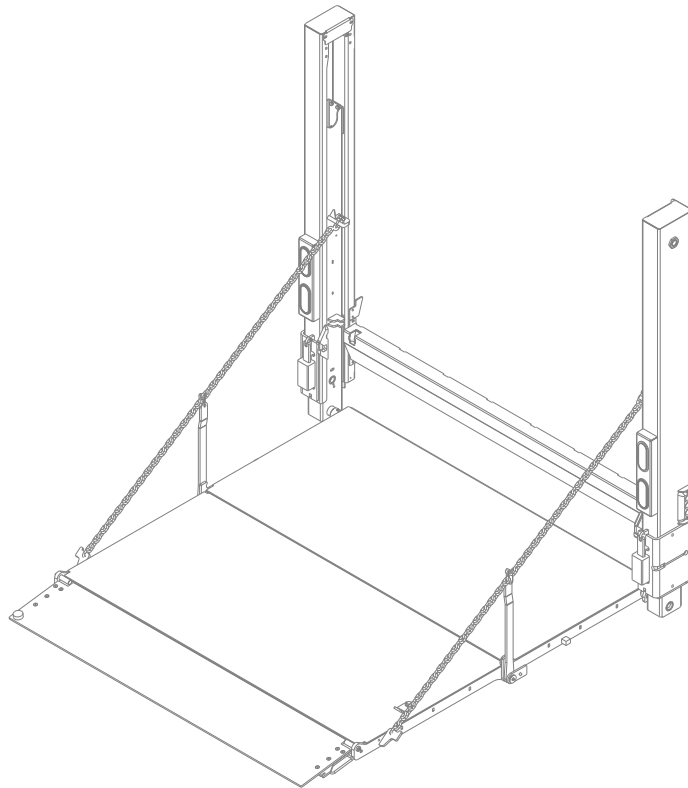




LIFTGATES

ILD *plus*

**INSTALLATION MANUAL
& CHECK-OFF SHEET**



ILD PLUS Installation Manual

Document Part Number: 90-1113-200 / 13-680_90-00_02-00

ECN-M1186, Rev. 1.10, 03-05-18

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Visit www.palfinger.com for up to date information and notifications.

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

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Table of Contents

1	Manual Updates	- 4 -
2	Safety Information	- 5 -
3	Important Information.....	6
4	Tools For Installation.....	8
5	Parts List (all small parts can be found inside the Hydraulic Enclosure).....	8
6	General View of Liftgate	9
7	Installation Dimensions.....	11
	7.1 Important Dimensions	11
	7.2 Installation Dimensions	14
	7.3 Width Requirements.....	15
	7.4 Strength Requirements	16
8	Body Preparation.....	17
	8.1 Rear Bumper.....	17
	8.2 Tow Hitch/Auxiliary Equipment.....	18
	8.3 Flush the Sill (Sub-Framing).....	19
	8.4 Support Body	22
9	Liftgate Preparation.....	23
	9.1 Liftgate Preparation	23
	9.2 Alignment Plates	25
10	Standard Gate Mounting	26
	10.1 Mounting the Liftgate (Standard Installation)	26
	10.2 Welding Liftgate	32
11	Hydraulic Installation.....	37
	11.1 Hydraulic Enclosure	37
	11.2 Hydraulic Connections	39
	11.3 Hydraulic Schematic.....	49
	11.3.1 Prior March 2018	49
	11.3.2 After March 2018	50
	11.4 Hydraulic Pump/Motor Overview	51
	11.5 Hydraulic Fluid	52
12	Electrical Installation	53
	12.1 Auxiliary Battery Kit	53

12.2	Connecting Power to Control Board	54
12.4	Battery Wiring – Truck and Trailer	55
12.5	Cable Routing	55
12.6	Wiring Crimping.....	56
12.7	Circuit Breaker at Truck Batteries.....	56
12.8	Battery Wiring – Truck Kit.....	57
12.9	Battery Wiring – Trailer Kit.....	59
12.10	Electrical Schematic.....	61
	12.10.1 Schematic (Prior to March 2018)	61
	12.10.2 Schematic (After to March 2018)	62
12.11	Control Board System Codes	63
12.12	Trailer to Tractor Ground Test.....	64
12.13	Tail Light Harnesses.....	65
12.14	Dock Bumper Installation.....	65
13	Above Floor Liftgate Installation (Optional).....	66
13.1	Mounting the Liftgate.....	66
13.2	Check Liftgate Dimensions.....	69
13.3	Welding Liftgate	70
14	Lubrication	74
14.1	Standard Unit Lubrication Points	75
14.2	Bottle Gas Unit Lubrication Points	76
15	Decal Placement	77
16	Cycle Test and Bleed the System	80
16.1	Cycle Test and Bleed the hydraulic system, Standard Units.....	80
16.2	Operating Instructions (Standard Units).....	80
16.3	Operating Instructions (Bottle Gas Units)	85
17	Final Inspection Check List.....	91

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
v1.9	<ul style="list-style-type: none">• Added Manual Updates Section.• Revised/updated Sections 5, 6, 7, 9,10, 11, 12.
v1.10	<ul style="list-style-type: none">• Updated Section 7.1: Dimension Sheets.• Updated Section 11: Update entire section to show new pump and motor.• Updated Section 12.8-12.9: Added control box (PCB) wiring• Added Schematic to Section 12.10

2 Safety Information

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



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



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



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



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



CAUTION without the safety alert symbol is used to address practices not related to personal injury. (*In this manual we use it to alert you to potentially hazardous situation which, if not avoided, may result in property damage.*)



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

3 Important Information

.....
Before Getting Started

“READ FIRST”

.....

NOTICE

The ILD Plus is an 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.

- Read and understand the “Installation Manual” and “Owner’s Manual” in their entirety before starting your 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.
- The installer should never place any portion of him/herself or any other person underneath the liftgate at any point during the installation, unless the liftgate is fully welded AND all moving components are safely secured.
- 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 PALFINGER Liftgates for Special Installations 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 **MUST** be filled out and kept in your records for future reference.
- Refer to owner’s manual for operation and maintenance information.

⚠ WARNING

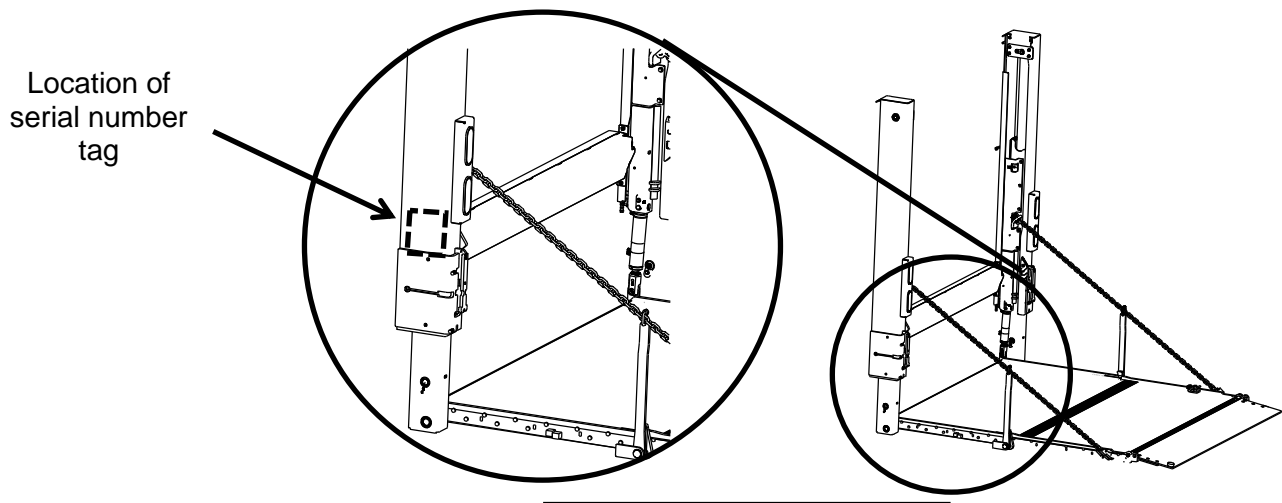
Improper operation of this liftgate may result in severe personal injury or death. **DO NOT** operate unless you have been properly instructed, have read and are familiar with the procedures in this manual. This manual has been designed to illustrate the steps needed for the basic installation of the ILD 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 a PALFINGER Liftgates Authorized Service Center.

This Manual has been designed for use in conjunction with the ILD series liftgate only which is designed for different capacities. There are four options available to determine the model and serial number of the installed liftgate:

- 1) Refer to the serial number tag on the liftgate (Located on Driver Side Column- shown below)



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

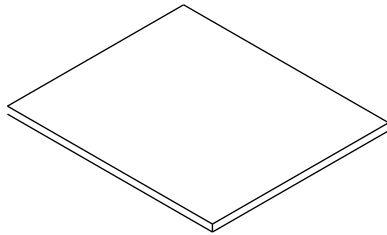
For technical support, contact PALFINGER Liftgates or an authorized PALFINGER service center. www.palfinger.com

Replacement manuals are available at no charge by contacting Customer service at 888-774-5844

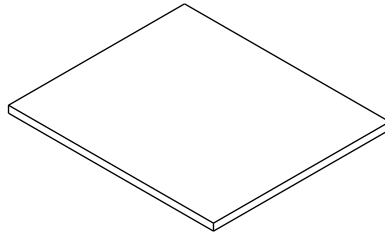
4 Tools For Installation

SAE & Metric Wrench Set	Basic Screwdrivers	Assorted Pliers	Wire Crimp Pliers
Digital Multi-Meter	Snap Ring Pliers	Hammer	SAE & Metric Allen key Set
½" Impact & Sockets	SAE & Metric Socket Set	Assorted Drill Bits	Floor Jack or Equiv.
Sm. To Med. Bottle Jack	Forklift or O/H Crane	Hand Held Grinder	Paint Gun & Accessories
Pry Bar	3/8 Drill Motor	Grease Gun	Heat Gun or Equiv.
Min.250A Welder	Cutting Torch or Equiv.	Framing Square	Measuring Tape

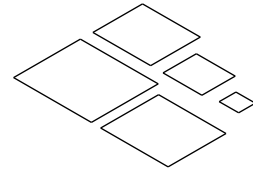
5 Parts List (all small parts can be found inside the Hydraulic Enclosure)



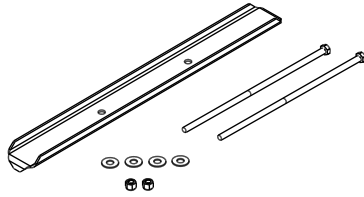
Owner's Manual
1 pc



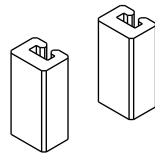
Installation Manual
1 pc



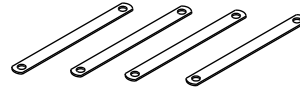
Decal Kit
15 pcs



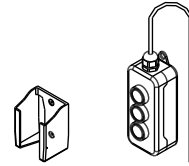
Battery Hold Down Kit
1 Kit



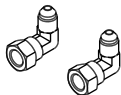
Nylon Dock Bumper
2 pcs



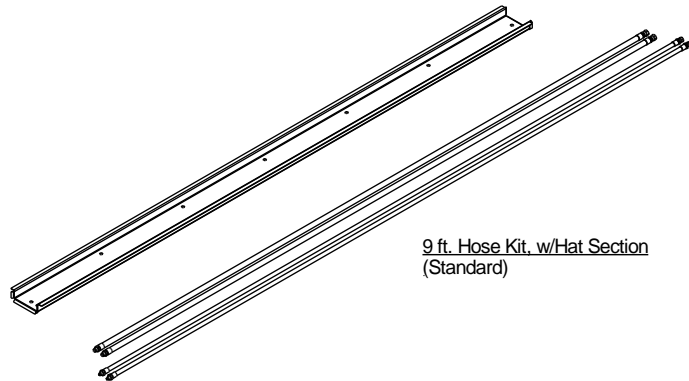
Battery Bus Bars
(Qty based on number of batteries)



3-Button Hand Held Remote w/Holster
1 pc

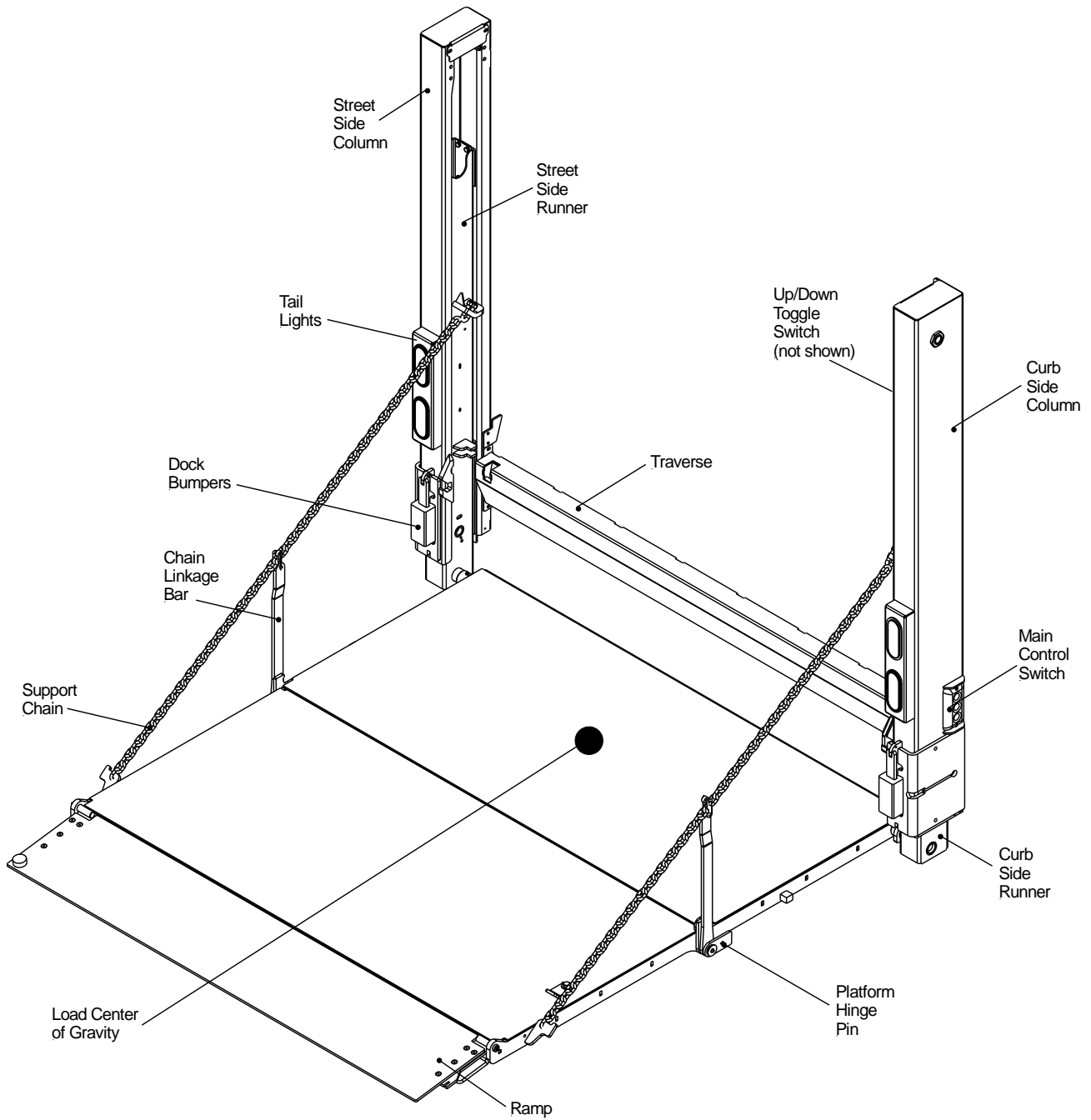


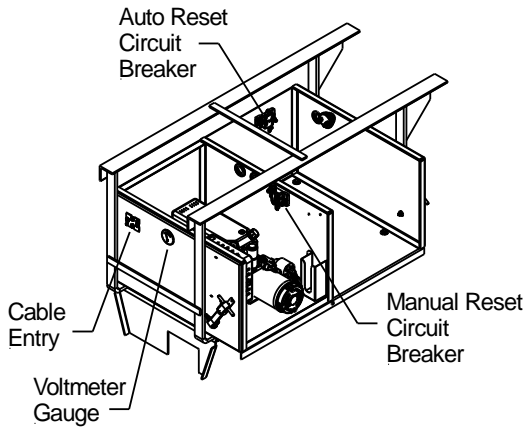
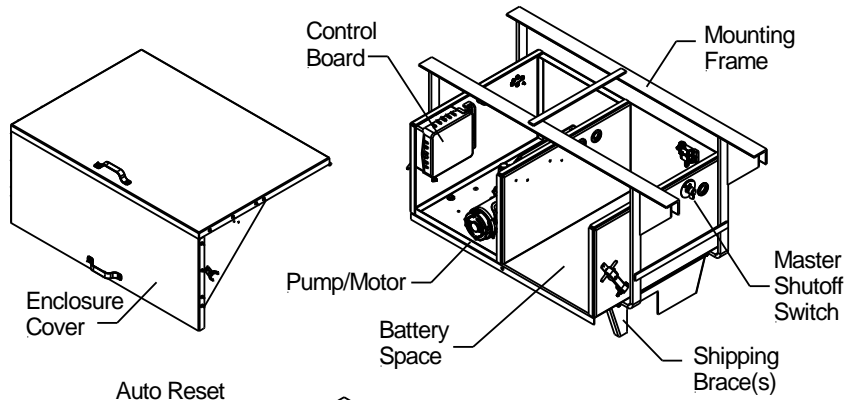
Hydraulic Fittings
1/4", 90° Elbow, Male/Female - 2 pcs



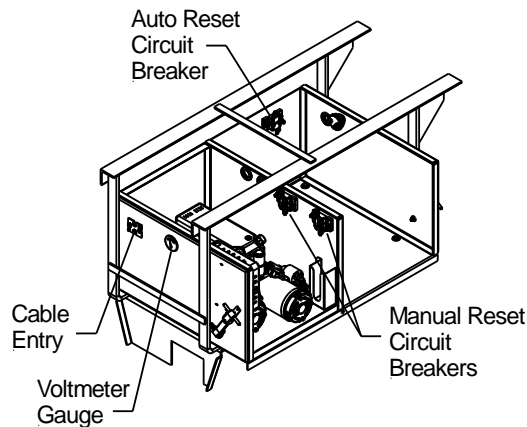
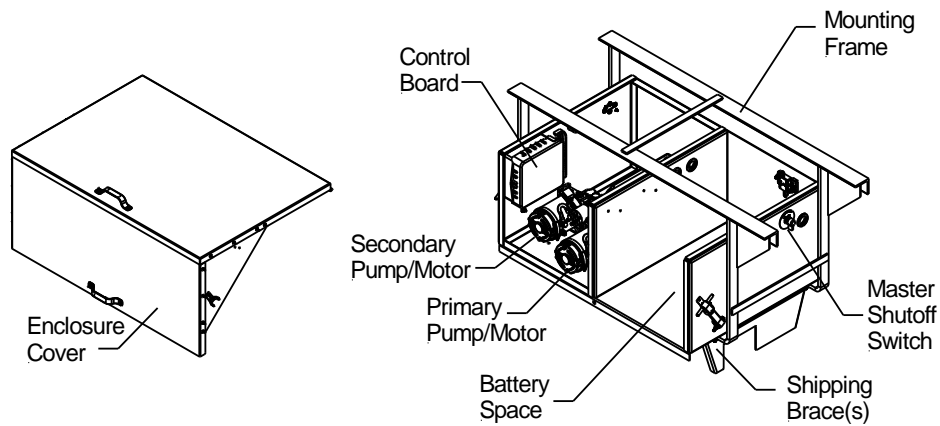
9 ft. Hose Kit, w/Hat Section
(Standard)

6 General View of Liftgate





**Hydraulic Enclosure
Single Pump Configuration**



**Hydraulic Enclosure
Dual Pump Configuration**

7 Installation Dimensions

7.1 Important Dimensions

NOTICE

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

Ensure truck body or trailer rear door does not interfere with installation or operation of ILD plus series liftgate. The ILD plus series cannot be installed with "barn" or "swing" type doors without extensive modification. It is not recommended to cut, torch, or remove support materials from rear sill of truck or trailer. Installers are advised to sub-frame or flush sills as required. Removing gussets, stiffeners, light rings, or other such support structures may VOID your truck/trailer warranty.

Call tech support before starting the installation if you have any questions or concerns on mounting dimensions or procedures 888-774-5844



Trailer Chassis Dimension Sheet

Customer Information

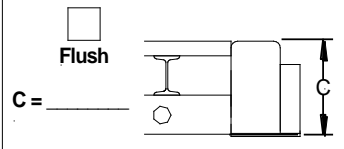
Quote#/SO#: _____
 Company: _____
 Phone: _____
 Email: _____ @ _____

Liftgates Information:
Model:
Capacity:
Platform Size:
Platform Material:

Trailer Information

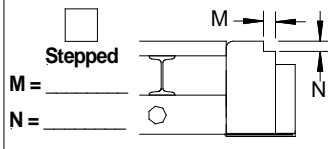
Trailer Specifications:	Type of Body <i>(check applicable)</i> <input checked="" type="checkbox"/>	Type of Rear Door <i>(check applicable)</i> <input checked="" type="checkbox"/>
Manufacturer: <i>(ex. Utility)</i>	Van	Flip-Up
GVWR: <i>(ex. 68,000 lbs)</i>	Flatbed	Roll-Up
Length: <i>(ex. 53ft)</i>	Reefer	Swing
Width: <i>(96", 102")</i>	Other (specify) _____	Other (specify) _____

Trailer Dimensions

- A = Bedheight: Top of trailer floor to level ground (with airbags up):.....
- B = Top of floor to bottom of trailer cross member:.....
- C = Rear sill height (Top of floor to bottom of buck plate): *If Stepped sill complete M,N; If Tapered sill complete O, P.*
- 

Flush

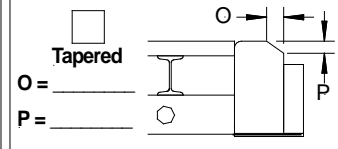
C = _____



Stepped

M = _____

N = _____

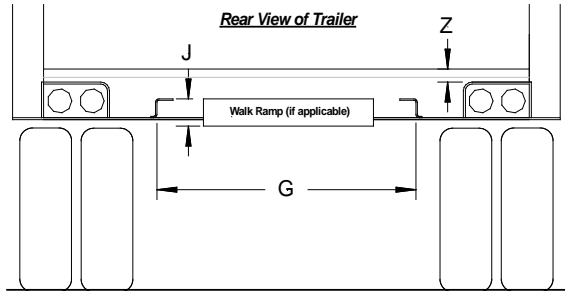
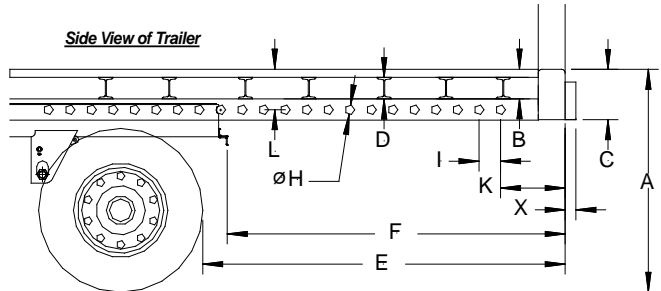


Tapered

O = _____

P = _____
- D = Crossmember height:.....
- E = Tire to end of vehicle body:.....
- F = Bogie to end of vehicle body:..... Sliding Suspension? Yes _____ No _____
 If Yes complete G, H, I, K, and L dimensions
- G = Inside horizontal width of sliding suspension angles:.....
- H = Diameter of sliding suspension holes:.....
- I = Hole spacing:.....
- J = Bottom of crossmembers to bottom of sliding ramp box, if applicable:.....
- 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:.....
- X = Eyebrow depth:.....
- Z = Top of floor, where the liftgate platform will meet the top of the eyebrow:.....

Notes:



90-9813-002_b



Truck Chassis Dimension Sheet

Customer Information

Quote#/SO#: _____
 Company: _____
 Phone: _____
 Email: _____ @ _____

Liftgates Information:	
Model	
Capacity	
Platform Size	
Platform Material	

Truck Information

Trailer Specifications:	
Manufacturer: (ex. Hino)	
GVWR: (ex. 68,000 lbs)	
Length: (ex. 53ft)	
Width: (96", 102")	

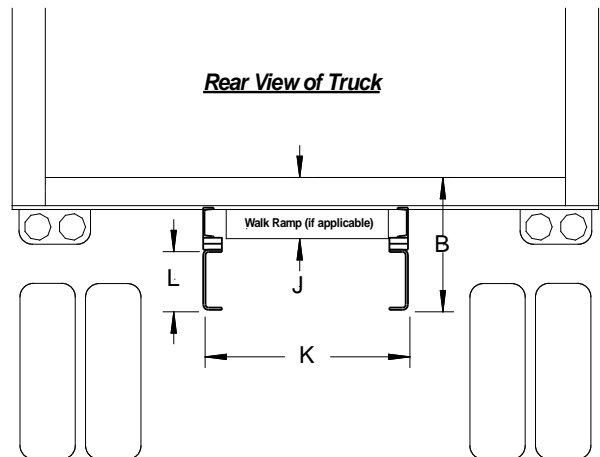
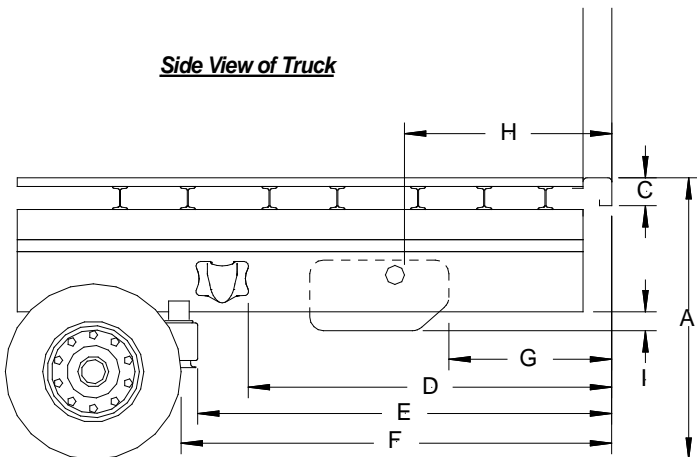
Type of Body (check applicable) <input checked="" type="checkbox"/>	
Van	<input type="checkbox"/>
Flatbed	<input type="checkbox"/>
Reefer	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>

Type of Rear Door (check applicable) <input checked="" type="checkbox"/>	
Flip-Up	<input type="checkbox"/>
Roll-Up	<input type="checkbox"/>
Swing	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>

Truck Dimensions

- A = Bedheight:..... Loaded Bedheight:.....
- 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 applicable):.....
- 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 applicable):.....
- J = Top of floor to bottom of sliding walk ramp (if applicable):.....
- K = Frame Width: Width of chassis frame:.....
- L = Frame Height: Height of chassis frame:.....

Notes:



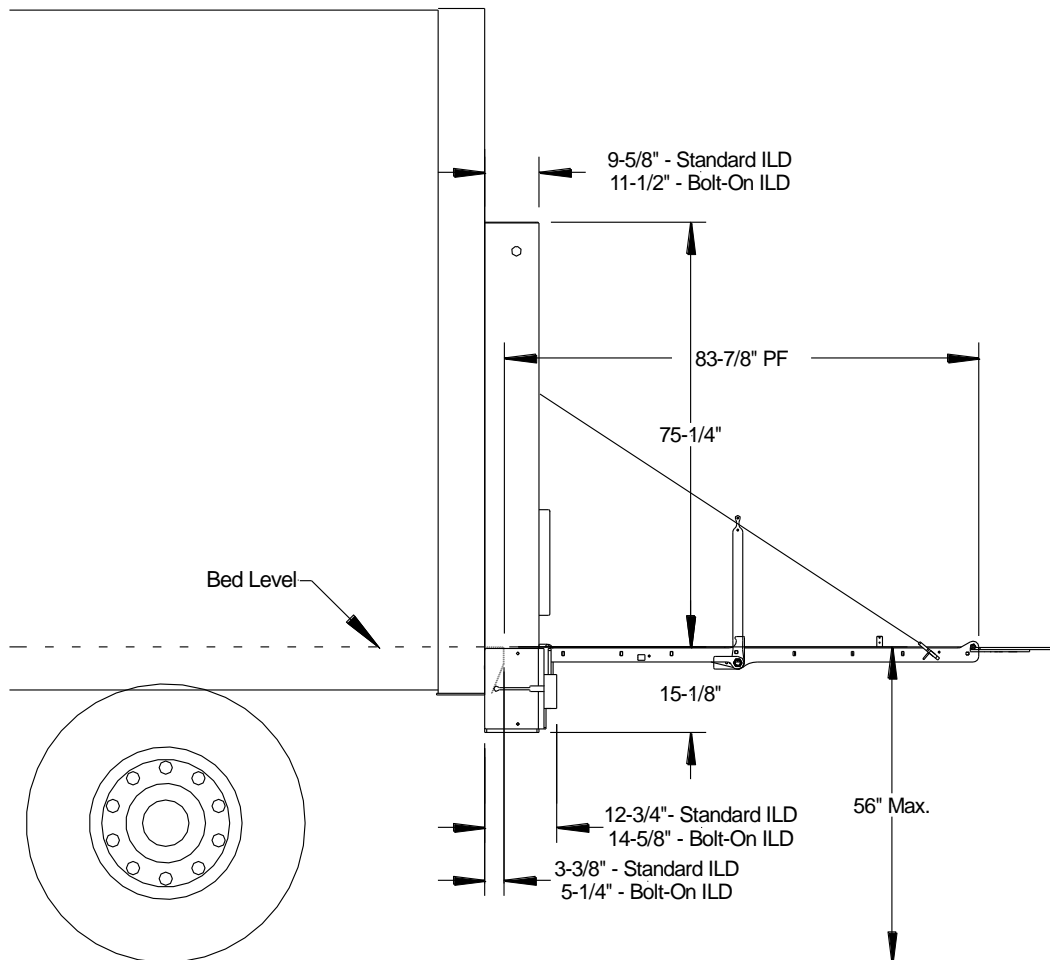
90-9813-003_b

7.2 Installation Dimensions

1. Measure Floor Height: Measure the floor height of your truck and determine clearance requirements for your liftgate platform size.
2. Verify Compatibility: Reference the compatibility table below to ensure your gate is compatible with your vehicles bed height.

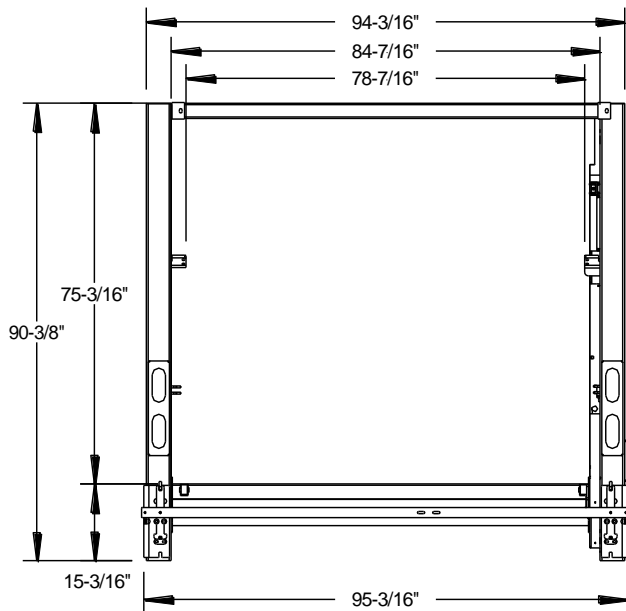
Compatibility Table					
Liftgate Model	Platform Depth	Dock Loading Bed Height Range		NO Dock Loading Bed Height Range	
		Min.	Max.	Min.	Max.
ILD+ BG	42"+16" ARR	46"	56"	34"	56"
ILD+	60"+12" Fixed Ramp	32"	56"	34"	56"
ILD+	60"+16" ARR	32"	56"	34"	56"
ILD+	72"+12" Fixed Ramp	38"	56"	34"	56"
ILD+	72"+16" ARR	38"	56"	34"	56"
ILD+	84"+12" Fixed Ramp	44"	56"	34"	56"
ILD+	84"+16" ARR	44"	56"	34"	56"

ARR = Aluminum Retention Ramp; BG = Bottle Gas
 All platforms are 80" wide..

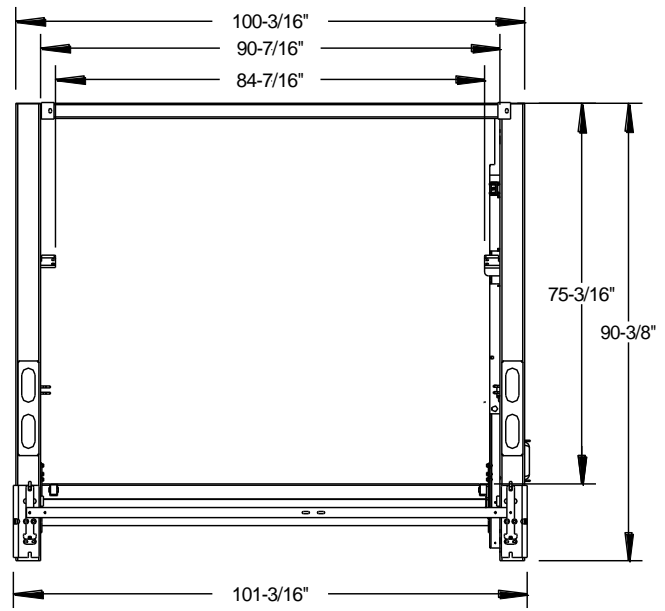


7.3 Width Requirements

Reference the chart below to determine liftgate width dimensions. Ensure that your vehicle meets these requirements. The ILD plus series liftgate is offered in two widths for most 96" and 102" wide bodies.



For 96" Wide Vehicle Bodies



For 102" Wide Vehicle Bodies

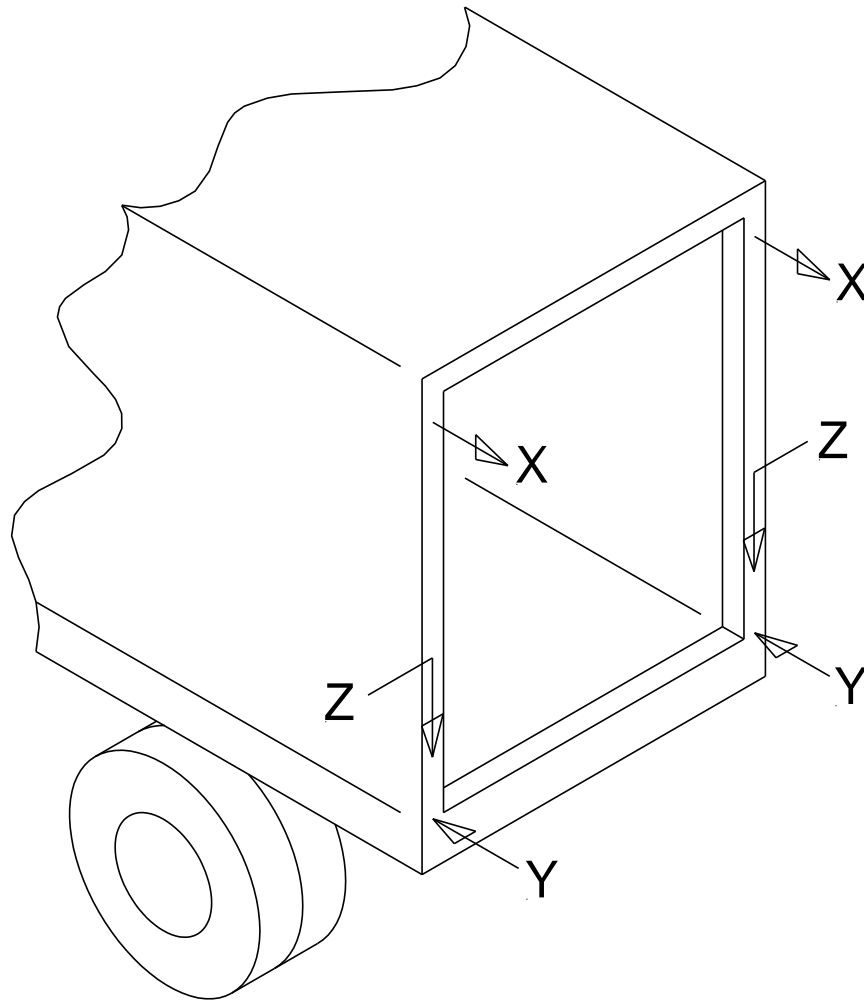
Nominal Truck or Trailer Width	Outside Column Dim.	Inside Column Dim.	Inside Platform Chain Plate	Overall Outside Dim.	Overall Liftgate Dim. H"xW"
96" Wide Body	94-3/16"	84"-7/16	78-7/16"	95-3/16"	90-3/8" x 95-3/16"
102" Wide Body	100"-3/16"	90"-7/16"	84-7/16"	101-3/16"	90-3/8" x 101-3/16"

7.4 Strength Requirements

Reference the chart below for side wall requirements. Ensure that the body side wall, corner post, and rear sill strength requirements are met for your liftgate.



Truck body or trailer must be capable of supporting minimum forces and loads shown below.



Side Wall Requirements				
	ILD 35	ILD 44	ILD 55	ILD 66
X = Side Wall Tension	1900 lbs.	2400 lbs.	2950 lbs.	3500 lbs.
Y = Side Wall Compression	1900 lbs.	2400 lbs.	2950 lbs.	3500 lbs.
Z = Side Wall Shear	2700 lbs.	3100 lbs.	3800 lbs.	4300 lbs.

8 Body Preparation

In order to install your ILD series liftgate, some body preparation may be required. Truck and trailer applications with flush corner post and sill and NO protruding gussets or stiffeners are the most straight forward of all ILD installations. Rear of body should be 90° to ground.

8.1 Rear Bumper

Steps:

1. Prep rear sill: Remove any sill or corner post mounted lights, grab handles, or bumpers, **Fig 1**. Your goal is to have a flat and flush mounting surface for the liftgate.

NOTICE

It is not recommended to cut, torch, or remove support materials from rear sill of truck or trailer. Installers are advised to sub-frame or flush sills as required. Removing gussets, stiffeners, light rings, or other such support structures may VOID your truck body or trailer warranty.

2. Remove Rear Protrusions: Be certain that under ride bumpers, trailer hitches, or other auxiliary equipment do not extend rearward of rear sill. Use the following illustrations as a guide. A more detailed explanation can be found in the following sections, **Fig. 2**.

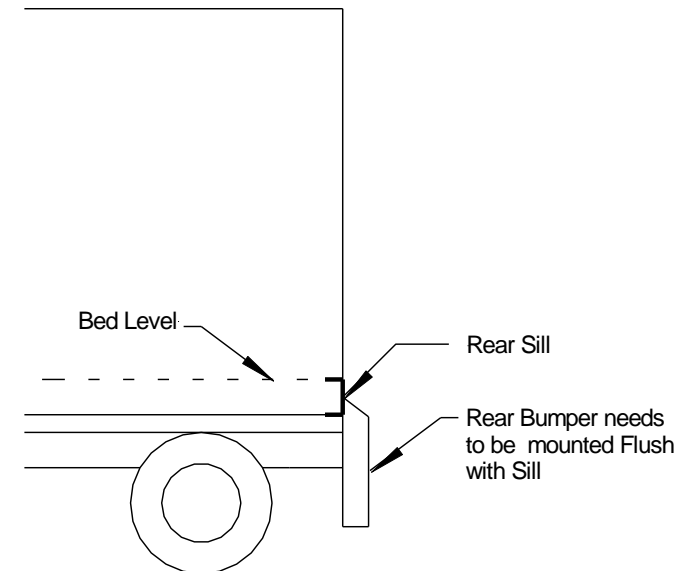


Fig. 1

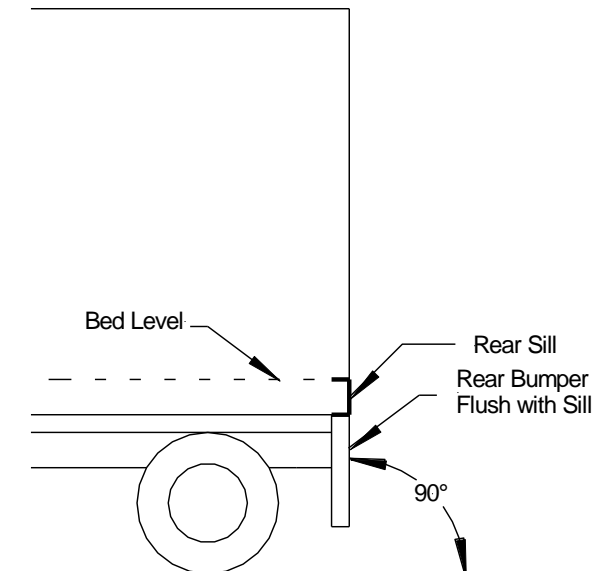


Fig. 2

8.2 Tow Hitch/Auxiliary Equipment

Steps:

1. Relocate Hitch (If applicable): Trailer Hitches are common truck or trailer equipment and are compatible with the ILD plus series; however they **must not stick out** further than the rear sill. Relocate or remove tow hitch or other auxiliary equipment (If necessary), **Fig. 3**.

NOTICE

If the tow hitch or other auxiliary equipment must be removed or adjusted, ensure that work is done by a qualified professional. Removing or relocating tow hitches or other equipment may void the warranty.

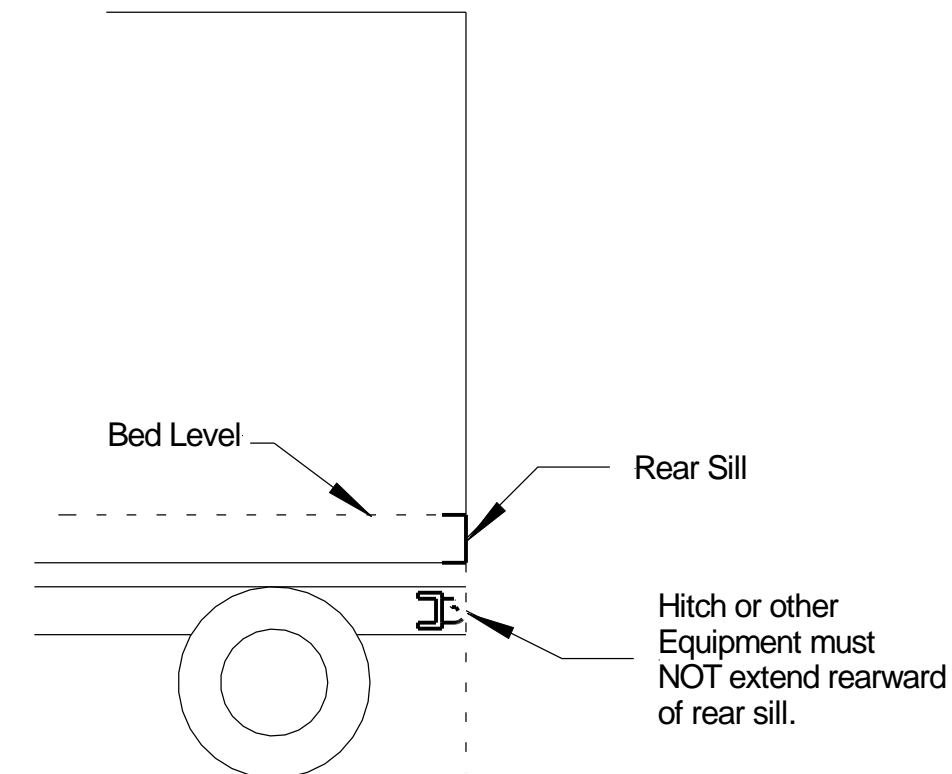


Fig. 3

8.3 Flush the Sill (Sub-Framing)

Steps:

1. Flush the sill: Some trucks or trailers may have configurations with irregular shaped sills, **Fig.4**. Liftgate mounting surface may NOT be flush with corner post. Some sills may be inset or have door gutters. All these situations are remedied with a process called sub-framing and/or flushing the sill.

Sub-framing is done one of two ways; Sub-frame can be built up using correct size 3/16" or greater wall tubing before liftgate is mounted. Or, the liftgate can be mounted into position and sub-frame can be built as liftgate is installed with 3/16" or greater flat bar, **Fig.5**. In either case, liftgate installation weld procedure does not change.

These examples are show below:

Flushing floor or filling gap between Sill and liftgate can be done up to 6" without cross supports. Use 1/4" or greater flat bar or diamond plate to span gap. Original width of the truck frame should be matched as close as possible.

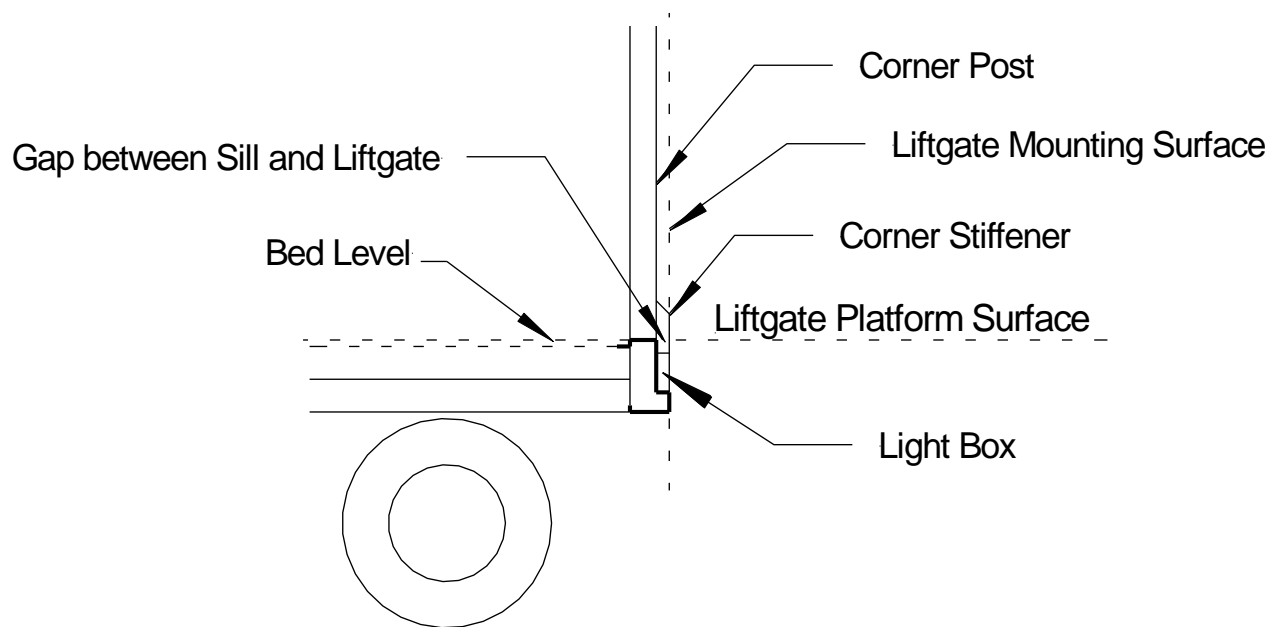


Fig. 4

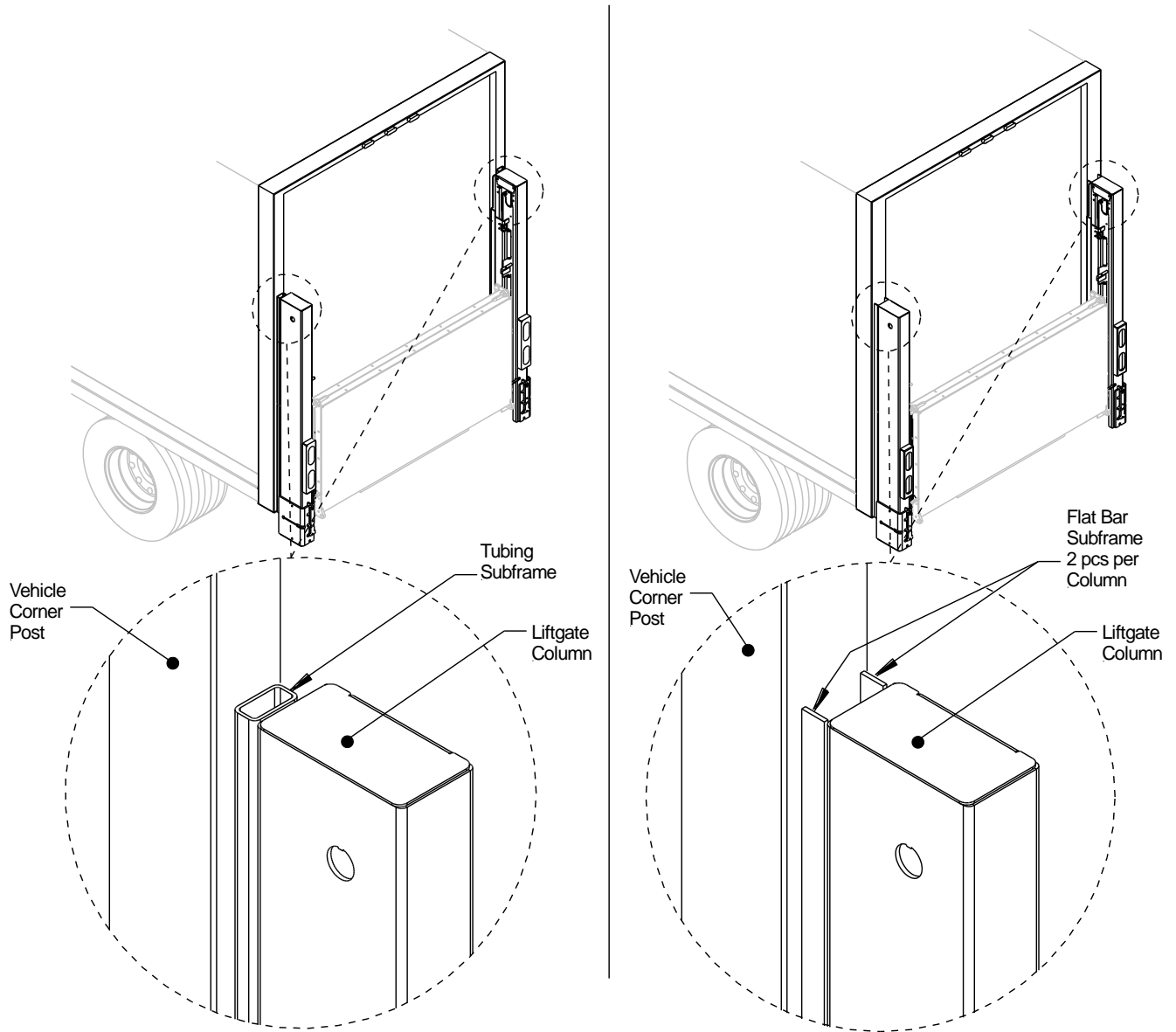
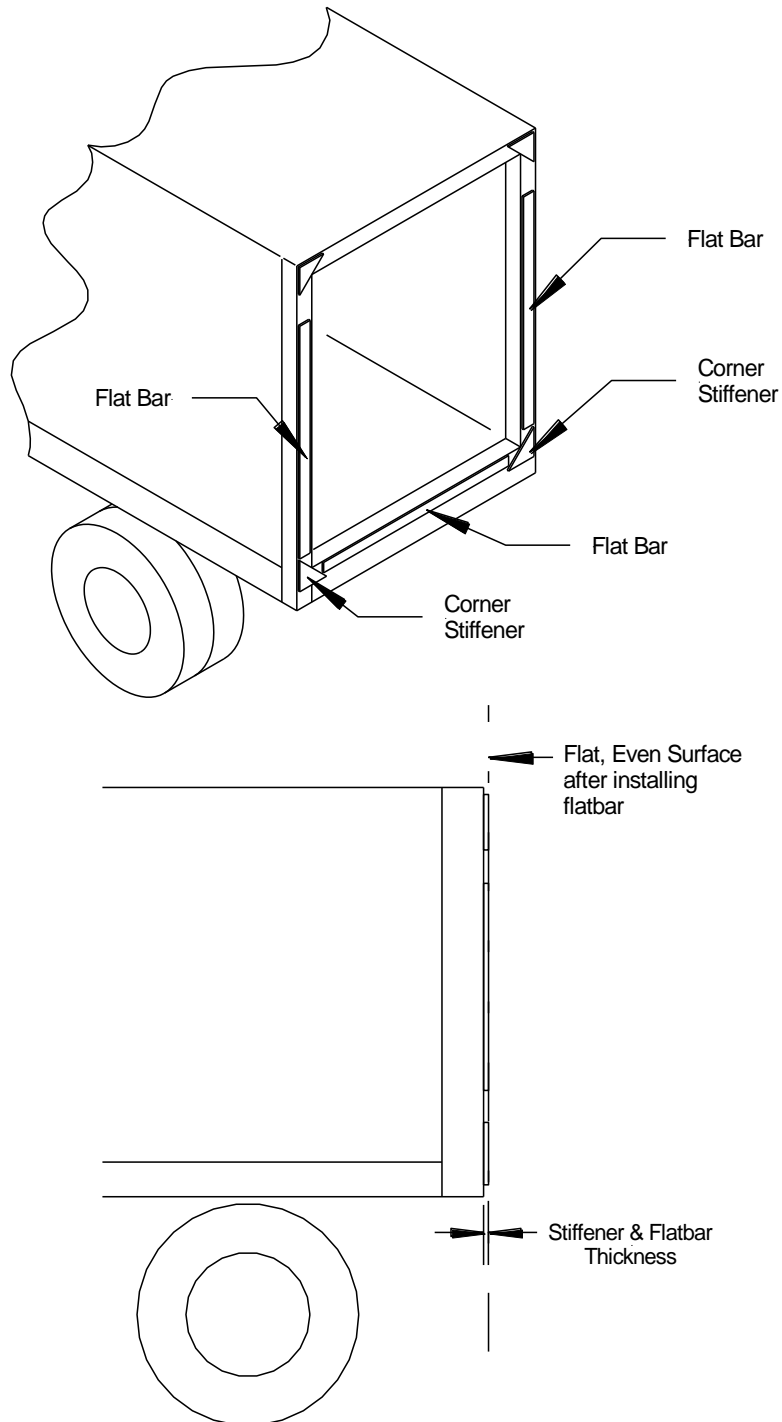


Fig. 5

Flat Bar Posts (if necessary): Corner stiffeners are common and should NOT be removed. It is recommended to “flat bar” with same thickness as stiffeners, typically ¼” to 3/8” thick x 3” wide. Liftgate Installation weld procedure is the same.

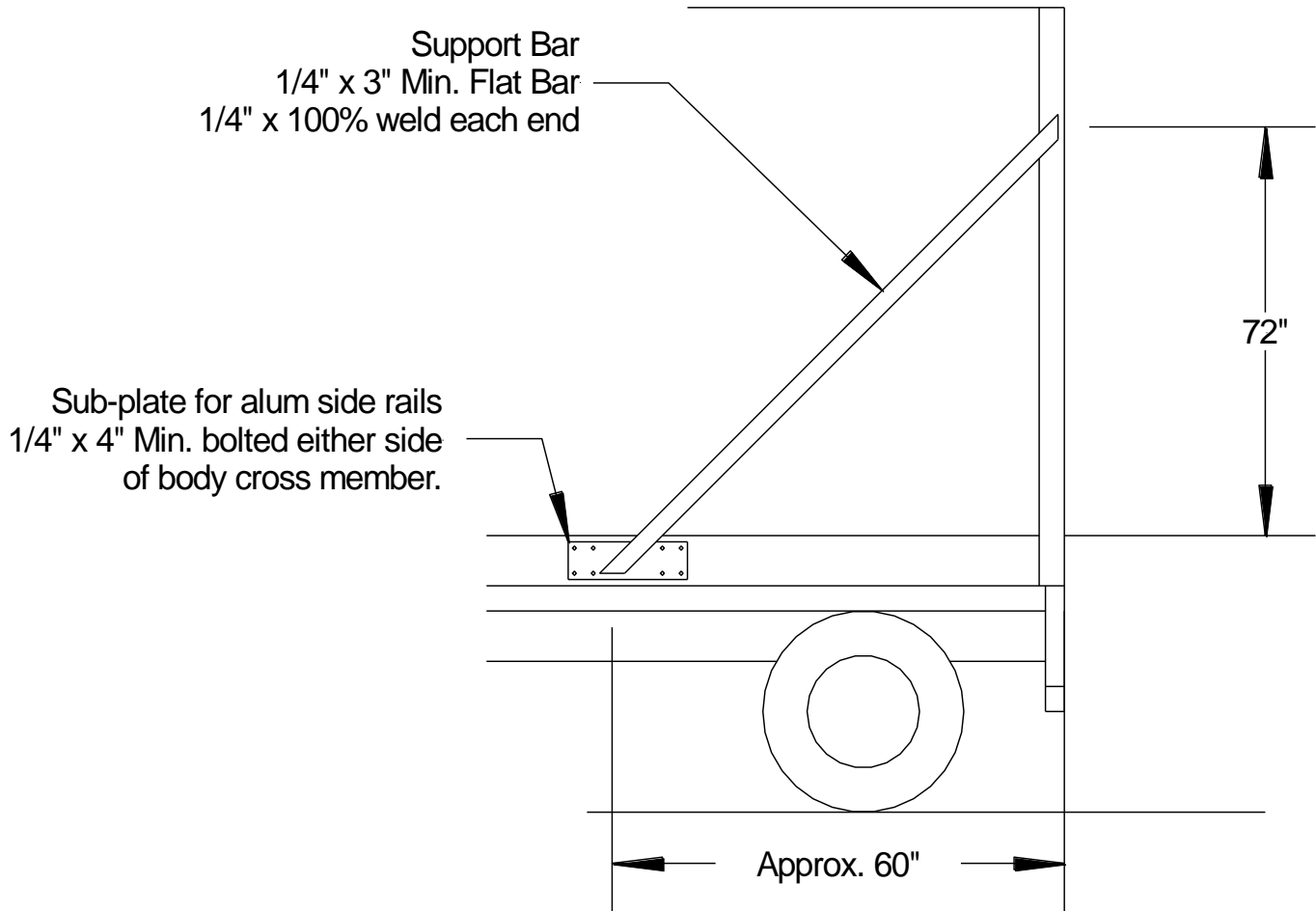


8.4 Support Body

Side supports can be used to strengthen body.

Steps:

1. Add body supports (if necessary): If extra support is required, add support bars. Flatbed installation may use similar arrangement with 3/16" x 4" x 4" min. rectangular tubing for corner post and 3" channels for support bar.



9 Liftgate Preparation

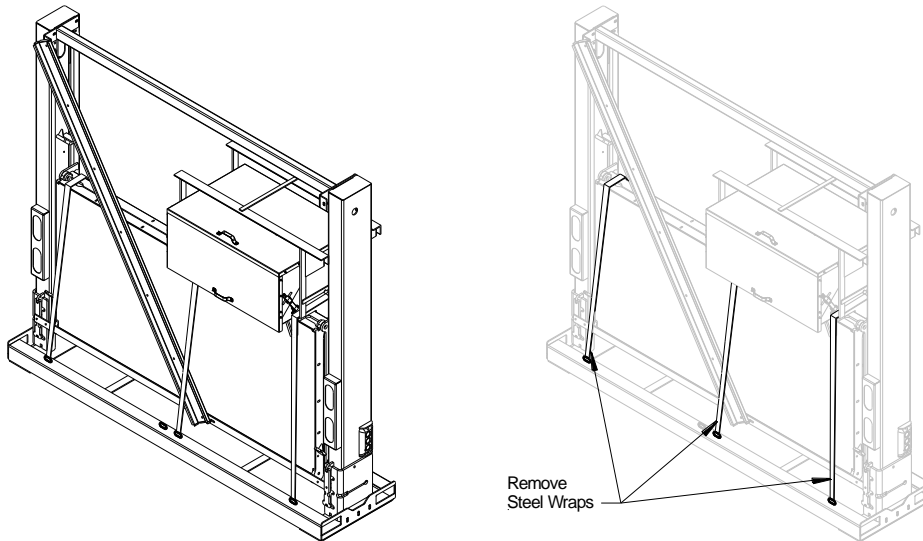
⚠ WARNING

The installer should never position any portion of him/herself, or any other person directly under the liftgate at any point during gate mounting.

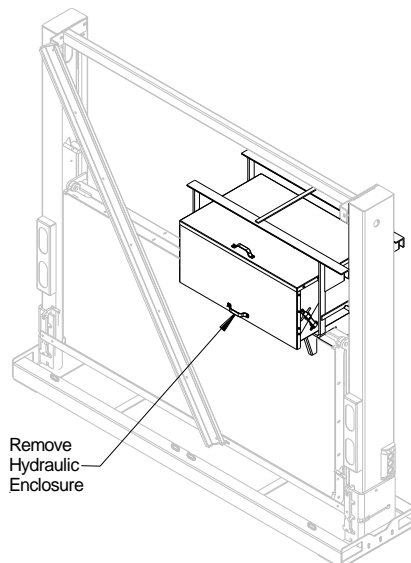
9.1 Liftgate Preparation

The ILD liftgate comes with multiple assemblies and components attached that need to be removed prior to installation. Prepare the liftgate for installation by removing the following components and assemblies.

1. Remove Shipping Ties: Remove steel wraps. Cut wraps from the front of the liftgate and the rear.



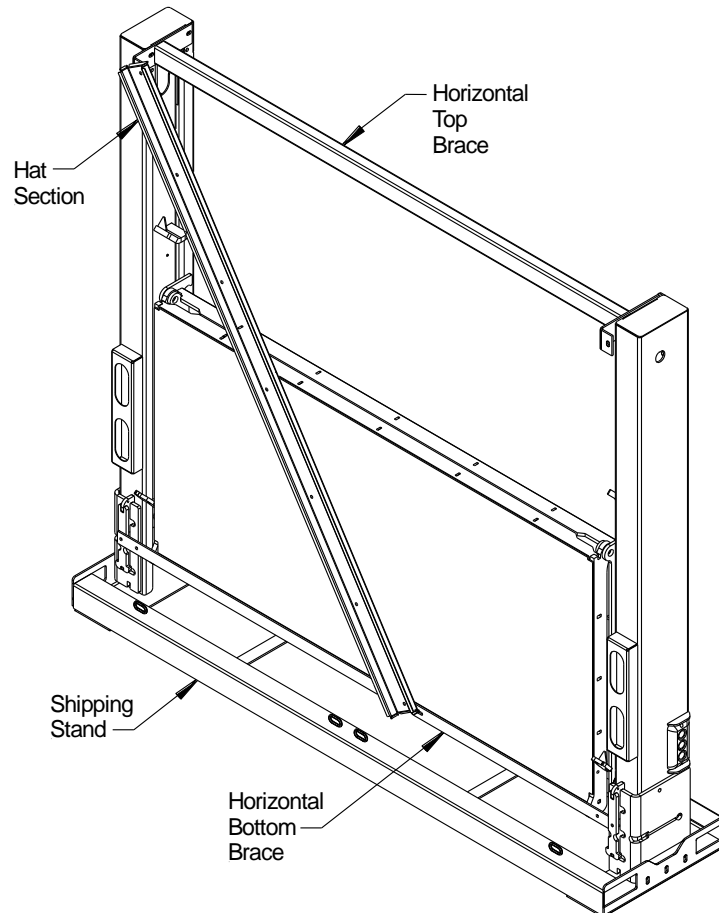
2. Remove Pump/Battery Box: Remove the Hydraulic Enclosure from the liftgate. It is recommended to use a forklift to remove hydraulic enclosure. Set the enclosure aside until it is required to be installed.
Attention: Be certain NOT to damage the hydraulic fittings located underneath the enclosure.



3. Liftgate Ready for Installation: After removal of the shipping ties and battery box the liftgate is prepared for installation as shown below.

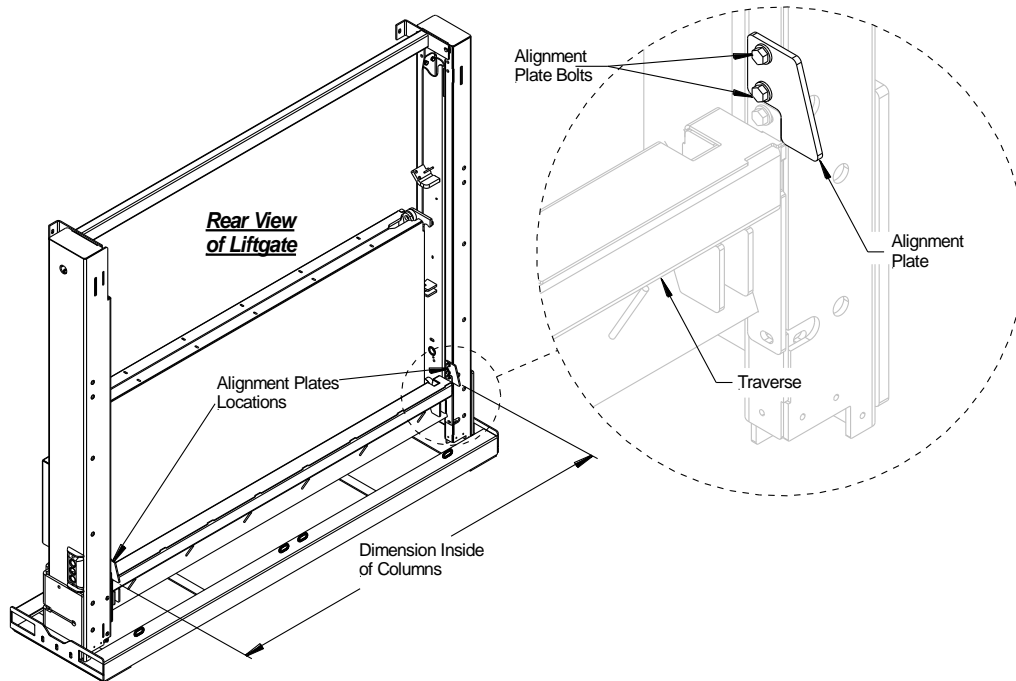
⚠ WARNING

DO NOT remove any braces before or during installation until instructed to do so.



9.2 Alignment Plates

For the convenience of the installer, alignment plates are included with all ILD+ liftgates and are pre-installed. The purpose of these plates is to aid in alignment of the traverse with the sill of the truck or trailer.



NOTICE

If the body of the truck is narrower than the inside of the column, it is recommended to use an alternative method for aligning the liftgate to the vehicles sill. Please contact Palfinger Liftgates technical support for special instructions.

10 Standard Gate Mounting

CAUTION

This manual features installation procedures for “Standard” ILD and “Above Floor” ILD liftgates models. Before continuing with the installation, identify what ILD model is to be installed.

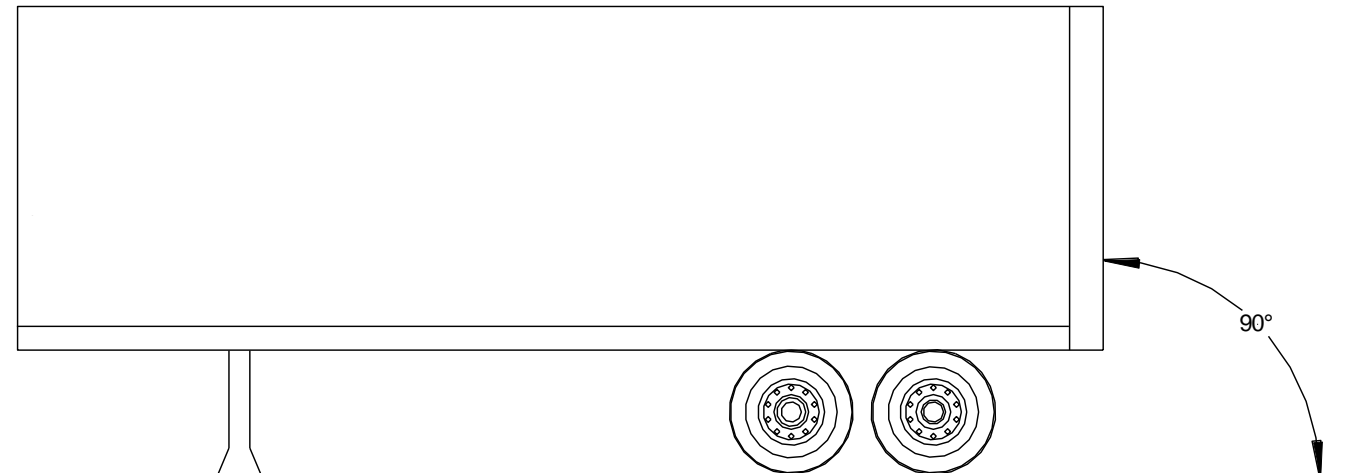
10.1 Mounting the Liftgate (Standard Installation)

NOTICE

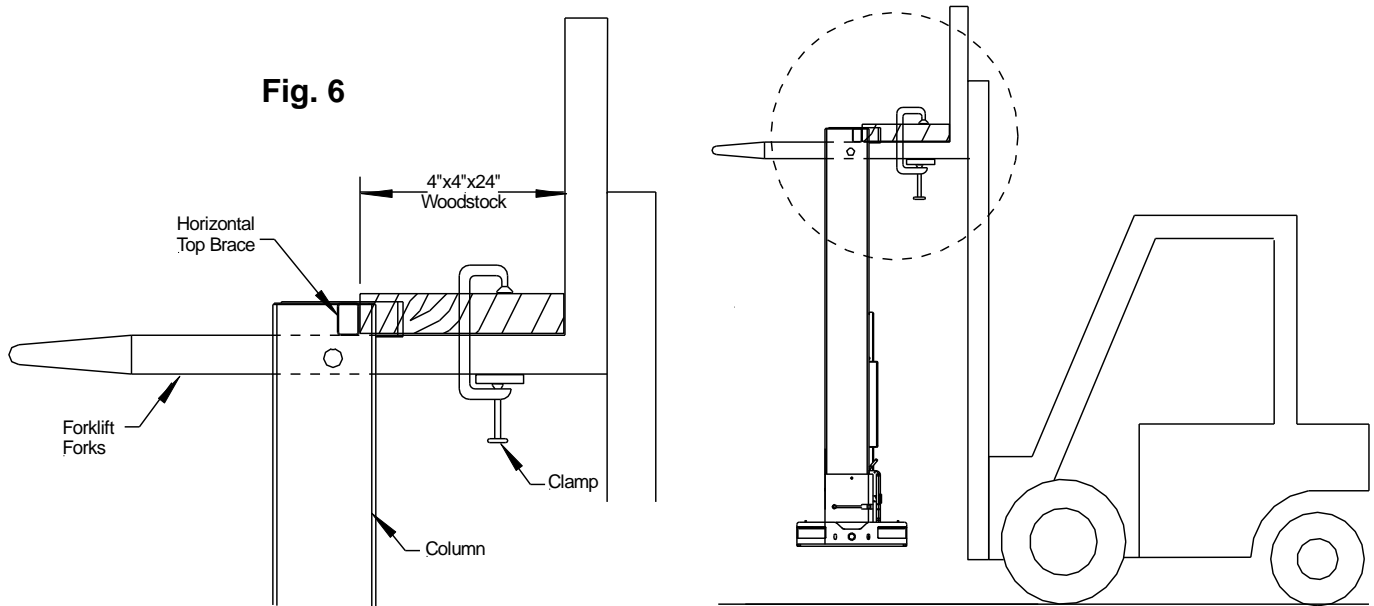
Before positioning the liftgate; consider when measuring and centering the liftgate that the truck or trailer may NOT be square or parallel. Special care must be taken to ensure that the liftgate is square and parallel before welding.

Steps:

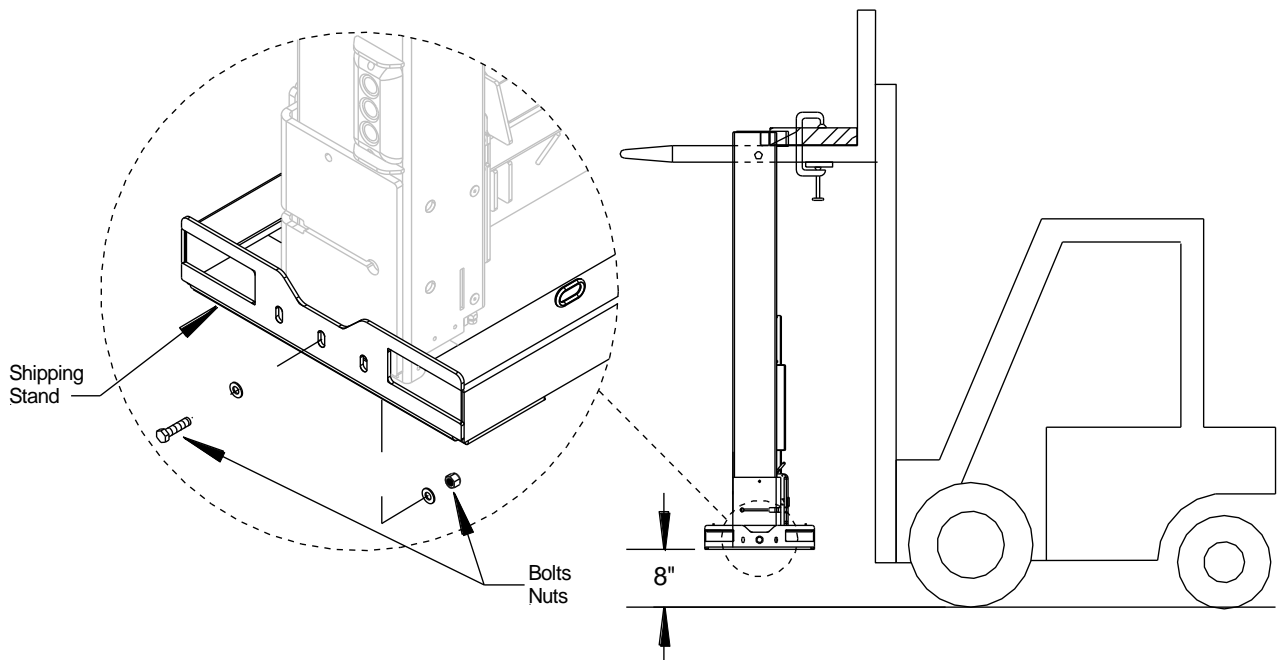
1. Level Vehicle: Vehicle must be on level and even ground. Uneven ground will give misleading measurements and can cause body twist or racking.



2. Make sure the liftgate is properly secured: Check that the liftgate is attached safely to the lifting device. If using a forklift to hoist the liftgate, use 4"x 4" x 24" wood spacers to keep the unit from sliding back when lifting, **Fig. 6**. This will help force the top of the liftgate tight against the body for welding.



3. Remove Shipping Stand: Hoist the liftgate approximately 8" from the ground and remove the two bolts and nuts located on the outside of the shipping stand for the street and curb side columns.



NOTICE

Before positioning the liftgate against the vehicle, open the vehicles rollup doors.

4. Fit Liftgate Against Truck: Use a forklift (recommended) to position the liftgate flush against the vehicles corner posts and sill.

NOTICE

The full weight of the liftgate should be supported by the lifting device, and not the alignment plates/ channels, Fig 7. Do not remove the lifting device.

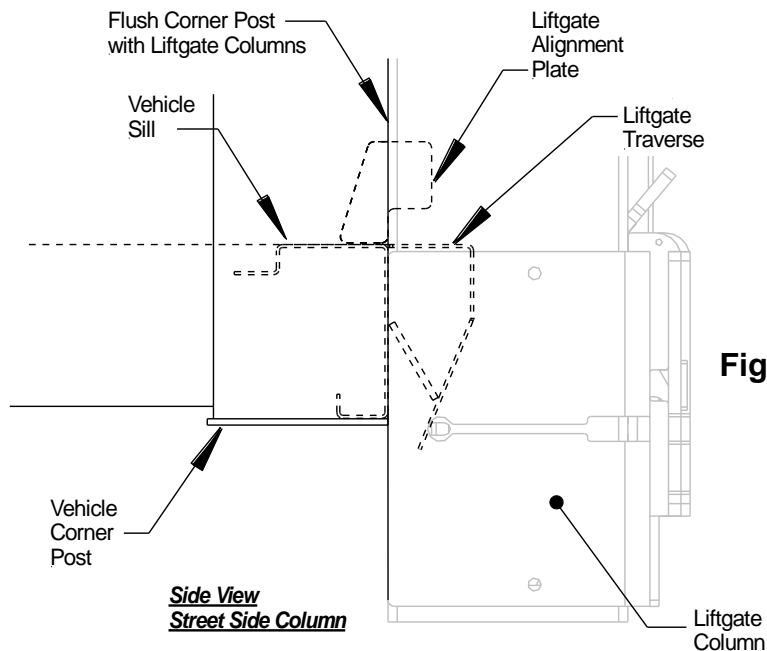
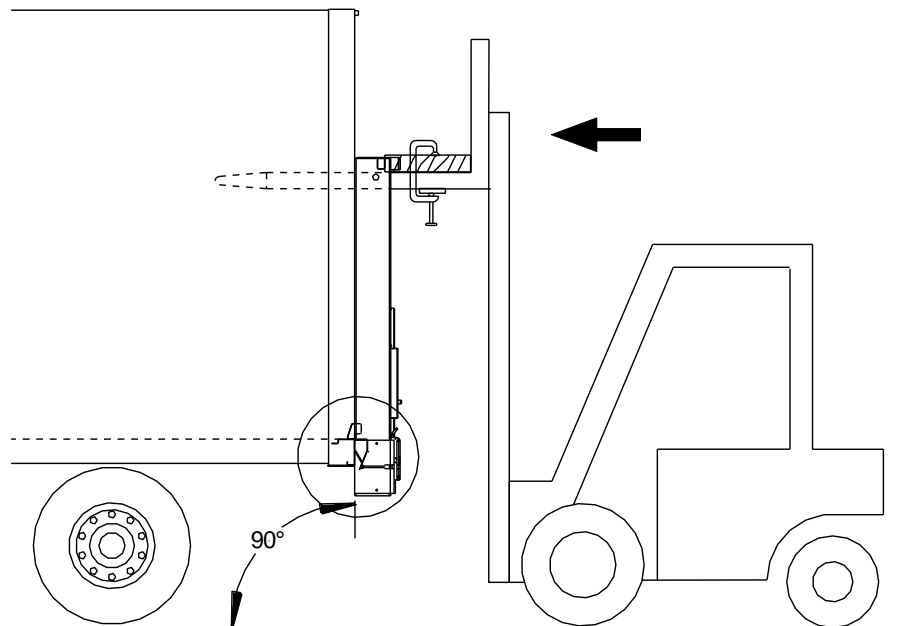
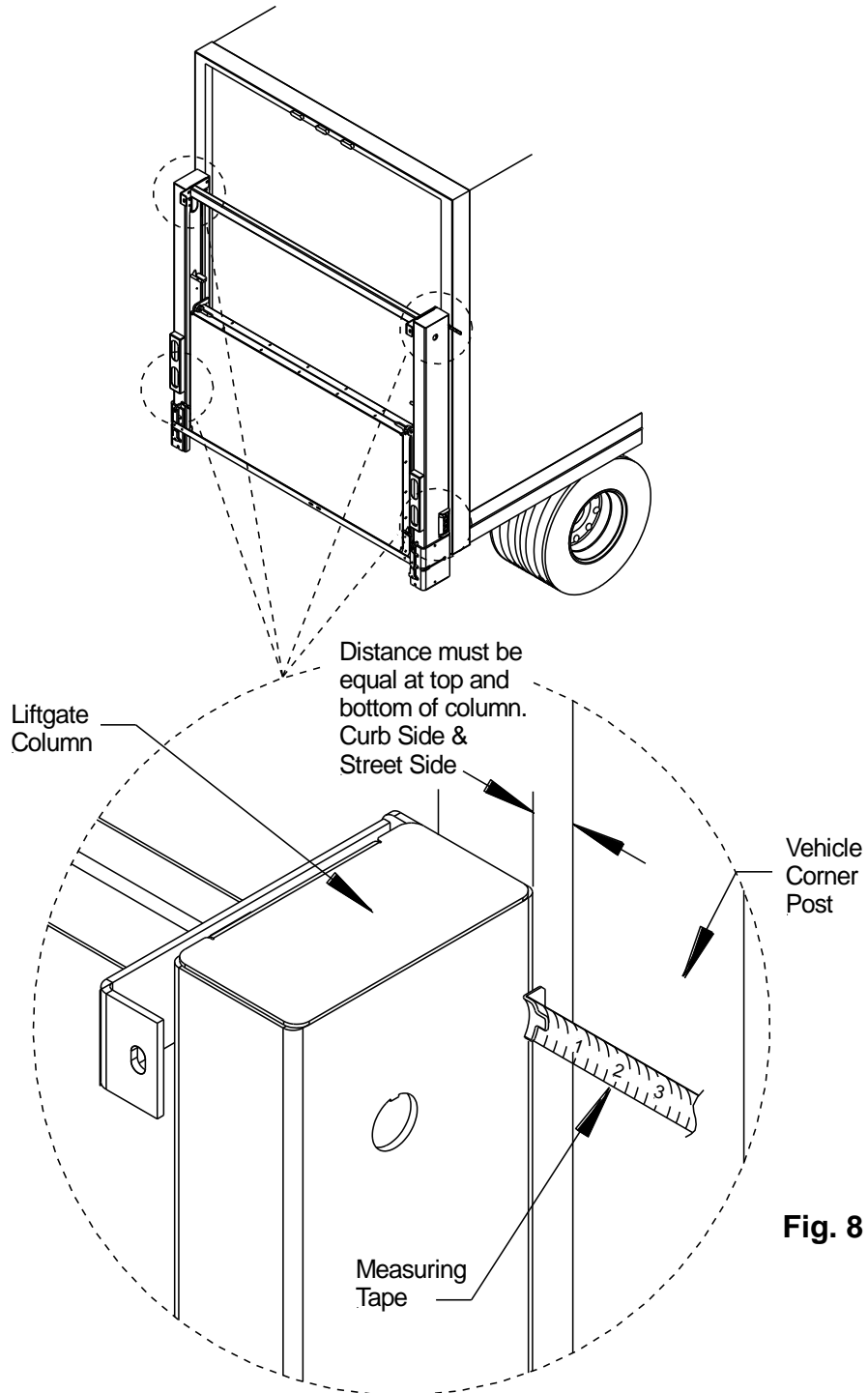


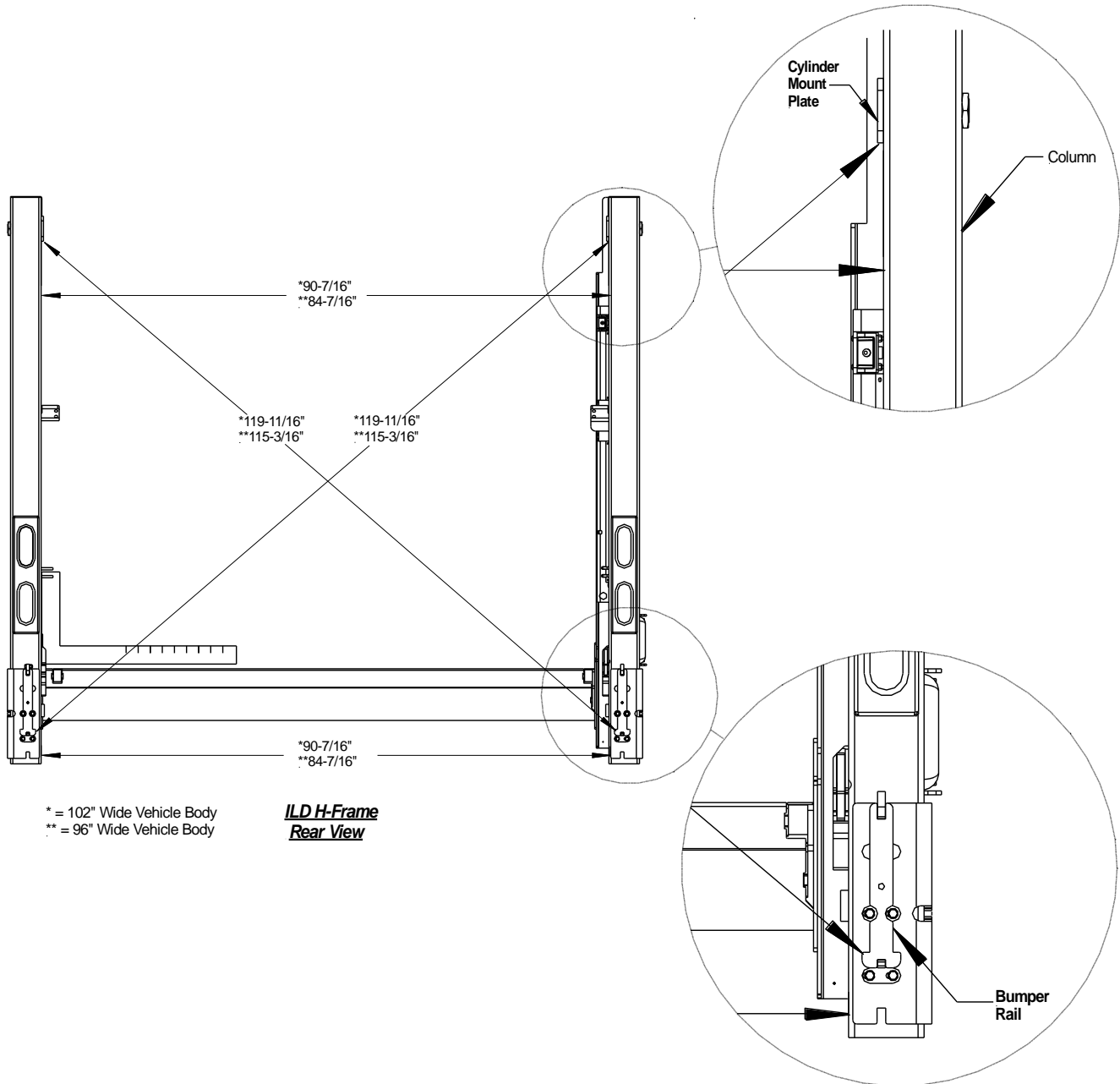
Fig. 7

5. Centering the Liftgate to Vehicle: After positioning the gate against the vehicle, measure the distance from the end of the columns to the end of the vehicle with a measuring tape. Measure the top of the columns and the bottom, both measurements must measure the same distance, repeat measurement on other column, **Fig. 8**. If both sides don't measure equally, shift the liftgate to the side necessary.



6. Check Dimensions: Inspect liftgate to be certain it is squared and parallel. Use a framing square to verify columns are square at 90° to the vehicles sill and body. Measurements should reflect dimensions below when measured from the indicated points.

NOTE: Be aware that dimensions below are from 96" wide and 102" wide vehicles



7. Clamping Liftgate: After centering the gate, use four (4) "F" style clamps, two on top and two at bottom, to secure the liftgate flush against the vehicle, **Fig. 9**. Confirm all mounting dimensions are correct, double check the floor and traverse is flush, and the columns are flush to the vehicle.

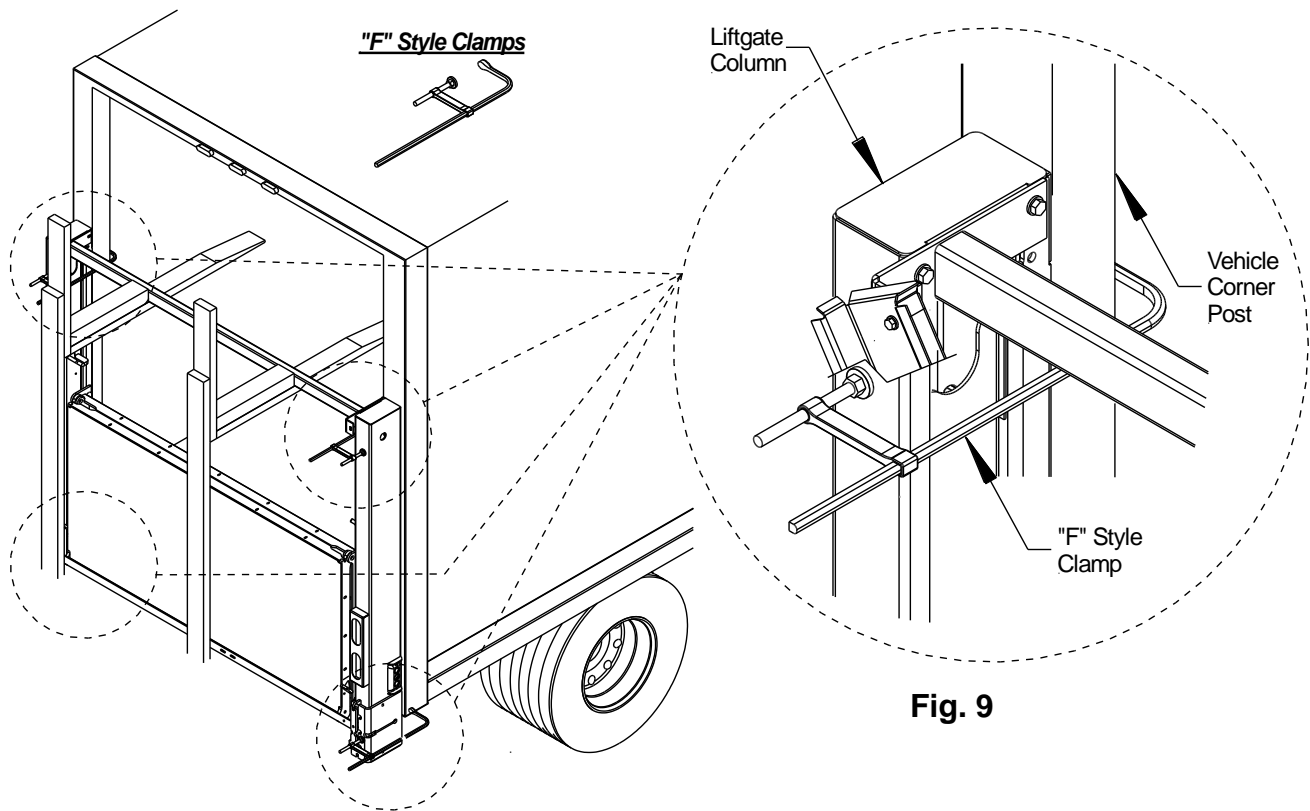


Fig. 9

NOTICE

DO NOT begin welding until dimensions are checked, liftgates is squared, clamped tightly and rechecked after each positioning adjustment.

WARNING

Do not remove lifting device until instructed.

10.2 Welding Liftgate

NOTICE

Optional: Take precautionary measures to ensure that columns do not toe-out during welding. Flat bar or round stock can be added in the corner to minimize pull from the weld. Maintain tension with come along from one bumper over to the other one as work is performed, Fig. 10.

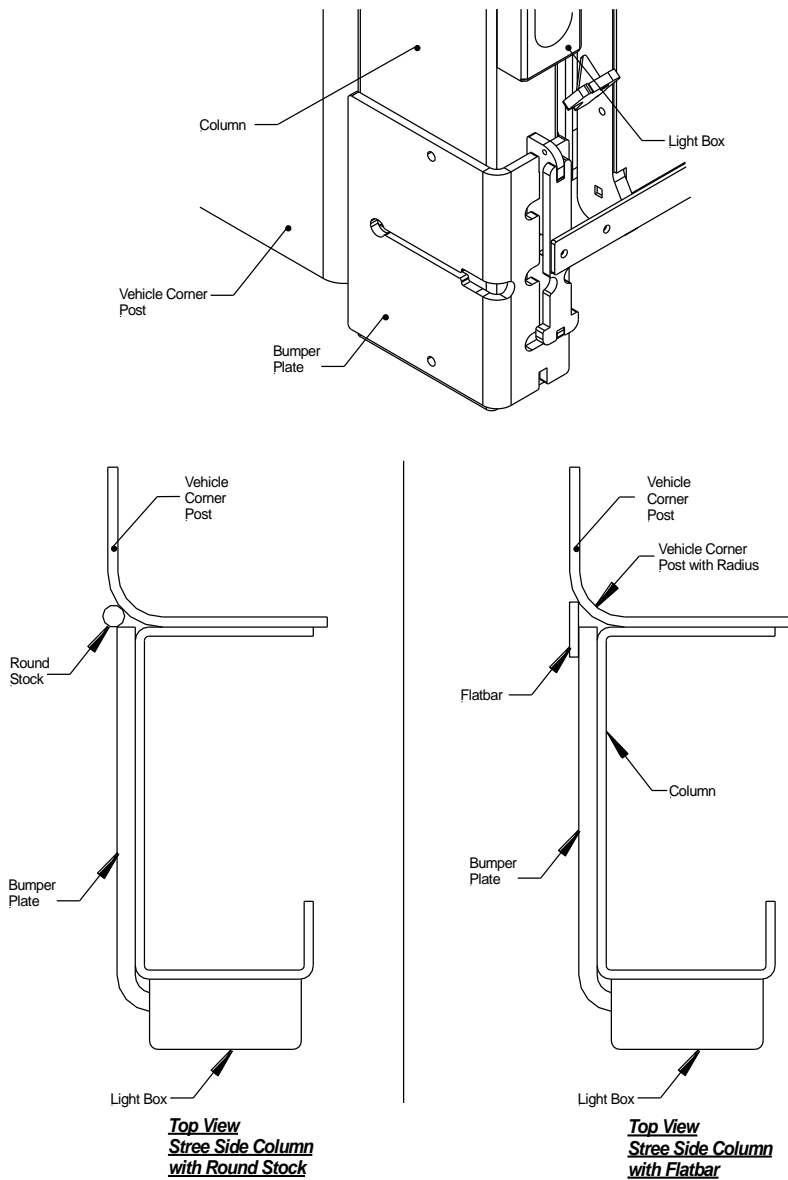


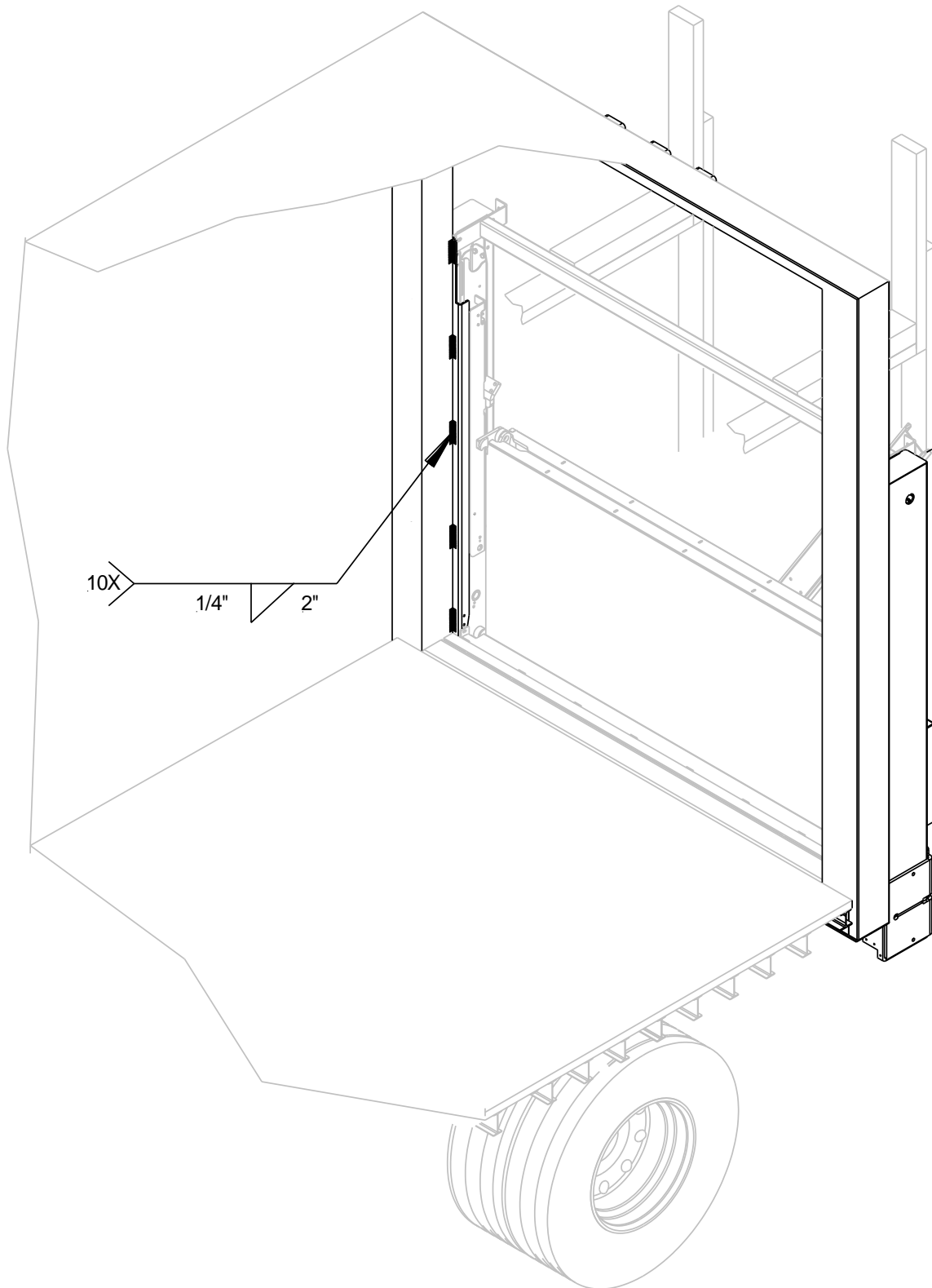
Fig. 10

Steps:

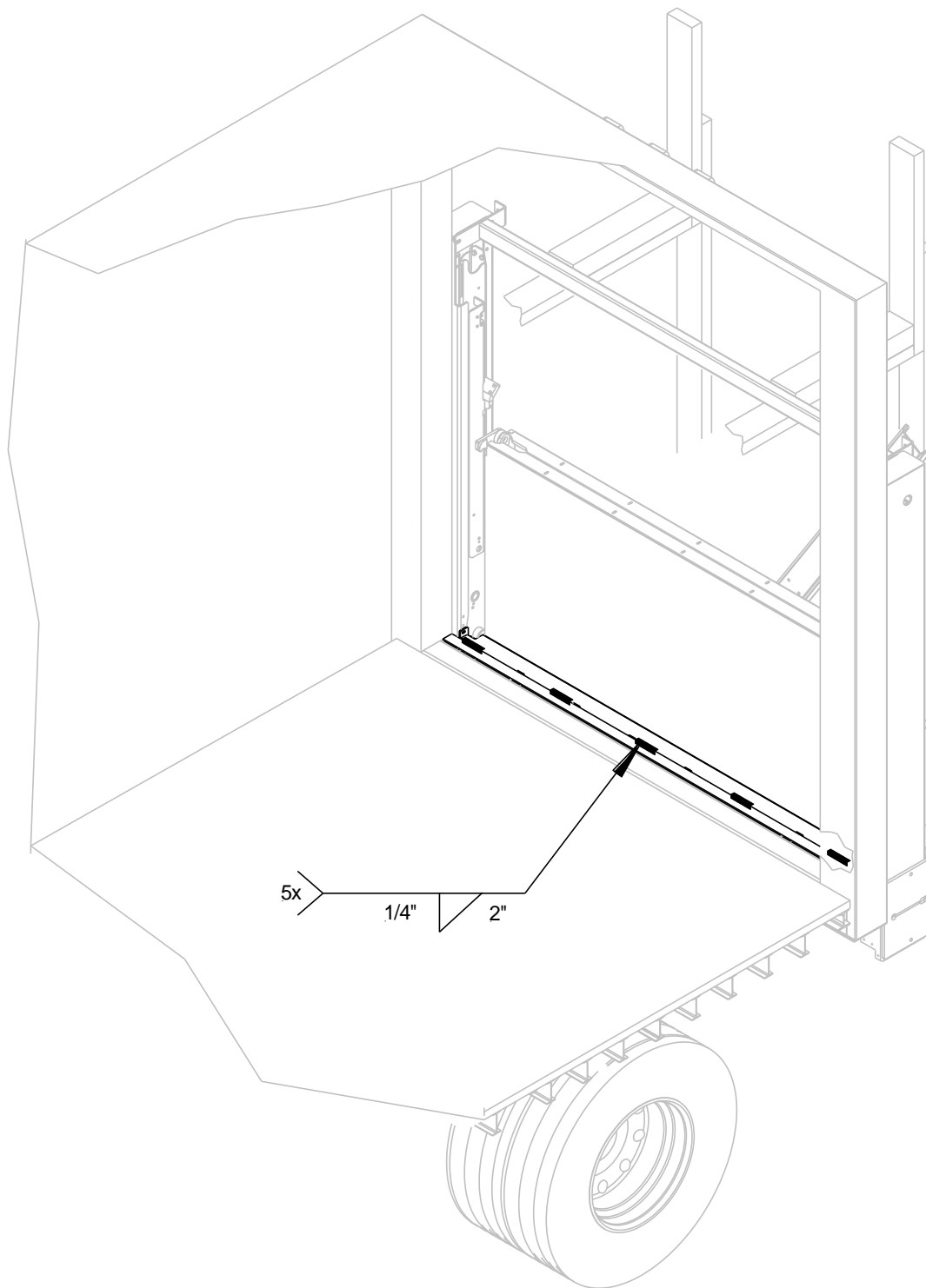
NOTICE

1. STOP and recheck all mounting dimensions.

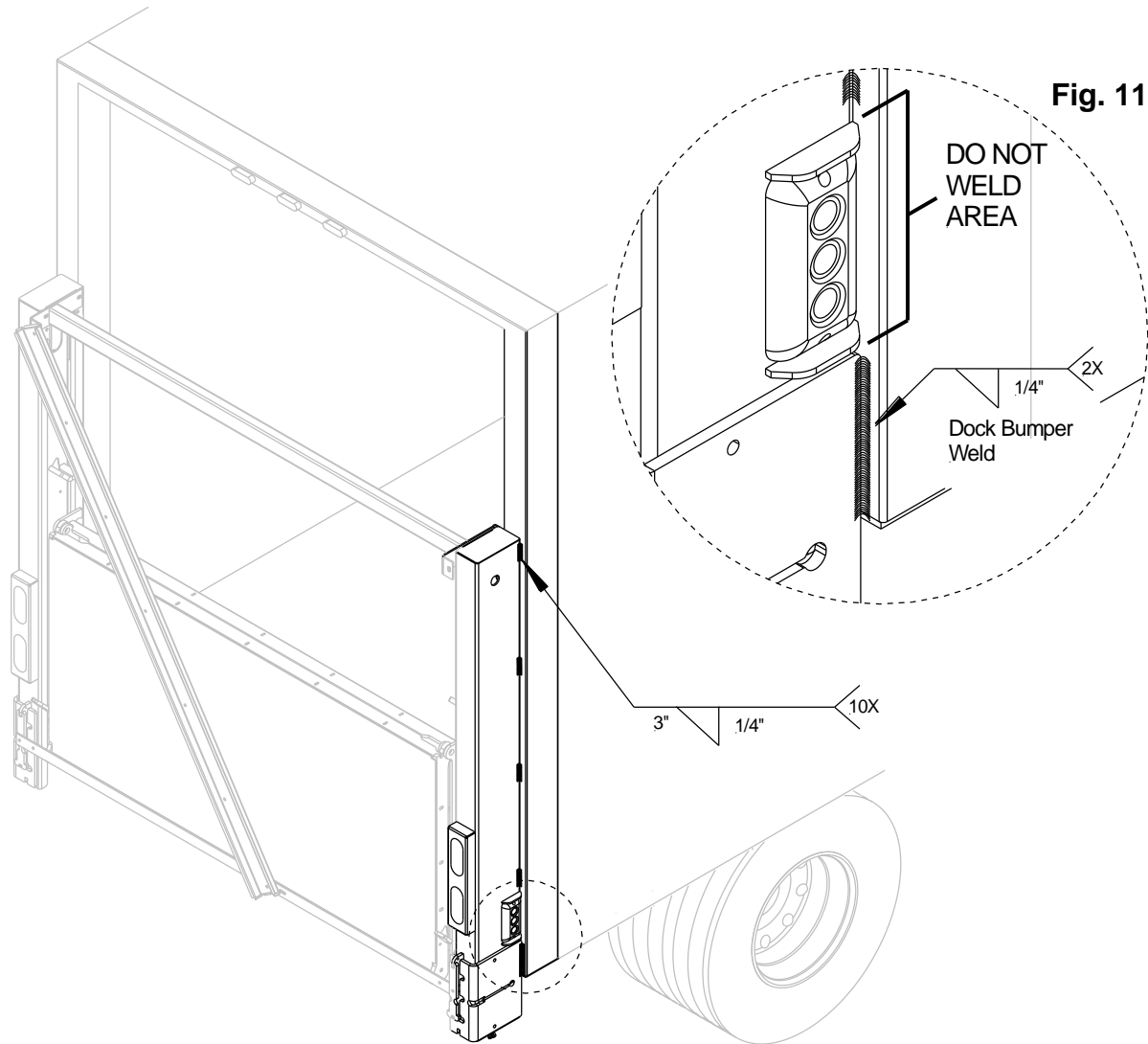
2. Inside Column Welds: Weld inside of columns $\frac{1}{4}$ " x 2" x 5 places evenly spaced top to bottom. Curb side column shown below, repeat welding procedure on street side column.



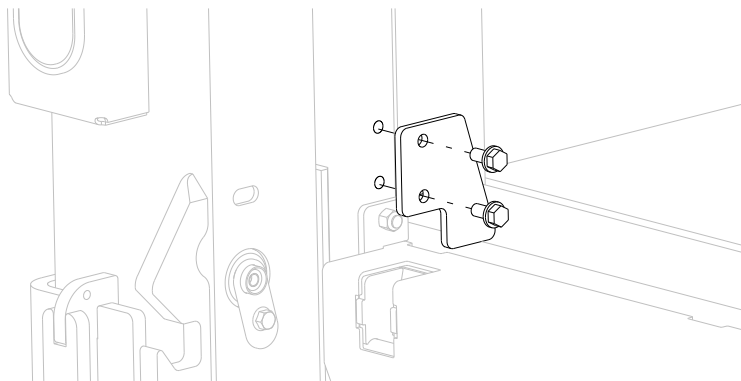
3. Traverse Welds: Weld traverse $\frac{1}{4}$ " x 2" x 5 places evenly spaced left to right. Do not weld the alignment plates.



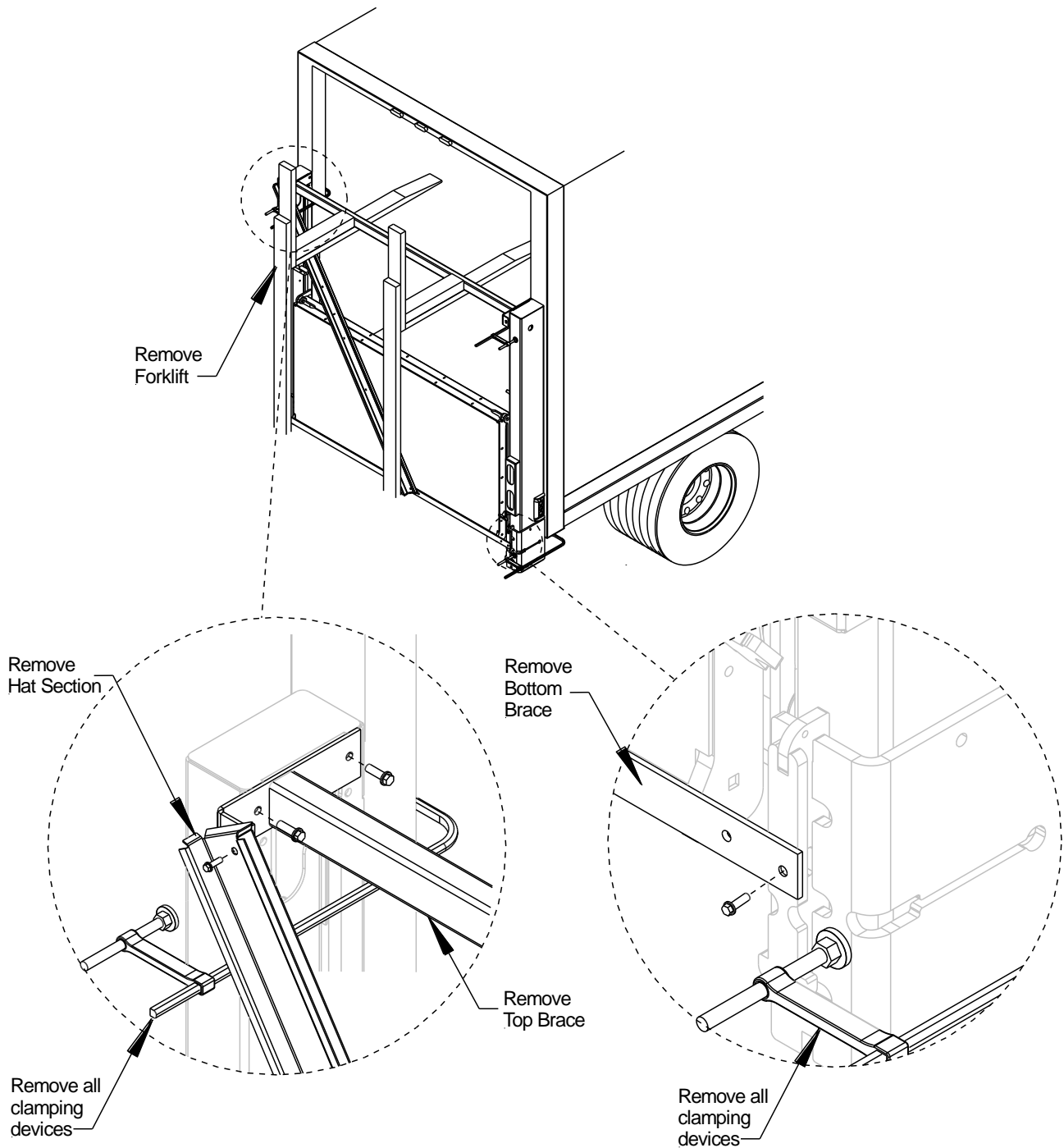
4. Column Welds (Outside): Weld the outside of columns to the vehicle using 1/4" x 100% on dock bumpers and 1/4" x 3" welds, 5 places evenly spaced on columns top to bottom. Do not weld on the control area, **Fig.11**. Repeat welding procedure on the street side column.



5. Remove Alignment Plates: Using a 9/16" socket, remove the hardware securing the alignment plates.



6. Remove Forklift Forks, Bracings and Clamps: Remove the top and bottom horizontal braces by unbolting each brace. Forklift can now be removed along with the all the clamps and hat section.



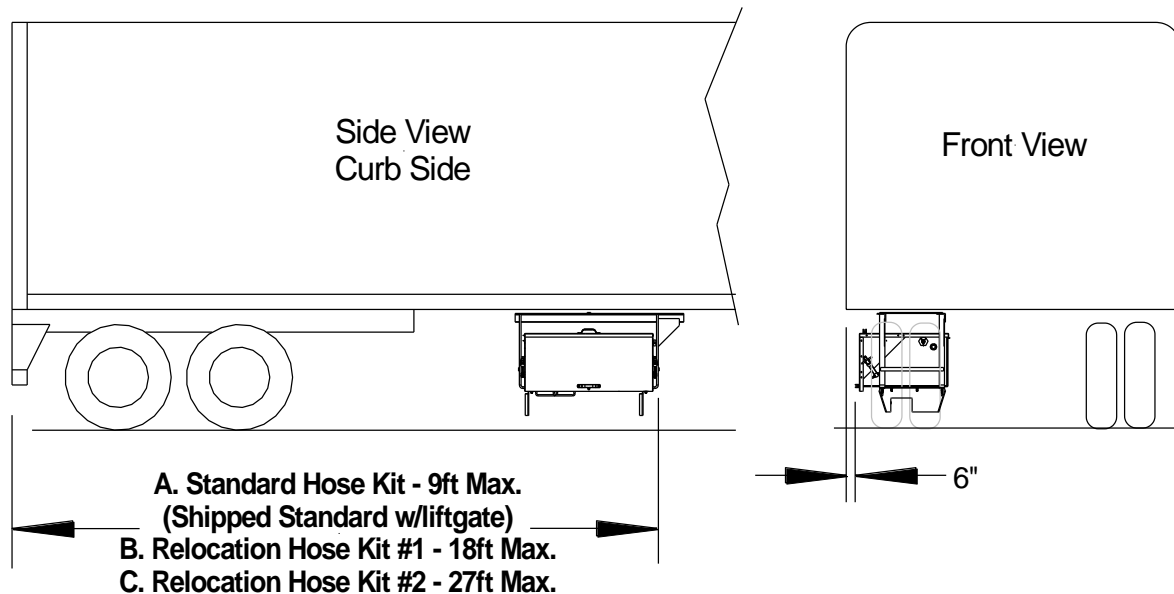
7. Gate Mounting Complete: Standard lifegate mounting is now complete, proceed to hydraulic installation.

11 Hydraulic Installation

11.1 Hydraulic Enclosure

NOTICE

When possible, position the hydraulic enclosure so it can be accessed from the curb side of the vehicle. Place the enclosure such that the access door is 6" in from the side of the body. It is recommended to position the hydraulic enclosure centered in the wheelbase and forward of the rear wheels when permitted.



- A. Standard Hose Kit: (shipped standard with liftgate) places the **front of the enclosure** a maximum of **9 feet forward** from the rear of the vehicle body.
- B. Relocation Hose Kit #1: (one additional 9 ft. hose) places the **front of the enclosure** a maximum of **18 feet forward** from the rear of the vehicle body. (Recommended for 28 ft. to 35 ft. trailers).
- C. Relocation Hose Kit #2: (two additional 9 ft. hoses) places the **front of the enclosure** a maximum of **27 feet forward** from the rear of the vehicle body. (Recommended for 48 ft. to 53 ft. Trailers).

CAUTION

High heat from welding can damage components. Make sure all components are clear of heat and weld splatter caused by welding. Steel crossmembers are required for welding.

Steps:

1. Weld Enclosure: Weld the enclosure to body cross members with 1/4" x 2" welds. Weld to a minimum of four (4) crossmembers. Weld front, rear, and sides of angles at each crossmember. **Fig. 12.**

NOTICE

Applications with Aluminum cross members will need to be bolted. Contact Palfinger Liftgates Tech Support for instructions.

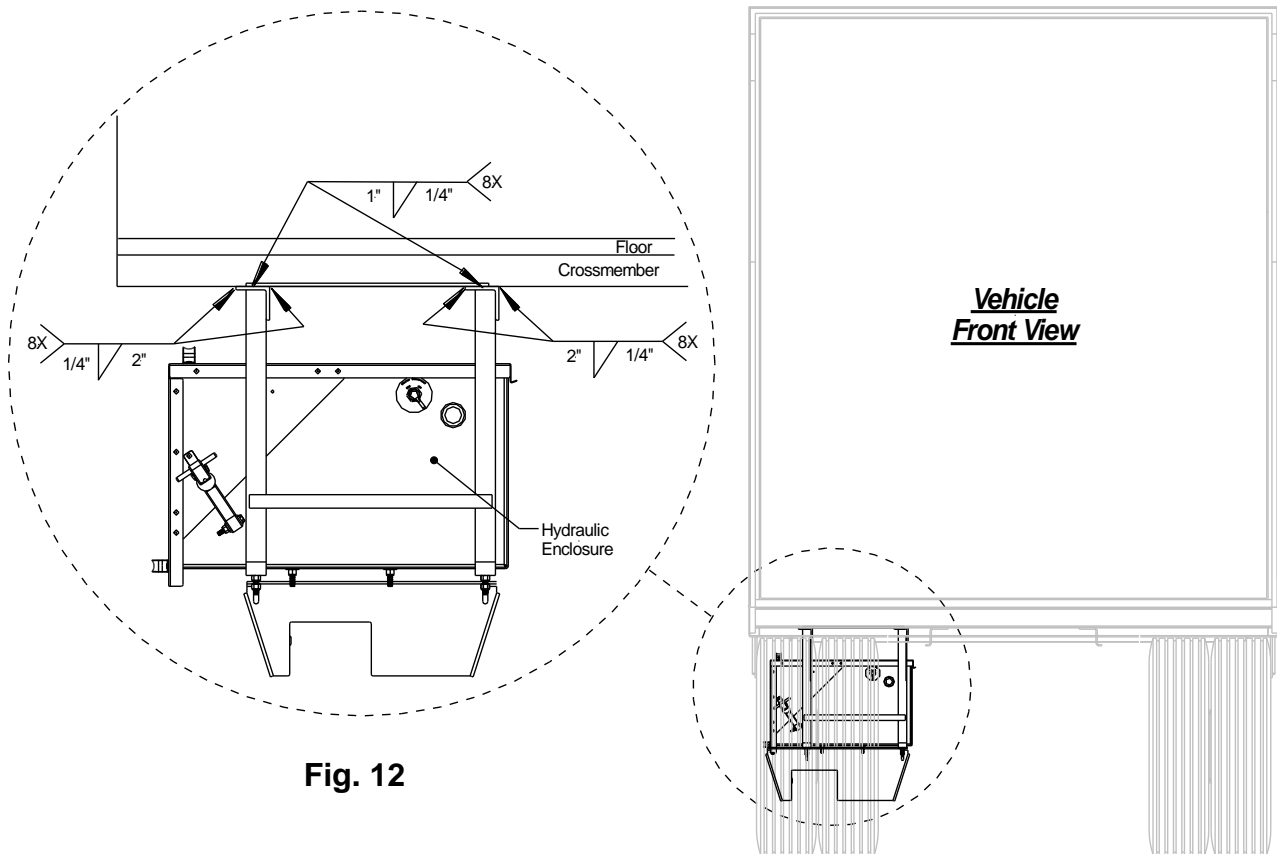
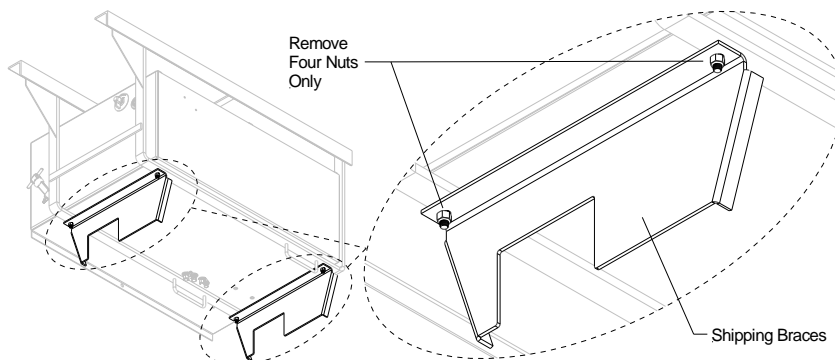


Fig. 12

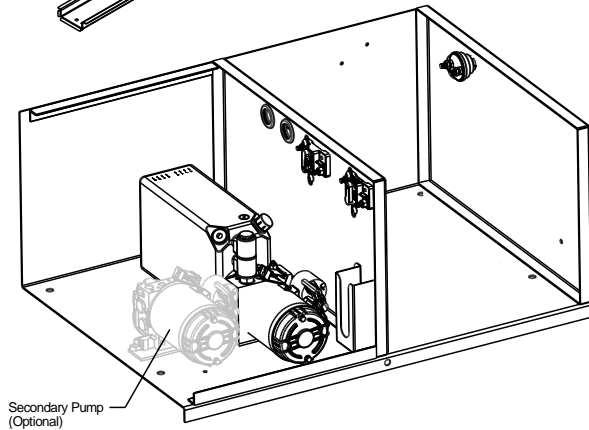
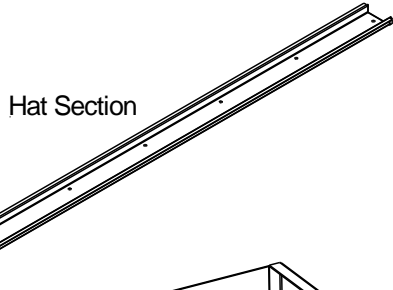
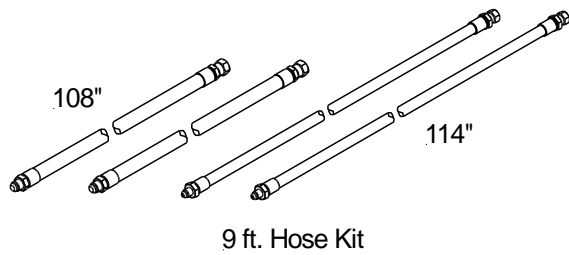
2. Remove Shipping Braces: Unbolt the four bolts that secure the shipping braces to the enclosure.



11.2 Hydraulic Connections

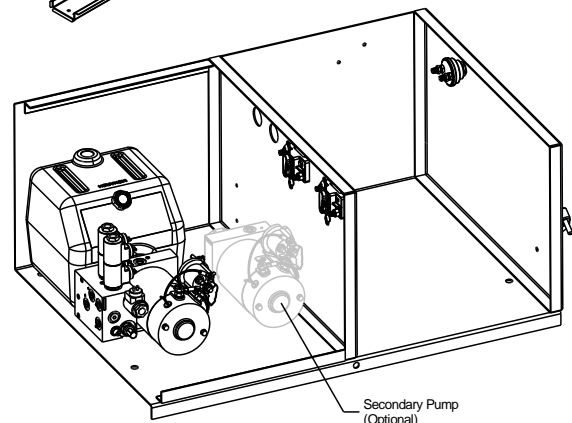
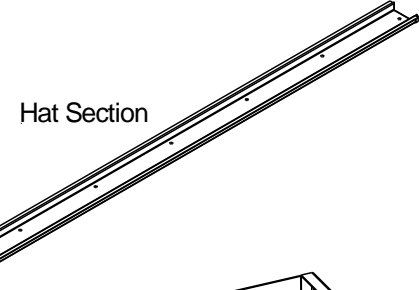
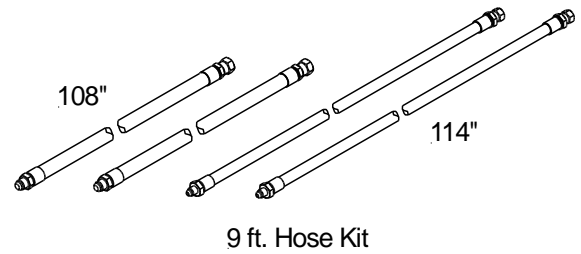
Pump and Motor Hydraulic Enclosure Prior to March 2018

- To open the lid of the box remove the security bolt below the lid handle.
- Hydraulic fittings are located under the enclosure box
- Secondary pump is optional.



Pump and Motor Hydraulic Enclosure After to March 2018

- To open the lid of the box remove the security bolt below the lid handle.
- Hydraulic fittings are located on the left side of the enclosure box
- Secondary pump is optional.

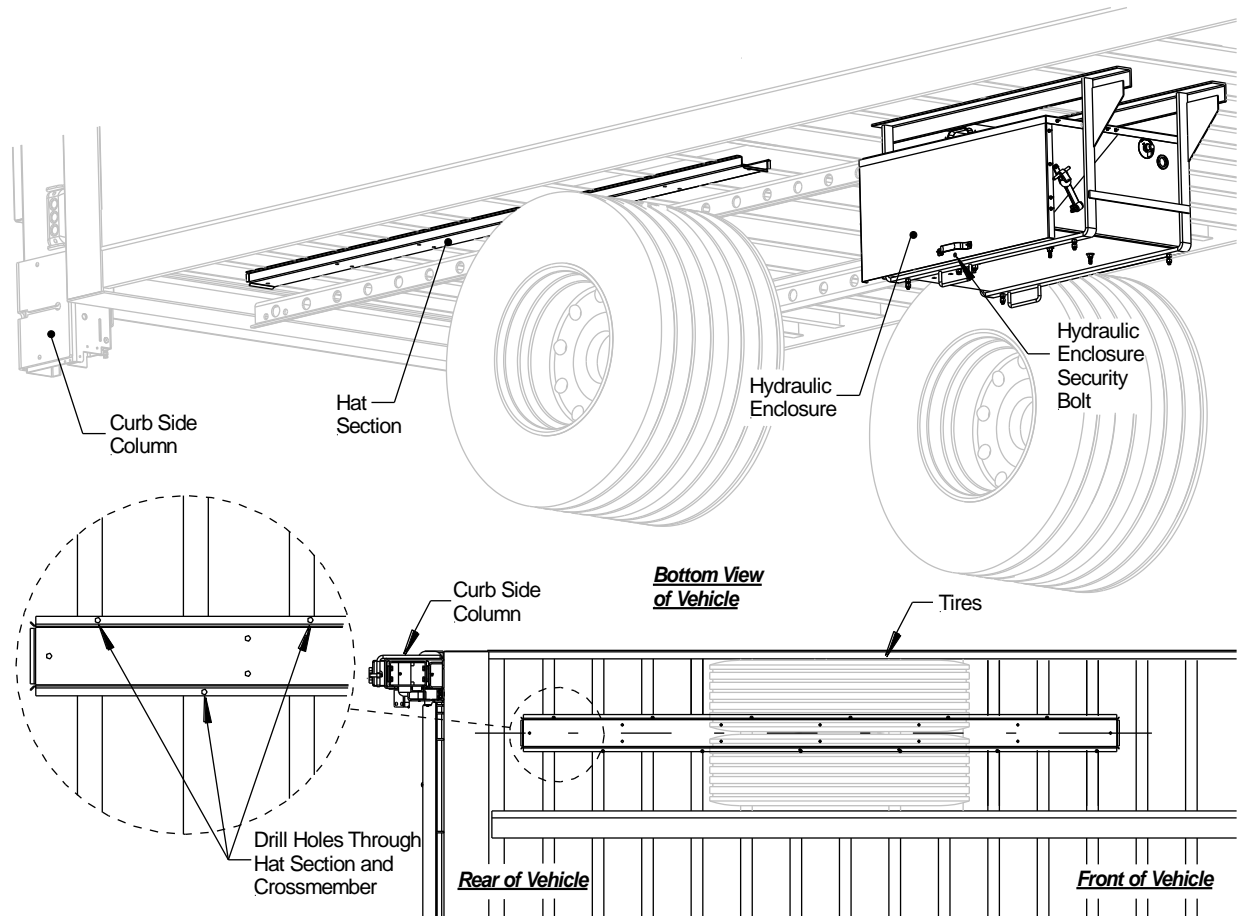


NOTICE

To prevent leaks during shipping and storage, hydraulic connections at liftgate are plugged by connecting hydraulic lines together. **DO NOT** disconnect any plugs until you are ready to connect hoses to liftgate and hydraulic enclosure. Aluminum cross members will need to be bolted. Contact Palfinger Liftgates Tech Support team.

Steps:

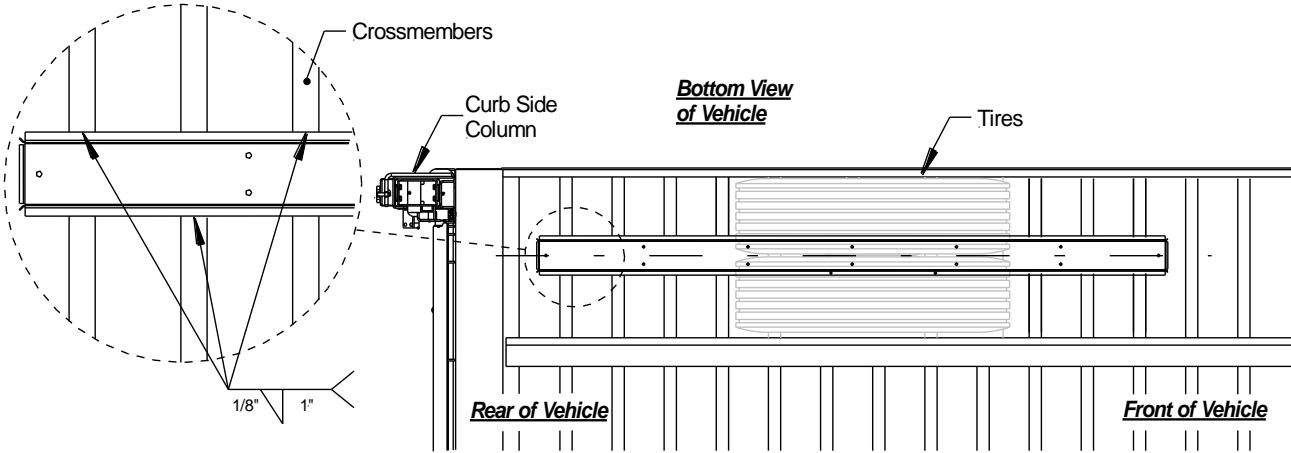
1. **Hat Section (Bolt-On):** Position the hat section on the curbside of the vehicle centered between the vehicle wheels. Clamp the hat section in place. Drill holes diagonally through the hat section flange and the cross member. Secure with thread cutting flange screws.



CAUTION

DO NOT weld hat section with hydraulic hoses or electrical wires installed.

Hat Section (Welded): Position the hat section as described in the bolt on section. Secure the hat section to the cross member by welding 1/8" x 1" welds every 12" minimum on both sides.



CAUTION

Do not route hoses, wires, harnesses, and cables near, around, or in contact with sharp edges, air lines, vehicle electrical, exhaust system, fuel lines, or liftgate moving parts.

2. Route Hoses and Control Harness: At the bottom of the curb side column of the liftgate the controls wire harness can be found. Position hoses opposite to each other. 3/8" hoses should have one male and one female exposed at each end. Position the 1/4" hoses in the same manner, one male and one female at each end, **Fig.13**. Route the control wire harness and the all hoses through the hat section(s) and out towards the hydraulic enclosure.

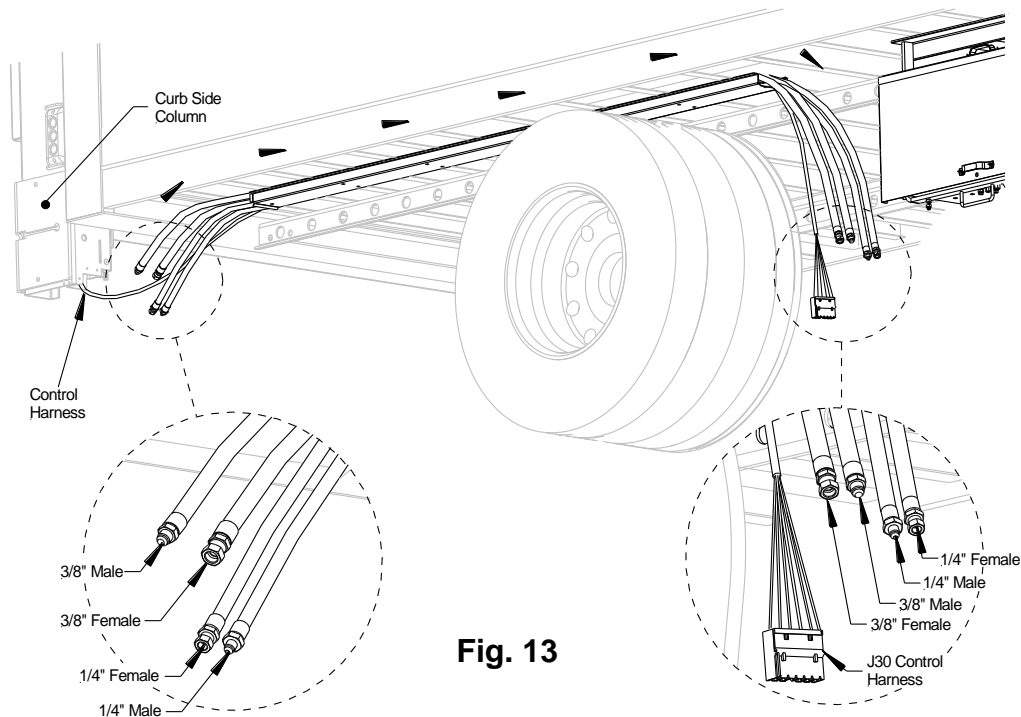
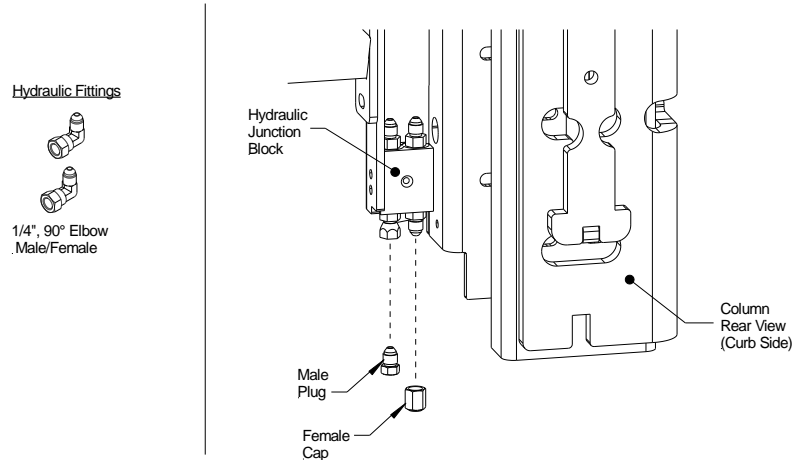


Fig. 13

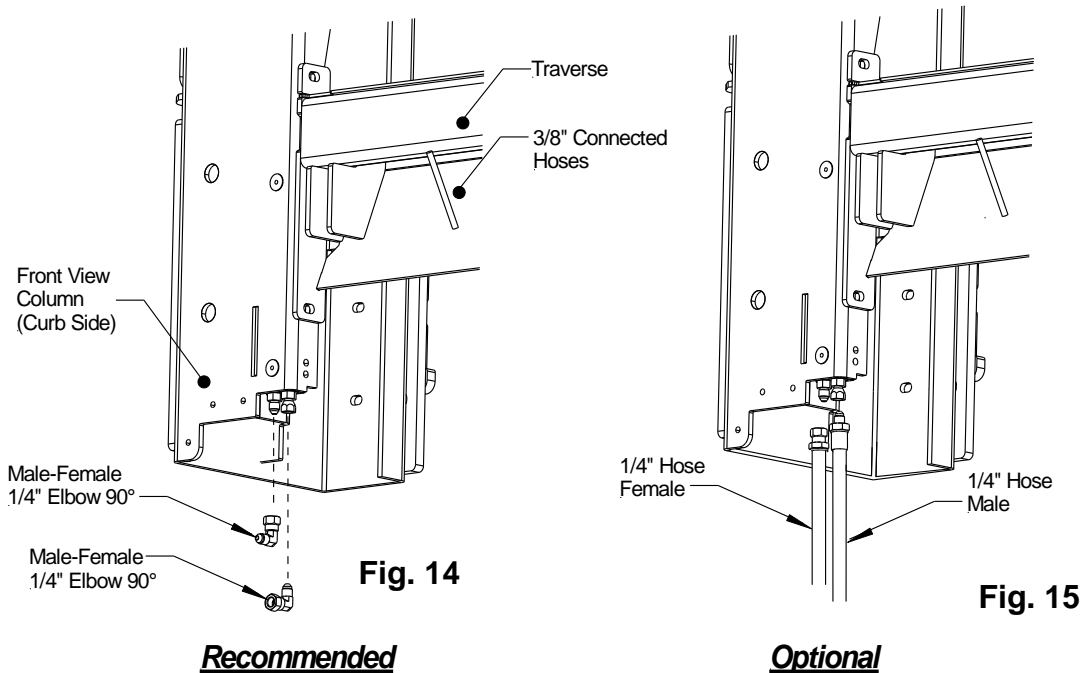
NOTICE

When disconnecting hydraulic lines and fitting hydraulic fluid will escape. It is recommended to have a proper container to catch any escaping fluid during installation. Always wear safety glasses when performing these procedures.

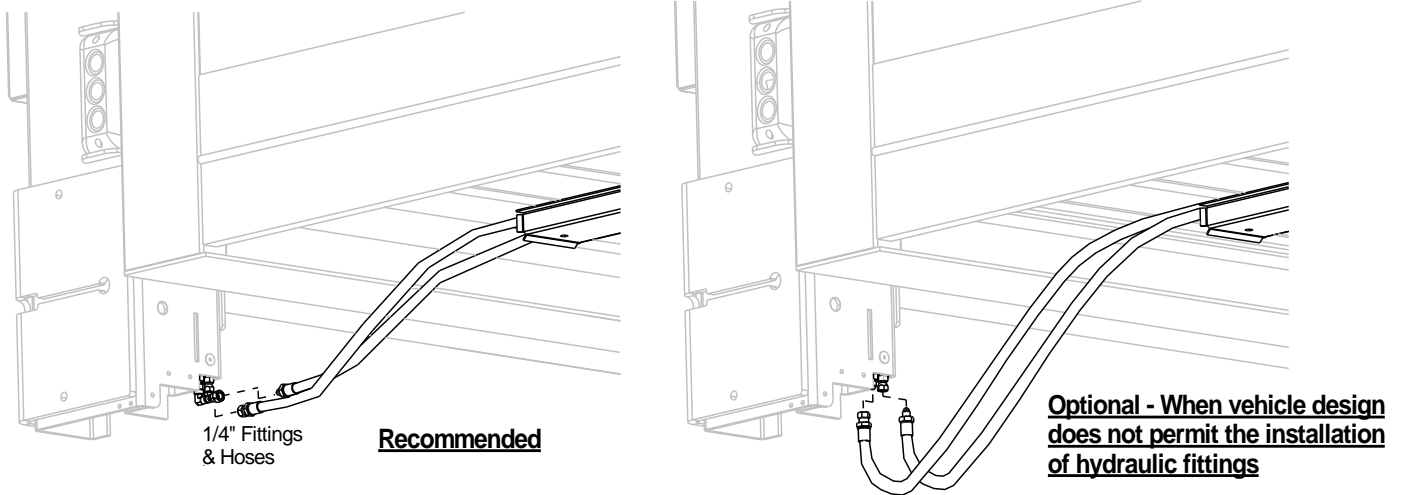
3. Hydraulic Fittings at Hydraulic Junction Block: The hydraulic junction box has one 1/4" male fitting and one 1/4" female fitting. Both fittings are capped/plugged. Remove the male plug first and the female cap second.



4. Installing 1/4" Hydraulic Fittings at Hydraulic Junction Block: It is highly recommended to install two (2) 1/4" 90° elbow fittings as shown, **Fig.14**. When the elbow fittings cannot be installed due to the construction of the vehicle, connect the 1/4" male and female hoses going to the hydraulic enclosure directly to the hydraulic junction block, **Fig. 15**.

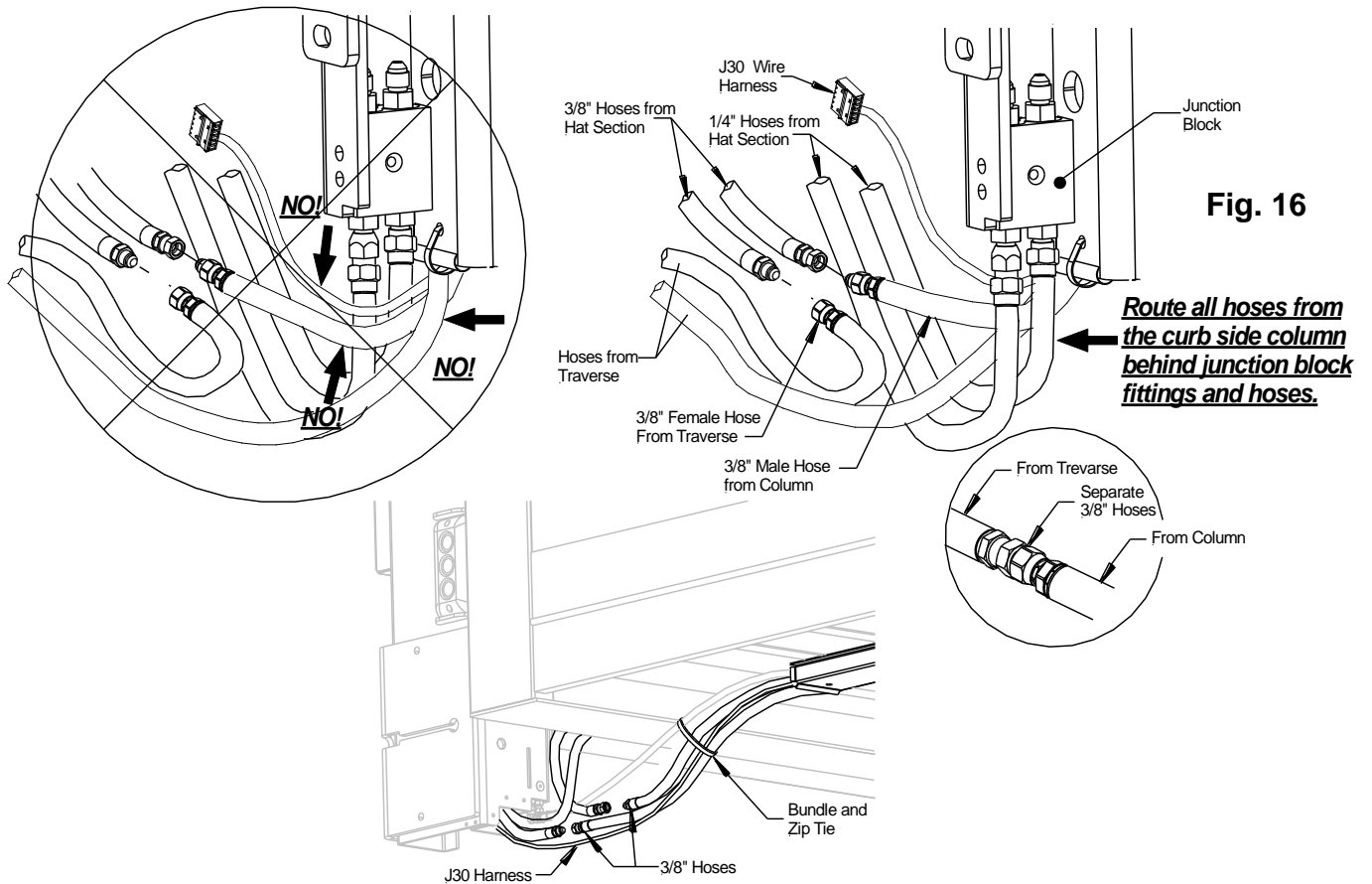


5. Installing 1/4" Hoses at Curb Side Column: Install 1/4" hoses to the fittings on the hydraulic junction block.



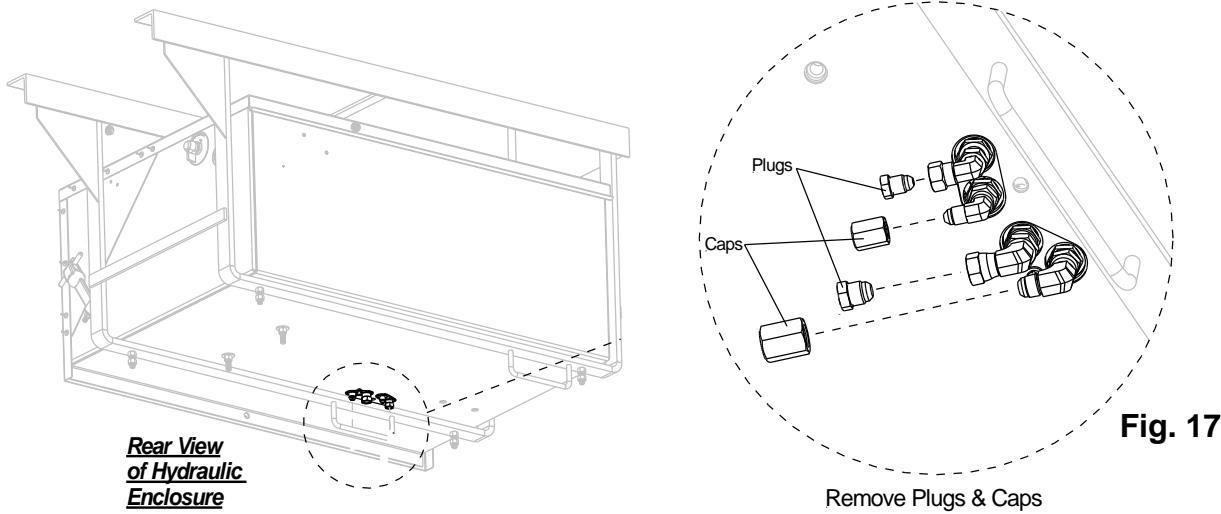
6. **Installing 3/8" Hoses at Curb Side Column:** Separate the 3/8" hoses. After separating the hoses, maneuver the hose coming from inside the column behind the junction block fittings, **Fig.16**. After all hoses have been connected, bundle all hoses and use zip ties to secure.

Attention: No pre-installed or installed hoses should be left in front of fittings, as they will get damaged.

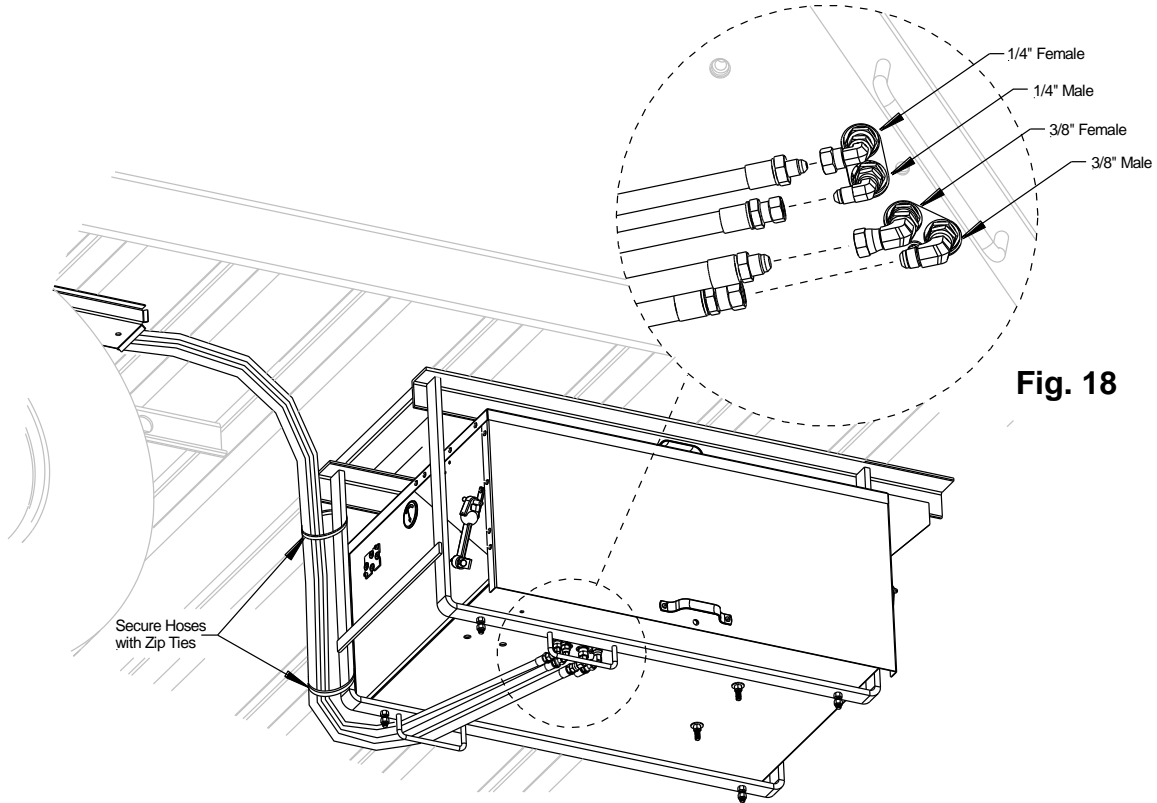


Pump and Motor Prior March 2018

7A. Installing Hoses at Hydraulic Enclosure: Remove the plugs and caps from the hydraulic enclosure, located under the enclosure, **Fig. 17**.

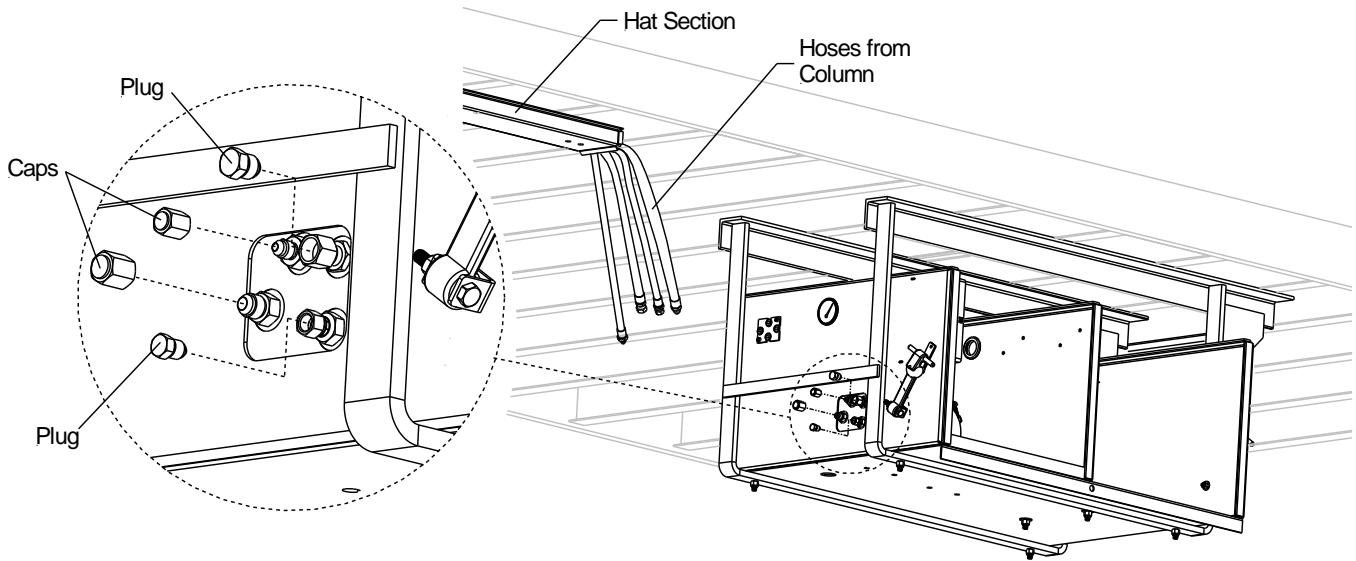


Route the hoses coming from the column down to the hydraulic enclosure, **Fig. 18**. Route along the enclosure frame and in through. When routing hoses never make sharp bends, maintain a natural hose radius. Connect the hoses to the hydraulic enclosure (pump and motor) as shown. Use zip ties to secure the routed hoses to the mounting frame.

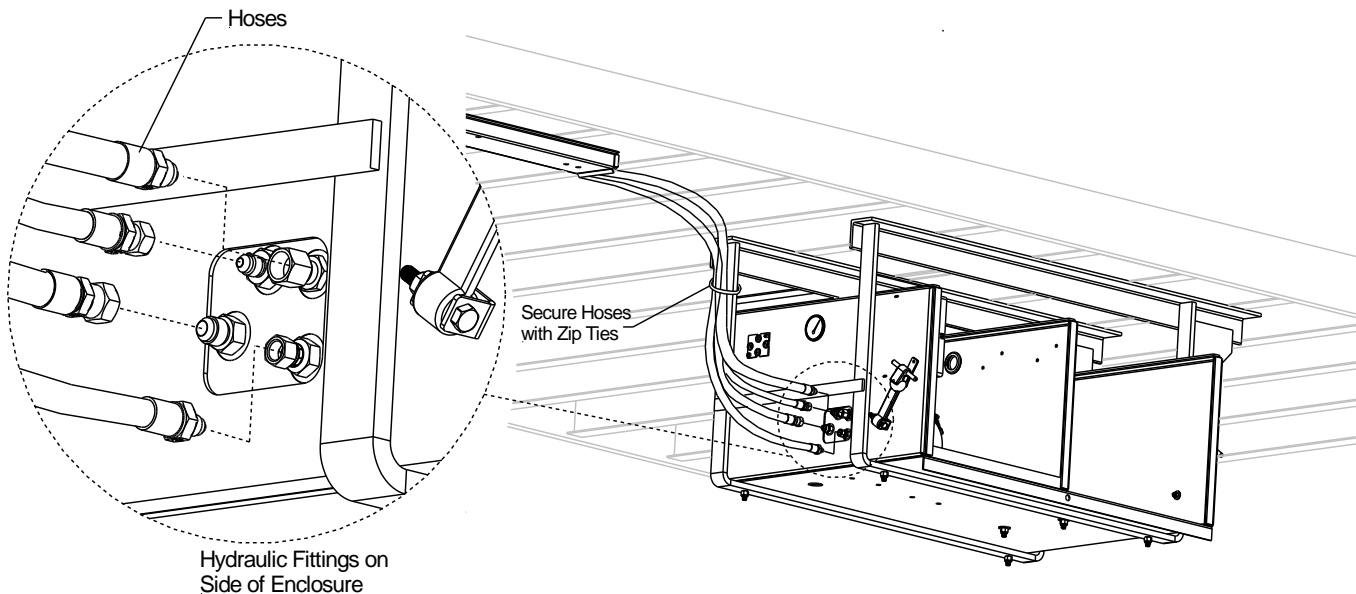


Pump and Motor After March 2018

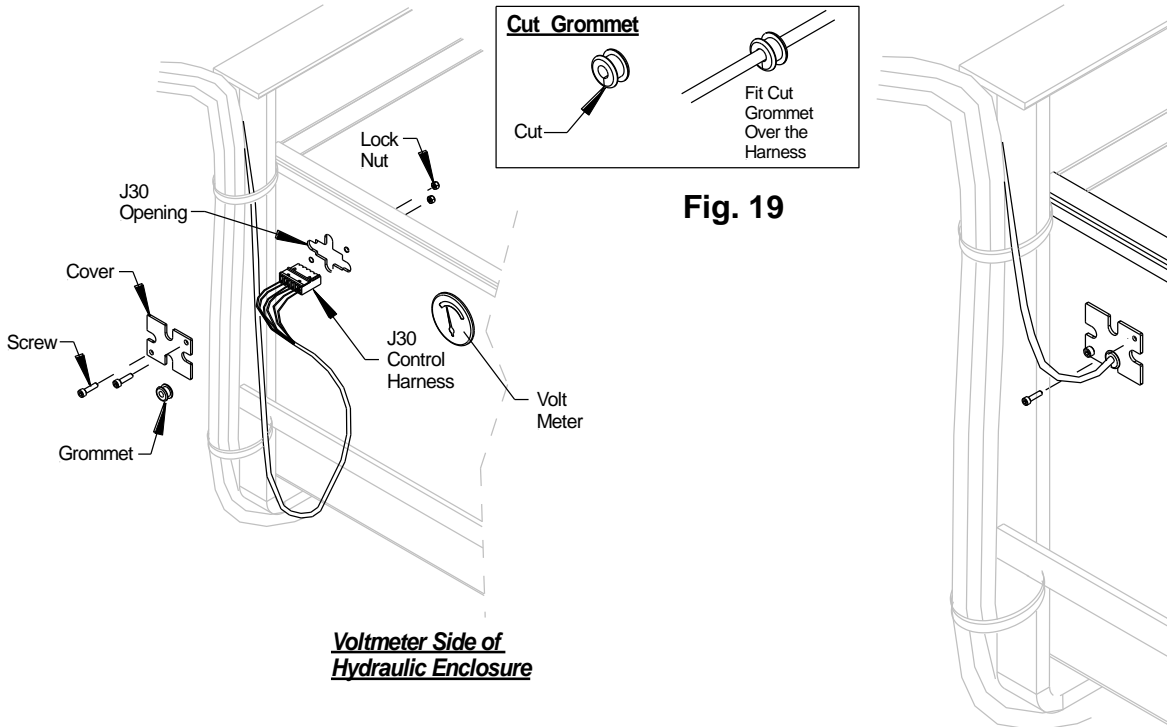
7B. Installing Hoses at Hydraulic Enclosure: Remove the plugs and caps from the side of the hydraulic pump and motor (enclosure).



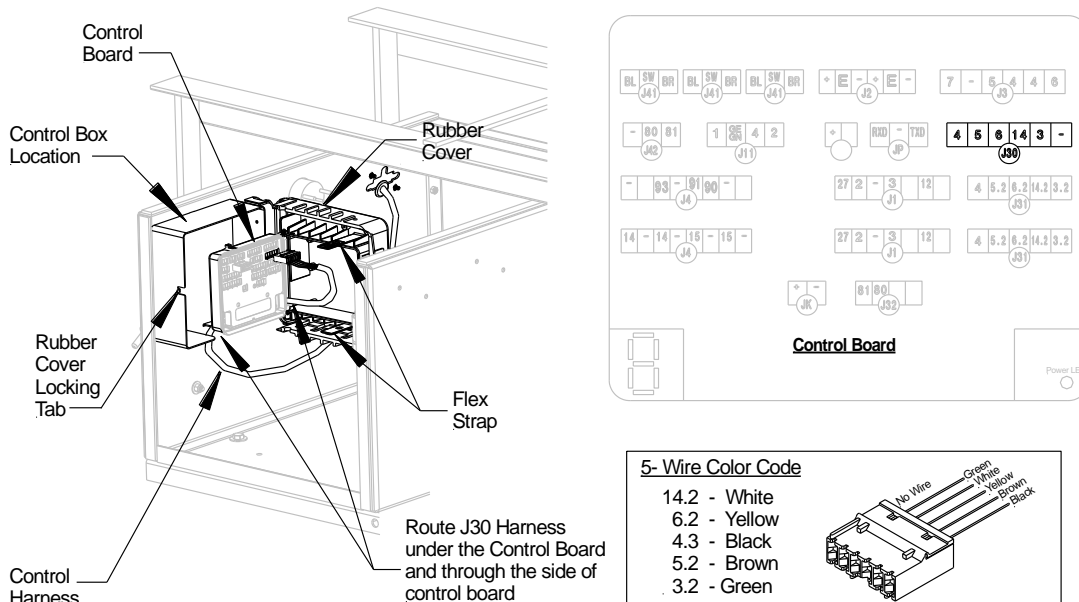
Route the hoses coming from the column down to the hydraulic enclosure. Route along the enclosure frame. When routing hoses never make sharp bends, maintain a natural hose radius. Connect the hoses to the hydraulic enclosure (pump and motor) as shown. Use zip ties to secure the routed hoses to the mounting frame.



8. **J30 Control Harness:** Remove the hydraulic enclosure cover. Remove the cover on the side of the hydraulic enclosure. Feed the control harness inside the enclosure. Before closing, cut the grommet so it can fit over the harness, **Fig.19**. Re-install the cover over the opening by removing the cover of the enclosure.



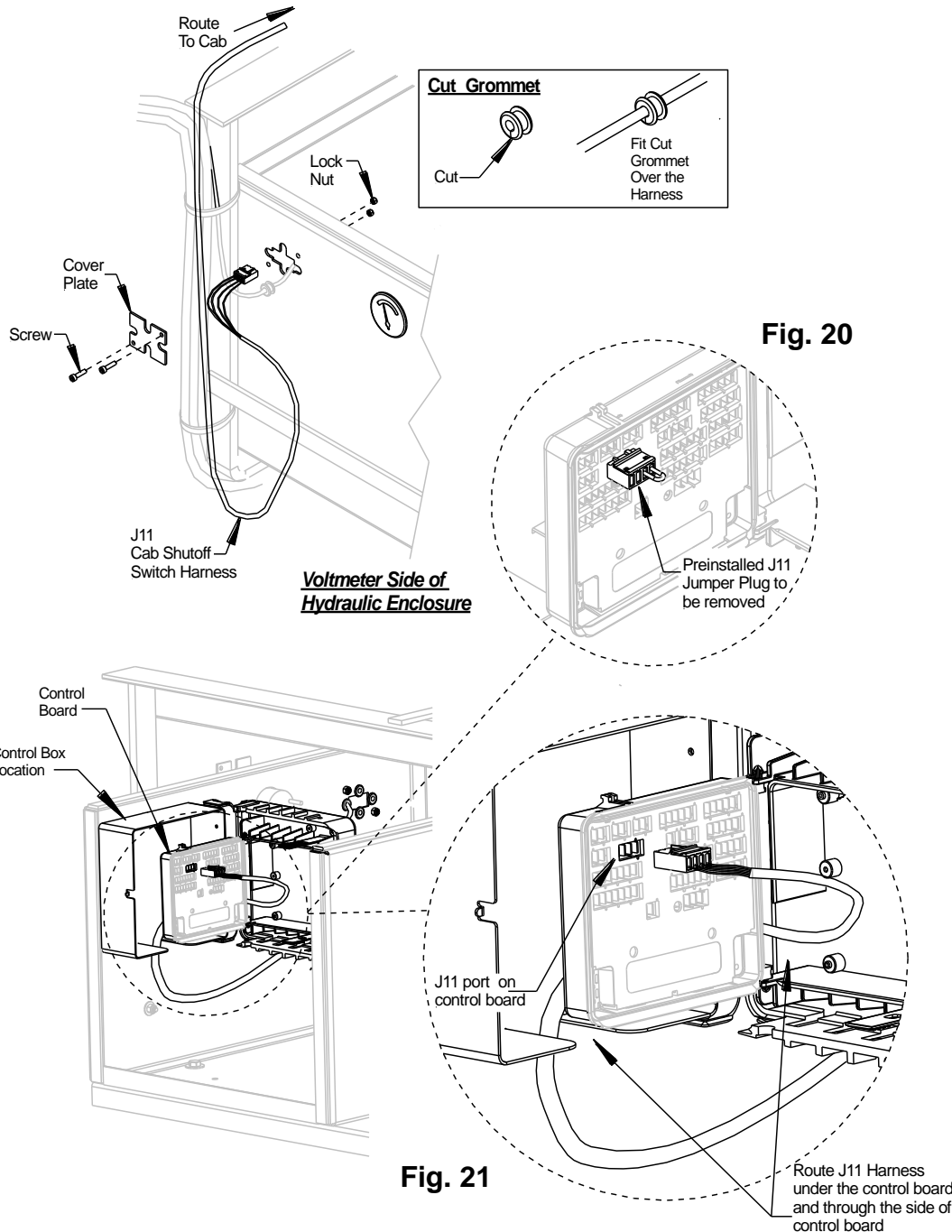
On the inside of the Hydraulic Enclosure, open the control board cover by pulling the side of the rubber cover out of the locking tab. Unhook the two flex straps that secure the control board to the rubber cover. Plug the control harness connector into the J30 port of the control board.



Cab Shutoff Switch Installation (Optional)

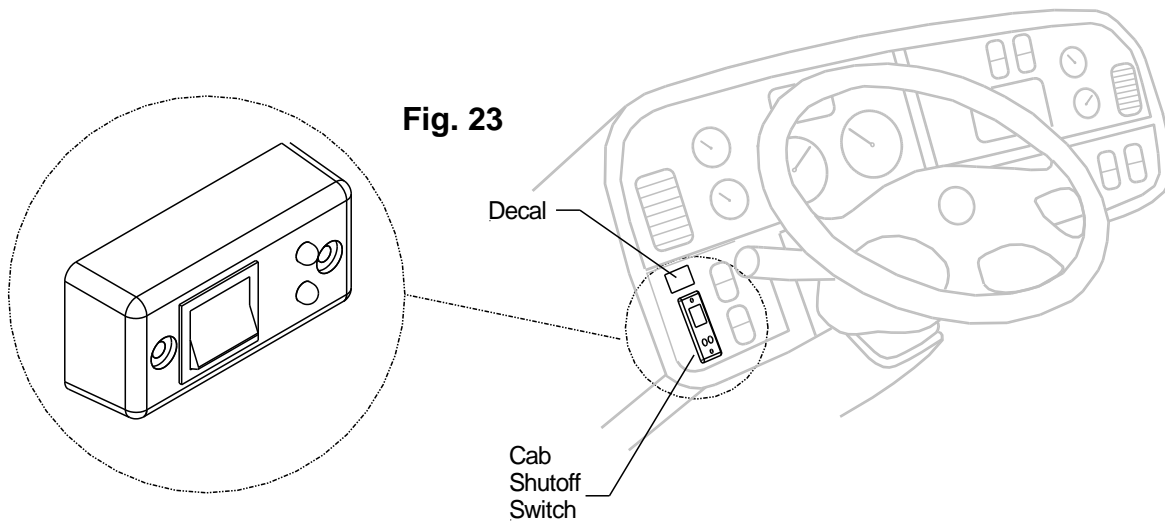
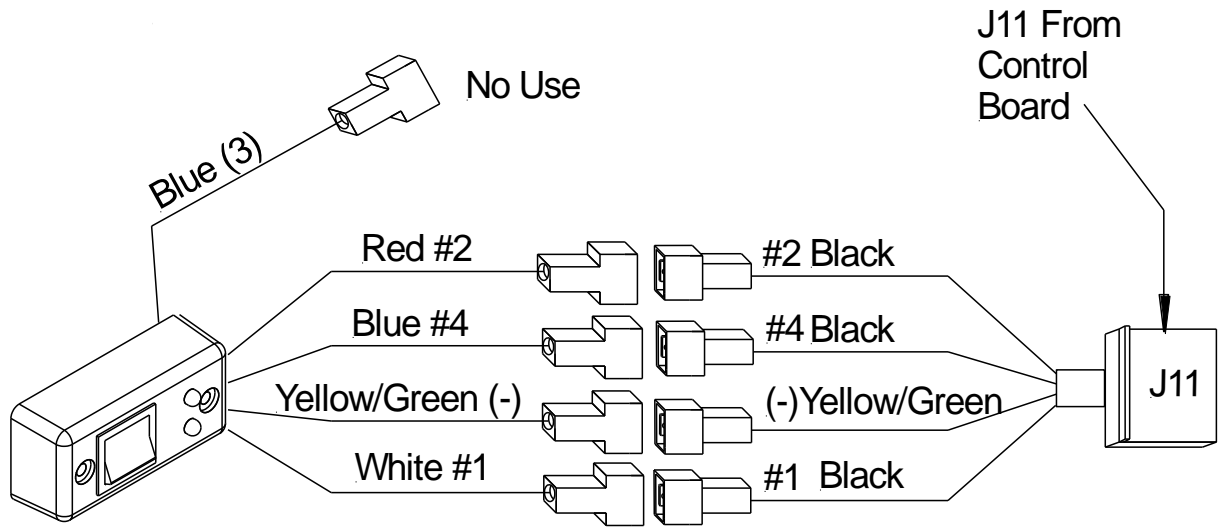
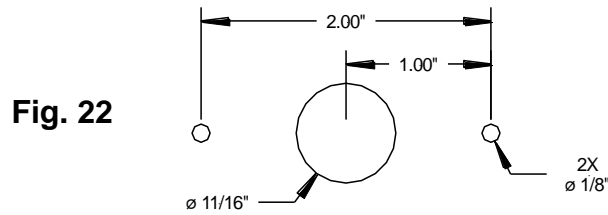
Steps:

1. **J11 Control Harness:** Remove the cover. Feed the J11 harness through the enclosure opening and route it to the control board. Disconnect the preinstalled J11 plug from the control board, **Fig. 20**. Connect the cab shutoff switch harness (J11) on the same slot from the preinstalled J11 plug that was removed, **Fig. 21**. At the hydraulic enclosure entry, cut one grommet as shown in step 8, Section 11.2, and fit the cut grommet over the J11 harness. Position the J11 harness with grommet in one of the grommet slots on the cover and screw the cover back on to the enclosure.



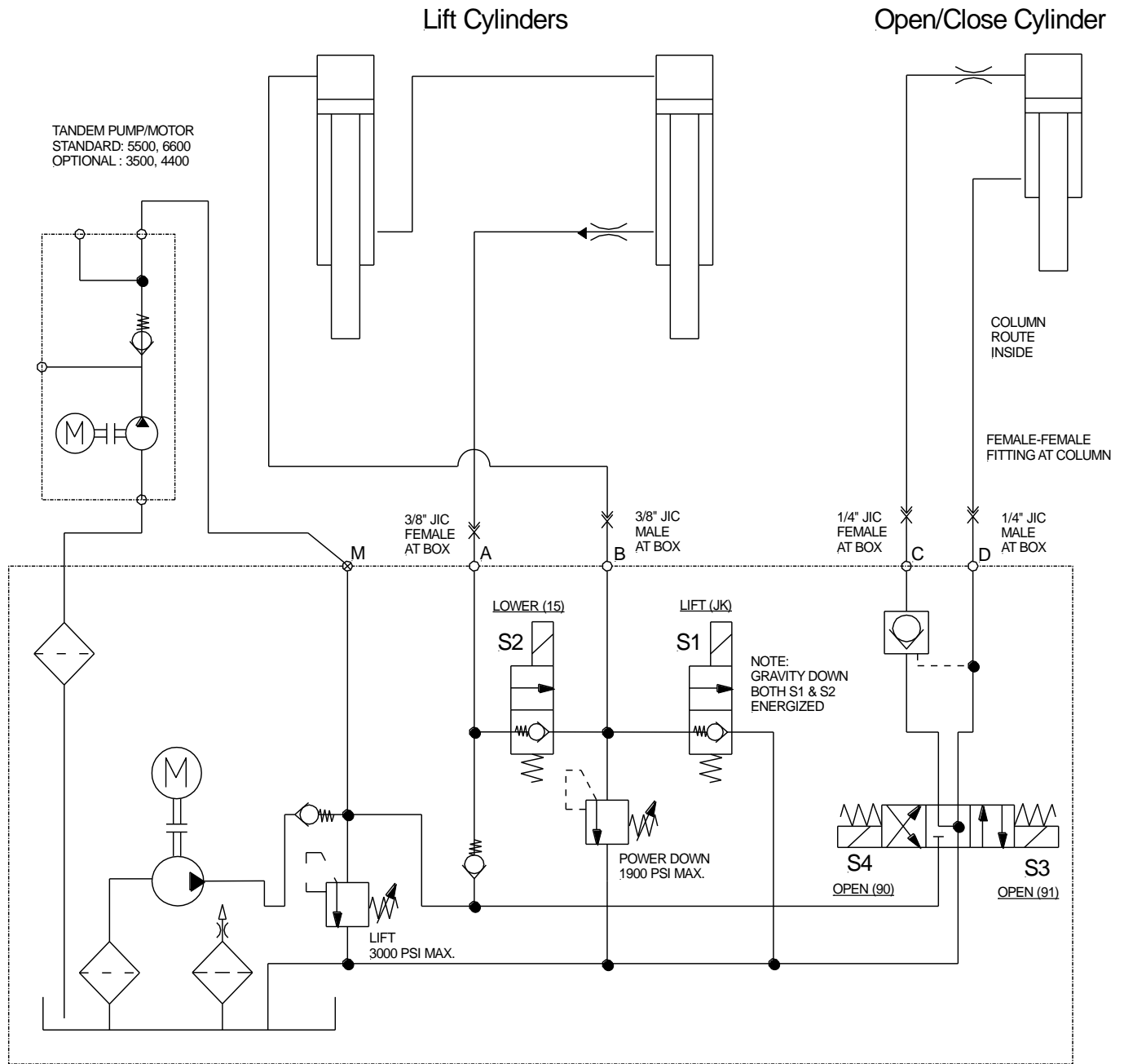
2. **Switch Installation:** Route the other end of the harness to the cabs dashboard. Position the switch where it is visible and accessible by the user from outside the cab. Use the mounting hole pattern below and mount the switch with the provided screws, **Fig. 22**. Wire the switch and harness per diagram. Test the switch. After testing and making sure the switch is functioning properly, place the decal near the switch, **Fig. 23**.

Mounting Hole Pattern



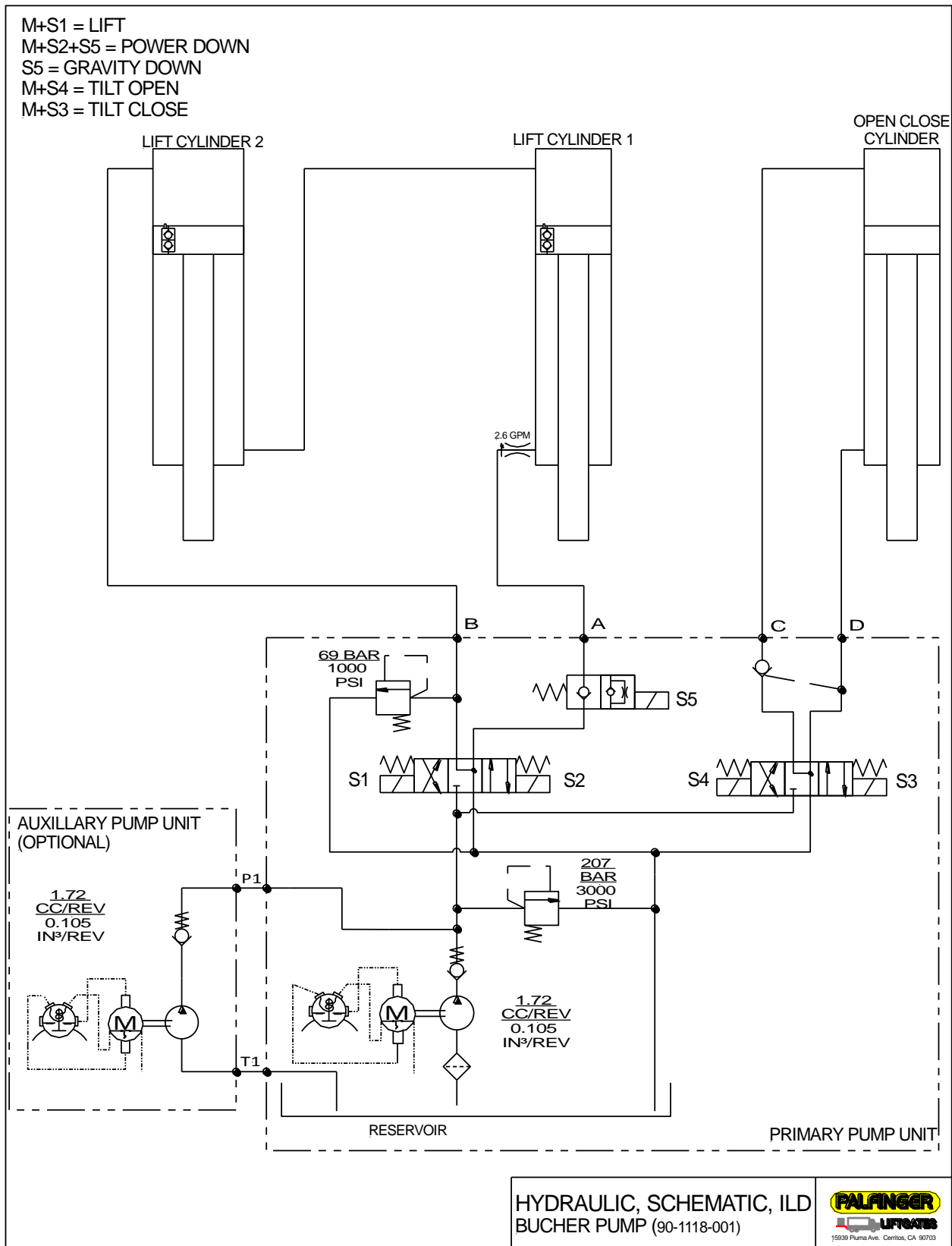
11.3 Hydraulic Schematic

11.3.1 Prior March 2018

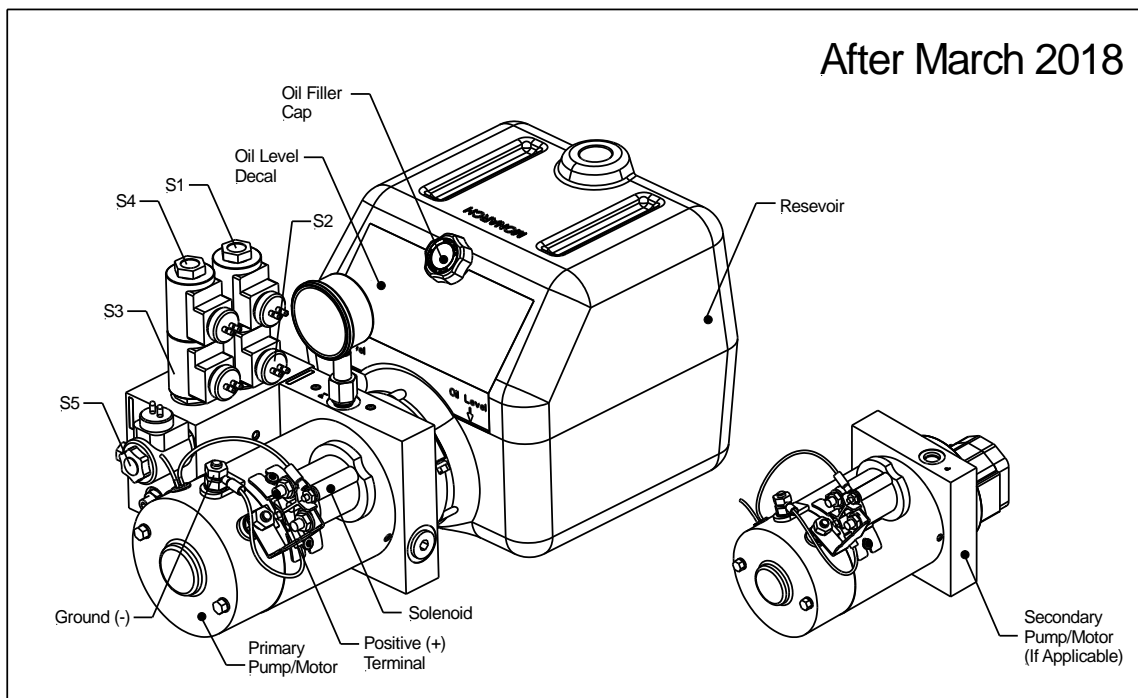
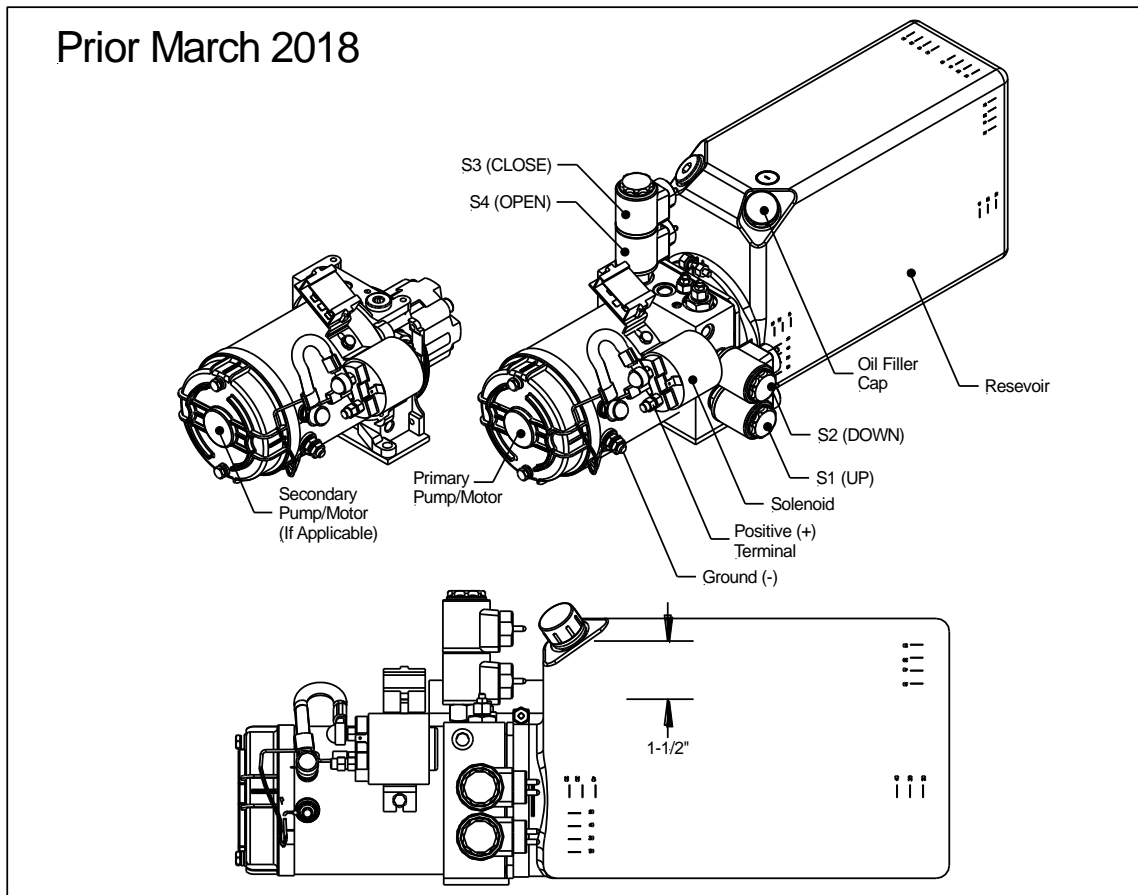


Note: Serial # PD10256 & PD10258 and higher.

11.3.2 After March 2018



11.4 Hydraulic Pump/Motor Overview



11.5 Hydraulic Fluid

All ILD liftgates come with Hydrex MV Arctic 15 hydraulic fluid.

Hydraulic Fluid Installed From Factory	
Property	HYDREX MV ARCTIC 15
<i>Start Up Temperature</i>	<50°C / -58°F
<i>Operating Temperature</i>	-45°C to +23°C / -49°F to 73°F
<i>Pour Point</i>	-57°C / -71°F
<i>Flash Point</i>	128°C / 262°F
<i>Density 15°C (59°F). kg/L</i>	0.834
<i>Viscosity:</i> <i>cSt @ 40°C/SUV @ 100°F</i> <i>cSt @ 100°C/SUV @ 210°F</i> <i>cP @ -50°C (-58°F)</i>	13.0 / 69.7 4.95 / 42.5 1,310

When changing fluids, it is highly recommended to use Hydrex MV Arctic 15 fluid, however, alternatives fluid brands listed below can be used.

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

12 Electrical Installation

CAUTION

When performing electrical installation, please be certain to install and secure everything in a way where it is not subject to damage from moving parts, sharp edges, exhaust systems, fuel lines, etc. It is recommended to use dielectric grease on all electrical connections.

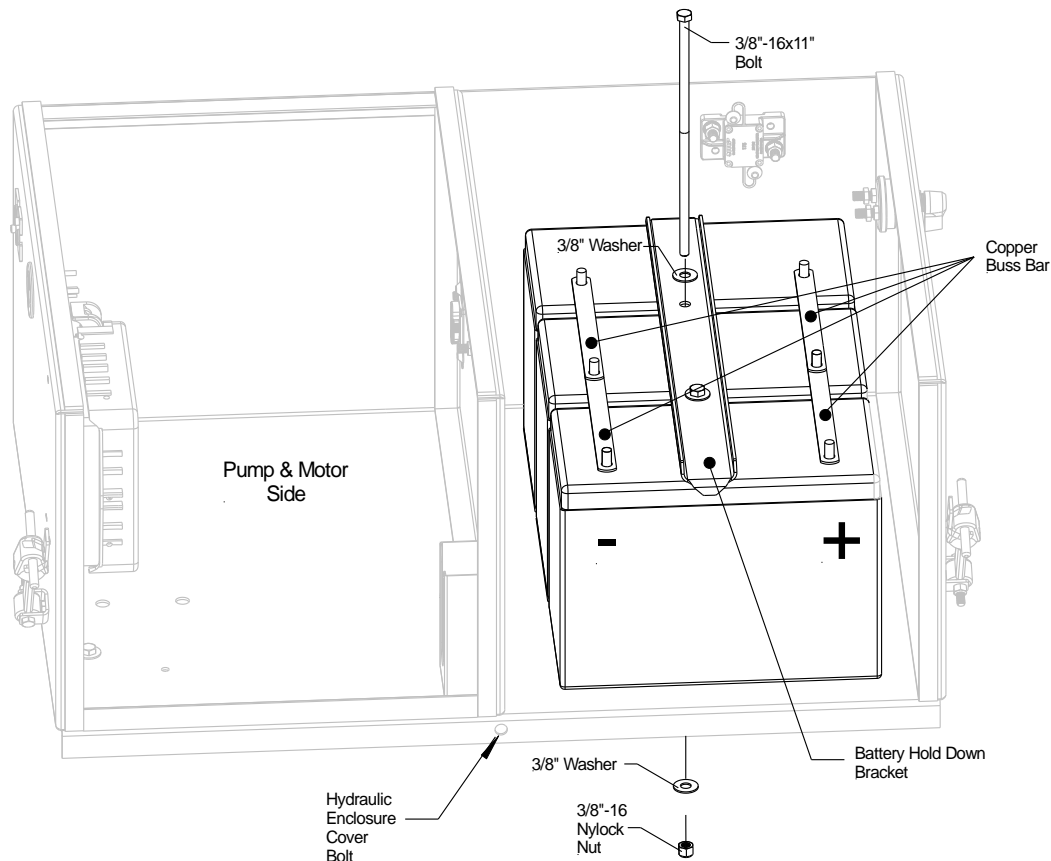
12.1 Auxiliary Battery Kit

NOTICE

Three (3) batteries are always recommended for ILD55 & ILD66, for high cycle and max load applications and for city deliveries with short duration between stops.

Steps:

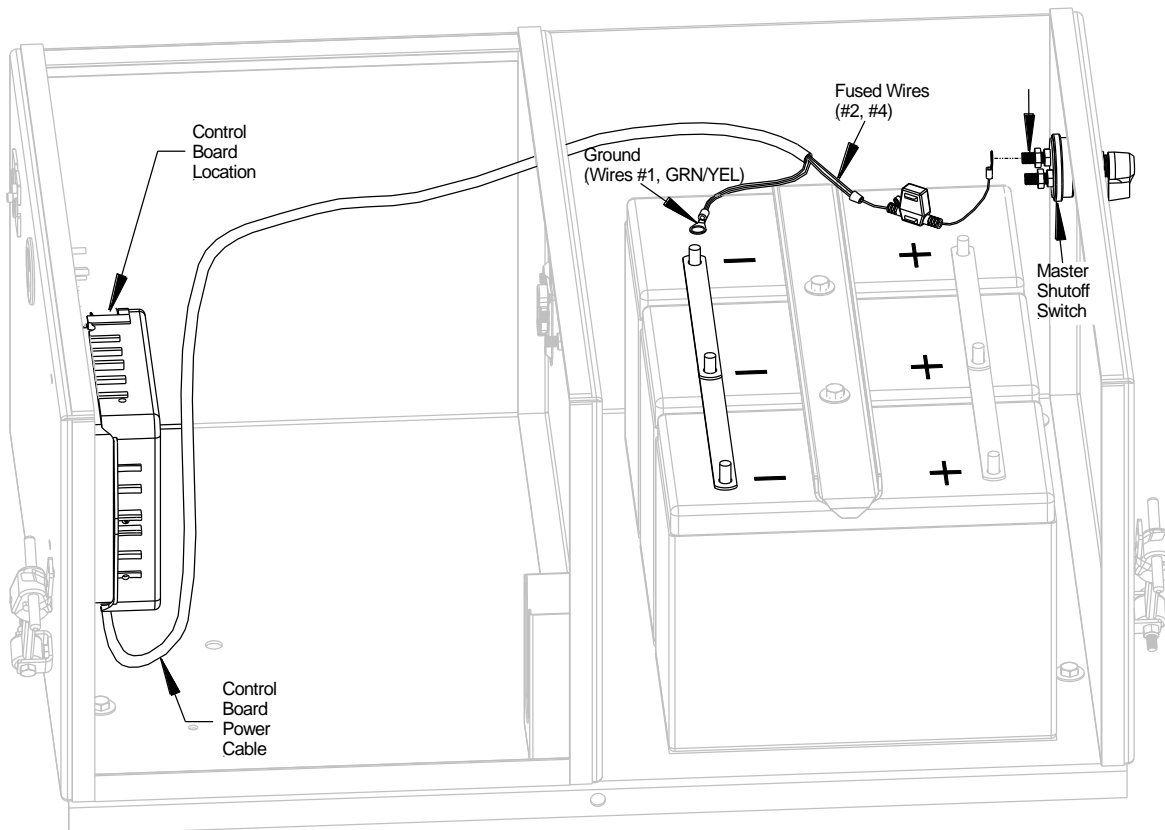
1. Install Batteries: Remove the hydraulic enclosure cover by removing the bolt under the handle. Install batteries in hydraulic enclosure with positive terminals to the right side as shown. Secure the batteries to the box with the battery hold down bracket and hardware provided.
2. Battery Hold Down Bracket: Secure the batteries to the enclosure with the battery hold down bracket. *Note: Install the battery hold down bracket the same way if less than 3 batteries are installed.*
3. Copper Buss Bars: Connect the three (3) batteries in parallel by installing two buss bars on the negative terminals and two buss bars on the positive terminals for three battery configuration. Use two (2) buss bars when connecting two batteries.



12.2 Connecting Power to Control Board

The Control Board Power Cable is pre-routed from the Control Board to the battery side of the hydraulic enclosure. Connect the paired wires with the fuse holder (Wire #2, & #4) to the master shutoff switch. Connect the other two paired wires (Wire #1 & Green/Yellow) with the ring terminal to the ground terminal on the battery(s).

Attention: Connect the wires to each terminal and continue to wiring the batteries. After batteries have been wired, all terminals must be secured with nuts.



12.4 Battery Wiring – Truck and Trailer

⚠ WARNING

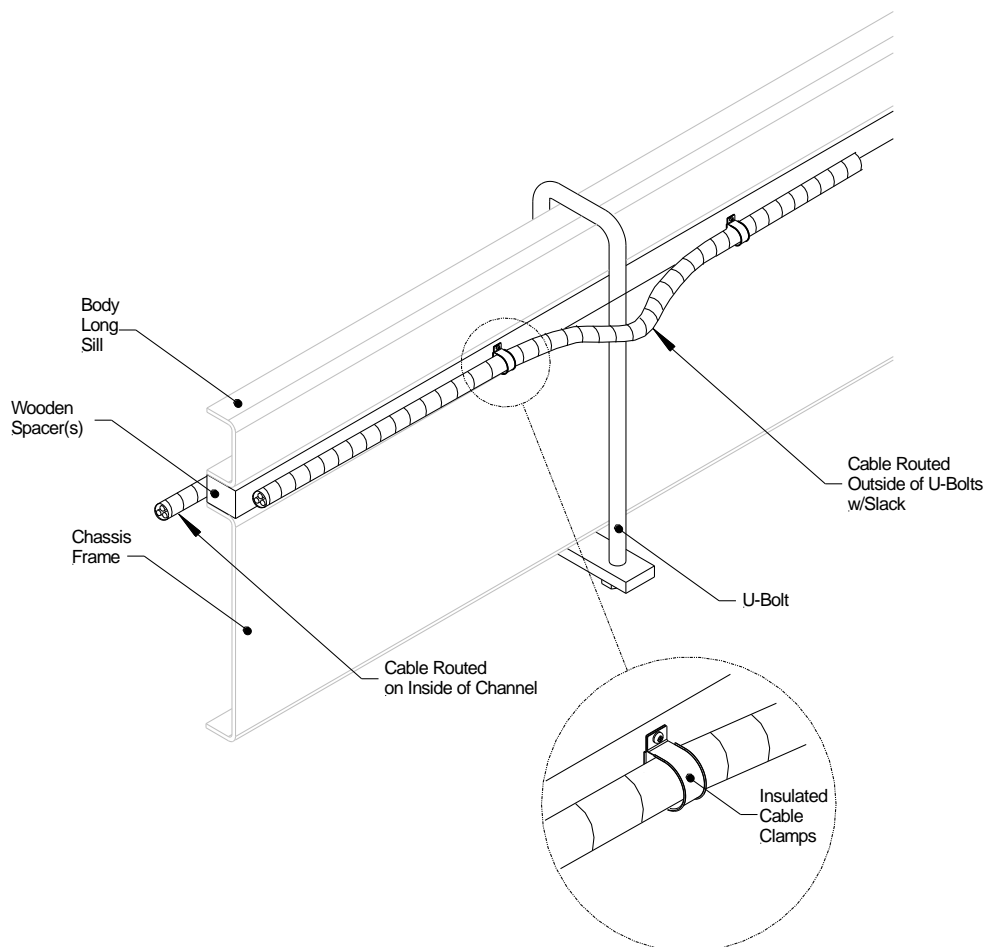
Never secure cable in a way where it can make contact with other wiring, brake fuel, or air lines or get pinched against other objects.

NOTICE

When grounding to any part of the vehicle, be sure to grind off paint or under coat and seal connection.

12.5 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.



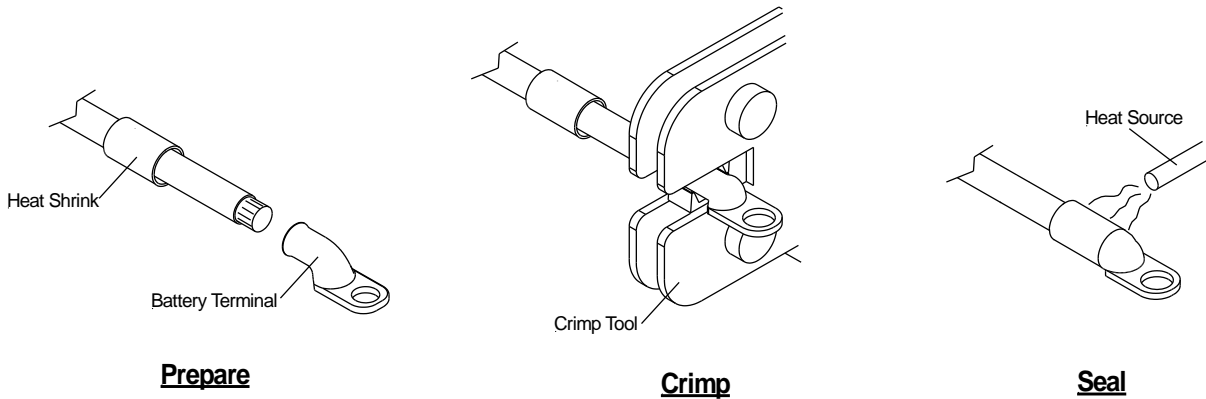
12.6 Wiring Crimping



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 with dielectric grease or equivalent sealer.

Battery Cable Crimping

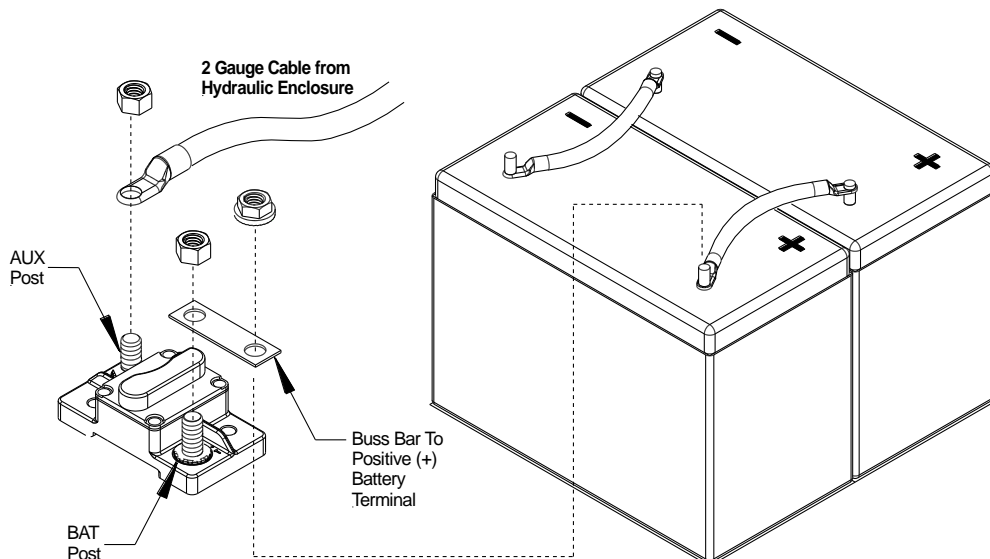
1. Prepare the wire to be crimped. Straighten out the exposed copper wire and insert into the battery terminal.
2. Use a crimping tool designed for crimping battery terminals for best results. The use of other tools could possibly damage the battery terminal and make poor connections between the wire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



12.7 Circuit Breaker at Truck Batteries

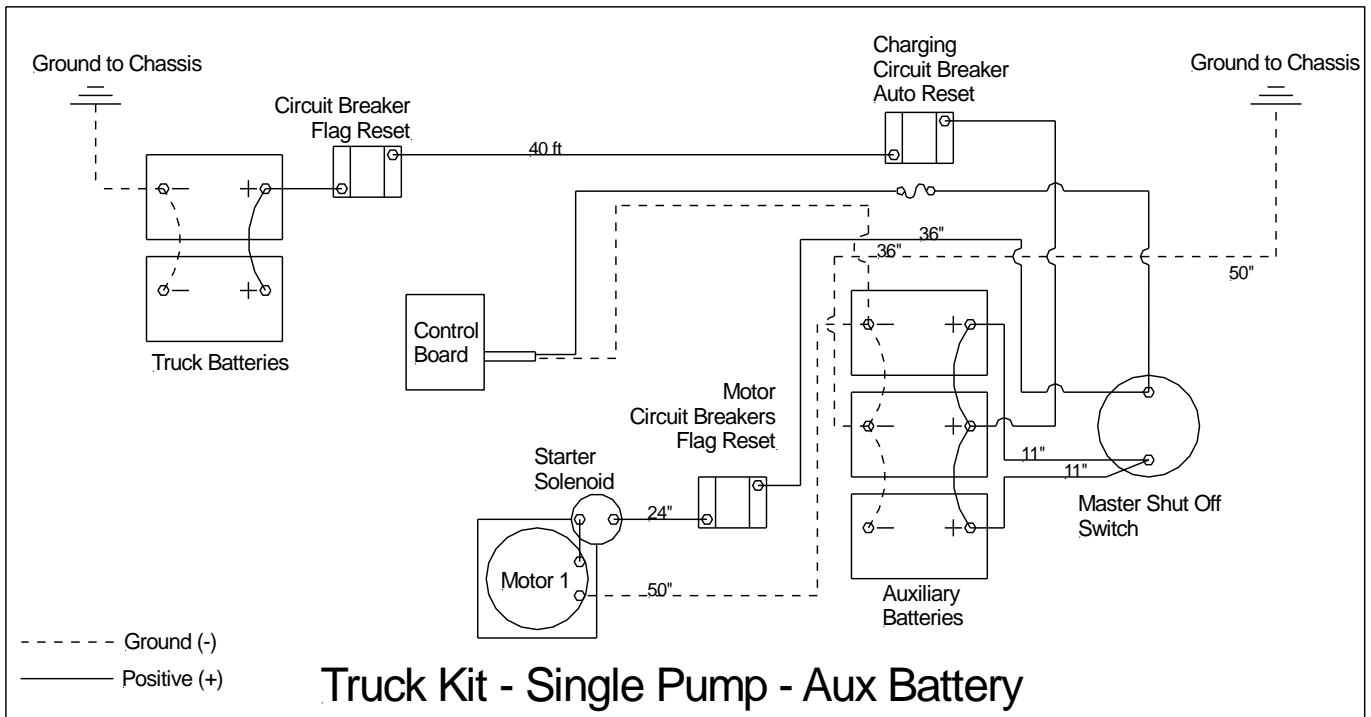
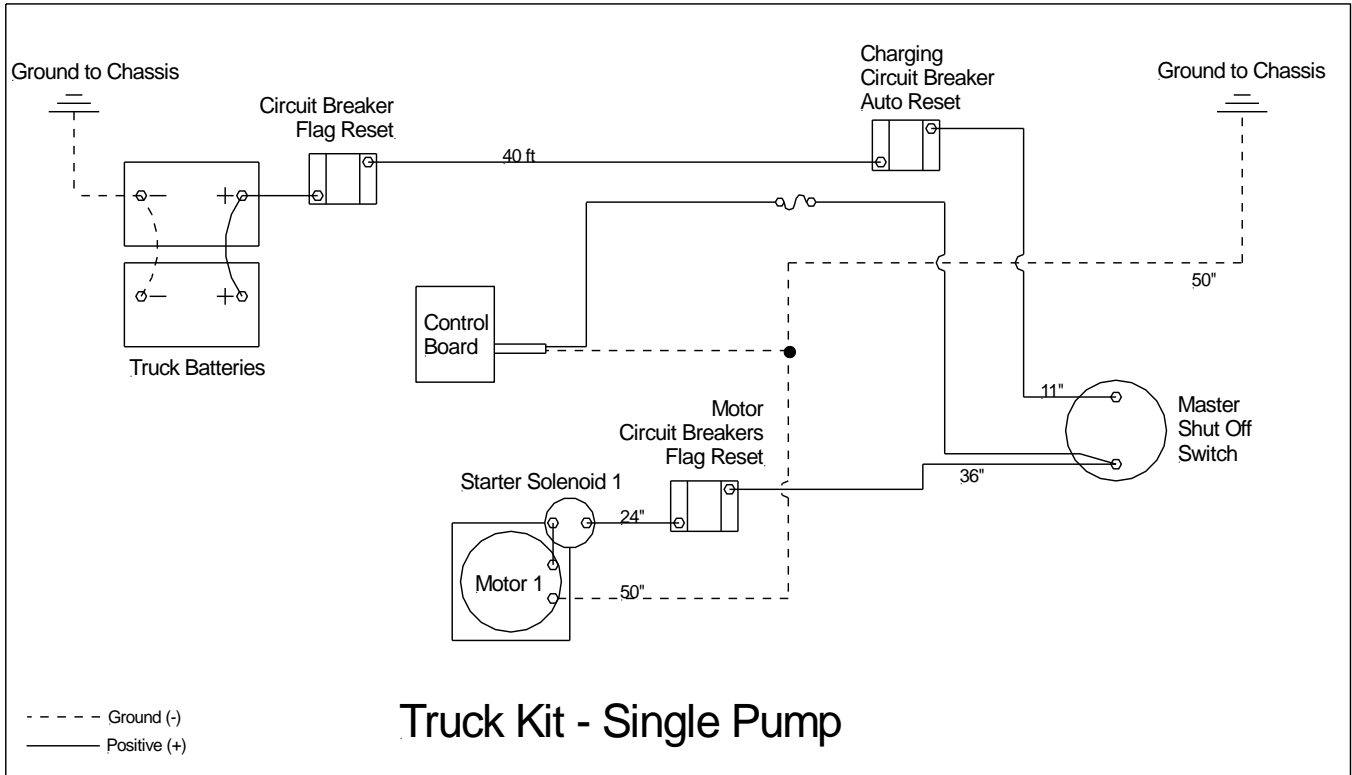
Circuit breakers are preinstalled inside the Hydraulic Enclosure from factory. Instructions below show how to install a circuit breaker at the truck batteries.

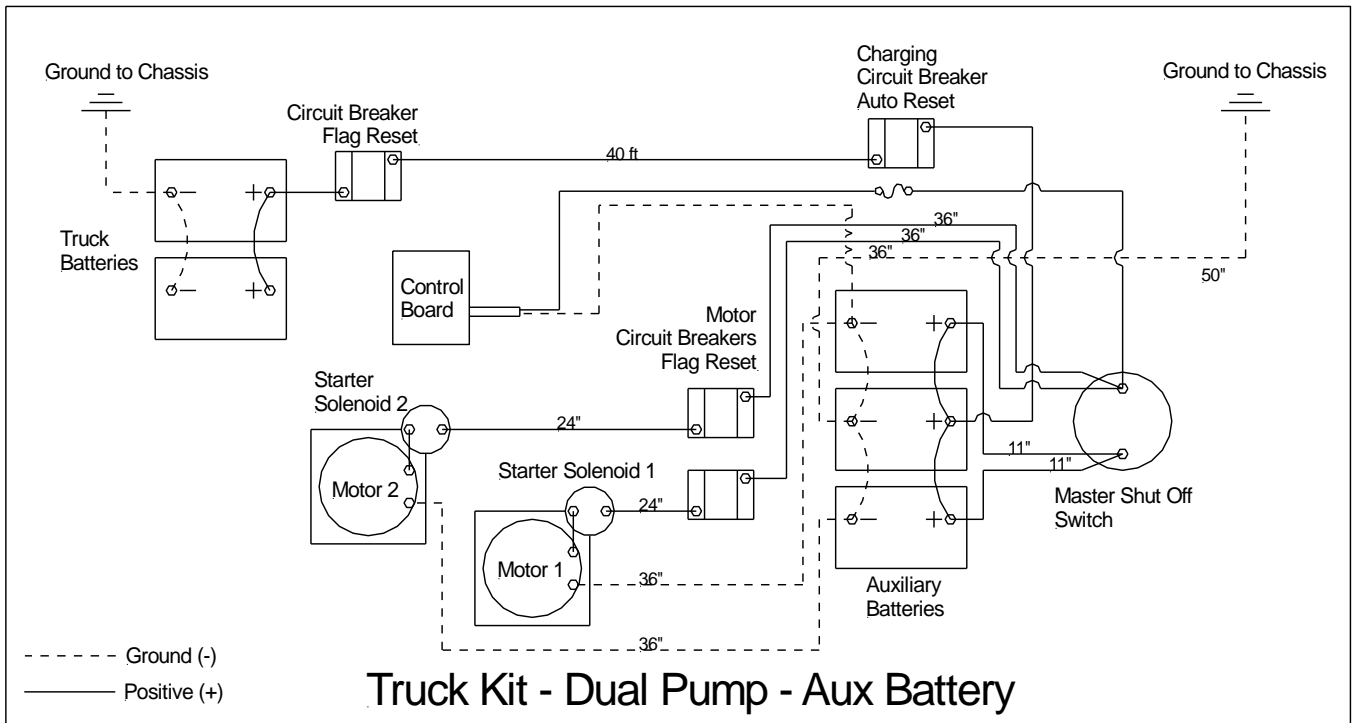
1. Battery Mount: Attach the bus bar to the circuit breaker on the BAT post. Mount the circuit breaker securely on the positive terminal post of battery.
2. Connect the 2 gauge power cable from the hydraulic enclosure (Auto Reset Breaker) to the AUX post on the circuit breaker.



12.8 Battery Wiring – Truck Kit

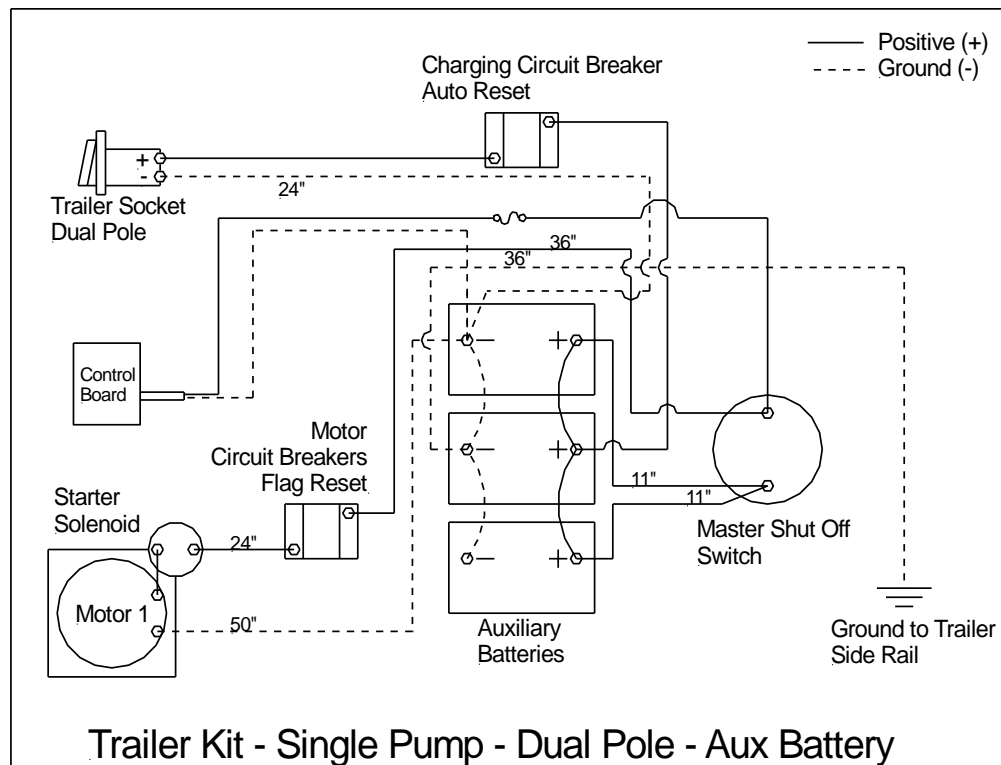
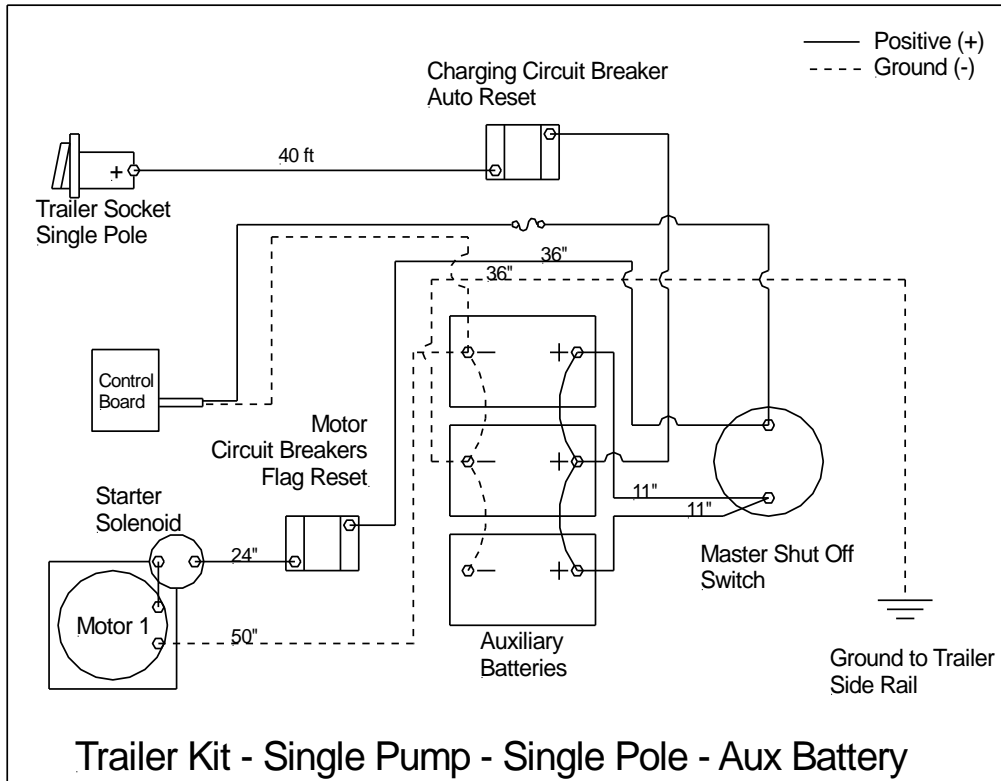
For 24V wiring reference document 90-1117-008.

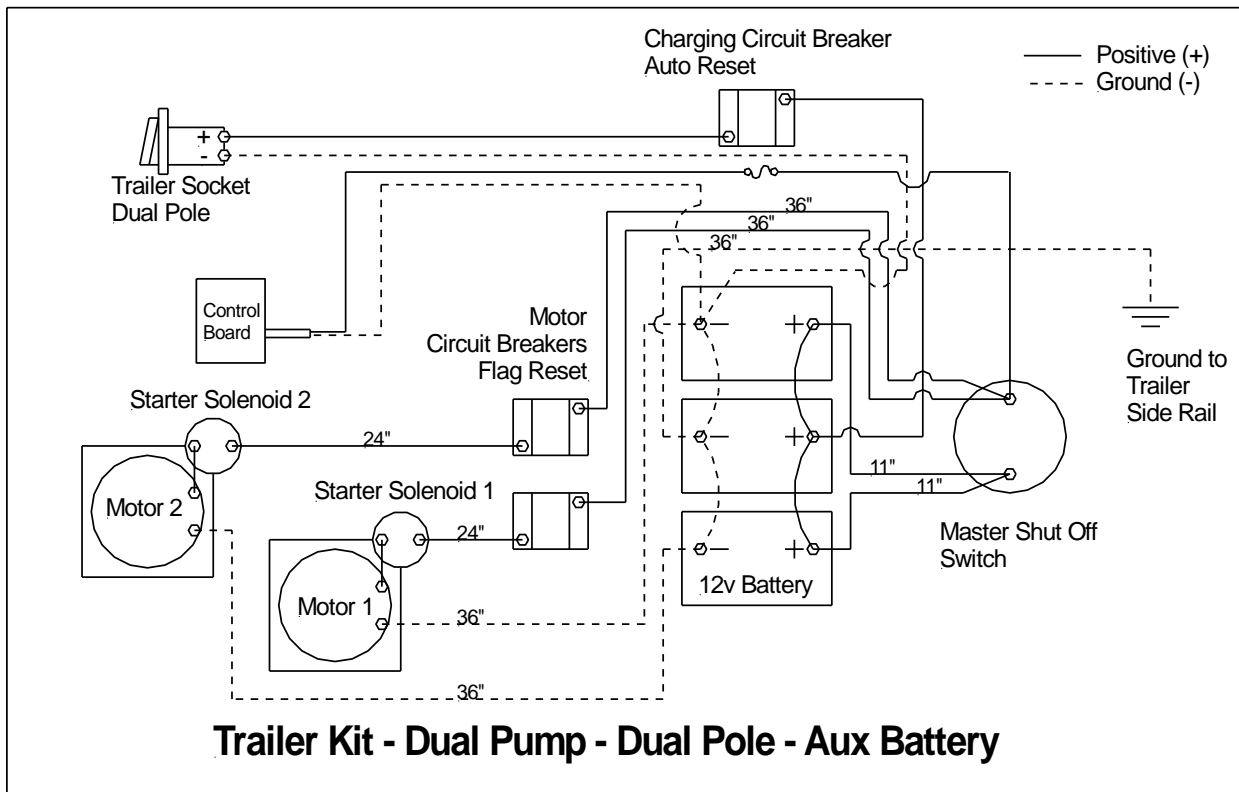
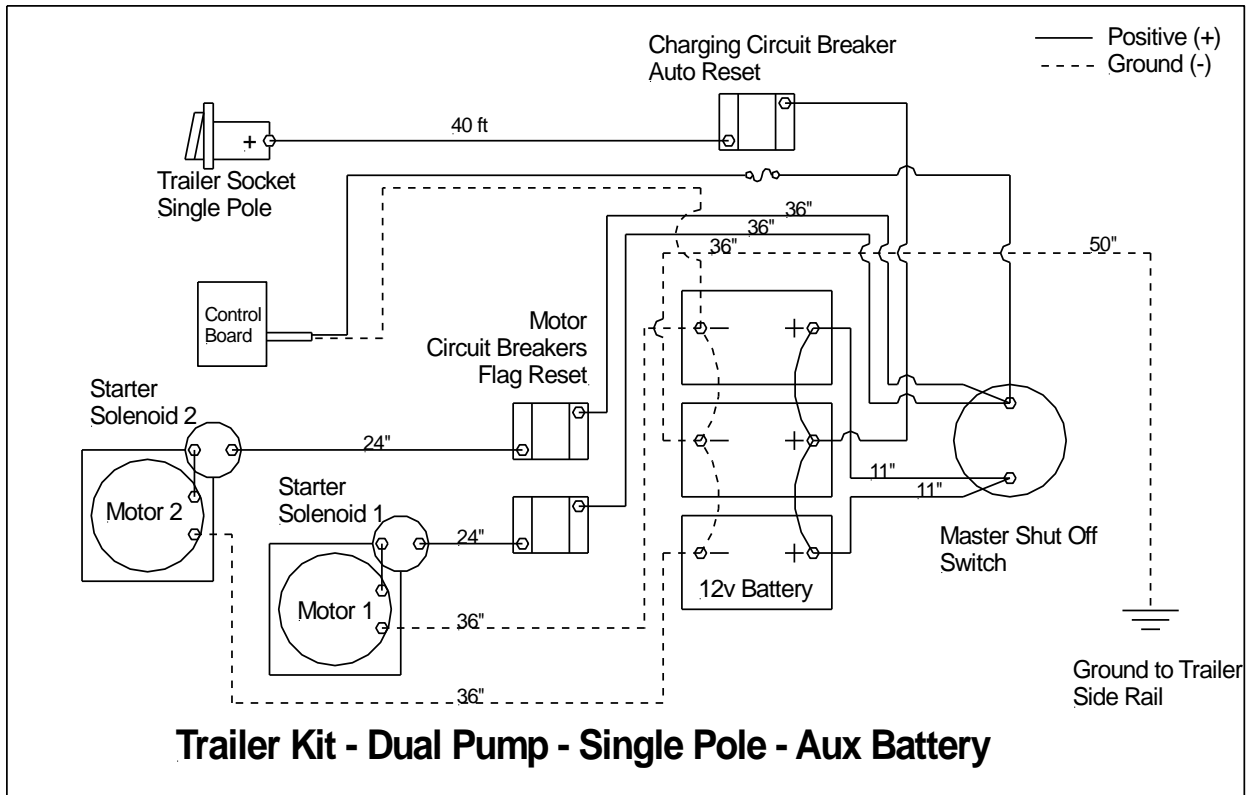




12.9 Battery Wiring – Trailer Kit

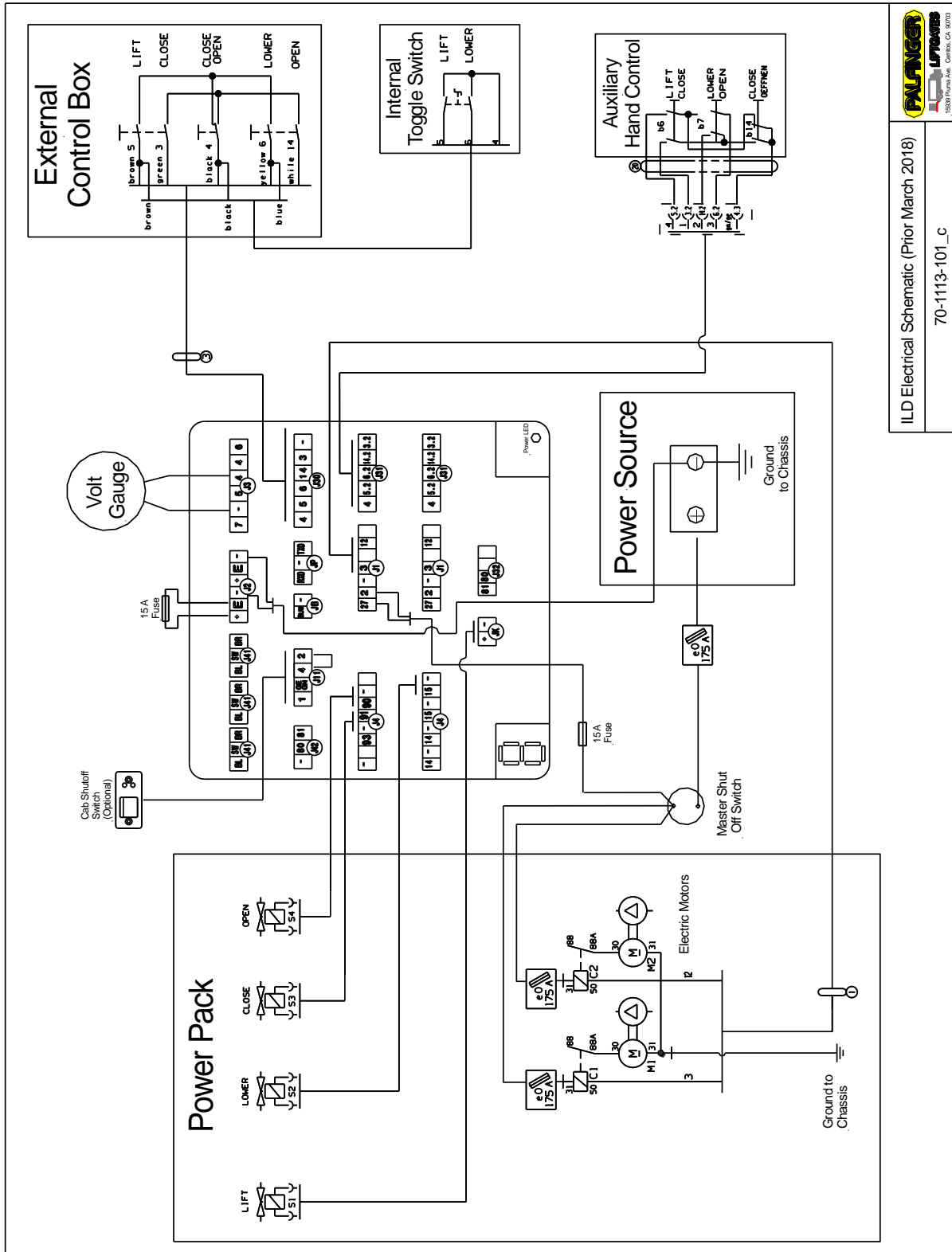
For 24V wiring reference document 90-1117-008.





12.10 Electrical Schematic

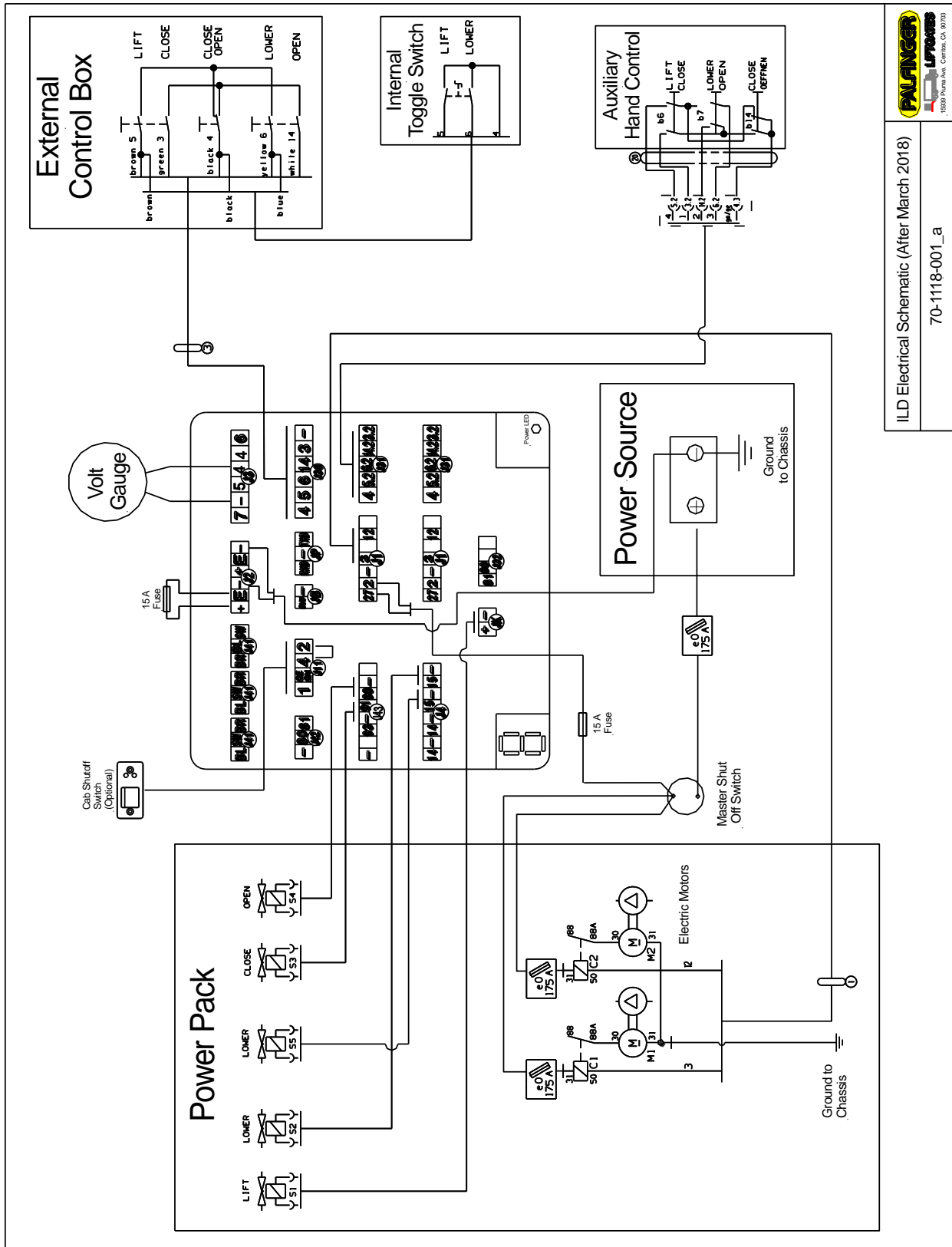
12.10.1 Schematic (Prior to March 2018)



PALANGER
UPFLOW
 15589 Puma Ave., Corral, CA 90709

ILD Electrical Schematic (Prior March 2018)
 70-1113-101_c

12.10.2 Schematic (After to March 2018)

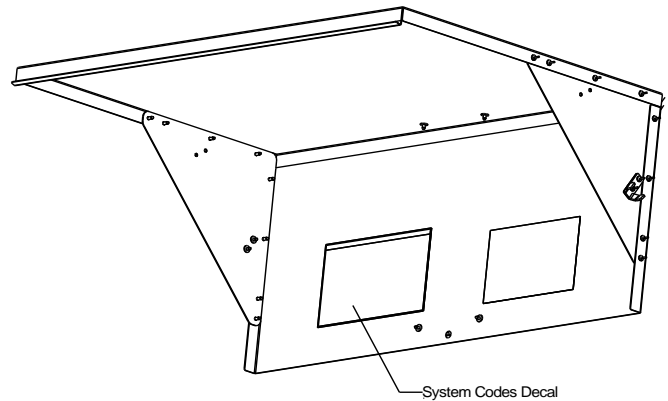
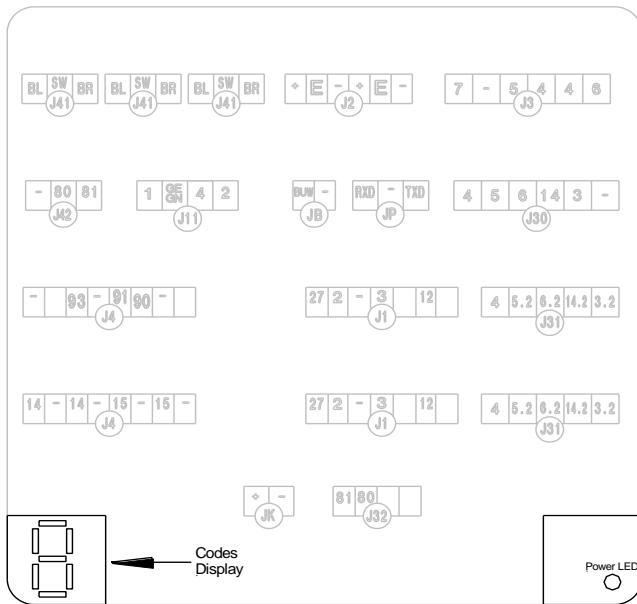


PALFINGER
UPPER
 18588 Palma Ave. Centex, CA 90703

ILD Electrical Schematic (After March 2018)

70-1118-001_a

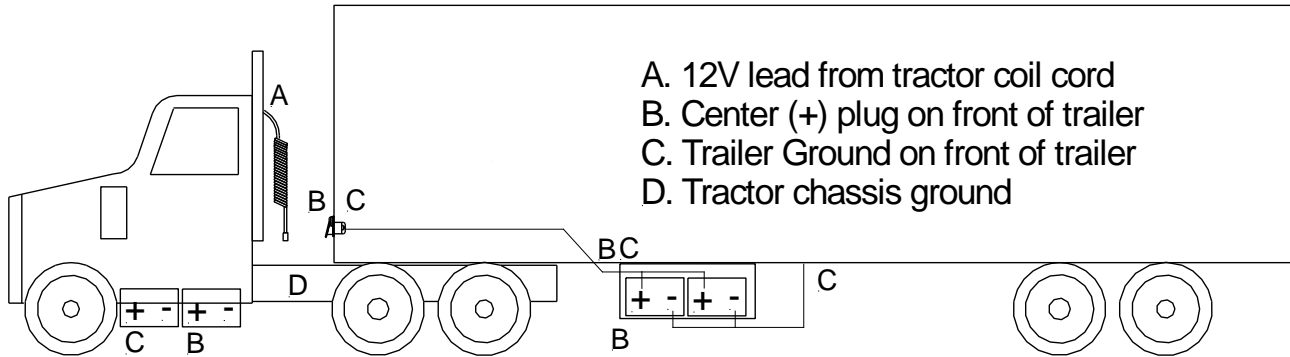
12.11 Control Board System Codes



Inside View of Pump and Motor Enclosure Lid

Control Board Code	Description	Reset
0	System ok / Cab switch off, (or missing bridge J11/2<->4)	
1	System ok / Cab switch on, (or bridge J11/2<->4)	
2	Low voltage – start truck engine, charge battery	Cab switch: off/on (or disconnect bridge J11/2<->4)
3	Defective or missing tilt switch B13 at lift arm	Automatically when the valves are back to normal
4	Defective or missing tilt angle sensor B15 at lift arm	Automatically when the valves are back to normal
5	Defective or missing tilt angle sensor B15 at platform	Automatically when the valves are back to normal
6	Warning lights shorted	Cab switch: off/on (or disconnect bridge J11/2<->4) or close tail lift
7	Short in cab switch / on-off-switch or aux port	Cab switch: off/on (or disconnect bridge J11/2<->4) or close tail lift
8	General short in electric wiring	Cab switch: off/on (or disconnect bridge J11/2<->4) or voltage interruption MBB control
9	Defect at motor solenoid detected during lifting	Automatically when the valves are back to normal
A	Voltage V02 (J1 pin 2) is missing, defective fuse?	Replace the fuse
b	Defect at opening, valve (S3/S4) or motor relay detected during opening	Automatically when the valves are back to normal
c	Defect at motor solenoid or S5 valve detected during closing	Automatically when the valves are back to normal
d	Defect at lowering valve (S1/S2) or S5 valve detected	Automatically when the valves are back to normal
E	Emergency program (all sensors are bypassed). Activation by: Press Open + Lower + Extra Button > 10 seconds	Cab switch: off/on (or disconnect bridge J11/2<->4)
P	Diagnosis mode activated	Removing service connector

12.12 Trailer to Tractor Ground Test



Testing of full system using a battery load tester. Start with testing each individual battery on both tractors and trailer before proceeding to check the system:

1. Tractor Test:

Ground battery load tester on tractor chassis point (D)

Connect positive load tester cable on positive pole of single pole plug at end of tractor coil cord (A)

Run load test- This will test entire circuit on tractor including ground

2. Trailer Test:

Ground battery load tester on trailer chassis point (C)

Connect positive cable on positive pole of single pole plug receptacle on trailer (B).

Run load test- This will test entire circuit on tractor including circuit breakers and ground between trailer batteries and trailer chassis.

3. Tractor and Trailer Charging system test while connected:

Ground battery load tester on tractor chassis point (D)

Connect positive cable on positive pole of single pole plug receptacle on trailer (B).

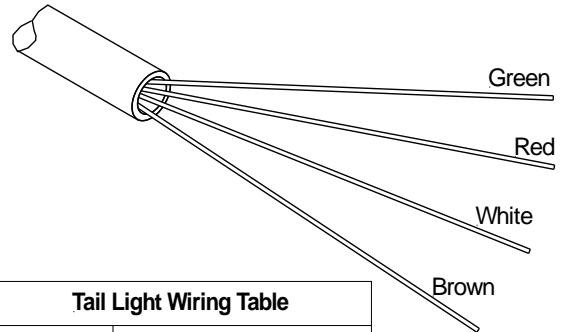
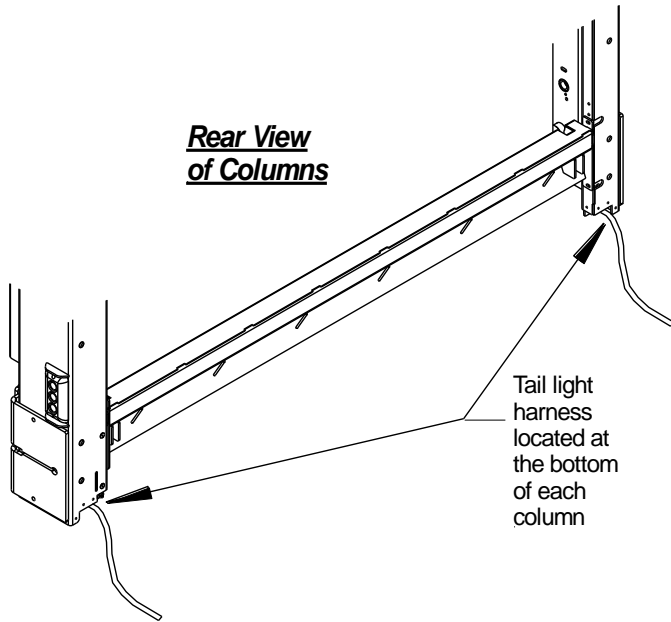
Run load test- This will test entire circuit on tractor and trailer including ground between tractor, trailer, and circuit breaker on trailer.

A simple low amp voltage test at the front of the trailer or at the tractor will not show insufficient connections or ground problems.

12.13 Tail Light Harnesses

NOTICE

All truck or trailer lighting, auxiliary lighting, and reflectors must be in accordance with DOT, State, and Federal regulations.



Tail Light Wiring Table	
*Wire	Function(s)
Green	Left/Right Stop/Turn
Red	Back Up
White	Ground
Brown	Tail Light

*All wires are 16 AWG.
*Wire ends are bare, no connectors attached.

12.14 Dock Bumper Installation

Remove bolt and nut from the bumper plate, **Fig. 24**. Slide the bumper down into the bumper plate, **Fig. 25**. Secure bumper by reinstalling the nut and bolt, **Fig. 26**. Curb side column shown below, repeat installation on the street side column.

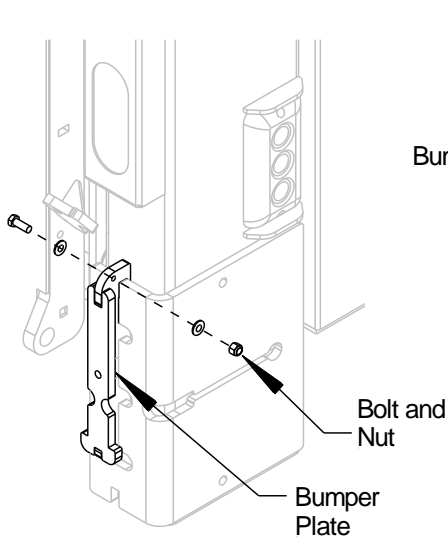


Fig. 24

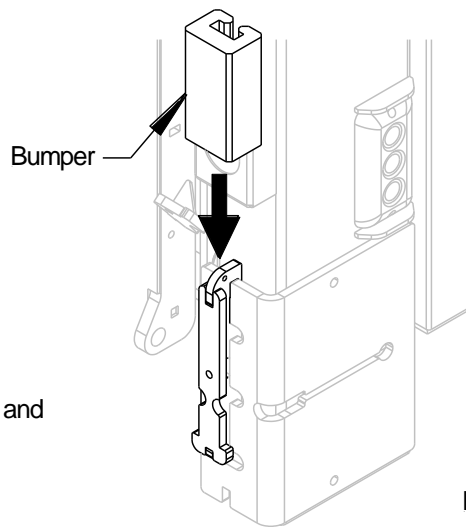


Fig. 25

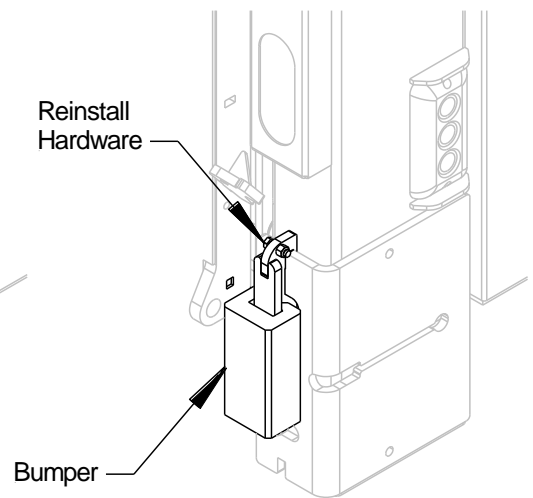


Fig. 26

Above Floor Installation Only**13 Above Floor Liftgate Installation (Optional)****13.1 Mounting the Liftgate****NOTICE**

Read this entire section before beginning installation. The above floor installation reduces the bed height limit of the liftgate. The maximum travel of the platform is 56". For example: If the gate is mounted 6" above floor, the maximum bed height lowers to 50". Above floor installations can be mounted a Maximum of 6" above the floor level of the vehicle.

NOTICE

Before positioning the liftgate; consider when measuring and centering the liftgate that the truck or trailer may NOT be square or parallel. Special care must be taken to ensure that the liftgate is square and parallel before welding.

Steps:

1. Level Truck: Truck should be on level and even ground. Uneven ground will give misleading measurements and can cause body twist or racking.
2. Make sure the liftgate is properly secured: Verify the liftgate is attached safely to the lifting device. If using a forklift to hoist the liftgate, use 4"x 4" x 24" wood spacers to keep the unit from sliding back when lifting. This will help force the top of the liftgate tight against body for welding.
3. Place Spacers: It is recommended to use spacers to aid in positioning the liftgate's height. Steel spacers, such as a 6"x6" 1/4" thick tube can be placed along the rear sill for a 6" above floor installation. For smaller above floor heights, use smaller spacers. These spacers should be placed where the alignment plates will land. The spacers should not be used to support the full weight of the liftgate, but only to aid in setting the height of the liftgate.

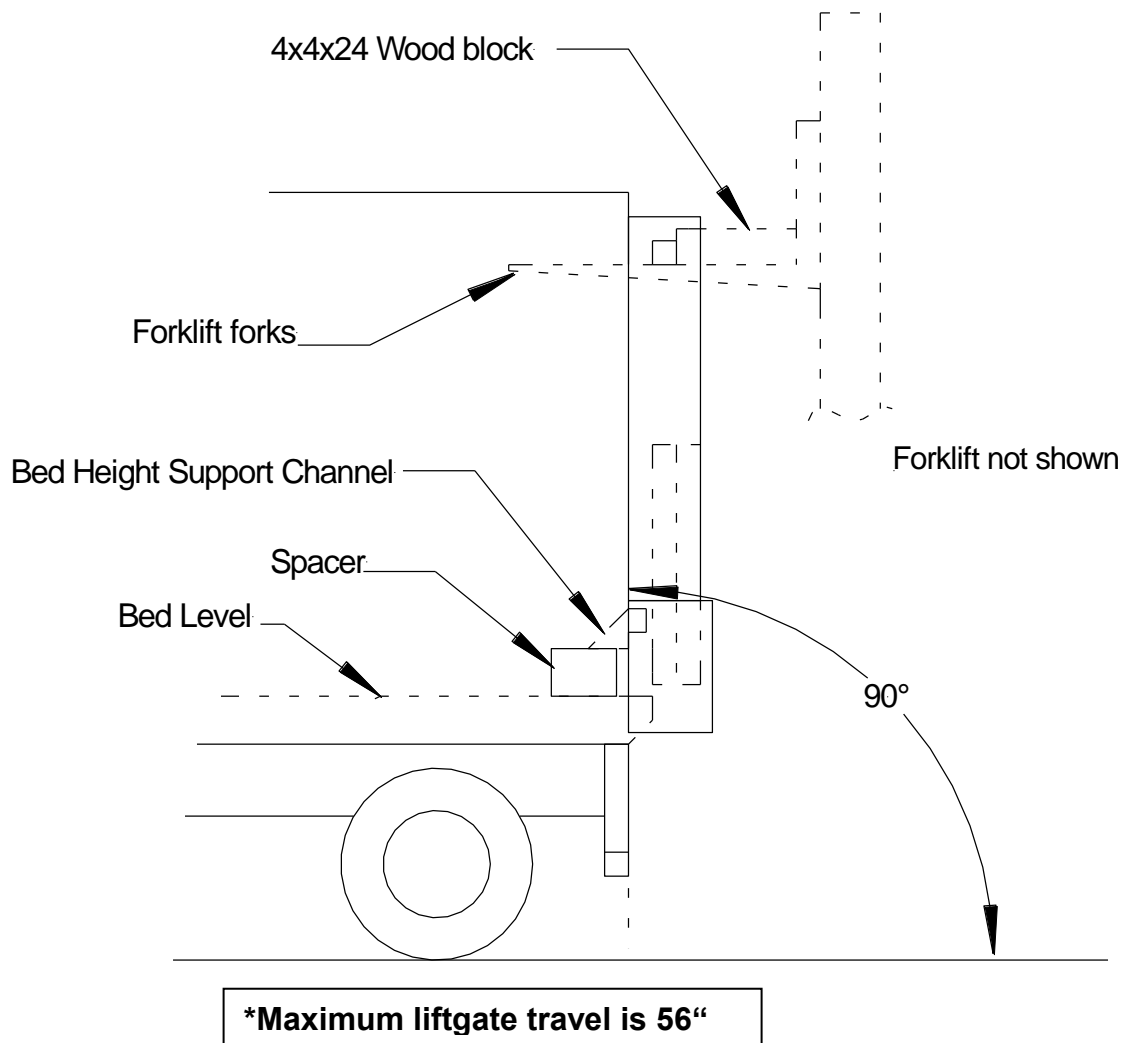
Above Floor Installation Only

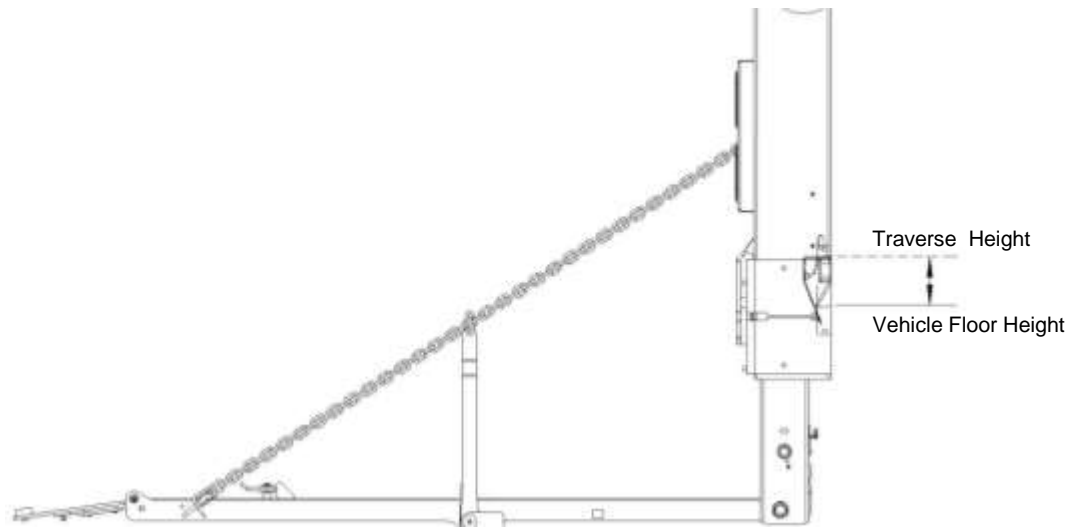
4. Fit Liftgate Against Truck: Hoist the Liftgate; preferred method for lifting liftgate is with a forklift. Position forks to widest point and lift from center. Above floor installations can be mounted a **maximum** of 6" above floor level, when measuring from the traverse floor level. The full weight of the liftgate should be supported by the lifting device, and not the alignment plates.

Please reference the diagrams on the following pages. The traverse member of the liftgate should be above floor level of the truck at this point. Instructions to lower the traverse will be explained in a later step.



Never remove lifting device until liftgate is securely welded.



Above Floor Installation Only**5. Center Liftgate:**

Method A: Align the liftgate so that it is centered on the truck. Use the center marks as a reference for this step. 12" or larger "C" or "F" style clamps can be used to coach or hold the liftgate in position.

Method B: An Alternative method for centering the liftgate is to measure side clearances from the outside of the liftgate to the outside of the body. (Centerline marked on sill is NOT easily visible, but can still be used as a reference.)

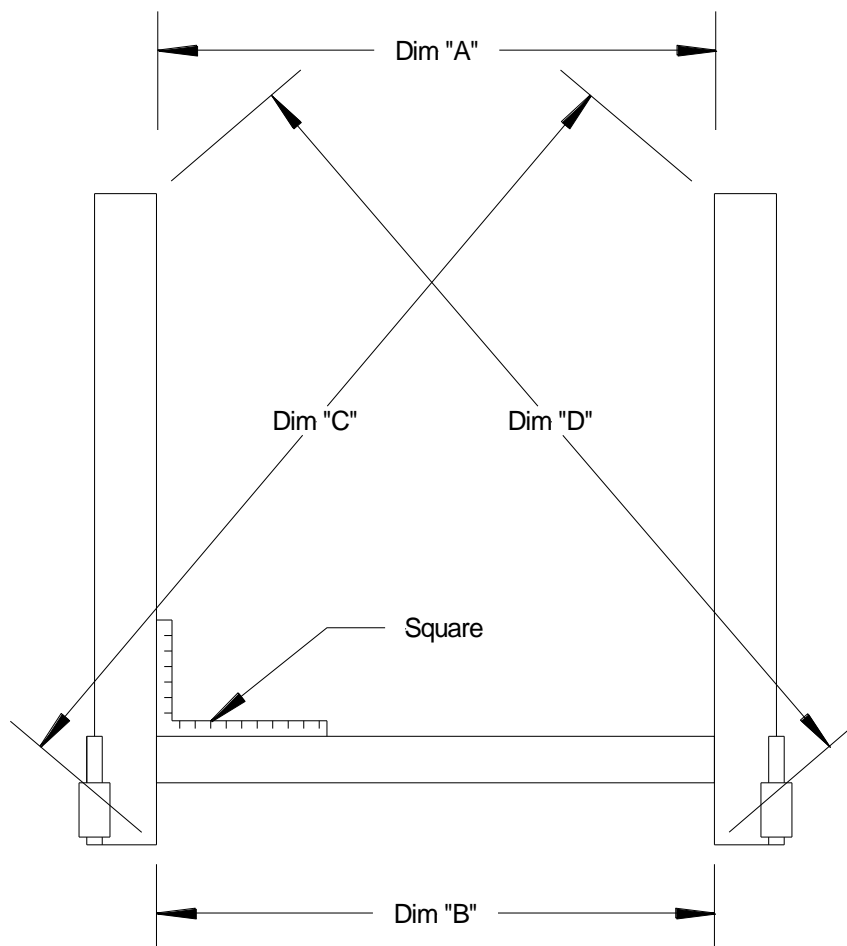
6. Verify Position: Confirm all mounting dimensions are correct, double check that floor and threshold extension are flush.

Above Floor Installation Only**13.2 Check Liftgate Dimensions**Steps:

1. Check Dimensions: Inspect liftgate to be certain it is square and parallel. Use a 3 ft. carpenters square. Verify columns are 90 degrees to sill or body.
2. Use "Dim A" and "Dim B" to verify columns are parallel.
3. Use "Dim C" and "Dim D" to verify columns are square.

NOTICE

DO NOT WELD until all dimensions are checked and rechecked after each positioning adjustment.



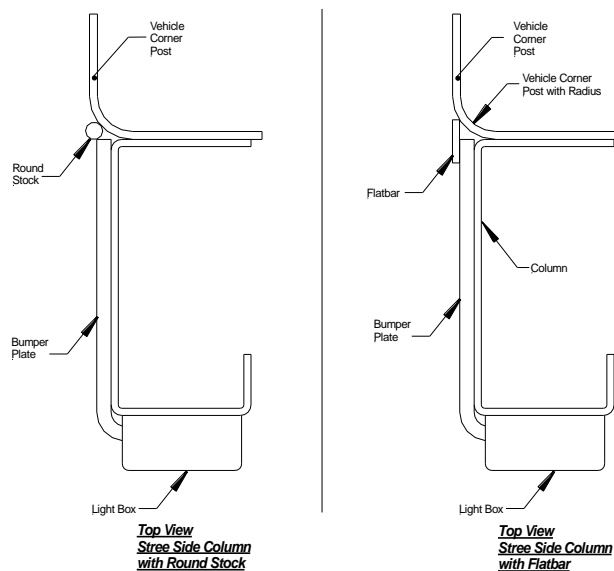
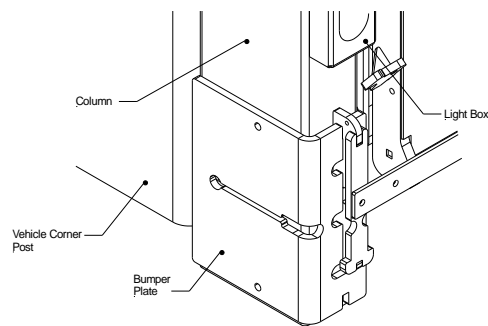
Above Floor Installation Only

13.3 Welding Liftgate

Do not weld the traverse yet.

NOTICE

Optional: Take precautionary measures to ensure that columns do not toe-out due to welding. Flat bar or round stock can be added in the corner to minimize pull from the weld. Maintain tension with come along from one bumper over to the other one as work is performed.



Steps:

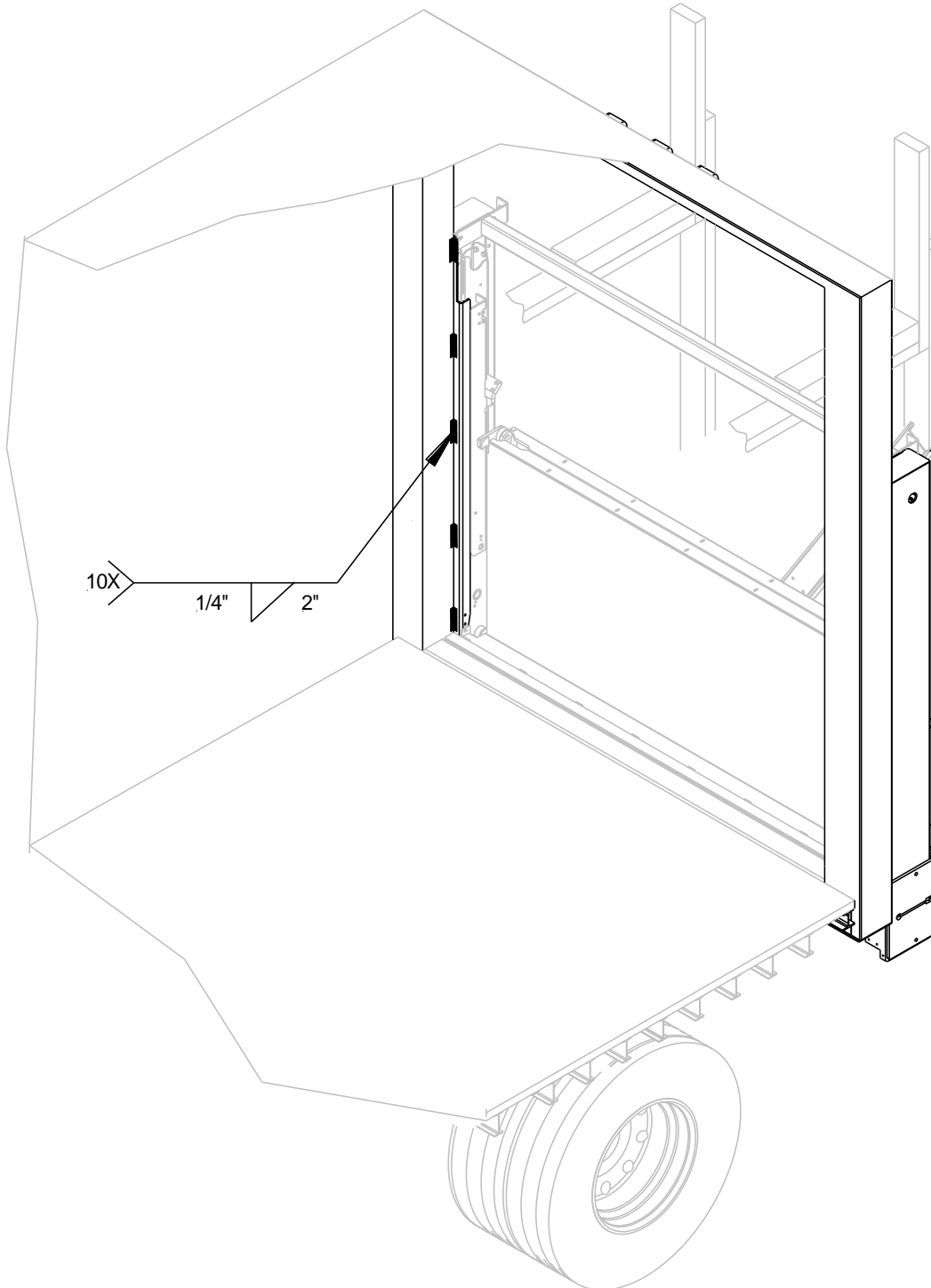
1. Outside Welds: Using $\frac{1}{4}$ " x 2" welds, place one weld $\frac{1}{2}$ " from the top of **each** column on the outside and place one weld at the bottom of each dock bumper plate.

NOTICE

2. **STOP** and recheck all mounting dimensions.

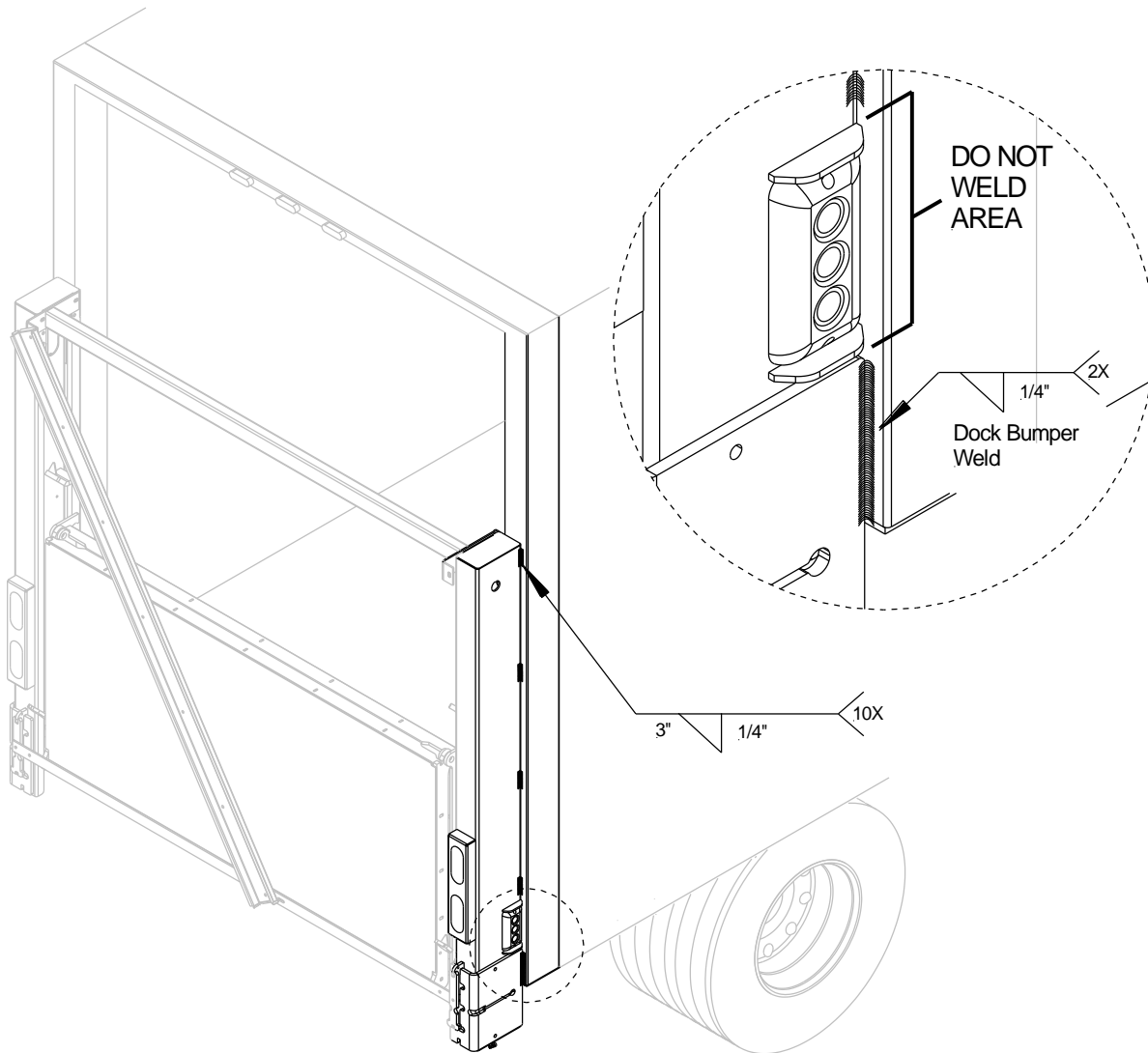
Above Floor Installation Only

3. Inside Column Welds: Weld inside of columns $\frac{1}{4}$ " x 2" x 5 places evenly spaced top to bottom.



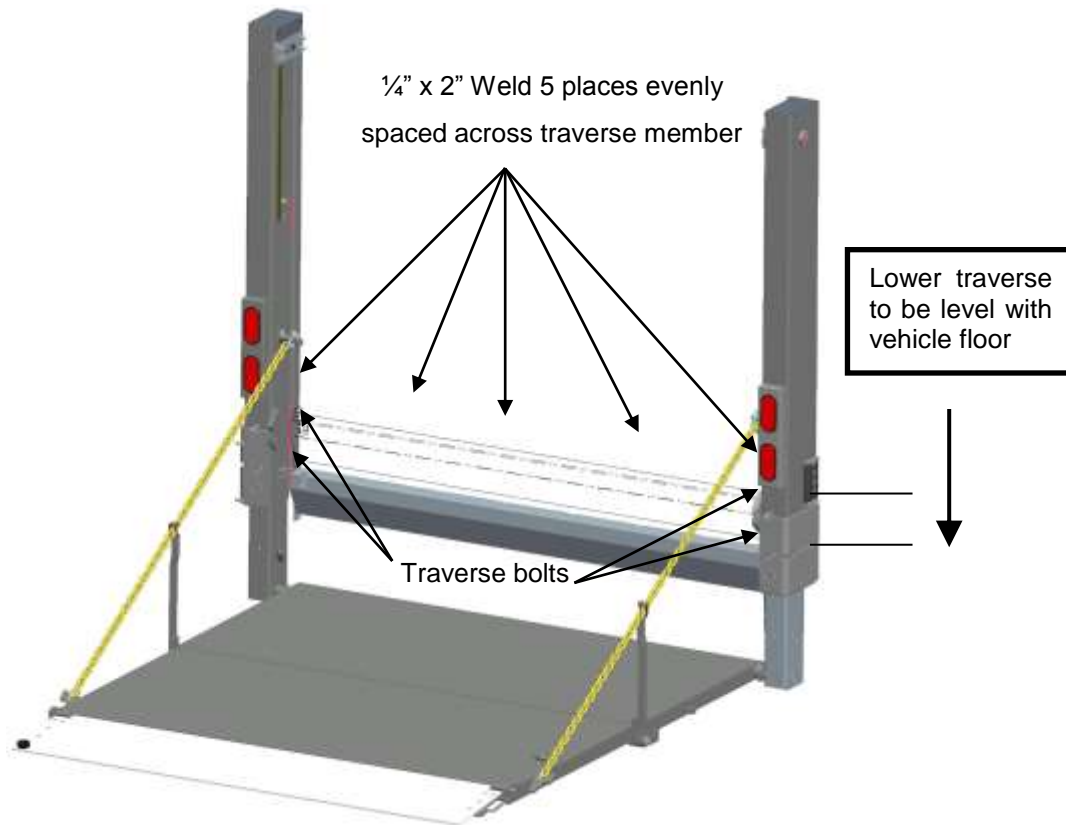
Above Floor Installation Only

4. Final Outside Welds: Final welding for the outside of liftgate is 1/4" x 100% on dock bumpers and 1/4" x 3" x 5 places evenly spaced on columns top to bottom.



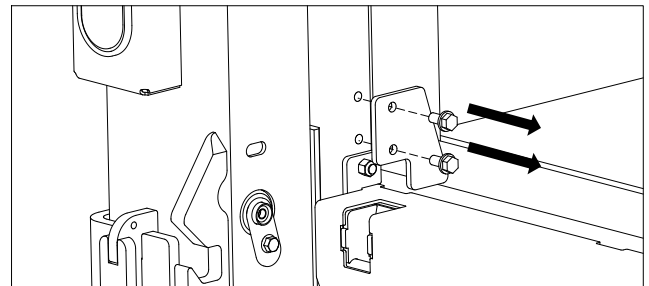
Above Floor Installation Only

5. Remove Spacers: If spacers were used during installation, remove them from the truck/trailer.
6. Traverse Welds: After the outside of the columns have been welded in place, remove the 4 traverse bolts, and lower the traverse member to be flush with the floor (Alignments plates can assist in setting traverse member height). Weld the traverse to each column, $\frac{1}{4}$ " weld by $\frac{1}{2}$ " long, x3 on each side.



7. Threshold Welds: Weld threshold $\frac{1}{4}$ " x 2" x 5 places evenly spaced left to right.

8. Remove Mount Plate Hardware:
Using a $\frac{9}{16}$ " socket, remove the hardware holding the mount plates in.



9. Gate Mounting complete: Above floor mounting is now complete. Continue with the hydraulic installation.

14 **Lubrication**

Proper lubrication will help ensure a long trouble free service life for the PALFINGER ILD+. Therefore, the liftgate should be lubricated at the same time as the truck/trailer. Grease more frequently if the lift gate is heavily used or whenever the pivot points appear to be dry. Average ILD plus use is considered 25 cycles per day or 500 cycles per month. Lubricate the gate at least every 3 months or 1500 cycles, whichever comes first.

CAUTION

DO NOT grease the “Slider Bearings” or “Columns” or “Runners”, as this will VOID your WARRANTY on the slide bearings. Lubricate liftgate per instructions in this chapter prior to release to service.

All Units:

- There are 12 grease fittings to maintain.
- Use a light penetrating oil on closing aids. For power closing units, grease upper & lower pivot mounting points.

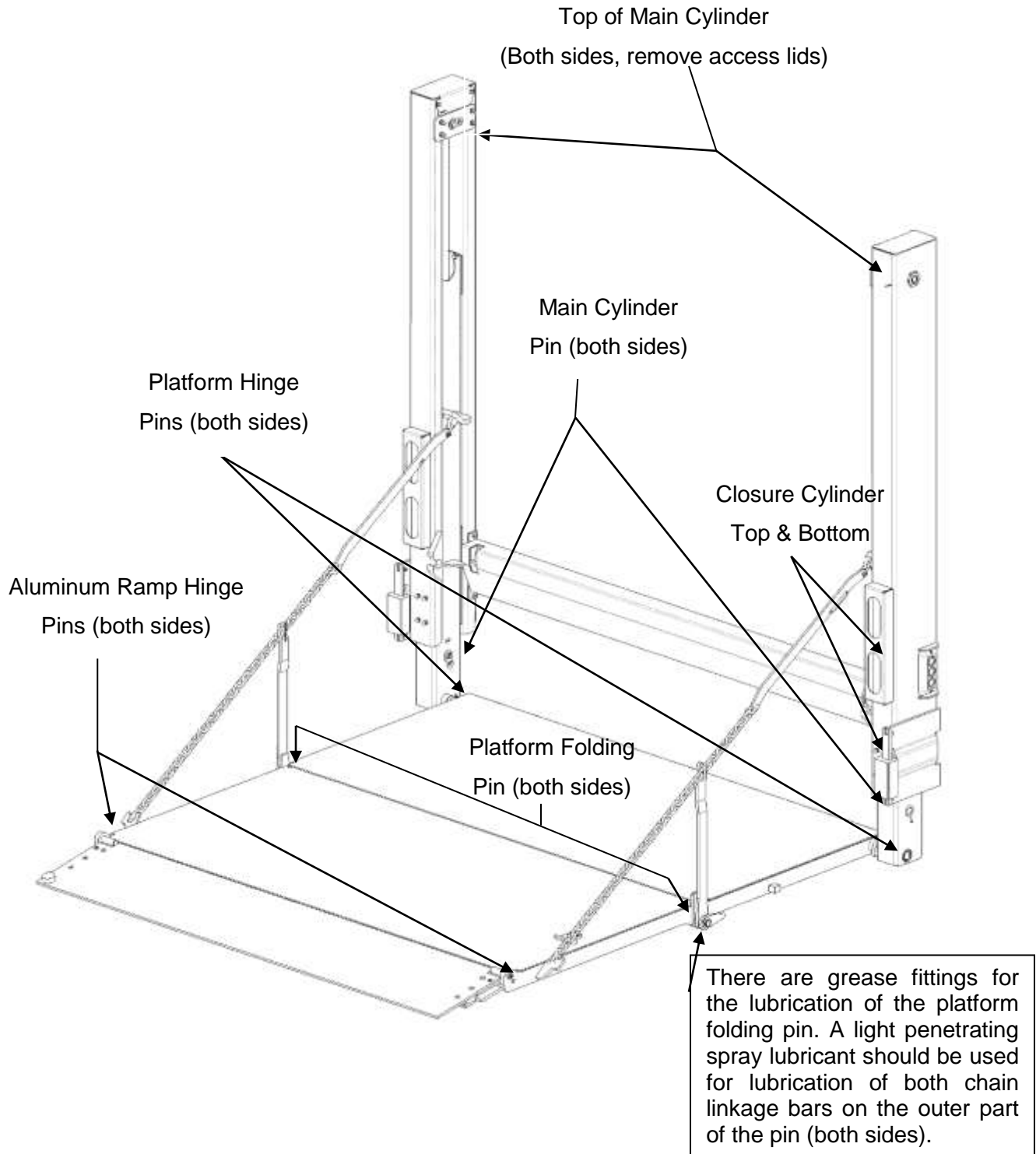
Bottle Gas Units:

For units with the Bottle Gas Options, there are an additional 8 grease fittings, and additional 8 locations that require light penetrating oil.

Check the oil level in the tank. The level should be 1.5” below the top of the reservoir when the platform is opened and on the ground. Use a good quality hydraulic fluid, ISO 32. Change oil at least once a year, preferably in the fall before the weather gets cold. The operation of the liftgate will accumulate condensation and some dirt which can interfere with the liftgate functions.

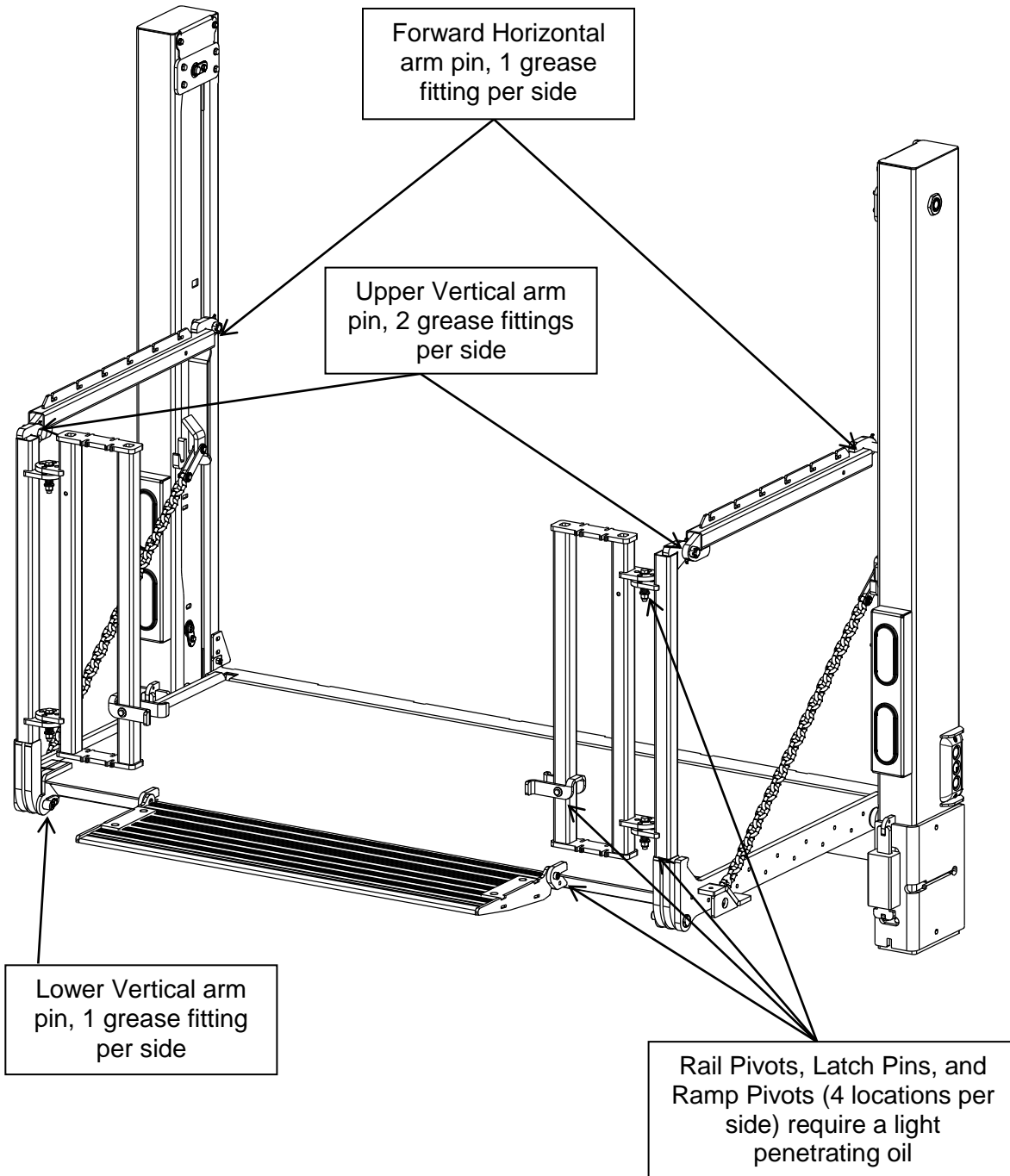
14.1 Standard Unit Lubrication Points

All bearing points must be lubricated in accordance with the maintenance interval.



14.2 Bottle Gas Unit Lubrication Points

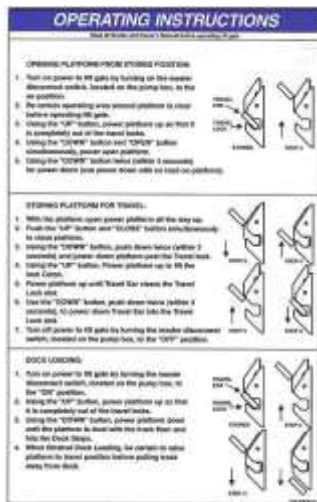
In addition to the lubrication locations shown in Section 14, Bottle Gas units require the following locations to be maintained



15 Decal Placement

! For operator's safety, all decals appearing in "Decal Kit" must be placed visibly on control side of liftgate to be read by operator. This is typically a combination of decals on the liftgate and truck body. Please make sure to place the maximum capacity decal (C) on driver and curb side.

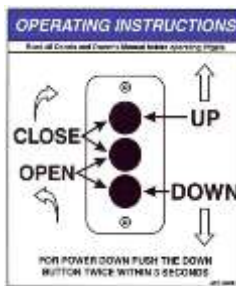
Decal Kit			
Decal	Qty.	Part No.	Description
A	1	ATG-OPER-ILD	Operating Instructions
B	1	ATG-OPER-ILD-BG-2	Operating Instructions (ILD-BG)
C	1	ATG-SWILD	Main Operation Switch
D	1	ATG-OPENILD	Notice for Open & Close
E	2	ATG-XXXX	Max. Capacity (please check the serial number plate to find out your specific capacity)
F	1	ATG-URGWA	Urgent warning: Elevating gate instructions
G	2	ATG-WLH	Warning: liftgate can crush
H	1	ATG-BKR	Circuit Breaker Reset (must be located at the circuit breaker)
I	1	ATG-RESET	Circuit Breaker Protection.
J	2	ATG-PLAT	Warning: Always stand clear of platform area
K	1	ATG-CAB	Liftgate Shut-Off (Place Decal next to the On-Off Switch in the Cab)
L	1	85-1114-003/85-1114-001	Conspicuity tape (If applicable)
M	1	ATG-UD	Toggle Decal, Up-Down



Decal - A



Decal - B



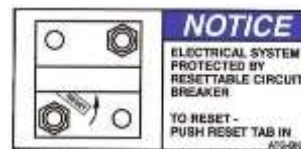
Decal - C



Decal - D



Decal - E



Decal - H



Decal - I



Decal - F



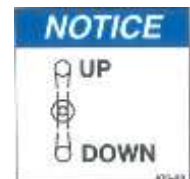
Decal - G



Decal - J



Decal - K

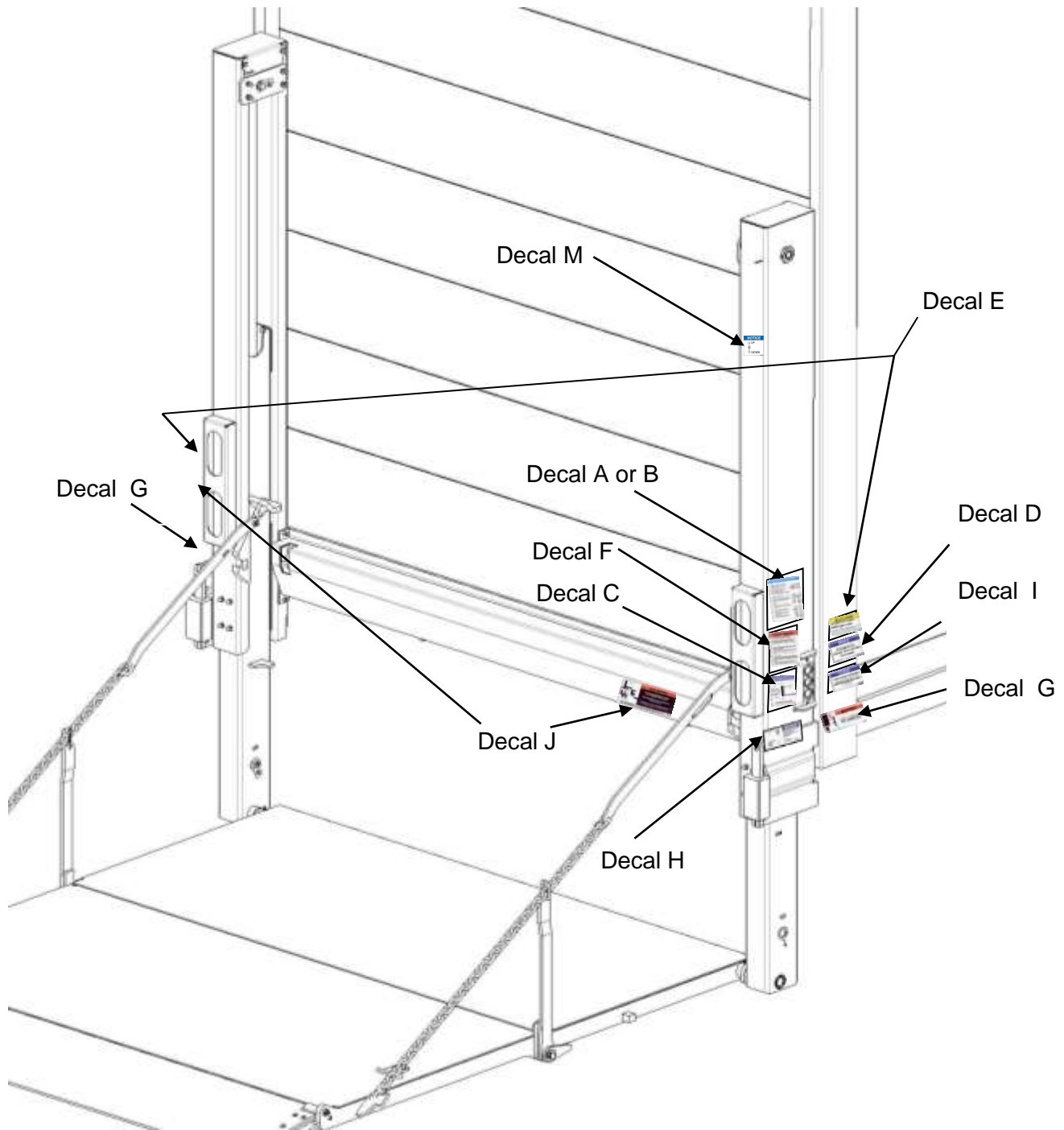


Decal - M



Decal - L

You may obtain free replacement decals by calling PALFINGER Liftgates at 888-774-5844. Please have your liftgate model # and serial # ready.



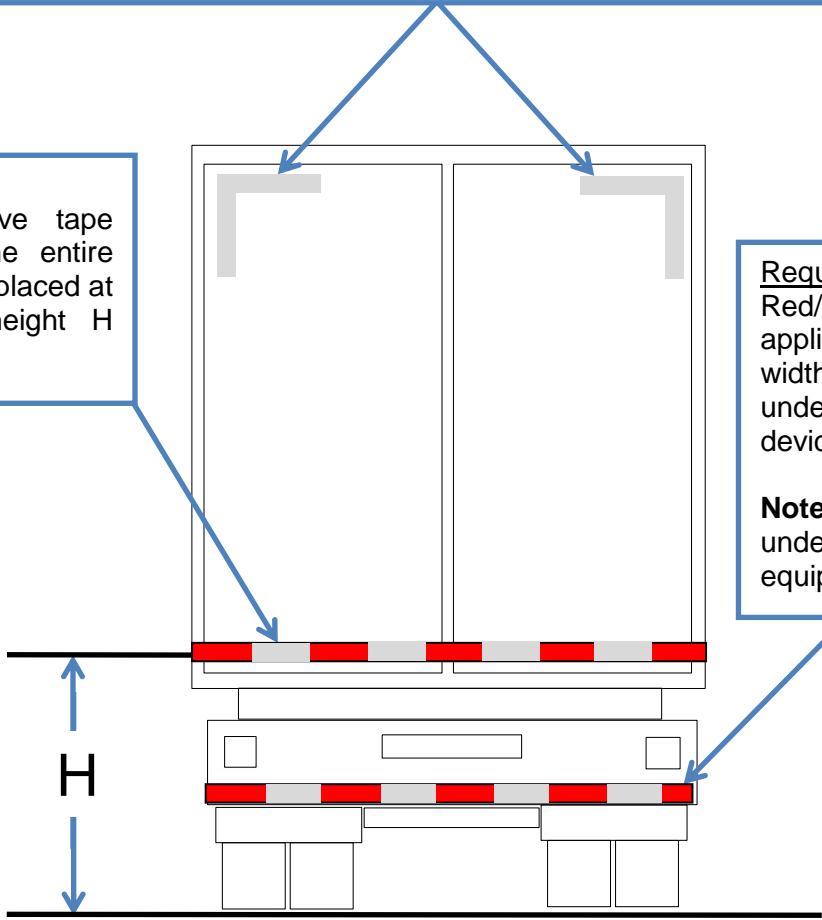
NOTICE

It is the installer's responsibility to determine the proper application of the Conspicuity tape, and to ensure that the vehicle or trailer meets DOT and federal lighting regulations. The following diagram is a guideline for placement on trailers over 80" wide and GVWR of 10,000 Lbs. or more. This document is not intended to replace published agency regulations, and it is strongly recommended that the installer refer to the Code of Federal Regulations (CFR) which can be viewed at <http://ECFR.gpoaccess.gov>.

Requirement 2:
On each corner: Two 12" long white reflective pieces, place adjacently to one another as close to the upper corner of the trailer as possible

Requirement 1:
Red/white reflective tape applied across the entire width of the trailer placed at an appropriate height H from the ground

Requirement 3:
Red/white reflective tape applied across the entire width of the rear underride protection device.
Note: Not required if no underride protection is equipped



H Dimension:
15" < H < 60" from ground to center of tape

16 Cycle Test and Bleed the System

16.1 Cycle Test and Bleed the hydraulic system, Standard Units

WARNING

Improper use of the liftgate may result in serious injury. **DO NOT** operate this liftgate without being properly instructed and fully understanding the Owner's manual. Platform may crush or pinch. Make certain area around liftgate is clear during all times of operation.

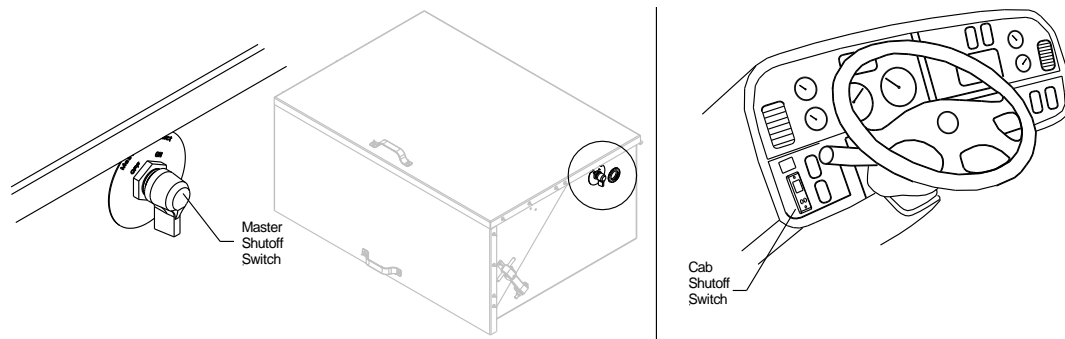
NOTICE

Test steps 2-9 (2-7 on bottle gas units) a minimum of five (5) times each to ensure **NO** unusual noises or movements are found. This will confirm all controls work correctly and hydraulic system is completely bled of air.

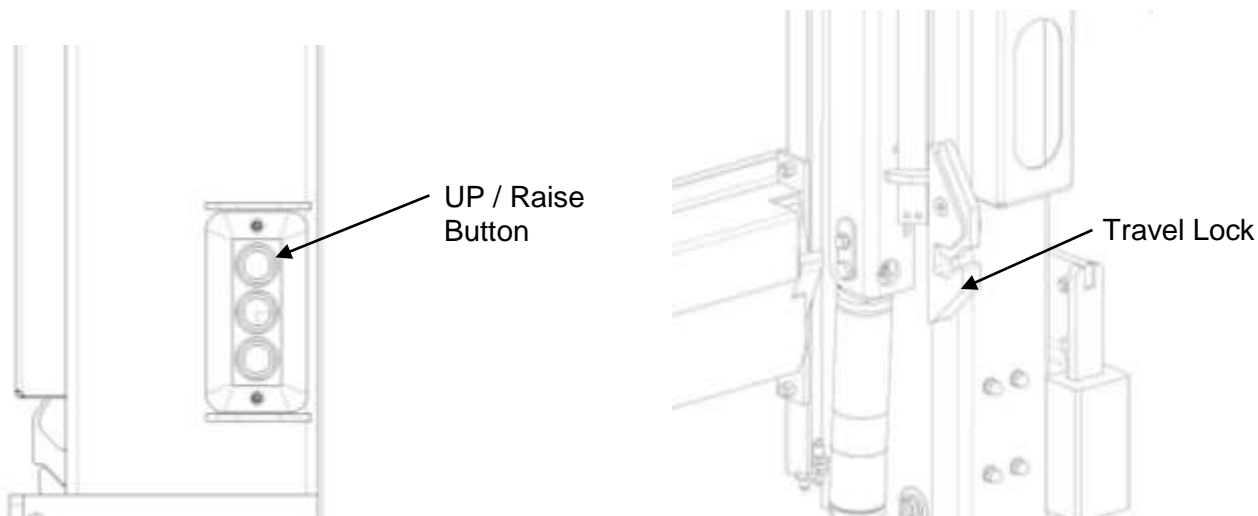
16.2 Operating Instructions (Standard Units)

Steps:

1. Turn on power: To activate power to the liftgate, turn the master disconnect switch located on the outside of the battery box to the "ON" position. If the vehicle has a cab switch verify that its turned ON also.

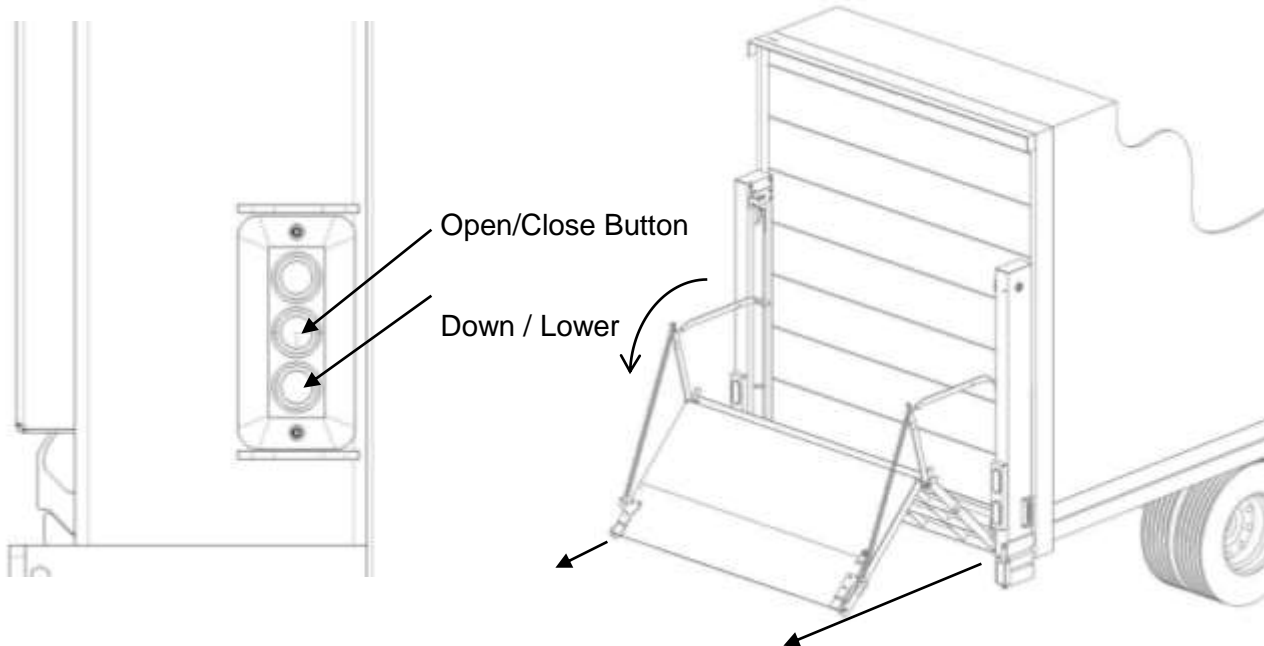


2. Open Liftgate Platform: Be certain the operating area around platform is clear before opening platform. Pushing the "UP" button, raise the platform up so that it is completely out of the travel locks. Hold the up switch for 5 seconds to level the platform.



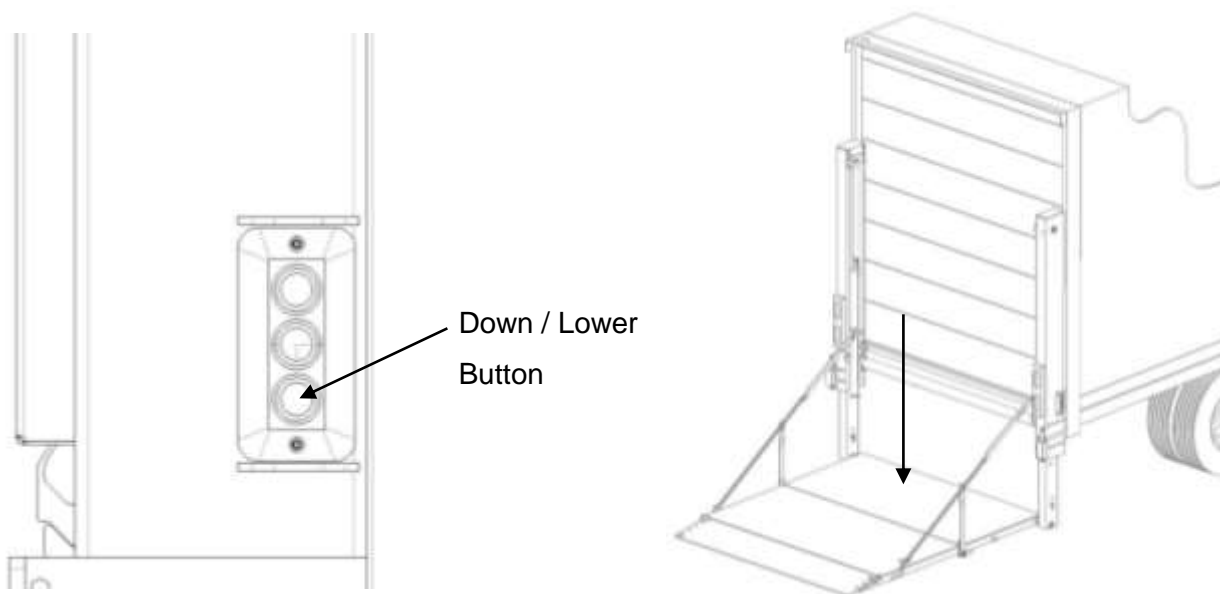
Open the Liftgate Platform (continued): Be certain operating area around platform is clear before opening platform.

Pushing the “DOWN” button, and “OPEN” button together to power the platform open.

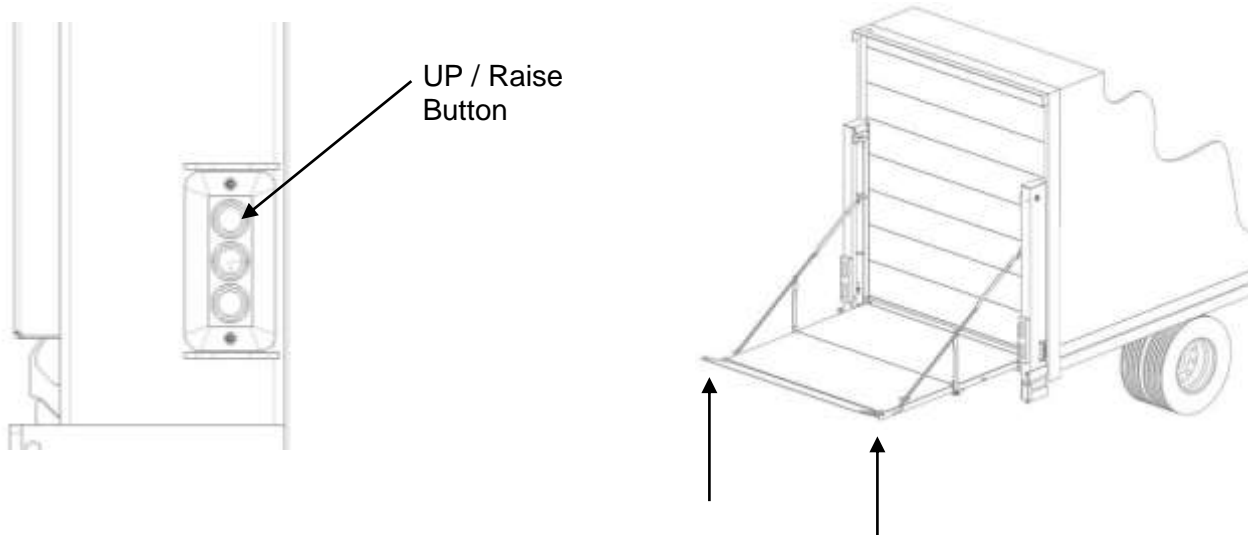


3. Lower the platform to the ground: Pushing the “DOWN” button, lower the platform to the ground.

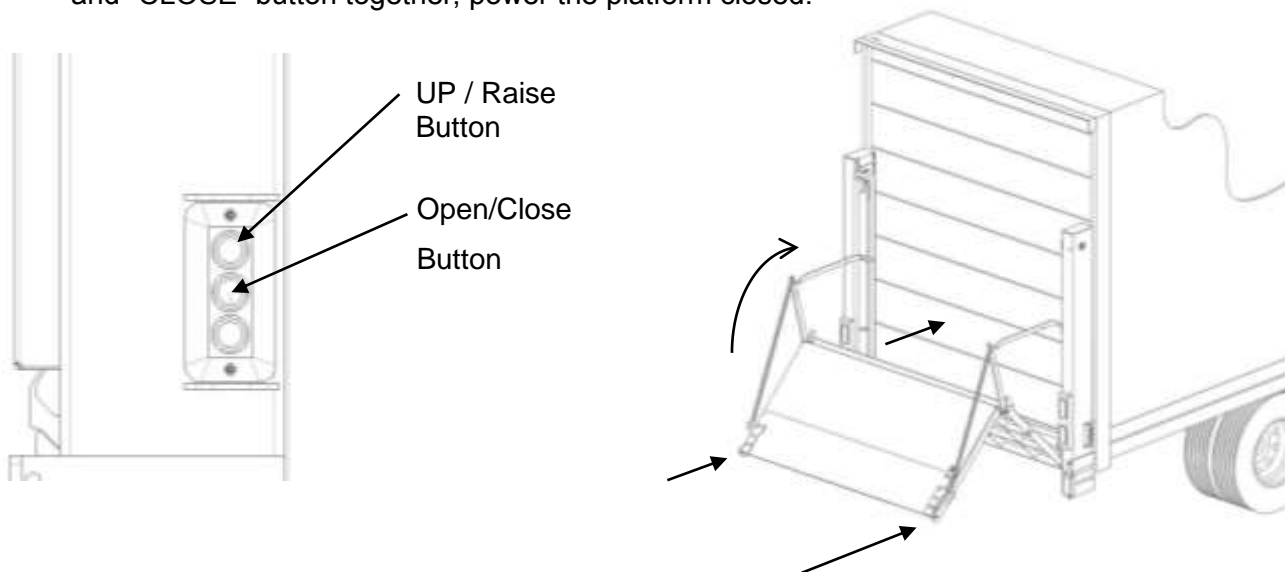
Note: for power down operation, push the down button twice (within 3 seconds).



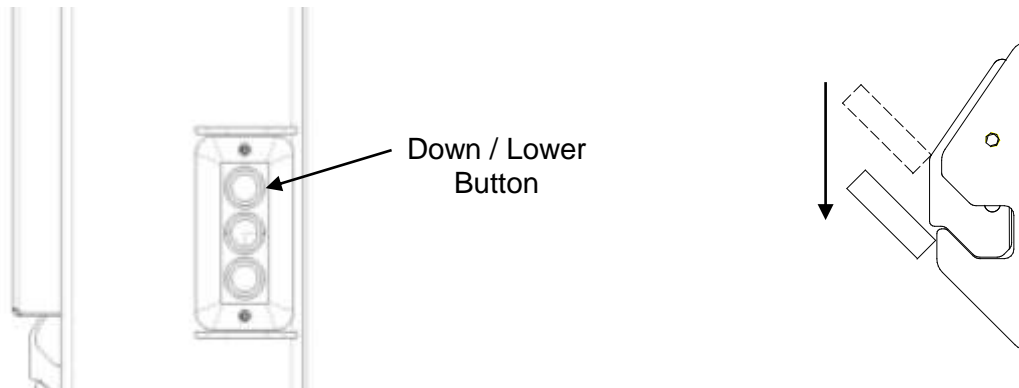
4. Raise the platform to bed level: Pushing the “UP” button, raise the platform to bed level.
5. Bleeding the system: With the platform at bed level, push the “UP” button for thirty (30) seconds. This will bypass hydraulic fluid through hydraulic poppet valves located in each of the lift cylinder pistons returning hydraulic fluid back to the reservoir via the return lines.



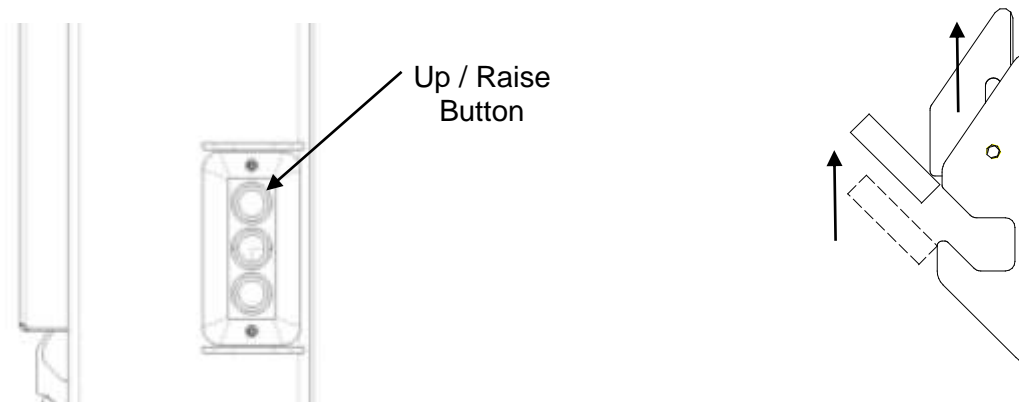
6. Closing and Storing of the Platform for transit: With the platform open at bed level use the “UP” button and “CLOSE” button together, power the platform closed.



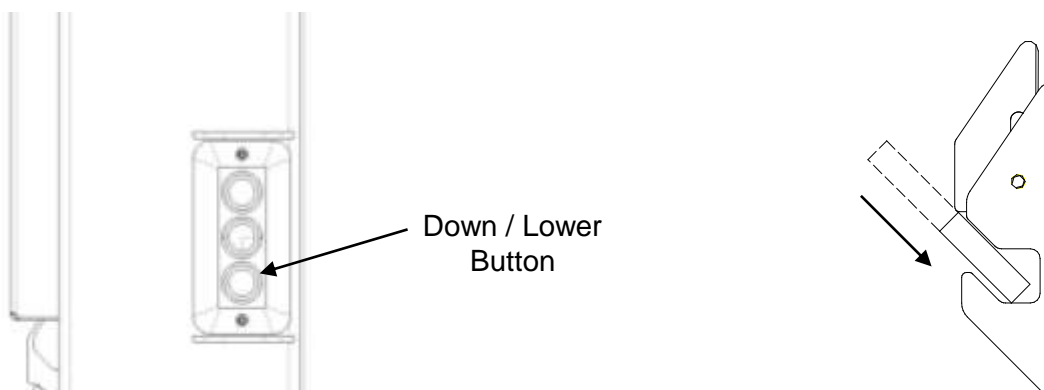
7. Lower the Platform: Using the “DOWN” button, push down twice (within 3 seconds) and power down platform past the Travel Locks. (See Illustration)



8. Raise the Platform: Using the “UP” button, raise platform up until travel ears clear the travel lock slot. (See Illustration)



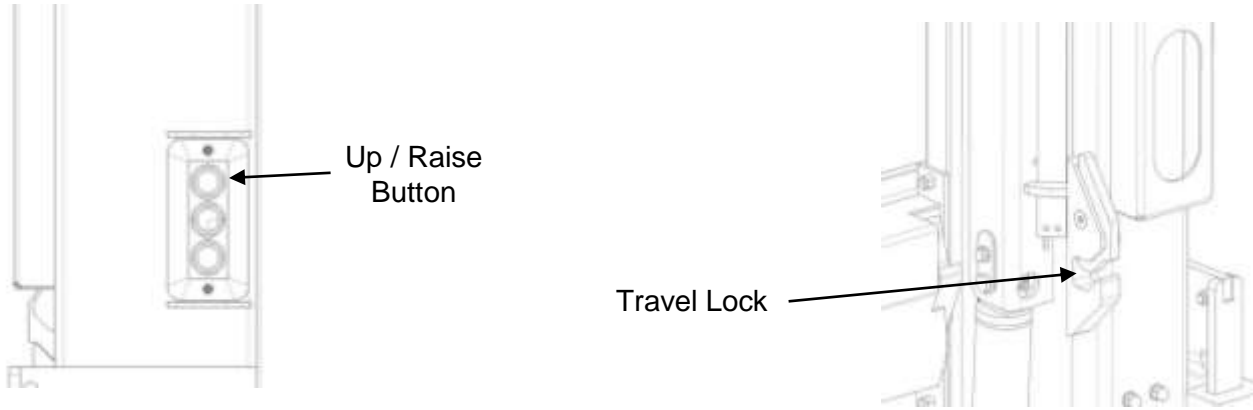
9. Lock the Platform: Once the travel ear clears the slot, use the **down button twice** (within 3 seconds) to **power down** travel ear into travel lock slot.



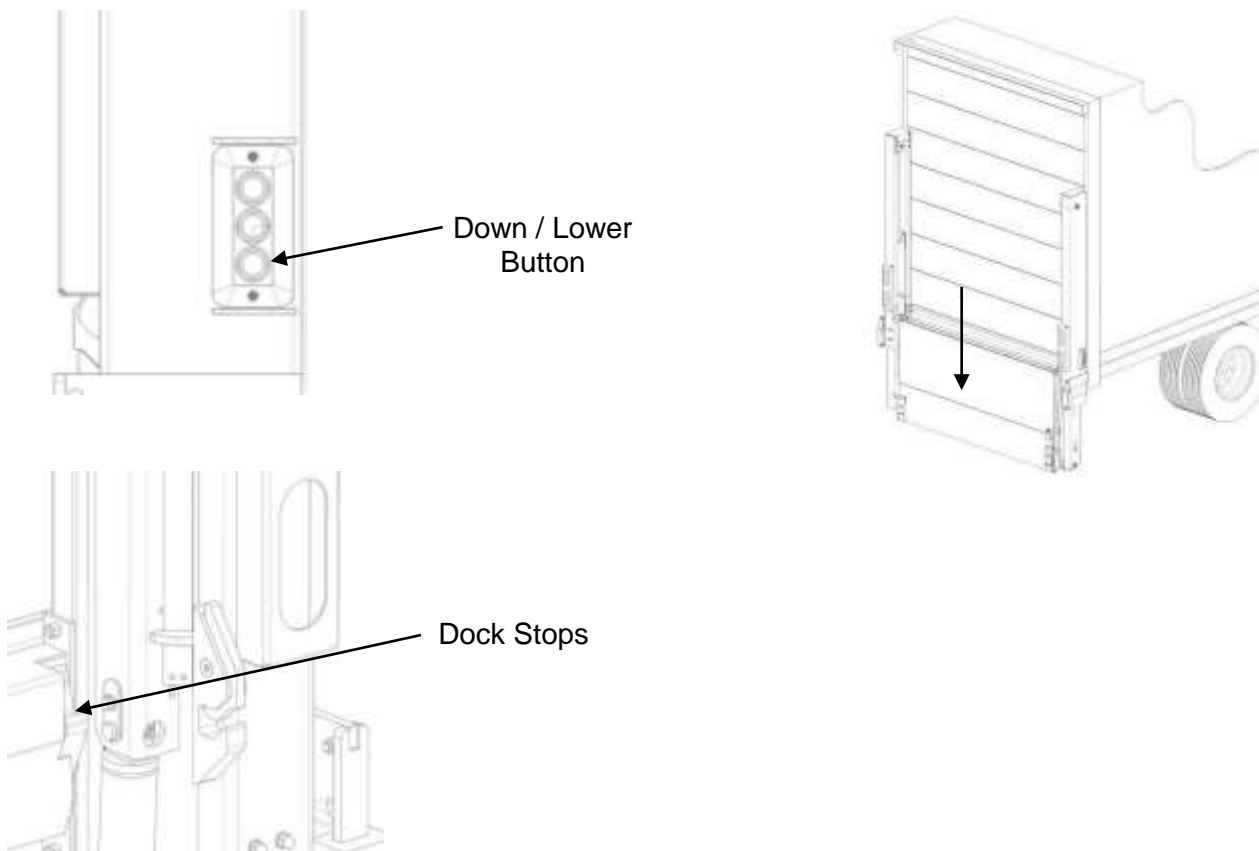
Lowering Platform for Dock Loading (Standard Units)

Steps:

1. Using the "UP" button to power platform up so that it is completely out of the travel locks.



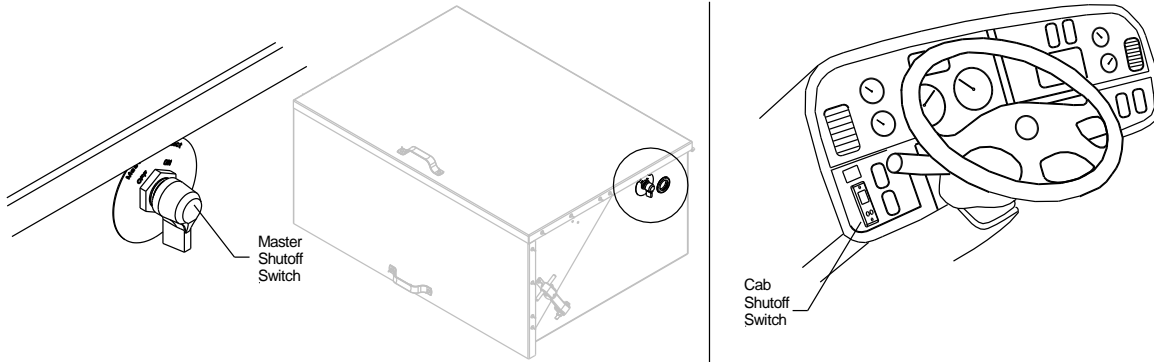
2. To lower platform down push **Down Button twice** (within 3 seconds) until the platform passes the travel latch and is level with the vehicle floor and rests on the Dock Stops.



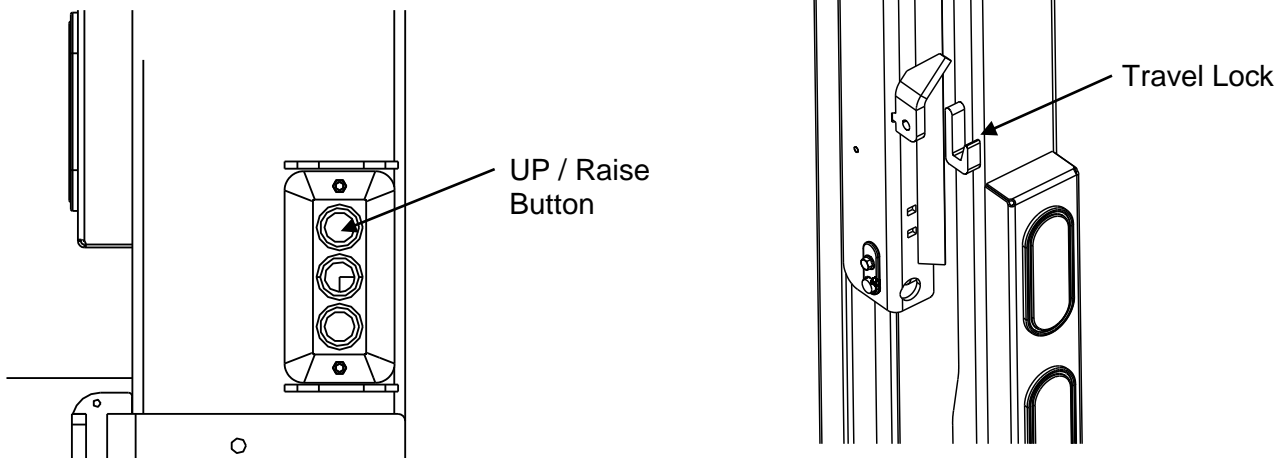
16.3 Operating Instructions (Bottle Gas Units)

Steps:

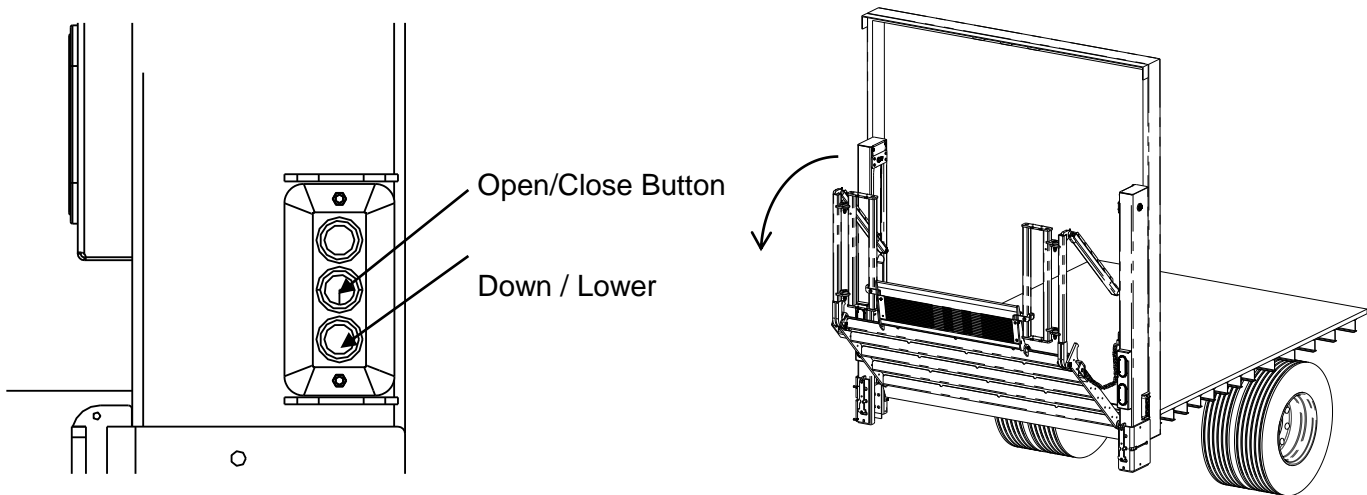
1. **Turn on power:** To activate power to the liftgate, turn the master disconnect switch located on the outside of the battery box to the "ON" position. If the vehicle has a cab switch verify that is turned ON also.



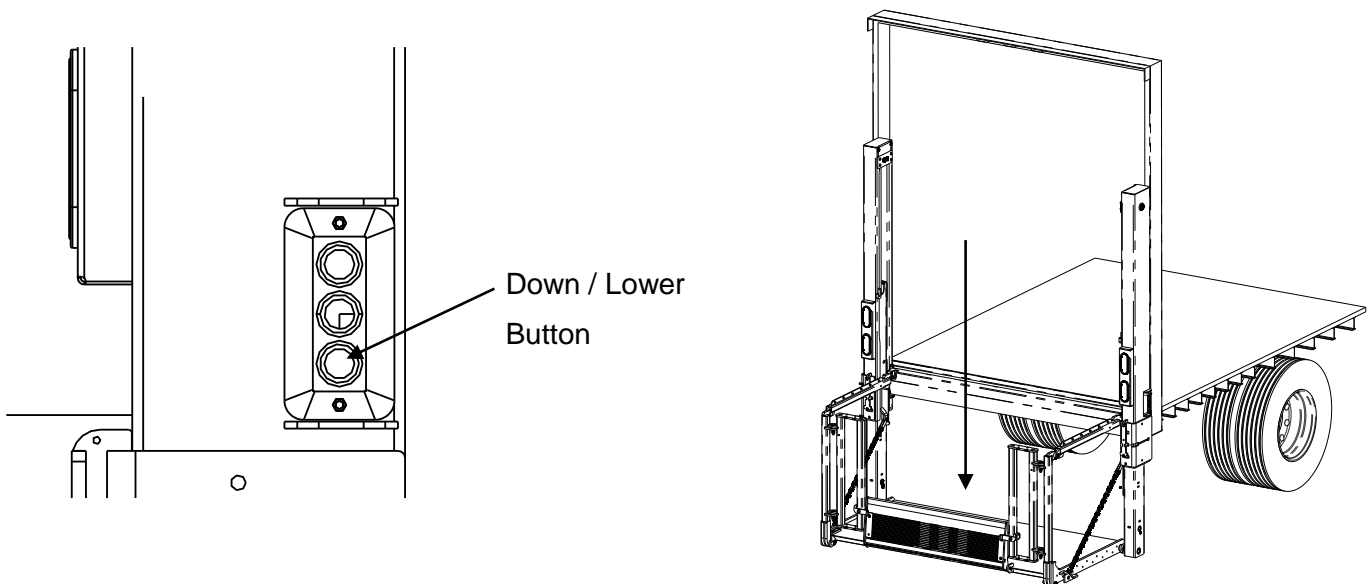
2. **Open Liftgate Platform:** Be certain the operating area around platform is clear before opening platform. Pushing the "UP" button, raise the platform up so that it is completely out of the travel locks.



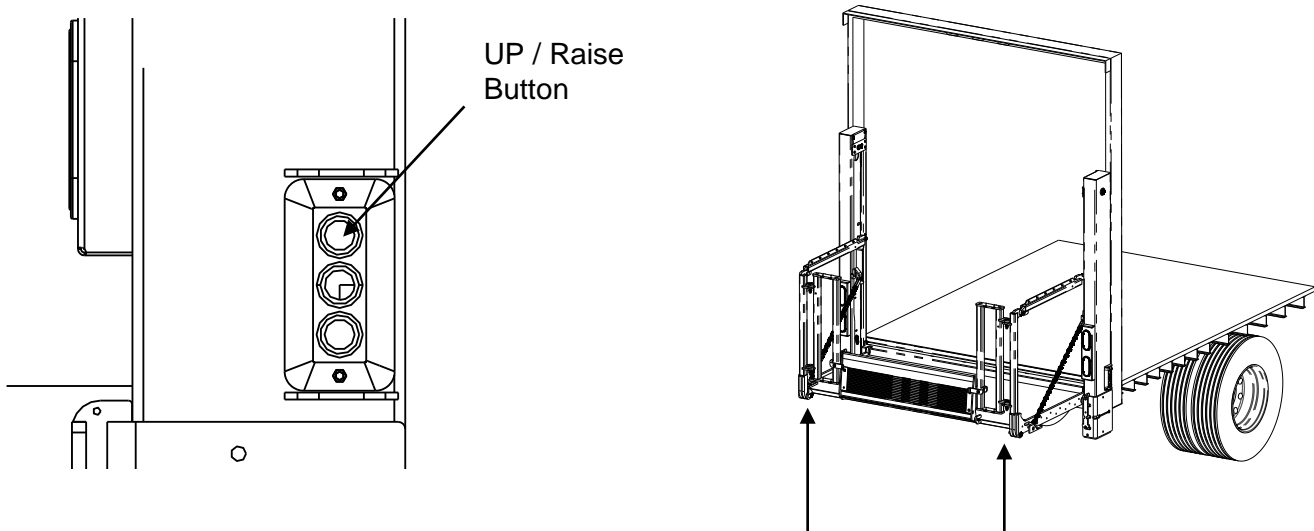
Open Liftgate Platform (continued): Be certain operating area around platform is clear before opening platform. Push the “DOWN” button, and “OPEN” button together to power the platform open.



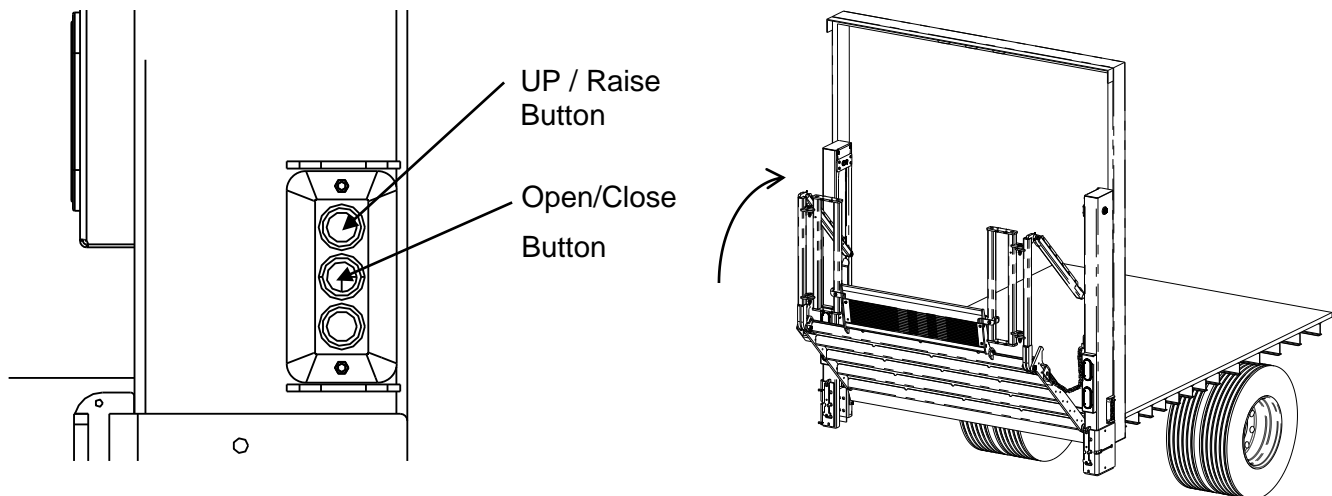
3. Lower the platform to the ground: Pushing the “DOWN” button, lower the platform to the ground. Note: for power down operation, push the down button twice (within 3 seconds).



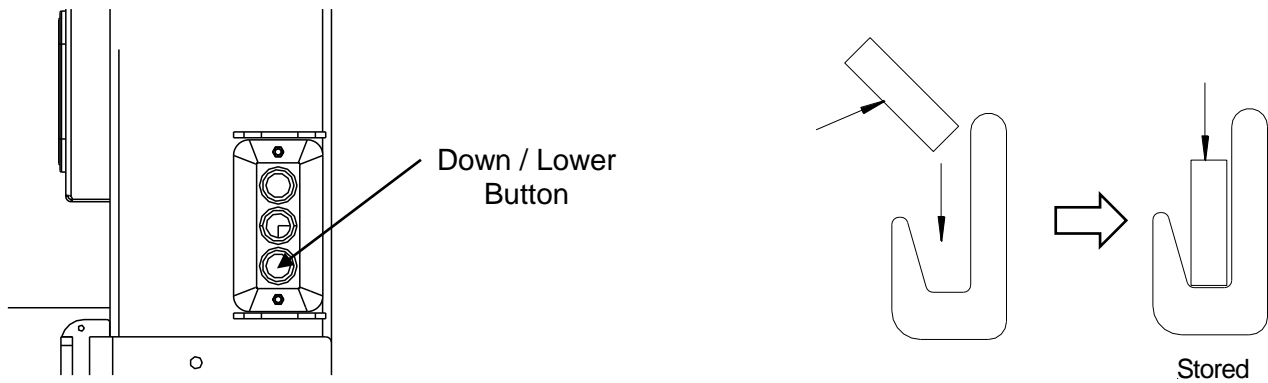
4. Raise the platform to bed level: Pushing the “UP” button, raise the platform to bed level.
5. Bleeding the system: With the platform at bed level, push the “UP” button for thirty (30) seconds. This will bypass hydraulic fluid through hydraulic poppet valves located in each of the lift cylinder pistons returning hydraulic fluid back to the reservoir via the return lines.



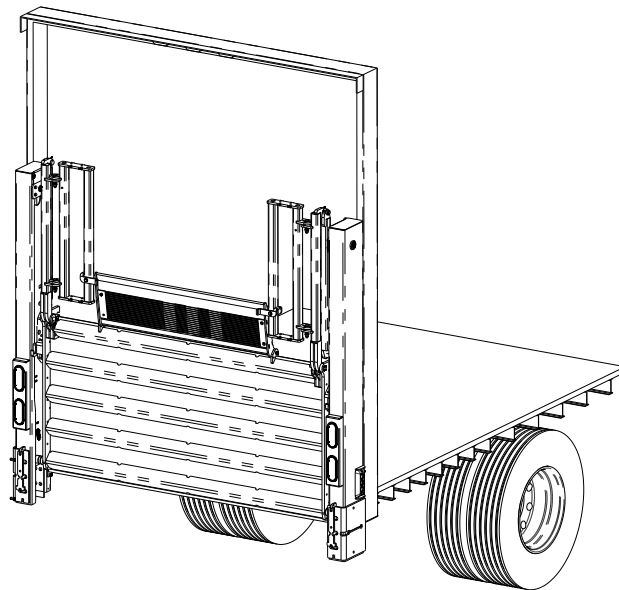
6. Closing and Storing of the Platform for transit: With the platform open at bed level use the “UP” button and “CLOSE” button together, power the platform closed.

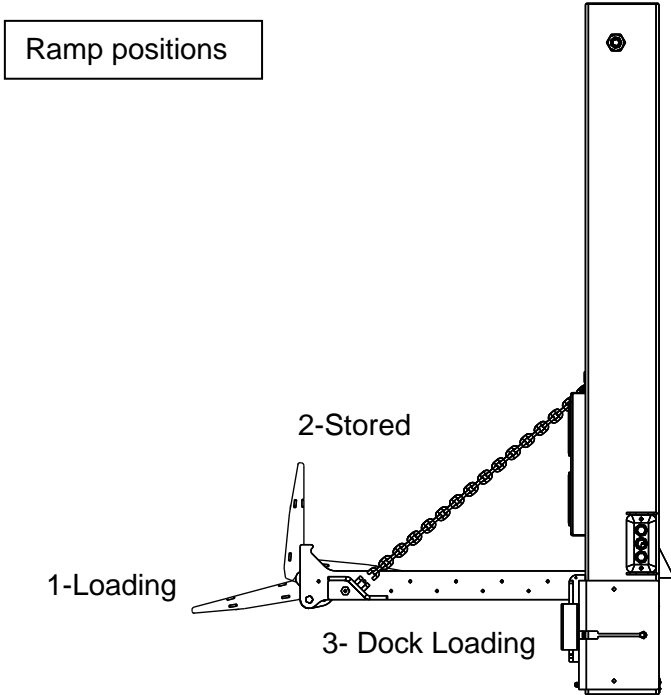


7. Lower the Platform: Using the “DOWN” button, push down twice (within 3 seconds) to power down the travel ear into travel locks. (See Illustration)

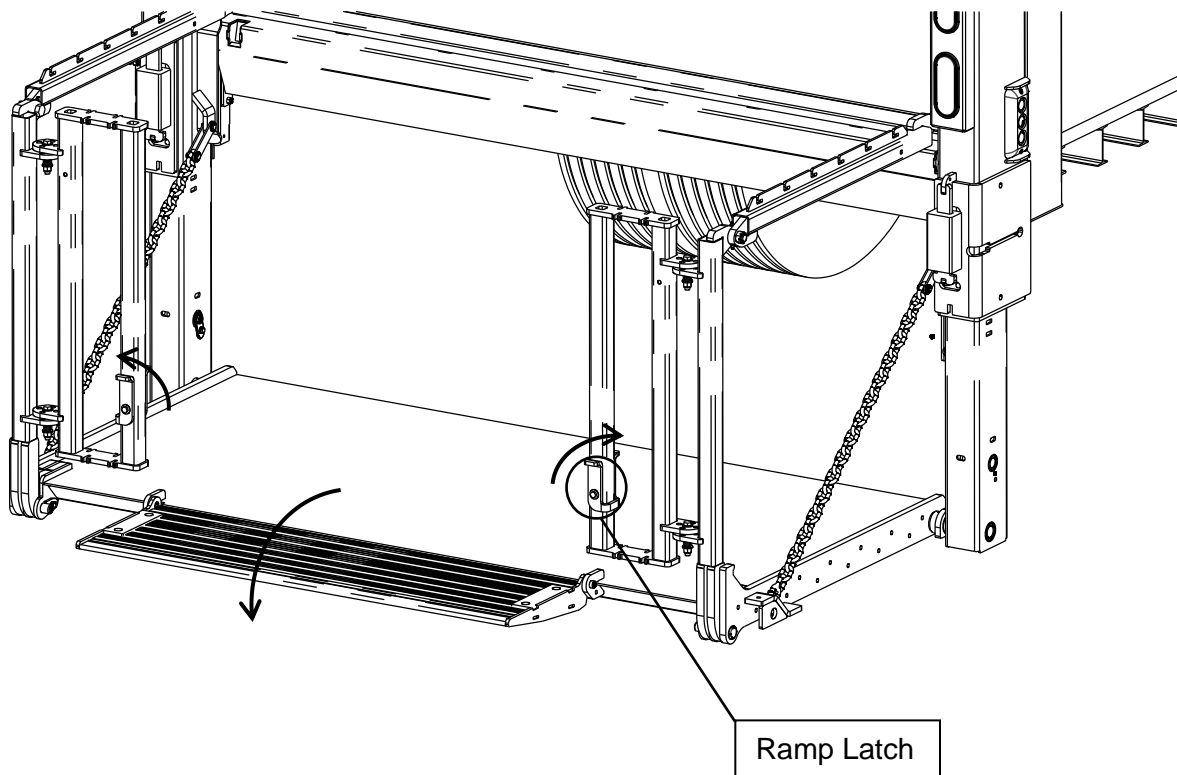


The platform should now be in stored/ transit position, as shown below.

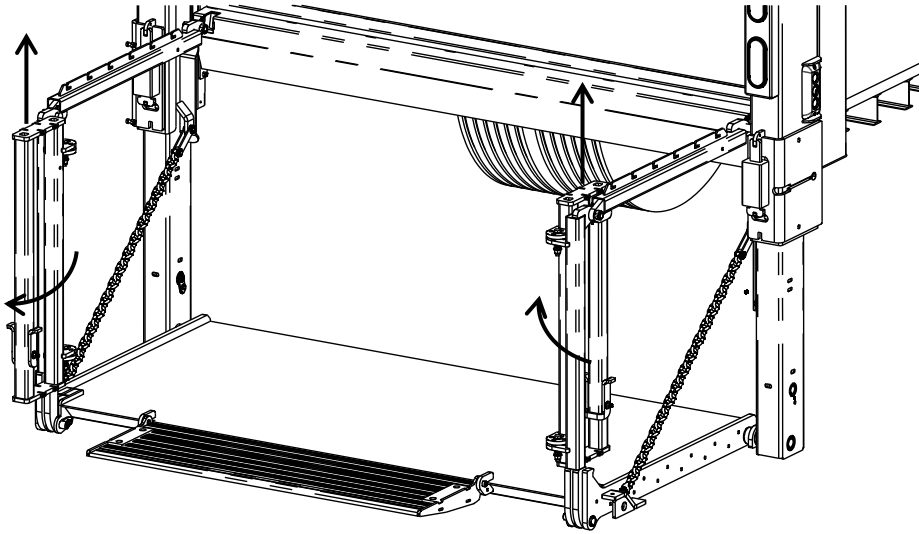




“Loading” position (Position 1 above) is achieved with the gate completely lowered to the ground, platform out, and the ramp out. To open the ramp, flip the ramp latches to a vertical position. This will release the ramp

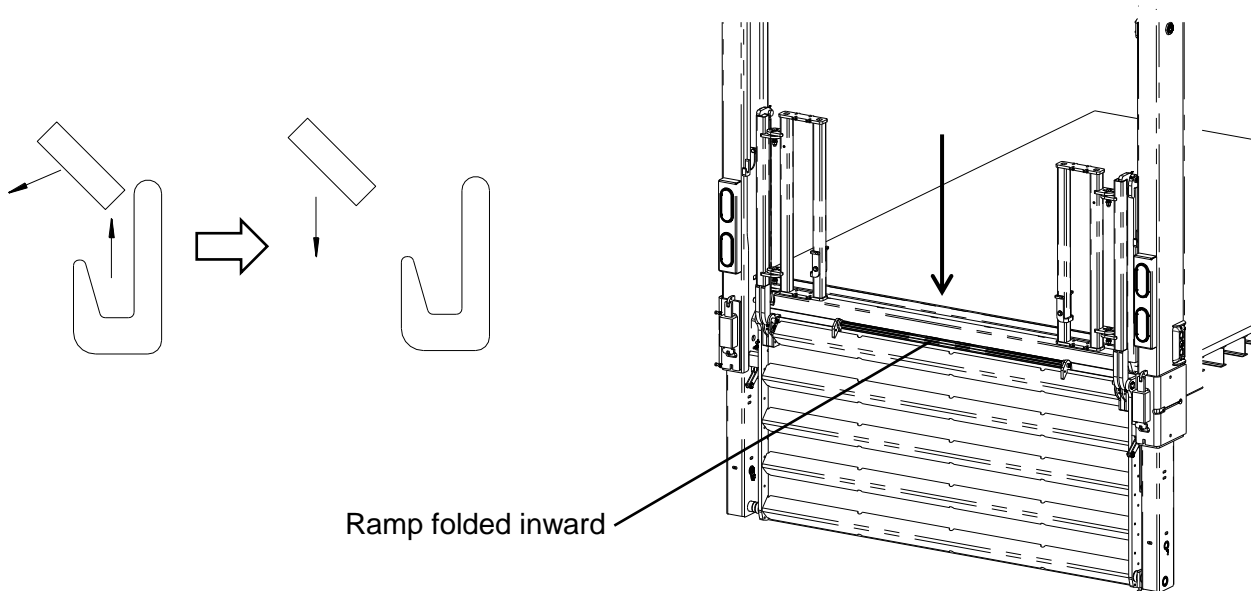


The swing doors can open in a 180° range. Lift the swing door vertically, and pivot the door in the direction you wish to open. The doors lock automatically in 3 positions.



“Dock Loading” position (Position 3) is achieved when the platform is folded closed, and the liftgate is lowered. The ramp should be folded over, on top of the platform.

Operation: From the **stored** position, raise the liftgate out of the travel lock. Press the **“Up/Raise”** button and the **“Open/Close”** button briefly to open the platform enough to clear the travel lock. Fold the ramp as shown below, if it is not already. Lower the gate until the platform passes the travel latch and is level with the vehicle floor. The platform will rest on **“Dock Stops”** built into the unit.



17 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 filed at the facility where liftgate was installed.

Structural Inspection

- Lifting braces and shipping stand are removed from the liftgate.
- 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 1.5" from top when platform is opened at bed level.
- 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 and are away from sharp edges and moving parts.

Electrical Inspection

- Battery cable(s) attached and clamped tight and dielectric grease is used to seal all connections.
- Master disconnect switch is installed and operating properly.
- 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.
- Lights wired properly and operate per DOT, State, and Federal requirements.
- Load test has been performed as explained in Section 12.12 Trailer to Tractor Ground Test.
- Measure battery voltages: Flooded Batteries = 12.6V; AGM Batteries = 12.8V.

Operational Inspection

- All decals are in place and legible per instructions.
- All pivot points are lubricated per instructions.
- Platform secures properly in its stowed position latches.
- Platform travels up and down smoothly and freely, without any hesitation or unusual noises.
- Platform is level with the floor of the vehicle when raised completely.
- Platform is level across the fold when opened.
- Platform rests on the ground evenly when lowered completely.
- Platform opens and closes properly and at correct speed. (2 to 4 inches per second)
- The liftgate serial number and model number are documented on the inside of the Owner's Manual (pg.iii).
- Owner's Manual has been provided to end user or is placed inside the hydraulic enclosure.
- 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: _____