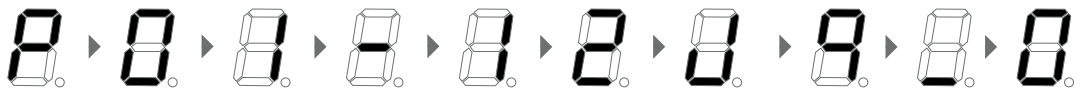
The lift remains locked if it loses power and is then started up again, and the number 6 flashes on the control card's display. Unlocking is performed as described above.

Electrical Information

Information codes					
Identification	Code 1	Code 2	Code 3	Information	Other
P (Program configuration)	00-99			Cancelled configuration	
		-		Dividers	
			12/24	Number of volts detected	
J Software version	01-99	_	1-9	Version number	
1-6 (Fixed light) Active control device while operating	1-6			Fixed light (1-6) displays active control device during operation.	
		Segment B, C, E or X.		Segments B, C, E or X are illuminated depending on which button is pressed	
1-7 (Flashing) The control device for which the control system is locked for a while after completed operation.	1-7			<p>Control device for which the control system is locked.</p> <p>This primarily applies to radio and coil control devices, as other control devices have such a short locking period that there is no time to see the indication.</p> <p>The number will stop flashing when one of the current control device's buttons are pressed.</p> <p>If the control card has been without voltage and receives the voltage again when the CS (cabin switch) is switched on, "7" will flash on the display and the control card is locked until the Off/On on the CS is operated.</p> <p>1-6 = Ctrl 1-6 7 = CS</p>	
C Sensor indication	Segment			<p>1-6 segments indicate sensors.</p> <p>On - signal in.</p> <p>Off - no signal in. 0V.</p> <p>(See electrical and hydraulics diagrams for information about the location of the sensors).</p>	

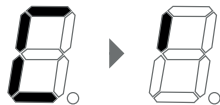
Example of sequence of information codes:

Program configuration: 01, Voltage detected: 12V, Software version: 09



Example of sequence with sensor indication:

Sensor indication: C, Detected sensor: Di1



Example of sequence with control device indication:

Control device: 2, Detected button: B



Electrical Information

Fault codes

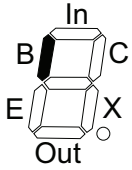
If a fault arises, the fault code is shown in the display in the form of a letter for identifying the fault, followed by numbers and/or number segments for further information, followed by sensor indication (C) in accordance with the previous page.

In fault codes E, F and U, the numbers (1-9) show which control device/output the fault code refers to.

1. Fixed control device 1, including two-hand button 2h1
2. Fixed control device 2, including two-hand button 2h2
3. Radio control device, External
4. Coil control device
5. Truck slider control device
6. Radio control device, internal module
7. CS (cabin switch)
8. Control Power
9. Sensor Power

If the system discovers several faults, only the fault code for the fault with the highest priority will be shown automatically. The display is prioritised in the order in the table below, L/H, E, F and A.

When the CS is switched off, the system will browse through a list containing the five most recent faults detected before the display goes off after approx. 5 minutes, the control card then goes into power save mode.

Fault codes					
Identification	Code 1	Code 2	Code 3	Information	Other
L Low battery voltage	07-35			Voltage measured	
H High battery voltage	07-35			Voltage measured	
E Control device locked	1			Fixed control device 1 (incl. two-hand button 2h1 if they are monitored)	
	2			Fixed control device 2 (incl. two-hand button 2h2 if they are monitored)	
	3			Radio control device, external	
	4			Coil control device	
	5			Truck slider control device	
	6			Radio control device, internal module	
	7			CS (cabin switch)	
			Segment		

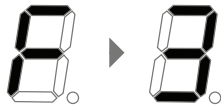
Electrical Information

Fault codes					
Identification	Code 1	Code 2	Code 3	Information	Other
F Output short-circuit- ed/high current	0-9			Which output has short-circuited/ has high current. Fault code is reset automatically if the function in question is running (function verified).	1-7 U0-U7, dis- played only af- ter the respec- tive output/ function has been active. 8 Control power 9 Sensor power
Output not connect- ed/cable breakdown	0-7			Which output is not connected/ has cable breakdown. Fault code is reset automatically if the function in question is running (function verified).	Displayed only af- ter the respective output U0-U7 has been active.
A Internal fault	0-				Contact support if the lift does not function.

All fault codes can be reset manually by switching Off/On the CS (cabin switch). Fault codes F0-F7 and U0-U7 are reset automatically if the function in question is running (function verified). Fault codes L and H are reset automatically if the battery voltage becomes correct. Fault code E is reset automatically if the control system has not received any signal from the relevant control device for 6 minutes.

Example of sequence of fault codes:

Output No. 3 short-circuited.



Control devices

If a control device button is held down for too long, the control device is blocked and cannot be used for a number of minutes. Fault code E flashes on the display. The fault is also indicated on a non-active coil control device with a lock button, if this is connected to Ctrl 4. The LED on the coil control device then flashes the same number of times as the number on the control device in question, see the list in section "11.2.2 Fault codes" on page 8.

Example: Control device 2 is blocked, the LED on the coil control device then flashes twice, goes out for a moment, flashes twice again, etc.

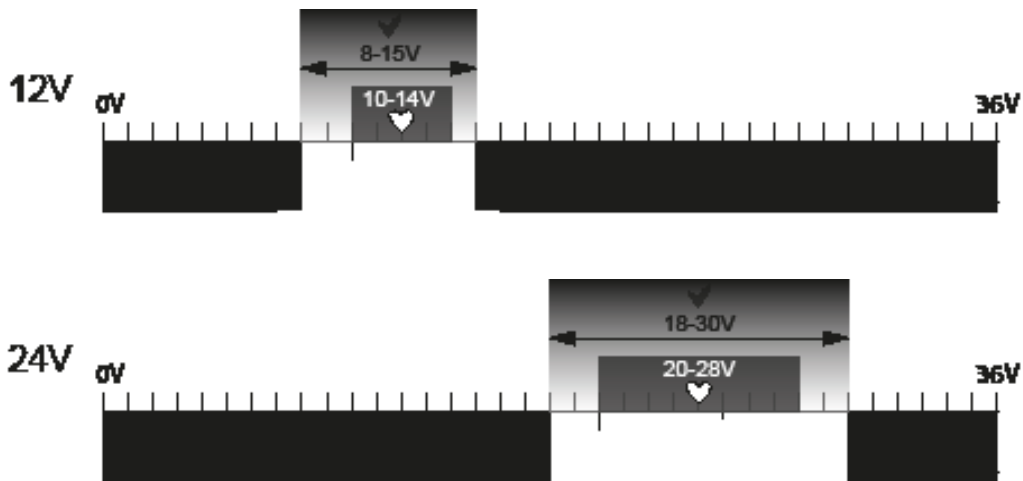
Coil control device's LED	
Fixed light	The coil control device is active
Extinguished (weak glimmer)	The coil control device is not active
Flashing	One of the other control devices is blocked

Electrical Information

Supply voltage

The illustrations below show the desired supply voltage for 12V and 24V systems. Specified voltage refers to voltage when the lift is operated. See also section "16.2 Maximum power consumption - Minimum recommended conductor cross sectional area" on page 12.

- ✘ The lift is not working.
- ! The lift is working but is issuing a warning. This voltage range is only recommended for emergency operation.
- ✓ The lift is working, but the voltage range outside the 'heart-marked' area is only recommended for operation for short periods.
- ♡ The lift is working within the voltage range for optimum function and service life.



How To Order Parts

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

When ordering repair or replacement parts, please include all 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
285 Northeast Avenue
Tallmadge, OH 44278
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 promptly after careful inspection of the returned assemblies.



Every vehicle that has a WALTCO Liftgate must have legible WARNING AND OPERATION 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 WARNING DECALS, OPERATION DECALS and OWNER'S MANUALS can be obtained from WALTCO LIFT CORP.

NOTE:

**When ordering, give model
and serial number of the liftgate.**

IMPORTANT

KEEP THIS OWNER'S MANUAL IN THE VEHICLE

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**