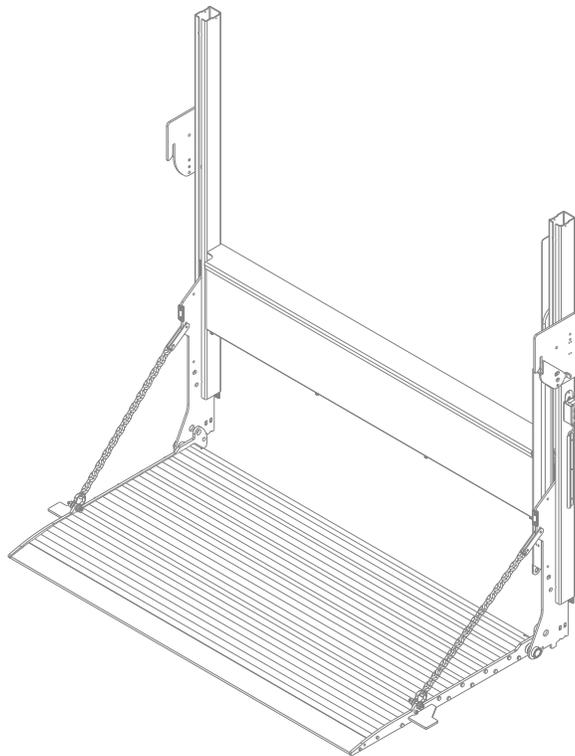




LIFTGATES

ILM *plus*

**INSTALLATION MANUAL
& CHECK-OFF SHEET**



ILM PLUS Installation Manual

Document Part Number: 90-0709-200 / 09-690_90-00_02-00

ECN-M0820, Rev. 1.8, 07-18-2016

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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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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 for v1.8**

- Added Section 5 – Parts List
- Updated Section 6
- Updated Section 7 with dimensional information for different liftgate widths
- Updated Sections 9-12 with step by step procedures
- Revised Section 13 – Electrical schematics
- Added Section 14 – Hydraulic schematics

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

! **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.

CAUTION

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

CAUTION

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

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”

 **WARNING** The ILM 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.
- Persons should never position themselves underneath the liftgate if it is not fully welded.
- 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 ILM 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 ILM 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, **Fig.1**.

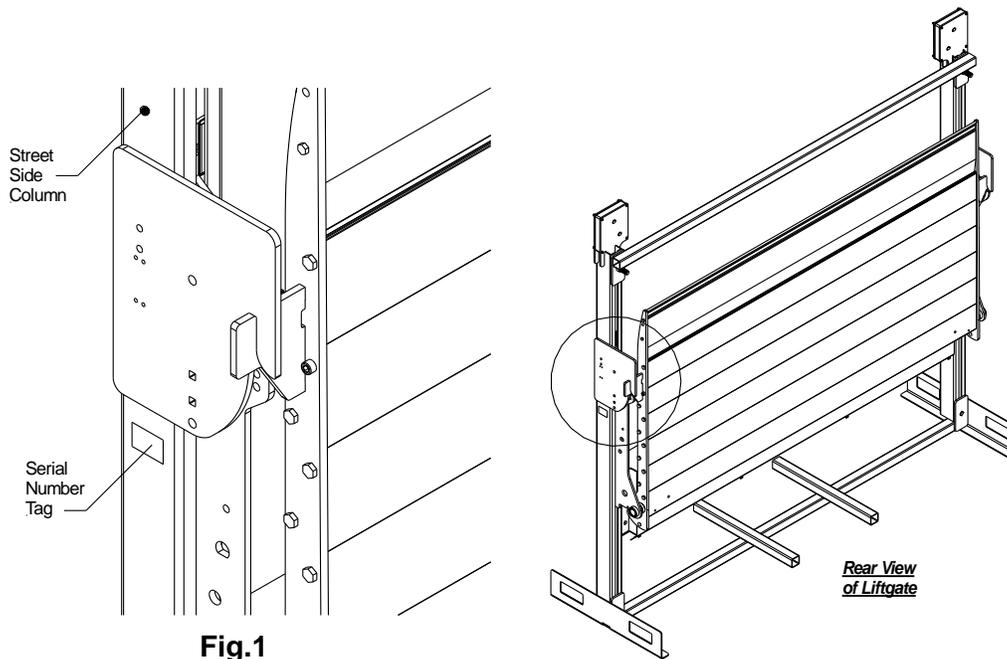


Fig.1

- 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

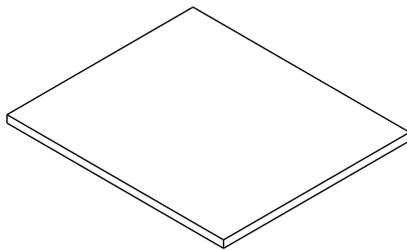
For technical support, contact PALFINGER Liftgates or an authorized PALFINGER service center. www.palfinger.com

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

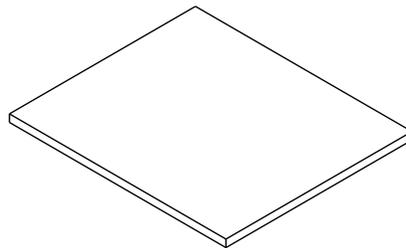
4 Tools For Installation

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

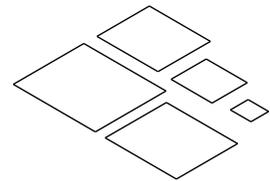
5 Parts List (Boxed Items)



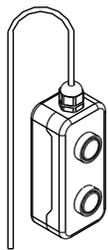
Owner's Manual
1 pc



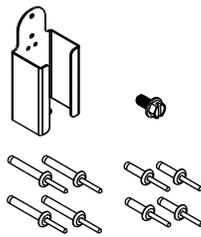
Installation Manual
1 pc



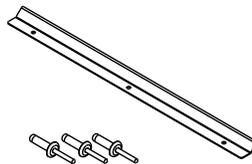
Decal Kit
10 pcs



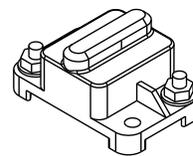
2-Button Hand Held Remote
1 pc



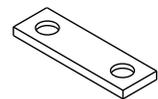
Control Holster
1 pc



Control Harness Wire Guard
1 pc

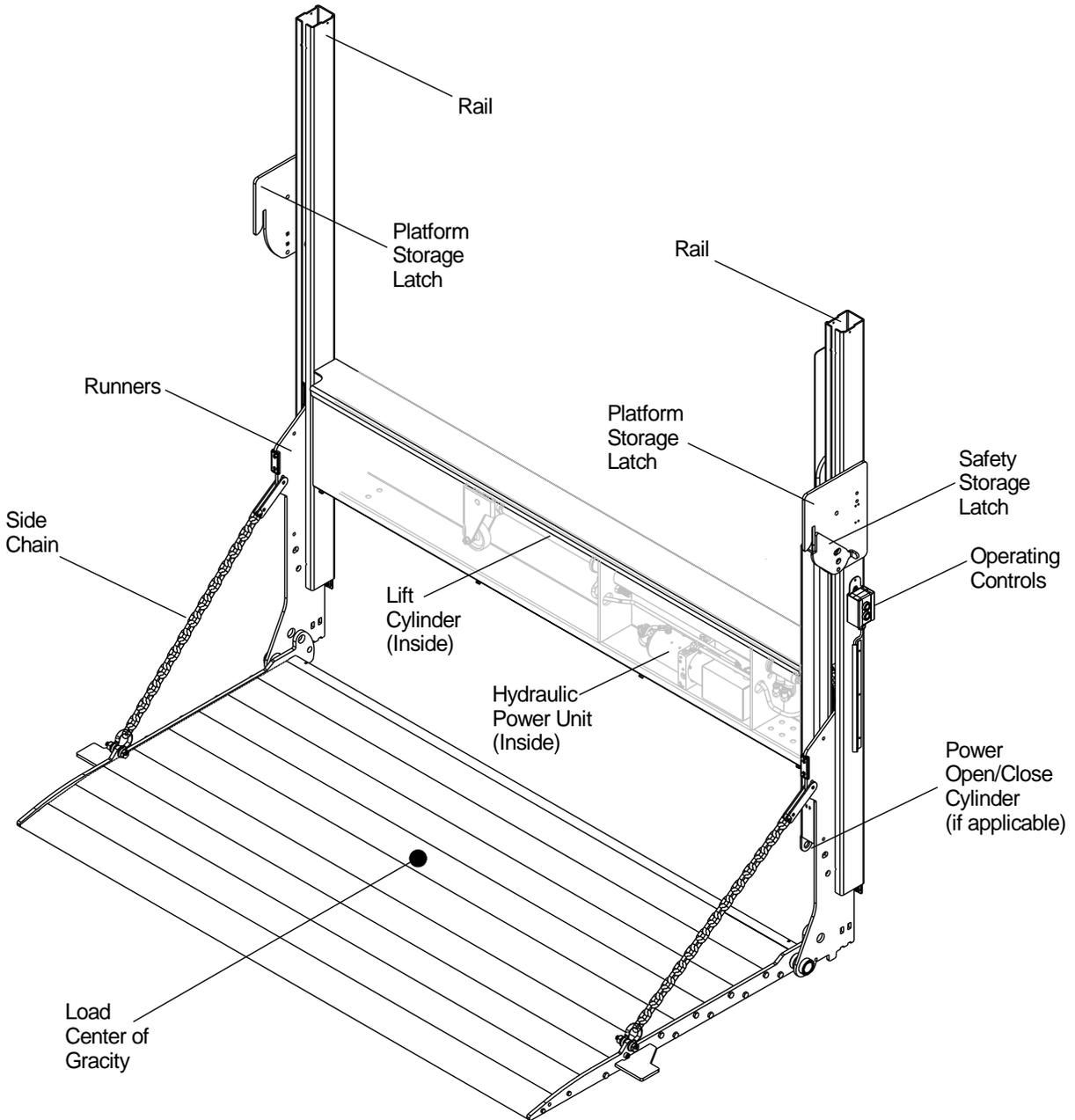


Circuit Breaker
1 pc



Copper Bus Bar
1 pc

6 **General View of Liftgate**



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 ILM plus series liftgate. The ILM 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... 888-774-584.

Installation Dimensions

To determine liftgate compatibility, follow the steps below:

Steps:

1. **Measure Floor Height:** Measure the floor height of your truck and determine clearance requirements for your liftgate platform size, **Fig.3**.
2. **Verify Compatibility:** Reference the chart below to ensure your gate is compatible with your vehicles bed height, **Fig.4**.

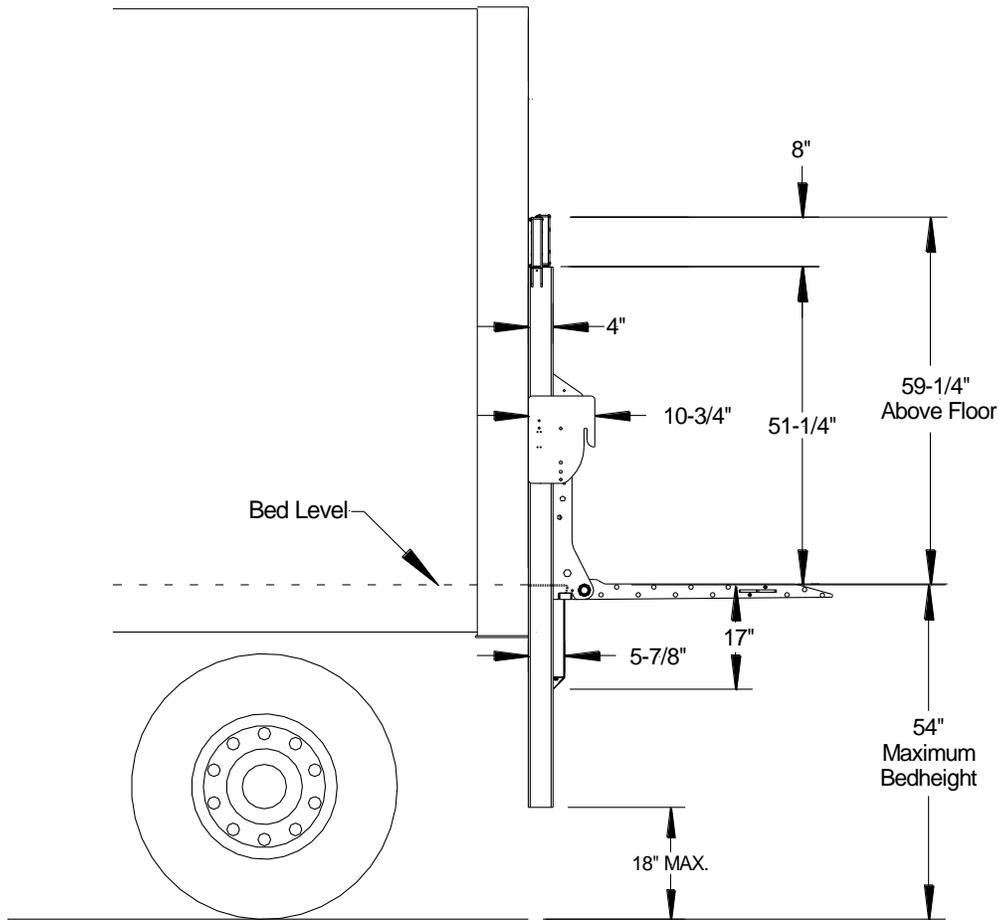


Fig.3

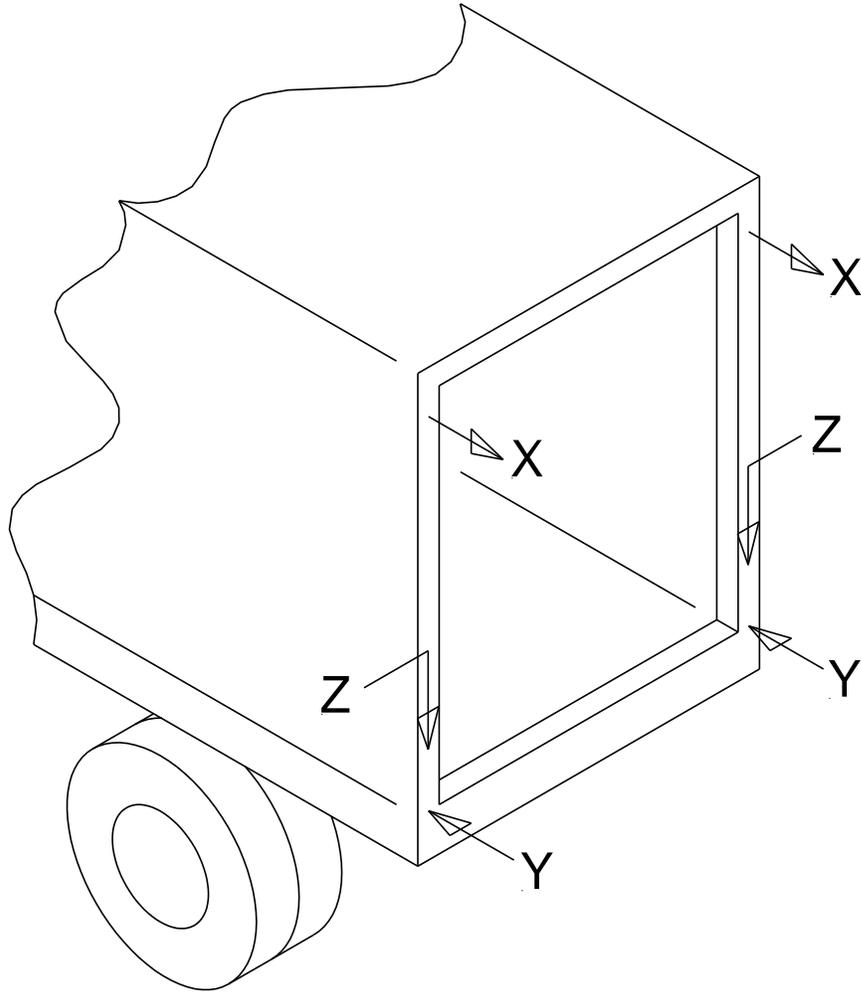
Compatibility Table		
Platform Depth	Dock Loading Bed Height Range	
	Min.	Max.
30" + Folding	35"	54"
30" + 6"	39"	54"
36" + Folding	41"	54"
36" + 6"	45"	54"
42" + Folding	47"	54"
42" + 6"	51"	54"

Fig.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.

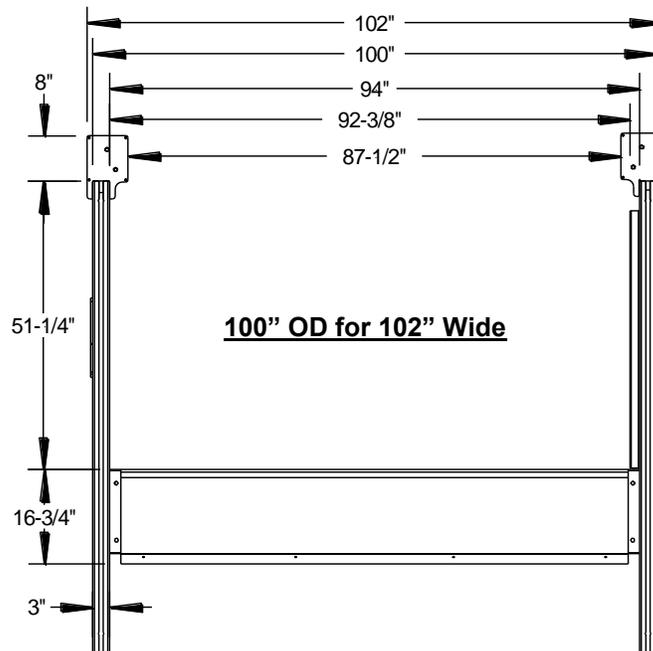
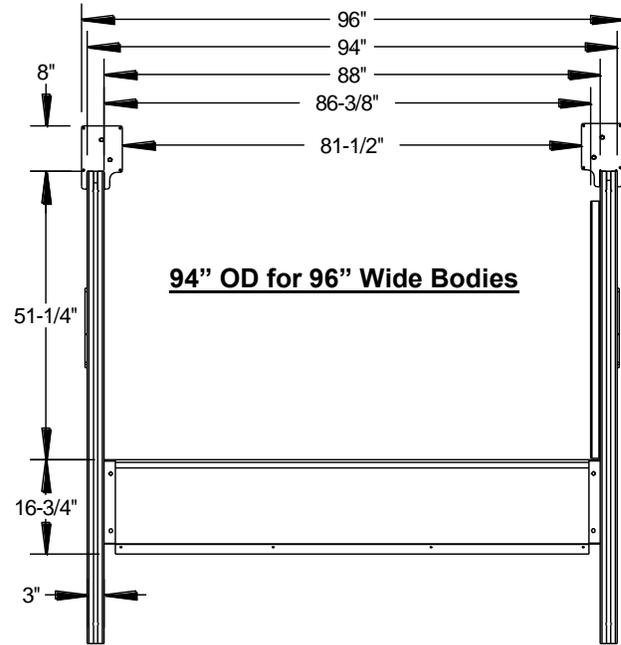
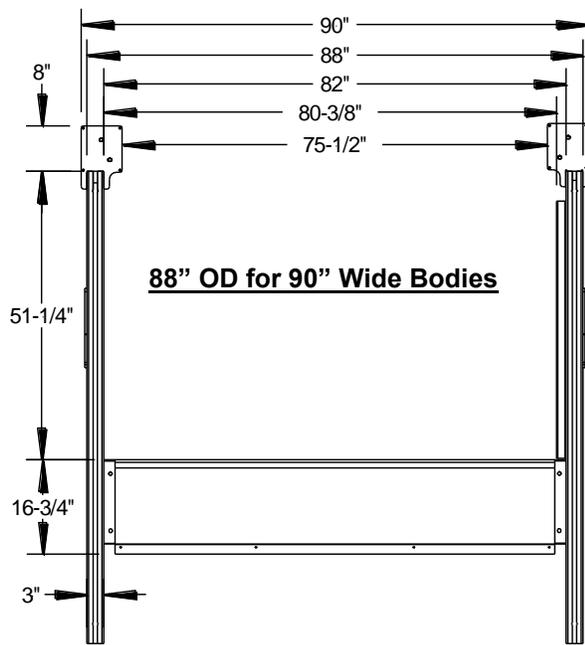
⚠ WARNING Truck body or trailer must be capable of supporting minimum forces and loads shown below.



	ILM 16	ILM 20	ILM 25	ILM 30
X = Side Wall Tension	1000 lbs.	1200 lbs.	1500 lbs.	1800 lbs.
Y = Side Wall Compression	1000 lbs.	1200 lbs.	1500 lbs.	1800 lbs.
Z = Side Wall Shear	1300 lbs.	1500 lbs.	1800 lbs.	2000 lbs.

7.2 Width Requirements

Reference the chart below to determine liftgate width dimensions. Ensure that your vehicle meets these requirements. The ILM plus series liftgate is offered in three widths shown below.



Nominal Truck or Trailer Width	Liftgate Outside Frame	Liftgate Inside Frame	Liftgate Platform Width
90" Wide Body	88"	82"	82"
96" Wide Body	94"	88"	88"
102" Wide Body	100"	94"	94"

8 Body Preparation

In order to install your ILM 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 ILM installations. Rear of body should be 90° to ground.

Note: Disconnect battery before welding to avoid damage to the truck or trailer’s electrical system.

8.1 Rear Bumper

Steps:

1. Prep rear sill: Remove any sill or corner post mounted lights, grab handles, or bumpers, **Fig.5**. 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, **Fig.6**.

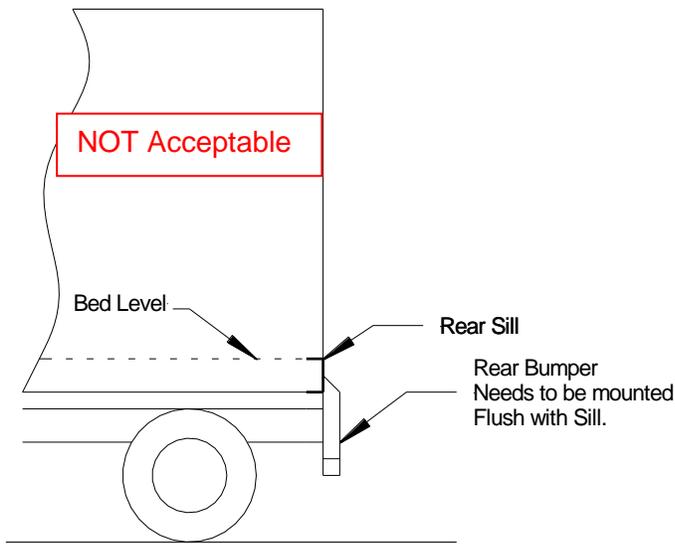


Fig.5

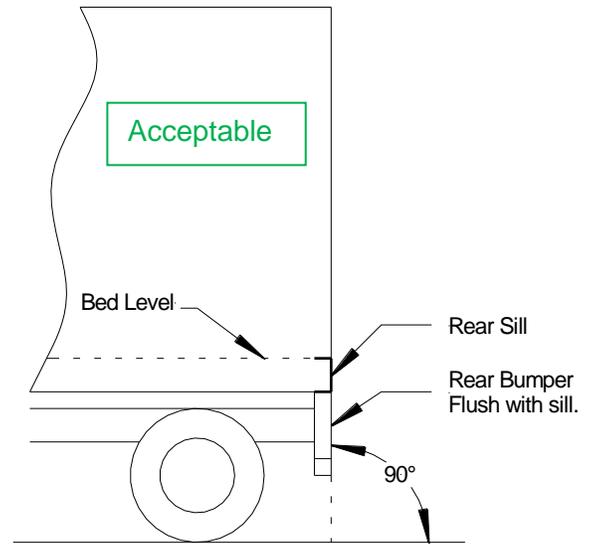


Fig.6

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 ILM 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.7**.

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.

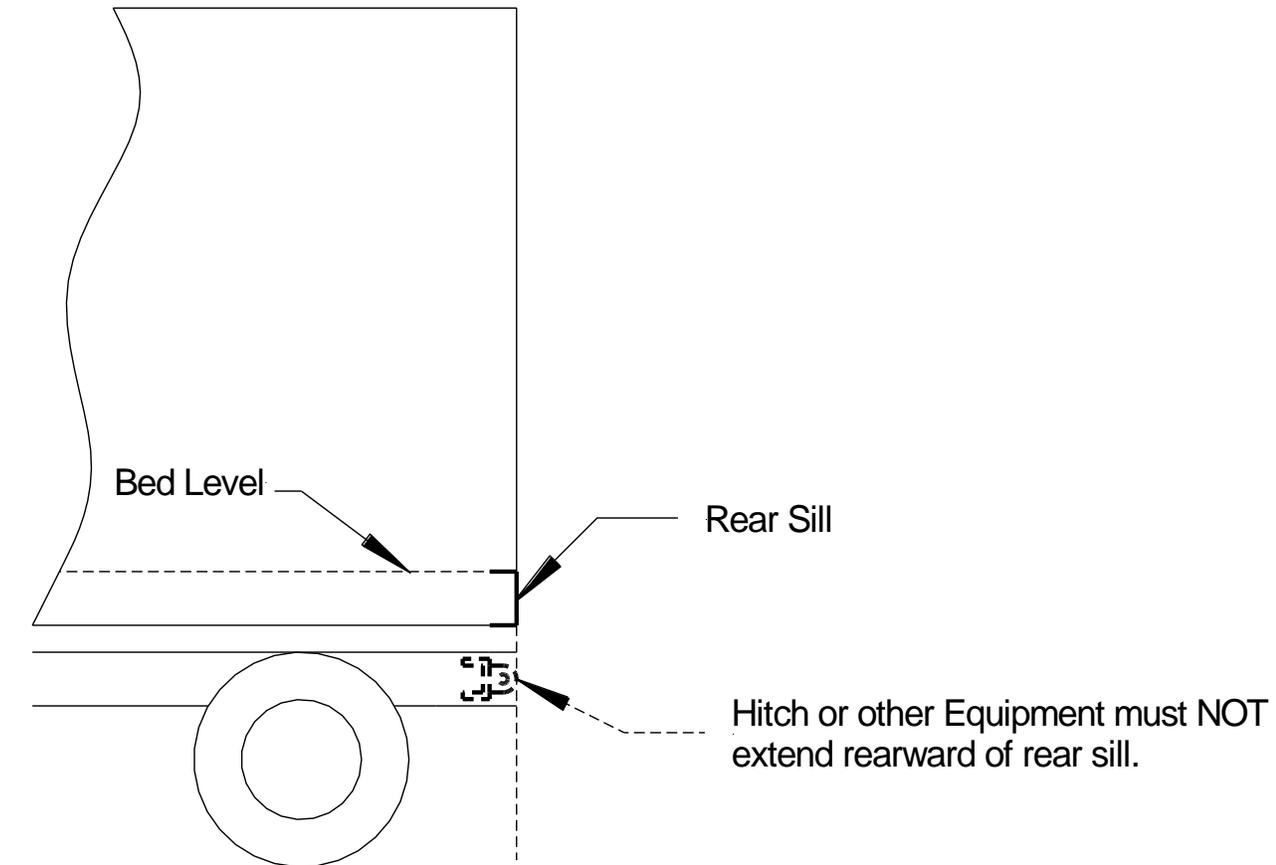


Fig.7

8.3 Flush the Sill (Sub- Framing)

Steps:

1. Flush the sill: Some trucks or trailers may have configurations with irregular shaped sills, **Fig.8**. 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. 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.

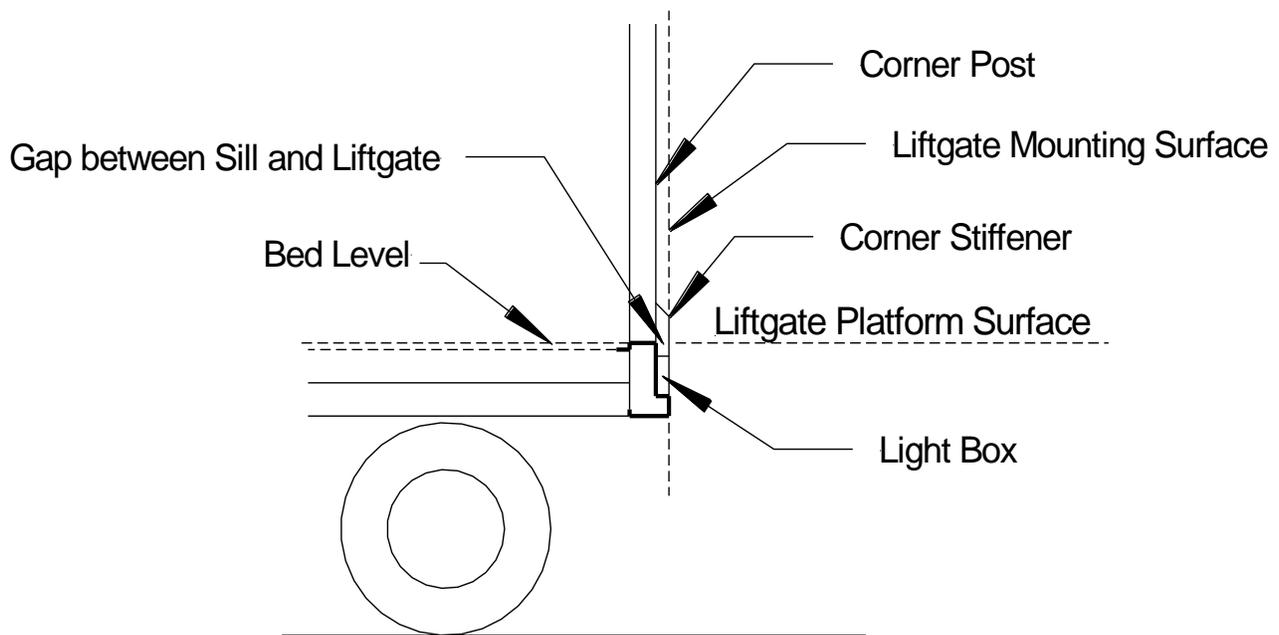
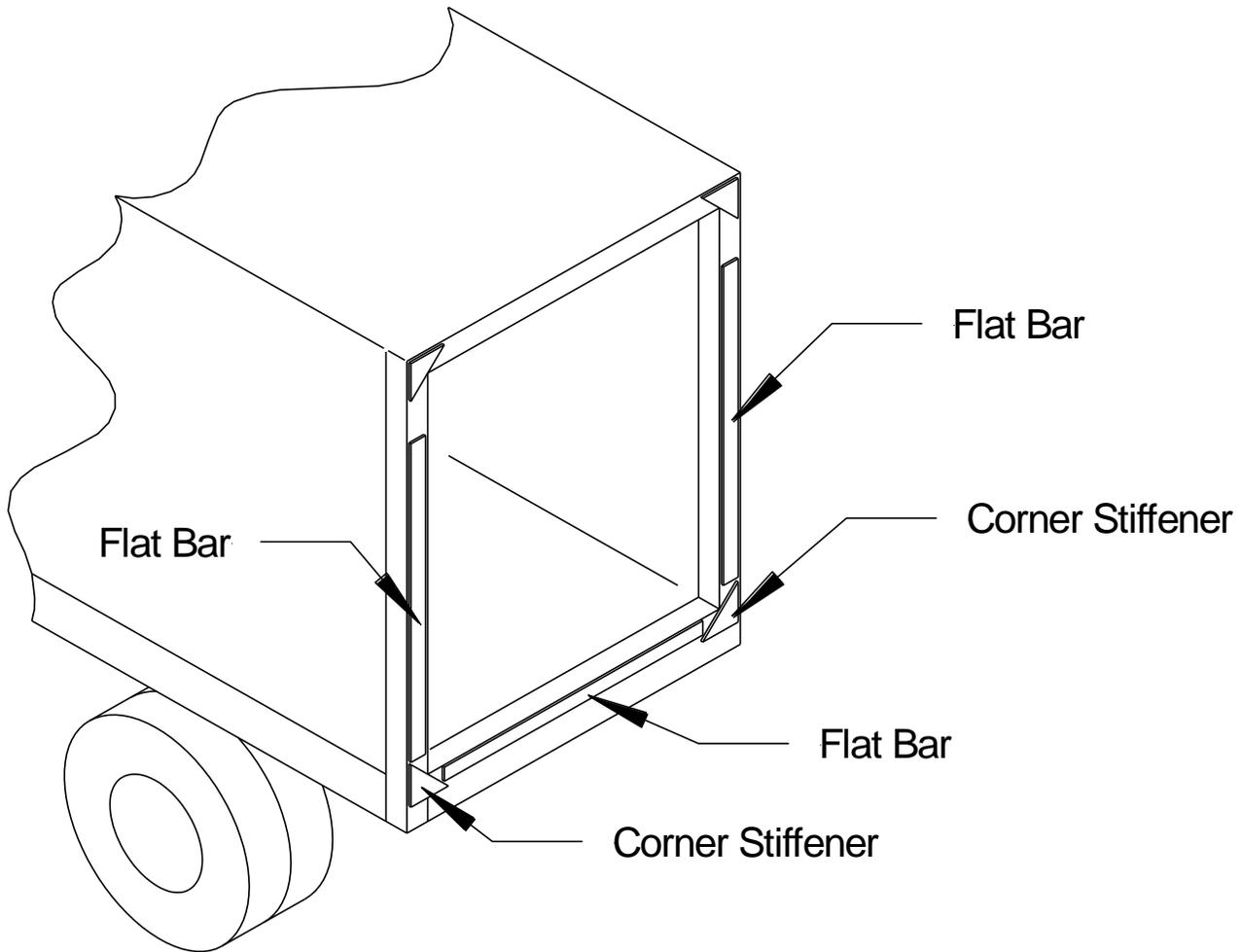


Fig.8

2. 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 $\frac{1}{4}$ ” to $\frac{3}{8}$ ” thick x 3” wide. Liftgate Installation weld procedure is the same.



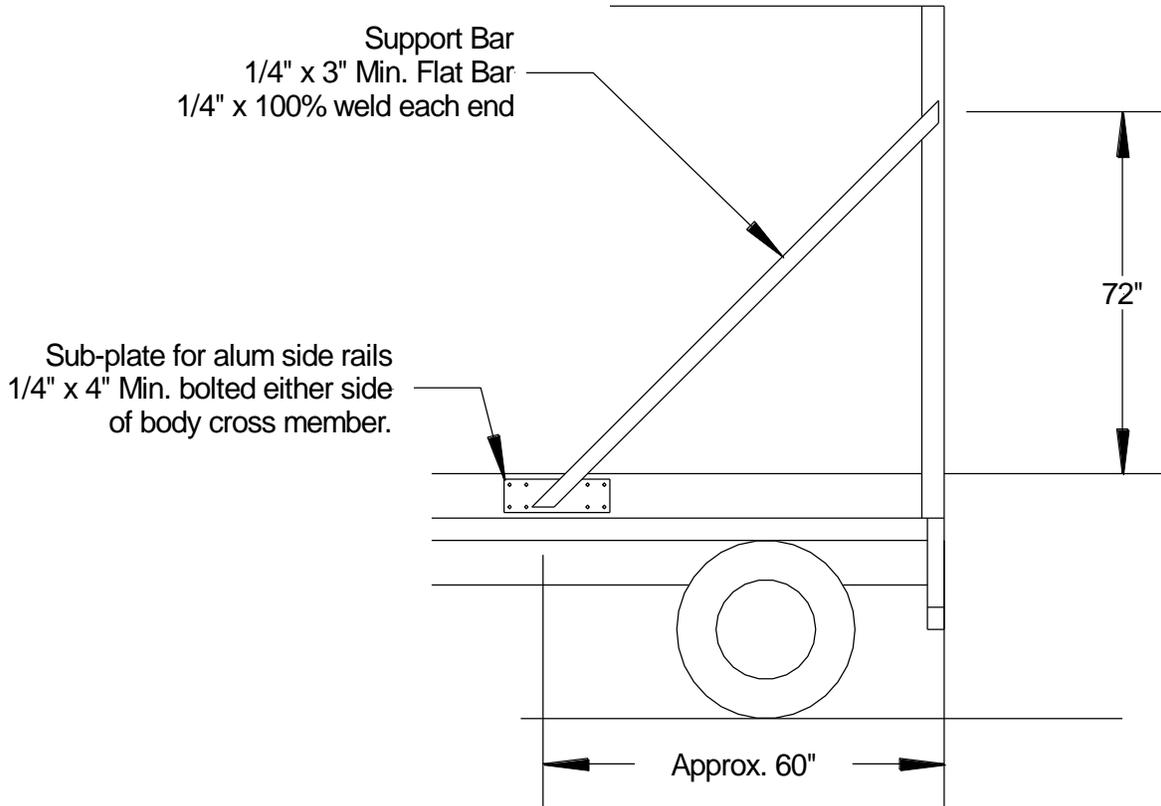
8.4 Support Body

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.

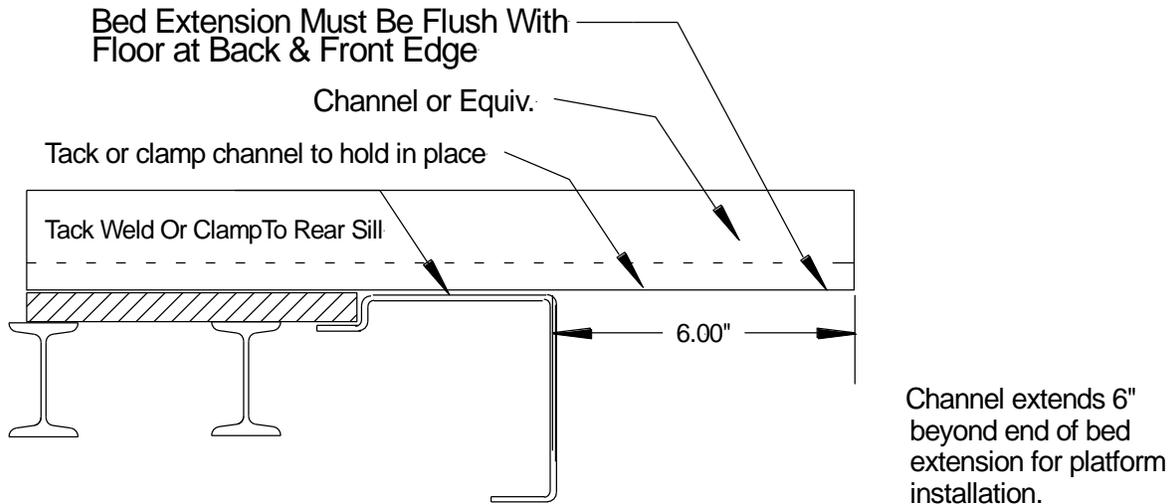


8.5 Add Alignment Bars (Optional)

The liftgate should be installed level to the rear sill. One method of doing this is to weld two alignment bars to the rear sill. This acts as a “stop” as the liftgate is hoisted up. This step should be done before the liftgate is raised to the vehicle. Other methods may also be used.

Steps:

1. Weld Alignment Bars: Weld two (2) supports to the sill of the truck. This will help ensure even alignment between liftgate crossbeam and body sill. Use 3” angle or channel approximately 10” long.



3/16" welds for bed extension



Do NOT weld channel along vertical posts on van install.

9 Liftgate Preparation

⚠ WARNING

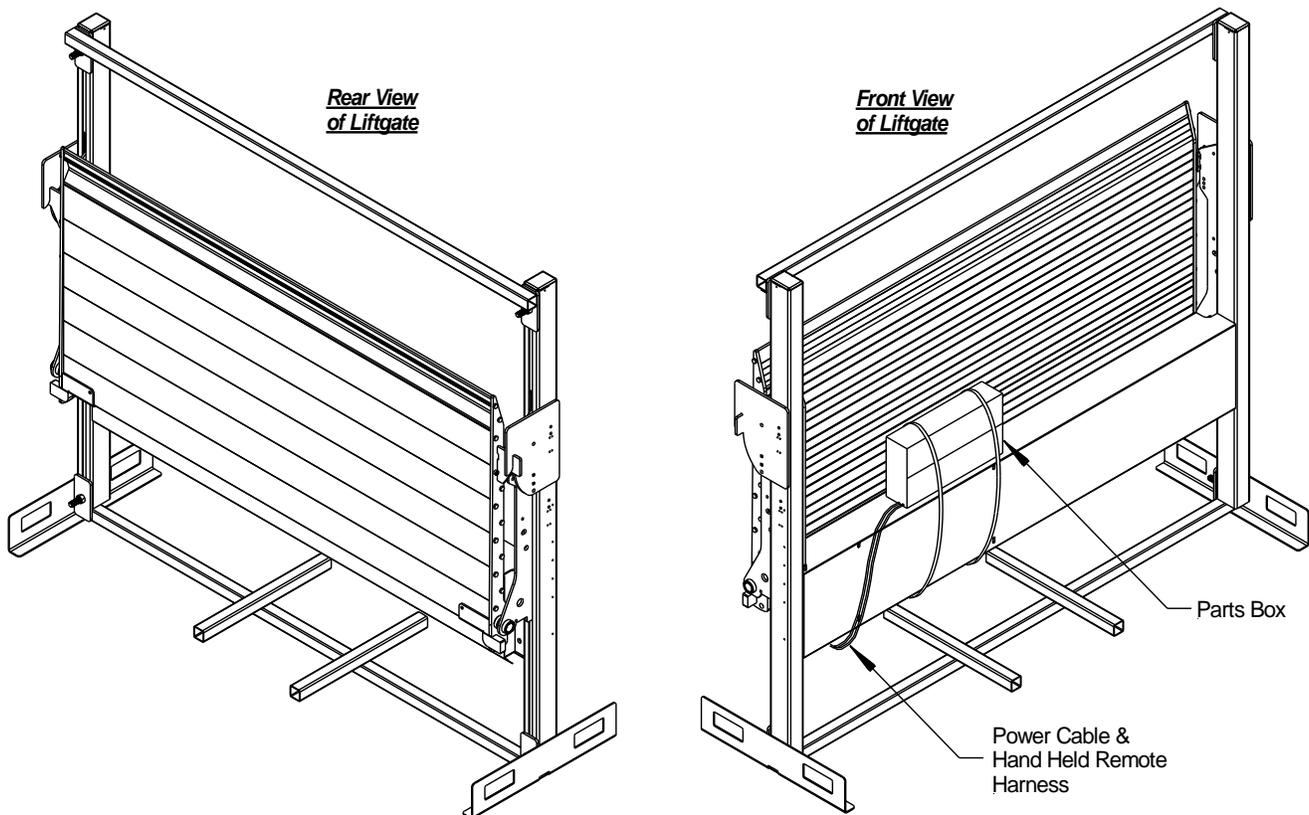
The installer should never position any portion of him/herself, or any other person directly under the liftgate at any point during gate mounting.

9.1 Liftgate Preparation

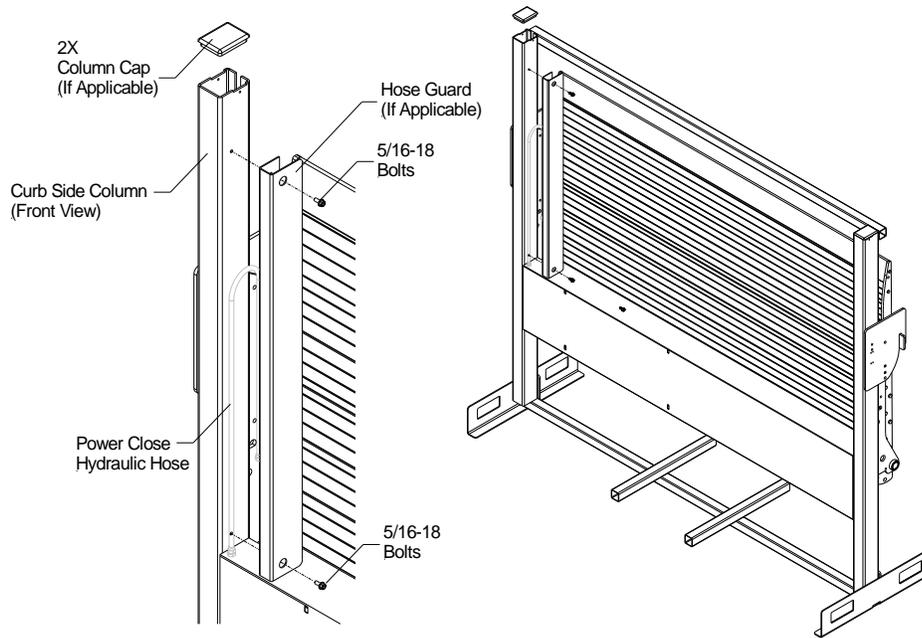
The ILM liftgate comes with multiple assemblies and components attached that need to be removed prior to installation. Prepare the liftgate for installation by removing the following components and assemblies.

Steps:

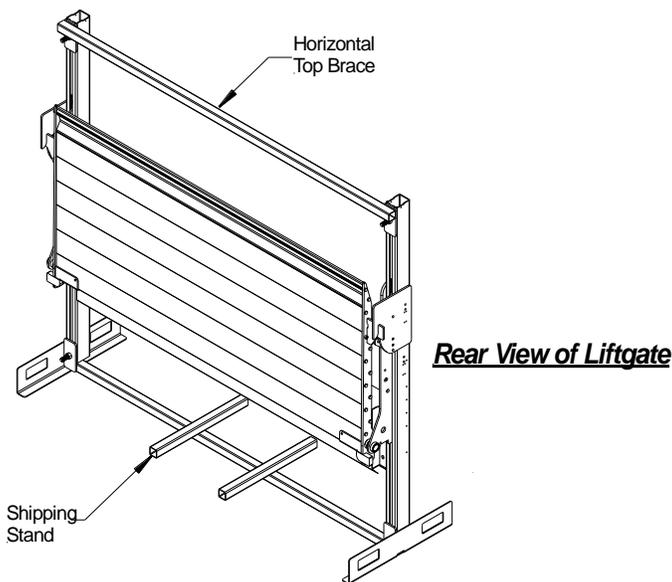
1. Remove Parts Box: The box is tie wrapped to the traverse of the liftgate. Cut the tie wraps, open the box and remove the power and hand held remote harness from the box, set the box aside.



2. Remove Hose Guard and Column Caps (if applicable): Standard ILM liftgates have plastic caps at the top of the columns that need to be removed. Power Closing liftgates have a hose guard next to the curb side column that needs to be removed. Remove the two 5/16"-18 bolts, do not discard any components or hardware, these components will be re-installed at the end of the installation.



3. Liftgate Ready for Installation: After removal of the parts box the liftgate is ready for installation.



WARNING

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

10 Standard Liftgate Mounting

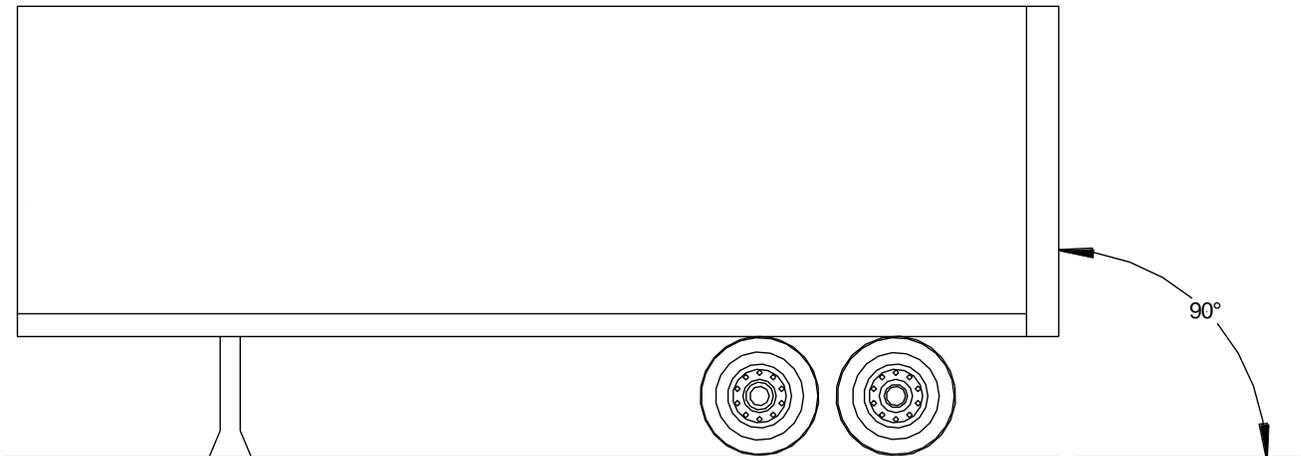
10.1 Hoisting the Liftgate

NOTICE

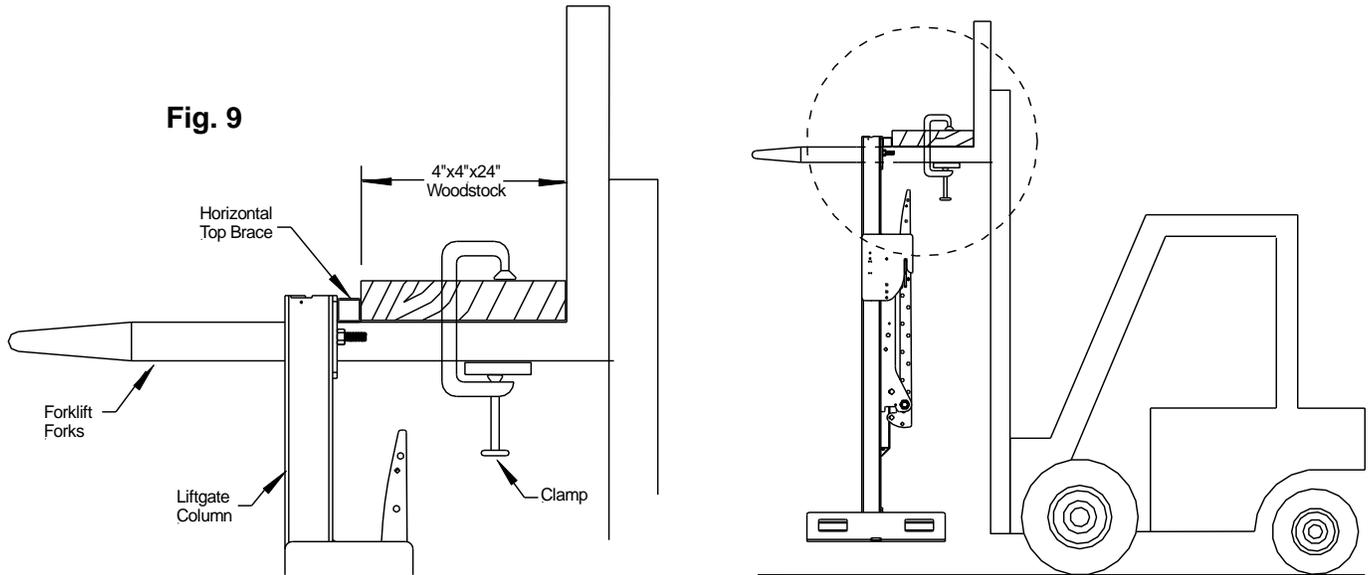
Before positioning the liftgate; consider when measuring and centering the liftgate that the truck or trailer may NOT be square or parallel. Special care must be taken to ensure that the liftgate is square and parallel before welding. Always disconnect the battery from the truck/trailer before welding to avoid damage to the electrical system.

Steps:

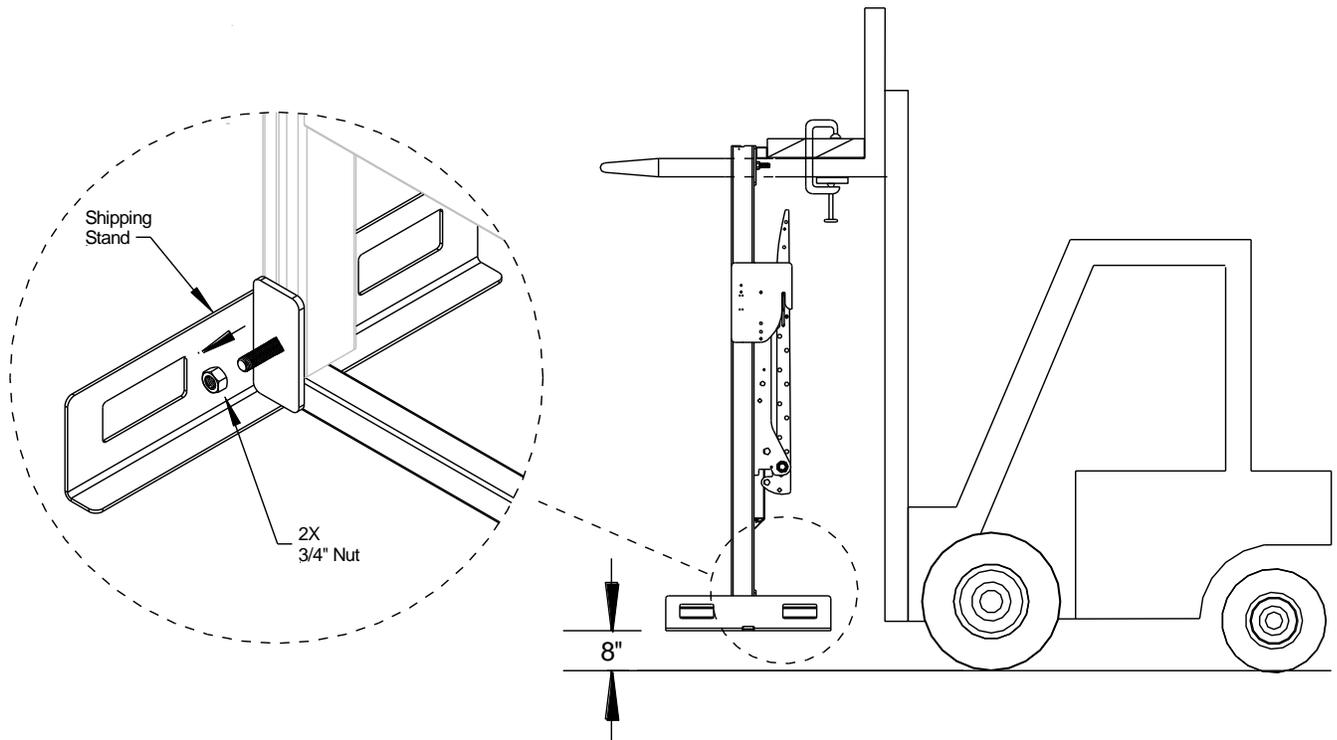
1. Level Truck: Truck should be on level and even ground. Uneven ground will give misleading measurements and can cause body twist or racking.



2. Make sure the liftgate is properly secured: Check that the liftgate is attached safely to the lifting device. If using a forklift to hoist the liftgate, use 4"x4"x24" wood spacers to keep the h unit from sliding back when lifting, **Fig.9**. This will help force the top of the liftgate tight against the body for welding.



4. Remove Shipping Stand: Hoist the Liftgate approximately 8" from the ground and remove the two 3/4" nuts located on the front side of the shipping stand. Remove street and curb side nuts.



NOTICE

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

5. Fit Liftgate Against Truck/Trailer: Use a forklift (recommended) to position the liftgate flush against the vehicles corner posts and sill, **Fig. 10**.

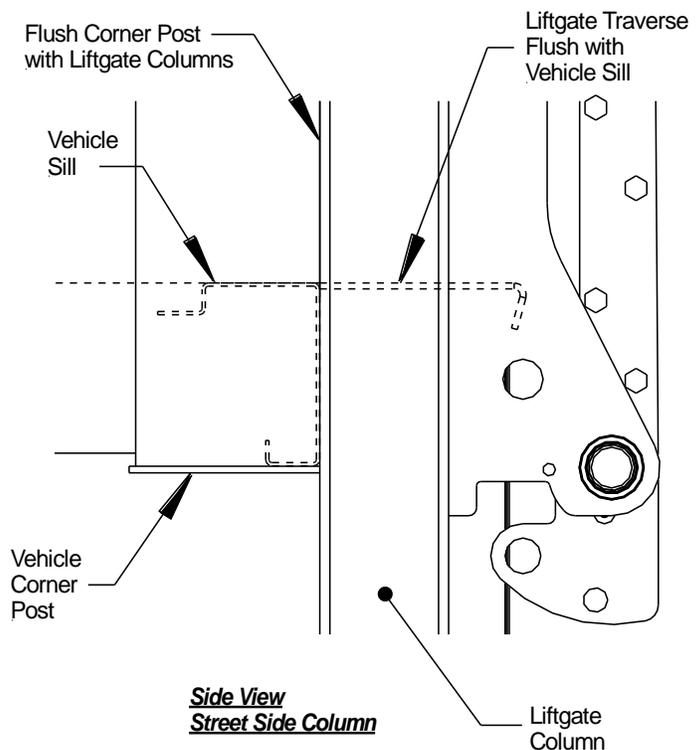
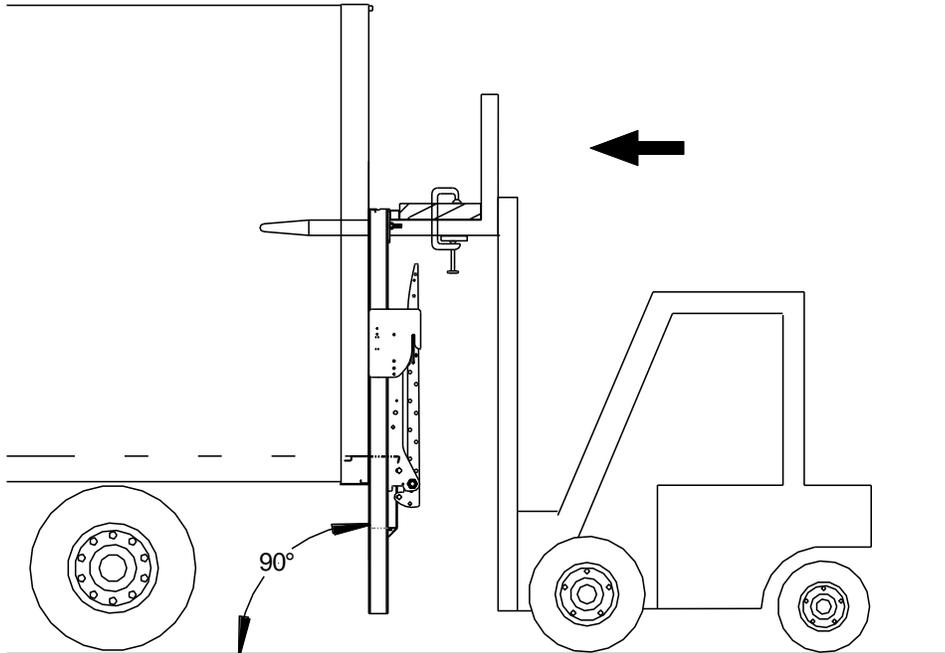
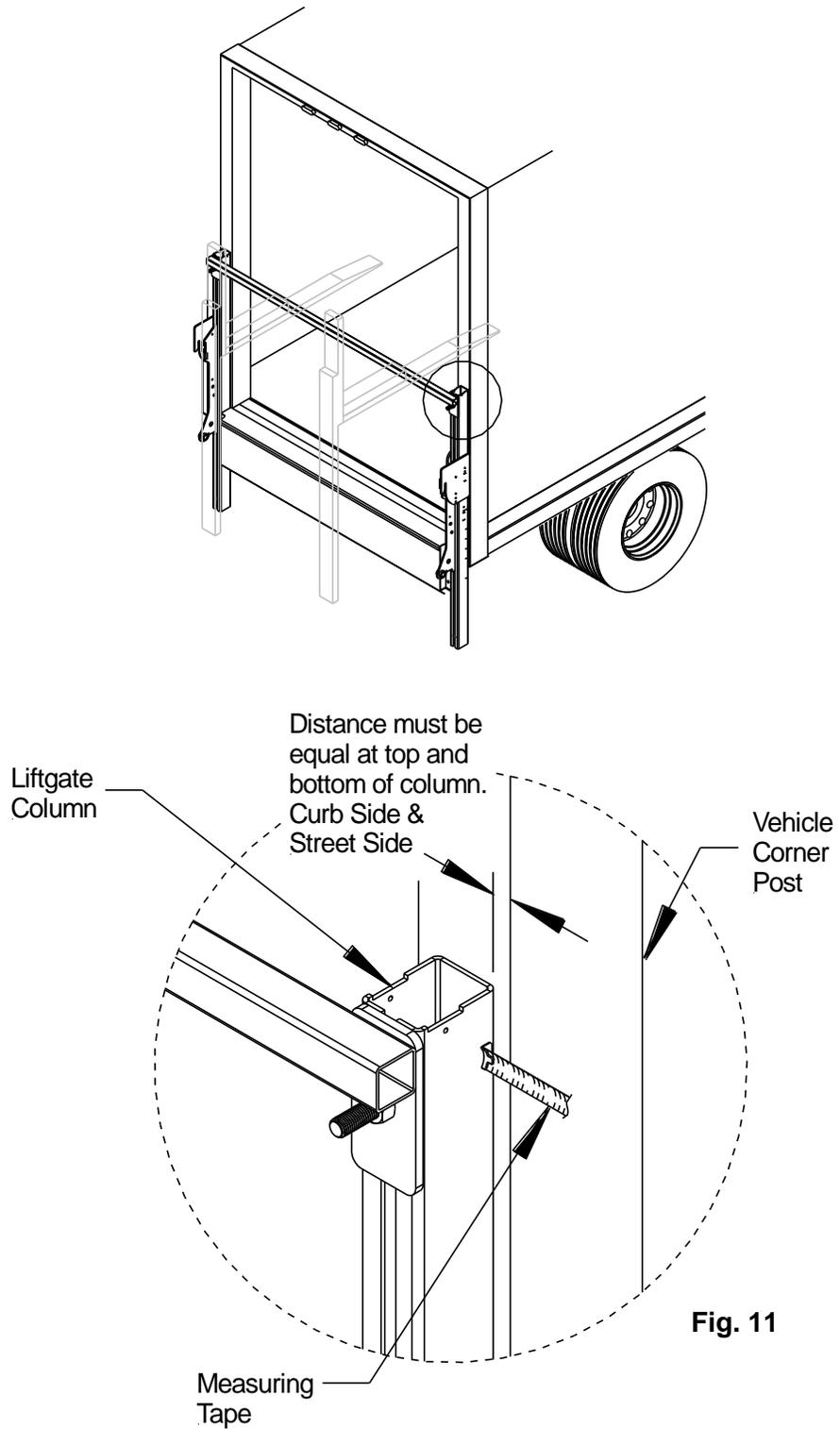


Fig. 10

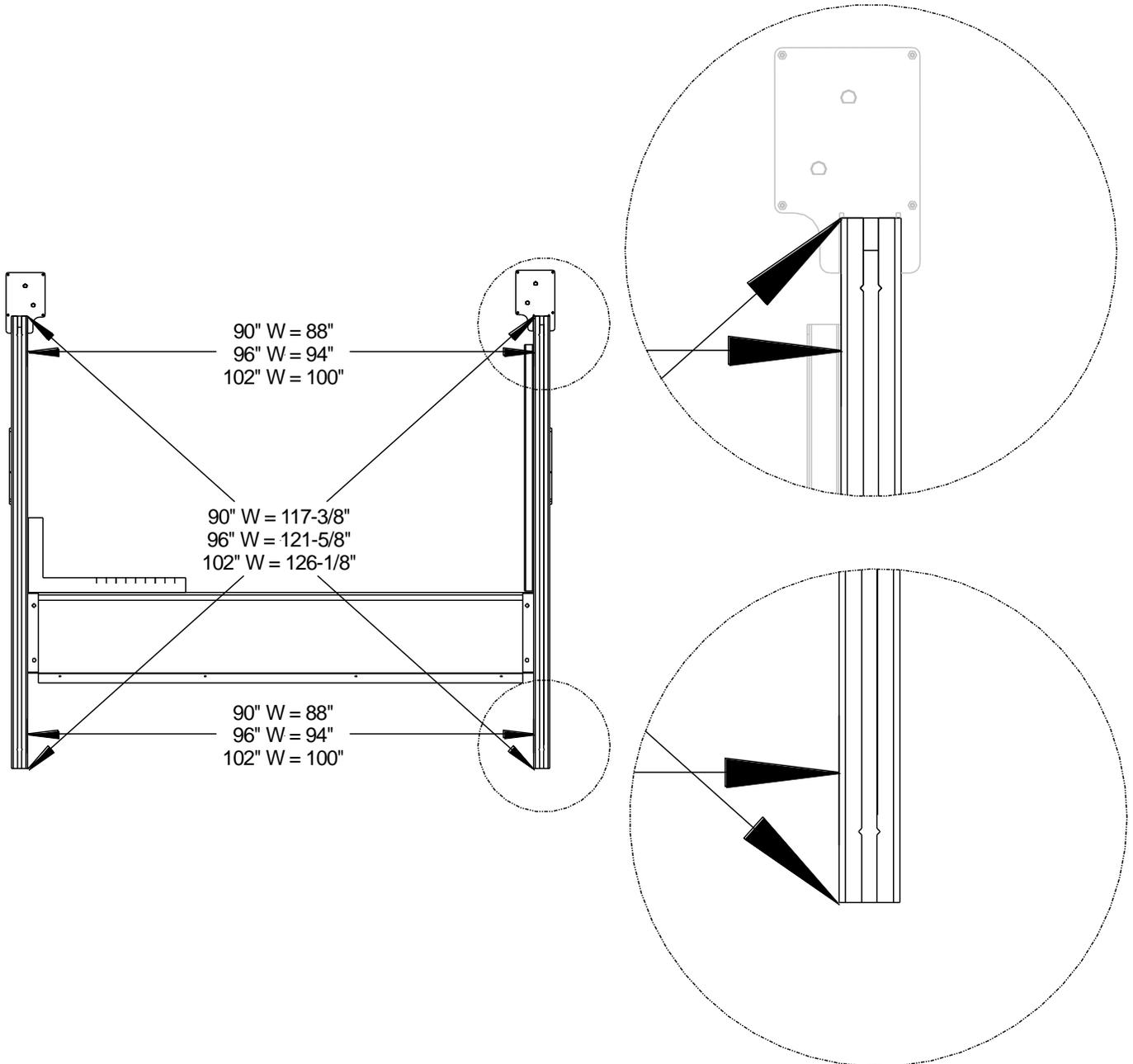
Side View
Street Side Column

6. Centering the Liftgate to Vehicle: After positioning the gate against the vehicle, measure the distances 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 measurements on the other column, **Fig.11**. If both sides don't measure equally, shift the liftgate to the side necessary.



7. Check Dimension: 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: Make sure identify the vehicle width and match the dimensions shown below.



8. **Clamping Liftgate:** After centering the liftgate, use four (4) "F" style clamps, two on top and two at bottom, to secure the liftgate flush against the vehicle, **Fig.12**. Confrim all mounting dimensions are correct, double check the floor and traverse is flush with the sill, and the columns are flush to the vehicle.

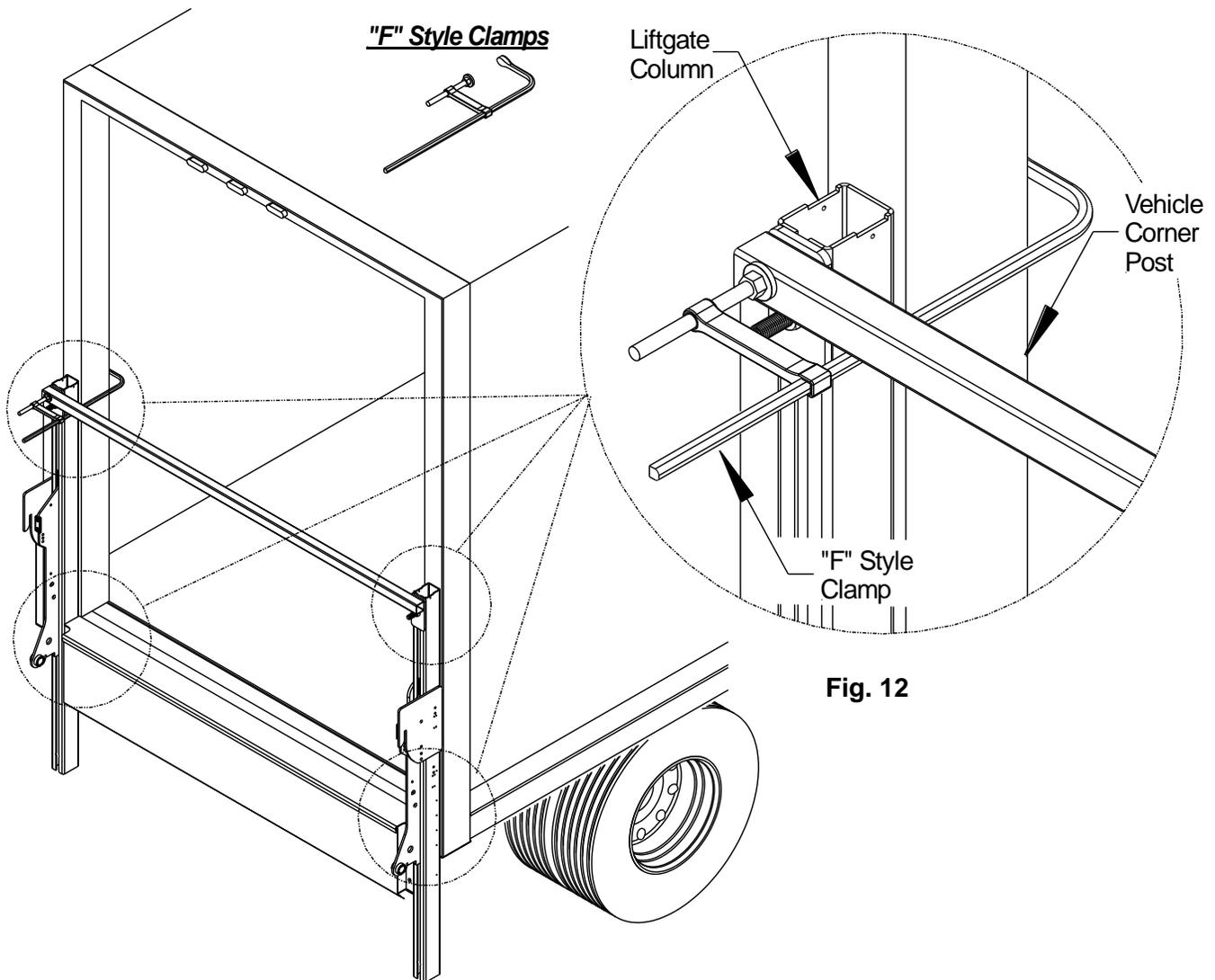


Fig. 12

NOTICE

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

WARNING

DO NOT remove lifting device until instructed.

10.2 Welding Liftgate

CAUTION

Before Welding:

- Do not position hands, feet, or any other body part underneath the liftgate until installation is complete.
- Disconnect all battery cables before welding to prevent possible damage to the trucks electrical system.
- Do not remove clamps or lifting device until the gate is welded.
- **Never weld at the location of the slide pads, which are connected to the runner. Before welding on the columns measure to make sure the welds will not be on the slide pads, Fig. 13.**

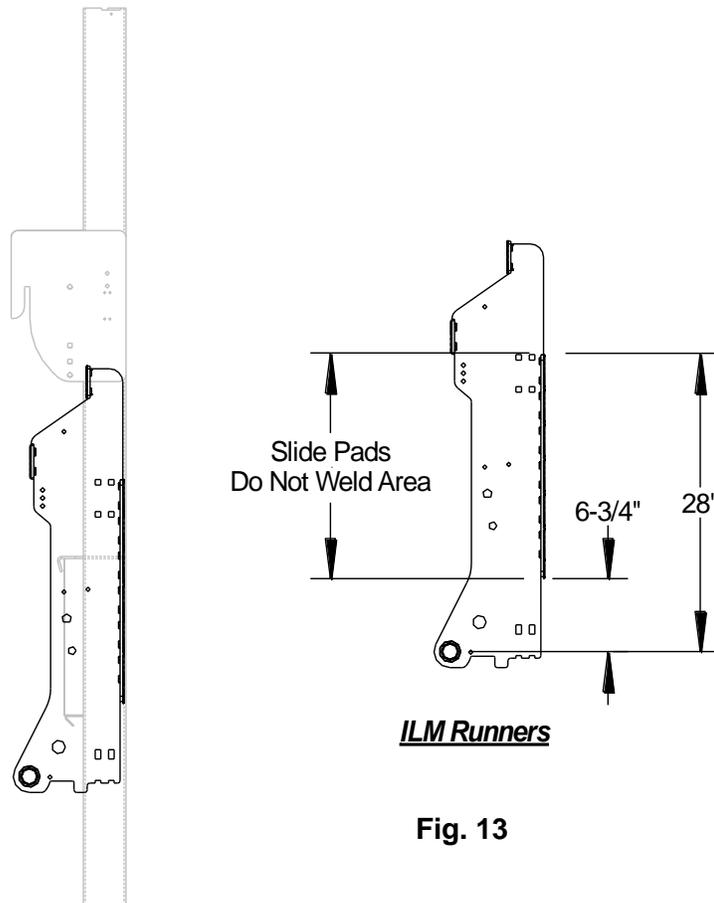


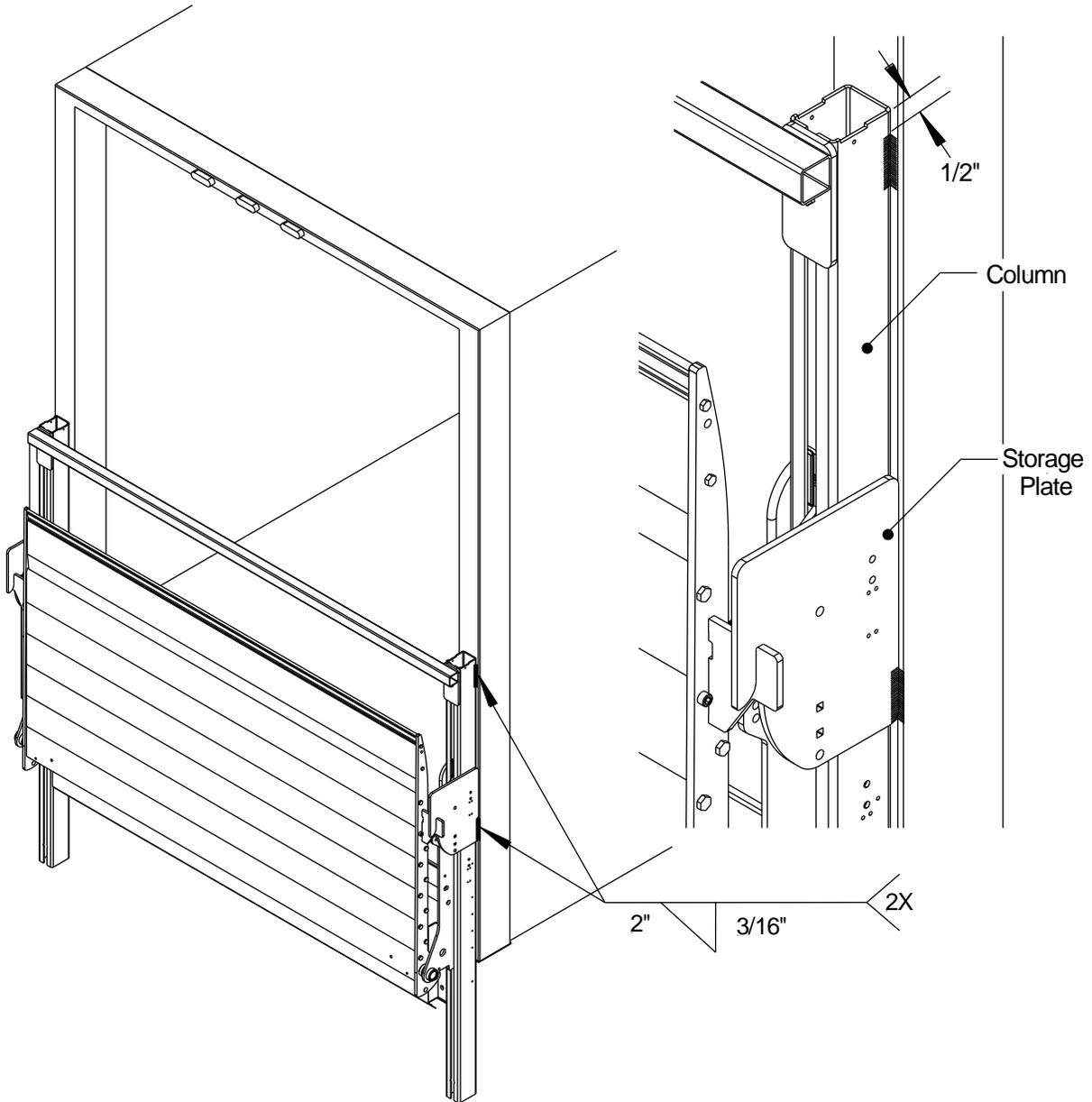
Fig. 13

Steps:

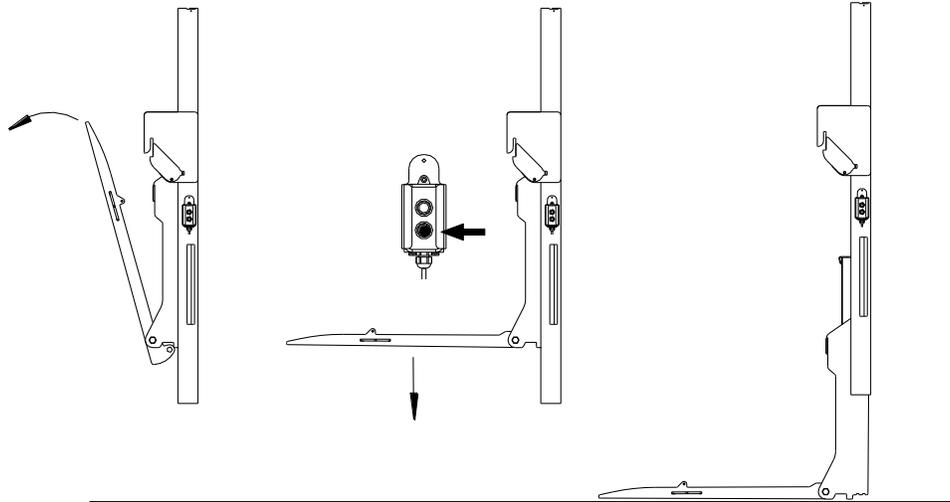
1. Outside Welds: Using 3/16" x 2" welds, place one weld 1/2" from the top of each column on the outside and place one weld at the bottom of each storage plate. Never weld at the same location as the slide pads.

NOTICE

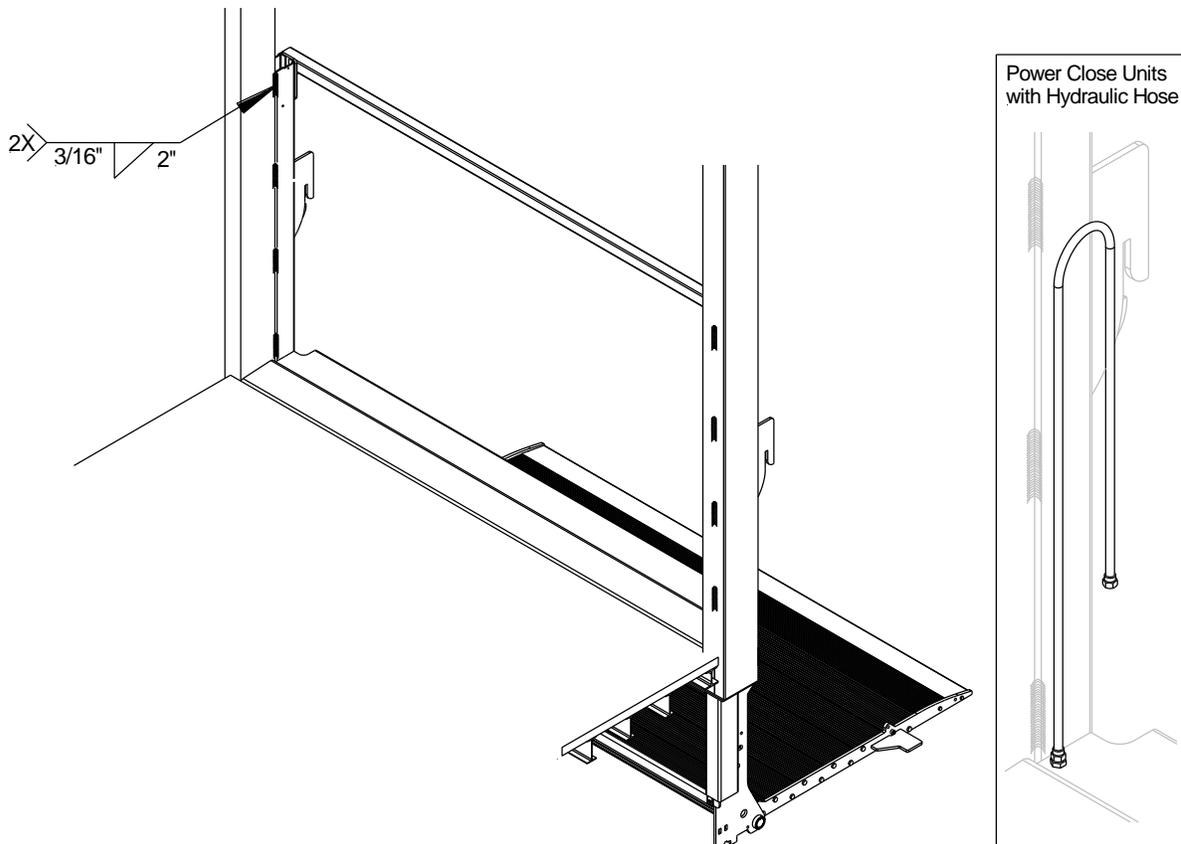
STOP and recheck all mounting dimensions.



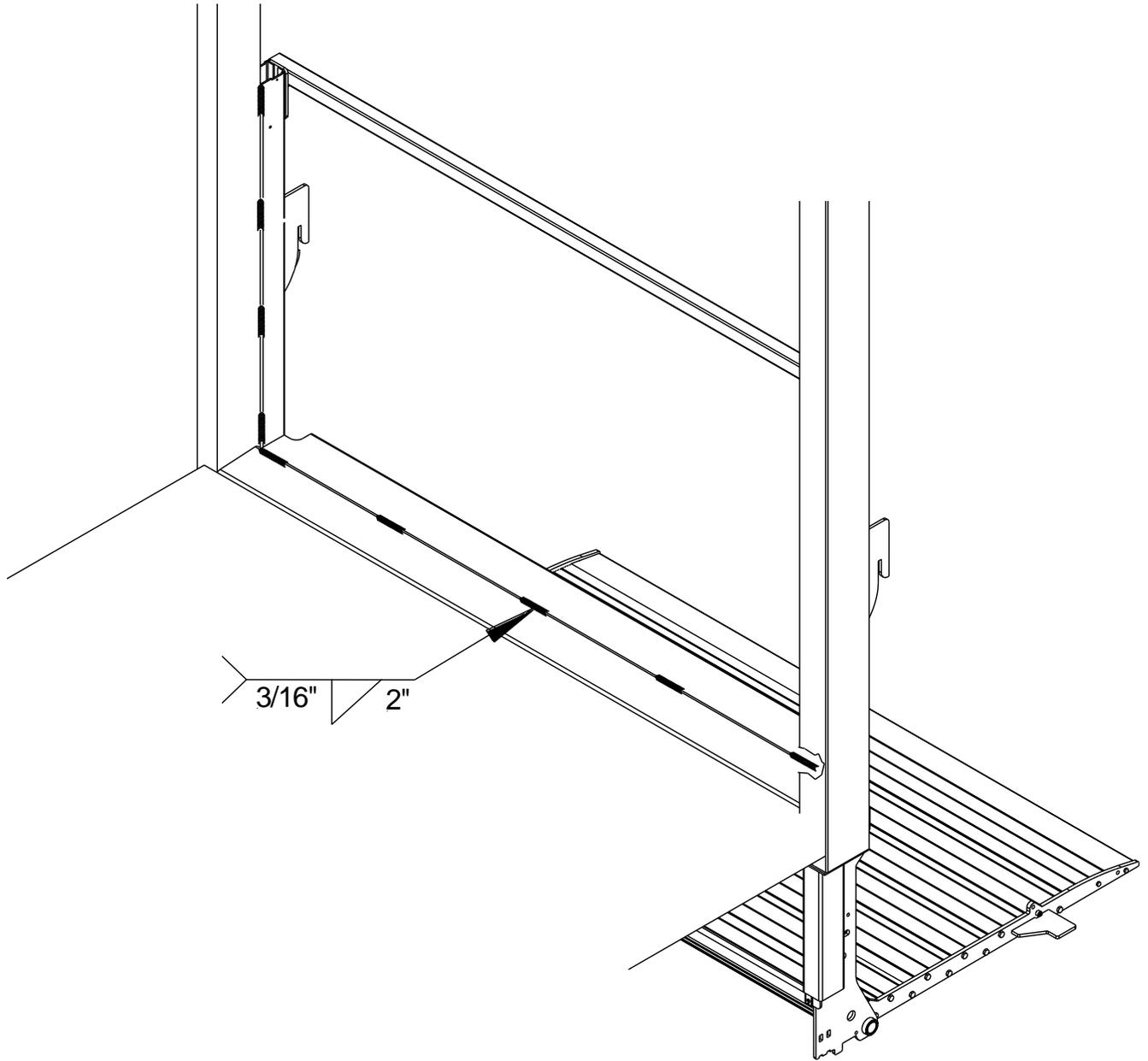
2. Open and Lower Liftgate: After the gate has been properly welded in step 1, supply temporary power to the liftgate using a 12-Volt battery source, reference Section 12. Open the platform and then lower the liftgate to the ground. Once opened and lowered, disconnect the temporary battery. This will allow space to finish welding, and move the slide pads out of the way from welding.



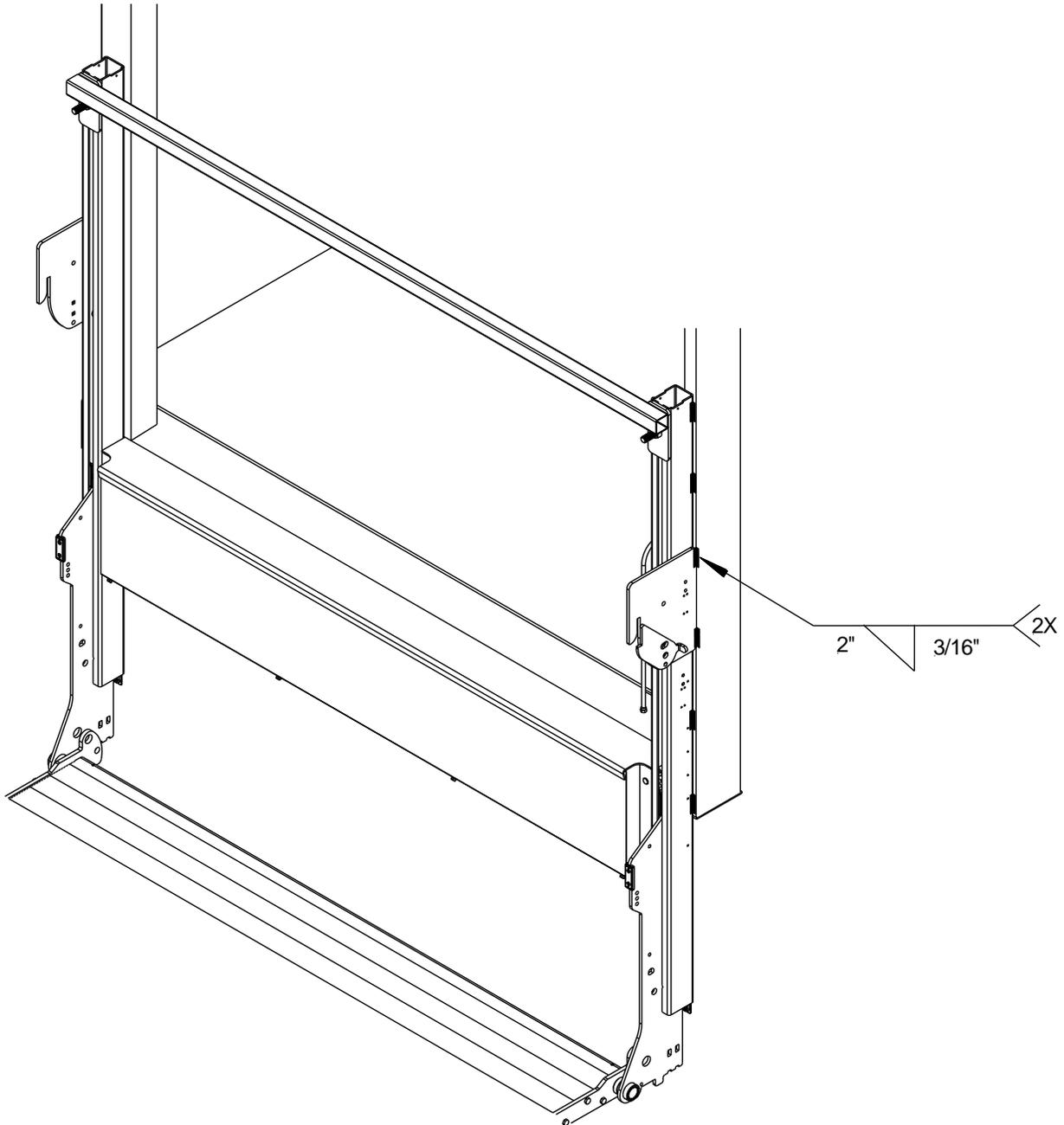
3. Inside Column Welds: Weld inside of curb and street side columns using 3/16" x 2" welds in 4 places evenly spaced top to bottom. **Attention: Power Close units have a preinstalled hydraulic hose on the curb side column; do not damage the hose while welding.**



4. Inside Floor Welds: Weld inside of floor using 3/16" x 2" welds in 5 places evenly spaced left to right.



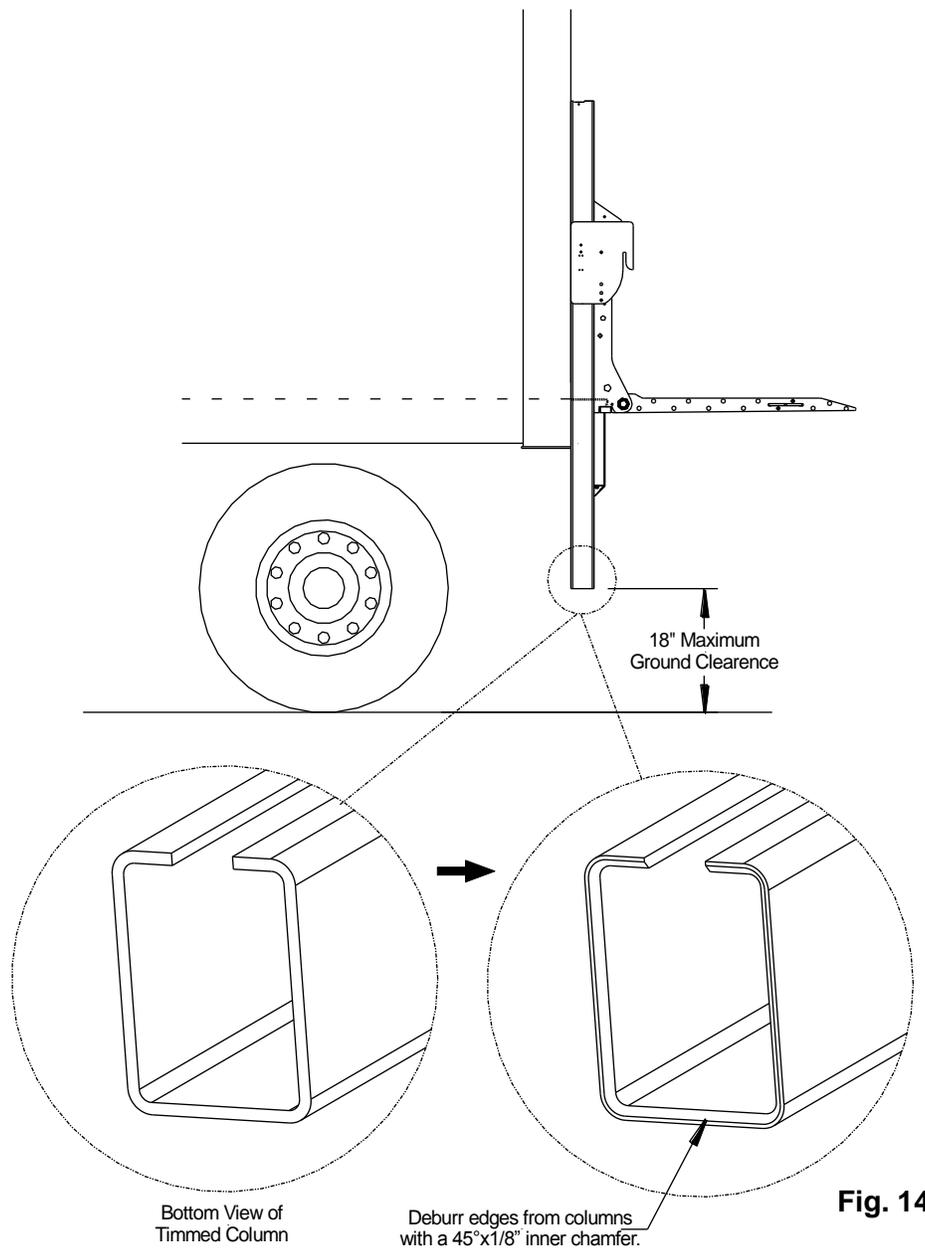
5. Final Outside Welds: Finish welding outside of columns using 3/16" x 2" welds in 5 places evenly spaced. Shown below is curb side column. Repeat welding on street side column. **On each side place (2) of the Outside Column welds at the upper and lower end of the mount plate. Take precautionary measures to ensure that the mount plates do not toe-out due to welding.**



10.3 Column Modifications

When columns are too long and exceed the 18" maximum ground clearance they will need to be cut.

1. Measure Height: With the liftgate in its highest position, measure from level ground to bottom of the column. Consider ride height at the vehicle's max load capacity, as well as dry unloaded ride height.
2. Mark Cut Line: Mark where the columns should be cut. Maximum ground clearance is 18".
3. Cut Column: Cut the excess length of the column. Important: Always deburr after cutting by grinding the inside and outside edges smooth. Chamfer the inside edge at 45°x1/8", **Fig.14. If the columns are not deburred the slide pads will get damaged.**

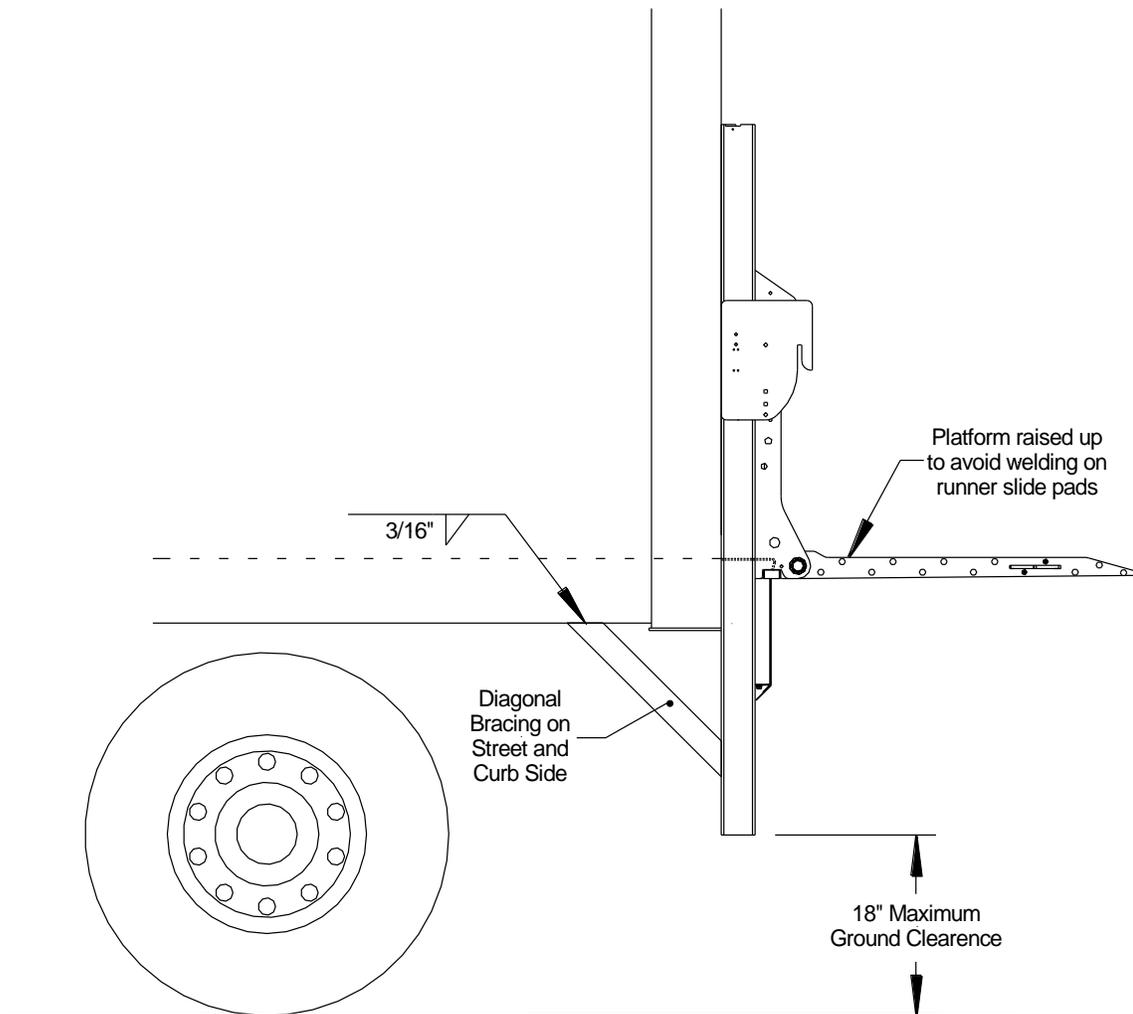


NOTICE

When diagonal supports are installed, raise the platform to stored position to avoid damaging the slide pads when welding.

Add Diagonal Support (Optional): If desired, diagonal bracing can be connected to the rail and underside of the truck/trailer body for added strength or aesthetic purposes as shown below. Diagonal supports are not required.

If desired cut an appropriate length of metal at 45° on both ends. If necessary, use ¼” thick plate to bridge the gap between two body sills. The Lifting bar from the liftgate’s shipping stand can be cut and used for bracing.



11 Holster and Cable Guard Installation

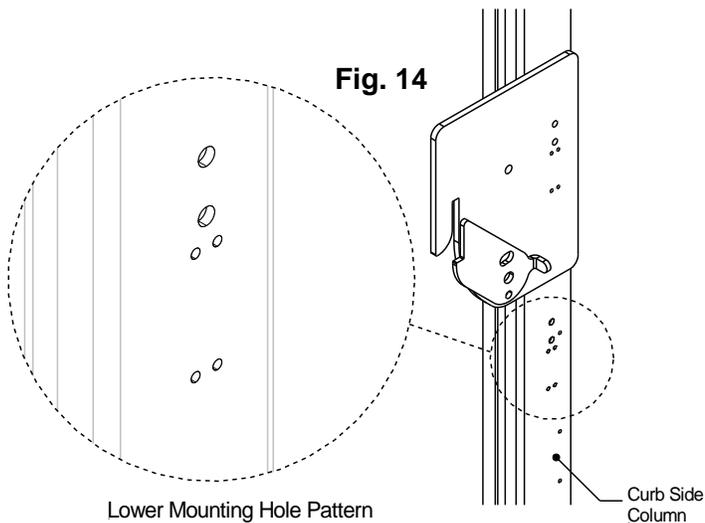
Steps:



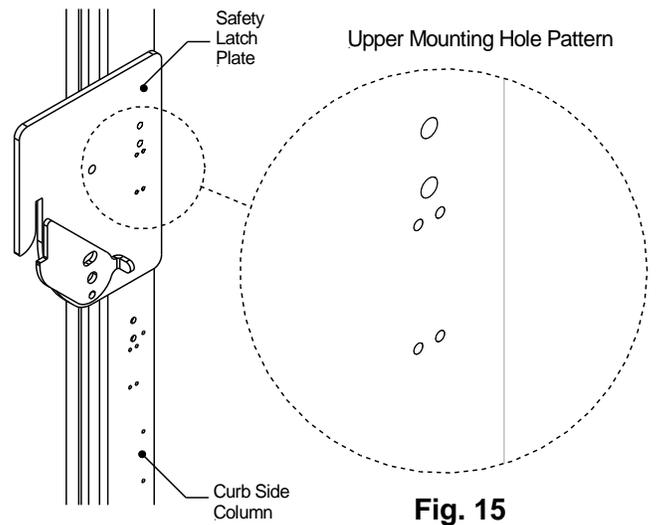
Disconnect liftgate power cable at battery. Liftgate should be in stored position.

1. **Holster Hole Mounting Pattern:** Determine the bed height of the vehicle. Vehicles with bed height from 46" and above will mount on the lower mounting hole pattern, **Fig. 14**, of the liftgate column. Vehicles with bed heights from 46" and below will mount on the upper mounting hole pattern on the safety latch plate, **Fig. 15**.

46" and above Bedheight Vehicles



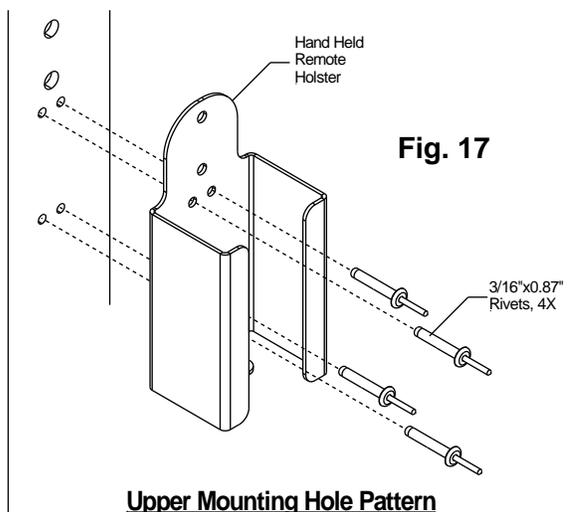
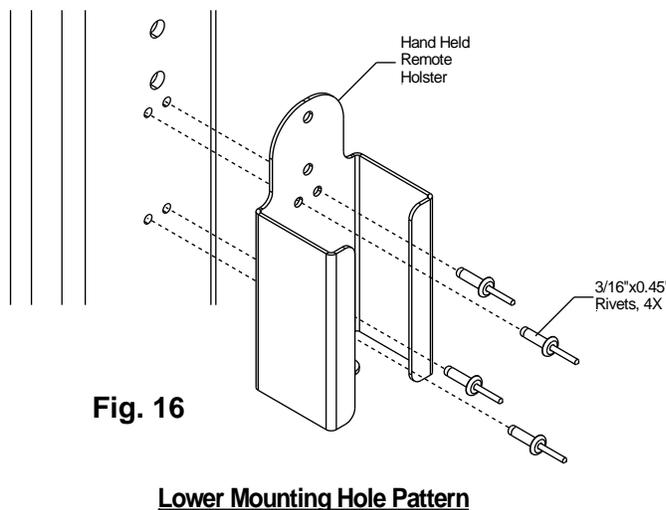
46" and below Bedheight Vehicles



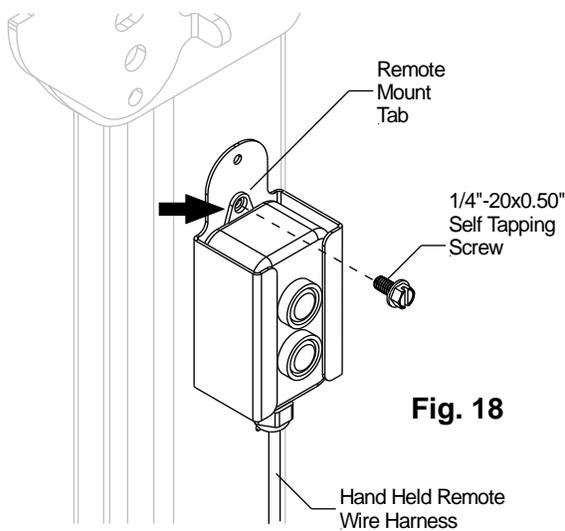
2. Holster Installation:

Lower Mounting Hole Pattern: Use four 3/16"x0.45" rivets to mount the holster to the curb side column, **Fig. 16**.

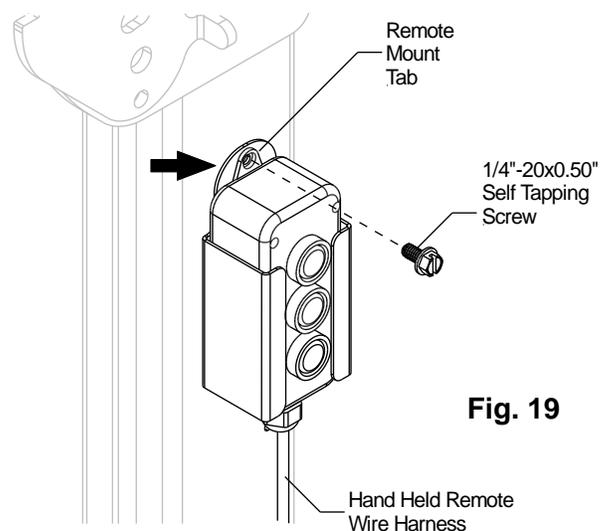
Upper Mounting Hole Pattern: Use four 3/16"x0.87" to mount the holster to the curb side safety latch plate, **Fig. 17**.



3. **Hand Held Remote:** The liftgate will ship with a 2-button (standard), **Fig. 18**, or a 3-button (optional), **Fig.19**, hand held remote. Place the control inside the holster and align the mounting tab of the remote with the corresponding hole on the holster. Use the 1/4"-20x0.50 self-tapping screw to secure the remote to the holster.

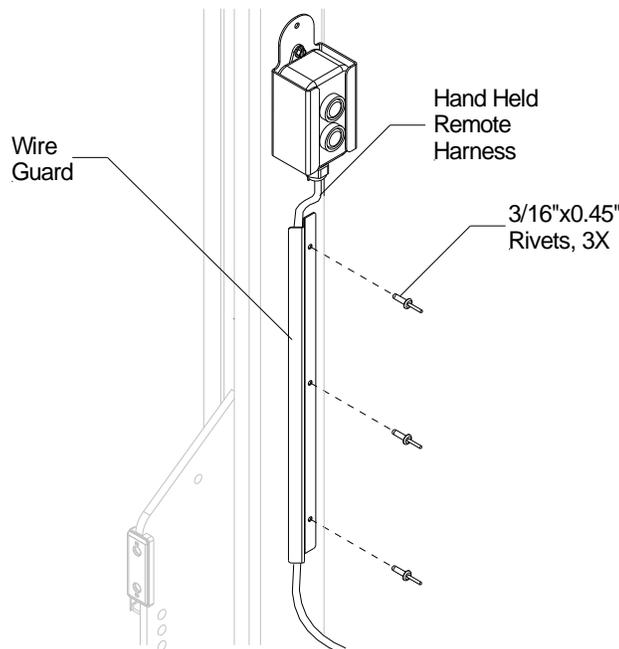


2-Button Control
Manual Close



3-Button Control
Power Close

4. **Wire Guard:** Install the wire guard to hold the hand held remote wire harness secured to column. Fit the wire harness on the wire guard channel, make sure the harness is not pinched by the wire guard when place over the harness. Use three 3/16"x0.45" rivets to mount the wire guard to the liftgate column. Store excess harness away from sharp edges and moving parts.



5. **Operate:** Connect power cable to the battery to briefly operate the liftgate functions with the remote.

12 Final Installation Steps

1. Remove the Top Brace: Remove the top brace assembly by unbolting the two hex nuts. Discard the brace after removal, **Fig. 20**.
2. Re-install Column Caps (if applicable): Columns caps should be installed when the columns have cooled from welding, **Fig. 21**.
3. Re-install Wire Guard (if applicable): Reinstall the wire guard on the curb side column for Power Close units only, **Fig. 22**.

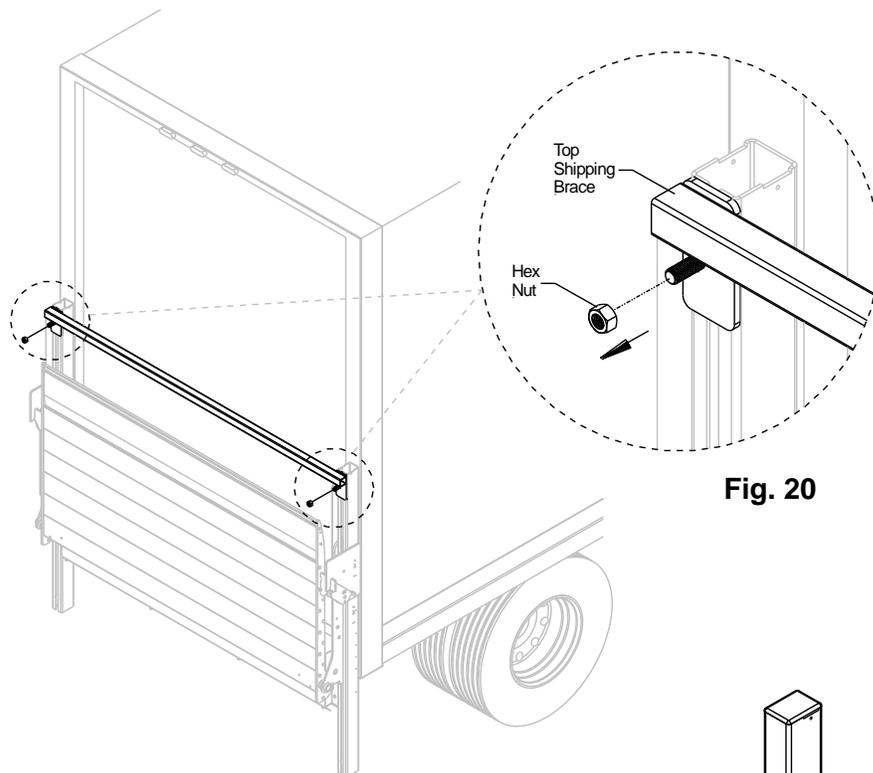


Fig. 20

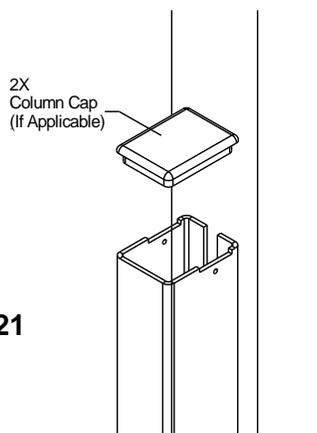


Fig. 21

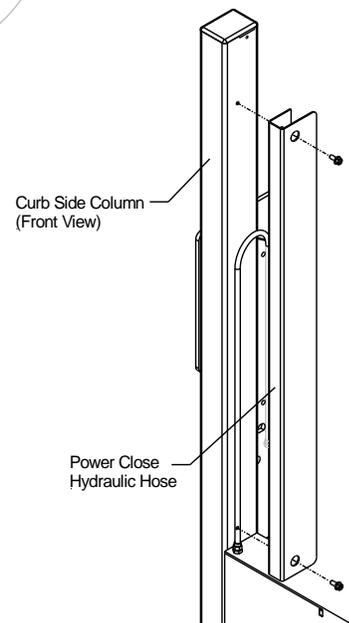


Fig. 22

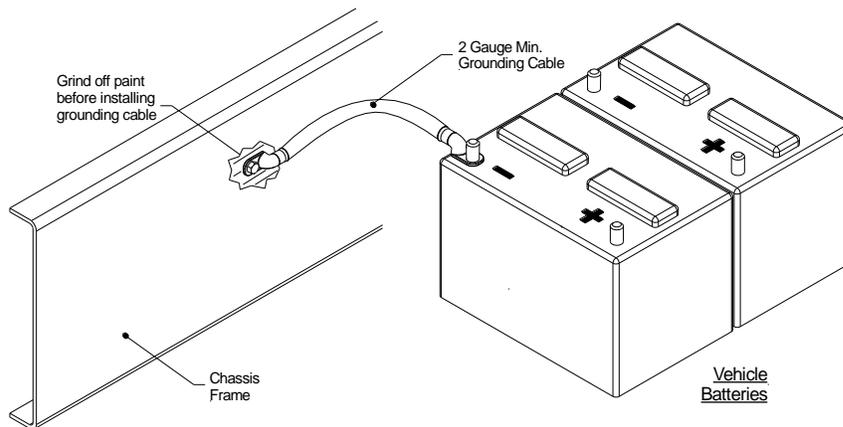
13 **Electrical Installation**

⚠ 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.

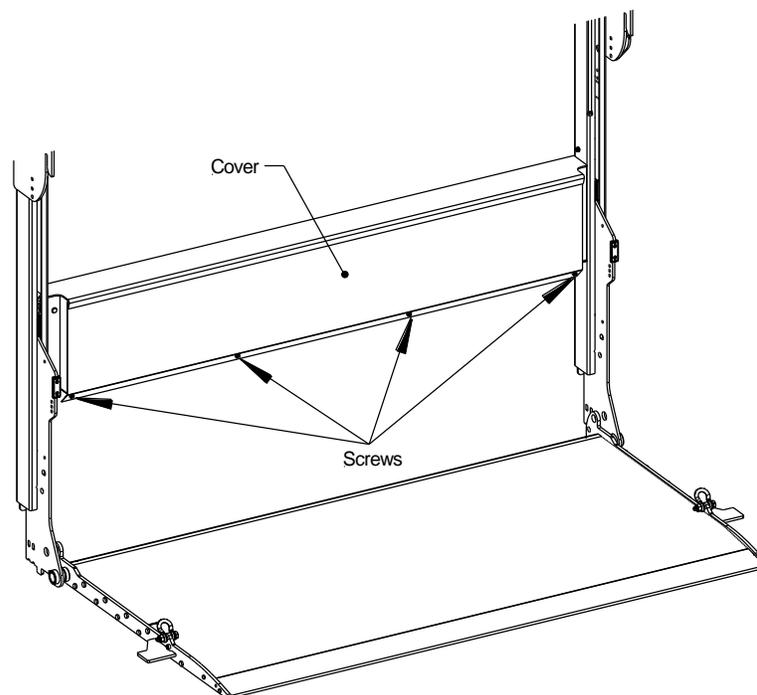
NOTICE

- Check for 2 gauge grounding cable or heavier connecting vehicle batteries to chassis. If NOT supplied by the vehicle manufacture, one will need to be installed. Be sure to grind off paint or under coat and seal when installing a ground cable.



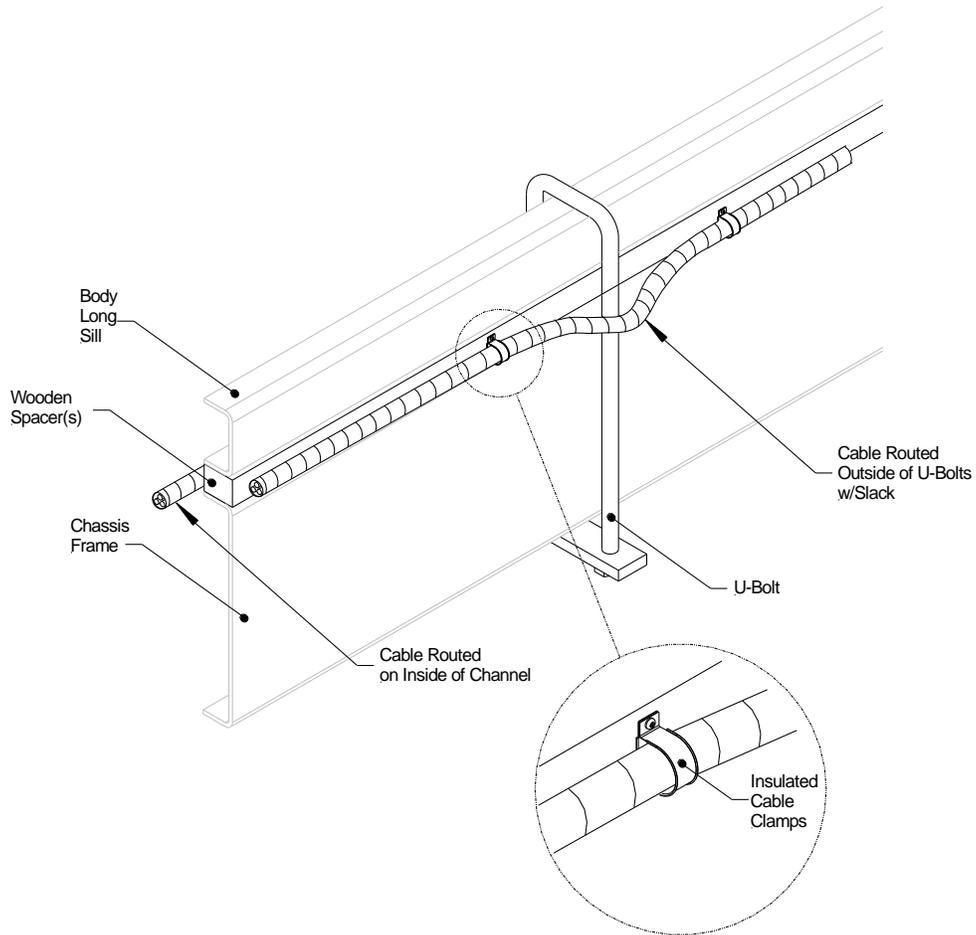
Battery to Chassis Frame Grounding

- If during installation the hydraulic power unit needs to be accessed, remove the four screws that secure the cover on the traverse.

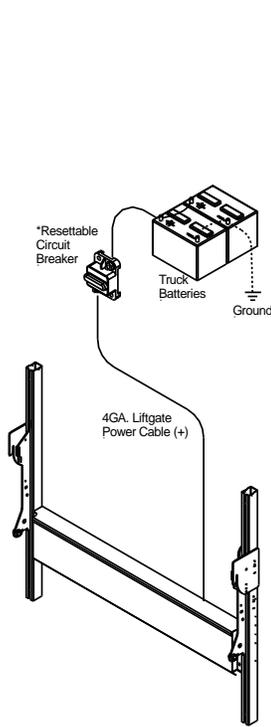


13.1 Cable Routing

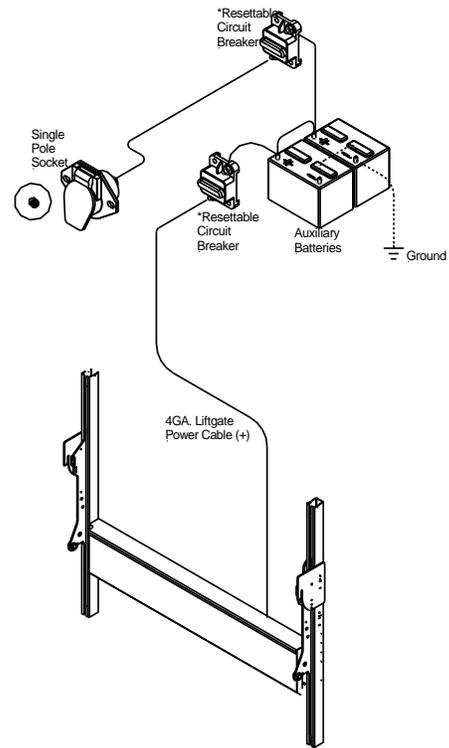
1. The use of wire loom is highly recommended to protect and facilitate cable routing. Wire loom not supplied.
2. Route all cables along the wooden spacer and through the outside of the U-bolts or on the inside part of the channel.
3. Secure the wire along the wooded spacer with insulated cable clamps.



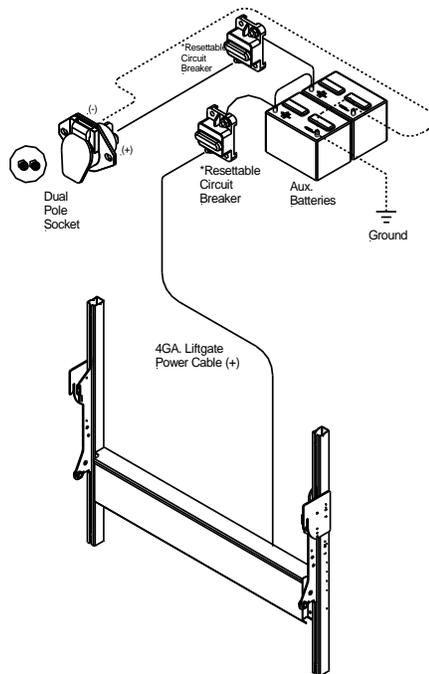
13.2 Battery Wiring Overview



Battery Wiring - Truck



Battery Wiring - Single Pole - Trailer



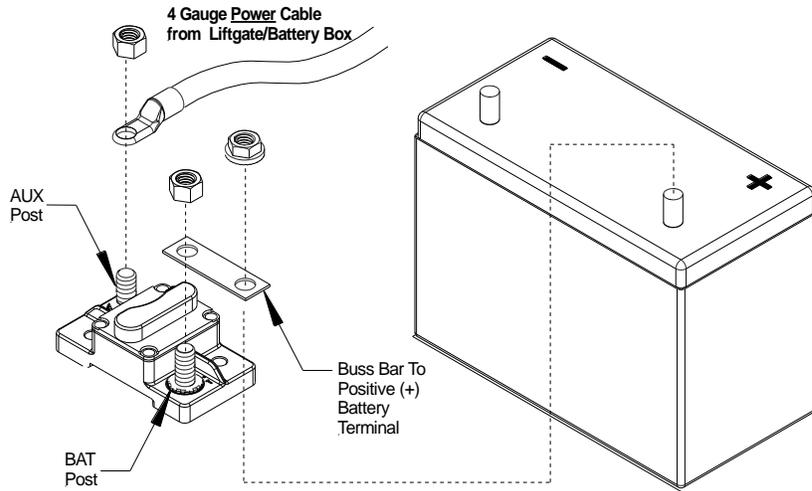
Battery Wiring - Dual Pole - Trailer

*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.

13.3 Powering the Liftgates and Circuit Breaker Installation

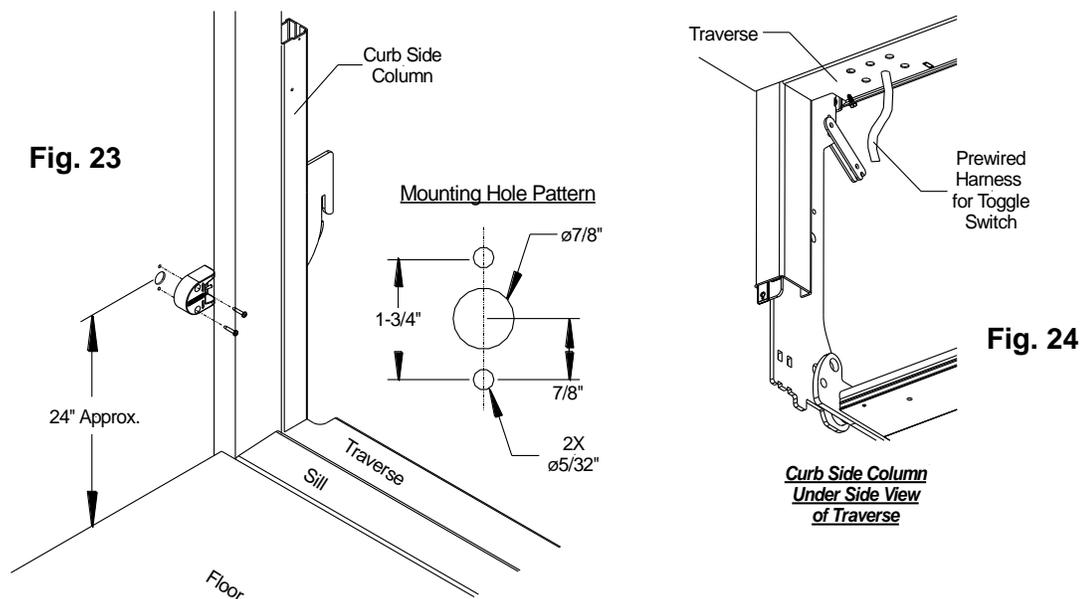
Instructions below show how to install a circuit breaker at the truck batteries and adding power to the liftgate. *Note: Circuit breakers are preinstalled inside the Battery Boxes (optional) from factory.*

1. Attach the bus bar to the circuit breaker on the BAT post. Mount the circuit breaker securely to the positive terminal post of battery.
2. Connect the 4 gauge power cable from the liftgate or battery box to the AUX (auxiliary) post of the circuit breaker.



13.4 Toggle Switch Installation (Optional)

1. Install the toggle switch approximately 24" from the ground or at desired distance, **Fig. 23**. Use the hold pattern to mount the toggle switch to the inside of the vehicle body. Route the harness down to the pump and motor. Connected the toggle switch connectors to the prewired harness coming out from the bottom of the traverse, **Fig. 24**. Reference wiring diagram in Sections 13.7-13.8 for wiring toggle switch.



13.5 2-Button Hand Held Remote (Optional)

1. Mount the holster approximately 30"-36" from the floor or determine the best location as preferred by the end user, **Fig. 25**.
2. Route the harness from the liftgate up through the inside corner post or between the wall extrusions of the vehicle. Use a wire clamp to secure the incoming harness, **Fig. 26**.
3. Splice the cables from the liftgate to the hand held remote with butt connectors and seal each connection with heat shrink.
4. Reference Section 13.7-13.8 for wiring remote.

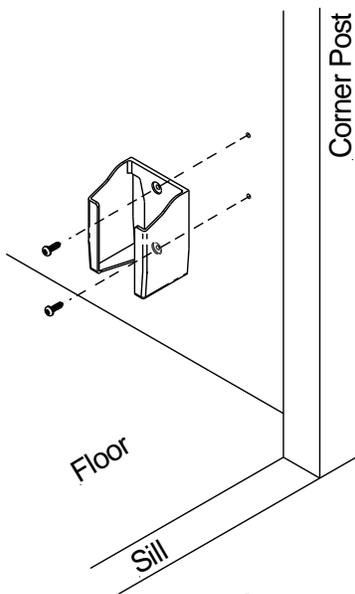


Fig. 25

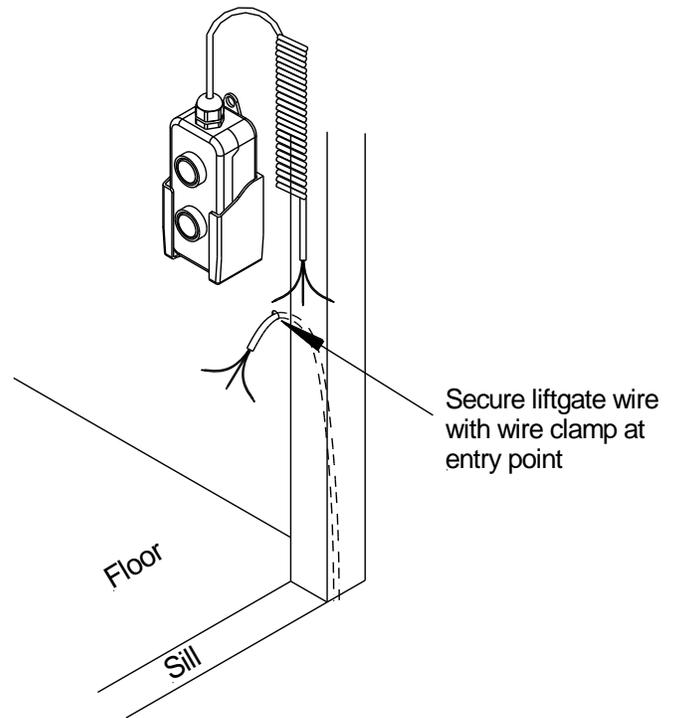
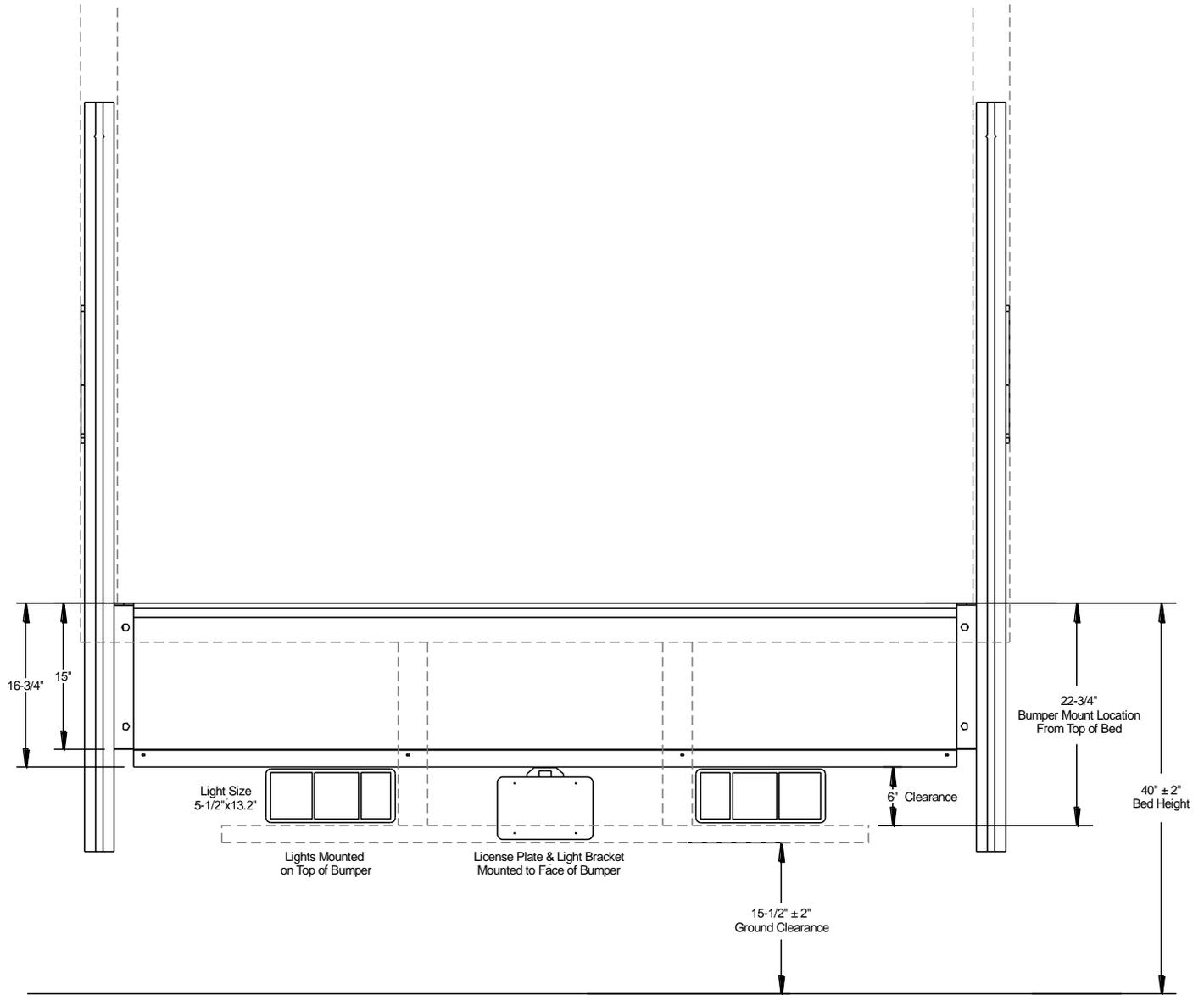


Fig. 26

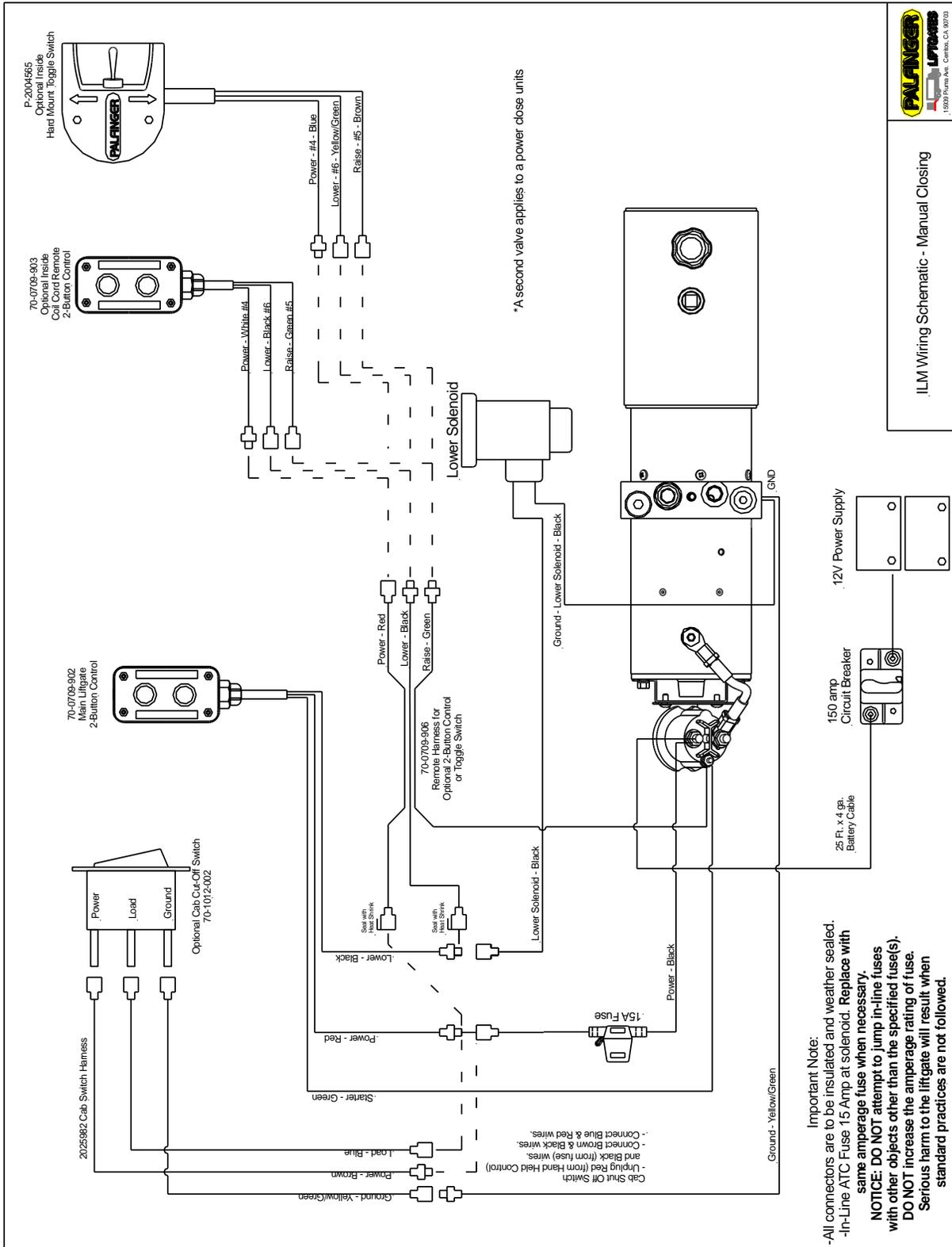
13.6 Rear Lights Mounting Dimensions

Typical lights mounting dimensions for ILM+ liftgates.

NOTE: Isuzu NPR style trucks. 38" to 42" bed heights.

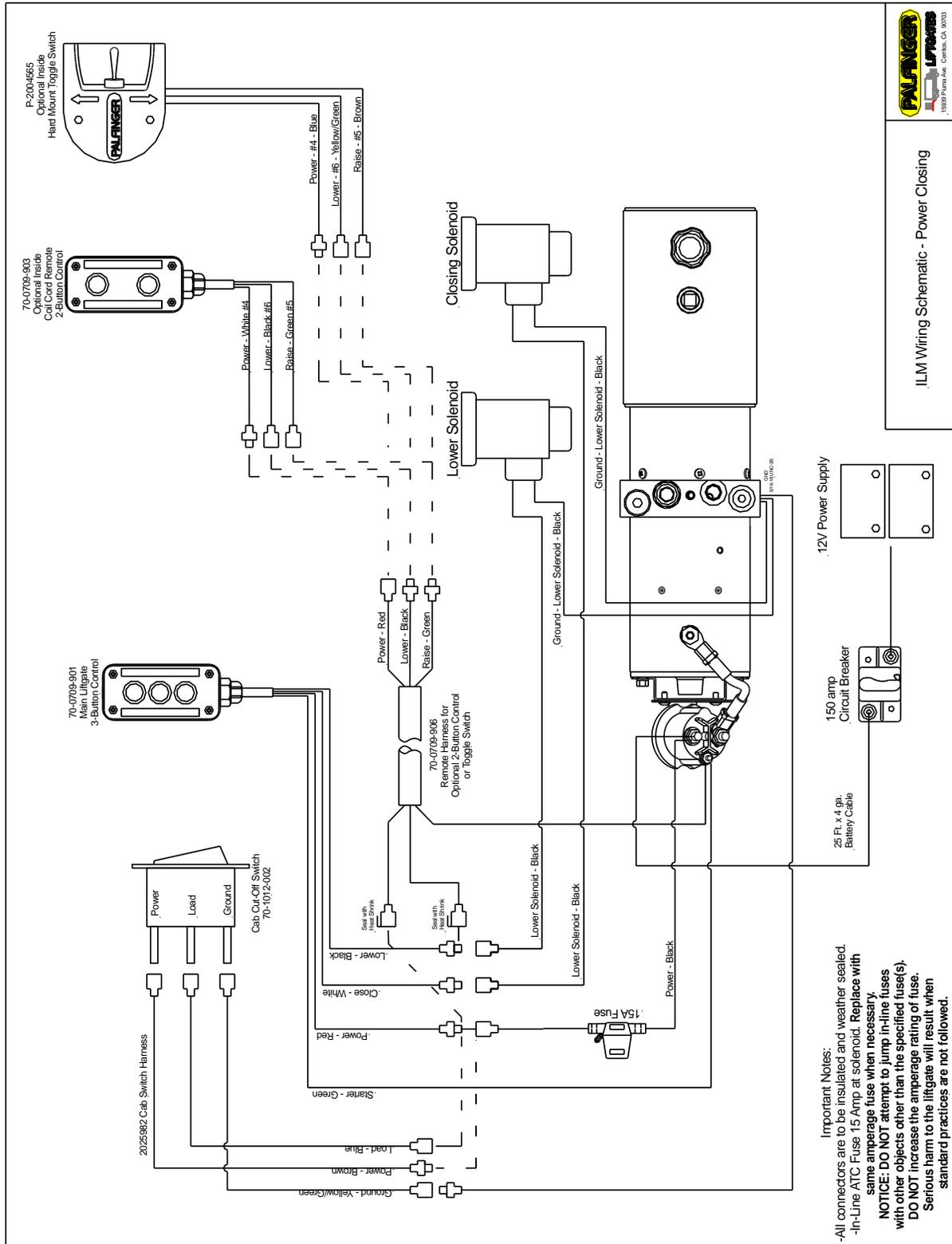


13.7 Electrical Schematic - Manual Closing



ILM Wiring Schematic - Manual Closing

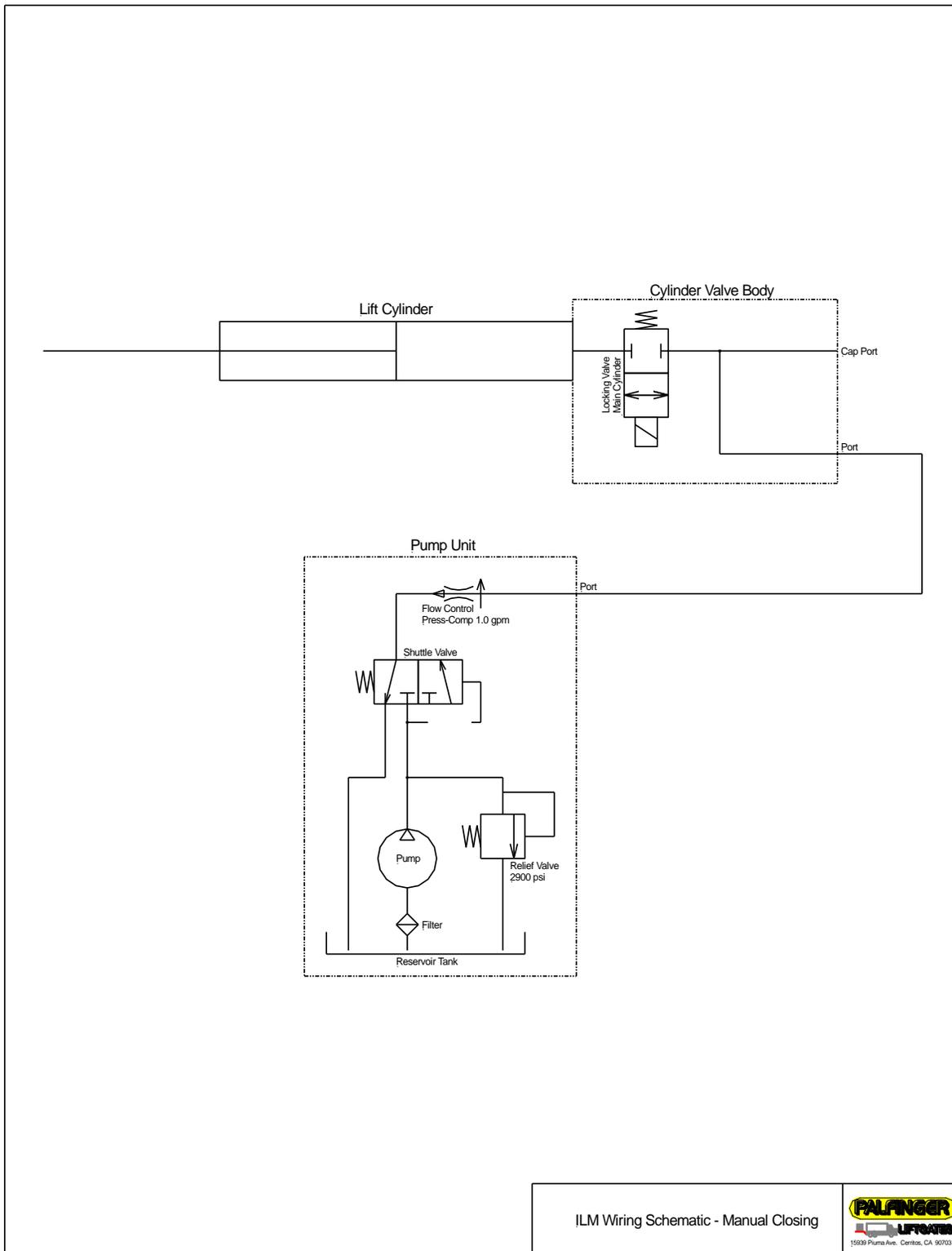
13.8 Electrical Schematic - Power Closing



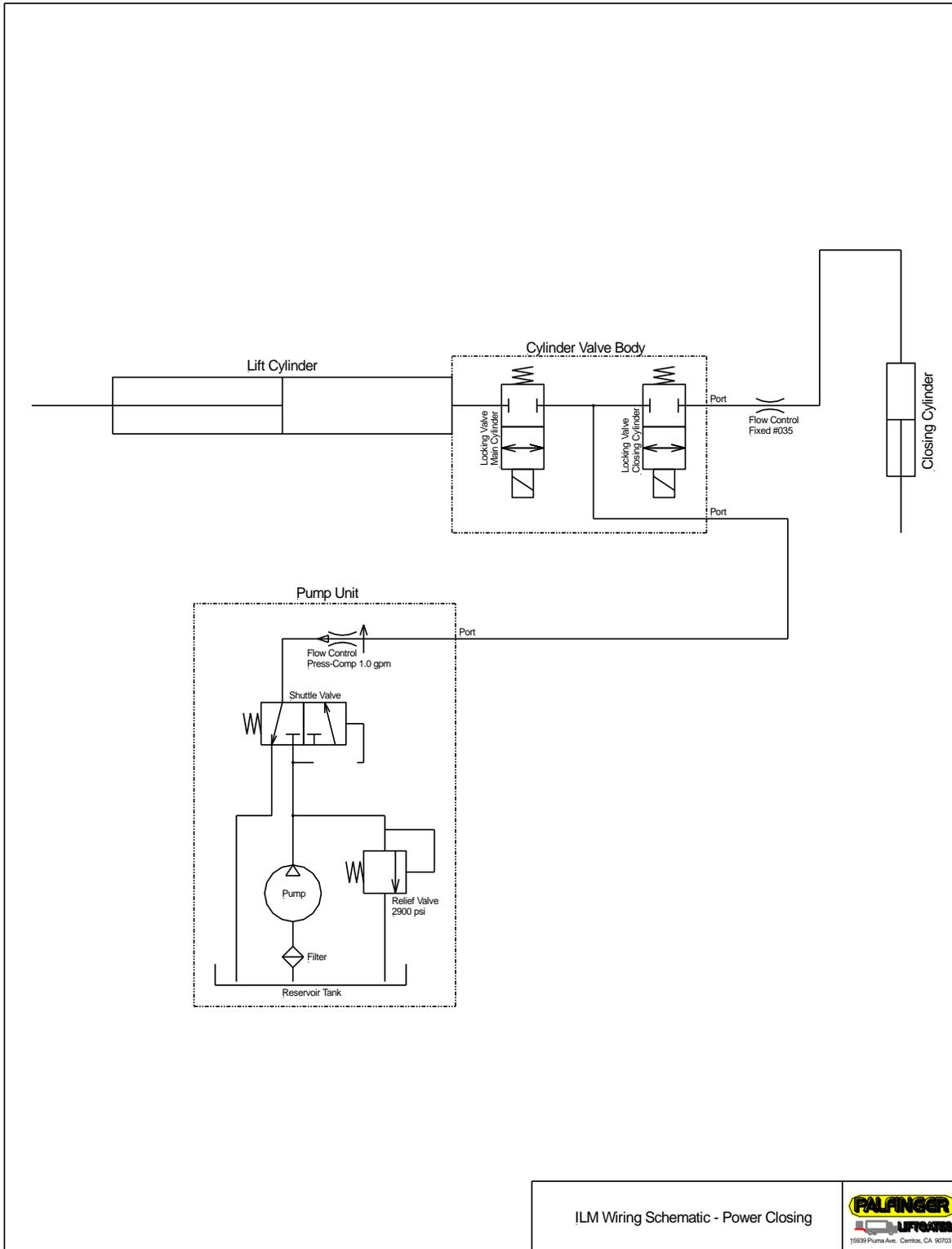
ILM Wiring Schematic - Power Closing

14 **Hydraulics**

14.1 **Hydraulic Schematic - Manual Closing**



14.2 Hydraulic Schematic - Power Closing



15 Lubrication

When kept properly lubricated, the PALFINGER ILM liftgate will ensure long lasting usage. Therefore, the liftgate pivot points should be lubricated at the same time as the truck/trailer. Lubricate more frequently if the lift gate is heavily used or whenever the pivot points appear to be dry. Average ILM plus use is considered 15 cycles per day or 1200 cycles per quarter.

CAUTION

DO NOT GREASE the “Slider Bearings” or “Columns” or “Runners”, as this will VOID your WARRANTY on the slide bearings.

Column Lubrication: The columns are designed to run DRY and this is what Palfinger recommends first. However, in some wet or dirty environments, the columns may require periodic lubrication. The schedule will vary based on cycles, load, and environment. We recommend motor oil, 0W-20, 5W-30, or "bar & chain oil" administered via a machinist style oil can. Don't over do it, a little goes a long way, two or three squirts on to slide surfaces will last months in most cases, **Fig. 27**.

Deck: There are 2 grease fittings to maintain, left and right main pivots, **Fig. 27**.

Power Closing: There are 2 grease fittings to maintain, upper & lower cylinder pivot points.

Manual Closing Gates: Use a light penetrating oil on closing aids; left & right side, upper & lower gas spring mounting points, **Fig. 27**.

Deck support chains: Use a light penetrating oil on chain anchors; left & right side, **Fig. 27**.

Lift roller chain: Under normal use and conditions, the lifting roller chain will require minimal lubrication or maintenance as it is impregnated with good quality grease and only makes contact with Polymer sprockets. In extreme wet or dirty environments, should roller chain show signs of drying or rust, lubricate with a good quality motor oil or chain oil listed above for columns, **Fig. 27**.

Lubrication Locations:

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

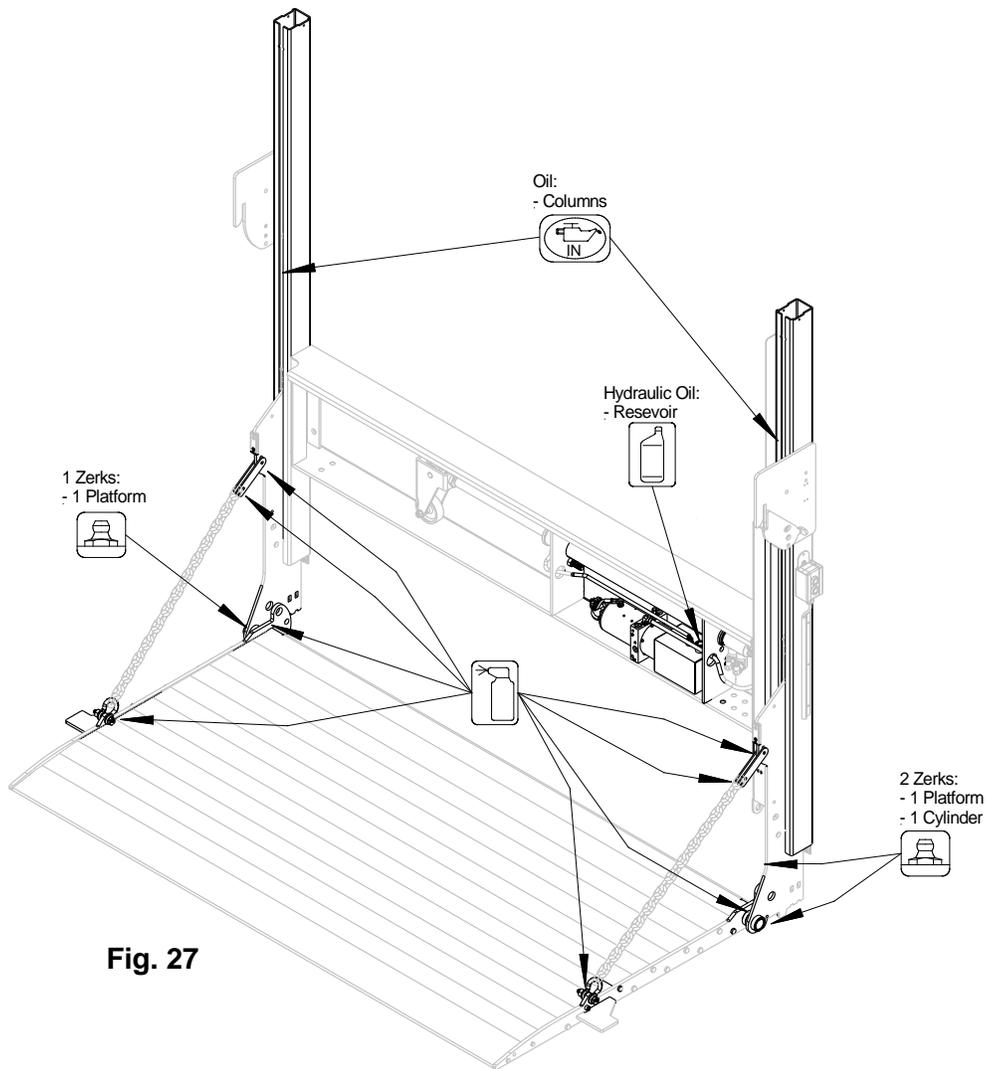


Fig. 27



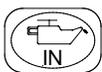
Grease fitting, 2 for deck, 2 for power closing.



Hydraulic oil level in the power pack tank 2" to the top with deck on the ground.
(see chart for recommended oils.)



Deck support chains and optional Cart Stops (use light penetrating oil)



Columns (optional) use motor oil or chain/bar oil. (Never use GREASE of any kind.)

16 Cycle Test

16.1 Cycle Test and Bleed the Hydraulic System.

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

No bleeding of hydraulic system is required. System is a self-bleeding system and is pre-bled from the factory. Test steps 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.

MANUAL CLOSING Operating Instructions

Steps:

1. Turn Power Switch On (If applicable): To activate power to the liftgate, turn the cab shutoff switch, **Fig.28.**

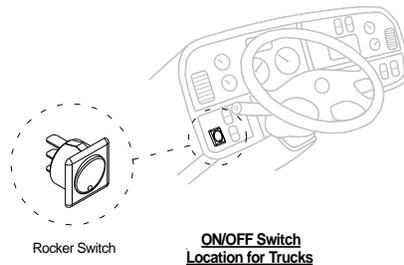


Fig. 28

2. Clear the platform sliding path by moving the storage safety latch manually. Hold the safety latch down manually with one hand and press the **Down** button on the control with the other hand until the platform locking ears clear the safety latch, **Fig. 29.** Release the safety latch back to its original place.

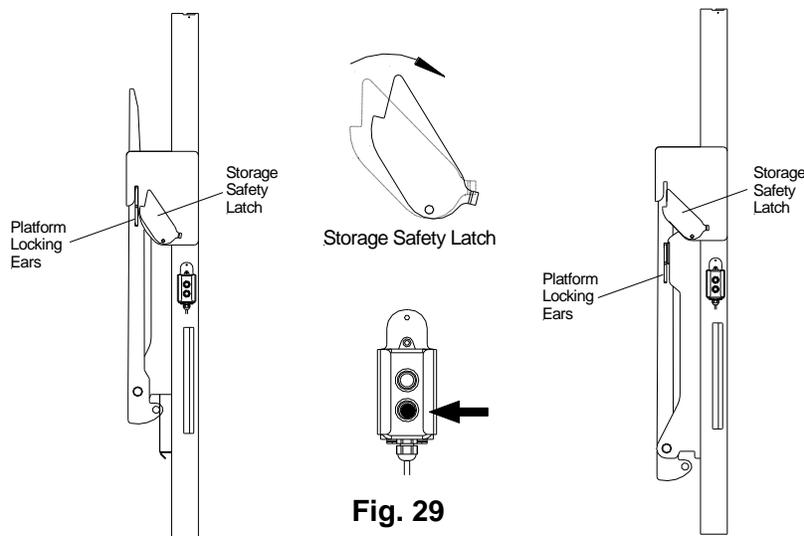


Fig. 29

3. Open the platform manually, **Fig. 30.** Never stand directly under the platform. Press the **Down** button to lower the platform completely to the ground, **Fig. 31.**

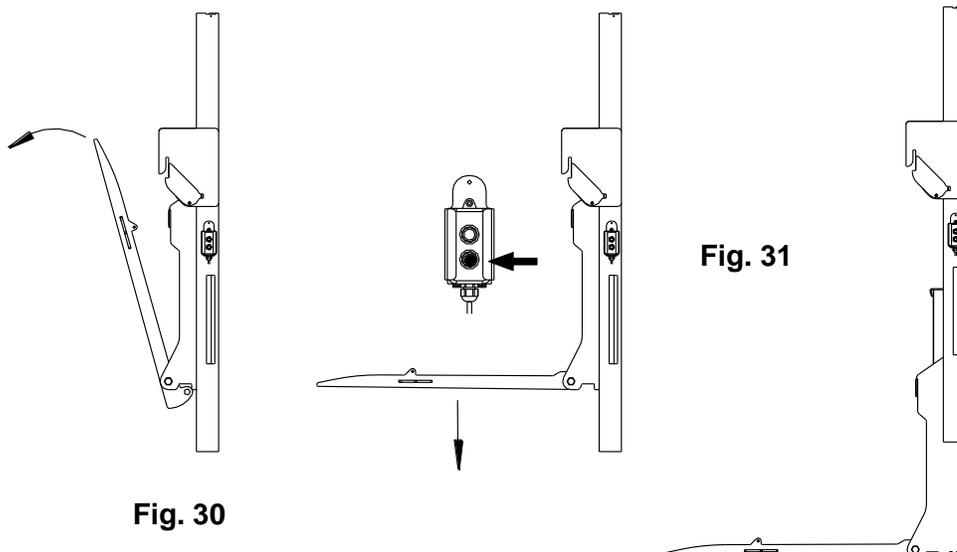
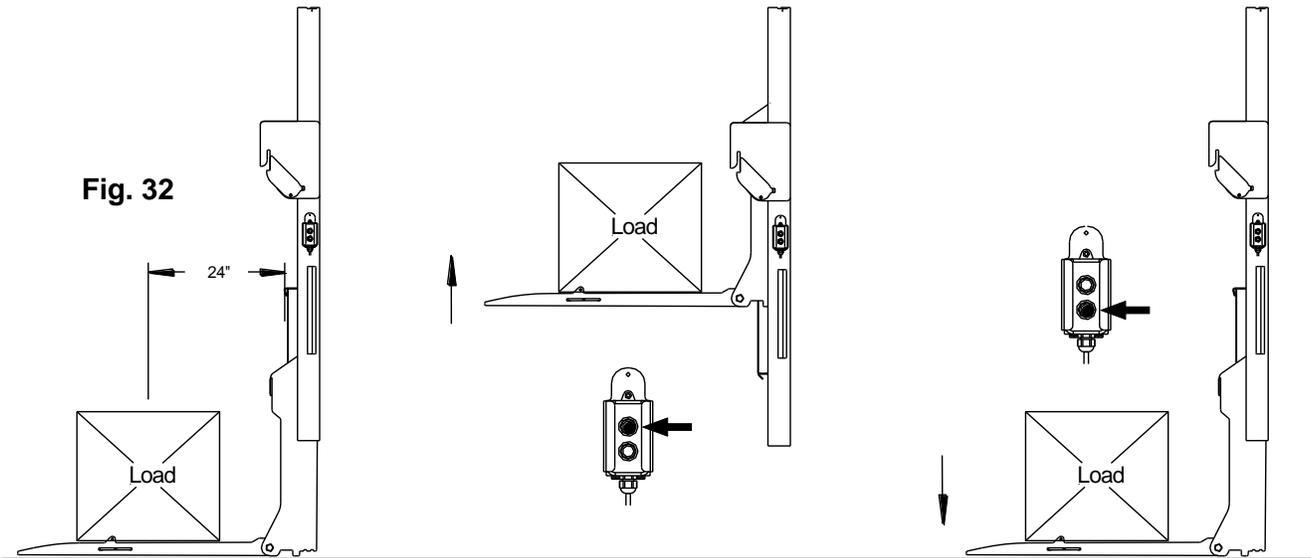


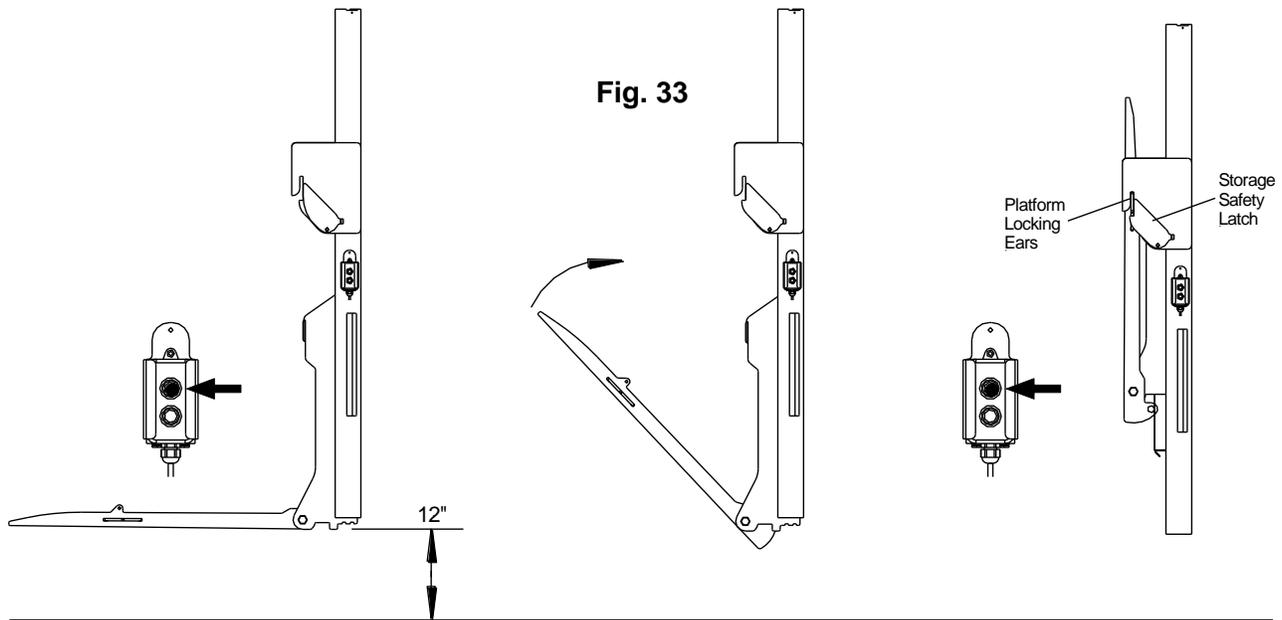
Fig. 30

Fig. 31

4.Center the load 24" from the front of the platform outward, **Fig. 32**. Use the **Up** button to raise the platform to bed level and the **Down** button to lower the platform down to ground level.



5.To store the platform, Press the **Up** button to raise the platform approximately 12" from the ground. Manually push the platform up parallel to the columns, **Fig. 33**. Press and hold the **Up** button to raise the platform until the platform locking ears are positioned in the locking plate and the storage safety lock is engaged.



POWER CLOSING Operating Instructions

Steps:

1. Turn Power Switch On (If applicable): To activate power to the liftgate, turn the cab shutoff switch, **Fig.34.**

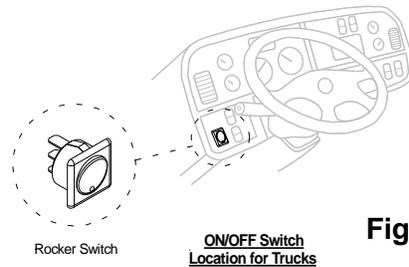


Fig. 34

2. Clear the platform sliding path by moving the storage safety latch manually. Hold the safety latch down manually with one hand and press the **Down** button on the control with the other hand until the platform locking ears clear the storage safety latch, **Fig. 35.** Release the safety latch back to its original place.

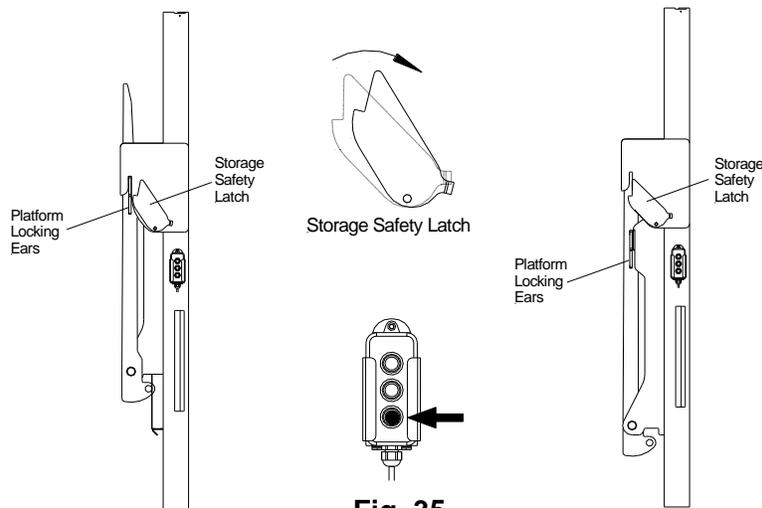


Fig. 35

3. Open the platform by pressing and holding the **Shift** and **Down** buttons simultaneously, **Fig. 36.** Never stand directly under the platform. Press and hold the **Down** button to lower the platform completely to the ground, **Fig. 37.**

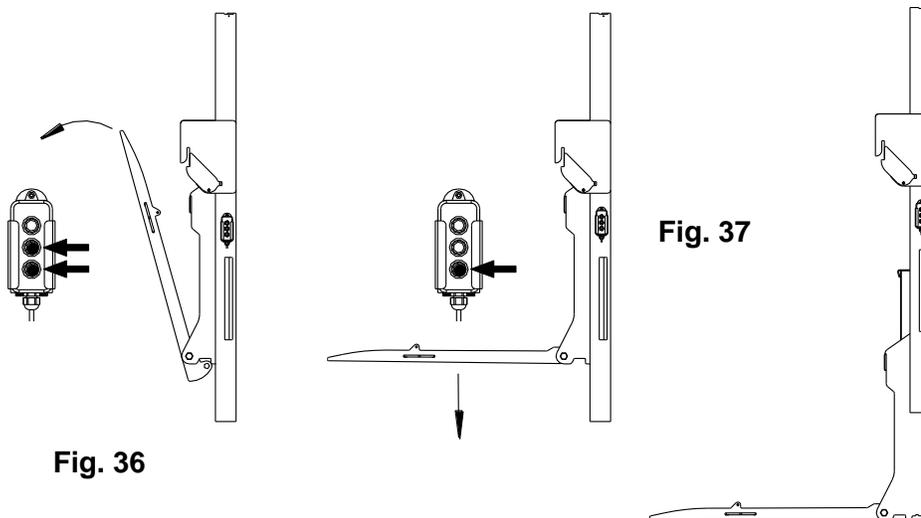
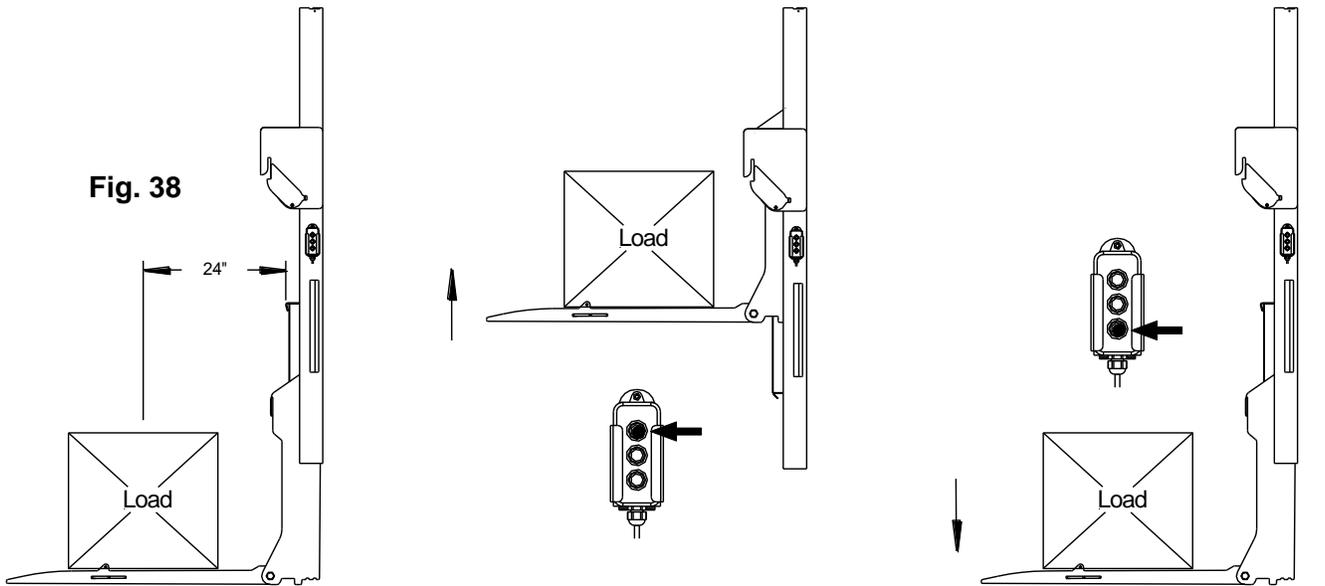


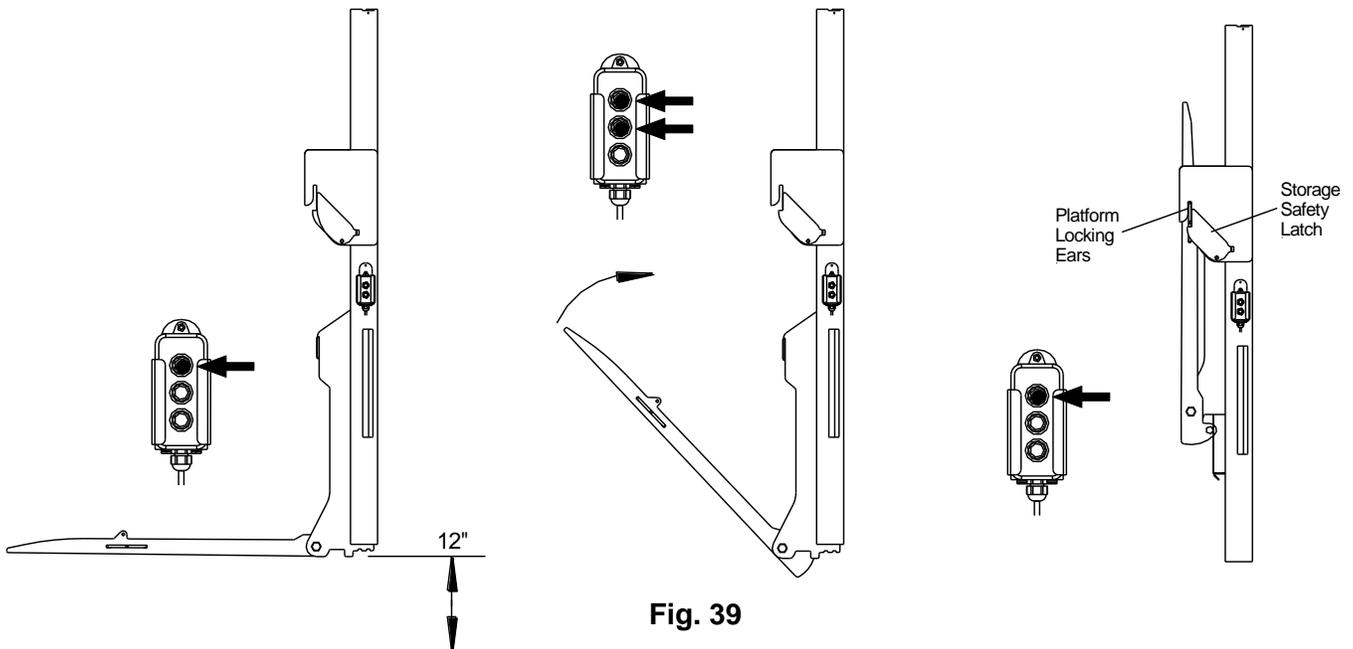
Fig. 36

Fig. 37

4. Center the load 24" from the front of the platform outward, **Fig. 38**. Use the **Up** button to raise the platform to bed level and the **Down** button to lower the platform down to ground.



5. To store the platform, Press the **Up** button to raise the platform approximately 12" from the ground. Press and hold the **Shift** and **Up** buttons simultaneously until the platform is parallel to the columns, **Fig. 39**. Press the **Up** button to raise the platform until the platform locking ears are positioned in the locking plate and the storage safety lock is engaged.



17 Decal Placement and Inspection



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 vehicle 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-OPERILM-MC	Operating Instructions Manual Close
AA	1	ATG-OPERILM-PC	Operating Instructions Power Close
B	1	ATG-SWILM-MC	Main Operating Switch Manual Close
BB	1	ATG-SWILM-PC	Main Operating Switch Power Close
C	2	ATG-XXXX	Max. Capacity
D	1	ATG-URGWA	Urgent warning: Elevating gate instructions
E	2	ATG-WLH	Warning: Liftgate can crush
F	2	ATG-PLAT	Warning: Always stand clear of platform area
G	1	ATG-RESET	Circuit Breaker Protection.
H	1	ATG-BKR	Circuit Breaker Reset (must be located at the circuit breaker)
I	1	ATG-ILMSTORAGE	Notice: Storage Latch
J	2	ATG-ILMGRNCLR	Notice: Ground Clearance
K	2	85-0713-100	Do Not Grease Columns
L	1	ATG-CAB	Liftgate Shut-Off (Place next to the Shut-Off switch, if applicable)
M	1	ATG-UD	Toggle Switch Decal, Up-Down (if applicable)
N	Roll		Conspicuity Tape (if applicable)

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>.

OPERATING INSTRUCTIONS
Read all Decals and Owner's Manual before operating liftgate.

ILM POWER CLOSING

SWITCH OPERATIONS

- "UP" switch raises platform from ground to load.
- "DOWN" switch lowers platform from load to ground.
- "SMPT" - "UP" raises platform from loading position to stored position.
- "SMPT" - "DOWN" lowers platform from stored position to loading position.

STORAGE AND TRAVEL POSITION

- Platform is closed and stored upright into the storage rack with hydraulic power.
- Platform is used on safety latches to prevent unauthorized use.
- Never release platform on to safety latch. This latch is for EMERGENCY situations ONLY.

PLATFORM FROM STORED POSITION TO LOADING POSITION

- Be certain all pinch points and areas around platform are clear before operating liftgate.
- With platform in the loading position, hold "SMPT" button & push "UP" button until platform reaches loading position.
- Hold safety latch to the open position and push "DOWN" button until platform clears storage latching system.
- With platform clear of latching system, hold "SMPT" button & push "DOWN" button to lower platform to loading position.

PLATFORM FROM LOADING POSITION TO STORED POSITION

- Be certain all pinch points and areas around platform are clear before operating liftgate.
- With platform in the loading position, hold "SMPT" button & push "UP" button until platform reaches "over" position.
- With platform raised up and latching system open, push "UP" button until platform is powered tight into storage latch.
- Never release platform on to safety latch. This latch is for EMERGENCY situations ONLY.

Decal - A

OPERATING INSTRUCTIONS
Read all Decals and Owner's Manual before operating liftgate.

ILM MANUAL CLOSING

SWITCH OPERATIONS

- "UP" switch raises platform from ground to load.
- "DOWN" switch lowers platform from load to ground.

STORAGE AND TRAVEL POSITION

- Platform is closed and stored upright into the storage rack with hydraulic power.
- Platform is used on safety latches to prevent unauthorized use.
- Never release platform on to safety latch. This latch is for EMERGENCY situations ONLY.

PLATFORM FROM STORED POSITION TO LOADING POSITION

- Be certain all pinch points and areas around platform are clear before operating liftgate.
- With platform in the loading position, hold safety latch to the open position and push "DOWN" button until platform clears storage latching system.
- With platform clear of latching system, and positioned to firmly grasp ramp end, lift platform toward ground.

PLATFORM FROM LOADING POSITION TO STORED POSITION

- Be certain all pinch points and areas around platform are clear before operating liftgate.
- With platform in the loading position, and positioned full above knee height, firmly grasp ramp end and pull up closing until platform reaches "over" position.
- With platform raised up and latching system open, push "UP" button until platform is powered tight into storage latch.
- Never release platform on to safety latch. This latch is for EMERGENCY situations ONLY.

Decal - AA

OPERATING INSTRUCTIONS
Read all Decals and Owner's Manual before operating liftgate.

FOR POWER DOWN PUSH THE DOWN BUTTON TWICE WITHIN 3 SECONDS

Decal - B

OPERATING INSTRUCTIONS
Read all Decals and Owner's Manual before operating liftgate.

Decal - BB

CAUTION

Maximum Load Capacity

xxxx pounds.

Center load on platform to avoid personal or property damage.

ATG-4000

Decal - C

NOTICE

ELECTRICAL SYSTEM IS PROTECTED BY A RESETTABLE CIRCUIT BREAKER. SEE OWNER'S MANUAL AND DECAL LOCATED AT THE BATTERY.

ATG-RESET

Decal - G

URGENT WARNING

BEFORE OPERATING LIFT, BE SURE YOU UNDERSTAND:

- Improper operation of this lift gate can result in serious personal injury. Do not operate unless you have been properly instructed, have read, and are familiar with, the operating instructions. If you do not have a copy of the instructions please obtain them from your employer, distributor or lessee, as appropriate, before you attempt to operate the lift gate.
- Be certain the vehicle is properly and securely braked before using the liftgate.
- Always inspect this lift gate for maintenance or damage before using it. If there are signs of improper maintenance, damage to vital part, or a slippery platform surface, do not use the lift gate. Do not attempt your own repairs, unless you are specifically trained.
- Do not overload. See the Mfg. Literature and/or Rating Label on the unit for the rated load. Remember that this limit applies to both raising and lowering operations.
- Each load should be placed in a stable position as near as possible to the center of the platform.
- Never allow yourself, a helper, or a bystander to stand in a position where an unstable load might fall on them. Do not allow any part of your or your helper's body to be placed under, through, or around any portion of the moving lift gate, or in a position that would trap them between any parts when the lift gate is operated.
- This lift gate is intended for loading and unloading of cargo only. Do not use this lift gate for anything but it's intended use. The lift gate is not equipped with a back up system to prevent falling in the event of a failure.

ATG-URD0001

Decal - D

WARNING

LIFTGATE HAZARDS CAN RESULT IN CRUSHING OR FALLING

KEEP HANDS AND FEET CLEAR OF PINCH POINTS

IF RIDING LIFTGATE, MAKE SURE LOAD IS STABLE AND FOOTING IS SOLID

READ AND UNDERSTAND ALL INSTRUCTIONS AND WARNINGS BEFORE USE.

Decal - E

NOTICE

ELECTRICAL SYSTEM PROTECTED BY RESETTABLE CIRCUIT BREAKER

TO RESET - PUSH RESET TAB IN

ATG-RBKR

Decal - H

WARNING

ALWAYS STAND CLEAR OF PLATFORM AREA

ATG-PLA

Decal - F

NOTICE

Storage Latch Power UP Tight for Storage & Transit

Decal - I

NOTICE

Cutting of RAILS for GROUND CLEARANCE

Cut bottom of RAILS for 18" of ground clearance.

INSIDE surfaces to be chamfered to not cause DAMAGE to slide bearings as they extend below bottom of cut Rail.

See ILM plus installation Manual for details.

ATG-ILMGRDCLR

Decal - J

NOTICE

DO NOT apply grease to columns

Refer to the Owner's Manual for proper lubrication procedures, or contact Customer Support at 888-774-5844

P/N 85-0713-100

Decal - K

NOTICE

UP

DOWN

ATG-UD

Decal - M

NOTICE

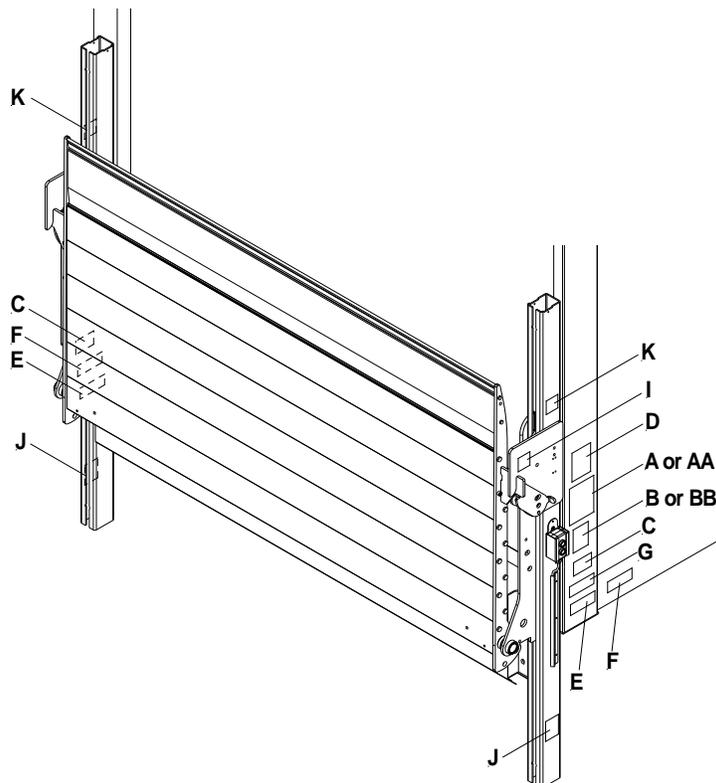
LIFT GATE SHUT-OFF TO BE TURNED OFF WHEN LIFT IS NOT IN USE

ATG-CAB

Decal - L



Decal - N



18 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 bar and shipping feet 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 to 1" from top when platform is opened and 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.

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.
- Lights wired properly and operate per DOT, State, and Federal requirements.
- 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 powers UP and locks hydraulically in 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 rests on the ground evenly when lowered completely.
- Platform opens and closes properly at correct speed (2 to 4 inches per second) and makes contact with pads in quiet manner.
- The liftgate serial number and model number are documented on the inside of the front cover of the Owners Manual in the space provided.
- Owners Manual is in the vehicle's glove box.
- Supervisor has demonstrated the instructions in the Owners Manual to the customer/driver upon delivery.
- Gate is properly lubricated as explained in Section 15.

Inspection Information (Please Print):

Name: _____ Signature: _____

Completed by: _____ Title: _____ Date: _____

Liftgate Model: _____ Liftgate Serial Number: _____

