



WALTCO

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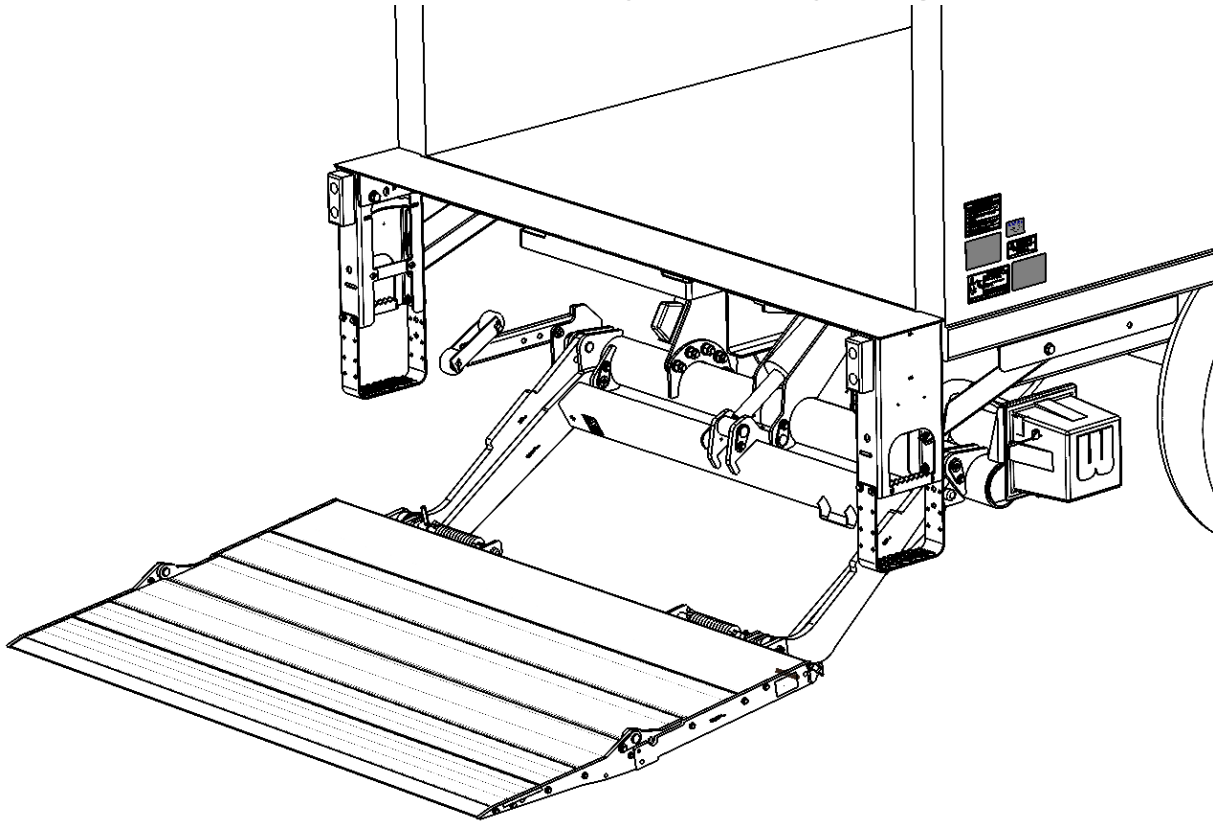
Phone: 800.411.5685

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Installation Manual

EM25, EM33

2500, 3300 lb. Capacity Flipaway Liftgates



Last Change(s)


Date	Page(s)	Description
10-2025	2	Corrected kit numbers
	35	Added page 1 of 80101732, it was missing
	41	80101387 was 80101569
		Removed Remote Mount Pump Kit instructions & Under Ride Instructions

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	<p>Improper installation of this liftgate could result in severe personal injury or death.</p> <p>Read and understand the contents of these instructions before proceeding.</p> <p>When installed, this liftgate must not alter or prevent vehicle compliance to any existing state or federal standards.</p> <p>Each chassis manufacturer's recommendations should be consulted for compliance.</p>
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#REF!

#REF!



#REF!

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.



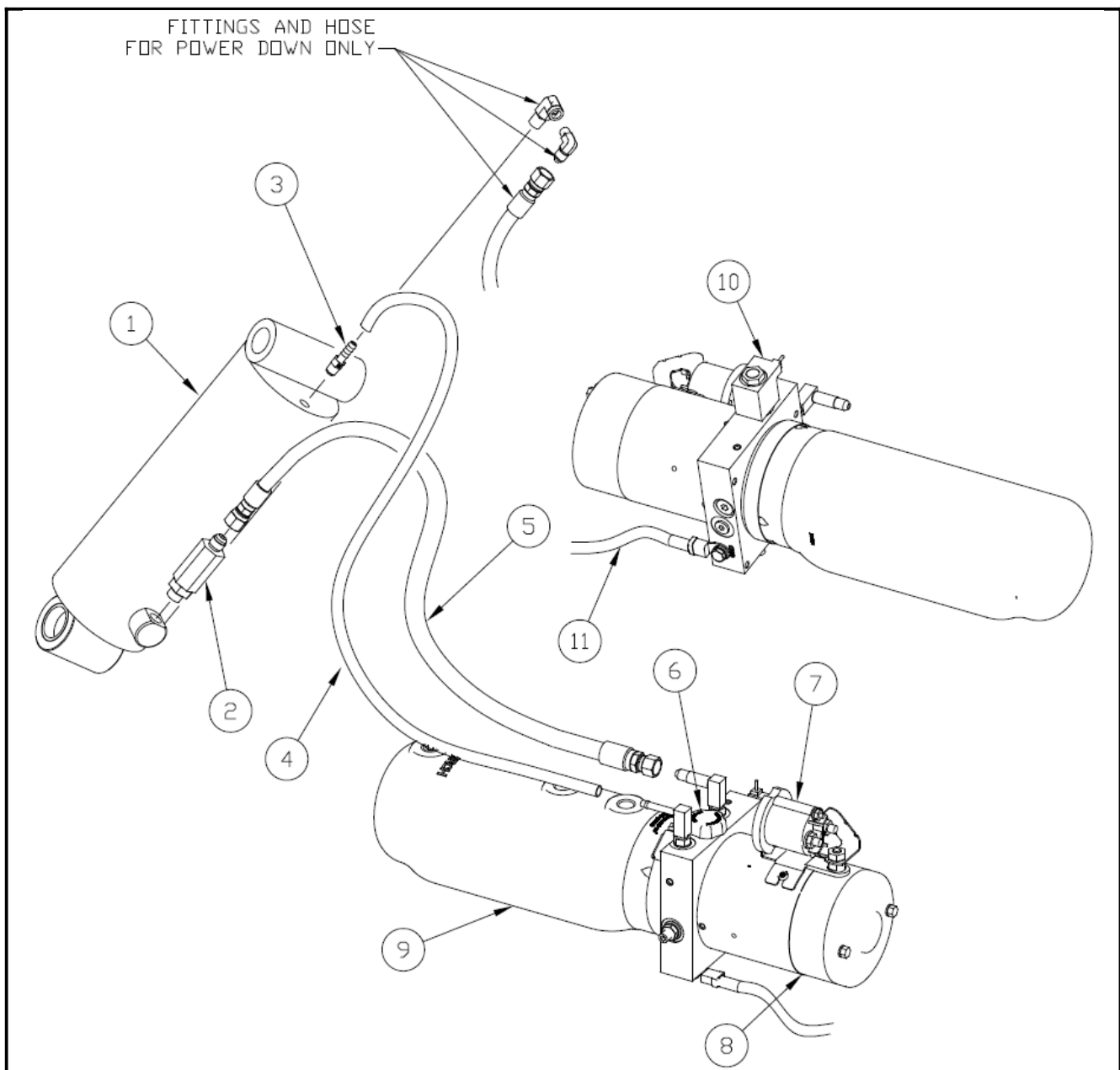
NOTICE

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



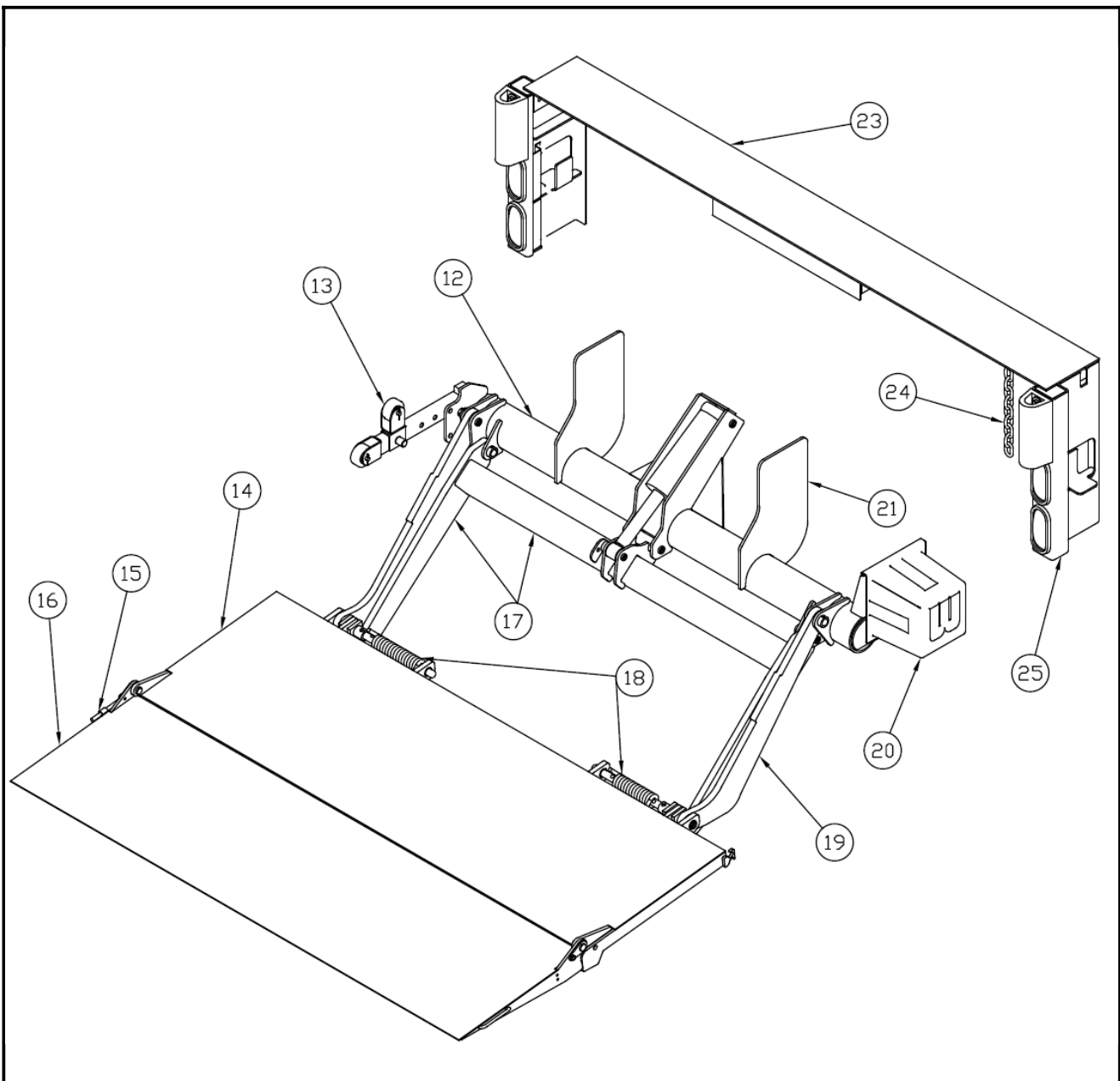
Chapter 2 Liftgate Terminology

- | | |
|--|-------------------------|
| 1. Hydraulic Cylinder | 8. Motor |
| 2. Flow Control Valve | 9. Reservoir |
| 3. Return Line Barbed Fitting (Gravity Down) | 10. Lowering Valve Coil |
| 4. Return Line (Gravity Down) | 11. Ground Cable |
| 5. Raise Hose Assembly | |
| 6. Breather Cap | |
| 7. Pump Unit Starter Solenoid | |



Chapter 2 Liftgate Terminology

12. Mount Tube Assembly	19. Parallel Arm
13. Parting Bar Assembly	20. Pump Cover
14. Deck Assembly	21. Mount Plate
15. Torsion Bar	22. Spec Tag (see following page)
16. Deck Extension Assembly	23. Bed Extension
17. Lift Arm Assembly	24. Transit Chain
18. Folding Assist Springs	25. Dock Bumper



Chapter 2 Liftgate Terminology

Explanation of Specification Tag

Model Name	Description	Capacity
EM	Single Cylinder	2500 lb.
EM	Single Cylinder	3300 lb.

MODEL NAME



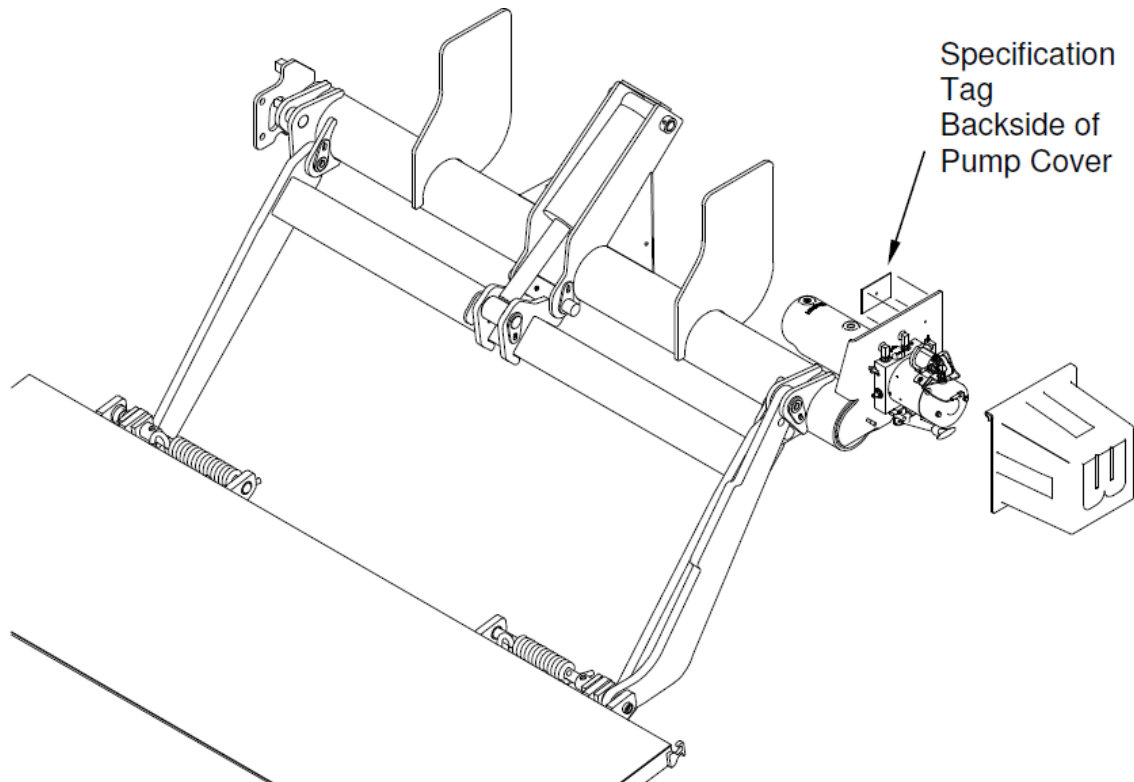
RATED CAPACITY

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



GR02773

Chapter 3 Determine Basic Mounting Requirements

Measure distance from ground to floor level. This is the bed height.

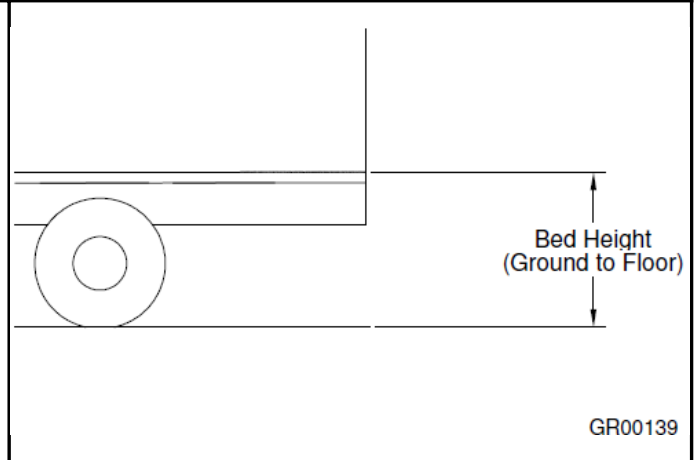
Refer to bed height dimension on mounting chart to determine basic mounting dimension "A" and minimum mount frame clearance required.

NOTE:

**Max bed height dimensions for unloaded vehicle.
Min bed height dimensions for fully loaded vehicle.**

NOTE:

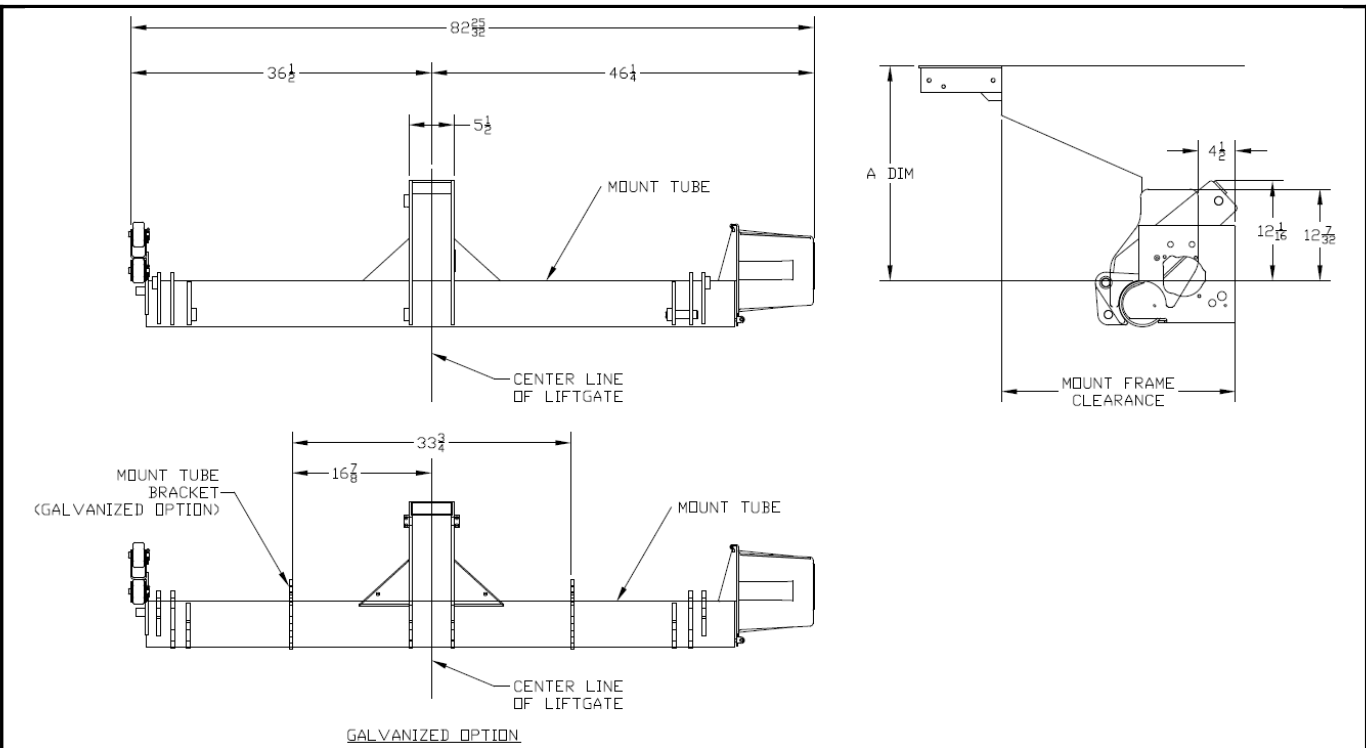
Tire clearance should be 6" minimum between tire and mount frame.



MOUNTING CHART

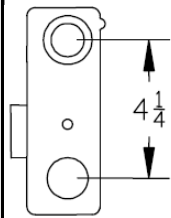
Bed Height	"A" Dimension	Mount Frame Clearance
*37"-43"	19"	34-1/2"
44"-54"	24"	30-1/2"
55"-56"	26"	28-3/8"

***IMPORTANT: Minimum Bed Height for 50" deep wedge platforms is 39".**

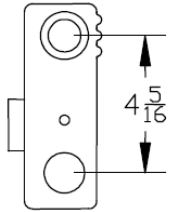


Chapter 3 Determine Basic Mounting Requirements

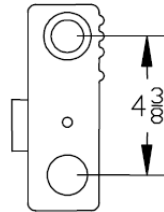
Stop Blocks shipped with liftgate are based on the depth and style of platform.



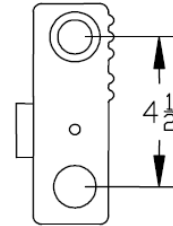
26450001/GV
26450051/GV



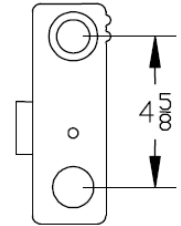
26450003/GV
26450053/GV



26450004/GV
26450054/GV



26450005/GV
26450055/GV



26450002/GV
26450052/GV

Below table indicates which stop blocks are shipped with different platforms.

Below are stop block recommendations for different bed height ranges.

Notes:

1. The larger the stop block hole spacing, the more tilt up the platform will achieve at bed height.
2. "GV" indicates Galvanized option.

48" & 50" Deep Wedge Platform

Bed Height Range	A-Dim	Recommended Stop Blocks
37-43	19	26450005/GV & 26450055/GV
43-54	24	26450003/GV & 26450053/GV
54-56	26	26450001/GV & 26450051/GV

Chapter 4

Installation

PREPARATION OF BODY SILL

Remove all obstructions that would interfere with operation of Liftgate; such as dock bumpers, trailer hitches, projections, etc.

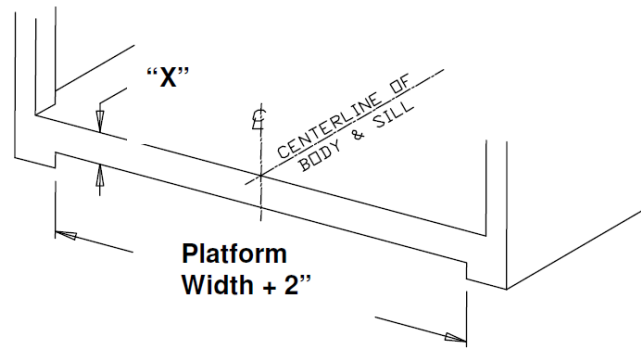
Locate and mark the center of body sill.

NOTE:

All mounting measurements for centering liftgate will come from centerline mark.

Body sill must have clearances indicated. Cut or notch Rear Sill to obtain these clearances.

Refer to chart on first page of Chapter 3. (Determine Basic Mounting Requirements).



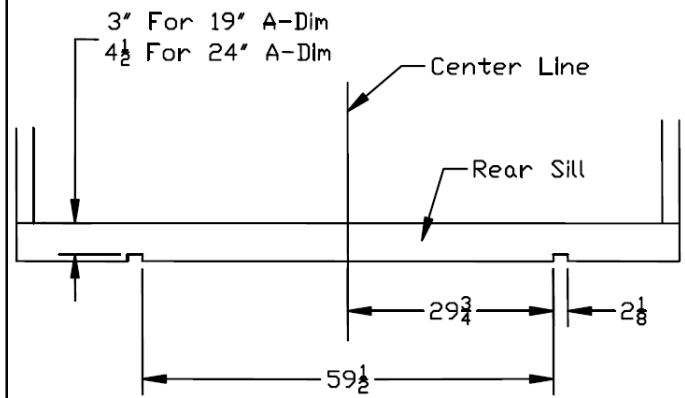
Hold "X" as follows:

"A" Dimension	"X" Max
19"	4"
24"	5-1/2"
26"	6"

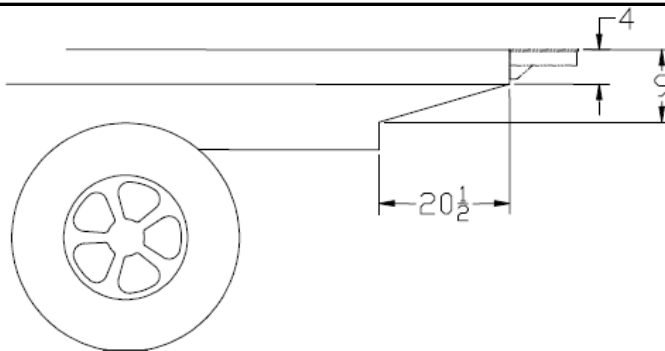
Note: For aluminum platforms only.

On units that have aluminum platforms, additional notching of the rear sill will be necessary.

Notches are not required for 26" A-Dimension.



Cut away vehicle frame as required to obtain the minimum clearance indicated.



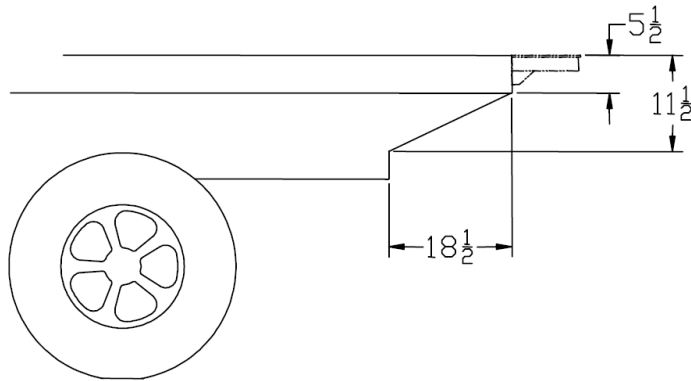
37" TO 43"
BED HEIGHT

19"
"A" Dimension

Chapter 4

Installation

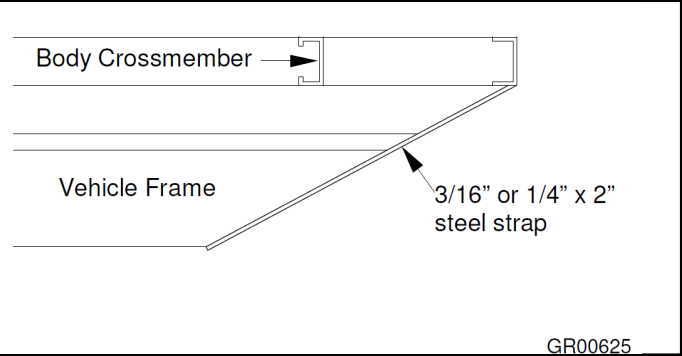
Cut away vehicle frame as required to obtain the minimum clearance indicated



44" TO 56"
BED HEIGHT

24" and 26"
"A" Dimensions

Cap Vehicle Frame using a 3/16" or 1/4" X 2" steel strap.

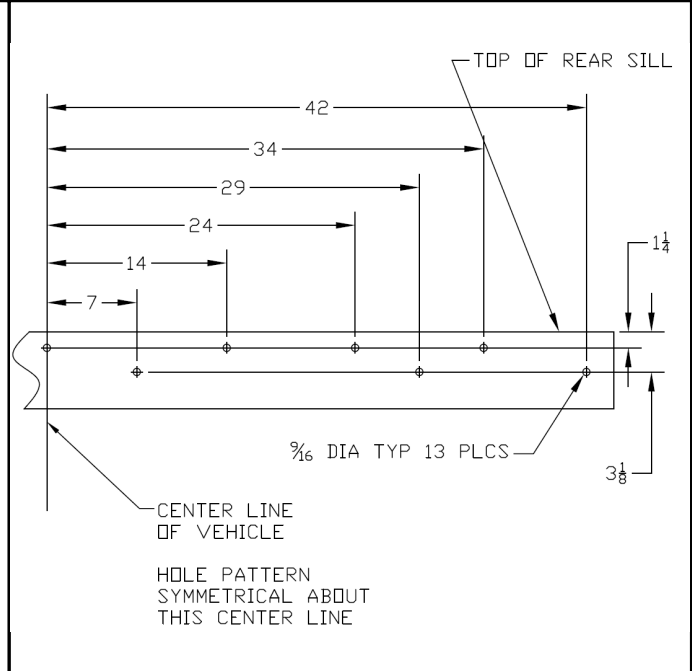


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INSTALLATION OF BED EXTENSION

If bed extension is to be bolted on, use pattern at right for drilling holes.

Thirteen (13) 9/16" diameter holes required.



INSTALLATION OF BED EXTENSION

Position bed extension against rear sill using a forklift or crane.

Make certain bed extension is centered on vehicle body and level with bed.

If corner posts of vehicle body extend beyond rear sill of body, shims may be added behind bed extension to prevent extension from bowing.



Other means may be used to support bed extension in position. ALWAYS verify the safety of your supporting method before proceeding.

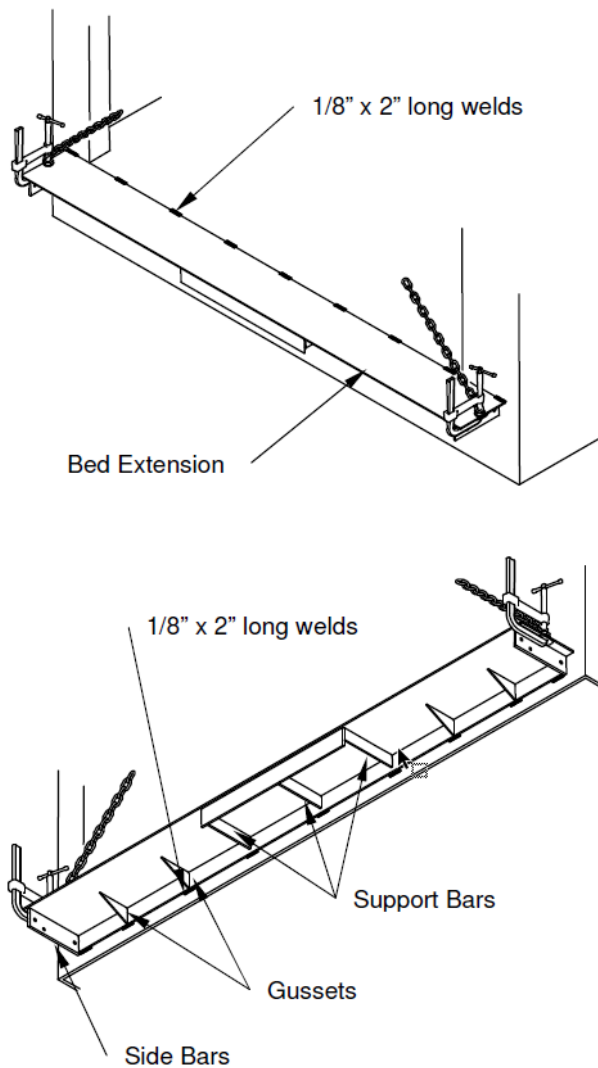
If bolting bed extension:

Use thirteen (13) 1/2" bolts, nuts, and washers provided with kit.
Torque bolts to 90 ft. lbs.

If welding bed extension:

Weld top side of bed extension, 1/8" X 2" long welds over each of the side bars, gussets, and support bars on underside of extension.

Weld underside of bed extension, 1/8" X 2" long welds under each of the side bars, gussets, and support bars.



Chapter 4

Installation

Remove liftgate from shipping pallet and all banding. Do not unfold platform until instructed to do so.

STOP Before proceeding: verify vehicle bed height and A-dimension to be used!

SET MOUNTING BAR FOR PROPER A-DIMENSION

Refer to Chapter 3 of this manual. Mounting bar must be set to correct A-dimension for vehicle bed height.

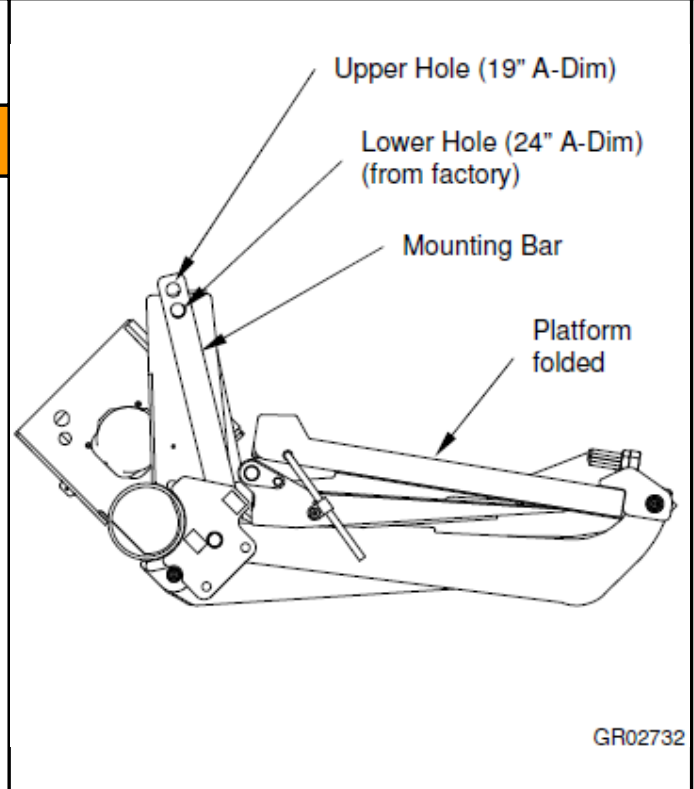
Mount bar is set for 24" A-dimension when shipped from factory (as-shown).

To change hole, remove cotter pin from upper cylinder pin, pull mounting bar off pin and rotate cylinder tower.

Push mounting bar back onto pin and reinsert cotter pin.

IMPORTANT:

Do not remove mounting bar until instructed to do so.

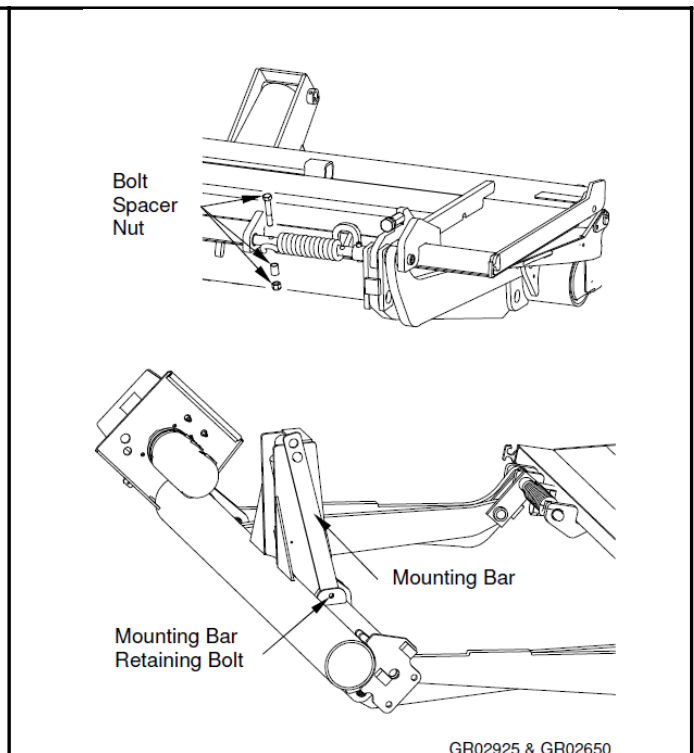


NOTE:

If mounting to 26" A-dimension, the mounting bar and platform spring retaining bolt(s) will need to be removed before proceeding.

With platform still folded, remove 1/2" bolt(s), nut(s), and spacer tube(s) from deck spring pin(s). Keep parts for re-assembly later.

Unfold platform to open position and remove mounting bar.



Chapter 4

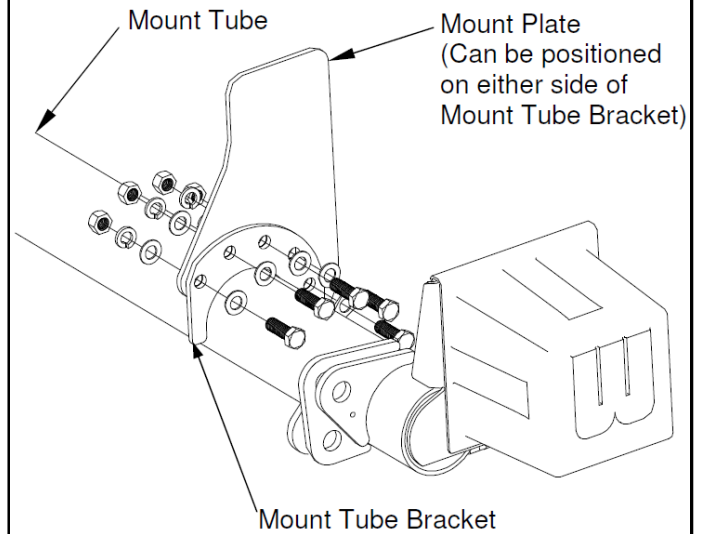
Installation

BOLT-ON MOUNT PLATE ATTACHMENT

For galvanized option, mount plates must be bolted onto mount tube prior to installation.

Use twelve (12) 3/4" bolts, nuts, and washers provided with kit.

Torque bolts to 300 ft. lbs.



Chapter 4

Installation

Position liftgate up under vehicle.

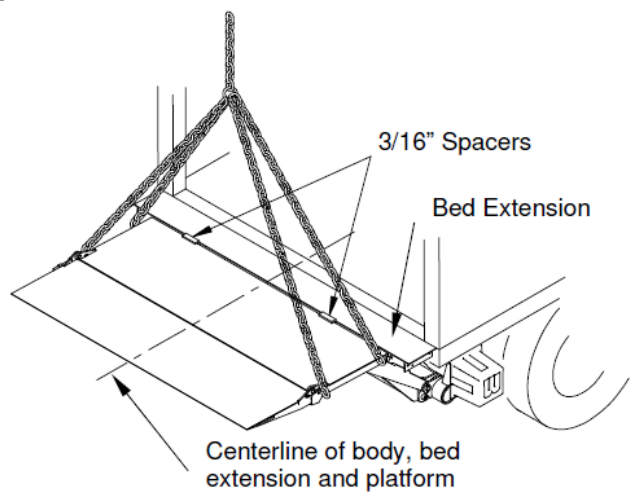
Using a forklift or crane, raise platform up to bed extension. Use 3/16" spacers to space platform away from bed extension.

Butt platform and bed extension skins together.

Platform to be centered on vehicle and level with floor (bed) of vehicle.

A jack can be used to help position the mount tube to proper A-dimension.

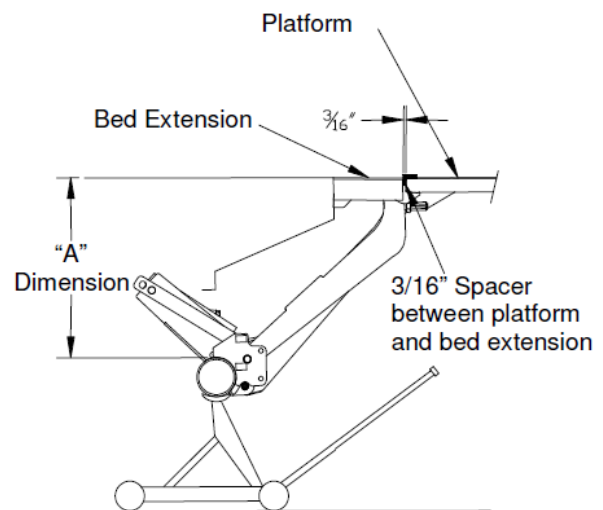
Be sure platform is centered on vehicle body and bed extension.



Other means may be used to support liftgate in position. ALWAYS verify the safety of your supporting method before proceeding.

Position platform so it is level with vehicle body and verify proper A-dimension.

NOTE:
If unable to obtain correct A-dimension with platform level, it may be necessary to screw in the Platform Adjustment Bolts as shown below.

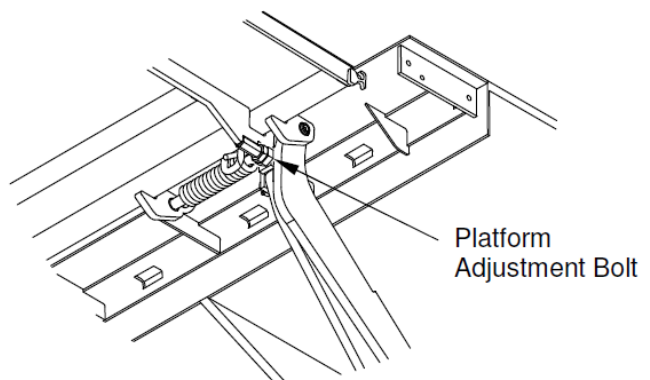


Bolt heads should be contacting platform hinges. If they are not, it may be necessary to rotate the cylinder tower towards the front of the vehicle.

Note:
Platform springs are engaged and under tension.



Take care when adjusting liftgate



Chapter 4

Installation

Lay two 3" channels (tubes or similar) on vehicle floor and clamp to bed extension and platform as shown.

Install counter weight on channels as required.

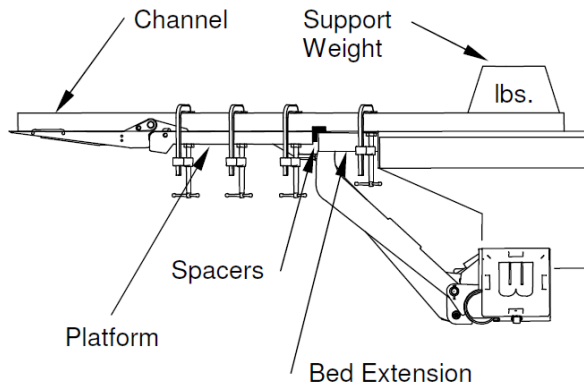
Platform is to be held parallel with vehicle floor, and is to butt up to 3/16" spacers on bed extension, centered with vehicle body.

! Other means may be used to support liftgate in position. **ALWAYS** verify the safety of your supporting method before proceeding.

NOTE:
Platform springs are under tension, therefore the platform must be held in position as shown.

IMPORTANT:
Verify mount tube is at correct A-dimension before proceeding to next step:

- Correct A-dimension for bed height
- Correct hole used in mounting bar
- If using 26" A-dimension and no mounting bar, square up pump bracket with ground



MOUNT PLATE INSTALLATION

Locate mount plates on mount tube. Mount plates should be approximately 90° to vehicle frame.

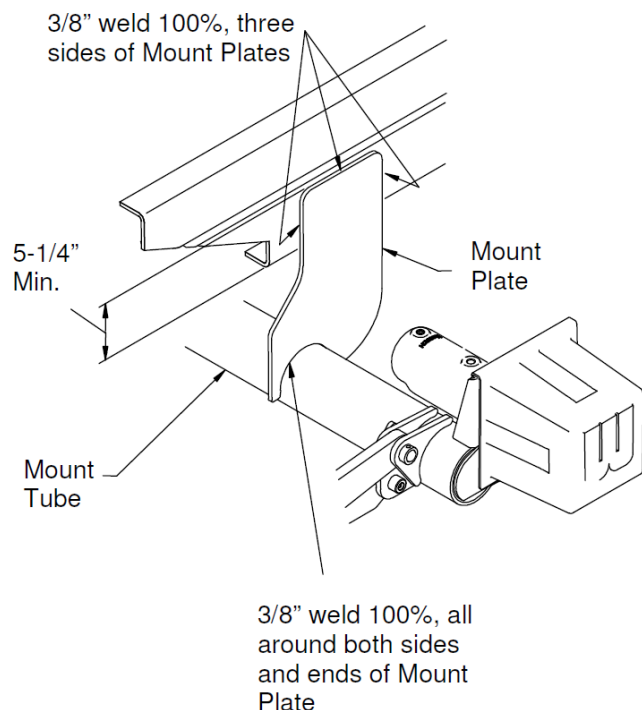
Check that mount plates extend a minimum of 5-1/4" above bottom of vehicle frame. If dimension cannot be held, refer to the optional installation.

! Shield all wires and hoses from heat and weld spatter.

Recheck A-dimension. Weld three sides of mount plates 100% to vehicle frame with 3/8" weld.

Weld mount tube to the mount plates. Weld all around, both sides of the mount plates, and ends, with 3/8" weld.

! To avoid injury or property damage, do not remove clamps from deck. Use forklift, crane, or other safe means to support deck and then remove clamps.



Chapter 4

Installation

OPTIONAL INSTALLATION

If the 5-1/4" dimension cannot be met, a 3/8" thick plate must be added.



Shield all wires and hoses from heat and weld spatter.

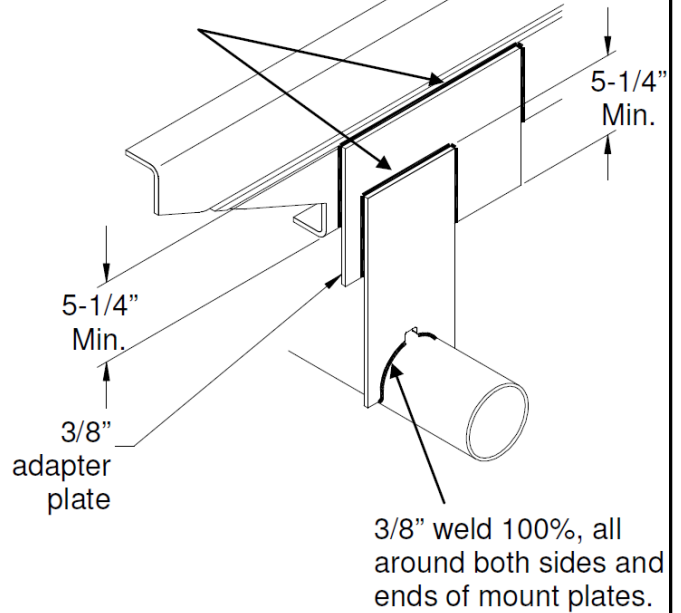
Recheck A-dimension. Weld three sides of mount plates and three sides of 3/8" plate 100% with 3/8" weld.

Weld mount tube to mount plates. Weld all around, both sides of mount plates, and ends, with 3/8" weld.



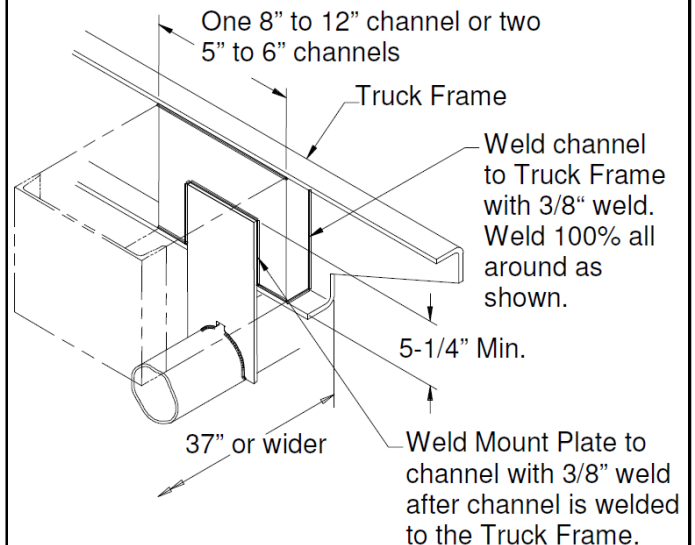
To avoid injury or property damage, do not remove clamps from deck. Use forklift, crane, or other safe means to support deck and then remove clamps.

3/8" weld 100%, three sides of mount plates and adapter plates as shown.



NOTE:

If necessary, liftgate may be mounted to inside of frame as shown.



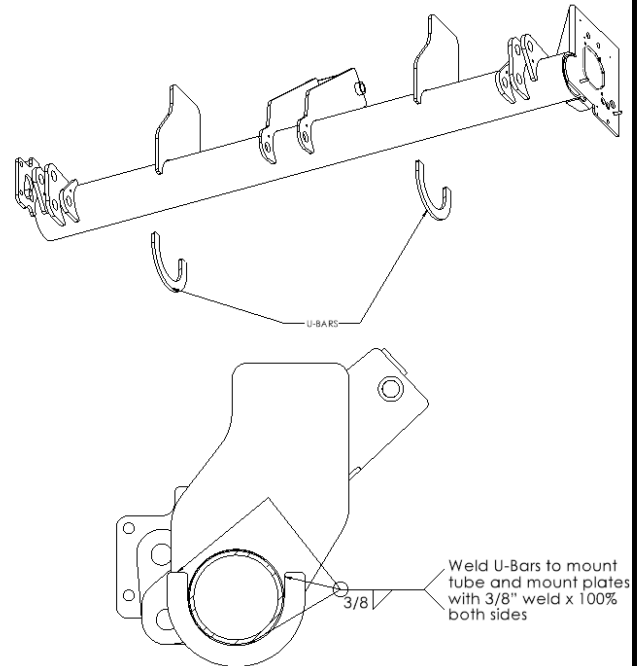
Chapter 4

Installation

For non-bolt-on gates. U-bars need to be added.

After mount plates are finish welded per previous pages, weld U-Bars in place as shown.

Weld U-Bars, to mount tube and mount plates, 100% both sides of bars with 3/8" welds.



Chapter 4

Installation

INSTALL U-BAR

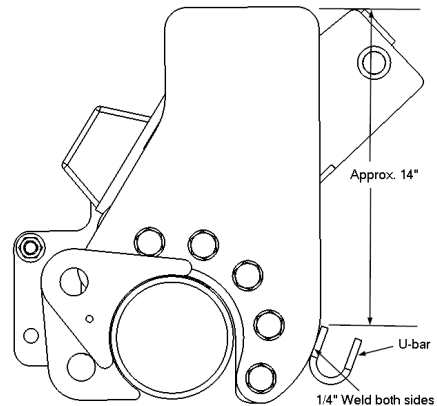
Locate U-bar on curbside mount plate as shown.

Weld both sides of bar with 1/4" weld, approximately 1/2" long.



Shield all wires and hoses from heat and weld spatter.

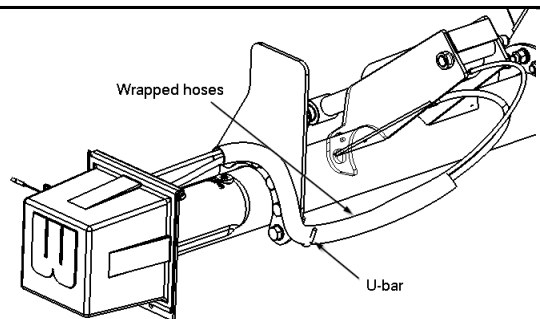
Remove all sharp weld and weld spatter that could contact hose wrapping.



Secure wrapped hydraulic hoses in U-bar and then hammer U-bar closed.



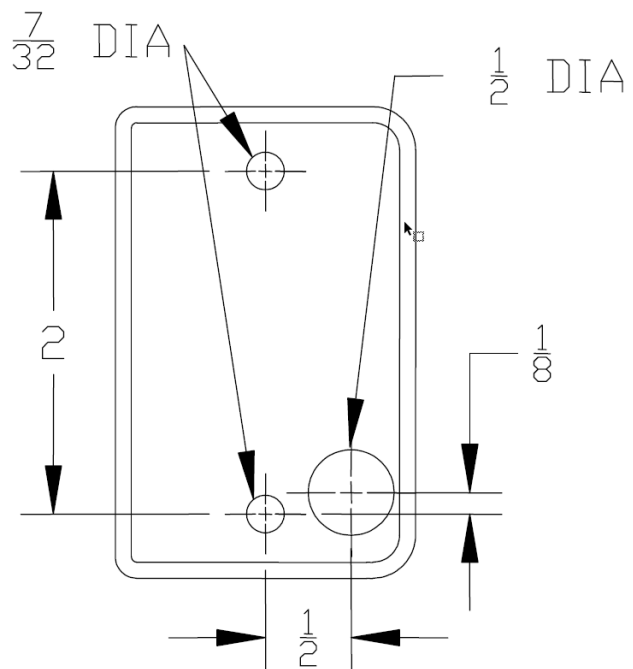
Do not crush or damage hoses.



INSTALLATION OF CONTROLS

Locate switch such that, when operating liftgate, operator will have clear view of entire platform area and will not be in area that liftgate will pass through.

Use this template to locate screw holes, and hole for control cord.



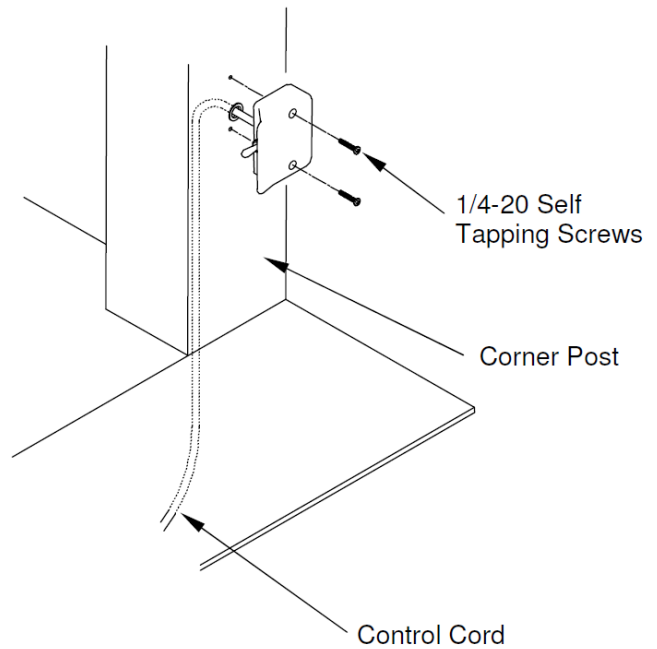
GR02662

Chapter 4

Installation

If control cord will be run through a hole in the body, remove all sharp edges from hole.

Use 1/4" self-tapping screws to secure switch.



Chapter 4

Installation

Route control cord from switch, and battery cables through pump plate.

Install provided grommets as shown on control cord and battery cables. Secure cables to vehicle with cable ties provided.

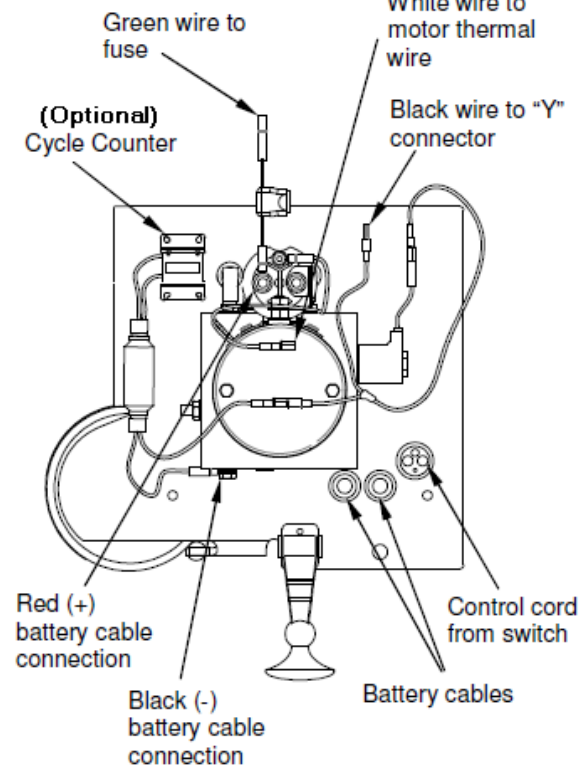
Connect control cord and battery cables to pump as shown. Connectors are gendered to help assure correct connections.

Add generous amount of dielectric grease to all electrical terminals and connections.

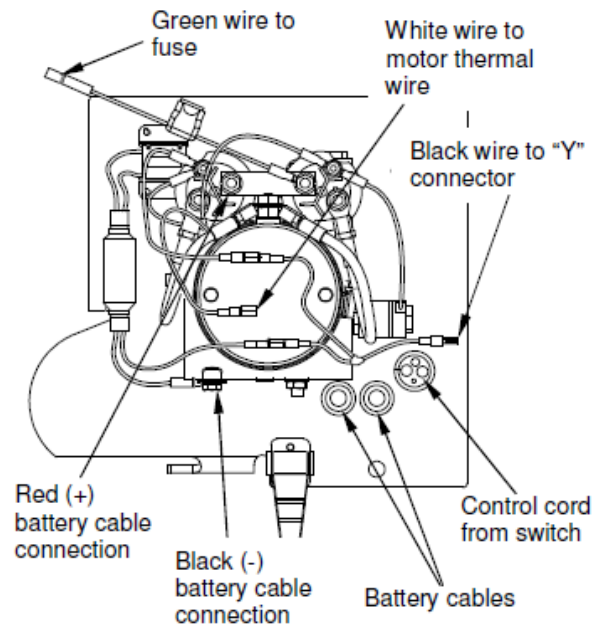
Also refer to electrical schematics on following pages.

NOTE:
Do not connect battery cables to battery at this time.

GRAVITY DOWN



POWER DOWN



GR10049 GR10050

Chapter 4

Installation

INSTALLATION OF POWER CABLES

Locate and mount 150 Amp circuit breaker directly to batteries using supplied copper terminal link.

Circuit breaker must be mounted to give good protection against any objects coming into contact with circuit breaker terminals and causing a short. Position must also be readily accessible to reset breaker.

NOTE:

Circuit breaker is to rest solidly on battery to prevent vibration during transit.

If unable to connect circuit breaker direct to batteries, an optional 24", maximum length, 2 Ga. battery cable may be used.

Connect end of red (+) battery cable from liftgate to circuit breaker as shown.

Connect end of black (-) battery cable from liftgate to negative post of batteries as shown.

Apply a generous amount of dielectric grease to all battery terminals and circuit breaker terminals.

Secure all battery cables to chassis frame with provided cable ties.

IMPORTANT:

Original equipment ground cable furnished on vehicle should be at least a number 2 ga. to ensure proper operation of pump unit. An auxiliary ground cable should be added between engine block and chassis frame if engine is not adequately grounded to chassis frame. When there are two or more batteries, all cables connecting batteries together must be 2 ga. or heavier. This includes all original equipment batteries on vehicle.



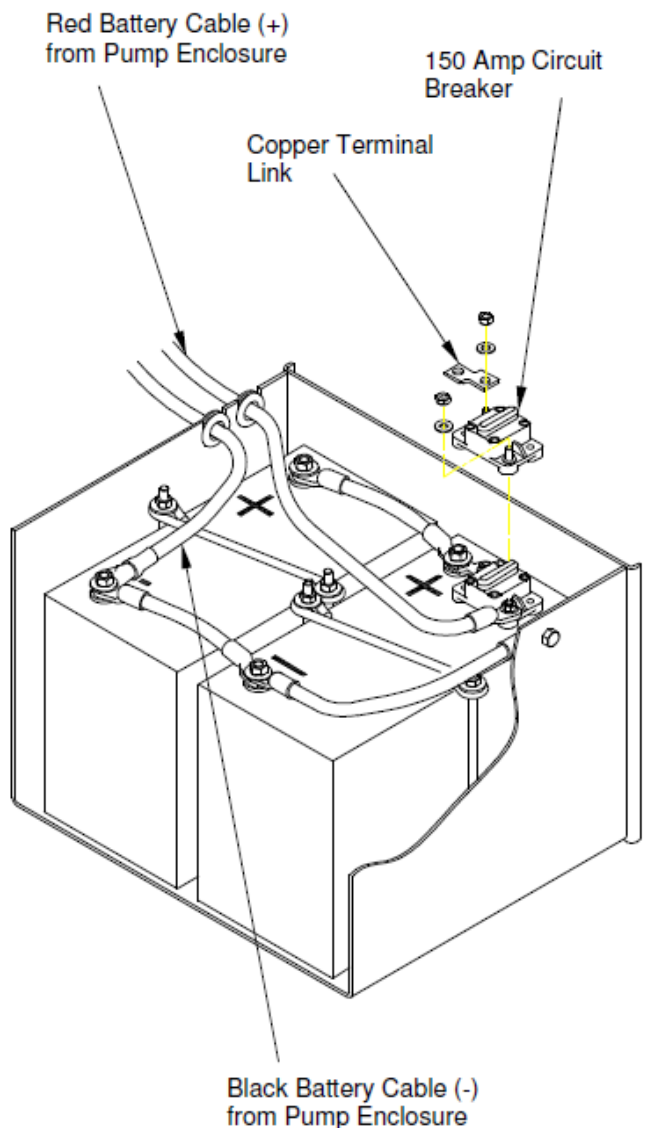
Protect wires from any sharp edges or holes that may abrade insulated covering of wires.



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.

IMPORTANT:

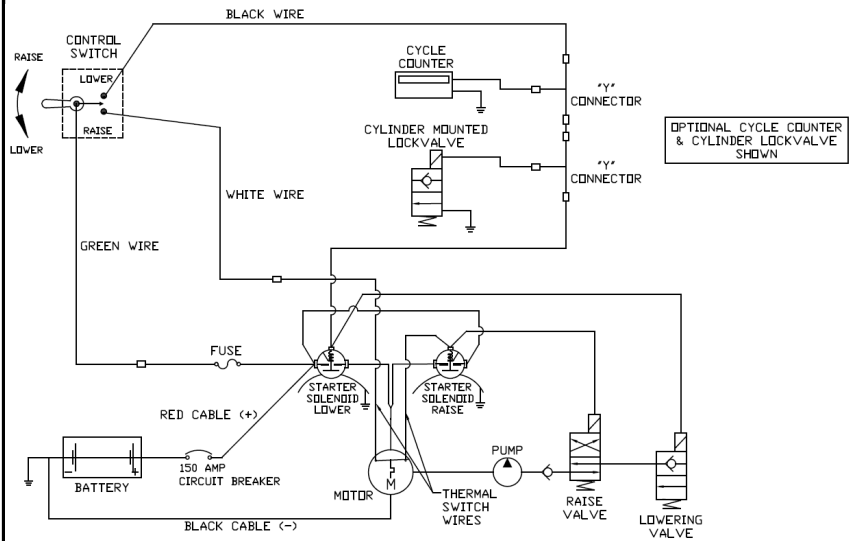
DO NOT operate liftgate until mounting bar has been removed.



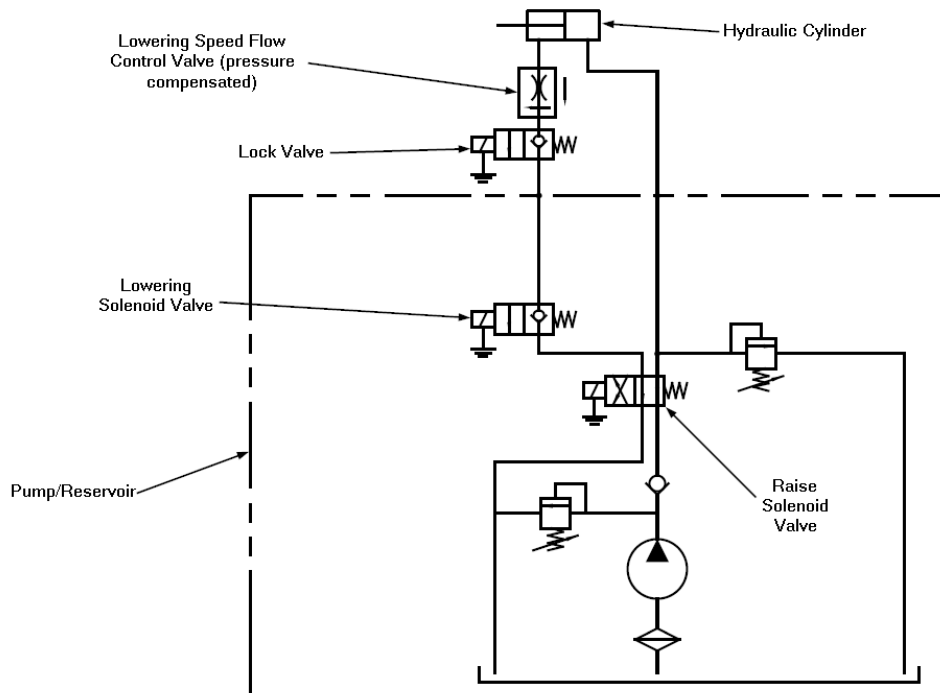
Chapter 4

Installation

Basic power down with lock valve liftgate wiring



Hydraulic Schematic - Power Down with Lock Valve



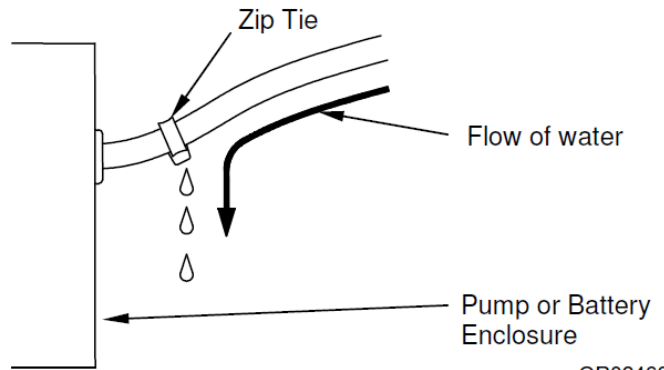
Chapter 4

Installation

DIVERT WATER FROM ENCLOSURE

To help prevent channeling water into pump or battery enclosures:

- Secure hoses, cables, and cords downward as they exit the enclosure.
- If a downward exit is impractical, a zip tie can be installed around hose or cable to help interrupt the flow of water as shown.



GR02460

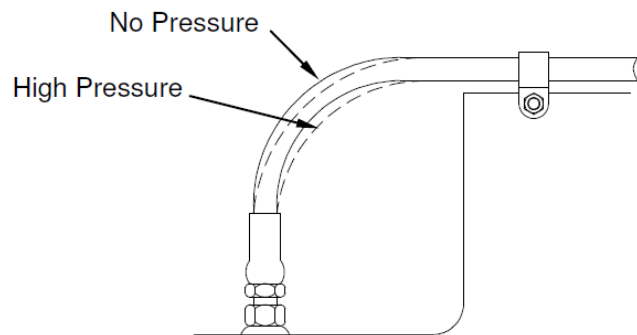
HOSE INSTALLATION

Avoid twisting of hoses.

Avoid sharp bends when routing hoses.

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

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

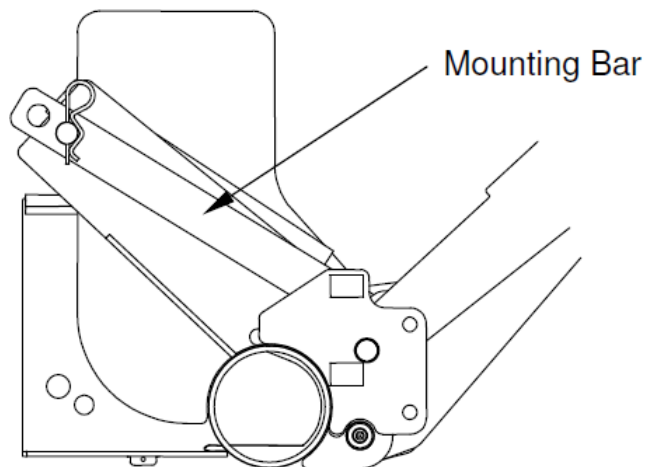


REMOVE MOUNTING BAR

Ensure platform is properly supported before disconnecting the mounting bar.



Do not be under platform or lift arms when disconnecting the mounting bar. Access bar from forward side of mount tube.



Chapter 4

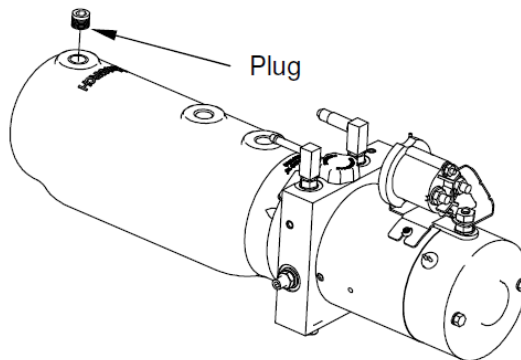
Installation

FILLING HYDRAULIC RESERVOIR

Position liftgate deck per chart below (use forklift, crane, or other safe device).
 Remove reservoir plug.
 Oil level should be 1/2" from top of reservoir.
 If low, fill as required. Use appropriate fluid per chart.
 Replace plug.
 Run liftgate through several full cycles to release trapped air from system.

NOTE:

If any hydraulic components were removed and replaced, or disconnected during installation, or you suspect there is air in the system, the system should be bled per the instructions on page 28.



LIFTGATE POSITION FOR OIL LEVEL CHECK

Deck should be in this position:	Gravity Down Pump:	Power Down Pump:
	Ground level	Bed level



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 ^o to 120 ^o	Waltco Biodegradable LiftLube Part # 85803860
	Shell Tellus S2 VX 32
	Chevron Rando HDZ 32
-20 ^o to 90 ^o	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 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)

Chapter 4

Installation

There is no speed adjustment on this liftgate.

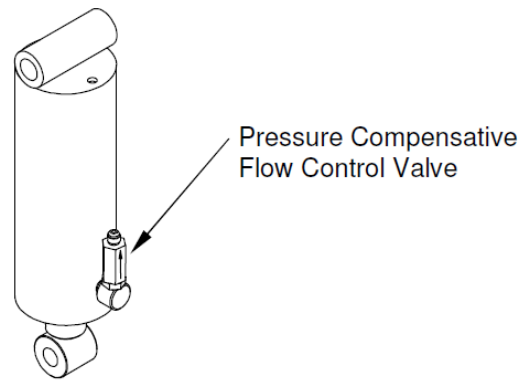
Lowering speed is controlled by the pressure compensative valve plumbed at the cylinder.

Regardless of weight on platform, liftgate should lower at approximately six (6) inches per second.

$$\frac{\text{Bed height (inches)}}{6} = \text{Lowering Time (seconds)}$$



**This liftgate must have the correct pressure compensative valve installed:
EM = 7010001-19**



BLEEDING HYDRAULIC SYSTEM

GRAVITY and POWER DOWN LIFTGATES

NOTE: Fluid level in reservoir will need to be checked before and after bleeding system.

Check fluid level, to be 1/2" from top of reservoir with platform at ground for gravity down units, platform at bed height for power down units.

Lower platform to ground, place a bucket or pan under the raise line and cylinder to catch hydraulic fluid.

Disconnect raise line at the flow control valve.

With someone holding the raise line in the bucket/pan, press the raise switch and activate the pump. Do this until a steady, air-free, stream of fluid flows from the hose.

Reconnect hose to cylinder. Again, check fluid level of reservoir and fill as may be required.

POWER DOWN LIFTGATES ONLY

On power down liftgates the upper hose (lowering) will also have to be bled of air.

Again, check fluid level with platform at bed level.

Lower platform to ground.

Disconnect upper lowering line.

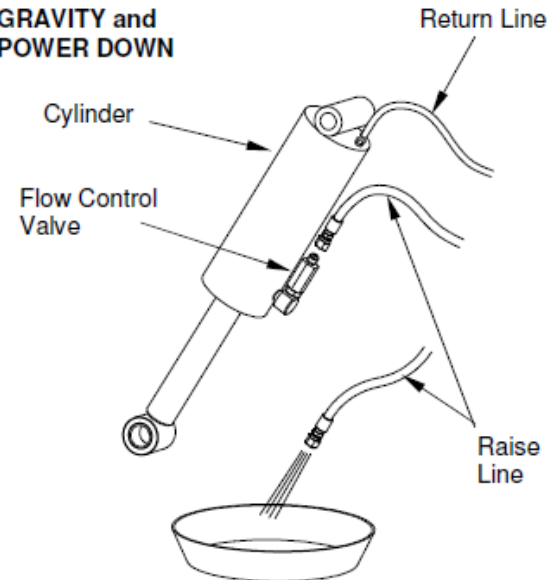


CAUTION
Hydraulic line may be pressurized

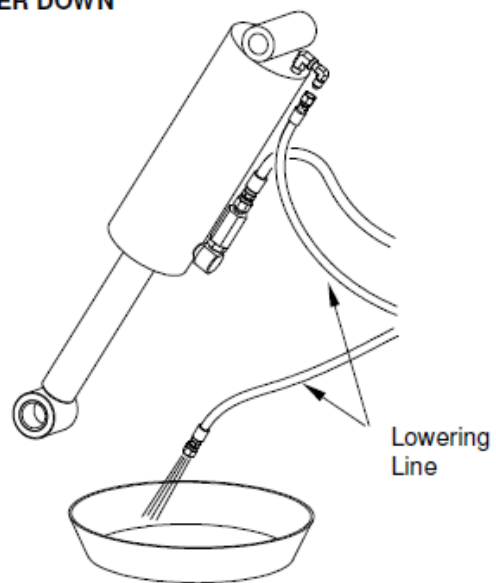
With someone holding the lowering line in the bucket/pan, press the lower switch and activate the pump. Do this until a steady, air-free, stream of fluid flows from the hose.

Reconnect hose to cylinder. Again, check fluid level of reservoir and fill as may be required.

GRAVITY and POWER DOWN



POWER DOWN



Chapter 4

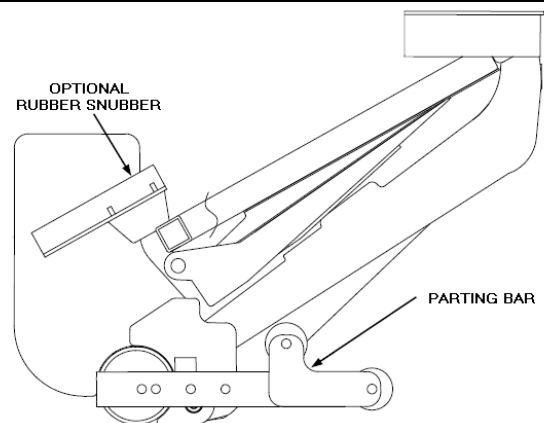
Installation

INSTALLATION OF PARTING BAR

IMPORTANT:

Install parting bar and optional rubber snubber before attempting to fold platform and raise to stored position.

NOTE: Rubber snubbers are NOT required to hold the gate during transit but are available as an optional feature when desired.



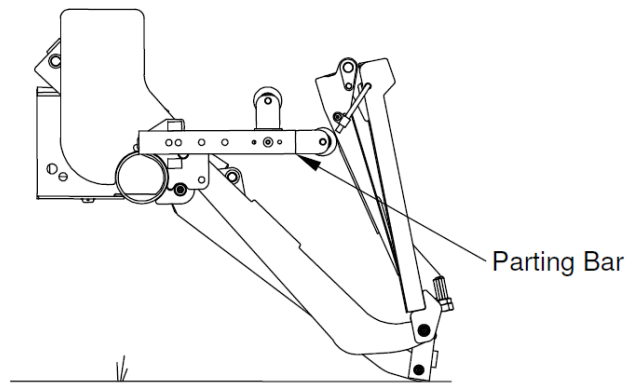
GR02667

To assist in opening of the platform:

Locate parting bar using correct holes based on platform and bed height of vehicle (see below).

Bolt into position. Torque to only 40-50 ft-lbs.

Check opening and closing operation of platform.



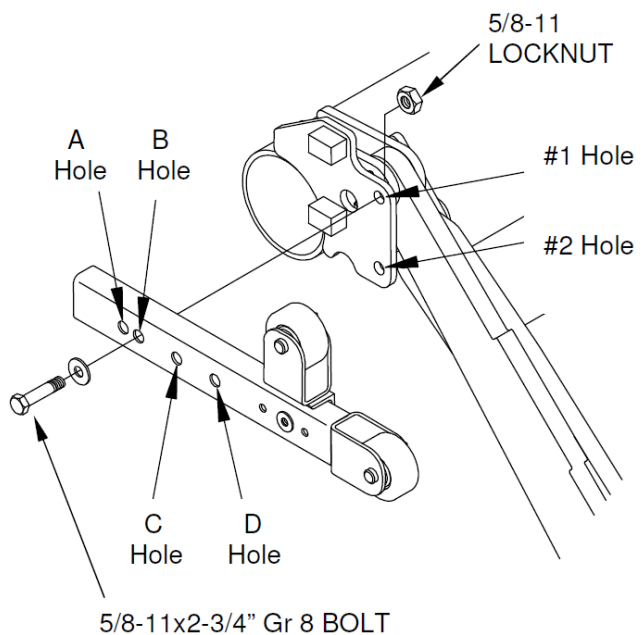
GR02667



Platform is to lean in towards parting bar when at ground. It is not to fall open to ground.

Install parting bar using #1 or #2 hole on mount tube, and A, B, C, or D hole in parting bar as indicated.

Platform Depth	Bed Height	A-dim	Holes
48" Wedge	37" - 43"	19"	2 - A
50" Wedge	39" - 43"	19"	2 - A
ALL	44" - 45"	24" & 26"	1 - A
ALL	46" - 49"	24" & 26"	1 - B
ALL	50" - 56"	24" & 26"	2 - D



GR02668

IMPORTANT:

Improper installation of parting bar can result in damage to the liftgate platform by powering into the chassis frame of vehicle.

Chapter 4

Installation

ADJUST PLATFORM ANGLE

Lower platform until stop blocks hit ground.

NOTE:

On higher bed heights stop blocks may not reach ground.

Tip of platform should touch ground without platform breaking (starting to fold) as shown in top drawing.

If platform tip is off the ground, adjust platform down until it reaches ground.

Be sure both adjusting bolts are adjusted the same.



Always secure jam nuts after any adjustment is made.

Raise platform back to bed level to check kick-up of platform.

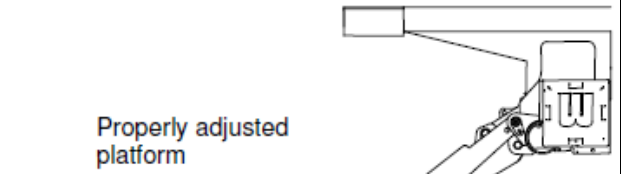
NOTE:

If kick-up is too little, or too great, it may be due to bed height of vehicle. Different stop blocks may be required to achieve desired kick-up.

The larger the stop block hole spacing, the more tilt-up the platform will achieve at bed height.

See bed height range and stop block recommendations in Chapter 3 of this manual.

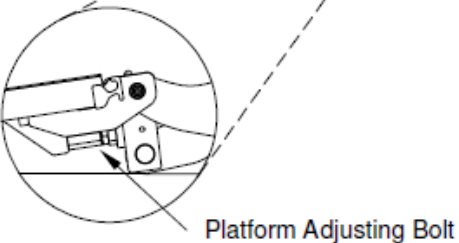
For additional assistance, contact Waltco Tech Support.



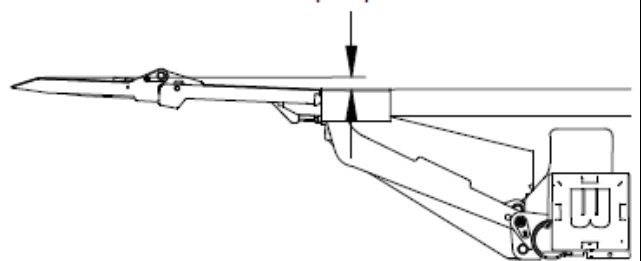
Platform off ground
adjust platform down



Platform breaking
adjust platform up



Kick-up of platform



GR02816 GR02817

Chapter 4

Installation

INSTALLATION OF OPTIONAL RUBBER SNUBBER

NOTE: Rubber snubbers are NOT required to hold the gate during transit but are available as an optional feature when desired.

Raise platform up 1" below the bed extension as shown.

NOTE:

Take care not to fully raise platform so as to contact chassis frame and damage paint on platform.

Locate rubber snubber flat against deck tube or against the aluminum extrusion as shown.

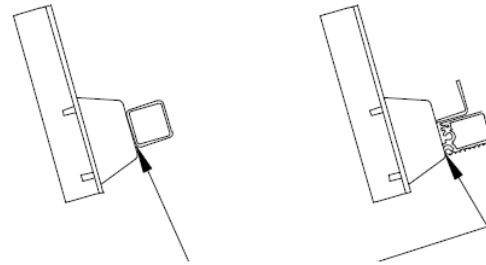
Weld snubber in place and check operation:

- Check that snubber holds platform tight
- Check that platform clears snubber while opening.

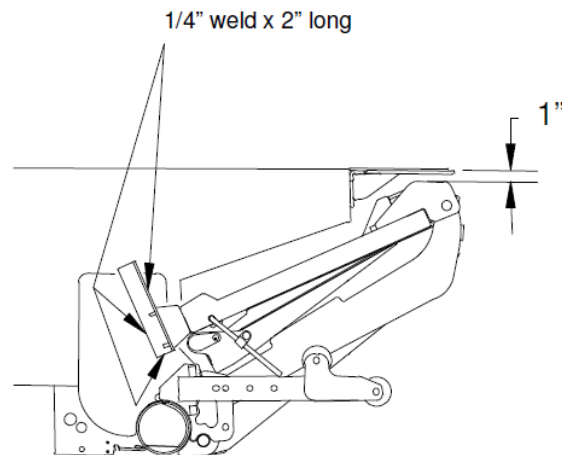
NOTE:

Weld snubber to mount plate or chassis frame as required. Steel angle of snubber may be trimmed as needed.

After installing parting bar and snubber, carefully run liftgate up to stored position and verify platform clears the chassis frame cutout (see beginning of this chapter).



Locate snubber flat against platform cross tube or against the aluminum extrusion as shown



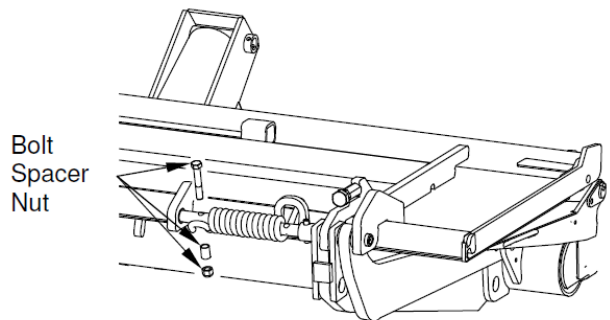
GR02691

RE-ASSEMBLY OF SPRING BOLT(S)

If spring retainer bolt(s) were removed earlier, fold platform and raise to horizontal position.

Re-install 1/2" bolt(s), nut(s), and spacer(s) as shown.

Torque bolts to 110 ft-lbs.



GR02925

Chapter 4

Installation

Waltco offers two suggestions for the installation of the vehicle taillights. We believe these suggested locations meet D.O.T. regulations but do not warrant that they do. Your installation of the vehicle taillights should meet all applicable regulations and requirements. This is in no way to infer that these suggestions are the only correct method of installing taillights.

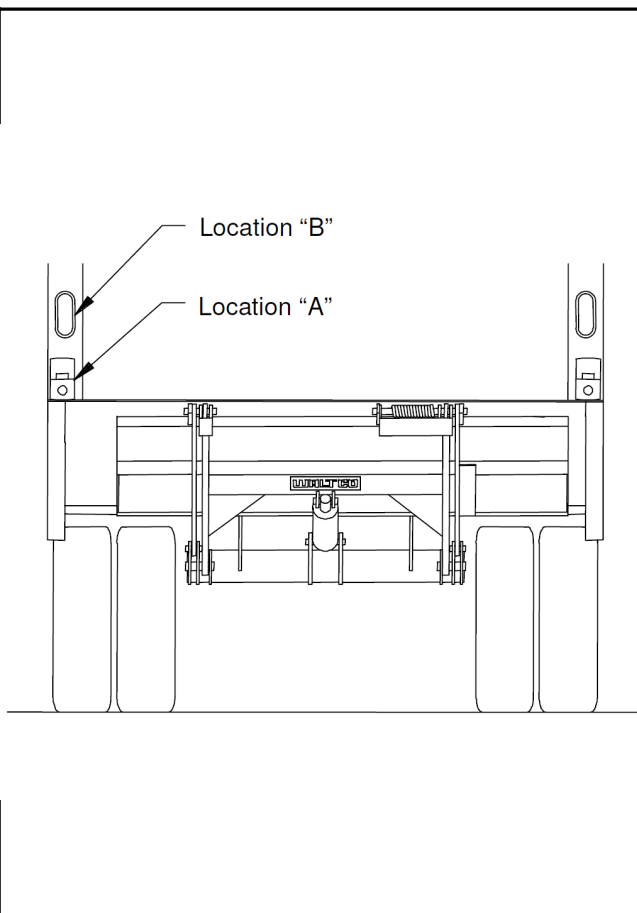
Location "A": Mount lights above bed extension and to the rear of the body rear corner posts.

Location "B": Mount lights into rear corner posts.

Waltco also offers dock bumpers with lights pre-installed.

IMPORTANT:

All lights must be installed in accordance with all applicable D.O.T. regulations.



GR02762

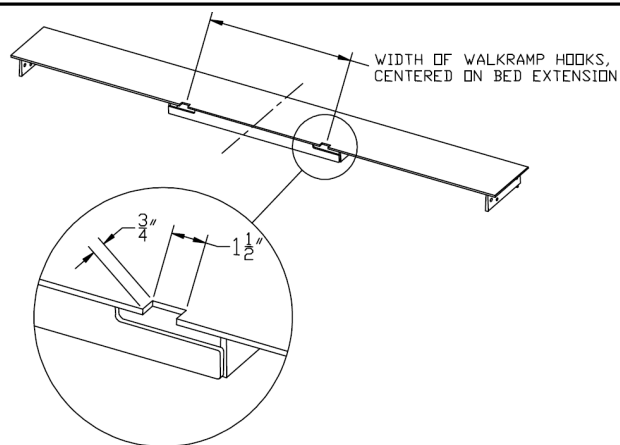
NOTCHING FOR WALK RAMP

If walk ramp is being added:

Measure walk ramp hook spacing.

Using this measurement, center it on the bed extension and mark where the walk ramp hooks will rest.

Notch the bed extension as shown.



GR02635

Dock Bumper Top Bolt Installation

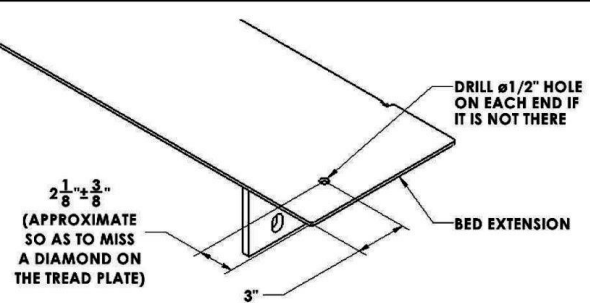
80101736

If installing gate with walkramp, see page 49 for bed extension and dock bumper installation instructions.

If bed extension does not have holes on top tread plate, then add half inch holes as shown.

2-1/8" ± 3/8" dimension is approximate, so that hole center is 7/16" away from a diamond edge.

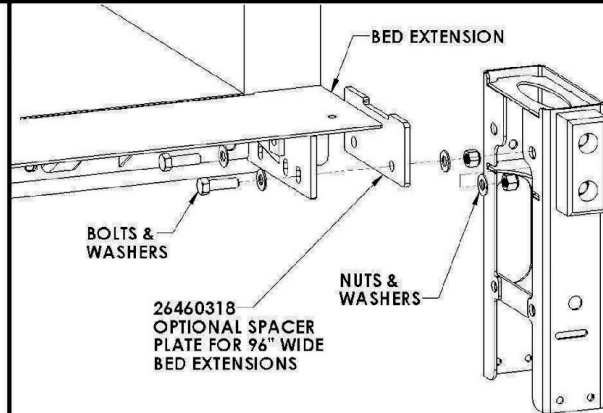
If you cannot avoid diamonds, grind them off.



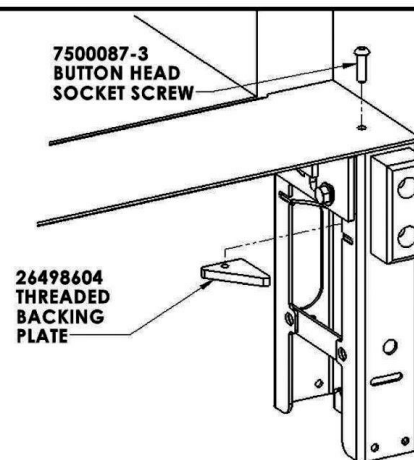
INSTALL DOCK BUMPERS

Bolt bumpers to bed extension using four 5/8" bolts, washers and nuts.

Torque bolts to 167-179 ft lbs.



Bolt bumper through top of bed extension with button head socket cap screw and backing plate by holding backing plate inside of bumper.



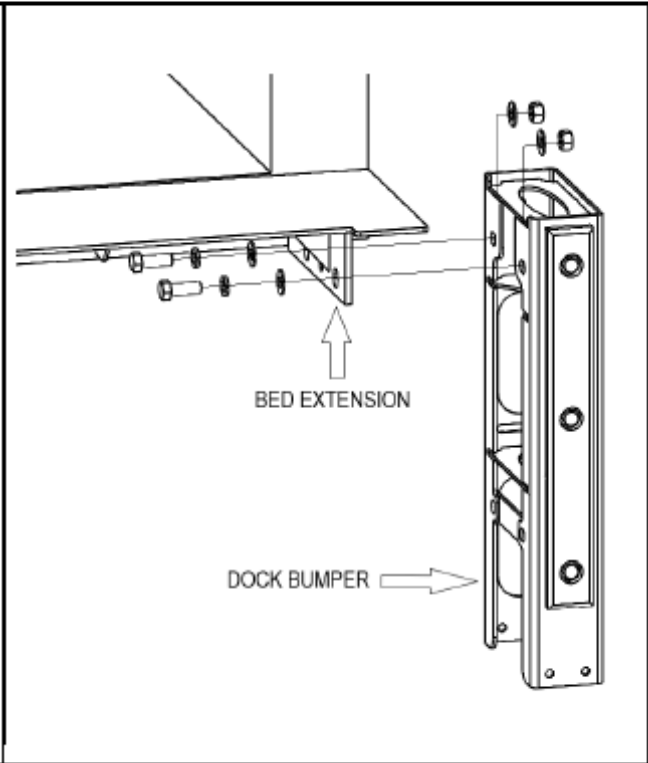
Dock Bumper Installation

80101732

INSTALL DOCK BUMPERS – 102" WIDE

Bolt bumpers to bed extension using four 5/8" bolts, washers, lock washers, and nuts.

Torque bolts to 167-179 ft. lbs.

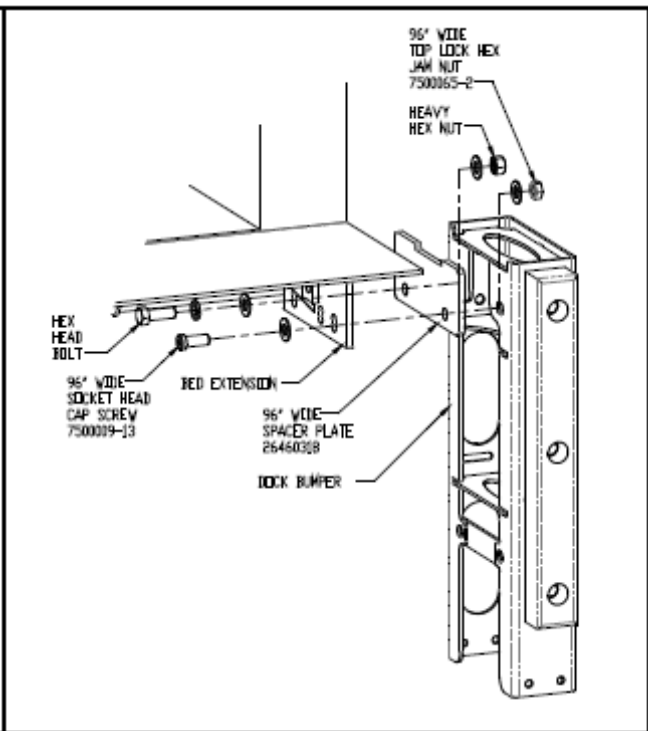


INSTALL DOCK BUMPERS – 96" WIDE

Ensure Spacer Plate is between Dock Bumper and Bed Extension.

Bolt bumpers to bed extension using supplied bolts, washers, and nuts.

Torque bolts to 167-179 ft. lbs.



Dock Bumper Installation

80101732

INSTALL BRACES ON TWO STEP BUMPER

Bolt brace and support angles as shown.

Support angle to span a minimum of 3 or 4 crossmembers.

Note:

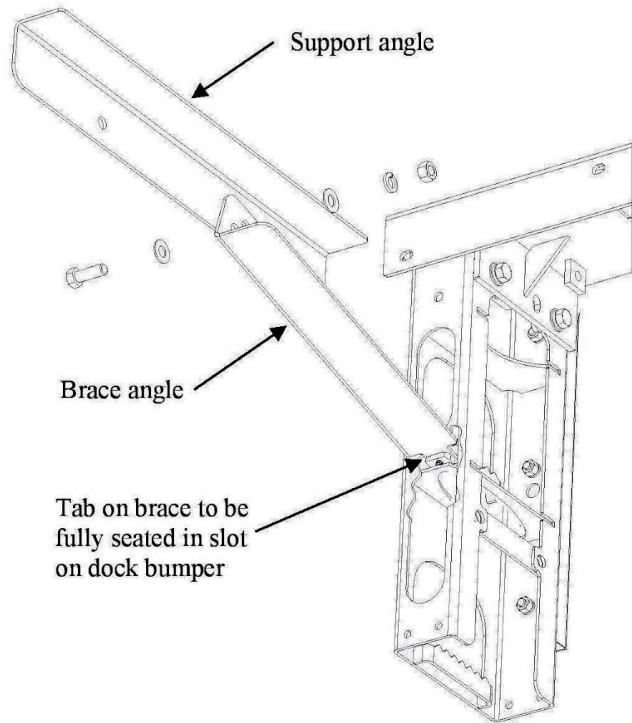
It may be necessary to trim rearward end of support angles to clear rear sill and/or dock bumper.

Weld support angles to all crossmembers it contacts with minimum four (4) inches of 3/16" weld total.

Insert brace angle into dock bumper then install 3/8" bolt and nut into brace angle. Attach brace angle to support angle with 5/8" bolts before tightening 3/8" bolt.

Torque 5/8" bolts to 167-179 ft. lbs.

Torque 3/8" bolts to 39-47 ft. lbs.



INSTALL BRACES ON ONE STEP BUMPER

Bolt brace and support angles as shown.

Support angle to span a minimum of 3 or 4 crossmembers.

Note:

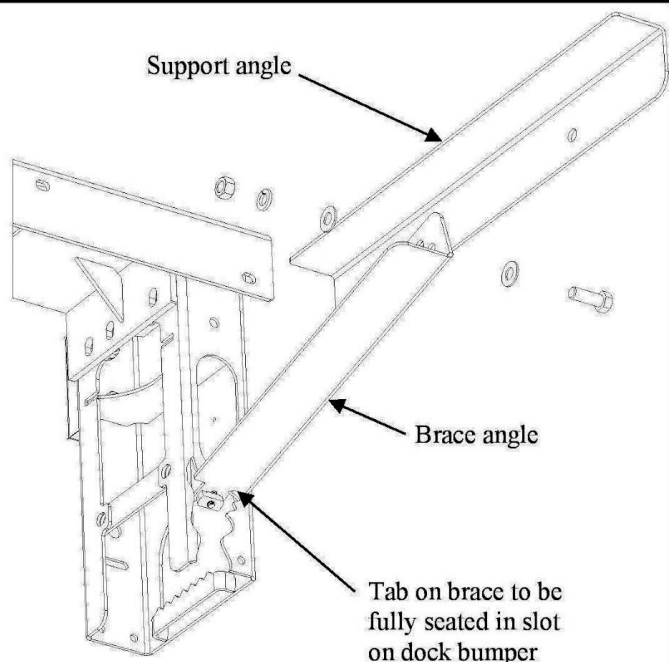
It may be necessary to trim rearward end of support angles to clear rear sill and/or dock bumper.

Weld support angles to all crossmembers it contacts with minimum four (4) inches of 3/16" weld total.

Insert brace angle into dock bumper then install 3/8" bolt and nut into brace angle. Attach brace angle to support angle with 5/8" bolts before tightening 3/8" bolt.

Torque 5/8" bolts to 167-179 ft. lbs.

Torque 3/8" bolts to 39-47 ft. lbs.



Dock Bumper Installation

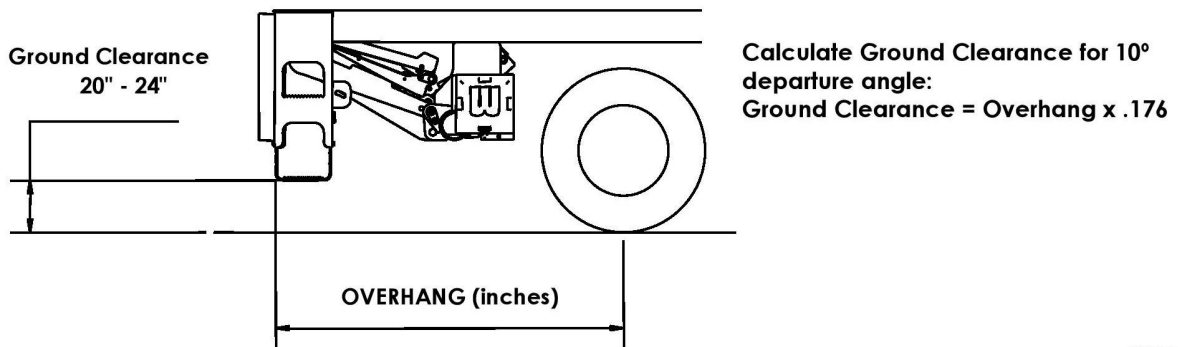
80101732

After installation of dock bumpers, ground clearance needs to be considered. If dock bumper steps are too low, they may hit the ground when driving in or out of driveways, etc.

Adjust dock bumper steps to achieve recommended ground clearance of 20" – 24" as shown below.

Note: Overhangs greater than 11 feet may need dock bumper steps set higher to maintain a 10° departure angle. Use formula below to calculate ground clearance.

Bed heights below 46" may require the lower step to be completely removed to achieve sufficient ground clearance.



GR02896

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Rev 01
12/02/2020

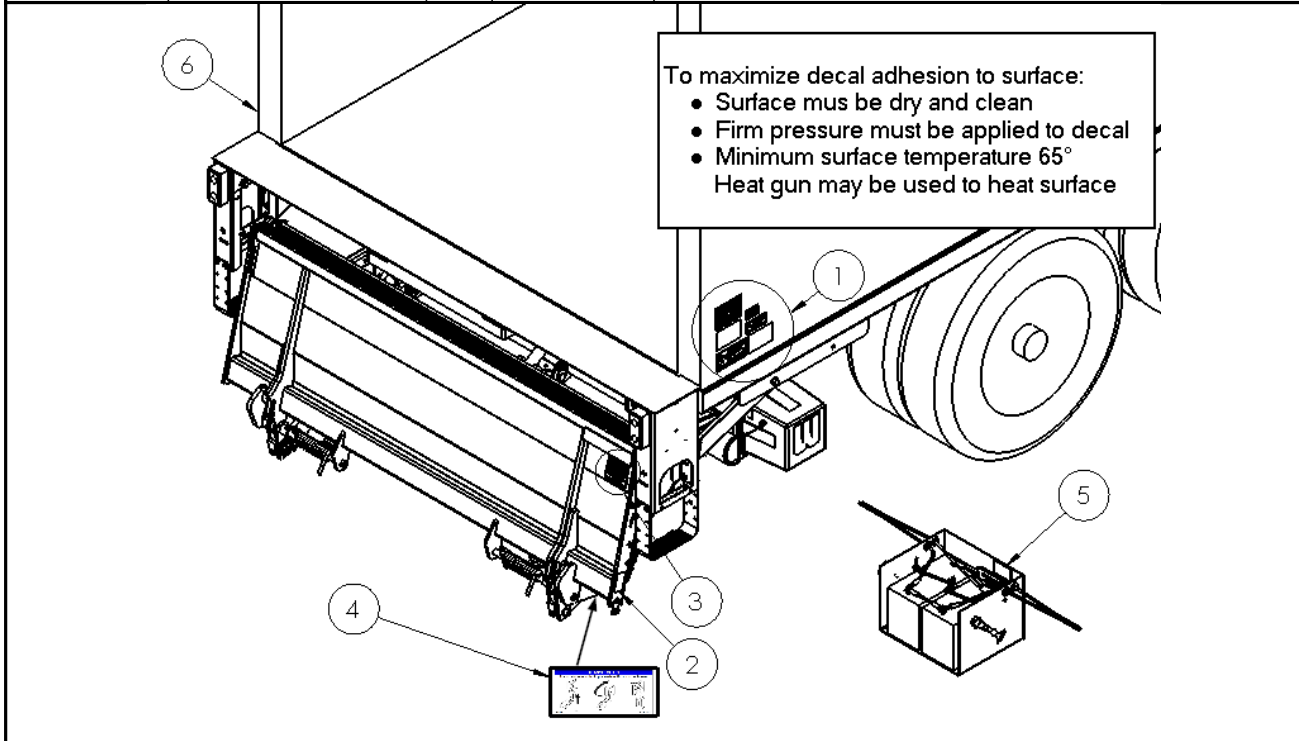
Chapter 5

Placement of Decals



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

ITEM	DECAL	QTY	PART NO.	LOCATION
1	Safety Instructions	1	80100850	<p>Locate in a conspicuous place near controls.</p> <p>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.</p>
	Operation	1	80101528	
	Hazard	1	80101370	
	Important	1	80100828	
	Stand Clear	1	75089296	
	Thermal Switch	1	80101480	
2	Capacity - 2500 lb	1	80100255	<p>Locate on curbside of platform.</p> <p>(Position so as to be read when platform is open)</p>
	Capacity - 3300 lb	1	80100585	
3	Use Handle	1	75089295	<p>Locate near platform handle.</p> <p>(Position so as to be read when platform is being unfolded into loading position)</p>
	Stand Clear	1	75089296	
	Capacity - 2500 lb	1	80100255	
	Capacity - 3300 lb	1	80100585	
4	Transit Chain	1	80101517	<p>Locate on back of deck on curbside.</p> <p>(Visible when platform is stored)</p>
5	Circuit Breaker	1	80100829	<p>Locate next to liftgate circuit breaker.</p> <p>In applications where more than one circuit breaker is used, this decal must be placed in both locations</p>
6	Stand Clear	1	75089296	<p>Locate on drivers side of vehicle body near liftgate.</p>



GR02655

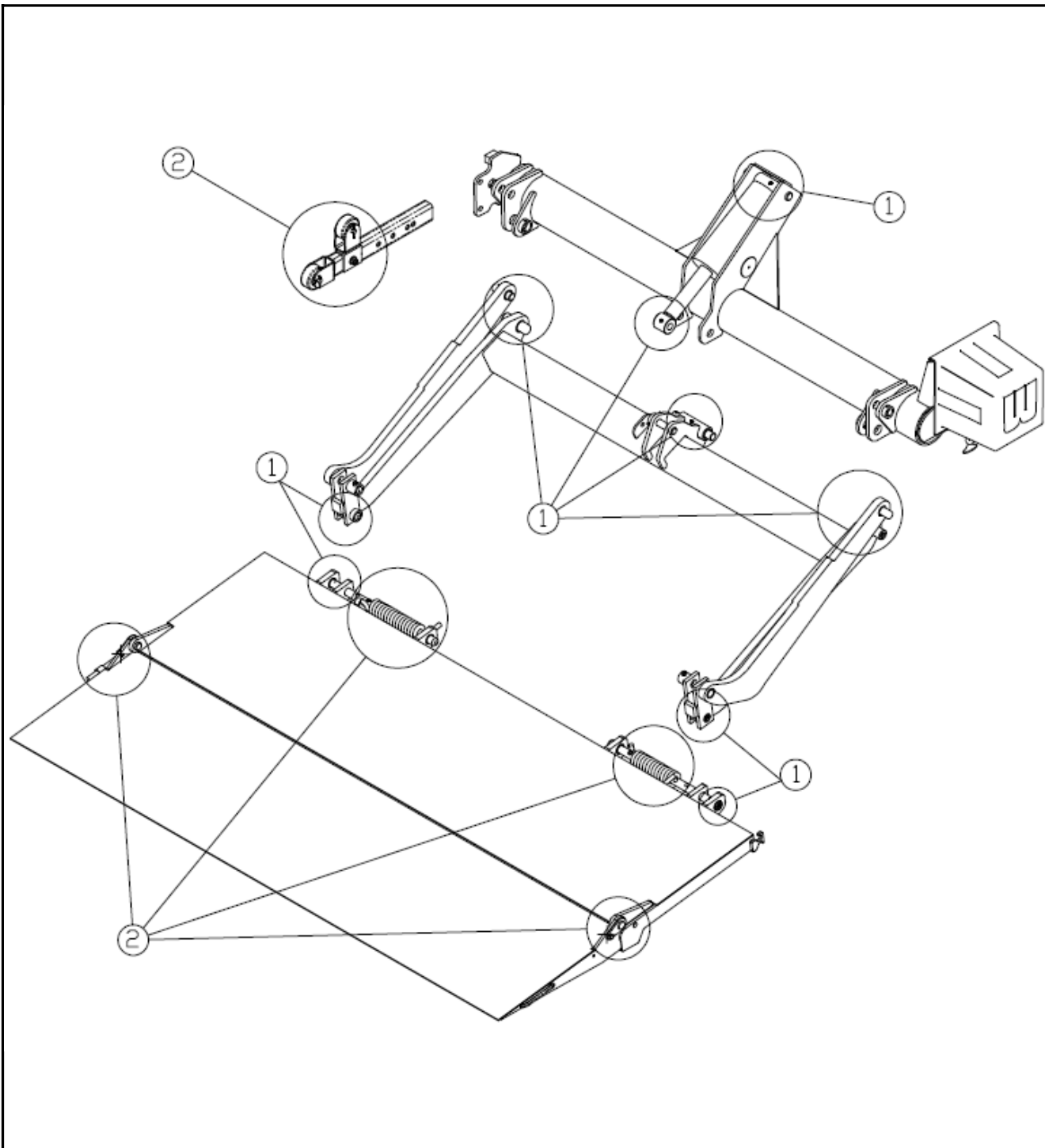
Chapter 6

Lubrication Instructions

The liftgate should be lubricated every 120 days.

#1 - Grease all grease fittings in pins, arms, and cylinder with grease gun.

#2 - Oil with a light weight machine oil (do not use on bearings in platform).



GR02676

Chapter 7

Final Inspection Sheet

IMPORTANT:

All of the following are to be checked and verified before installation is complete.

- A. Is grade 8 bolt installed through collar and upper cylinder pin and retained with self-locking nut?
- B. Are all pivot pins secured with retaining bolt and lock washer?
- C. Are all roll pins securely in place?
- D. Does liftgate fold and unfold properly?
- E. Does the platform meet the vehicle properly?
- F. Is transit chain installed on bed extension?
- G. Do controls operate properly?
- H. Are bed extension, mount frame, mount plates, dock bumpers, bumper braces, taillight guards, and taillights all bolted tight and/or finish welded?
- I. Are hydraulic hoses and fittings properly connected with no leaks?
- J. Are battery cables attached and clamped tight?
- K. Is 150 amp circuit breaker installed at battery?
- L. Are all electrical connections coated with dielectric grease?
- M. Has hydraulic system been properly bled of all air?
- N. Is pump reservoir full of oil?
- O. Are all parts properly lubricated according to the lubrication instructions?
- P. Do lights operate properly (Note: Lights must be installed in accordance with all applicable state and federal D.O..T. regulations.
- Q. Is license plate properly installed?

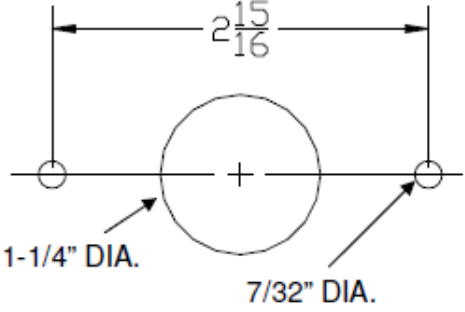
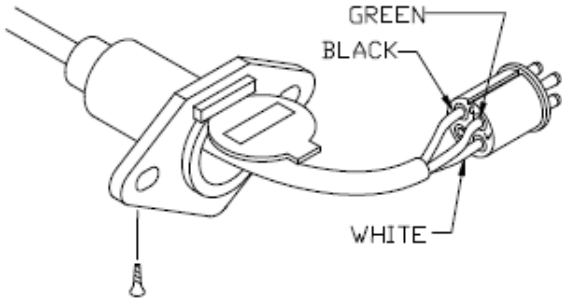
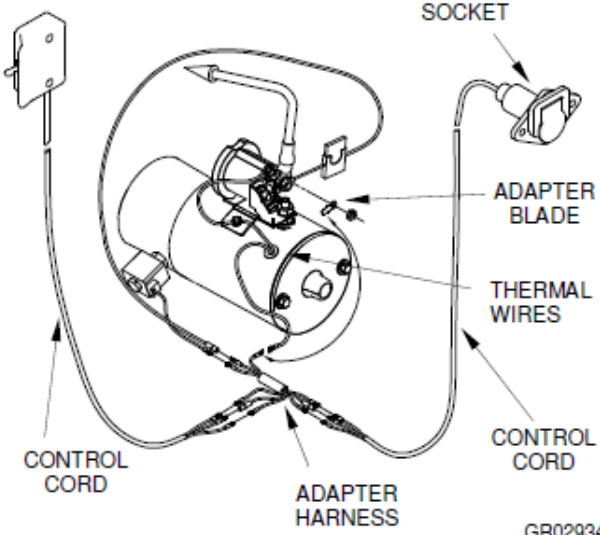
- R. Are all decals properly in place and legible according to the decal placement drawings?
- S. Is pump cover installed and securely latched?
- T. Is the owner's manual in the vehicle?
- U. If installed, does cycle counter add a cycle each time lower switch is activated and held on for 4 seconds or longer?

WARNING



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 facility.

Hand Held Remote Installation

<p>DRILL SOCKET HOLES</p> <p>Using dimension shown, drill mounting holes in desired location for socket.</p>	 <p style="text-align: right;">GR00036</p>
<p>INSTALL SOCKET</p> <p>Assemble socket as shown.</p> <p>Install wires according to colors: W = White (Raise) B or BK = Black (Lower) G = Green (Power)</p>	 <p style="text-align: right;">GR02240</p>
<p>CONNECT WIRES TO PUMP UNIT</p> <p>Route Control Cord into pump enclosure.</p> <p>First connect Pump wires to Dual Control Adapter Harness as shown.</p> <p>Connect both Control Cords to other ends of Adapter Harness as shown.</p> <p>Note! Match wire connections male to female. Color of wire may vary.</p> <p>If motor does not have Thermal Wires, plug Adapter Harness into Adapter Blade.</p>	 <p style="text-align: right;">GR02934</p>

BATTERY KIT INSTALLATIONS

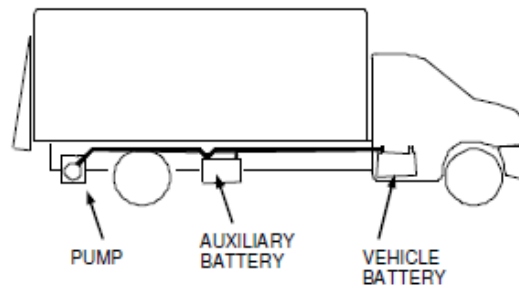
80101387

DETERMINE BATTERY AND PUMP LOCATION, AND CABLE ROUTING

Determine where pump unit and battery box will be located. Make certain hydraulic hoses supplied will reach pump.
Your installation may use only one cable supplied with liftgate, or, it may also use a cable supplied with the trailer kit.

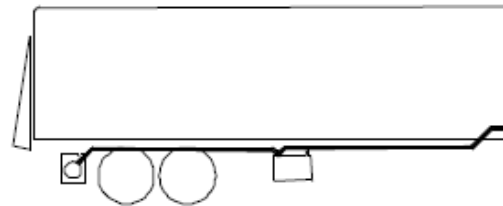
Truck with auxiliary batteries:

Cable supplied with liftgate will be cut into two lengths to reach from pump to auxiliary batteries and to vehicle batteries.

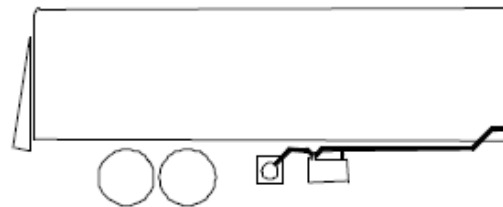


Trailer with auxiliary batteries:

Use cable supplied with liftgate from pump to auxiliary batteries.
Use cable supplied with trailer kit from auxiliary batteries to nose of trailer.



Note: Auxiliary batteries on trailers are to be mounted "mid-ship" on the trailer.



GR01389

BATTERY KIT INSTALLATIONS

80101387

BATTERY AND PUMP BOX INSTALLATION

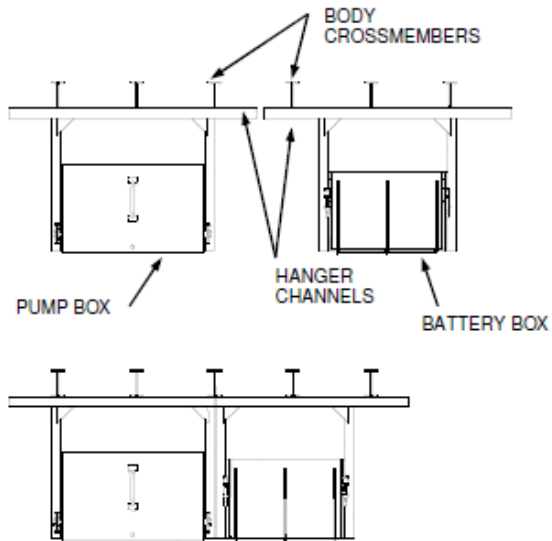
Locate battery box and pump box in a suitable location under the vehicle body (refer to previous page.)

Weld hanger channels to body crossmembers.

Hint:

To save space, hanger channels can be cut down and boxes moved closer together as shown.

Install batteries.



GR01390

INSTALLATION OF BATTERY CABLE

Install battery cable supplied with liftgate to the pump starter solenoid.

For trucks:

Route cable to vehicle batteries, cut to desired length.

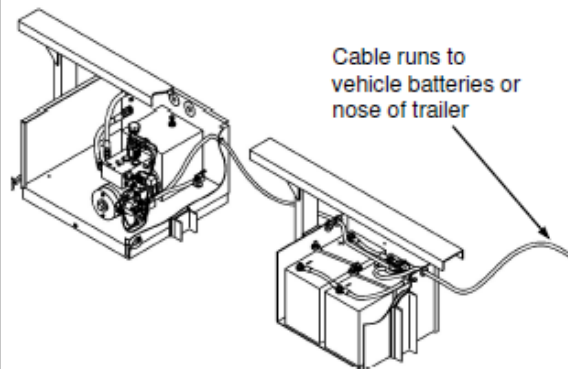
Cut cable to reach auxiliary batteries, and cut remaining piece to reach from auxiliary batteries to vehicle batteries.

For trailers:

Route cable to auxiliary batteries, cut to desired length.

Use cable supplied with trailer kit and route from auxiliary batteries to nose of trailer.

NOTE: Do not connect cables to any batteries at this time.



GR01391

BATTERY KIT INSTALLATIONS

80101387

INSTALLATION OF TERMINAL LUG

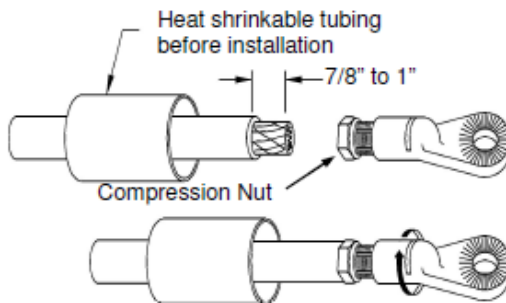
Strip 7/8" to 1" of insulation from end of cable.

Slide heat shrinkable tubing onto cable.

Insert bare wire into compression nut until it seats.

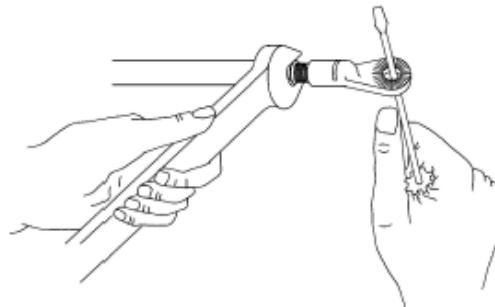
NOTE: Be sure to use correct compression nut, use 2 gauge nut for 2 gauge cable, use 0 gauge nut for 0 gauge cable.

Note: Copper wire should be flush with, or slightly past nut



GR00299

Grip nut with wrench and turn terminal until nut seats



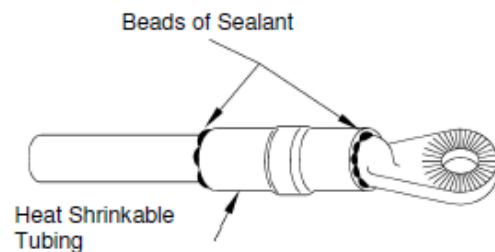
GR00300

Position heat shrinkable tubing over terminal and end of cable

Shrink tubing using electric heat gun or torch.

Note: To reduce chance of damaging tube and cable, a heat gun is recommended

Apply sufficient heat to produce thin bead of sealant all around tube edges



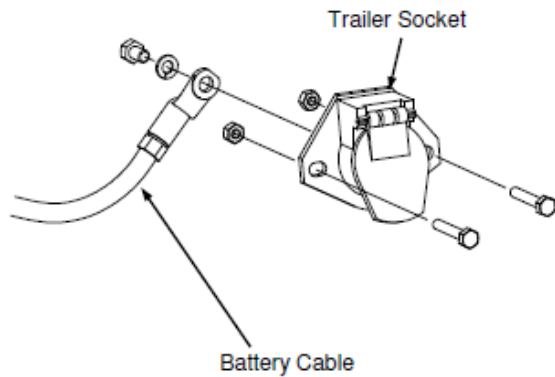
GR00301

BATTERY KIT INSTALLATIONS

80101387

INSTALLATION OF SOCKET

Drill 1-3/4" hole in nose of trailer for trailer socket.
Mount socket to trailer with bolts and nuts provided.
Attach cable to back of socket with bolt provided.
Apply a generous amount of Dielectric Grease over cable terminal.

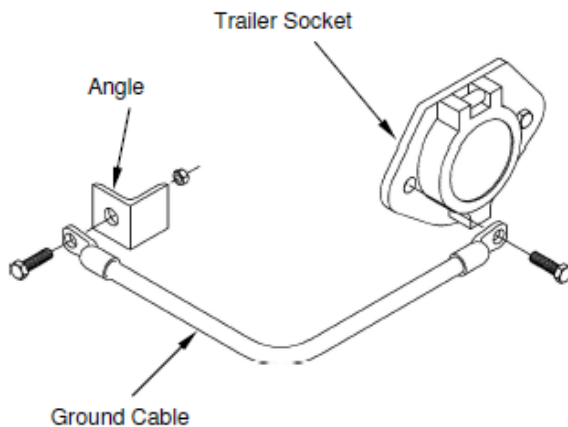


GR02739

Ground trailer socket to main structure of trailer.

Use the 18" ground cable, supplied, and bolt it to the trailer socket and suitable structure on the nose of the trailer.

An angle has been provided, it can be used by welding it to the crash plate, or other suitable structure.



GR01414

BATTERY KIT INSTALLATIONS

80101387

INSTALLATION OF CIRCUIT BREAKER(S)

Auxiliary batteries on a truck will require circuit breakers at both the auxiliary batteries and the vehicle batteries.

Locate and mount 150 Amp circuit breaker directly to batteries using copper terminal link supplied.

Circuit breaker must be mounted to give good protection against any objects coming into contact with circuit breaker terminals and causing a short. Position must also be readily accessible to reset breaker.

Note: Circuit Breaker is to rest solidly on battery to prevent vibration during transit.

If unable to connect circuit breaker direct to batteries, an optional 24", maximum length, 2 Ga. battery cable may be used.

Connect end of battery cable from liftgate to Terminal Link attached to circuit breaker.

Apply a generous amount of Dielectric Grease to all Positive (Hot) Battery terminals and Circuit Breaker terminals.

Secure all battery cables to chassis frame with cable ties provided.

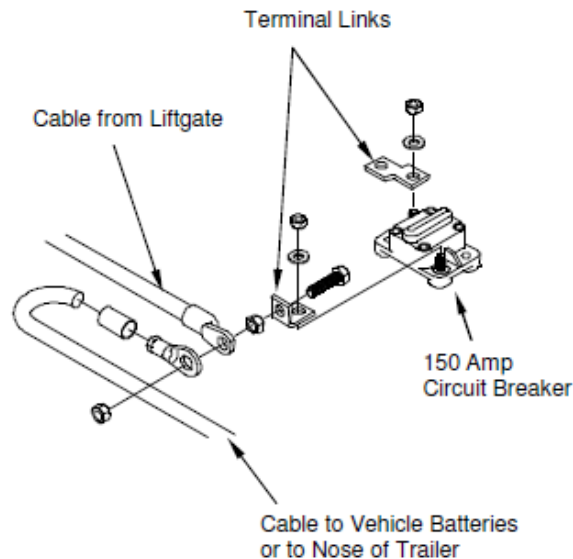
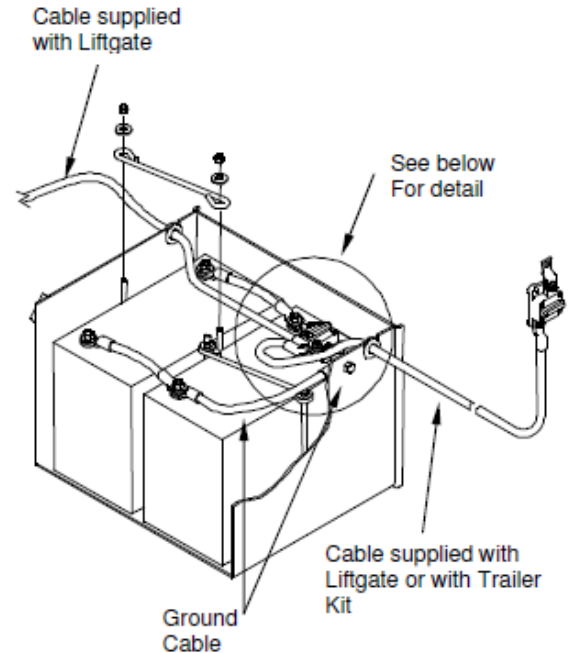
NOTE: Original equipment ground cable furnished on vehicle should be at least a number 2 ga. to insure proper operation of pump unit. An auxiliary ground cable should be added between engine block and chassis frame if engine is not adequately grounded to chassis frame. When there are two or more batteries, all cables connecting batteries together must be 2 ga. or heavier. This includes all original equipment batteries on vehicle.



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.



GR01413



Dual Control Switch, Installation Instructions

For Kit 80000437

Note: Kit may include additional parts not used in all installations

Locating and Mounting Switch

Locate a position for Switch such that operator has a clear view of entire Platform area and will not be in the area that liftgate passes through.

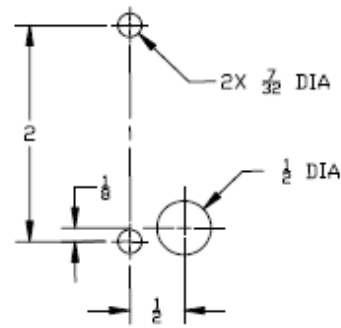
IMPORTANT

Verify that Control Cord is long enough to reach pump unit before advancing to the next step.

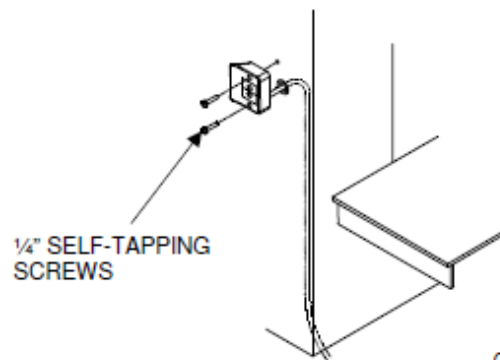
Using Switch Mounting Template or diagram to the right, drill two fastener holes with a 7/32" drill bit.

If Control Cord will be run through a hole in the side of the truck, drill 1/2" dia hole and remove all sharp edges and insert a grommet.

Mount Switch with 1/4" Self-tapping screws provided.



GR02652



GR02653

Route Control Cord into pump enclosure.

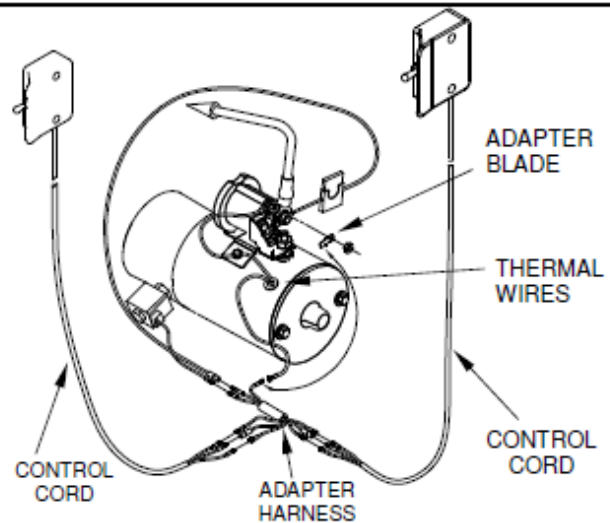
First connect Pump wires to Dual Control Adapter Harness as shown.

Connect both Control Cords to other ends of Adapter Harness as shown.

NOTE:

Match wire connections male to female. Color of wire may vary.

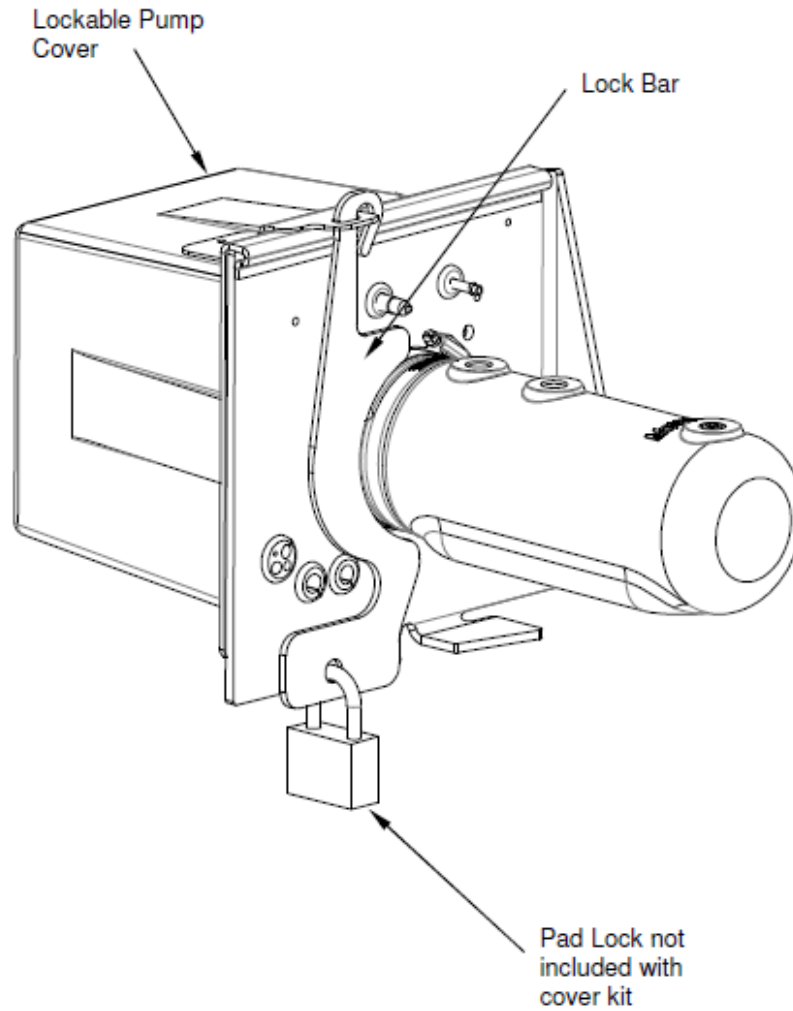
If motor does not have Thermal Wires, plug Adapter Harness into Adapter Blade.



GR02935

Theft Deterrent

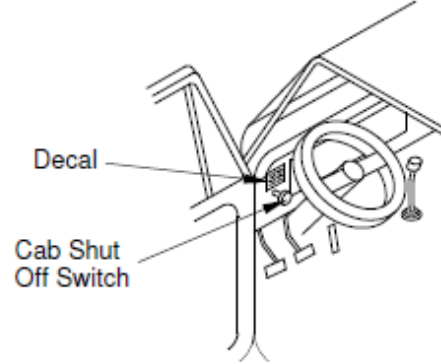
PUMP UNIT THEFT DETERRENT OPTION



GR10055

Installation of Cab Shut Off Switch

Install cab shut off switch and shut off switch decal in convenient location in vehicle cab.

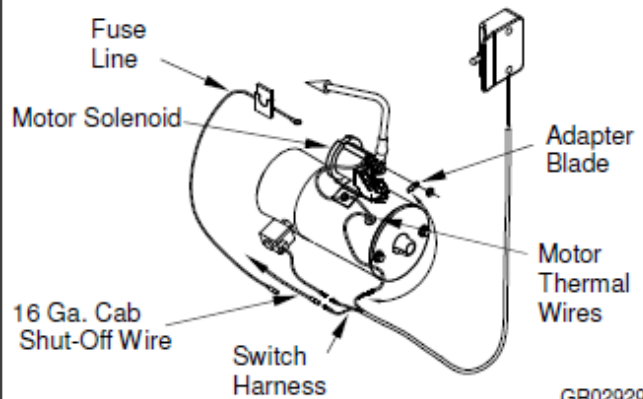


GR00379

Remove fuse line from motor solenoid. Unplug fuse line from switch harness and save for later installation.

Plug green 16 ga. x 40 ft. cab shut-off wire into switch harness.

Note:
If motor does not have Thermal Wires, plug switch wire into Adapter Blade.



GR02929

Run green 16 ga. x 40 ft. cab shut-off wire to cab shut-off switch.

Cut off excess wire and connect to cab shut off switch with supplied #10 ring terminal.

Re-using the fuse line, plug into excess 16 ga. wire.

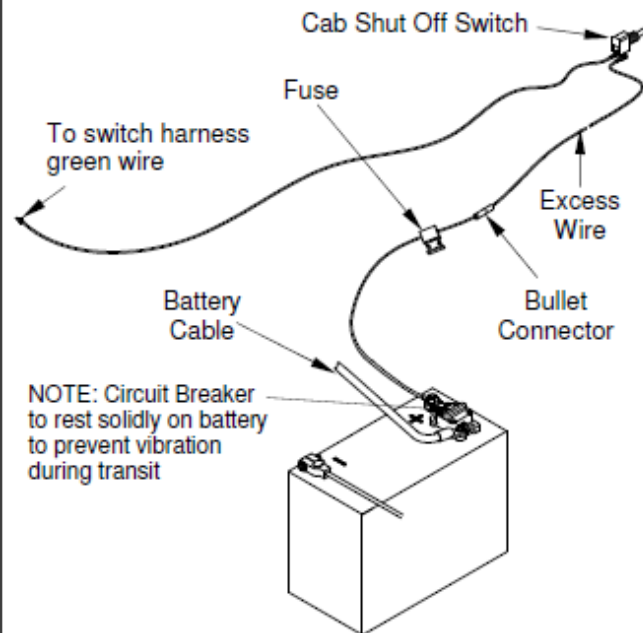
Run excess 16 ga. wire from vehicle battery to cab shut off switch. Fuse end to be toward battery.

Note: Do not connect to battery at this time.

Connect 16 ga. wire to cab shut off switch with supplied #10 ring terminal.

Connect fuse line to battery with attached 3/8" ring terminal.

Important: Heat shrink all connectors.



GR00716

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EM WALK RAMP KIT INSTALLATION INSTRUCTIONS

EM WALK RAMP KIT

*This kit is for bed height ranges of 44" fully laden to 56" empty.

**Additional bed height restrictions may apply.

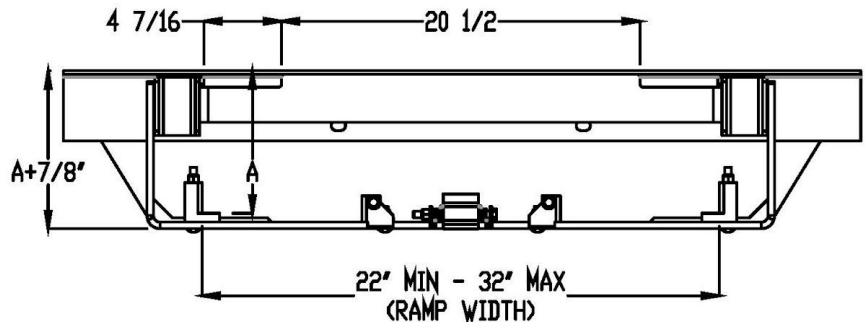
Walk Ramp Clearances

Check clearances prior to installing walk ramp kit.

Note Walk Ramp "A" Dim

Remove any items that cause interference.

This kit includes Walk Ramp Latch, Up-Stop Spacers, Up-Stops, Dock Bumper Spacers, Bracket Spacer, and Walk Ramp Bracket.



GR10125

Assemble Walk Ramp Bracket and Up-Stops to Bed Extension

Bolt Bracket Spacer to Bed Extension. Bolt Walk Ramp Bracket to Bracket Spacer, as shown, with supplied 3/8" bolts, nuts, and washers. See chart on next page.

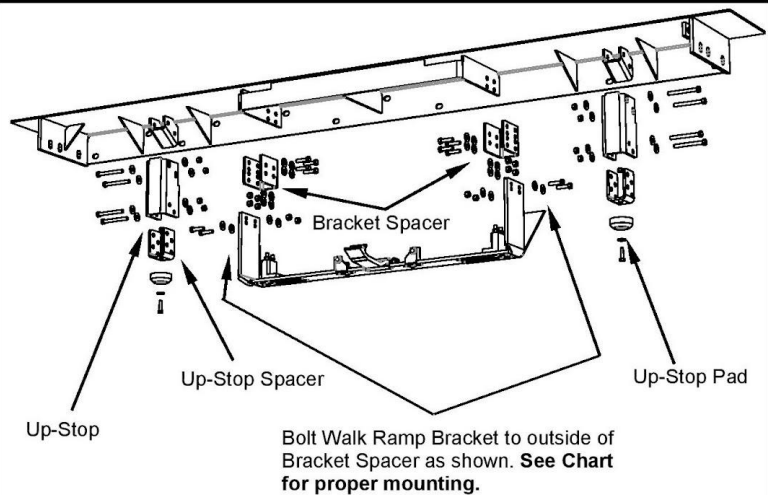
Note: Walk Ramp Bracket goes outside of Bracket Spacer.

Bolt on Up-Stop Spacer to Bed Extension, as shown, with supplied 3/8" bolts, nuts, and washers.

Bolt Up-Stop Pad to Up-Stop, as shown, with supplied 5/16" bolts, nuts, and washers.

Note: Failure to locate up-stop pads will result in damage to liftgate and walk ramp.

Bolt Up-Stop to Up-Stop Spacer, according to instructions on following page, with supplied 3/8" bolts, nuts, and washers.



GR10127

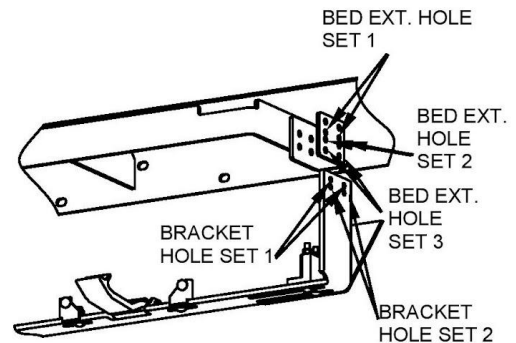
EM WALK RAMP KIT INSTALLATION INSTRUCTIONS

Mounting Chart for Walk Ramp Bracket

Based on the walk ramp "A" dim and type of walk ramp, mounting the walk ramp bracket varies slightly.

Walk Ramp Type	A = 8-1/2"		A = 9"	
	Bracket Hole Set	Bed Ext. Hole Set	Bracket Hole Set	Bed Ext. Hole Set
Standard	2	1	1	1
Spring Assist	2	2	1	2

IMPORTANT: For every inch the walk ramp is lowered beyond 8-1/2", the equal amount must be added to minimum laden bed height.



GR10126

Additional Spacers

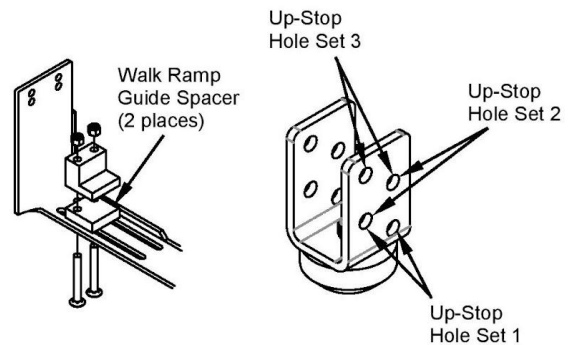
If "A" dim is 8-1/2" with standard walk ramp, use Up-Stop Hole Set 1.

If "A" dim is 8-1/2" with spring assist walk ramp, add Walk Ramp Guide Spacers and use Up-Stop Hole Set 2

If "A" dim is 9" with standard walk ramp, use Up-Stop Hole Set 2.

If "A" dim is 9" with spring assist walk ramp, add Walk Ramp Guide Spacers and use Up-Stop Hole Set 3.

IMPORTANT: For every inch the walk ramp is lowered beyond 8-1/2", an equal amount must be added to minimum laden bed height.

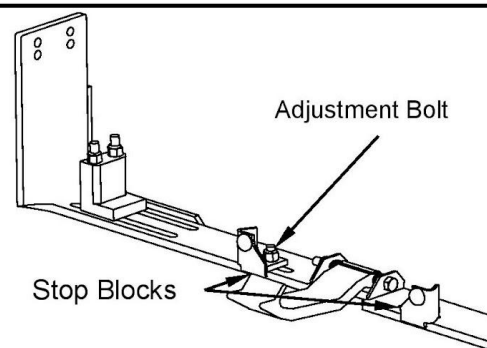


GR10121

Adjust Stop Blocks

Loosen adjustment bolts and slide stop blocks to proper width for the ramp.

Re-tighten adjustment bolts.



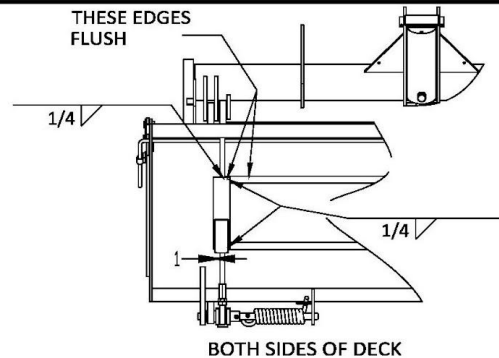
GR03008

EM WALK RAMP KIT INSTALLATION INSTRUCTIONS

Assemble Platform Brackets to Platform Frame – Steel Platform

Align and weld Platform Upstop to platform frame as shown.

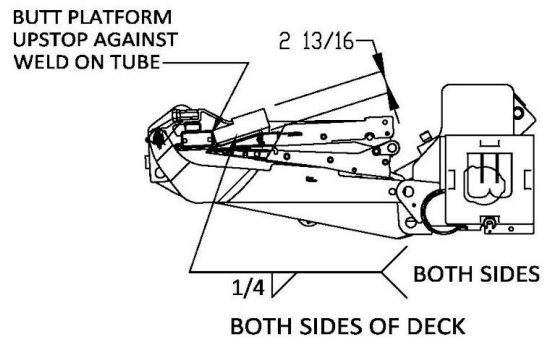
Note: Tube of Platform Upstop should be towards rear of vehicle.



GR10128

Assemble Platform Brackets to Platform Frame – Aluminum Platform

Align and weld Platform Upstop to platform frame as shown.



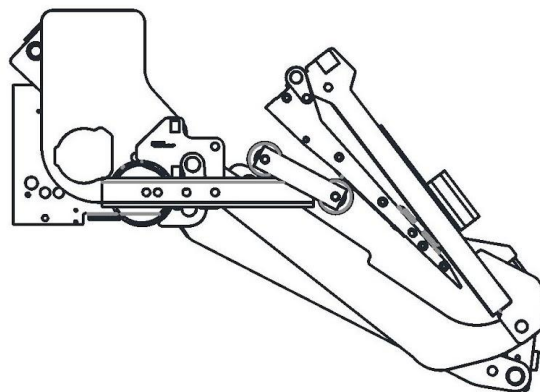
GR10128

Adjustment of Parting Bar

The Parting Bar will be located as shown to right.

Ensure that the platform does not interfere with bed extension upstops, also ensure that the platform does not lower past the vertical plane causing it to spring open. The lowered platform should look similar to the diagram to the right.

Tighten nuts and bolts to 50 ft lbs.



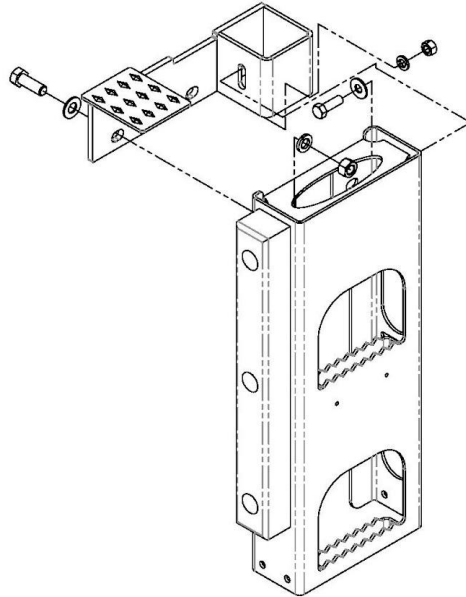
GR10124

EM WALK RAMP KIT INSTALLATION INSTRUCTIONS

Assemble Dock Bumper to Spacer

Attach Dock Bumper to Spacer with supplied 5/8" bolt, nut, and washers and 1/2" bolt, nut, and washers.

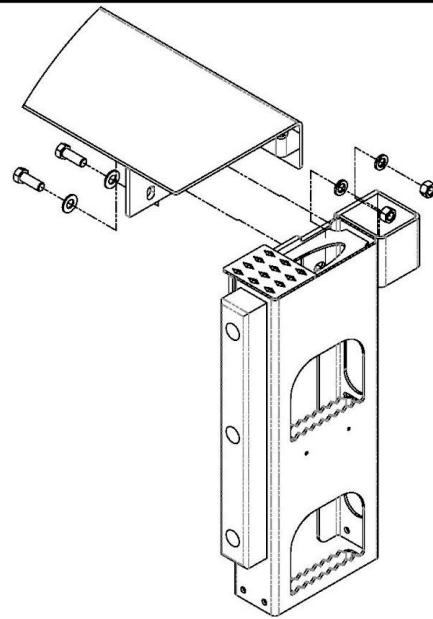
Attach Dock Bumper Spacer to Bed Extension with supplied 5/8" bolts, nuts, and washers



GR10122

Assemble Dock Bumper Spacer to Bed Extension

Attach Dock Bumper Spacer to Bed Extension with supplied 5/8" bolts, nuts, and washers.



GR10122

EM WALK RAMP KIT INSTALLATION INSTRUCTIONS

Final Inspection

After all components from Walk Ramp Kit have been installed, carefully run liftgate through a complete cycle to check for interferences.

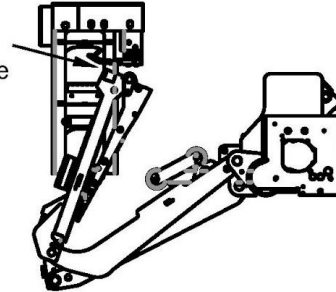
Check platform storage:

- Ensure Upstops contact Platform Brackets
- Ensure liftgate does not extend beyond Dock Bumper

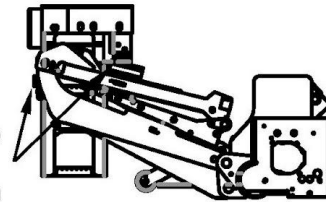
Check platform operation:

- Ensure platform does not contact Walk Ramp Bracket nor Upstops when opening and closing.
- If contact does occur, the Parting Bar was not adjusted or the bed height is too low.

Check for contact while opening & closing liftgate



Check Up-stop contact & liftgate location



GR10123

LIFTGATE INTERFACE INSTALLATION

80101257

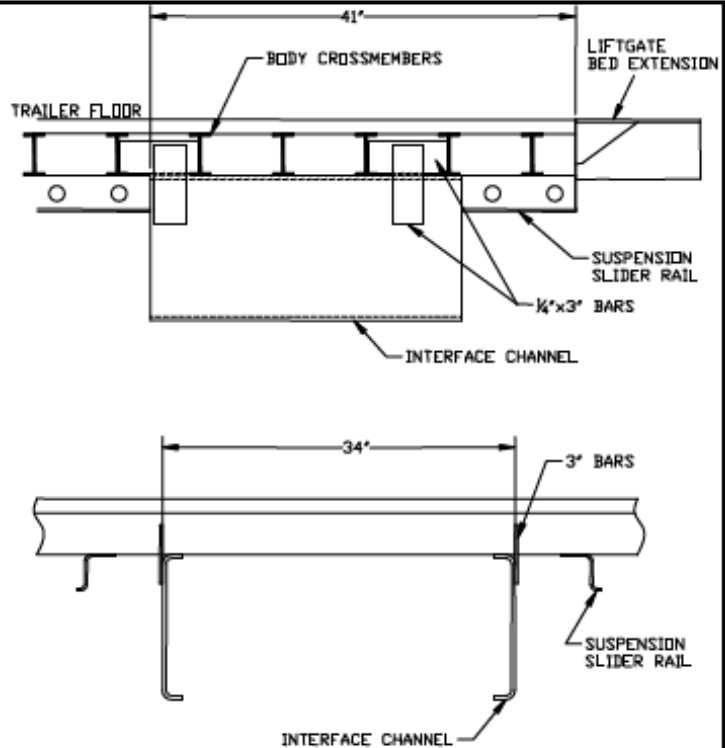
This Interface Kit is for mounting most Waltco Flipaway and Conventional liftgates to trailers with sliding rear suspensions.



This kit is not to be used for any liftgates that have a capacity rating over 4,400 pounds.

Interface channels must be welded to crossmembers as shown for adequate support of liftgate.

- Determine location of interface channels, 41" forward of rear sill, and at 34" spacing (centered on trailer).
- Weld channels to crossmembers as shown below.
- Cut four (4) of the 3" bars to fit between webs of crossmembers.
- Locate bars flush with channels and weld as shown.
- Locate and weld the additional 3" bars to tie channels and bars between crossmembers.



GR02752

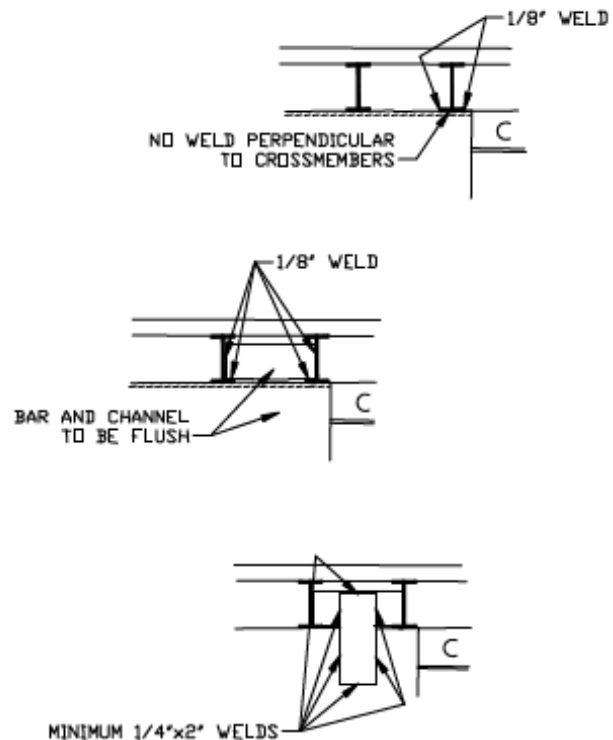
WELDING

- Weld each interface channel to minimum of four (4) crossmembers as shown above and at right.



Weld parallel to Cross Members, along top of Mounting Angles. **Never** perpendicular to Cross Members, as structural damage to the Trailer could result.

- Weld 3" bars between crossmembers at each end of interface channel as shown.
- Weld vertical 3" bars tying horizontal 3" bars and interface channels together as shown.



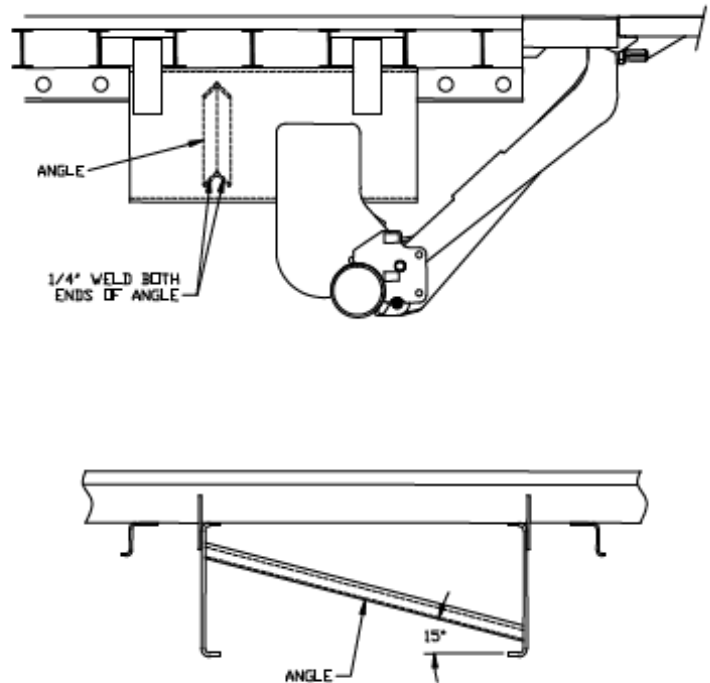
GR02753

LIFTGATE INTERFACE INSTALLATION

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ANGLE

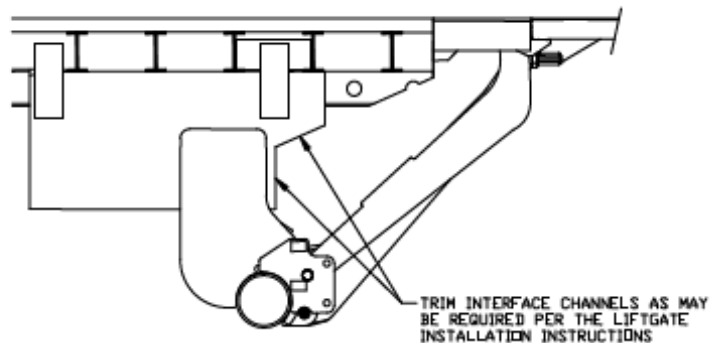
- Cut 2"x2" angle to fit between interface channels at an angle of approximately 15 degrees as shown.
- Position angle approximately as shown, such that it will not interfere with the liftgate. (This step should be done after liftgate is positioned)
- Weld angle into position.



GR02754

Trim Channels

- Trim interface channels and other trailer components as may be required per the liftgate installation instruction manual.



GR02755

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