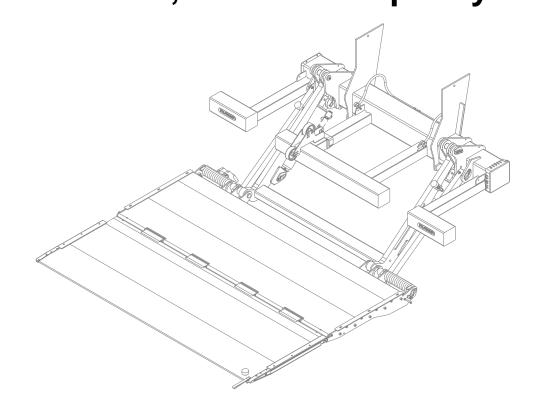


INSTALLATION MANUAL & CHECK OFF SHEET PTF 50, 5000 lbs. Capacity PTF 55, 5500 lbs. Capacity



PTF 50/55 Installation Manual Document Part Number: 90-1021-100/ 21-528_90-00_01-00 ECN-M1723, Rev. 1.4, 01-24-24 Copyright © 2023 Palfinger Interlift, LLC. All rights reserved.

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If you received this product with damaged or missing parts, contact INTERLIFT Liftgates at (888)-774-5844

Parts Order/Inquiries liftgateparts@palfinger.com

Technical Support technicalapplications@palfinger.com



15939 Piuma Ave. Cerritos, CA 90703 Tel (888) 774-5844 Fax (562) 924-8318



572 Whitehead Road. Trenton, NJ 08619 Tel (609) 587-4200 Fax (609) 587-4201

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Company Information:			
Company Name:			
Advisor Name:			
Trailer Year Make & Model:			
Liftgate Information:			
Liftgate Serial Number:			
Liftgate Model Number:			

Date of Purchase:______
Date of Installation:_____

1 Manual Updates

Revision	Description					
v1.0	Initial Release.					
v1.1	Add Sec 10.9 LED Marker Lights Kit (Optional)					
v1.2	Update Sec.10.10 Wiring Diagram.					
v1.3 • Update Sec. 9.2 Weld On Sub-Frame Installation (Optional).						
Update Sec. 9.3 Bolt On Sub-Frame Installation (Optional).						
	 Update Sec. 9.4 Adjusting the Platform. 					
	 Update Sec. 9.5 Final Steps of Installation. 					
v1.4	Changed the logos, from Palfinger to Interlift					

2 Safety Information

This manual follows the Guidelines set forth in "<u>ANSI Z535.4-2007</u>" for alerting you to possible hazards and their potential severity.



! DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

! WARNING indicates potentially hazardous situation which, if not avoided, **could result** in death or serious injury.

A CAUTION

! CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION

CAUTION without the safety alert symbol is used to address practices not related to personal injury. (In this manual it is used to alert the user to potentially hazardous situation which, if not avoided, may result

in property damage.)

NOTICE

NOTICE without the safety alert symbol is used to address practices not related to personal injury. (In this manual it is to alert you to special instructions, steps, or procedures.)

- Always be aware of your surroundings.
- Wear eye protection at all times during installation.
- Ear protection and gloves should be used when necessary.

3 Important Information

Before Getting Started

"READ FIRST"

NOTICE

The PTF 55 liftgate is a heavy duty industrial hydraulic lifting device. Performance and reliability are closely related to proper installation, battery cable connections, and grounding. All grounding surfaces MUST be cleaned, prepped, and sealed per this manual. "Cut to size" cables MUST be properly crimped and sealed as factory supplied. All connections MUST be dressed with dielectric grease or equivalent sealer.

- Review lift gate invoice, packing slip, and installation drawing to assure delivery of correct gate and complete delivery of accessories and optional equipment.
- Refer to chapter 6-page 13 MOUNTING TABLE and verify that the truck/trailer has sufficient bed height and mount clearance for the selected gate. Keep in mind that the truck/trailer can settle several inches depending on suspension, overhang, addition of equipment and loading.
 - 1. If the minimum bed height is not maintained the gate will not fold or unfold
 - 2. If the maximum bed height is exceeded the gate may not reach the ground
- Read and understand the "Installation Manual" and "Owner's Manual" in their entirety before starting the installation.
- Refer to your truck manufacturer's instructions before adding any auxiliary equipment. Installer is responsible for compliance with this manual, OEM and FMVSS requirements.
- All welding should be performed by qualified personnel per AWS standards.
- Always Ground closest to your welding point to prevent arcing through moving parts or electrical parts.
- Contact INTERLIFT Liftgates for <u>Special Installations</u> not covered in this Installation Manual.
- Do not paint cylinder shafts or nylon bearings (Use non-chlorinated brake cleaner to remove over spray)
- Final Check-Off-Sheet at rear of this manual <u>MUST</u> be filled out and sent to INTERLIFT Liftgates for warranty activation.
- Refer to owner's manual for Operation and maintenance information.
- Check the battery voltage before installation. Flooded lead acid batteries should measure 12.6V and AGM batteries should measure 12.8V. If batteries are not at these voltages, fully charge before installation

Improper operation of this liftgate may result in severe personal injury or death. DO NOT operate unless you have been properly instructed, have read and are familiar with the procedures in this manual. This manual has been designed to illustrate the steps needed for the basic installation of the PTF liftgate. It also provides safety information and simple preventive maintenance tips.

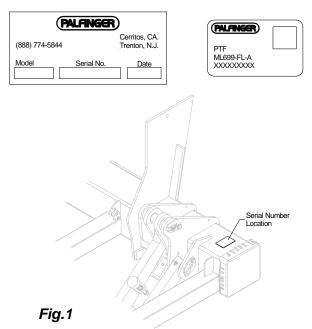
NOTICE

This manual is not intended for use as a repair or troubleshooting guide. Repairs should be performed by an INTERLIFT Liftgates Authorized Service Center.

This Manual has been designed for use in conjunction with the PTF series liftgate only which is designed for different capacities and features.

There are four options available to determine the model and serial number of the installed liftgate:

1) Refer to the serial number tag on top of the mount tube at right side as shown in **Fig. 1**.



Serial Number Tags

- 2) Ask your employer or lessor.
- 3) Call your INTERLIFT Liftgates Authorized Service Center for assistance.
- 4) Call INTERLIFT Liftgates for assistance in the USA at 888-774-5844. You can also contact INTERLIFT Liftgates by fax (562) 924-8318 or on the internet at <u>www.palfinger.com</u>

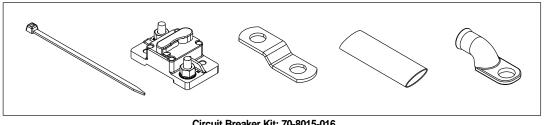
For technical support, contact INTERLIFT Liftgates or an authorized INTERLIFT service center. <u>www.palfinger.com</u>

4 Tools For Installation

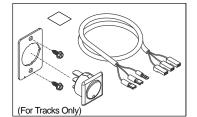
Metric Wrench Set	Basic Screwdrivers	Assorted Pliers	Wire Crimp Pliers
Digital Multi-Meter	Snap Ring Pliers	Hammer	SAE & Metric Allen key Set
1/2" Impact & Sockets	SAE & Metric Socket Set	Assorted Drill Bits	Floor Jack or Equiv.
Small to medium bottle	Forklift or Over Head	Hand Held Grinder	Paint Gun & Accessories
Jack	Crane		
Pry Bar	3/8 Drill Motor	Grease Gun	Heat Gun or Equiv.
Min. 250 Amp Welder	Cutting Torch or Equiv.	Safety Goggles	

4.1 Bagged Items Parts List

Installation for each bagged item can be found throughout this installation manual.



Circuit Breaker Kit: 70-8015-016 KET06537A; Bus Bar, Offset, 1 pc EZ7105; Zip Tie, 8° L, 15 pcs EEA12286; Lug, Compression, 2GA, 3/8°, 1 pc 70-8115-002; Circuit Breaker, Manual, 150A, 1 pc 70-8113-501, Heat Shrink, ø5/8°x2.50°, 1 pc



 Cab Cut Off Switch Kit: 70-0312-100

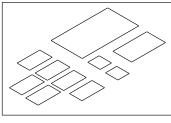
 ATG-CAB; Decal, 1 pc

 70-1012-001; Mounting Braket, 1 pc

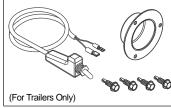
 70-1012-002; Switch, Rocker, On/Off, 1 pc

 2025982; Wire Harness, 1 pc

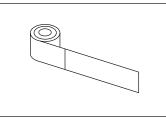
 ES3748; Sheet Metal Screw, #8x 0.5", 2 pcs



Decal Base Kit: 85-8815-001 Decal Base Kit; 12 pcs

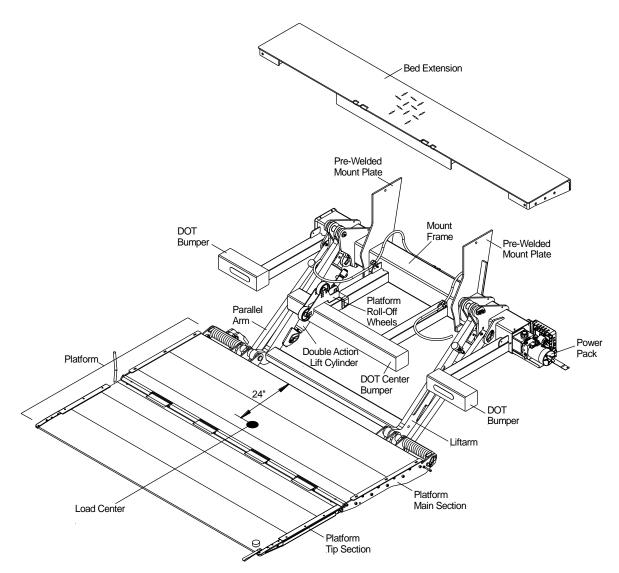


Trailer Switch Kit, ON/OFF: 70-8015-008 70-8015-009; ON/OFF Switch,1 pc ES3674; Mounting Screw, 12-14x0.75", 4 pcs 70-8114-000; Recessed Faceplace, 1 pc



Conspicuity Tape Kit: ML85-8821-001 Conspicuity Tape Strip, 2 pcs

5 <u>General View of Liftgate</u>



Notes: Mount plates are pre-welded from manufacture. Mount frame, mount plates, liftarms, and parallel arms are available in galvanized finish only.

NOTICE

5.1 Important Dimensions

Minimum Bed Height dimensions are ALWAYS MAXIMUM LOADED TRUCK. Maximum Bed Height dimensions are ALWAYS DRY UNLOADED TRUCK.

- Installing a gate at or close to minimum bed height normally results in a gate that will NOT open and close from stored position if the minimum floor height is exceeded when truck is loaded.
- Ensure trailer/truck body does not interfere with installation or operation of the PTF liftgate series.
- It is not recommended to cut, torch, or remove support materials from trailer/truck. Removing gussets, stiffeners, light rings, or other such support structures may VOID your trailer/truck warranty.
- Call technical support before starting the installation if any questions or concerns arise on mounting dimensions or procedures.
- Minimum clearance area required for an PTF 55 liftgate to install on a vehicle is 36". Clearance area should be free of any obstruction that will prevent the installation of the liftgate, **Fig.2**.

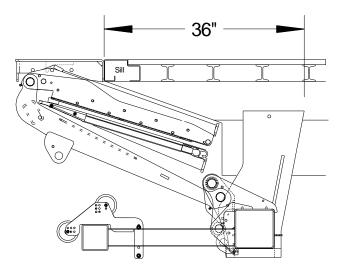


Fig.2

Installation Dimensions 6

PALFINGER	railer Chas	sis Di	m	ension S	heet	
Customer Information		Liftgates	Infor	mation:		
Quote#/SO#:		Model:		mation.		
Company:		Capacity:				
Phone:		Platform S	Size:			
Email:@		Platform		ial:		
Trailer Information						
Trailer Specifications:	Type of Body (check applicable)	\checkmark	Type of Rear Doo	r (check applicable)	\checkmark
Manufacturer: (ex. Utility)	Van		•	Flip-Up	/	•
GVWR: (ex. 68,000 lbs)	Flatbed			Roll-Up		
Length: (ex. 53ft)	Reefer			Swing		-
Width: (96", 102")	Other (specify)_			Other (specify)		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $						
E = Tire to end of vehicle body:				·····		
F = Bogie to end of vehicle body				No and L dimensions		
G = Inside horizontal width of sliding suspension an H = Diameter of sliding suspension holes:	-					
I = Hole spacing:						
J = Bottom of crossmembers to bottom of sliding ra						
K = Rear sill face to first slider hole:	• • ••					
L = Top of floor, where liftgate platform will meet floor, to the center of the trailer slider holes:						
Z = Top of floor, where the liftgate platform will meet the top of the eyebrow:						
Side View of Trailer	* *			<u>Rear View of Trailer</u> J	z	
IIIII			~	1		
				Walk Ramp (if applicable)		

90-9813-002_b



Truck Chassis Dimension Sheet

Customer Information

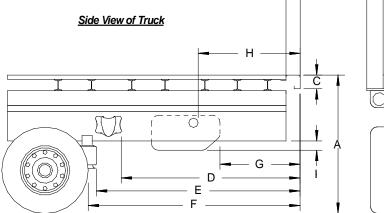
	Liftgates Information:
Quote#/SO#:	Model
Company:	Capacity
Phone:	Platform Size
Email:@@	Platform Material

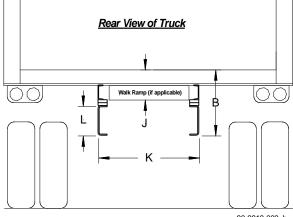
Truck Information

Truck Specifications:	Type of Body (check applicable)	Type of Rear Door (check applicable)
Manufacturer: (ex. Hino)	Van	Flip-Up
GVWR: (ex. 68,000 lbs)	Flatbed	Roll-Up
Length: (ex. 53ft)	Reefer	Swing
Width: (96", 102")	Other (specify)	Other (specify)

Truck Dimensions

A = Bedheight: Lo	paded Bedheight:	Notes:
B = Top of floor to bottom of frame:		
C = Rear sill height:		
D = Spring hanger to end of body (if applicable):		
E = Air bag suspension to end of body (if applicabl	e):	
F = Tire to end of vehicle body:		
G = Gas tank to end of body (if applicable):		
H = Fuel filler hole to end of body (if applicable):		
I = Bottom of frame to bottom of gas tank (if applic	cable):	
J = Top of floor to bottom of sliding walk ramp (if a	pplicable):	
K = Frame Width: Width of chassis frame:		
L = Frame Height: Height of chassis frame:		





7 Chassis and Body Preparation

7.1 Installation Dimensions (within North America)

NOTICE

-Decrease ground clearance only to clear obstructions (i.e., fuel tanks, cross members, hitches, etc.) without exceeding maximum "F" dimension of 29".

- Minimum bed height is when truck/trailer is loaded to Maximum GVW (Gross Vehicle Weight).

- "F" dimension: Mount and Ground clearance always relate to each other on a set floor height. If the

"F" dimension is increased for a shorter mount clearance, the ground clearance will decrease.

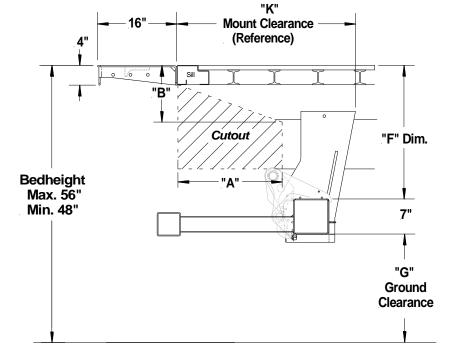
- 1) Bed Height: Bed Height Ranges: Max=Unloaded / Min=Loaded Truck Measure from TOP of body floor to ground. Vehicle must be on a flat leveled surface when measuring.
- 2) "F" Dim (Mount Frame Height): Measure from top of Mount Frame to top of body floor.

3) "K" Dim Ref. (Mount Clearance): Measure from rear of body to front edge of Mount Plates.

4) "G" Dim (Ground Clearance): Measure from bottom of Mount Frame to ground.

5) "A" Dim (Vehicle Body Cutout): Measure from the rear of the sill towards the front of the vehicle.

- 6) "B" Dim (Vehicle Body Cutout): Measure from top of the sill down to the cut out edge.
- 7) 1020mm [40"] Liftarm: Measure from center to center of pivot pins.



Mounting Dimension Table					
Bed Height (Loaded)	"F" Dim.	"G" Dim.	"K" Dim. (Ref.)	"A" Dim.	"B" Dim.
56" - 52"	29"	20"-16"	35"	20"	14"
52" - 48"	27"	18"-14"	36"	21"	11"

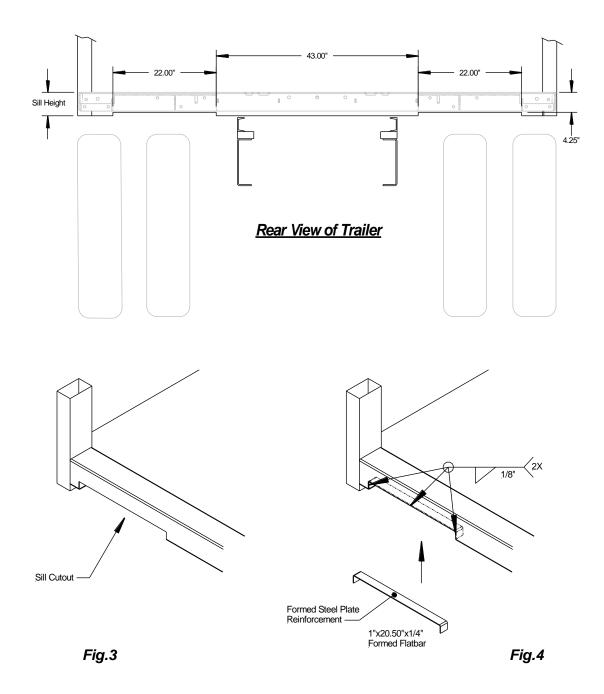
• Mounting Table Dimensions are for vehicles with 4" sill.

- Never exceed any of the dimensions from the table when installing the liftgate.
- "G" Dim = Bed Height F Dim. Mount Tube Height
- Maximum bedheight is 56" for the US market.

7.2 Body Frame Cutout Options

To prevent interference with the platform when it is in stored position the trailer sill could require notching.

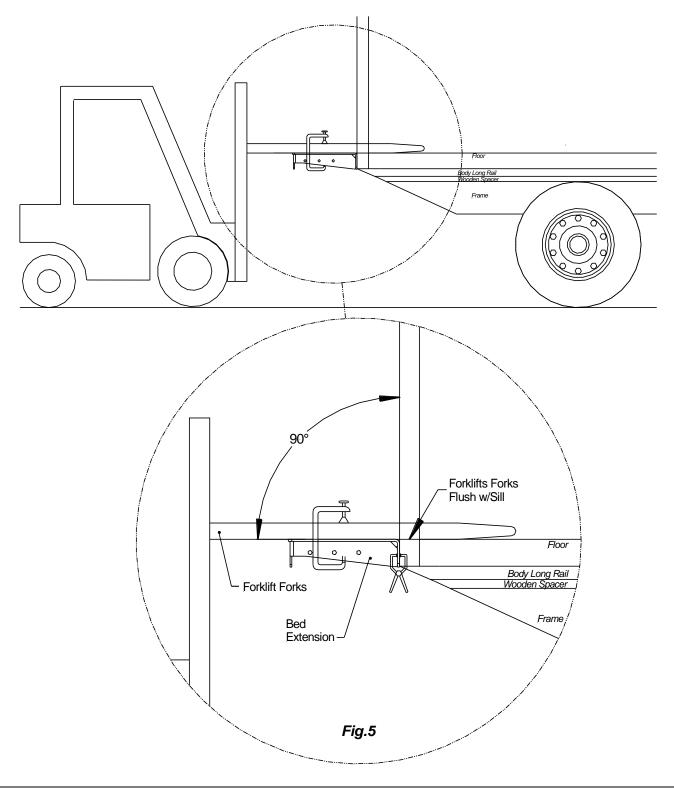
Options					
Vehicle Sill Height Action					
4" No sill notching required.					
5"	5" If not notched, liftgate will be offset down approximately 1"-2" from bed extension.				
Over 5+"	Notch sill as shown in Fig. 3; notches will require reinforcement, Fig.4				



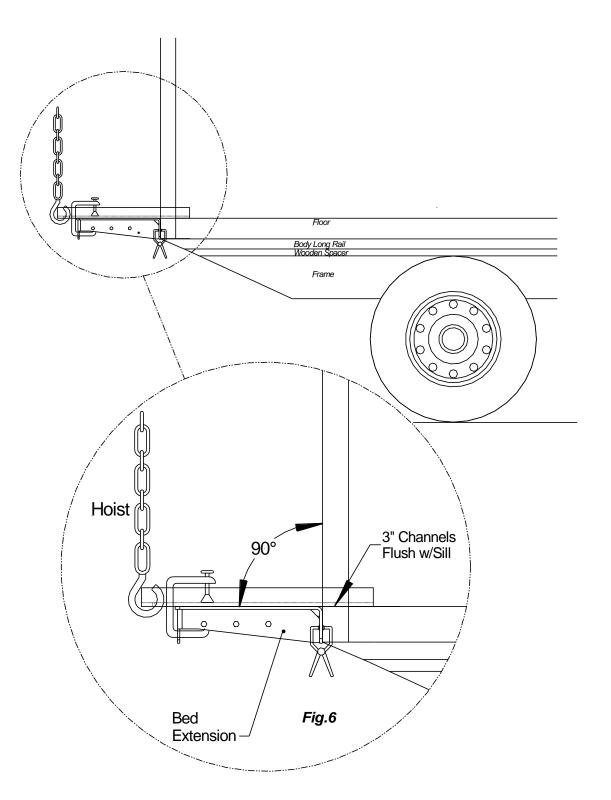
8 Bed Extension Installation

8.1 Bed Extension (Weld-On)

1. Mark the center of the vehicle body and the bed extension. Clamp the bed extension to the forklift Forks, **Fig.5**. Maintain the bed extension centered and flush to the sill vertically and horizontally. Check for squareness before continuing.



If using a hoist, make a hole on the edge of a 3" standard channel, **Fig.6**. Clamp the channels to the bed extension and attached the hoist to the 3" channels. Maintain the bed extension centered and flush to the sill vertically and horizontally. Check for squareness before continuing.



2. Weld 1/4" x 5" welds around each end. Keep 1" gap clearance on corner post seam line, **Fig.7**. All other welds shall be 1/4" x 2" centered on each rib, top and bottom of bed extension, **Fig.8**. Bed extension shall be parallel to the ground after installation, **Fig.9**.

NOTE: Grind galvanizing off the weld locations before welding.

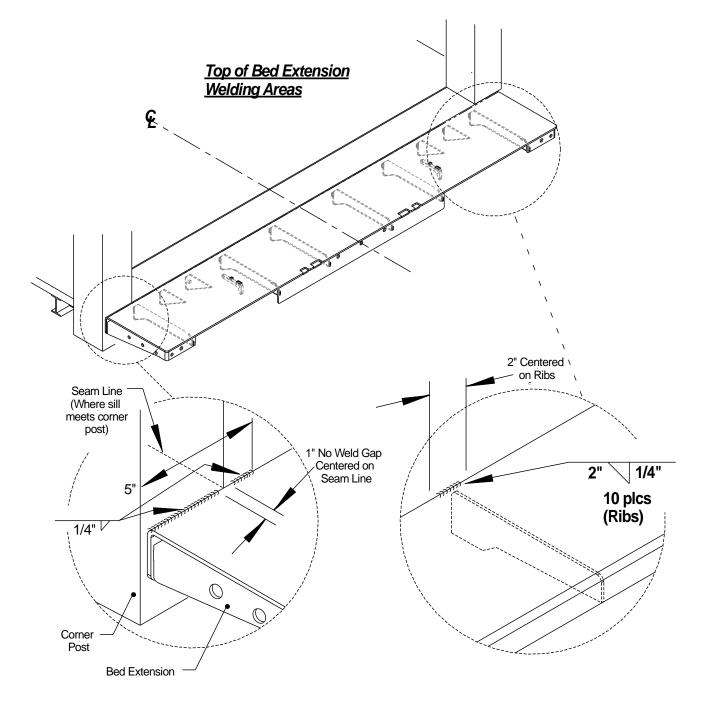
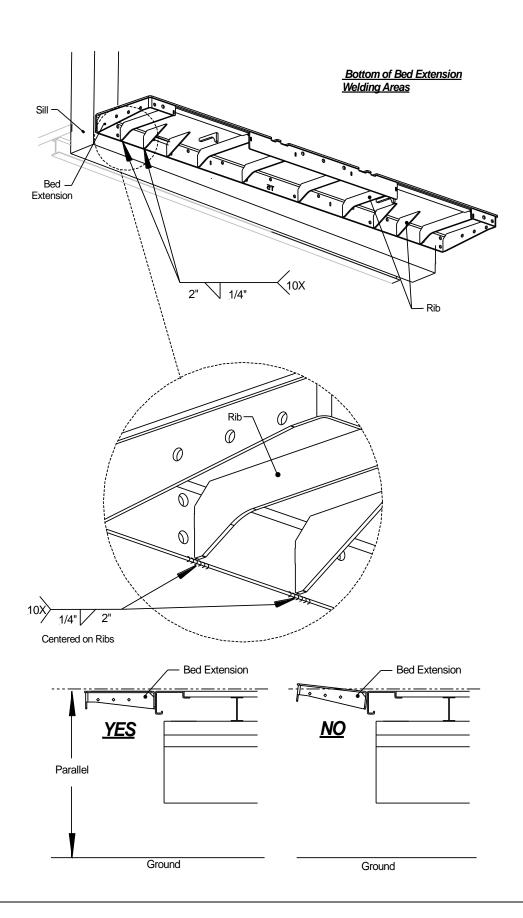
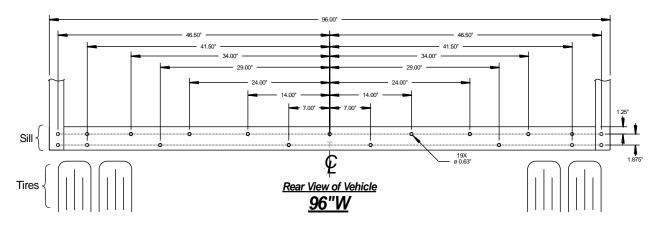


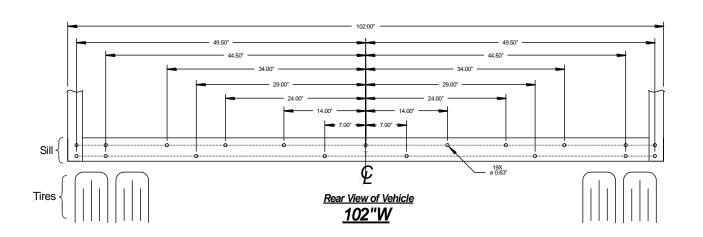
Fig.7



8.2 Bed Extension (Bolt-On)

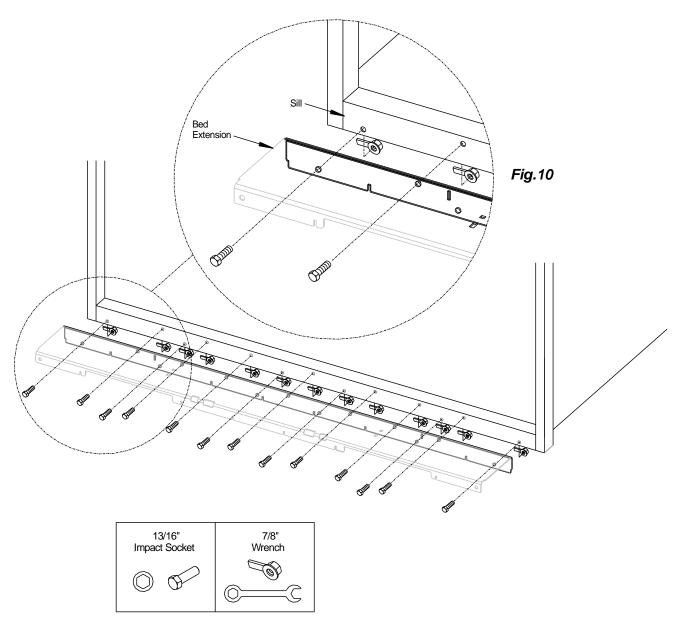
1. Determine the vehicle width, 96" wide or 102" wide. Pre-drill 19, 5/8" holes for 96" wide vehicles, and 19, 5/8" holes for 102" wide vehicles on the rear of the sill. Follow the dimensions below.



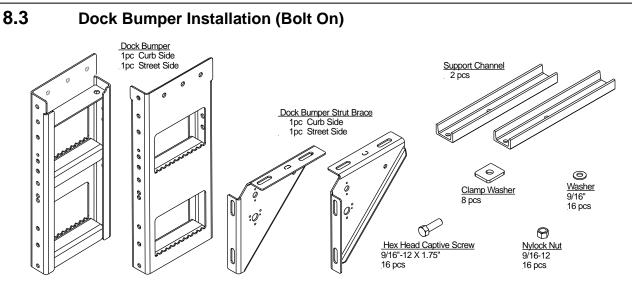


Use a forklift, hoist or equivalent to support the bed extension and align the bed extension with the pre-drilled hole pattern on the sill. Verify the bed extension is squared. Secure the bed extension to the sill with the provided 9/16-18x1.75" hardware. Torque all bolts to 125 ft./lbs. min., 145 ft./lbs. max., Fig. 10.

Recommendation: It is highly recommended to lubricate all bolts and nuts prior to installation.

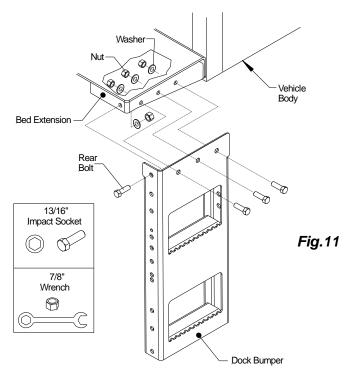


Bolt-On Bed Extension



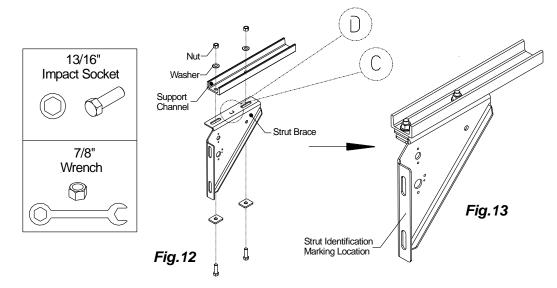
Steps:

<u>Dock Bumpers</u>: Use four (4) bolts and four (4) nuts to mount the dock bumper to the bed extension.
 Fig.11. Torque nuts to 115 ft. /lbs. minimum. Make sure the dock bumper is properly squared.
 Recommendation: It is highly recommended to lubricate all bolts and nuts prior to installation.

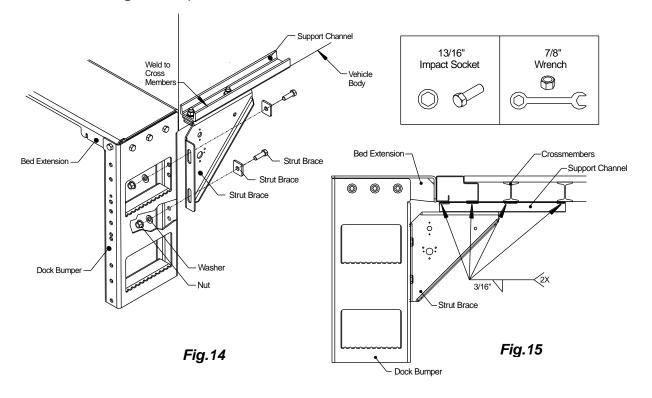


2. <u>Dock Bumper Support</u>: Each strut brace has a marking for easy identification, the curb side strut has a "C" and the drive side strut has a "D", **Fig.12**. Join the support channel to the strut using a set of bolts, clamp washers and flange nuts, **Fig,13**. Do not tighten nuts completely as adjustment to the support channel could be required.

Recommendation: It is highly recommended to lubricate all bolts and nuts prior to installation.



3. <u>Bolt Assembly:</u> Secure the strut support to the dock bumper with a set of bolts, clamp washers, and flange nuts, Fig.14. Adjust the strut brace by moving it vertically along the dock bumper and the support channel horizontally along the vehicle's cross members for best positioning. Check for squareness. After tightening all bolts in place, weld the support channel to the bottom of the vehicle's cross members should be welded to the support channel, Fig.15. Torque nuts to 115 ft./lbs. minimum.



9 <u>Gate Installation (Truck)</u>

9.1 Liftgate Installation

Installation for a Weld-On and Bolt-On are identical. Follow the steps below to install the liftgate and pay attention to the mount plate installation steps.

WARNING

Never work under platform without safety supports



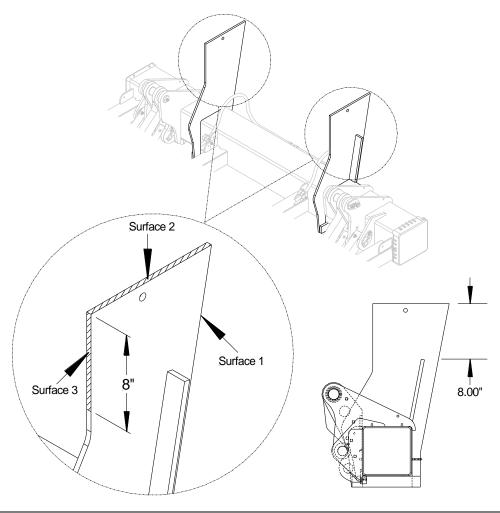
High heat from welding can damage components within the heated area.



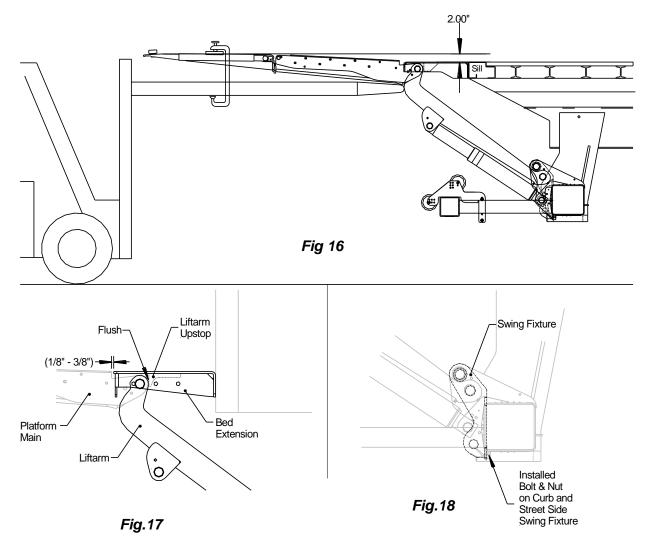
Welding galvanized finish parts is not recommend and these parts should be prepared by grinding the parts to bare metal before welding.

<u>Steps:</u>

1. <u>Liftgate Preparation:</u> Remove the galvanize finish from the pre-welded mount plates. Grind the three (3) indicated surfaces to bare metal. Surface 1 and 3 grinds should be 8".



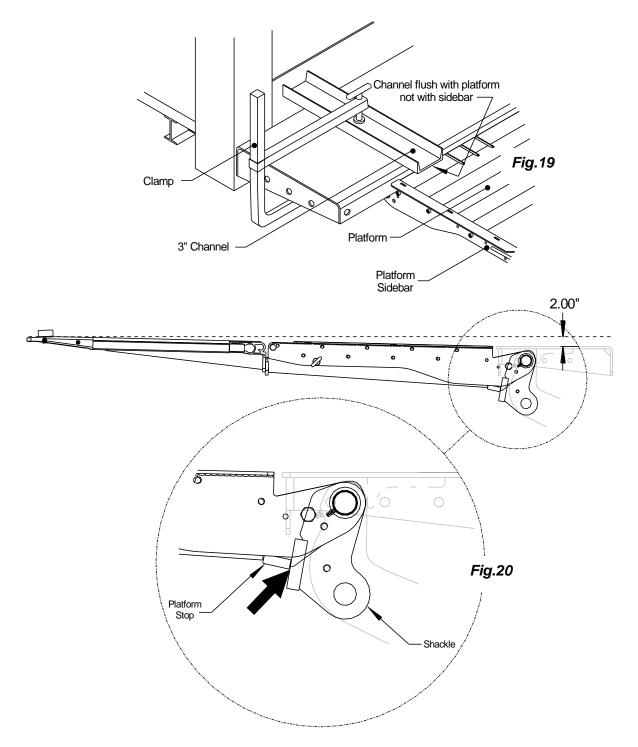
 <u>Hoist Platform</u>: Unfold platform manually and clamp forklift forks, overhead crane or equivalent to platform. Make sure the platform is secured. Always maintain the mount tube centered to the vehicles body. Make sure the tip of the platform is pitched up 2" and the platform is centered to the bed extension, Fig.16. Verify that both liftams are flush with both upstops on the underside of the bed extension, Fig.17. Important: Verify the bolts and nuts are installed on each swing fixture, Fig.18.



Note:

If the Gate is uninstalled, Swing Fixture bolts have to be reinstalled before reinstalling the gate.

3. <u>Raise Platform</u>: Clamp 3" channels over the bed extension and align the front edge of the platform, not the platform sidebar, to the back edge of the bed extension, Fig.19. Again, verify the liftarms are still flush with the bed extension upstops. Maintain the top of the platform flush to the bed extension (channel) and keep the 2" pitch at the platform tip. Check that both shackles are flush with the platform stops, Fig.20. Note: Shims maybe required between the stop and the shackle to maintain the tip of the platform pitched up.



4. <u>Set "F" Dimension:</u> "F" Dimension should be determined from Section 7 of this manual. Use floor jack or equivalent to position the frame assembly up to the required "F" dimension, Fig.21. Use a second jack to level out the under-ride guard, if necessary. Check for squareness vertically and horizontally. 12V power supply may be required to release pressure on lift cylinder valves, if power is required continue to the Electrical Installation in Section 10.

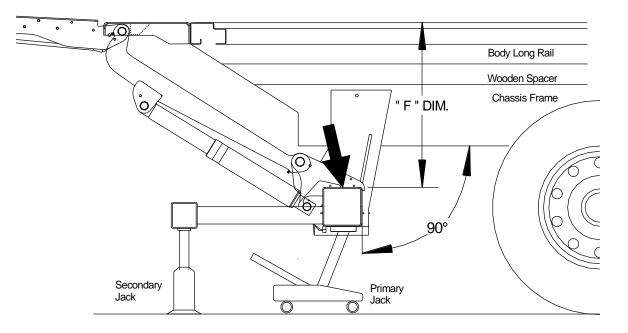
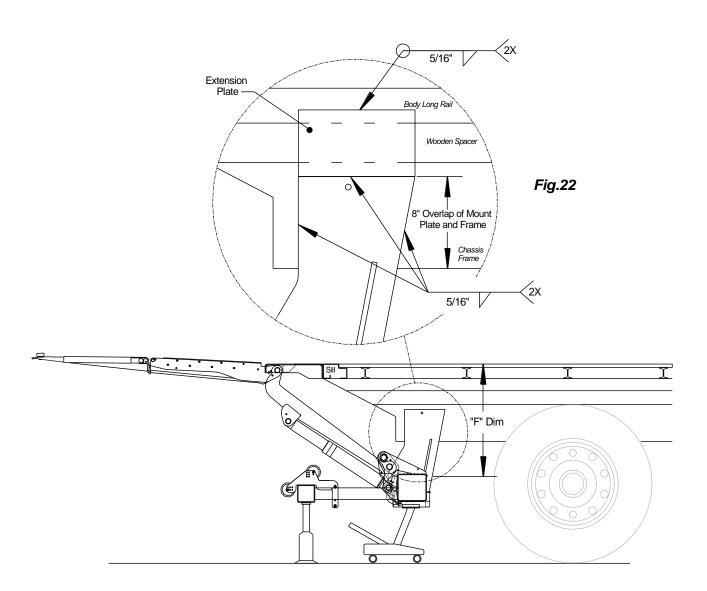


Fig.21

5. <u>Weld on Mount Plates (Tack):</u> Make sure the mount plate is squared to the mount tube vertically and horizontally. Install the mount plate on the chassis in the shown orientation and tack weld using three fillet welds 2" long on each side and on top of the mount plate.

<u>Weld on Mount Plates (Verify)</u>: Verify the following: One, F dimension has not changed. Two, bed extension and platform are still squared. Three, liftgate is operating as intended.

Do not power gate hard against bed extension while liftgate is only tack welded in position. <u>Weld on Mount Plates (Finalize):</u> After verifying the above, continue to 100% welding of of the three sides of the mount plates with 5/16" fillet welds to the vehicle frame. Connect the body long sill to the mount plate by adding an extension plate, **Fig.22**.



9.2 Weld On Sub-frame, Installation (Optional)

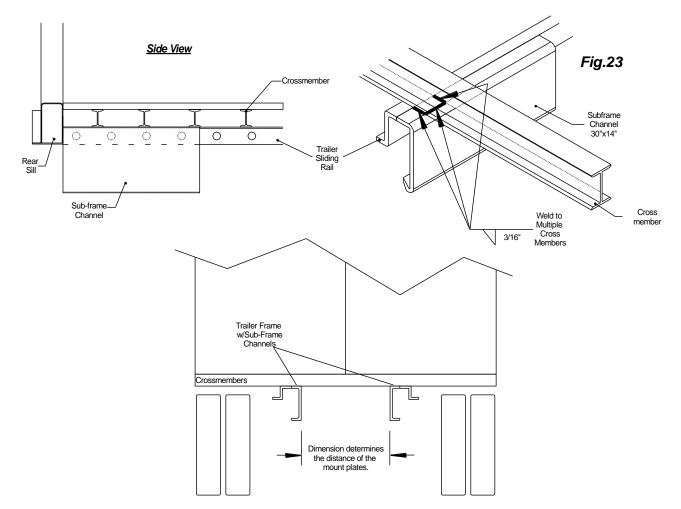
Trailer installations require a sub-frame (Weld On or Bolt On) to be installed prior to installing the liftgate. After installing the sub-frame, follow the installation procedure in Section 9.1 to complete the liftgate installation.

WARNING

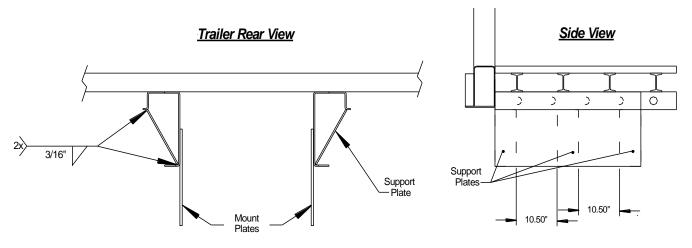
Never work under platform without safety supports

Steps:

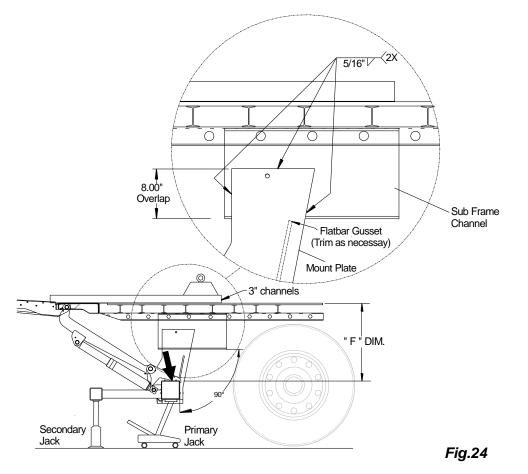
1. <u>Sub-Frame:</u> Position the sub-frame channels up against the trailers crossmembers in the orientation shown below. Weld the sub-frame channel to multiple crossmembers, **Fig.23**. Use 3/16" welds to secure the sub-frame to a minimum of four crossmembers.



2. <u>Support Plates:</u> Install three support plates per sub-frame channel as shown and secure the plates with 3/16" welds.



- 3. <u>Set "F" Dimension: "F" Dimension should be determined from Section 7 of this manual. Use floor</u> jack or equivalent to position the frame assembly up to the required "F" dimension, **Fig.24**. Use a second jack to level out the under-ride guard, if necessary. Check for squareness vertically and horizontally. Trim the mount plate flatbar gussets as necessary to not stick out between the mount plates and the sub-frame channels in the overlap area, **Fig.24**.
 - 12V power supply may be required to release pressure on lift cylinder valves, if power is required continue to the Electrical Installation in Section 10.



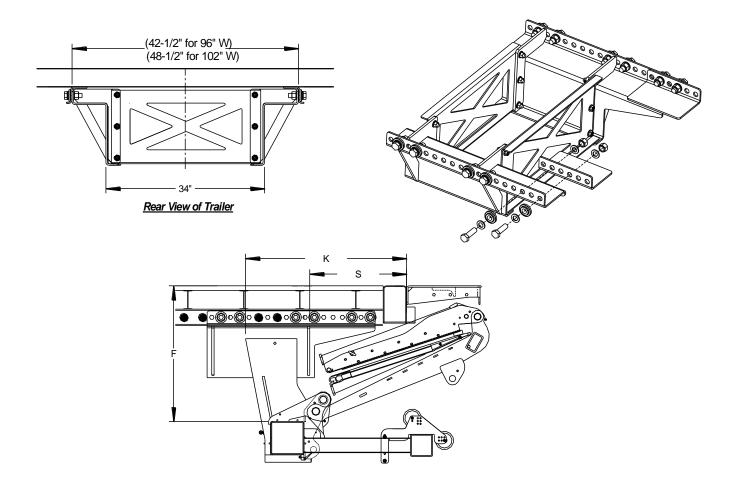
4. <u>Weld on Mount Plates (Tack)</u>: Make sure the mount plate is squared to the mount tube vertically and horizontally. Install the mount plate on the chassis in the shown orientation and tack weld using three fillet welds 2" long on each side and on top of the mount plate.

<u>Weld on Mount Plates (Verify)</u>: Verify the following: One, F dimension has not changed. Two, bed extension and platform are still squared. Three, liftgate is operating as intended.

Do not power gate hard against bed extension while liftgate is only tack welded in position. <u>Weld on Mount Plates (Finalize)</u>: After verifying the above, continue to 100% welding of the three sides of the mount plates with 5/16" fillet welds to the the sub-frame channels, **Fig.24**.

9.3 Bolt On Sub-Frame Installation (Optional)

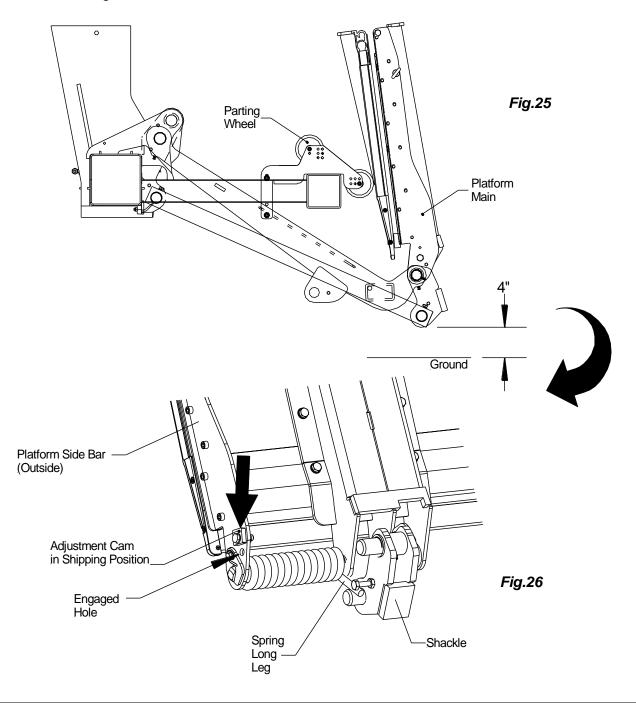
The Bolt On subframe can only be used for trailers with bolt on frame. The Bolt On subframe kit contains detailed installation instructions which are used in conjunction with this installation manual for a trailer installation. Read and understand the subframe kit installation instructions (ML90-7521-000) first before beginning the liftgate installation.

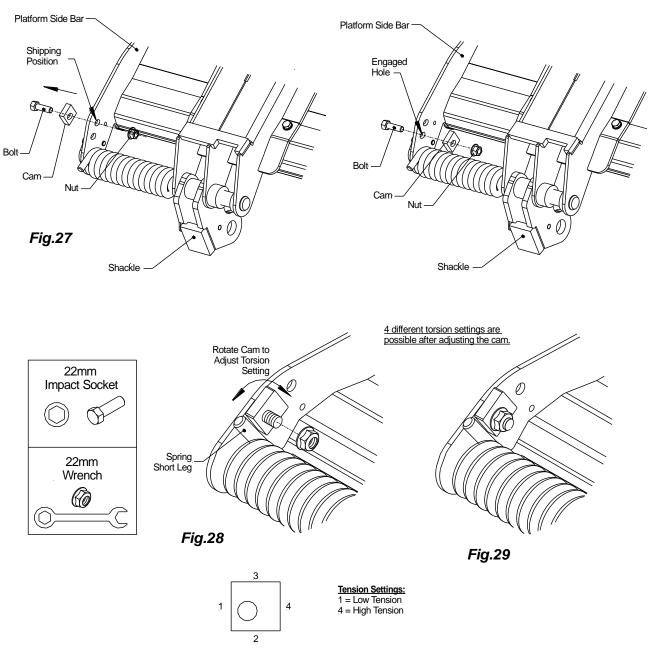


9.4 Adjusting the Platform

Steps:

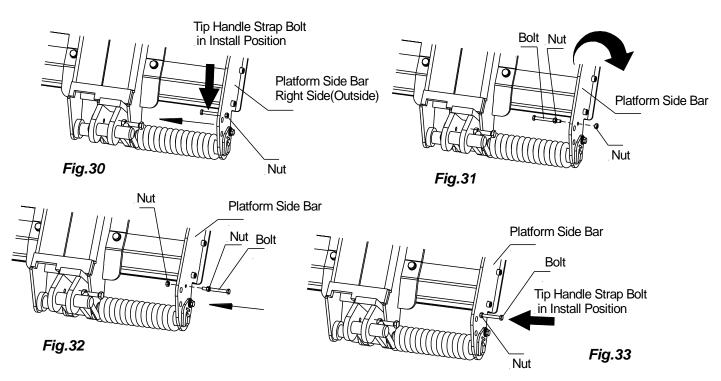
<u>Torsion Cam Installation</u>: Position the gate as shown below with the platform resting on the parting wheel and raised about 4" from the ground, Fig.25. The adjustment cam is installed in shipping position with no tension when shipped from the factory, Fig.26. To add tension to the torsion spring, remove the adjustment cam from its shipping position and move to the engaged hole Fig.27. Rotate cam to adjust the tension of the spring. The short leg of the spring should be in contact with the cam, Fig.28. Secure the cam with the bolt and nut. Torque the bolts to 100 ft-lbs., Fig.29. Repeat the process for the right side cam. Make sure left side and right side cams are installed in the same tension setting.





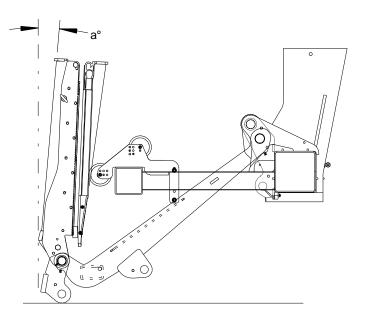
Suggested Torsion Settings for Aluminum Platforms: #2

 <u>Adjust Tip Handle Strap Bolt</u>: The tip handle strap bolt is installed in the shipping position when shipped from the factory to be secured. Loosen the outside nut to take out the bolt from the shipping position, Fig.30. Flip the bolt to the outside of the platform side bar, Fig.31. Install the bolt with the nut from the outside of the platform side bar and the other nut from inside of the side bar, Fig.32. Tighten the nuts when finished, Fig.33.



3. <u>Adjust Sliding Wheel:</u> Loosen the nuts to adjust the sliding wheel bracket, back or forward, so the platform angle "a" from vertical to match with the below table for different Bed Heights when resting against the wheel. Tighten all lock nuts when finished.

Bed Height	"a"
(Loaded)	Degree
56" - 52"	5°
52" - 50"	10°
50"-48"	15°



4. <u>Adjustable Rubber Snubber:</u> Adjust (2) rubber snubbers up to force platform against frame caps to hold platform from bouncing while vehicle is moving, **Fig.34**. Make sure there is a ½" gap between the frame cap and the platform, **Fig.35**. Adjust the Rear rubber snubber first and the Front second. Also make sure the rubber snubbers are adjusted so that the gate does not rub on other components during the opening and closing sequences.

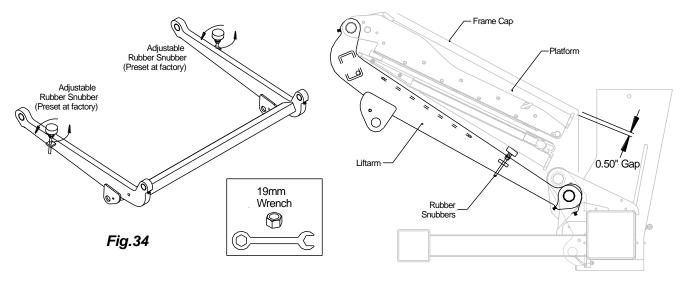
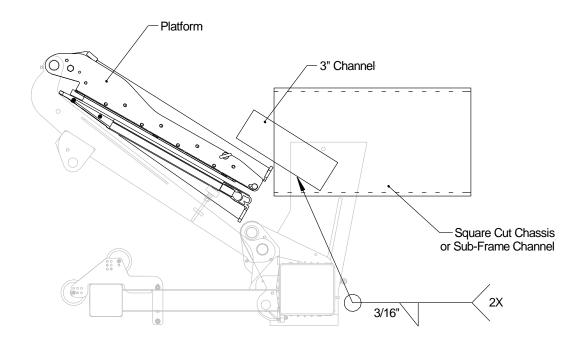


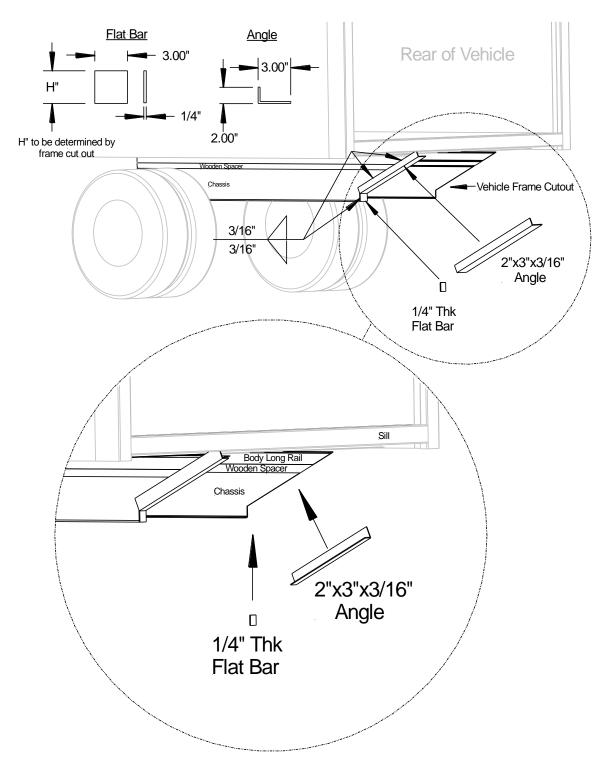
Fig.35

Use a 3" channel (each side) as a platform store stop where frame caps cannot be installed.



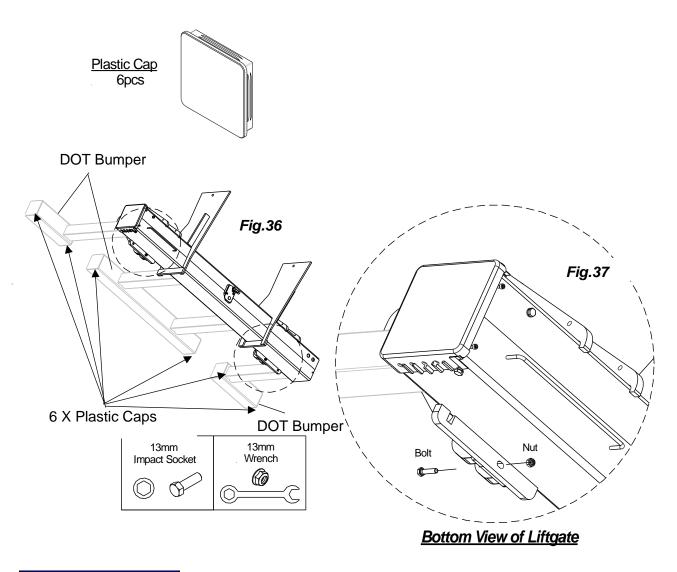
5. <u>Frame Cap</u>: Cap both frames cut outs with two pieces of ¼" flat bar and two 2"x3"x3/16" angles. Install the 2" side of the angle on the outside of the frame. Weld components to the chassis and the body long rail. Flat bar may not be required if the frame cut out does not have a step. Sharp and jagged edges present a hazard and can cause injuries if cutouts are not capped.

Note: INTERLIFT Liftgates does not supply cap materials. All material must be supplied by end user.



9.5 Final Steps of Installation

- 1. <u>Battery Connect</u>: Connect battery cable to batteries, aux batteries to power the liftgate. Refer to electrical installation on Section 10.
- 2. <u>Cycle Gate:</u> Cycle gate several times to assure proper alignment.
- 3. Weld Gate: Complete welding of gate. Weld all contact areas 100% with ¼" fillet welds.
- 4. <u>Insert Plastic Caps:</u> Install the six plastic caps into the DOT bumper tubes from the six sides of the tube openings untill the caps completely get inserted, **Fig.36.** Use a plastic hammer as needed.
- 5. <u>Remove Retaining Bolts:</u> Lower the platform down to the ground and remove the two retaining bolts (curb side and street side) holding the swing fixture fixed to the mount tube, **Fig.37**. The removal of the bolts will allow the platform to tilt to the ground when being operated. Discard the bolts after removal.
- 6. <u>Paint</u>: It is recommended to clean and paint over any welding done during the installation.



NOTICE

Platform will not tilt to the ground if these bolts are not removed.

Note: Reinstall the Swing Fixture bolts if the gate has to be removed and reinstalled.

9.6 Walk Ramp Installation (Optional)

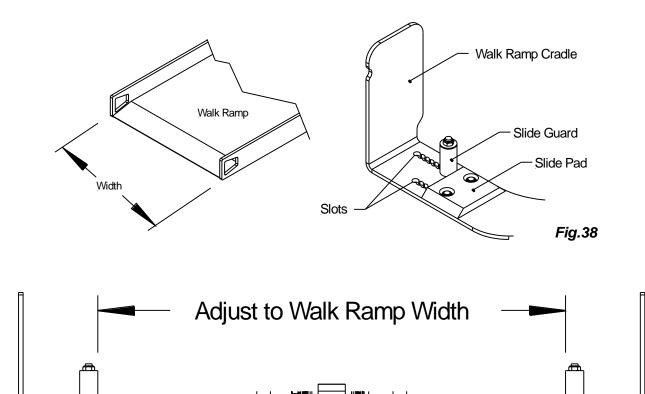
NOTICE

Application for Walk Ramp is only available for Trucks with the Laden (Loaded) Bed Heights from 52" to 56" as an option. Vehicle bed heights are absolute minimum when the vehicle is fully loaded, gassed, and on even ground. It is highly recommended to start with 2"-3" higher for vehicle bed heights.

Note: Walk Ramp application is not available for Trailers with the Bolt On Subframes. The Weld On Subframe could be used for trailers to accommodate a Walk Ramp application as a Special Request.

Steps:

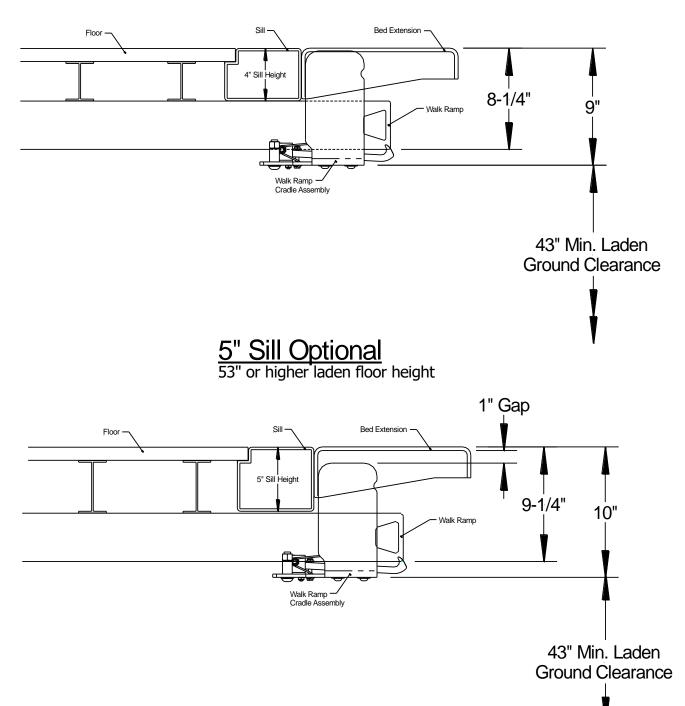
1. <u>Walk Ramp</u>: Measure the walk ramps width. The walk ramp cradle has adjustable Slide Guards and Slide Pads to accommodate different widths of walk ramps, **Fig.38**. Adjust the slide guard and pad by removing the nut and sliding the guard and pad on both sides of the cradle to the next available slot.

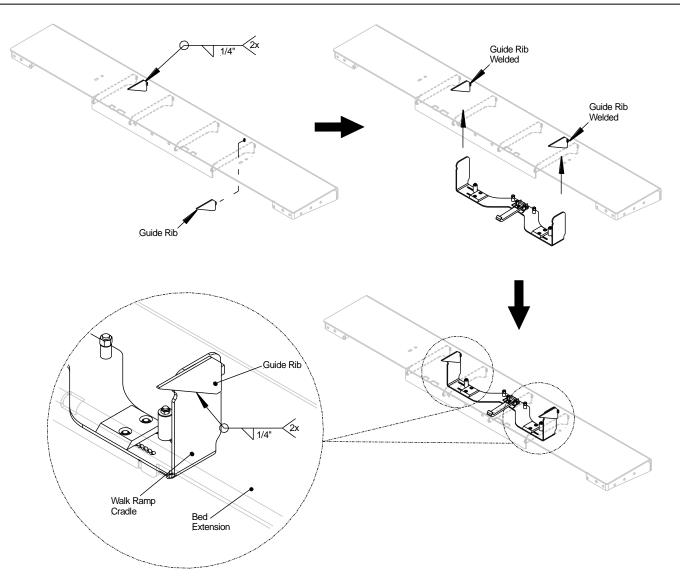


 <u>Cradle Position</u>: Position cradle in the orientation shown below with the hook retainer pointing out, Fig.39. Reference dimensions below for optimized mounting based on the sill height. Slide the walk ramp cradle assembly in between the two guide ribs of the bed extension and weld 100%.

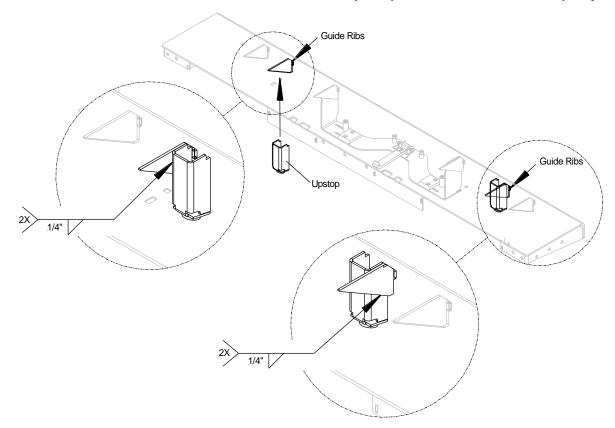


4" Sill highly recommended for application, especially on lower range of laden dimension as folding clearances are increased with 1"

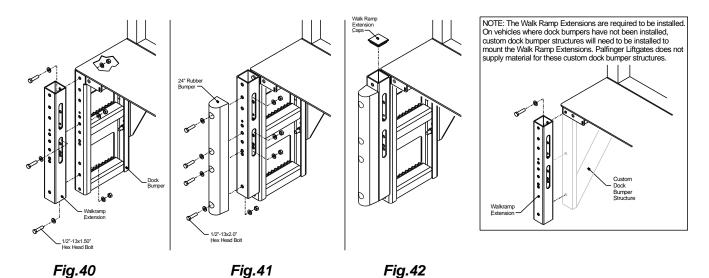




3. <u>Upstops</u>: Upstops need to be installed to prevent any damage to the walk ramp and the platform. Position the upstops up against the inside of the guide rib and weld 100%. **IMPORTANT! If cradle has been mounted lower, up-stops need to be lowered equally.**



4. <u>Walk Ramp Extension:</u> Walk Ramp Extensions should be used for the Walk Ramp application. Install them onto the dock bumpers using three ½"-13x1.5" bolts, washers, and nuts for each walk ramp extension, **Fig.40**. Next, install the rubber bumper onto the Walk Ramp Extension, **Fig.41**. Install the Walk Ramp Extension Caps after all bolts have been tightened, **Fig.42**. *Note: Rubber bumpers will vary depending on required specifications. The Walk Ramp Extension will accept a variety of rubber bumpers (5", 16", 24"), shown below is the 24" rubber bumper.*



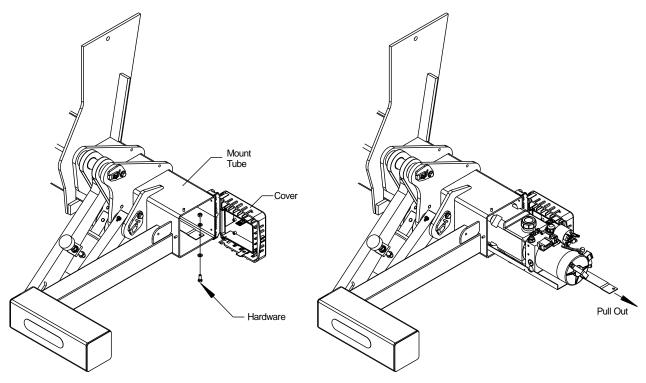
10 Electrical Installation

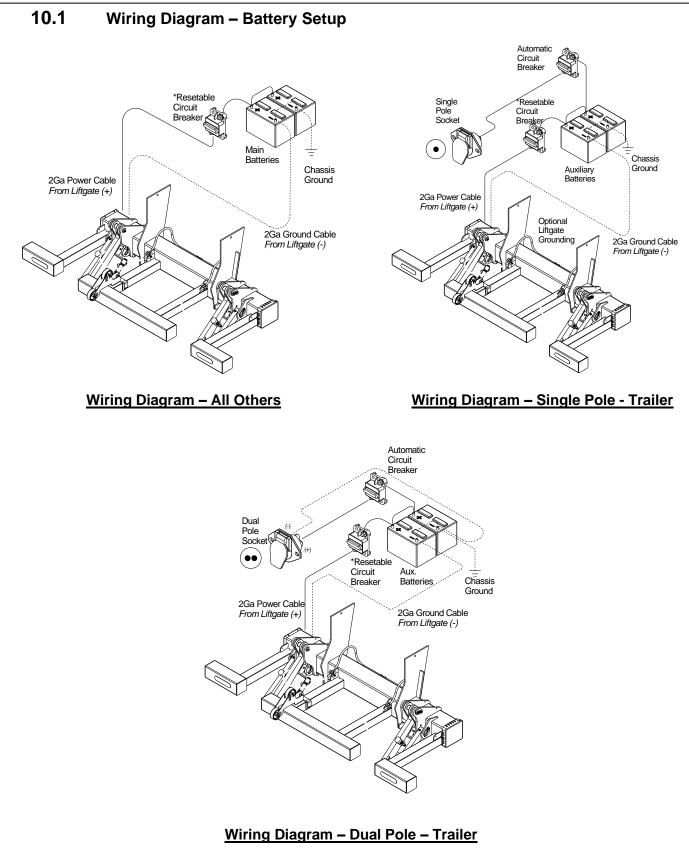
NOTICE

- It is the liftgate installers' or incomplete vehicle builders' responsibility to be certain all <u>chassis</u> <u>ground systems</u> are adequate for the job. Liftgates with single motor can pull 250 amps at full load, and liftgates with dual motors will pull 500 amps at full load. These requirements include liftgate charging systems and OEM chassis battery grounding. Failure to adequately ground the whole system can lead to burned electrical harness, metal braided hoses, and other vehicle components.
- Never exceed rating of existing fuses located at the battery, control board and/or the pump and motor which may result in serious damage to the equipment.
- Never jump the 150 Amp circuit breaker at the batteries unless otherwise instructed by the INTERLIFT Liftgates technical support group.
- Assure all connections are tight and securely sealed.
- Heat shrink all cable connections.
- Never secure a cable in a way where it can contact other wirings, brake, fuel, or air lines etc. or get pinched against other objects.
- 2-gauge cable, minimum, is required throughout the motor circuit.
- Ensure that all wiring is secured and away from heat sources, sharp corners/edges, and abrasion from moving components during the operation of the liftgate and vehicle.

Accessing the Hydraulic Power Unit:

To access the Hydraulic Power Unit, open the cover on the curb side of the mount tube. Remove the nut and bolt securing the hydraulic power unit to the mount tube. Pull the hydraulic power unit out approximately 14"-16" to access the solenoid, oil reservoir, etc.



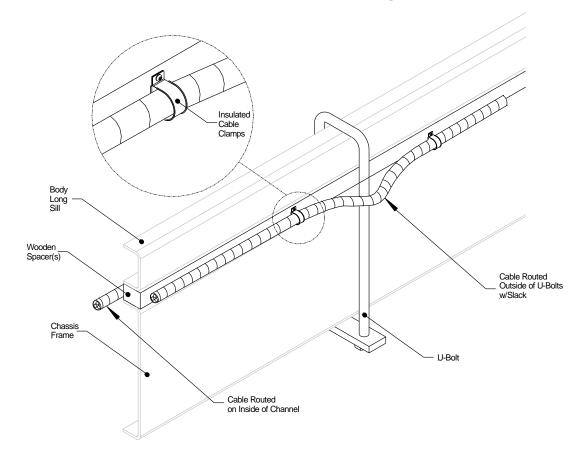


*Resettable Circuit Breaker: 150 Amp Min. Replace with same amperage breaker when necessary. Ground: For optimal grounding, ground all batteries and power units to the body side rails of the vehicle. NOTICE: DO NOT attempt to jump in-line fuses with other objects other than the specified fuse. Do not increase the amperage rating of fuse. Serious harm to the liftgate will result when standard practices are not followed.

10.2 Cable Routing

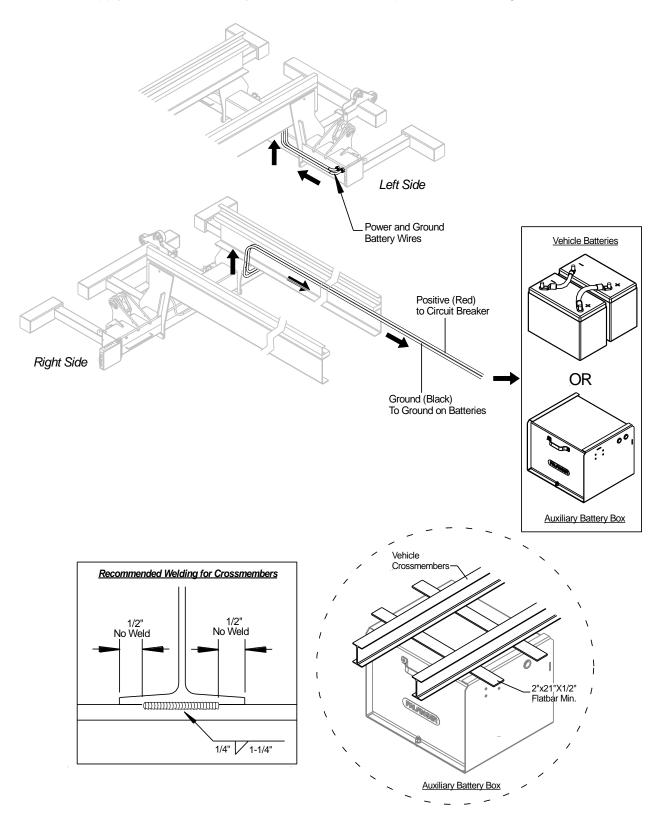
- 1. The use of wire loom is highly recommended to protect and facilitate cable routing. Wire loom not supplied.
- 2. Route all cables along the wooden spacer and through the outside of the U-bolts or on the inside part of the channel.
- 3. Secure the wire along the wooded spacer with insulated cable clamps.

A WARNING Do not tie electrical cables along with hoses.



10.3 Power Cable Routing

The liftgate power cables are located on the left side of the mount frame. There is a power (+) and a ground (-) that needs to be routed to the vehicle's batteries or to an auxiliary battery box. To maintain the best possible power supply, install the auxiliary batteries as close as possible to the liftgate.

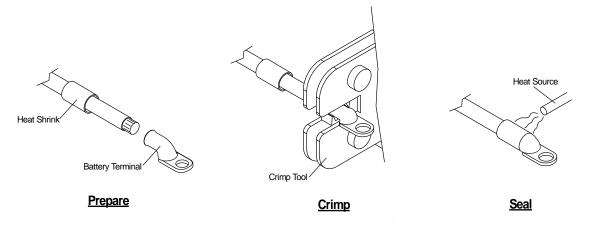


10.4 Wire Crimping

All grounding surfaces MUST be cleaned, prepped, and sealed per this manual. "Cut to size" cables MUST be properly crimped and sealed as factory supplied. All connections MUST be dressed in dielectric grease or equivalent sealer.

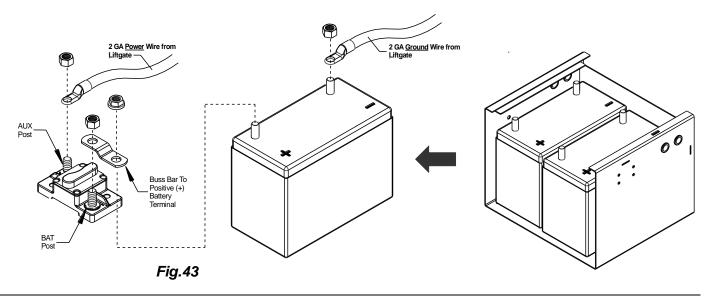
Battery Cable Crimping

- 1. Prepare the wire to be crimped. Straighten out the exposed copper wire and insert into the battery terminal.
- 2. Use a crimping tool designed for crimping battery terminals for best results. The use of other tools could possibly damage the battery terminal and make poor connections between the wire and terminals.
- 3. Slide the provided heat shrink over the battery terminal and cable to seal the connection.



10.5 Circuit Breaker Installation

- 1. Attach the bus bar to the circuit breaker on the BAT post. Mount the circuit breaker securely to the positive terminal post of the battery, **Fig.43**.
- 2. Install the liftgates 2-gauge power cable to the AUX post on the circuit breaker and install the ground 2-gauge ground cable to negative battery post.



10.6 Toggle Switch Installation

The Toggle Switch is weatherproof from factory, do no substitute or tamper with the switch.

NOTICE

Determine location for fixed toggle switch on corner post in a way that the operator can view the platform and surrounding areas while operating the liftgate. Place toggle switch in a horizontal position

Steps:

Roll Up Door Vehicles

- Mounting Hole Pattern: Locate area on rear curb side post of body where switch can be reached by the operator from ground and body floor. Position the holes approximately 24" up from vehicles floor, Fig.44. Drill two 5/32" (.156") holes spaced at 1-3/4" vertically, and one 1/2" hole, centered to the two 5/32" holes, for the switch cable harness, Fig.45.
- 2. <u>Wiring:</u> Route cable harness through rear post and down to the pump & motor box. Heat shrink or protect all connections. Use cable clamps to keep the cable clear of all moving parts. Reference the wiring diagrams in Sections 10.9.
- 3. <u>Mount Switch:</u> Verify all operations are functional as intended. Secure the switch to the corner post with the two #10-24 x 1" self-tapping screws.

IMPORTANT: Screws must be hand tighten, do not use power tools to tighten screws.

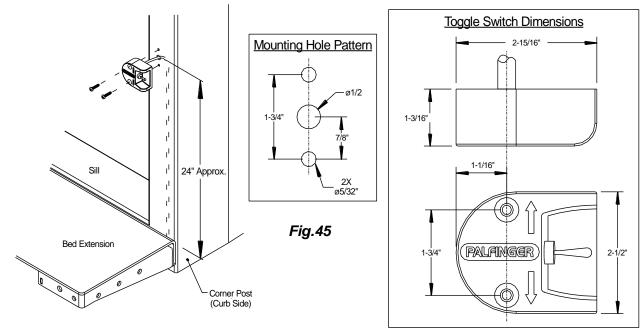


Fig.44

Stake Bed Vehicles

- Dock Bumper Strut Sill Bed Extension Ø Ø Ø Q Ø \bigcirc Ø Ø 00 0 0 0 00 Ø 0 Dock Bumper
- 1. <u>Mount Switch:</u> Mount toggle switch to dock bumper strut using two #10x1-1/2" self-tapping screws.

- <u>Route Wire:</u> Route the toggle switch harness along the vehicle body down to the pump and motor. To prevent damage to the harness, properly secure the harness and keep cleared from any moving liftgate parts.
- 3. <u>Connect wires:</u> Reference Sections 10.9 for wiring according to your liftgates specifications.
- 4. <u>Check Switch Operation:</u> Verify that the up and down functions on the toggle switch operate as intended.
- 5. <u>Seal Connections:</u> Heat shrink and seal all connections, if applicable.

10.7 ON/OFF Liftgate Switch



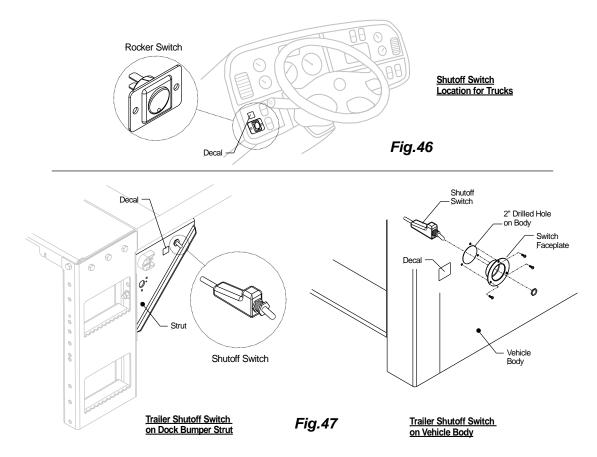
Liftgate Cab ON/OFF Switch <u>MUST</u> be installed and in clear view of driver.

1. Mount Switch:

<u>Truck Application</u>: Install the liftgates shut off switch on the vehicle's dashboard in clear view of the driver and within reach from the ground, **Fig.46**.

<u>Trailer Application</u>: Install the shutoff switch on the dock bumper strut, if applicable, or use the faceplate to install the switch on the vehicles body as shown (faceplate requires a 2" hole to be drilled on vehicle body for installation), **Fig.47.**

<u>Decal</u>: Apply the accompanying decal in the surrounding area of the switch.

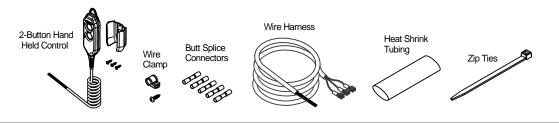


- 2. <u>Route Wire:</u> Route and secure the control wire cable every 12 inches against the frame with frame clamps or equivalent along the frame to pump & motor box.
- 3. <u>Check Wire Clearance:</u> Verify wire is clear of all moving parts and securely tied up.
- 4. <u>Cover Connections:</u> Heat shrink or protect all connections.
- 5. <u>Wiring:</u> Reference Section 10.9 for wiring according to the liftgates specifications.

Rocker switch shall not be installed anywhere outside the truck cab.

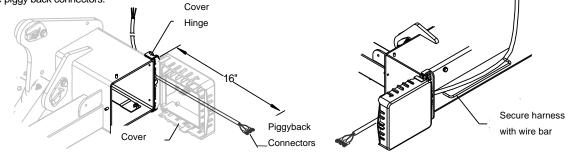
Inspect and test all electrical connections, wiring and the different functions to make sure that the electrical installation is complete.

10.8 2-Button Hand Held Remote Control (Optional)

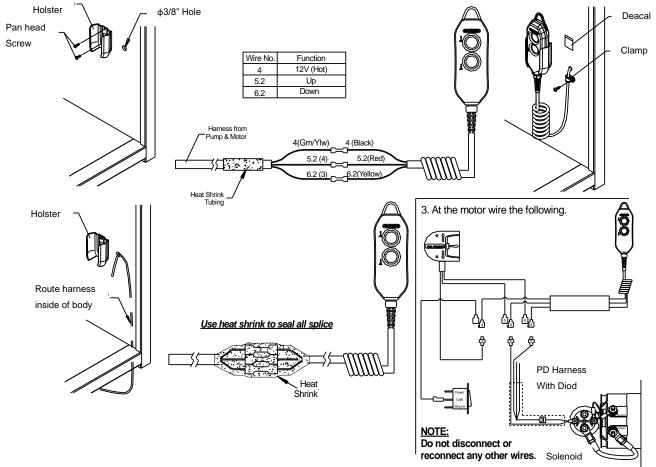


Steps:

1. Remove the metal brace from the mount tube cover. Route the provided harness through the holes on the hinge of the cover. Feed the side of the harness that does not have any connectors through one of the holes on the hinged cover. Leave approximately 16" of the harness end with the piggy back connectors.

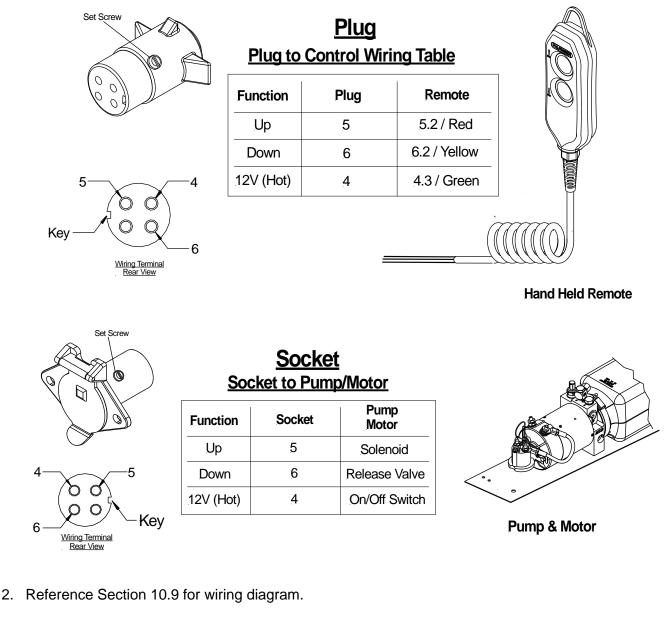


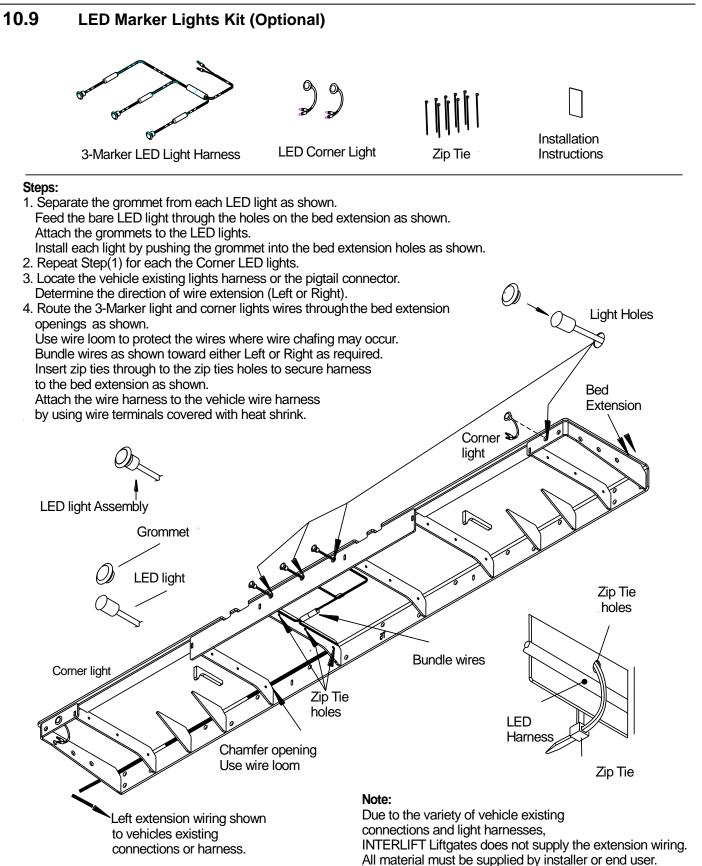
2. Determine the location to install the hand remote. Install the remote holster with the provided pan head screws. Drill a 3/8" hold next to the holster for wire routing purposes. Route the harness from Step 1 through the 3/8". Use the provided butt splice connectors to hard wire the remote and the harness per the wiring schematic. Then secure the harness to the wall with the provided wire clamp.



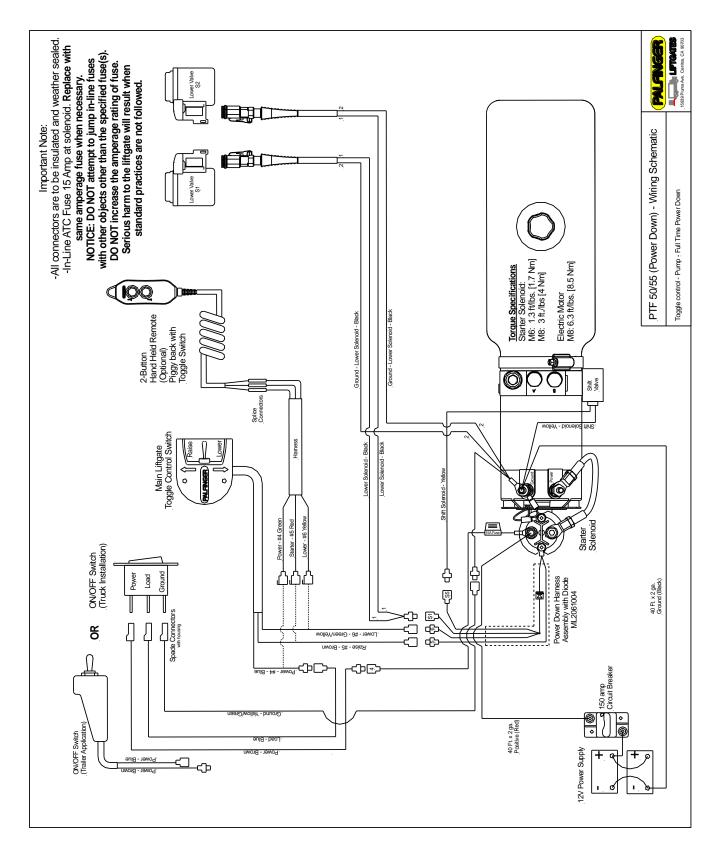
10.8.1 Plug and Socket (Optional)

1. Use a plug and socket when the vehicle is a refrigerated body. Remove the set screw to access the wire terminals. **Never store remote inside refrigerated vehicles, control will be damaged.**

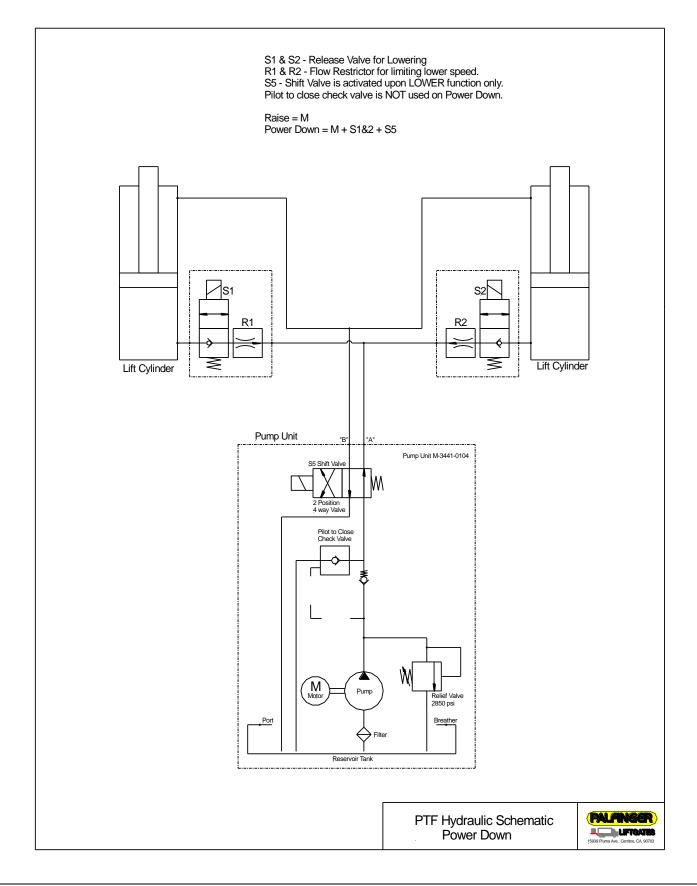








11 Hydraulic Schematic



12 Decal Placement and Inspection

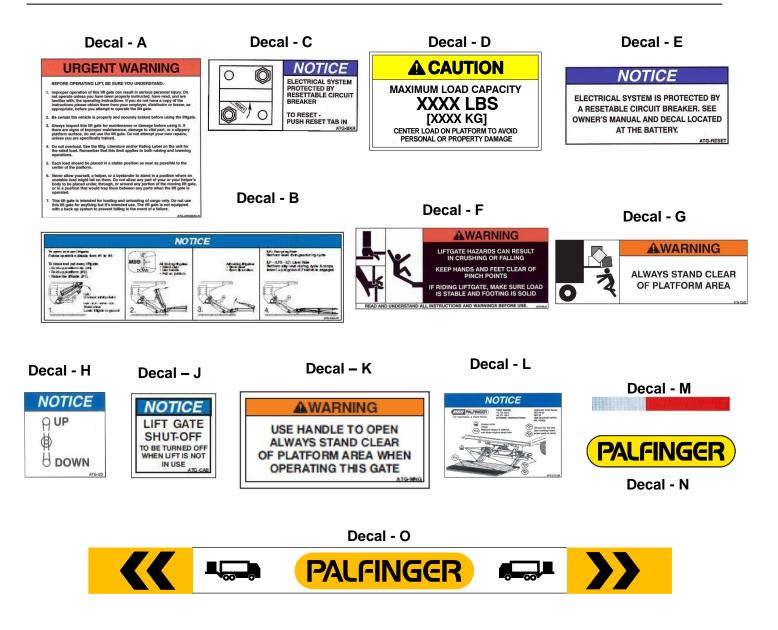
For operator's safety, all decals must be placed visibly on the control side of liftgate to be read by operator. This is typically a combination of decals on the liftgate and truck/trailer body. Please make sure to place the maximum capacity decal (D) on driver and curb side of the vehicle.

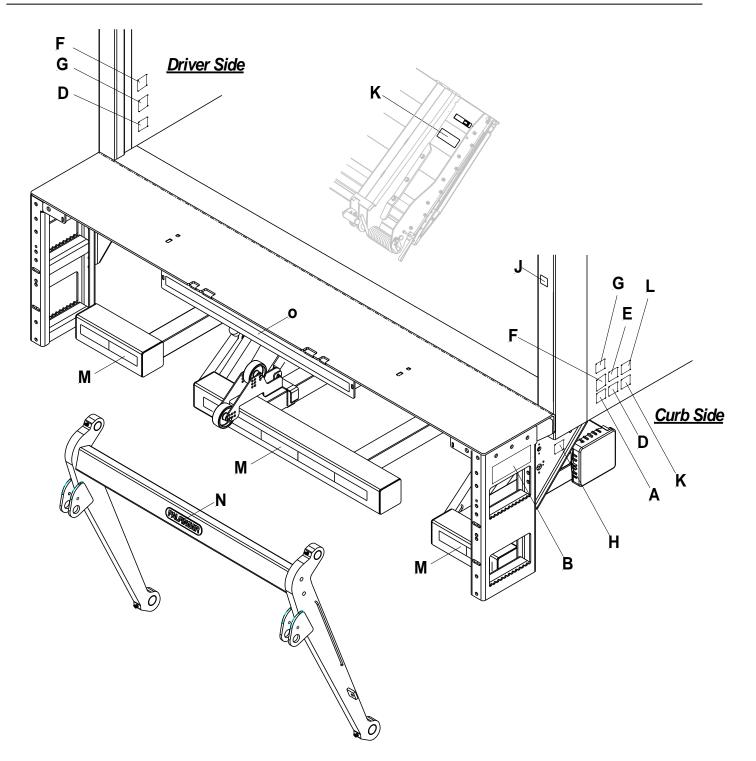
<u>Important:</u> Never remove or paint over any decal. If any decals below require replacement contact INTERLIFT Liftgates.

Decals					
Decal	Qty.	Part No.	Description		
A	1	ATG-URGWA	Urgent Warning: Elevating gate instructions		
В	1	ATG-ILR-ILFS	Operating Instructions		
С	1	ATG-BKR	Circuit Breaker Reset (must be located at the circuit breaker)		
D	2	ATG-XXXX	Capacity (check the serial number plate to find out the gates specific capacity).		
E	1	ATG-RESET	Circuit Breaker Protection		
F	2	ATG-WLH	Warning: liftgate can crush		
G	2	ATG-PLAT	Warning: Always stand clear of platform area		
Н	1	ATG-UD	Toggle Switch Decal (located on post for Trucks) Or (located on strut brace for flatbeds)		
J	1	ATG-CAB	Liftgate Shut-Off (Place Decal next to the On-Off Switch in the Cab)		
К	1	ATG-WNG	Warning: Use handle to open (must be located underneath handle (main section))		
L	1	ATG-ILTLUB	Lubrication and Fluid Points		
М	Roll	85-1114-003	Conspicuity Tape		
N	1	85-0315-100	Palfinger Logo, 1.81" x 8.375"		
0	1	ML2032626	Palfinger Logo, 3" x 38"		

NOTICE

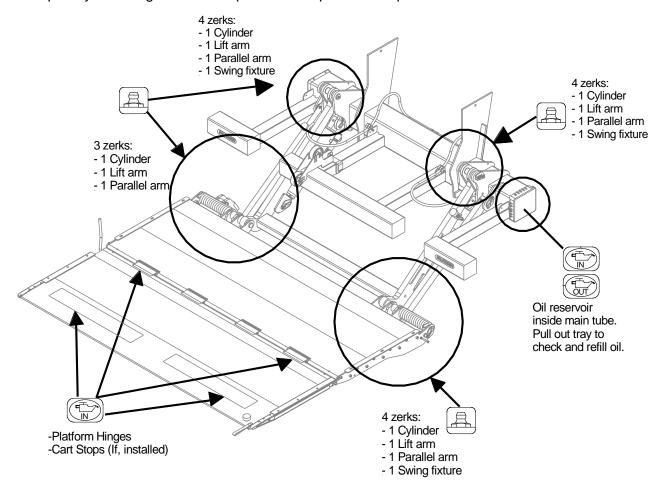
It is the installer's responsibility to determine the proper application of the Conspicuity tape, and to ensure that the vehicle meets DOT and federal lighting regulations. Keep in mind that there are different requirements depending on the classification of the vehicle. Placement of decal "M" shown is an example of conspicuity tape placement. This document is not intended to replace published agency regulations, and it is strongly recommended that the installer references the Code of Federal Regulations (CFR) which can be viewed at http://www.ecfr.gov

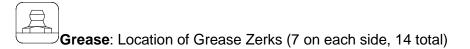




13 <u>Lubrication</u>

- 1. Lower the platform to the ground.
- 2. Remove red protector caps from each component. Lubricate, grease, and oil per diagram below.
- 3. Cycle platform up and down several times. Lubricate and grease all points again.
- 4. Wipe any excess grease and replace all red protector caps on zerks.





Oil: Oil level in the power pack tank (see marking inside of power pack reservoir)

Lubricate: Platform hinges, Slide Rails and optional Cart Stops (use WD-40 spray for lubrication)

13.1 Desirable Grease Characteristics

Desirable Grease Characteristics					
Typical Properties	ASTM Method	Values			
NLGI		2			
Thickener Type		Polyurea, Calcium Sulfonate, Lithium Complex			
Color		Various			
Molybdenum Disulfide, %		5			
Low Operating Temperature, °F		-40			
High Operating Temperature, °F		250			
Base Oil Viscosity 40°C, cst	D445	150 - 220			
Dropping point, °C	D2265	260 +			
Ball wear, scar diameter, mm	D2266	0.45			
Ball weld load, kg	D2596	500 +			
Rust Prevention	D1743	Pass			
Copper Corrosion	D4048	1A			
Water Wash-Out, 79°C, Mass %	D1264	< 1			

Example : Chevron NLGI 2 Black Pearl Grease EP

13.2 Recommended Hydraulic Fluids

Alternative Fluids				
Temperature Range	Fluid Brand			
	EXXON UNIVIS J26			
30° to 150° F	MOBIL DTE 13M			
	CHEVRON AW MV32			
	ROSEMEAD MV 150 (32)			
	MOBILE DTE 11			
-50° to 150° F	SHELL AERO FLUID 4/41			
	SHELL TELLUS 15			
Extreme Cold Temperature	MIL H5606 (Military Spec.)			

14 Final Inspection Check List



Liftgate failure or malfunction could result in property damage, personal injury or death if you fail to check each of the following items listed. DO NOT USE the liftgate if any of the following points are NOT verified and checked. Installation is NOT complete, and all WARRANTIES are VOID if you have not checked and verified all items listed on this inspection sheet. Inspection sheet is to be filled out at the facility where liftgate was installed and <u>MUST</u> be sent to INTERLIFT Liftgates for warranty activation.

Structural Inspection

- All welds are 100% complete per this manual.
- All nuts, bolts, mounting hardware, pins, chain anchors are tight.
- All mounting dimensions are correct and liftgate is square and parallel per this manual.

Hydraulic Inspection

- Pump reservoir is filled to 1.0" from top of reservoir when cylinders are completely compressed (platform is resting on the ground).
- Hydraulic components and connections do not leak. (Should be checked after unit is hydraulically locked for five (5) minutes.)
- All hydraulic lines are secured with cable ties, hoses clamps, or other fasteners. No hoses or components rub on the frame, platform, or any other components while unit is in operation or in storage. No hoses are kinked or bent.

Electrical Inspection

- Battery cable(s) attached and clamped tight and dielectric grease is used to seal all connections.
- All electrical lines are secured with cable ties, hoses clamps, or other fasteners and are away from sharp edges and moving parts.
- Circuit Breakers installed and wired per instructions.
- Measure battery voltages: Flooded Batteries = 12.6V; AGM Batteries = 12.8V
- Lights wired properly and operate per DOT, State, and Federal regulations.

Operational Inspection

- □ All decals are in place and legible per instructions.
- All pivot points are lubricated per instructions, and Zerk fittings have been capped.
- Platform parting wheel is set for proper opening when lowering.
- Coil springs have been adjusted at the platform for proper folding and unfolding tension.
- Snubber pads are tight against platform.
- Retaining bolts are removed from both swing arm fixtures (Section 9.4).
- Platform travels up and down smoothly and freely, without any hesitation or unusual noises.
- Platform is flush with the bed extension; tip is pitched approximately 2"above rear bed extension when raised completely.
- Platform rests on the ground evenly when lowered completely.
- Platform raises and lowers properly and at correct speed. (2 to 4 inches per second)
- Gate is painted, body is clean around gate. Chrome cylinder shafts are not painted. Rubber & plastic caps are in place.
- □ The liftgate serial number and model number are documented in the Owner's Manual, as well as the installation manual in the space provided (pg. 4).
- Owner's Manual has been placed inside the vehicle's glove compartment.
- Supervisor has demonstrated the instructions in the Owner's Manual to the customer/driver upon delivery. Inspection Information (Please Print):

Name:	Signature:
Completed by:	
Title:	Date:
Liftgate Model:	Liftgate Serial Number:

