

PALFINGER



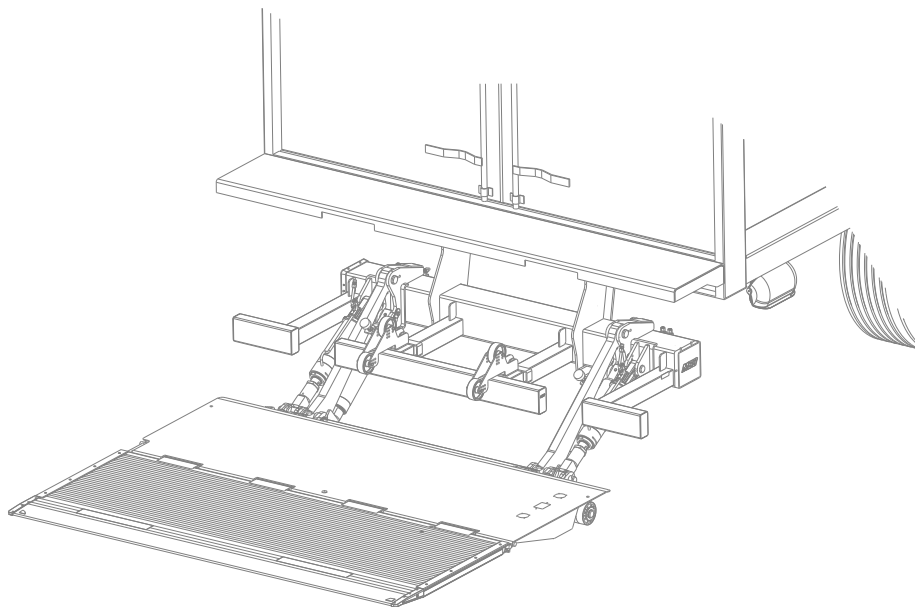
LIFTGATES

ILF 33 – 3300 lbs. Capacity

ILF 44 – 4400 lbs. Capacity

ILF 55 – 5500 lbs. Capacity

INSTALLATION MANUAL & CHECK-OFF SHEET



Palfinger Liftgates ILF 33/44/55 Installation Manual
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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 v1.1

- Updated Section 7.8: Foot control installation
- Updated Section 8.2: Decal placement

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”

NOTICE

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

- Review lift gate invoice, packing slip, and installation drawing to assure delivery of correct gate and complete delivery of accessories and optional equipment.
- 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.
- 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.
- Check the battery voltage before installation. Flooded lead acid batteries should measure 12.6V and AGM batteries should measure 12.8V. If batteries are not at these voltages, fully charge before installation

⚠ 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 ILF liftgate. It also provides safety information and simple preventive maintenance tips.

This manual is not intended for use as a repair or troubleshooting guide. Repairs should be

NOTICE

performed by a Palfinger Liftgates Authorized Service Center.

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

- 1) Refer to the serial number tag on the liftgate (Top of Mount Frame).
- 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 at www.palfinger.com

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

NOTICE

3.1 Important Dimensions

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

- Installing a gate at or close to minimum bed height normally results in a gate that will NOT open and close from stored position if the minimum floor height is exceeded when truck is loaded.
- Ensure trailer body does not interfere with installation or operation of the ILF liftgate series.
- It is not recommended to cut, torch, or remove support materials from trailer. Removing gussets, stiffeners, light rings, or other such support structures may VOID your trailer warranty.
- Call technical support before starting the installation if any questions or concerns arise on mounting dimensions or procedures.

Mounting Notes:



Read and clearly understand manual BEFORE beginning ANY work.

The basic rule of PALFINGER Liftgates's ILF installation is to lift mount frame to achieve MAXIMUM ground clearance WITHOUT exceeding Min "F" dimension.

3.2 Recommended Tools

Metric Wrench Set	Basic Screwdrivers	Pliers	Wire Crimp Pliers
Digital Multimeter	Snap Ring Pliers	Hammer	Metric Allen Set 1.5mm-10mm
½" Impact & Sockets	Sm. 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
Cutting Torch or Equiv.	3/8 Drill Motor	Pry Bar	Heat Gun or Equiv.
Min. 250 Amp Welder			

4 Dimension Sheet



Chassis Dimension Sheet

Trailer Chassis Dimension Sheet – 90-9813-002

Contact Information

Quote#/SO# _____
 Company _____
 Phone (____) ____-____ Fax (____) ____-____
 Email _____@_____

Chassis Information

Type of Body (check one)	
Van	<input type="checkbox"/>
Flatbed	<input type="checkbox"/>
Refer	<input type="checkbox"/>

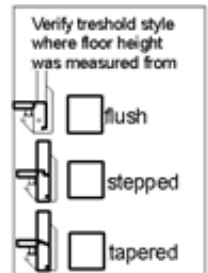
Type of Rear door (check one)	
Roll-up	<input type="checkbox"/>
Swing	<input type="checkbox"/>
Flip-up	<input type="checkbox"/>

VIN #: _____ Trailer Make: _____ GVWR _____ Length _____
 Liftgate Model: _____ Liftgate Capacity: _____
 Liftgate platform dimensions: _____

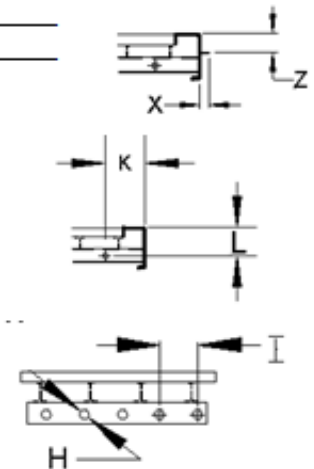
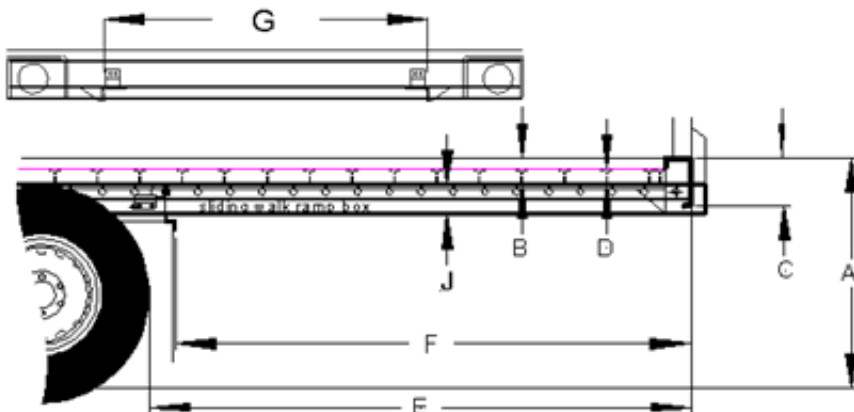
- A = Bed height: top of trailer floor to level ground (with air bags up)..... _____
- B = Top of floor to bottom of trailer cross member..... _____
- C = rear sill height: top of floor to bottom of buck plate..... _____
- D = Crossmember height..... _____
- E = Tire to end of body..... _____
- F = Bogie to end of body _____ Sliding suspension? Y / N

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 cross members to bottom of sliding ramp box..... _____
- 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 hole _____
- X = Eyebrow depth..... _____
- Z = Top of floor, where the liftgate platform will meet to the top of the eyebrow..... _____



if Stepped Sill:
Fill out the Sill-Dimension-Sheet





Chassis Dimension Sheet
Truck Chassis Dimension Sheet – 90-9813-003

Contact Information

Quote#/SO#: _____
 Company: _____
 Phone: (____) ____ - ____ Fax: (____) ____ - ____
 Email: _____@_____

Chassis Information

Type of Body (check one)	
Van	<input type="checkbox"/>
Flatbed	<input type="checkbox"/>
Refer	<input type="checkbox"/>

Type of Rear door (check one)	
Roll-up	<input type="checkbox"/>
Swing	<input type="checkbox"/>
Flip-up	<input type="checkbox"/>

VIN #: _____ Truck Make: _____ GVWR _____

Liftgate Model: _____ Liftgate Capacity: _____

Liftgate platform dimensions: _____

A = Bed height..... Loaded Bed Height.....

B = Top of floor to bottom of frame.....

C = Rear sill height.....

D = Spring hanger to end of body.....

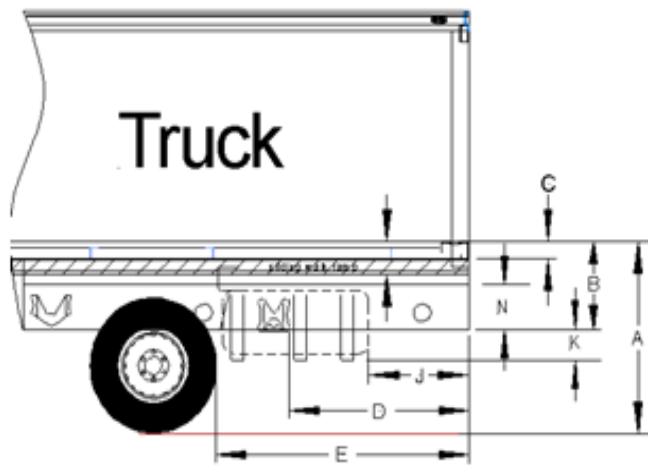
E = Tire to end of body.....

J = Gas tank to end of body (if applicable).....

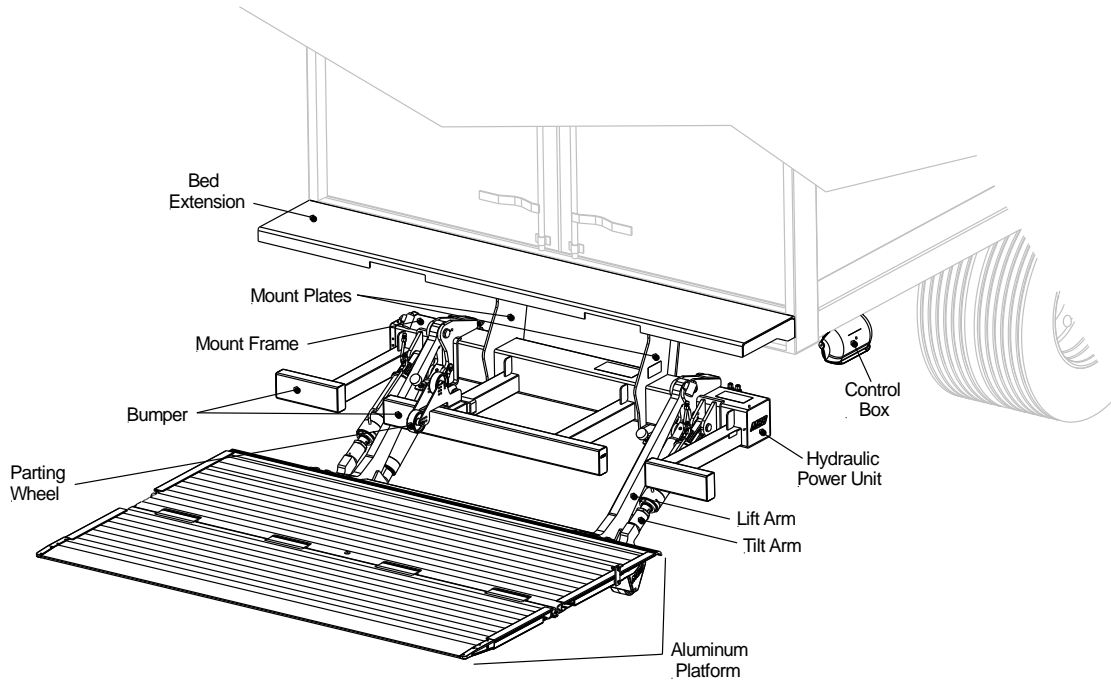
K = Bottom of frame to bottom of gas tank (if applicable).....

H = Top of floor to bottom of sliding walk ramp (if applicable).....

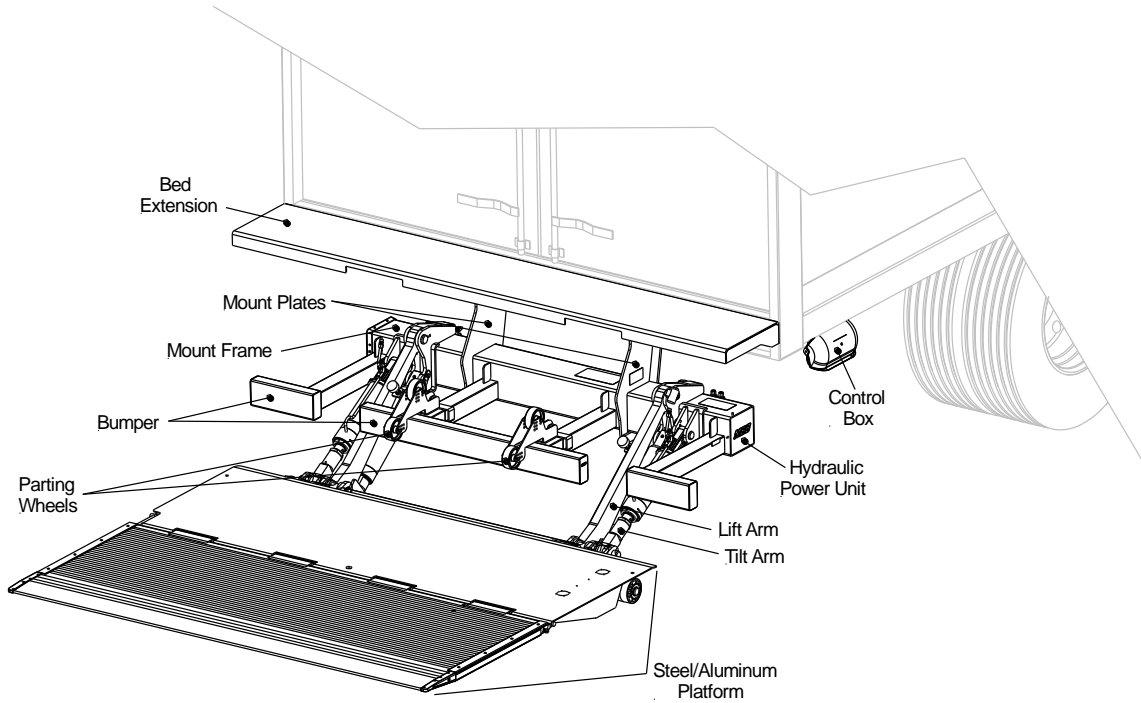
N = Frame Thickness: Top of Frame to bottom of frame.....



5 General Overview of ILF Liftgate

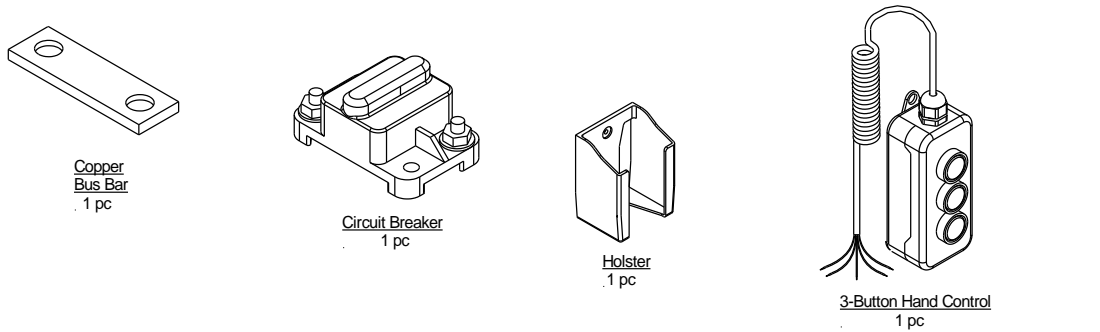
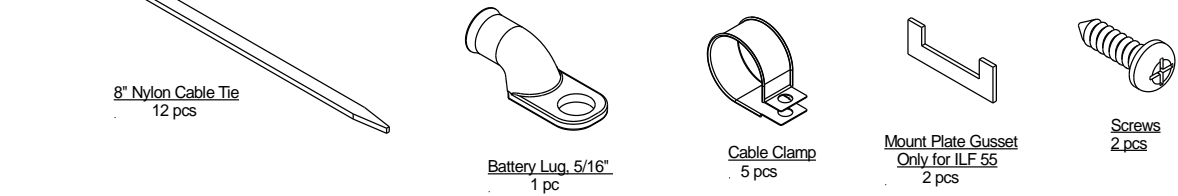
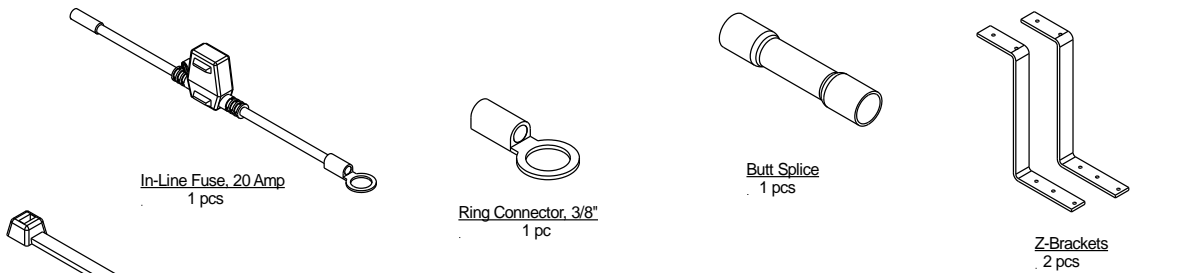
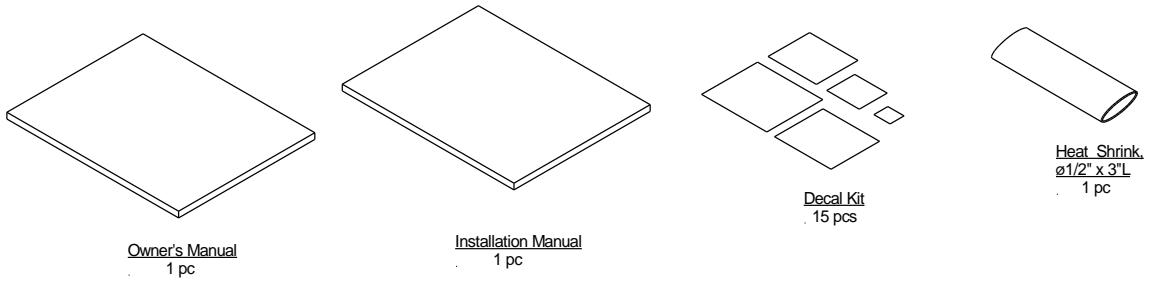


ILF 33



ILF 44/55

Boxed Items Included with Liftgate for Installation



6 Chassis and Body Preparation

6.1 Installation Dimensions

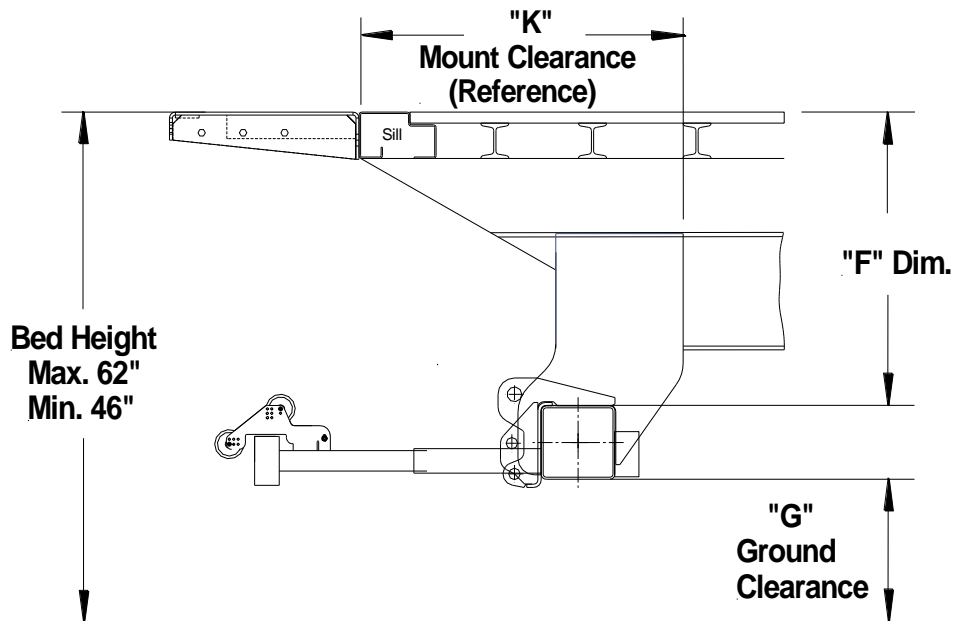
IMPORTANT:



Always use the smallest F-dim possible for best ground clearance
(Don't exceed max. ground clearance)



Minimum bed height is when truck/trailer is loaded to MAX GVW



Bed Height (Loaded)	F Dim.	G Dim.	K Dim. (Ref.)
62"	33"	20"	29"
58"	32"	19"	30"
56"	31"	18"	31"
54"	30"	17"	31.5"
52"	29"	16"	32.5"
50"	28"	15"	33"
48"	27"	14"	34"
46"	26"	13"	35"

6.2 Chassis Cut Out ILF 33



These dimensions are starting points due to variation of installations. The final dimensions may vary depending on actual installation F-Dim.

- Determine the correct frame cut out according to your specific bed height. With long overhangs it is even more important to maintain min F = Max ground clearance, **Fig. 1**.

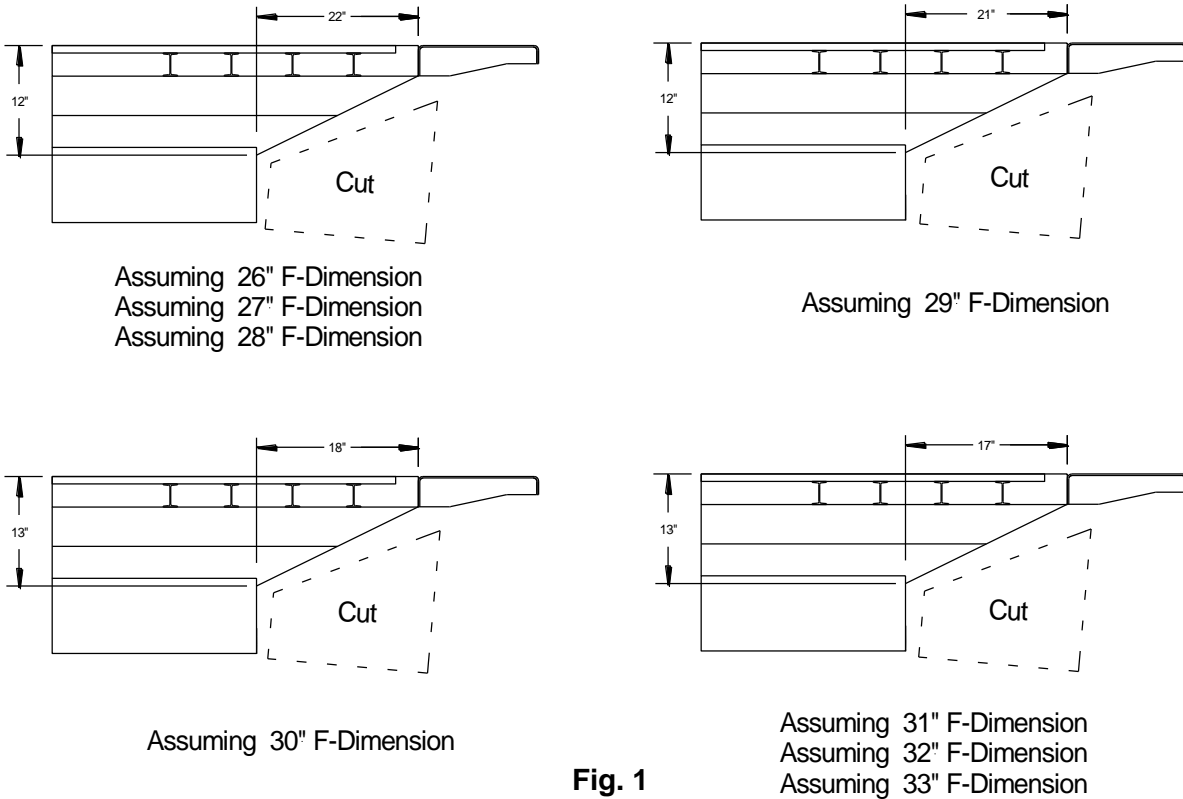


Fig. 1

- If the vehicles sill measures more than 4" in height, add a spacer to the rear of the vehicle, **Fig. 2**. The spacer will shift the bed extension back allowing the platform to clear the bottom of the sill when it is in stored position. Reference cutout dimensions from Step 1 to determine the chassis cutout.

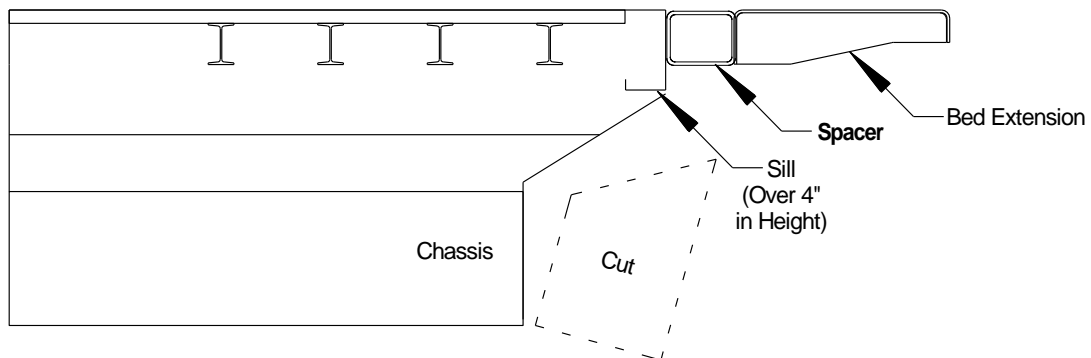


Fig. 2

6.2.1 Installation Dimensions ILF 44 and ILF 55

IMPORTANT:

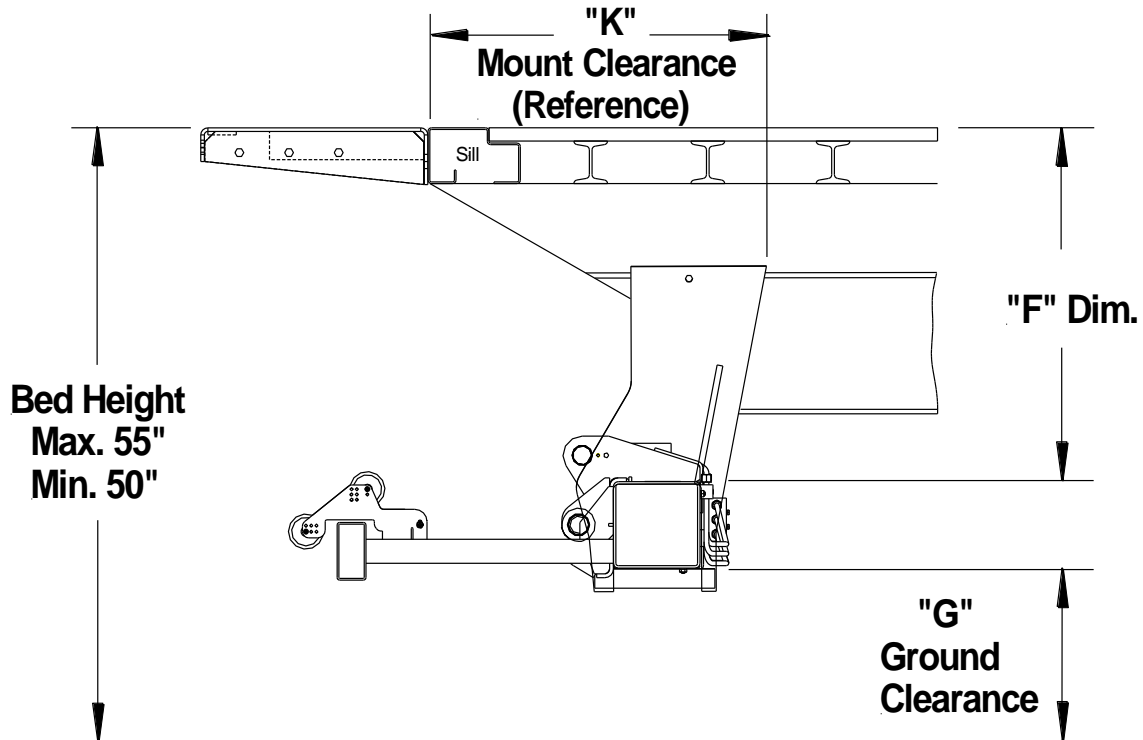


Always use the smallest F-dim possible for best ground clearance

(Don't exceed max. ground clearance)



Minimum bed height is when truck/trailer is loaded to MAX GVW



ILF 44/55 Mounting Dimension Table			
Bed Height (Loaded)	F Dim.	G Dim.	K Dim. (Ref.)
55"	28"	19.5"	26"
54"-53"	27"	19"	27"
52"-51"	26"	18"	28"
50"	25"	17"	29"

6.3 Chassis Cut Out ILF 44/55



These dimensions are starting points due to variation in installations. The final dimensions may vary depending on actual installation F-Dim.

- Determine the correct frame cut out according to your specific bed height. With long overhangs it is even more important to maintain min F = Max ground clearance, **Fig. 3**.

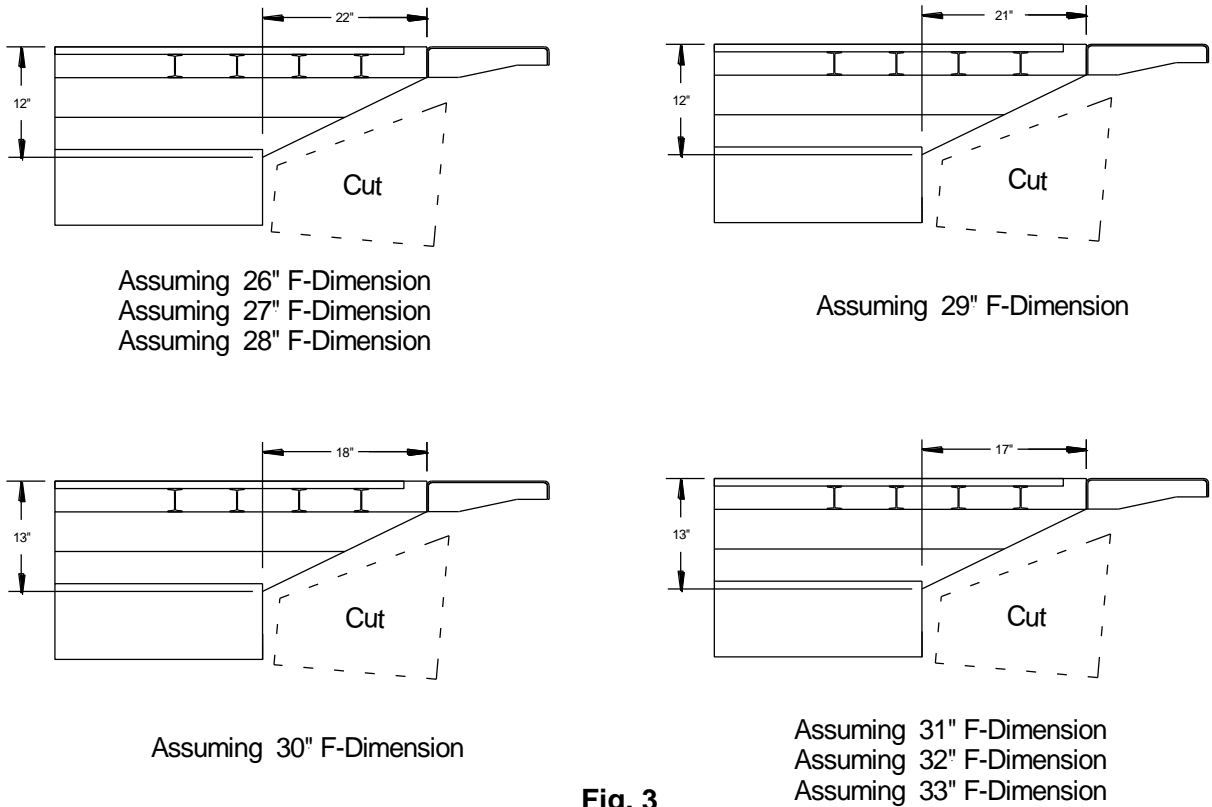


Fig. 3

- If the vehicles sill measures more than 4" in height, add a spacer to the rear of the vehicle, **Fig. 4**. The spacer will shift the bed extension back allowing the platform to clear the bottom of the sill when it is in stored position. Reference cutout dimensions from Step 1 to determine the chassis cutout.

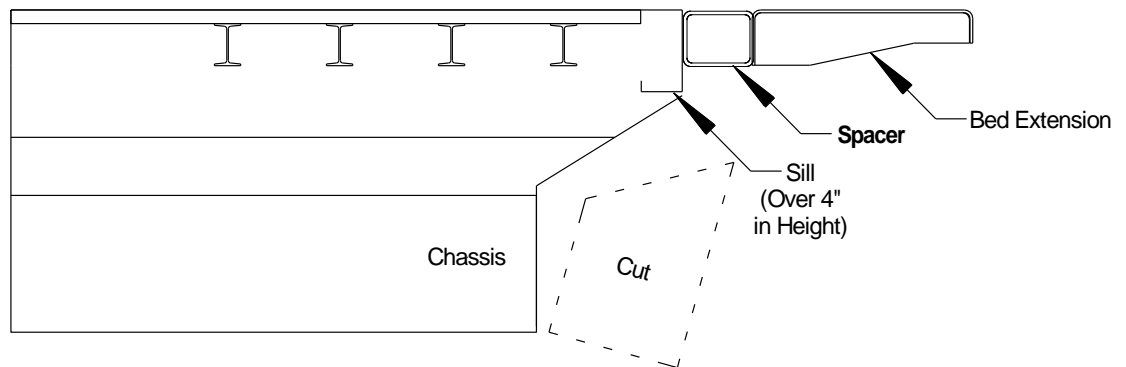


Fig. 4

6.4 Frame Cap

Capping the frame cut outs is recommended to help protect the liftgates platform from being damaged, **Fig. 5.**

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

1. Suggested components: 2"x3"x3/16" angle, and 1/4" flat bar stock. Cut material to size.

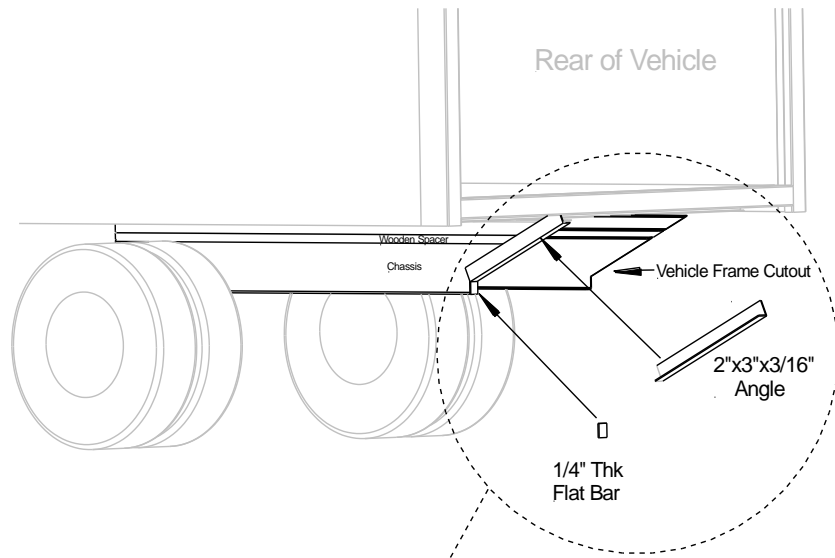
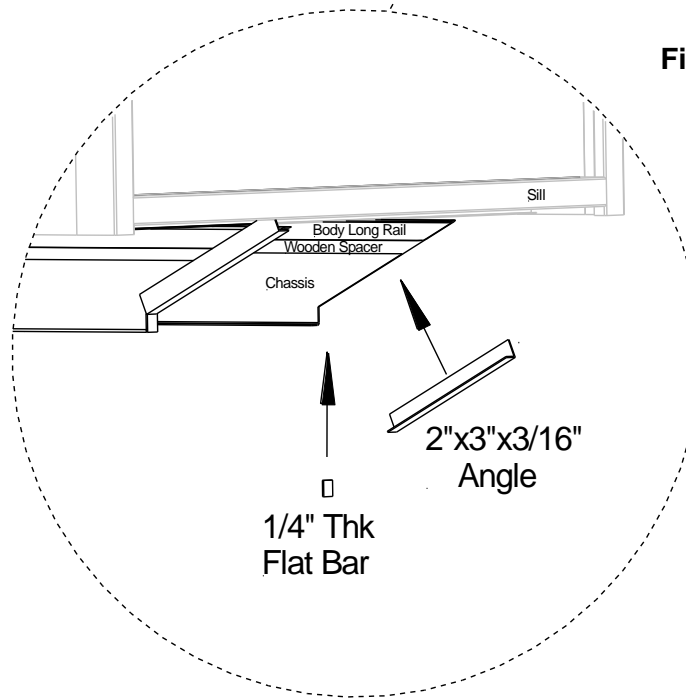


Fig. 5



Frame Cap

NOTES

6.5 Bed Extension Installation

NOTICE

NOTE: Standard bed extension measures 102" wide, for 96" vehicles, trim each end, Fig. 6.

1. Center bed extension to vehicle body. Lay channels flush with the bed extension, sill, and floor. If tack welding the channels, tack weld channels or angles to bed extension and sill. If not tack welding the channels, use proper weights and clamps to maintain channels in a flush position. Keep the channels in place as they will serve to level the platform during installation, **Fig. 7.**
2. Verify bed extension is centered on body and flush with channel.
3. Weld 3/16" x 4" welds on approximately 10" centers and alternate welds on top and bottom of bed extension. **Do not weld across the corner posts, Fig. 8.**

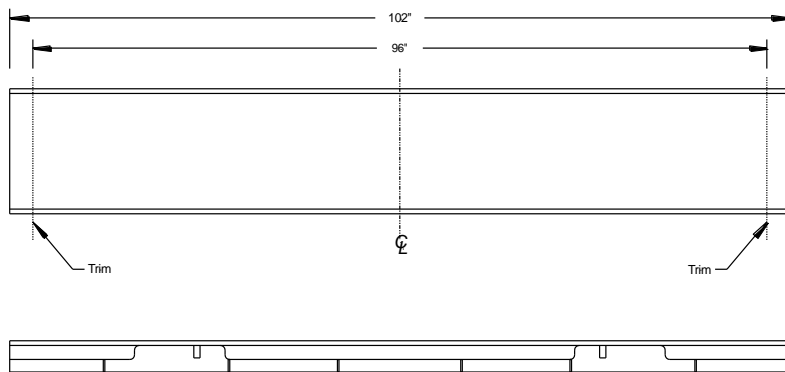


Fig. 6

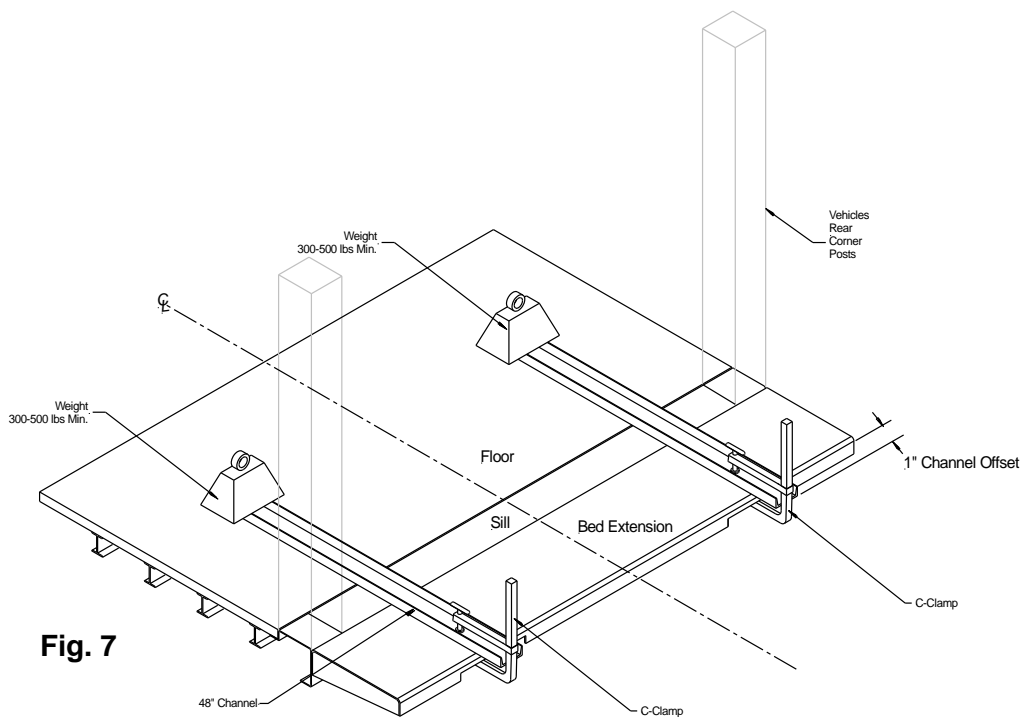
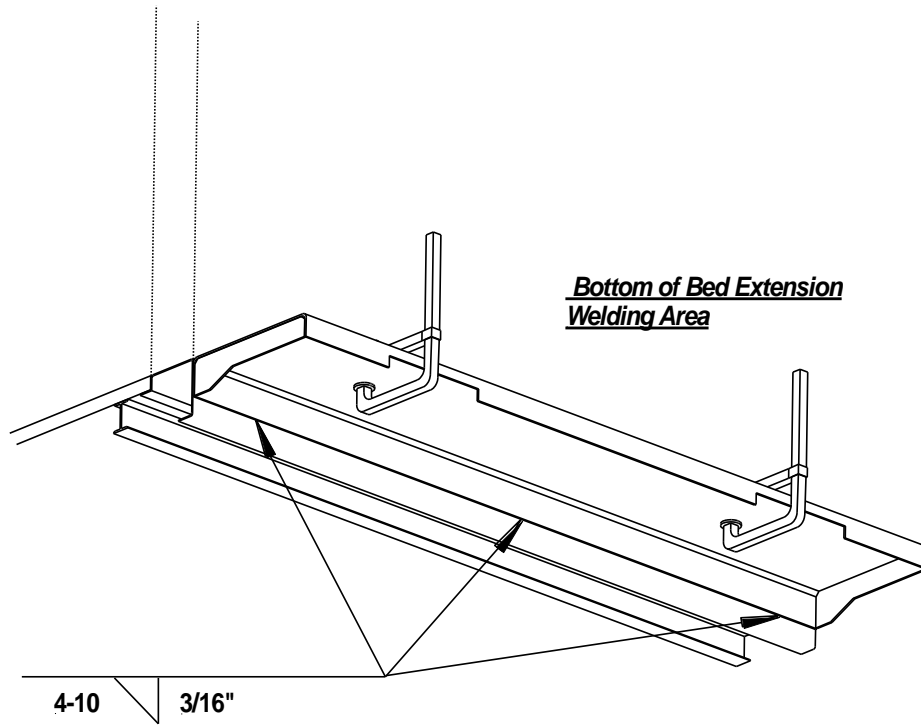
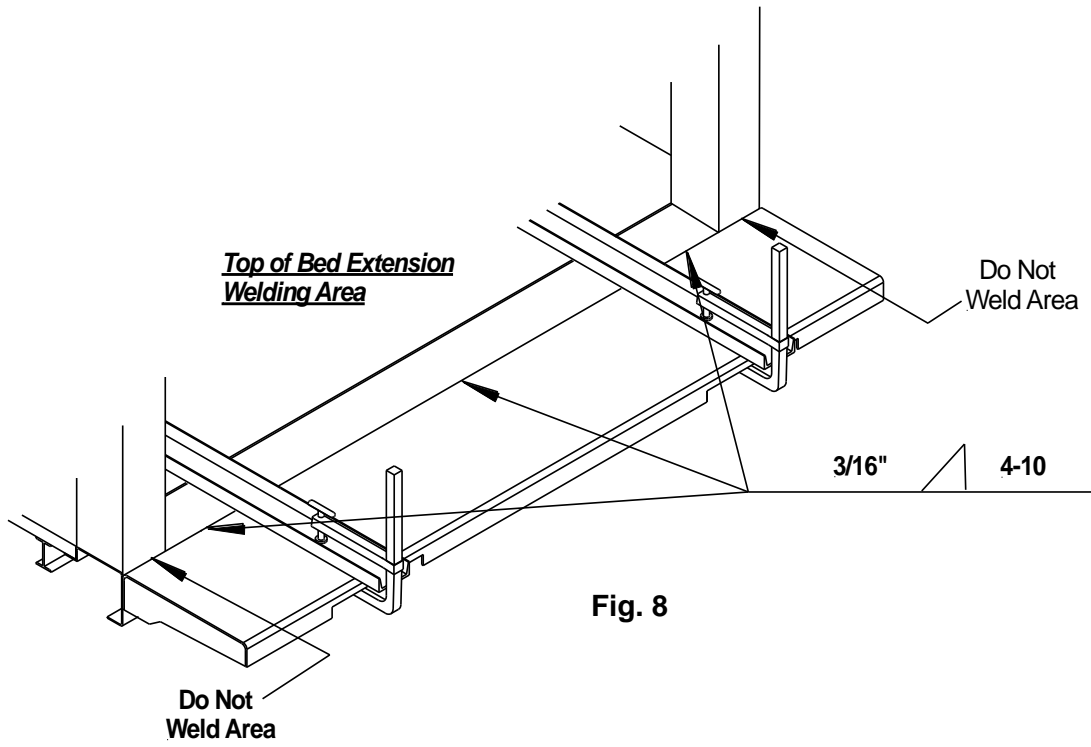


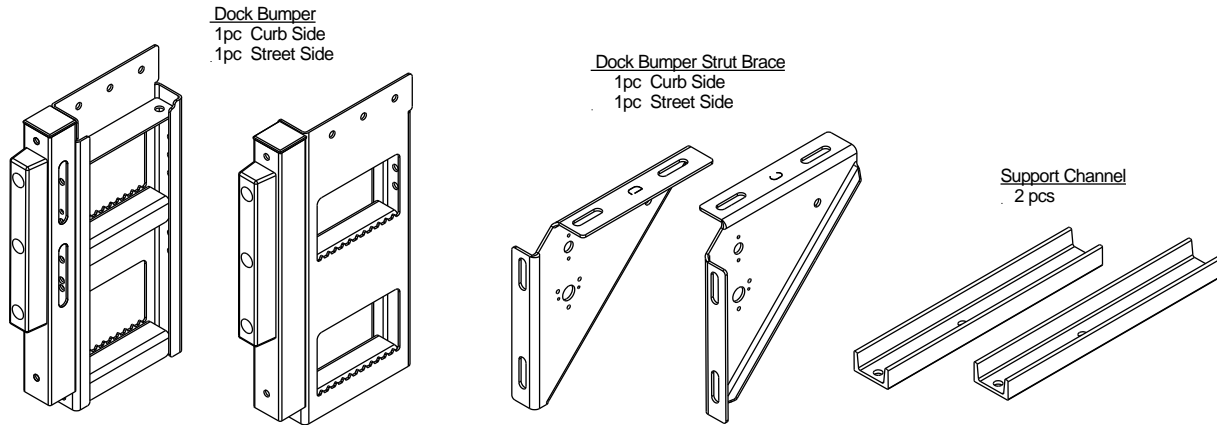
Fig. 7

Bed Extension Installation



Weld-On Bed Extension
Welding Locations

6.6 Dock Bumper Installation – Weld On (Optional)



Steps:

1. Dock Bumper:

Position the dock bumper against the bed extension; make sure everything is squared vertically and horizontally. Clamp dock bumpers onto the bed extension. Remove the plastic cap from the top of the extension channel prior to welding. Tack weld the bumper to the bed extension, **Fig. 9**.

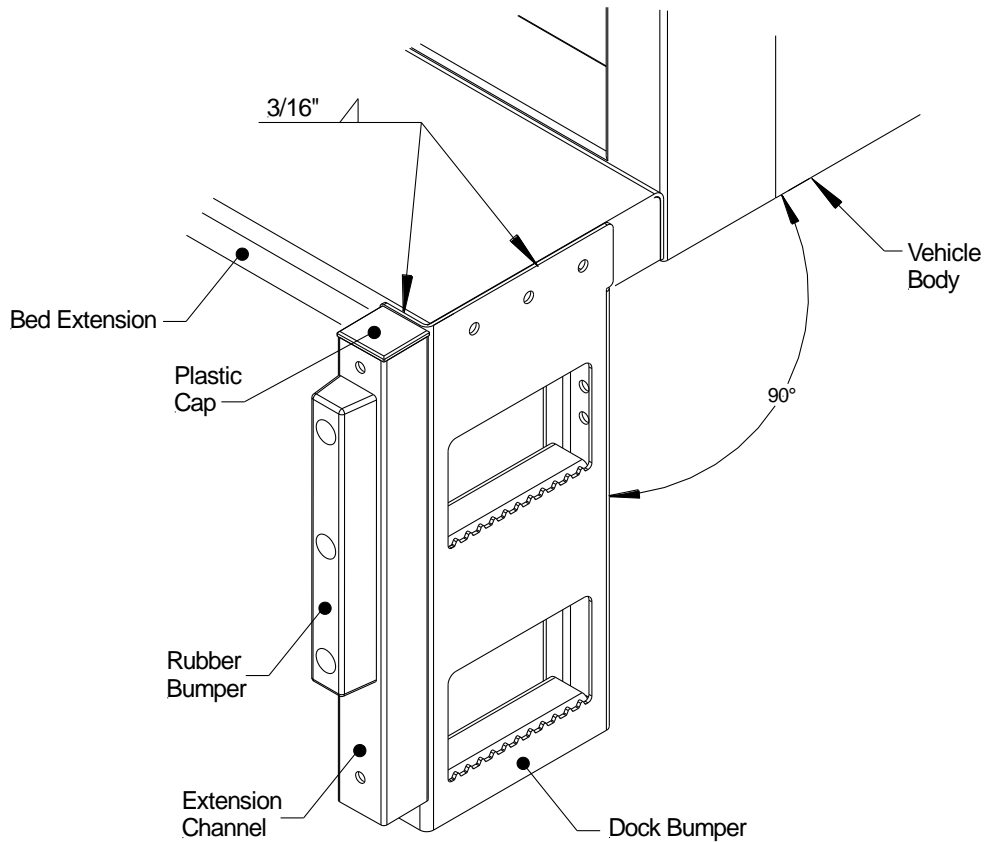


Fig. 9

2. Dock Bumper Struts:

Before welding the struts and support channels, make sure the channels are properly adjusted for optimum installation. Position the support channels perpendicular to a minimum of three of the vehicles cross members, move the channel horizontally for adjust if necessary, **Fig. 10**. Use clamps or similar devices to hold the support channels in place. Next position the strut against the dock bumper and support channel, clamp in place. Finally, weld all components 100% as shown.

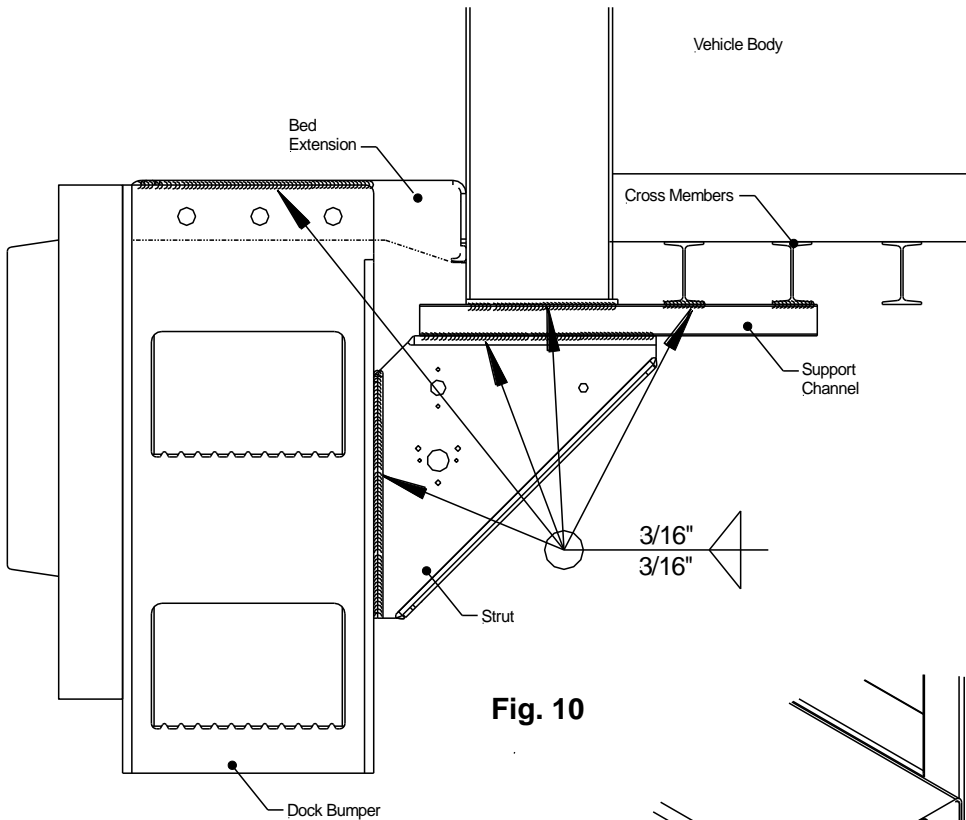
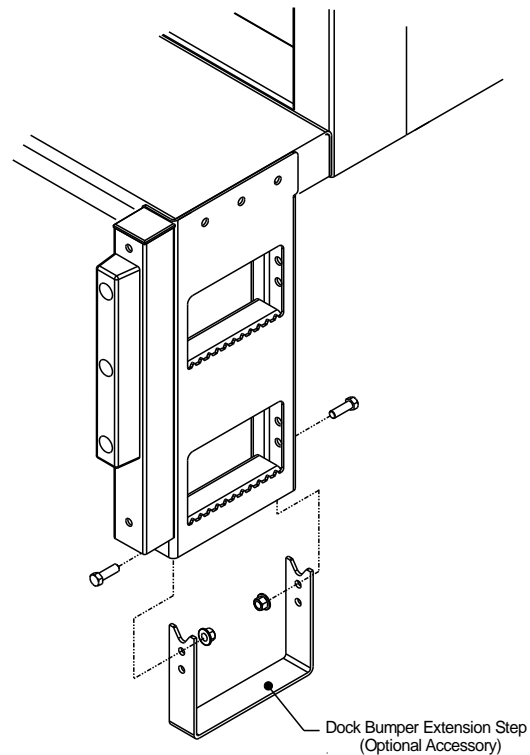


Fig. 10



7 Liftgate Installation (Truck)

⚠ WARNING

Warning: Never work or place yourself under unsupported platform

CAUTION

High heat and spatter from welding can damage components. Make sure components such as hoses, lines, and wires are clear of or protected from heat and spatter caused by welding.

Prior to beginning installation, assure the vehicle is on a leveled surface.

NOTE: The installation process for an ILF 33, ILF 44, and ILF 55 is the same for all gates. For illustration purposes, an ILF 44 is shown.



Protect all wires and cable from dropping slag or splatter when welding mount plates.



Make sure to have power pack pulled out when welding the tube and hoses and cables are away from walls..



Do no apply a load to the platform at anytime during installation.

7.1 Installation

1. Hoist Platform: Unfold platform manually and clamp forklift forks, overhead crane or equivalent to platform. Make sure the platform is secured. Always maintain the mount tube centered to the vehicles body, **Fig. 11**.

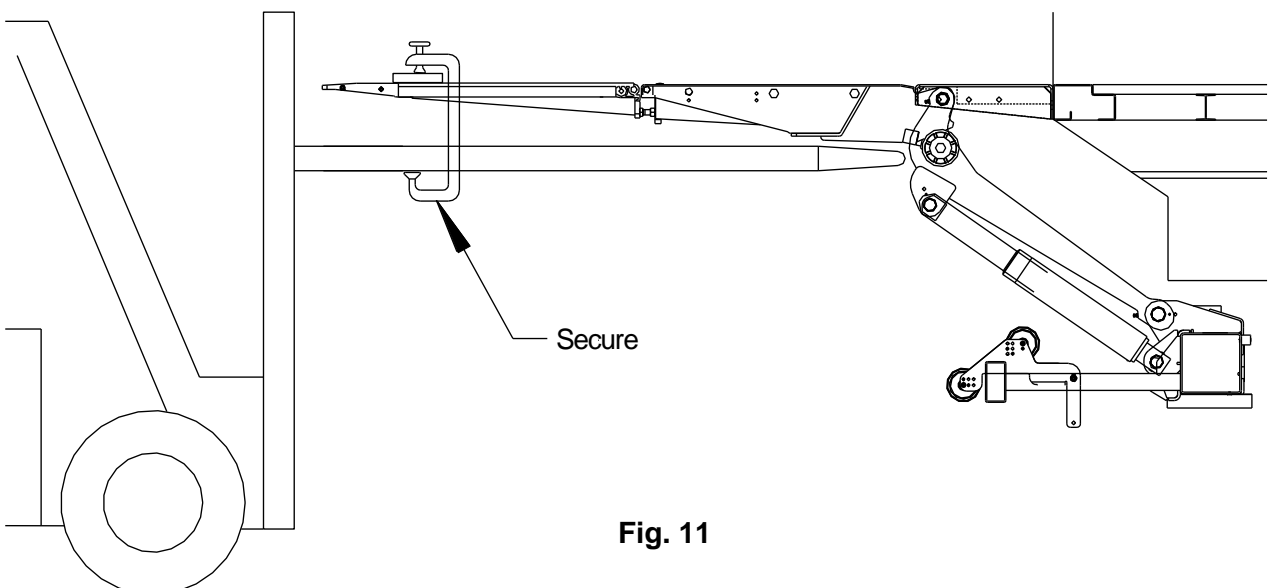


Fig. 11

2. **Raise Platform:** Clamp 3" channels over the bed extension and align the front edge of the platform, to the back edge of the bed extension, **Fig. 12**. Maintain the top of the platform flush to the bed extension (channel).

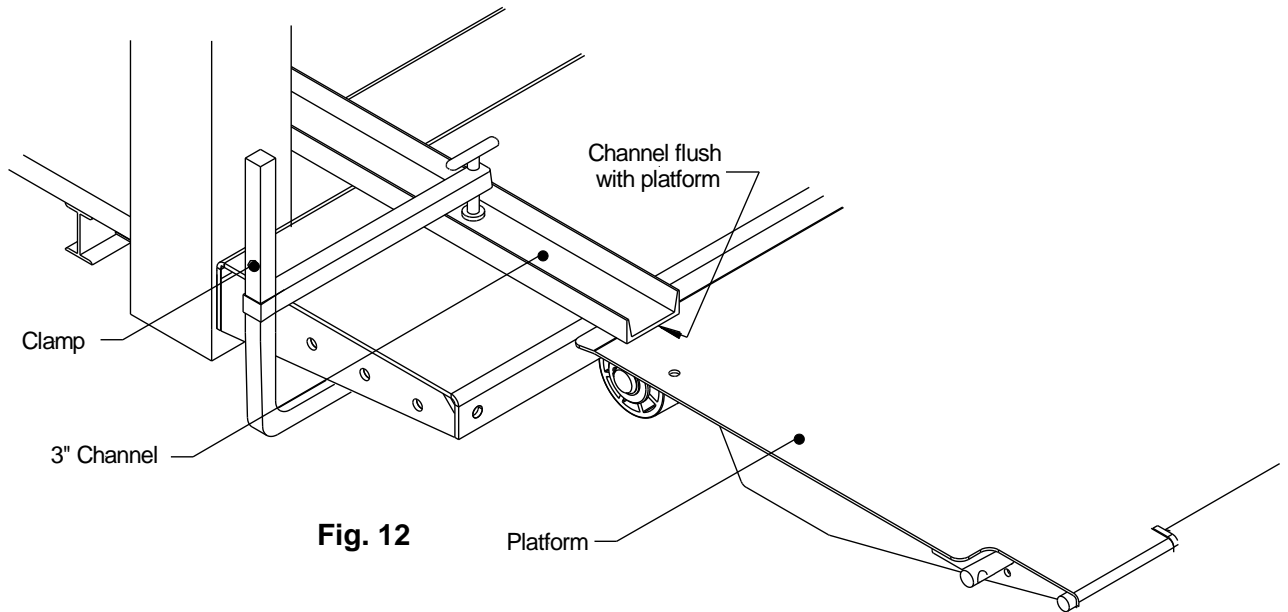


Fig. 12

3. **Set "F" Dimension:** "F" Dimension should be determined from Section 6 of this manual. Use floor jack or equivalent to position the frame assembly up to the required "F" dimension, **Fig. 13**. Use a second jack to level out the under ride guard, if necessary. Check for squareness vertically and horizontally. 12V power supply may be required to release pressure on lift cylinder valves, if power is required continue to the Electrical Installation in Section 9.

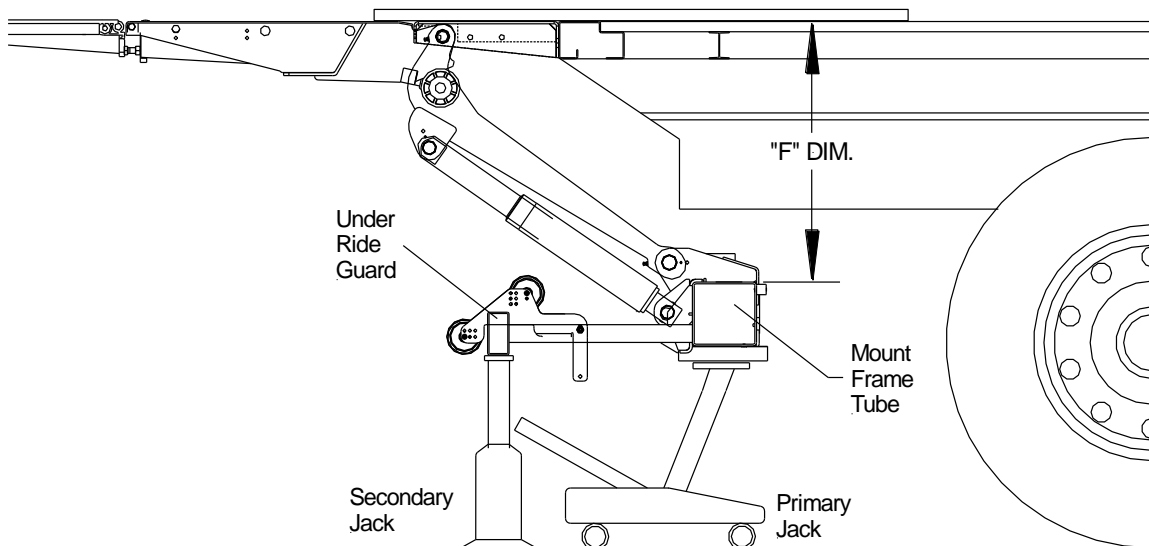


Fig. 13

CAUTION

Pull out power tray before welding. Power Tray is located inside the mount tube and can be accessed through the curb side of the mount tube.

4. Pull out the power pack tray approximately 20" out of the mount tube by removing the bolt on the curbside and detach the ground strap and control power connector from the tray, **Fig. 14**. Disconnect hoses, if necessary, to pull out tray far out. Verify hoses and cables are not in contact with the inside walls of the tube prior to welding.

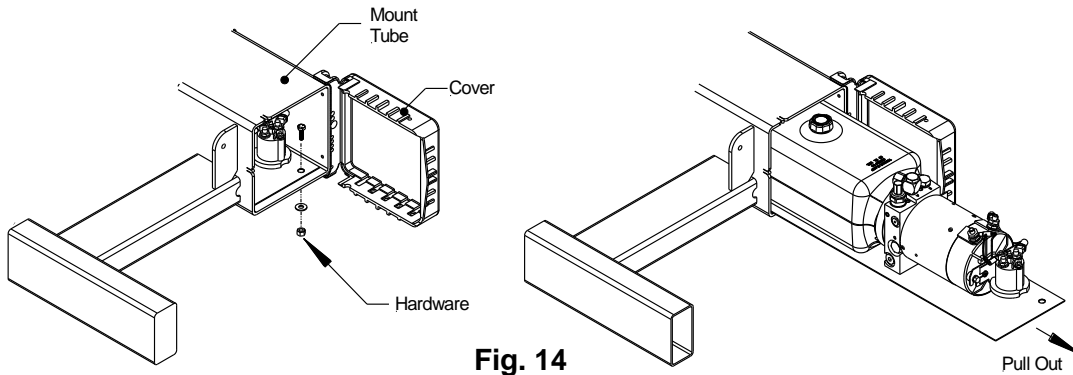


Fig. 14

5. Weld the mount plates to the liftgates mount tube. Remember to keep the mount tube centered to the truck. Determine the overall width of the frame and position the mount plates at the same distance. Weld all around the mount plates and tube on both sides of the mount plates, **Fig. 15**. **NOTE:** ILF 55 will have an additional brace that's required at the bottom of the plate, **Fig. 16**.

Rear View of Truck Frame

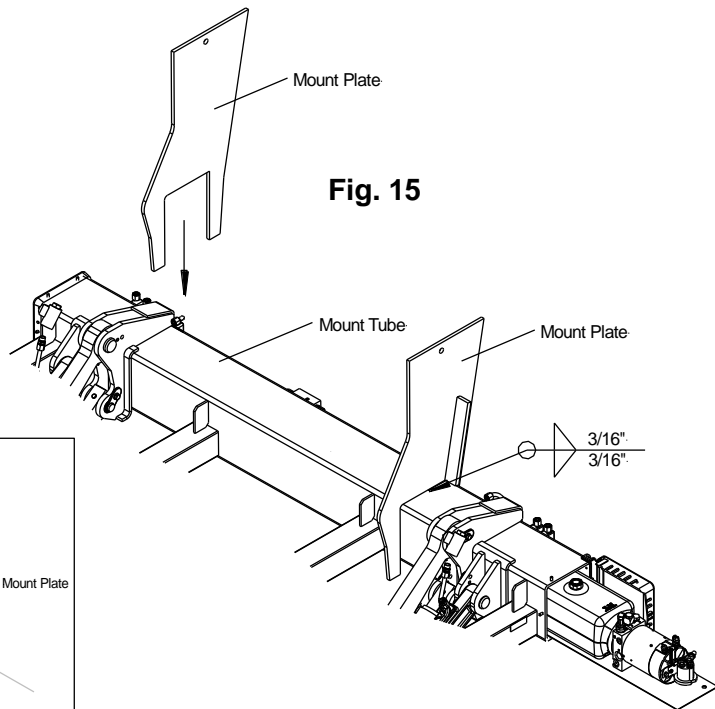
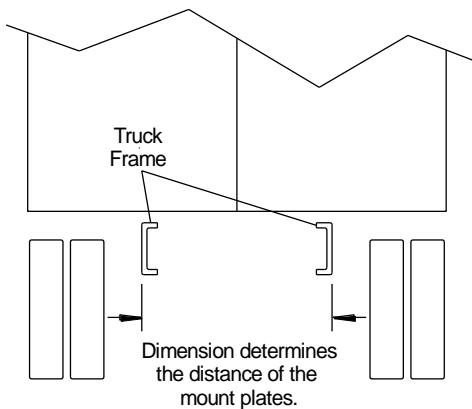


Fig. 15

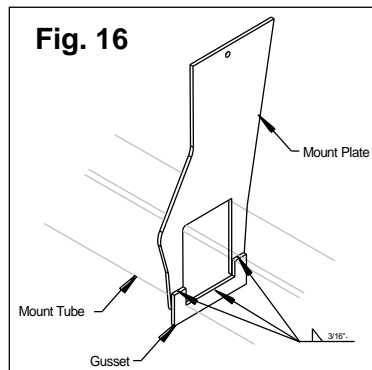
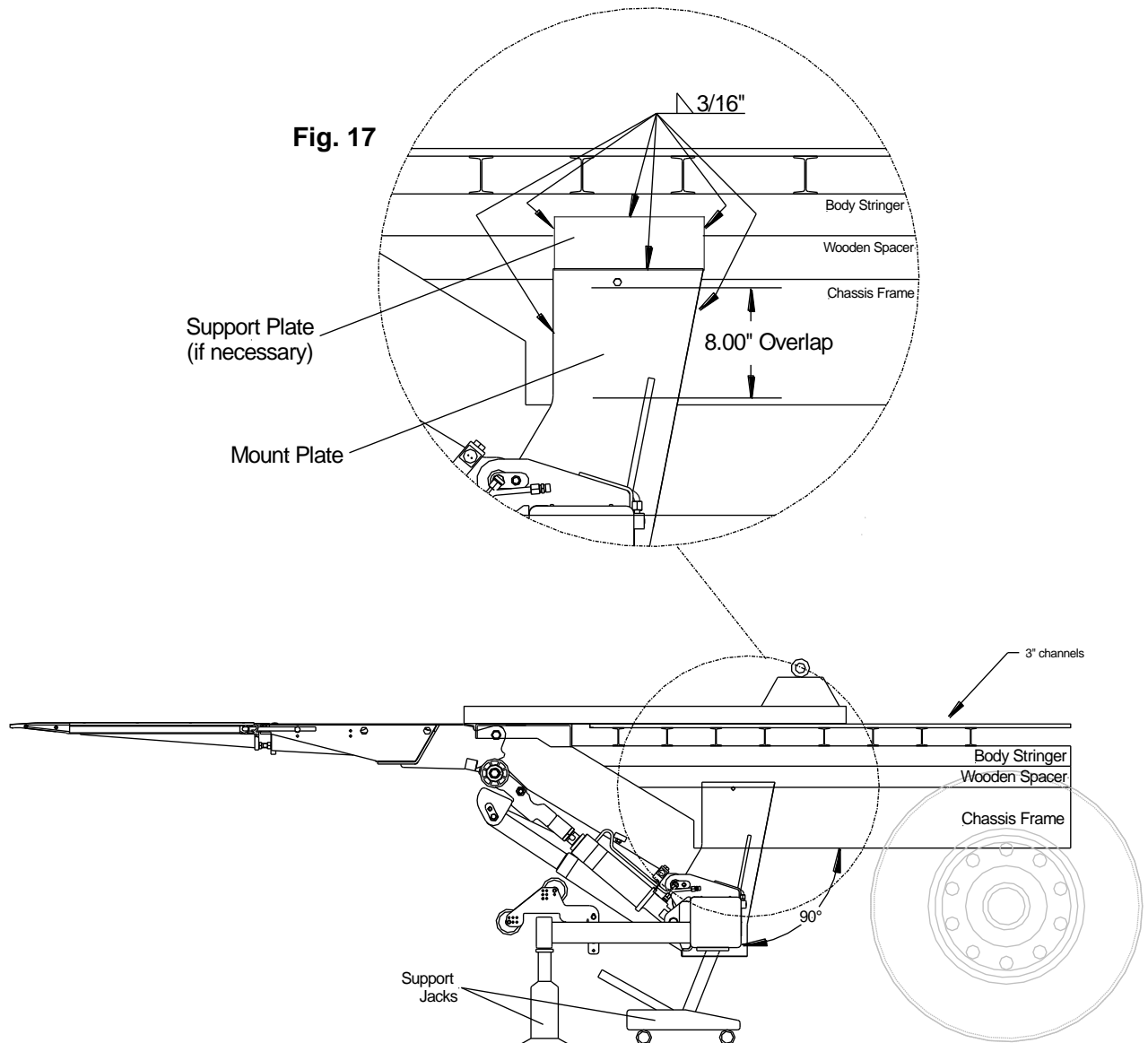


Fig. 16

- Place the mount tube in the predetermined position, keeping the given maximums and minimums dimensions in mind. Support the mount tube using a rolling floor jack or a similar device to position the mount tube and clamp plates. Make sure the mount tube is squared 90-degree, vertically and horizontally, to the truck frame. Use a minimum of 8" overlap between the mount plates and truck frame. Clamp mount plates to the chassis frame to prevent any misalignment before welding. Tack weld mount plates to vehicle frame.

Recommendation: Add a support plate to the top of the mount plates, if needed, to tie liftgate mount plates to the body stringer, Fig. 17.

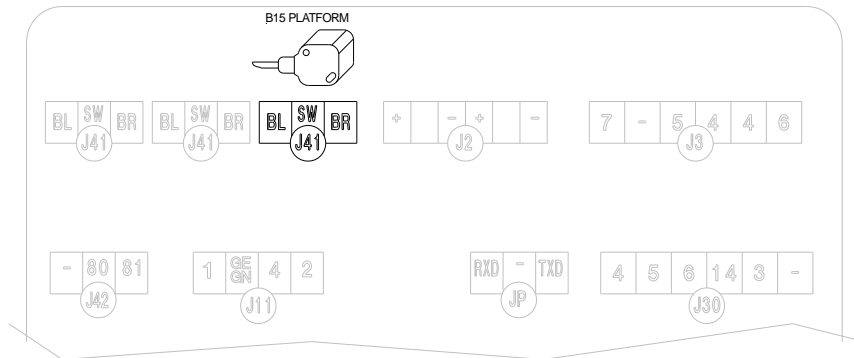
NOTE: When the mount plate is welded on the chassis frame, the ground (electrical) from the chassis is transferred to the liftgate through the weld.



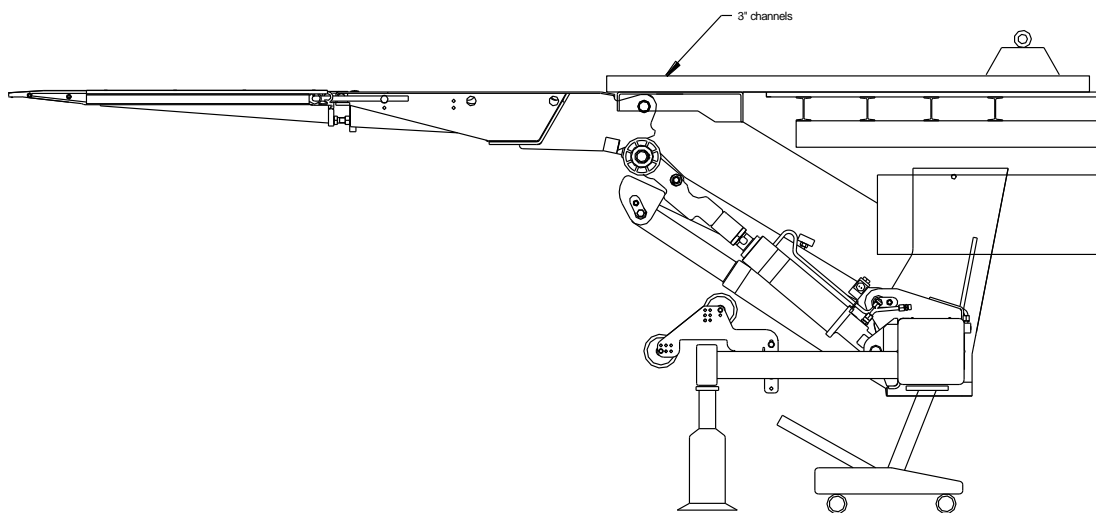
7. Proceed to the electrical installation, Section 9.

NOTICE

To adjust the tilt cylinder during installation, disconnect the B-15 sensor at J41 on the control board. **Remember to reconnect the B-15 sensor back into J41 on the control board after any adjustments are done, Fig.**



8. After completion of the electrical installation, Raise platform to be flush with the 3” channels. If the platform is not flush, the mount tube will need to be adjusted, remove tack welds and make adjustments to get the platform to be flush. If the platform is leveled with the 3” channels, proceed with completing the installation.



Supported Mount Frame

CAUTION

Be extremely cautious when testing. Remember that the Liftgate is only tack welded in place, **DO NOT APPLY A LOAD.** Do not power up against the bed extension.

9. After verification of everything being aligned, proceed to welding the unit completely. Weld 100% with ¼" welds against the frame and both sides of the plates against the mount frame.

CAUTION

Before running the unit through its cycle, make sure that the In-Cab Switch is in the "ON" position (Lights are on).

CAUTION

Before running the unit through its cycle, make sure that the solenoids on the lift cylinders are not hitting the mount plates.

8 Liftgate Installation (Trailer)



WARNING

Warning: Never work or place yourself under unsupported platform



CAUTION

High heat and spatter from welding can damage components. Make sure components such as hoses, lines, and wires are clear of or protected from heat and spatter caused by welding.

Prior to beginning installation, assure the vehicle is on a leveled surface.

8.1 Installation

1. Install the sub-frame channels onto the trailer chassis. Weld the sub-frame channels onto as many cross members as possible, **Fig. 18**. The inside distance of the channels will determine what distance the mount plates will be installed.

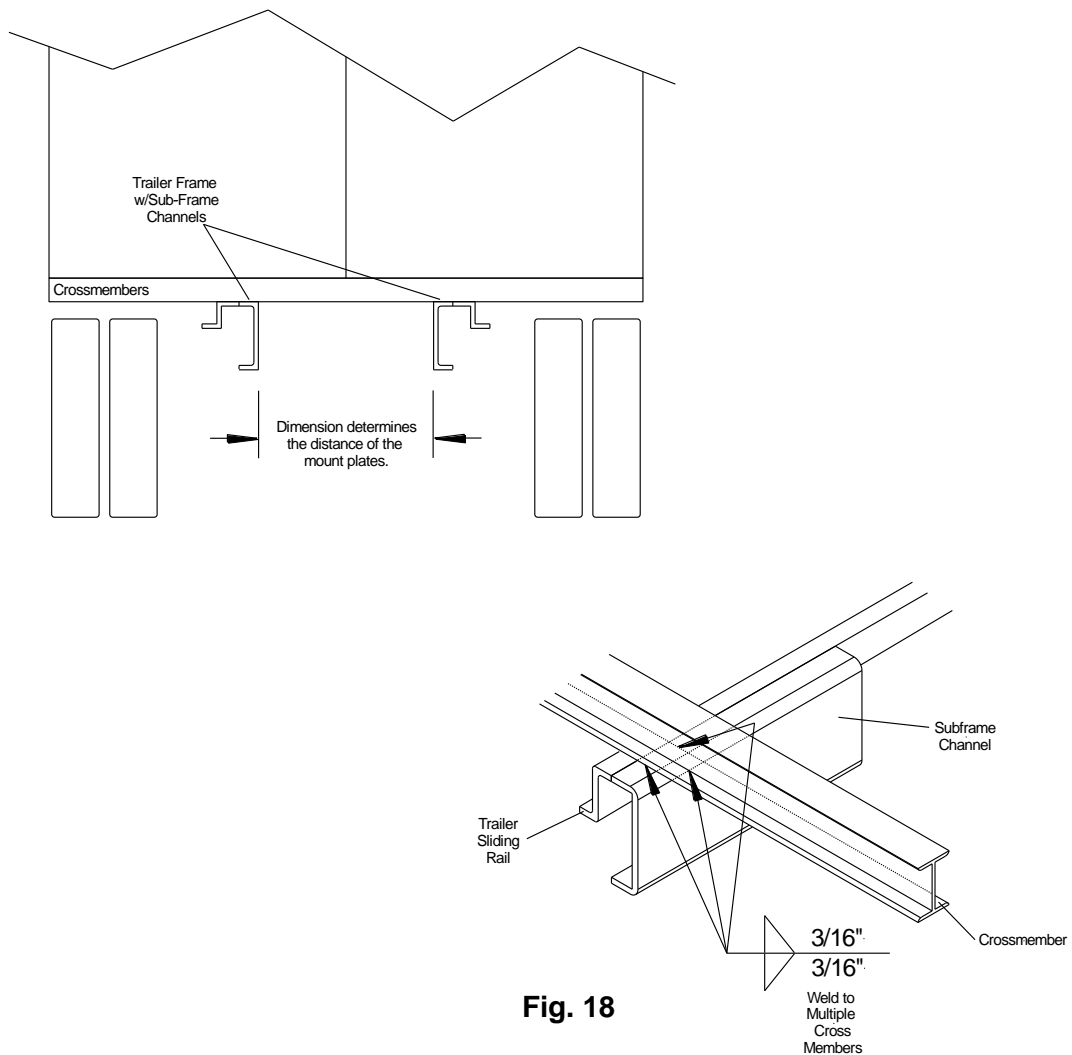
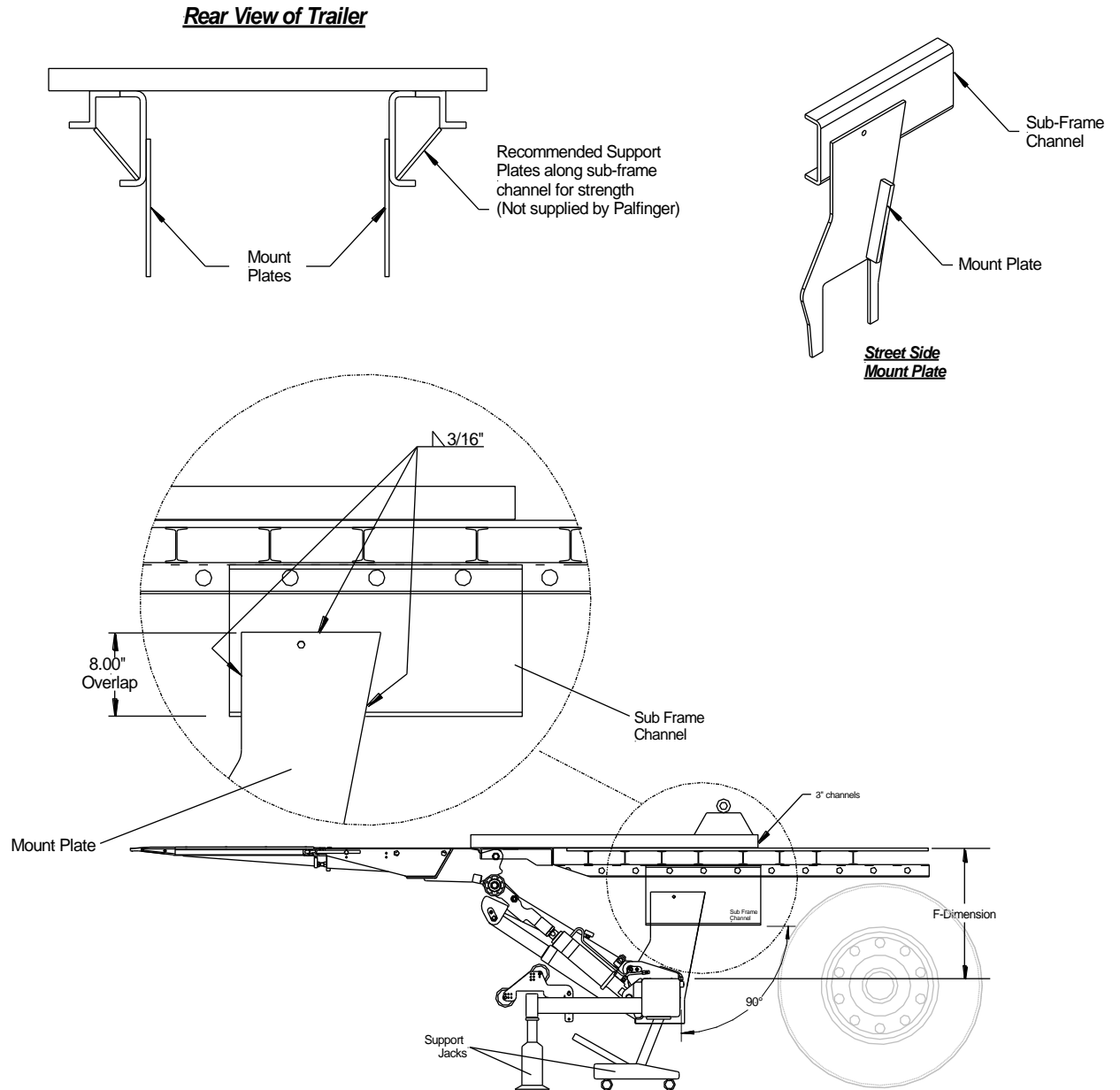


Fig. 18

Weld to Multiple Cross Members

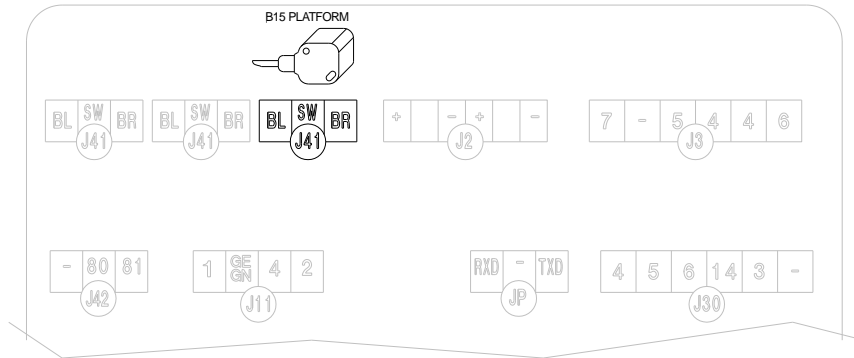
- Place the mount tube in the predetermined position, keeping the given maximums and minimums dimensions in mind. Support the mount tube with a rolling floor jack or a similar device to position the mount tube. Make sure the mount tube is squared 90-degree, vertically and horizontally, to the trailer. Use a minimum of 8" overlap between the mount plates and sub-frame channel. Clamp mount plates to sub-frame to prevent any misalignment before welding.



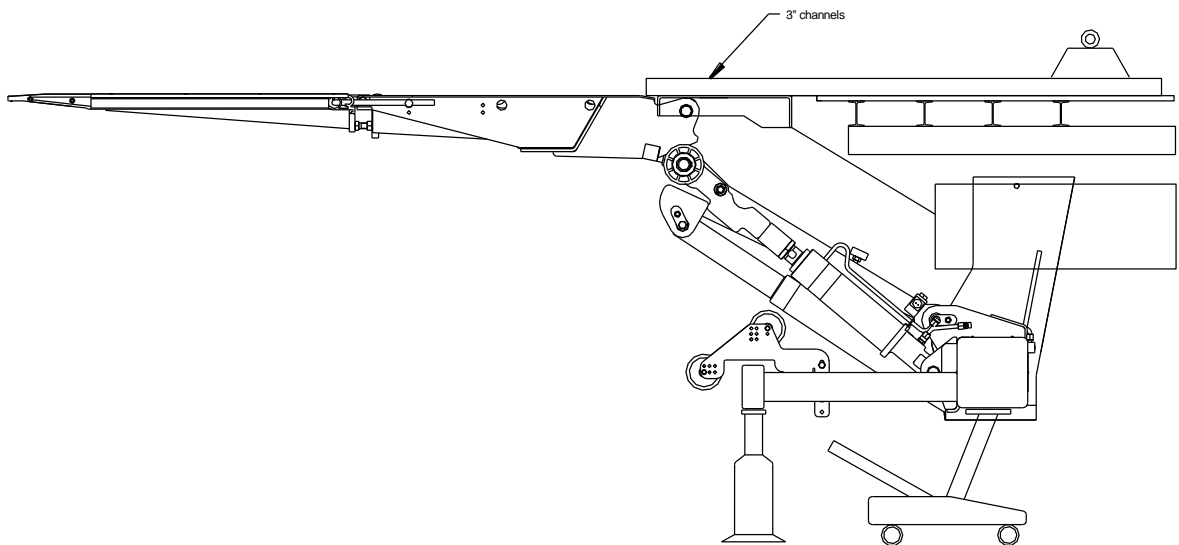
- Proceed to the electrical installation, Section 9.

NOTICE

To adjust the tilt cylinder during installation, disconnect the B-15 sensor at J41 on the control board. **Remember to reconnect the B-15 sensor back into J41 on the control board after any adjustments are done**



4. After completion of the electrical installation, Raise platform to be flush with the 3" channels. If the platform is not flush, the mount tube will need to be adjusted, remove tack welds and make adjustments to get the platform to be flush. If the platform is leveled with the 3" channels, proceed with completing the installation.



Supported Mount Frame

CAUTION

Be extremely cautious when testing. Remember that the Liftgate is only tack welded in place, DO NOT APPLY A LOAD. Do not power up against the bed extension.

5. After verification of everything being aligned, proceed to welding the unit completely. Weld 100% with ¼” welds against the frame and both sides of the plates against the mount frame.

CAUTION

Before running the unit through its cycle, make sure that the In-Cab Switch is in the “ON” position (Lights are on).

CAUTION

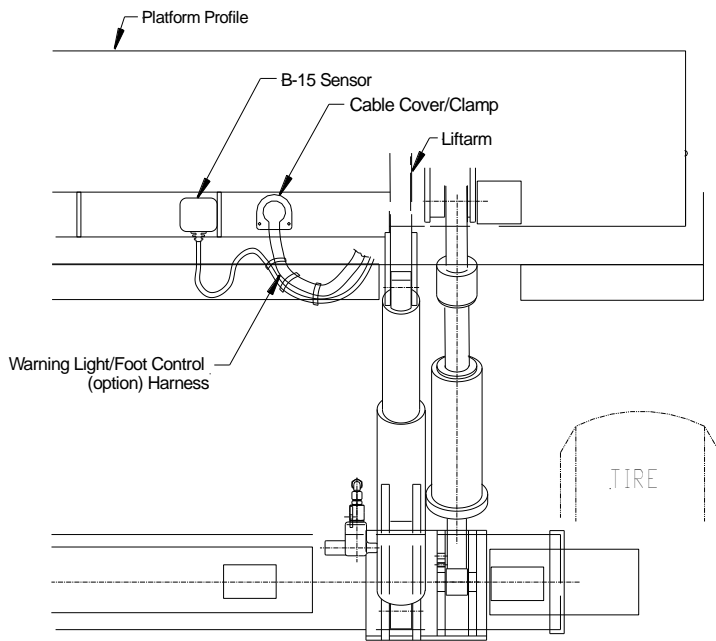
Before running the unit through its cycle, make sure that the solenoids on the lift cylinders are not hitting the mount plates.

8.2 Operation of B-15 Sensor

The B-15 Sensor allows the platform to tilt, up or down, once it has reached a minimum height off the ground, **Fig. 19**. The sensor will not allow the platform to tilt after a certain height off the ground for safety purposes. The tilting function allows the platform to tilt down as close as possible to the ground for easy loading and unloading of cargo.

To adjust the B-15 sensor, **if necessary**:

1. Loosen (2) 5mmx50mm Allen Head sensor mount screws and rotate slightly for re-adjustment. Fasten screws after adjustment is complete.



Bottom View of Platform

 **Warning Light/Foot Control (option) MUST have all connectors inserted into platform profile after connections are made.**

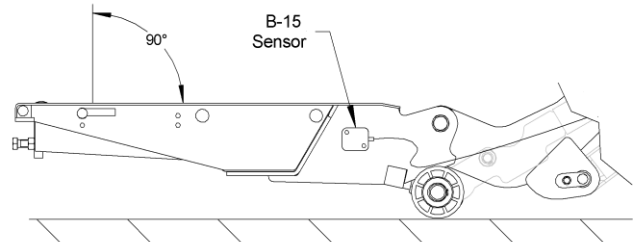


Fig. 19

8.3 Operation of B-13 Sensor

The B-13 Sensor allows the lift arm to, **Fig. 20**:

1. Raise platform approximately 12-15" off ground and verify platform is level (tilt if necessary).
2. Loosen lock bolt and set sensor level with platform/ground (verify colored side of sensor is out).
3. Lower platform to ground. When properly set, platform should remain leveled for approximately two to five seconds then tilt the platform tip to ground.
4. Cycle Platform from bed height to ground several times to verify proper operation. Tilt sensor slightly forward or back to achieve proper Auto-Tilt action.

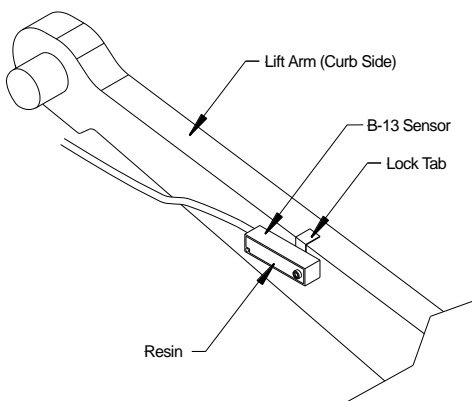


Fig. 20



At NO time should the platform tilt tip towards ground while lowering. Platform should ONLY tilt AFTER Lift Arms/Nylon Rollers contact ground.

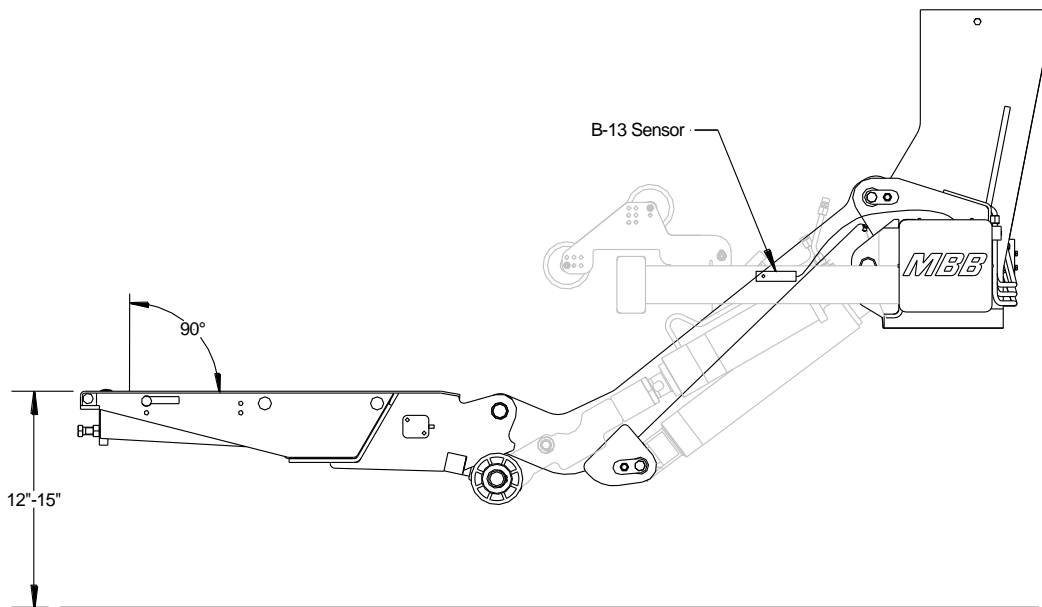
1. After sensor is properly set, tighten lock bolt to 3.5 ft.lbs
2. Cycle platform several times to check operation after tightening lock bolt.
3. Fold down Lock Tab tightly over Lift Arm.



Never over torque the B-13 lock bolt.



Verify colored resin side of sensor is out (facing away from arm)



Under torqued B-13 lock bolt may allow sensor to shift during normal gate operation.

9 Electrical Installation

WARNING

- Any deviation from PALFINGER Liftgates's recommended power setup **will void warranty and product liability** unless you have a written confirmation by PALFINGER Liftgates that allows you to do specific changes.

NOTICE

- **Prior to starting electrical installation insure that the liftgate batteries are fully charged. 12.6V for Flooded Acid Batteries, and 12.8V for AGM Batteries. Charge batteries if necessary.**
- **Never exceed rating of existing fuses located at the battery, control board and/or the pump and motor which may result in serious damage to the equipment.**
- **Never jump the 150 Amp circuit breaker at the batteries unless otherwise instructed by the PALFINGER Liftgates technical support team.**
- **All connections should be heat shirk protected and all open ended terminals must be replaced with closed end terminals or the open ends must be protected with heat shrink tubing.**
- **Never secure a cable in a way where it can make contact with other wiring, brake-, fuel- or air-lines, or get pinched against other objects.**
- **It is highly recommended to use 2 gauge wire throughout the electrical system when connecting to batteries.**
- **Do not splice battery cables unless otherwise instructed by the Palfinger Liftgates technical support team.**
- **All electrical cables and wires must secured with cable ties, hoses clamps, or other fasteners. No wiring components rub on the frame, platform, or any other components while unit is in operation or in storage.**

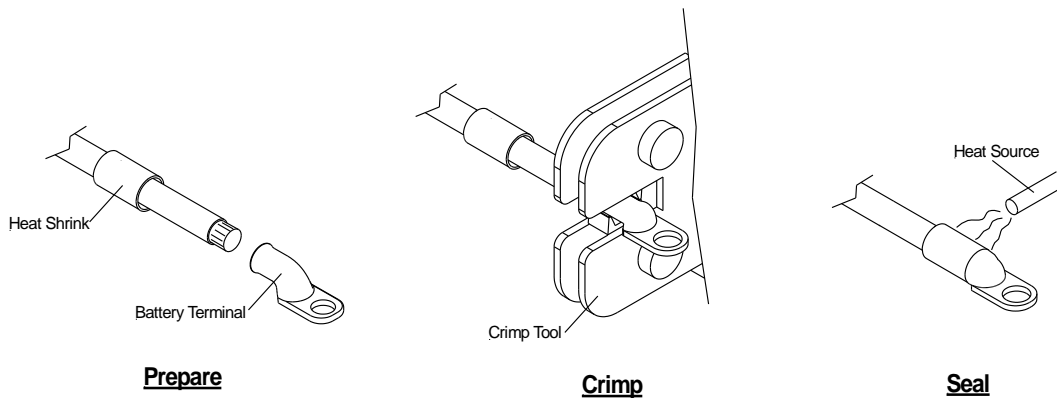
9.1 Wire Crimping



All grounding surfaces **MUST** be cleaned, prepped, and sealed per this manual. “Cut to size” cables **MUST** be properly crimped and sealed as factory supplied. All connections **MUST** be dressed 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. Slide the provided heat shrink over the battery cable.
2. Use a crimping tool designed for crimping battery terminals for best results. The use of other tools to crimp terminals 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.



9.2 Circuit Breaker Installation

1. Mount the circuit breaker securely in battery box or at positive battery terminal using the buss bar, **Fig. 21**.
2. Connect the liftgate 2 Gauge cable to AUX stud on the circuit breaker.
3. Connect a 2 Gauge jumper from BAT stud on breaker to positive battery post if circuit breaker is not mounted on battery. When circuit breaker is mounted on battery use the provided buss bar on the "BAT" stud, **Fig. 22**.

Note: 150 amp minimum circuit breaker required.

Battery Mount

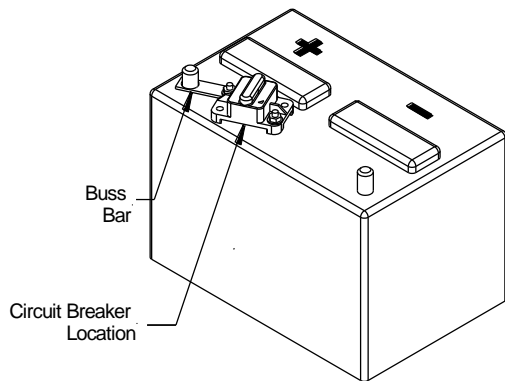


Fig. 21

Battery Box Mount

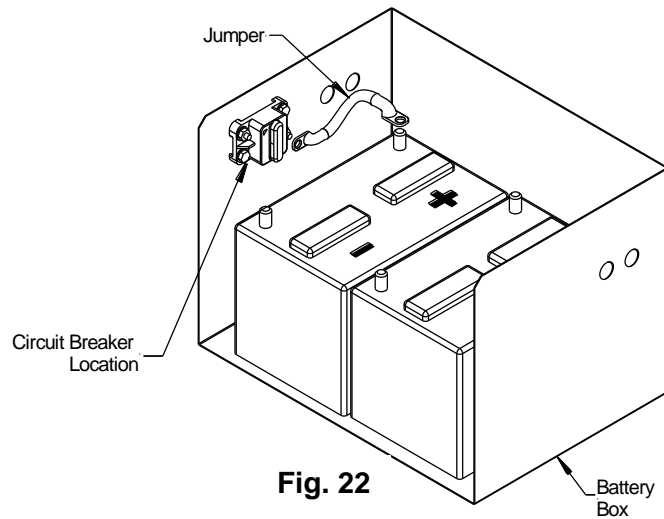
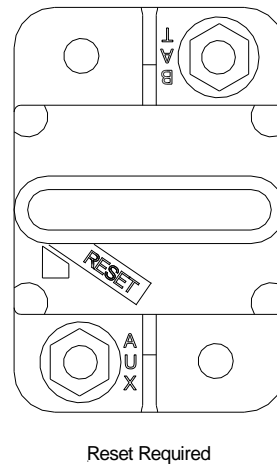
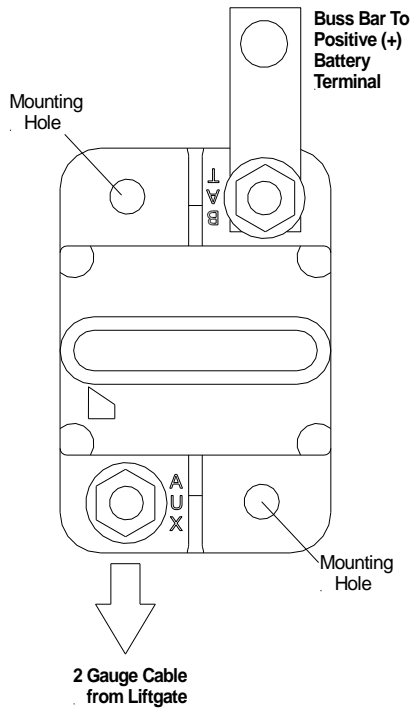


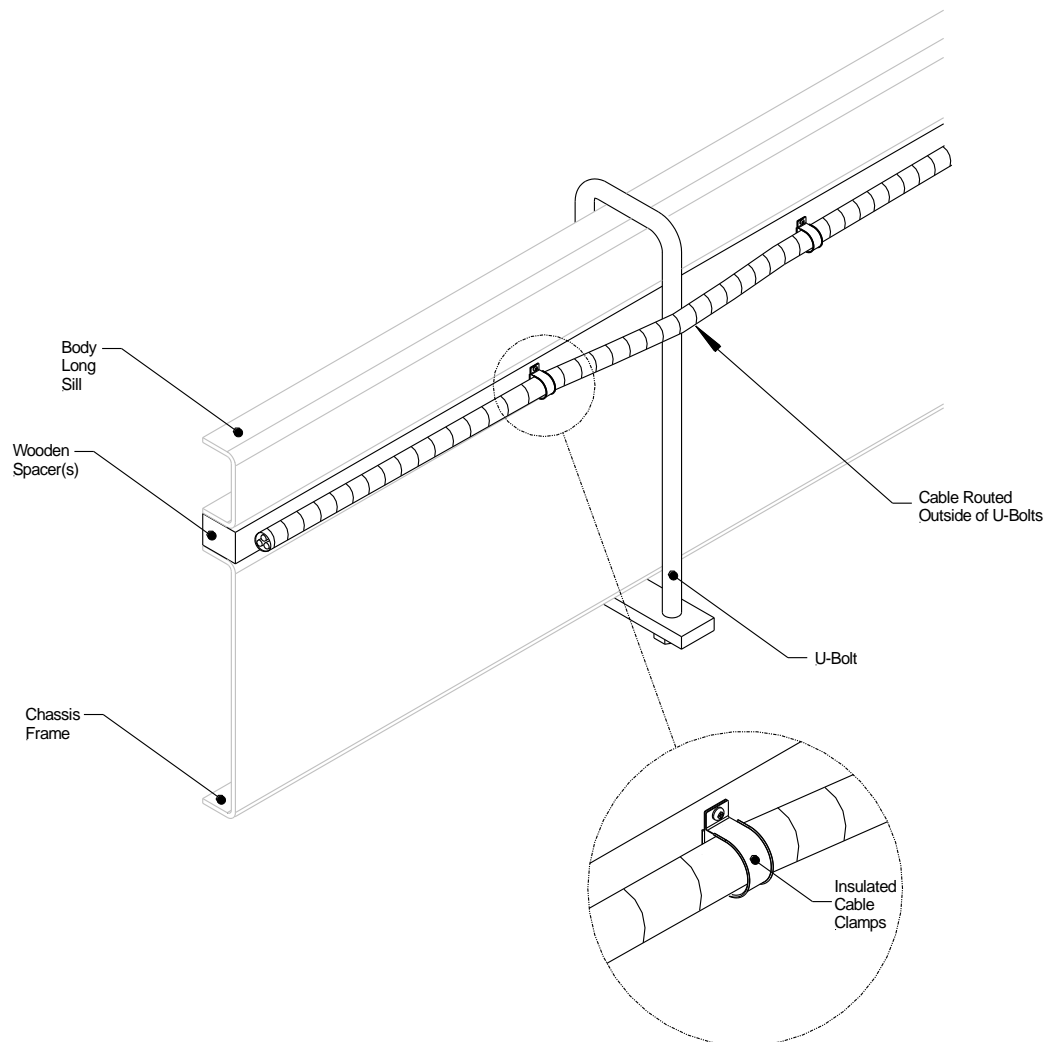
Fig. 22



Reset Required

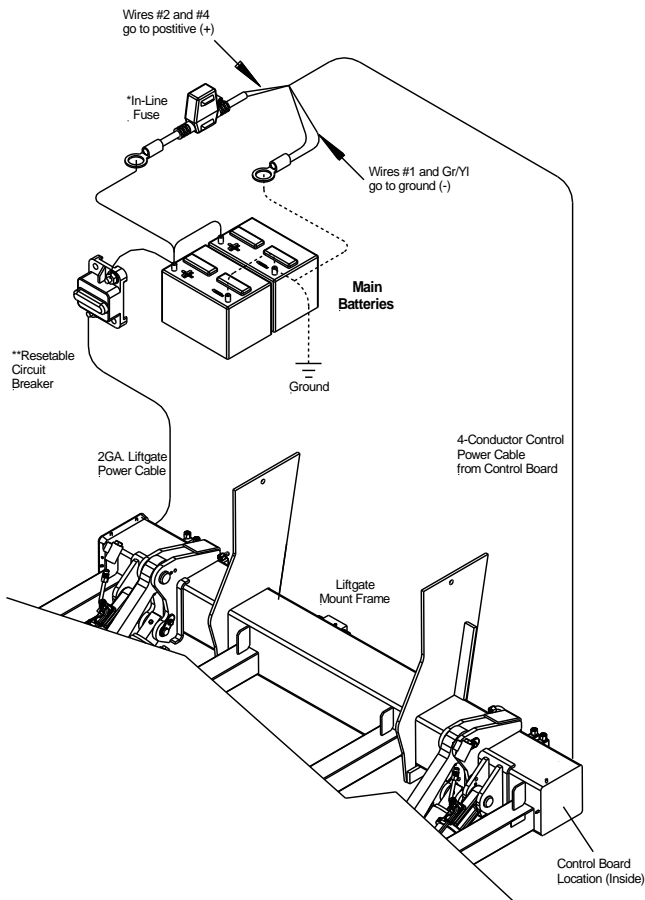
9.3 Cable Routing

1. Route all cables along the wooden spacer and through the outside of the U-bolts.
2. Secure the routed wire every 12" with insulated wire clamps or staples against the wooded spacer(s).
3. The use of wire loom is highly recommended to protect and facilitate cable routing. Wire loom not supplied.

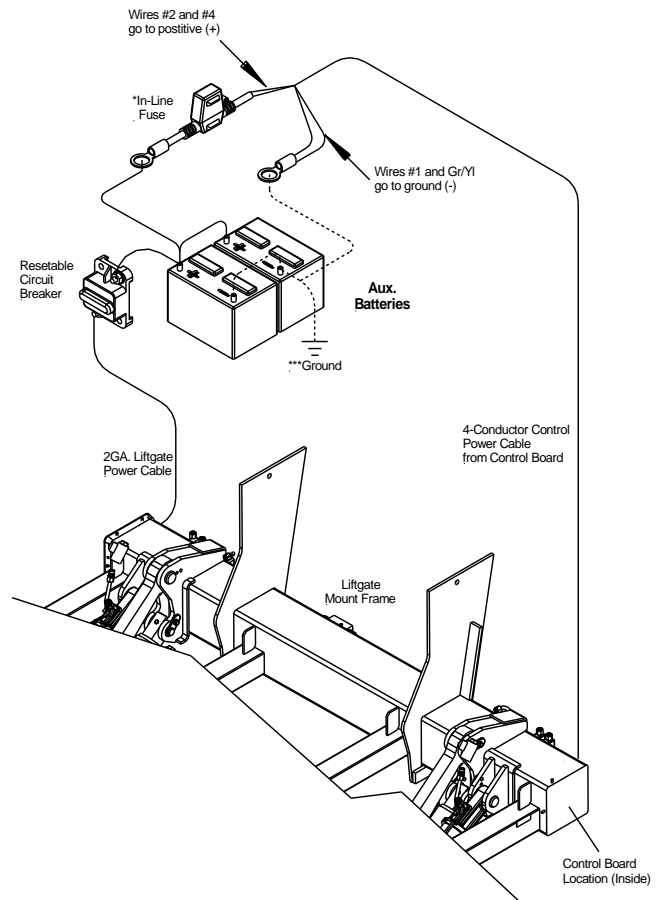


Inspect and test all electrical connections, wiring and the different functions to make sure that the electrical installation is complete.

9.4 Main Power Connections



Battery Wiring Setup – Truck



Battery Wiring Setup - Trailer

*In-Line ATC Fuse: 20 Amp. **Replace with same amperage fuse when necessary.**

Resettable Circuit Breaker: 150 Amp Min. **Replace with same amperage breaker when necessary.

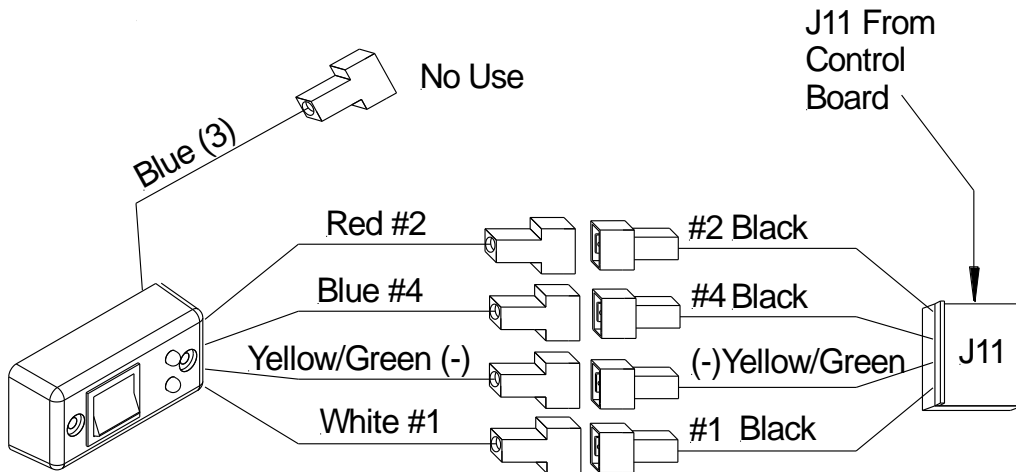
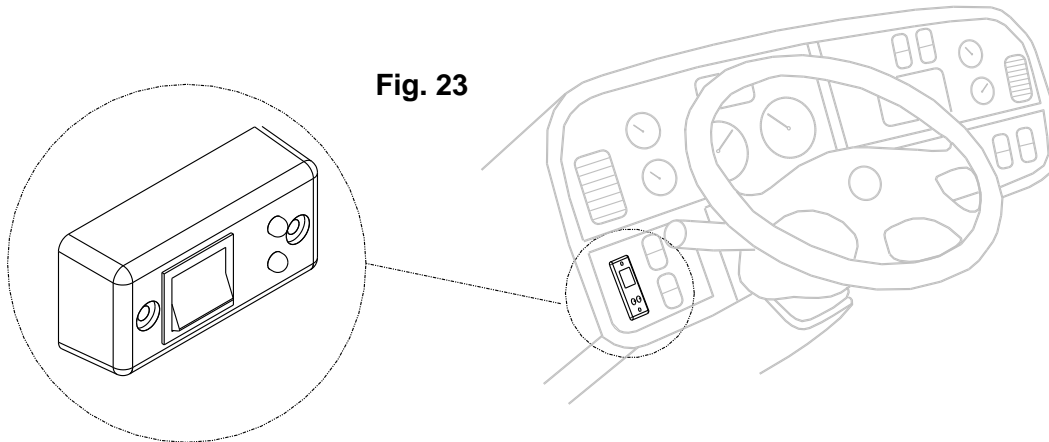
***Ground: For optimal grounding, ground all batteries and power units to the body side rails of the vehicle.

NOTICE: DO NOT attempt to jump in-line fuses with other objects other than the specified fuse.

Do not increase the amperage rating of fuse. Serious harm to the liftgate will result when standard practices are not followed.

9.5 On-Off Switch Installation (Truck Application)

1. Route the J11 wire harness from the control box to the inside of the cab.
2. Place the switch where it can conveniently be seen and reached from the driver's seat as well as from the ground, **Fig. 23**.



In-Cab ON/OFF Switch Wiring Table		
Cable Number / Marking	Color	Function
1	White	Hot lead to red LED lights
-	Yellow/Green	Ground to LED lights
2	Red	12V Power from batteries
4	Blue	Control power to liftgate
3 (BS3)	Blue	Not Used

9.6 On-Off Switch Installation (Trailer Application)

1. Position the mounting brackets as close as possible to rear of the vehicle where the operator will have a clear view of the platform/load, **Fig. 24**. Make sure the mounting brackets and control box do not interfere with the platform and that the control box does not protrude beyond the width of the vehicle body. Mount the provided Z-brackets to the vehicle by either bolting or welding the brackets to the body.

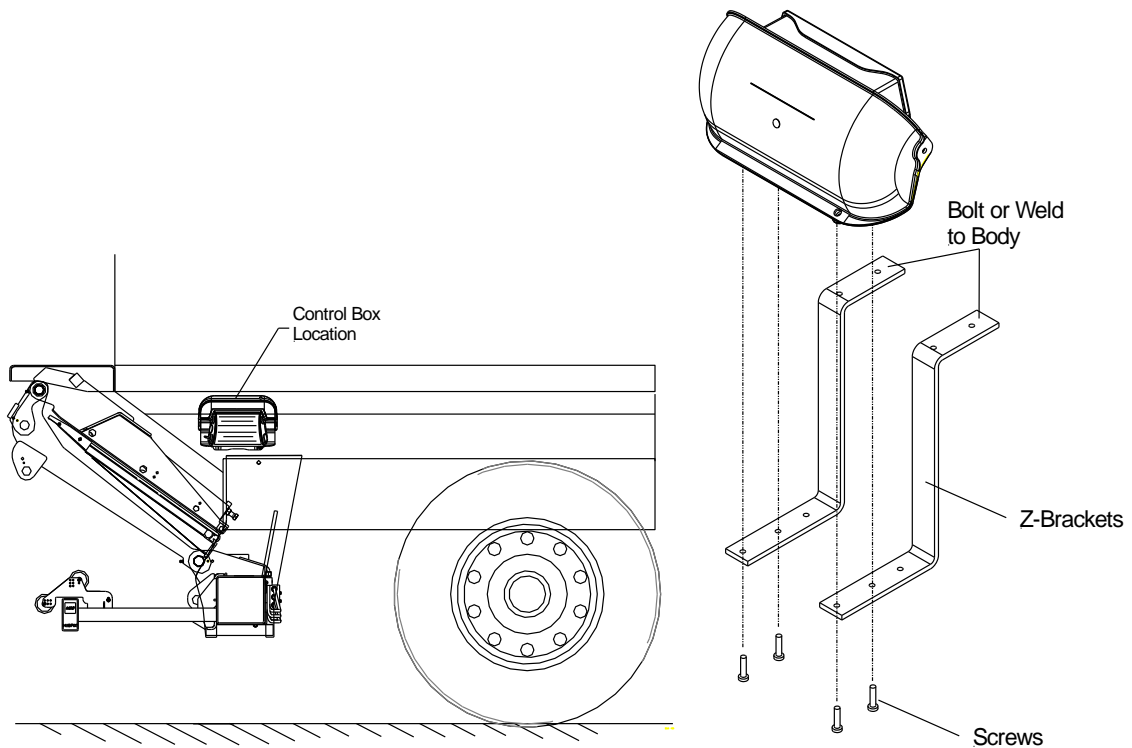
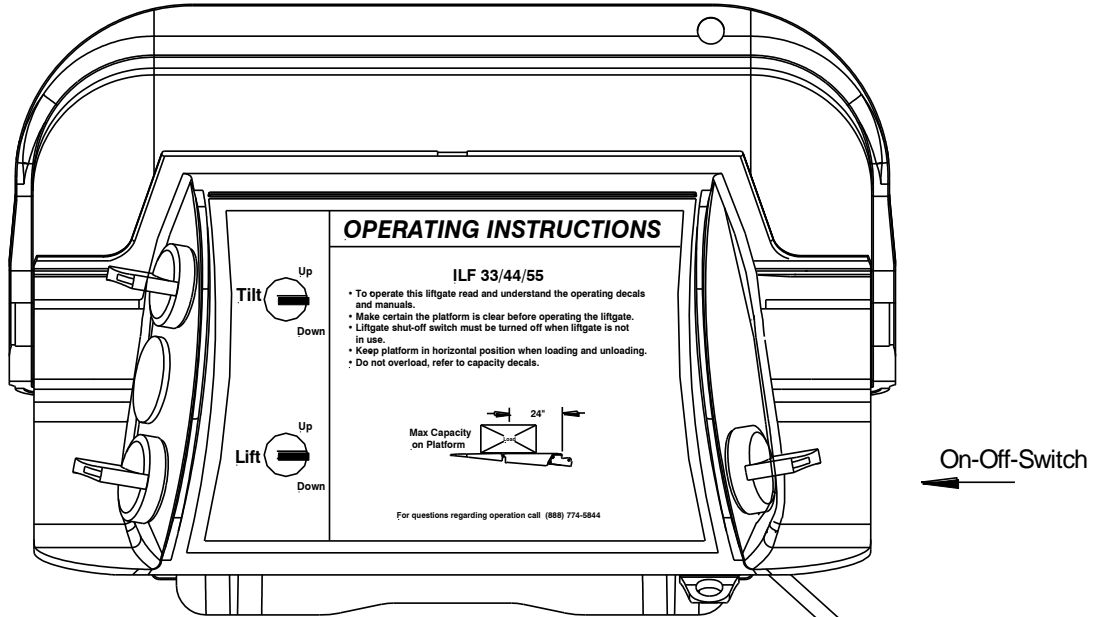


Fig. 24

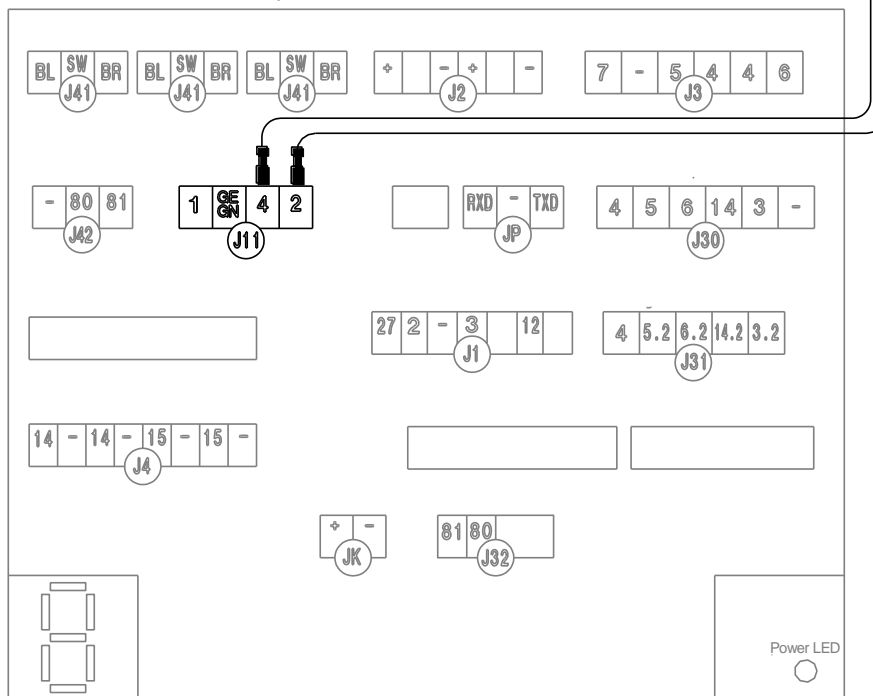
2. Route the 4-wire cab switch cable together with the battery cable and the 4 wire harness for the control power to the batteries along the sub-wood. Secure the cable every 12" against the sub-wood with cable staples or insulated wire clamps. Make sure the cable is kept away from sharp edges and moving parts to prevent any damage.

ON/OFF Switch Wiring

On a trailer installation the control port J11 has to be connected with an on/off toggle switch connecting 2 and 4 on port J11 together. **NOTE: The Circuit Board is located inside the 7" x 7" mount tube of the liftgate assembly on the curb side.**



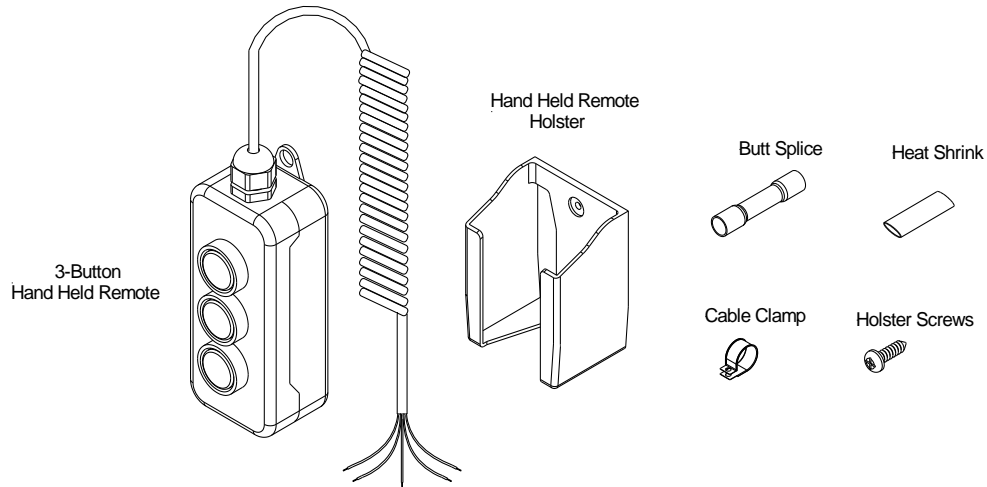
Unplug existing J11 connector from board
 Install 2 Position Toggle Switch in Control Box Face
 Run leads from Toggle Switch to #2 & #4 on Circuit Board
 Use Tie Straps to hold unused J11 Connector in safe location



9.7 Remote Hand Control Installation

NOTICE

Hand Controls are NOT weatherproof and are to be stored inside the vehicles body in holster or in weatherproof box (optional). For “Reefer” and Flatbed installations, a “plug & socket” installation is recommended.



Hand Held Remote and Holster Installation:

Reminder: It is recommended to install the holster inside the body of the vehicle on the rear curb side.

1. Mount the holster approximately 40”- 48” from the vehicle floor, or determine the best location as preferred by end user, **Fig 25**.
2. Route the cable from the liftgate up through the inside corner post or between the wall extrusions of the truck. Use the wire clamp to secure the incoming cable to the surface, **Fig. 26**.
3. Splice the cables from the liftgate to the hand held remote with the supplied butt connectors and seal all connections with heat shrink. Use the Wiring Table to splice the wires.

Wiring Table

Function	Wires From Control/Color	Wires From Liftgate/Number
Up	5.2 / Yellow	5.2 / #4
Down	6.2 / Brown	6.3 / #3
12V (Hot)	4.3 / Red	4 / Green-Yellow
Tilt Up	3.2 / White	3.2 / #1
Tilt Down	14.2 / Green	14.2 / #2

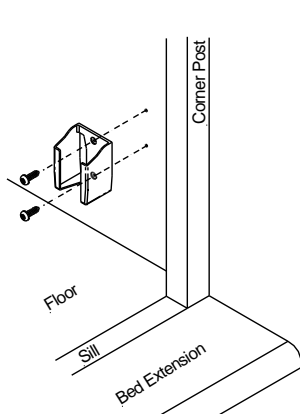


Fig. 25

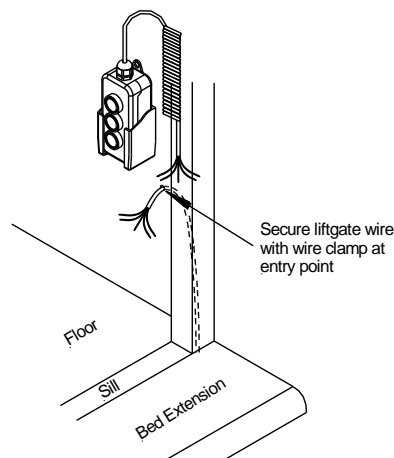
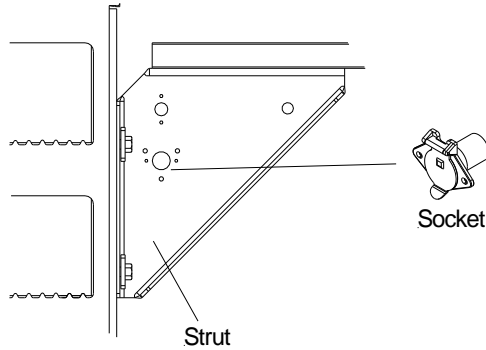


Fig. 26

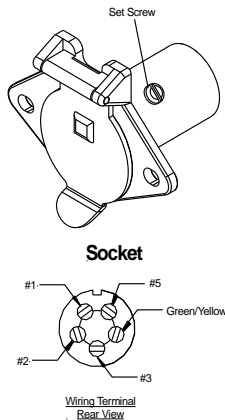
Plug and Socket Installation for Reefer or Flatbed Trucks (Optional):

- The socket can be installed in various locations depending on user preference. The dock bumper strut has pre-drilled holes for the socket to mount, or it can also be installed where the end user feels most convenient.



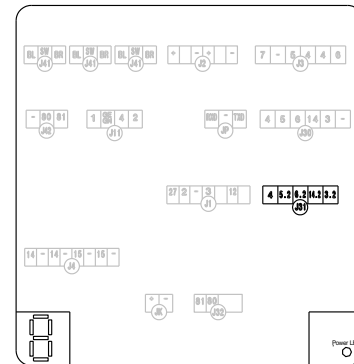
- Wire the female socket to the control board. Remove the set screw and push out the wiring terminal from inside the socket housing. Feed the wire from the control board through the back of empty socket housing. Wire socket as indicated in the Socket to Control wiring table.

Socket



Socket to Control Wiring Table

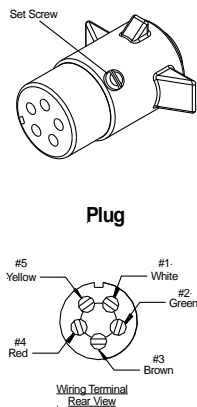
Function	Socket	Control Board
Up	#4	5.2
Down	#3	6.3
12V (Hot)	Green	Green/Yellow
Tilt Down	#2	14.2
Tilt Up	#1	3.2



Control Board

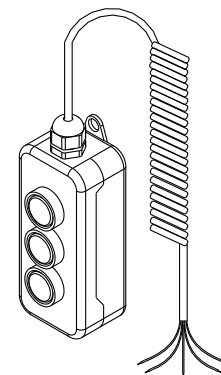
- Wire the male plug to the hand held remote. Remove the set screw and push out the wiring terminal from inside the plug housing. Feed the wire from the control board through the back of the empty plug housing. Wire plug as indicated in the Plug to Control wiring table. Assure the number matches the female terminal wiring.

Plug



Plug to Control Wiring Table

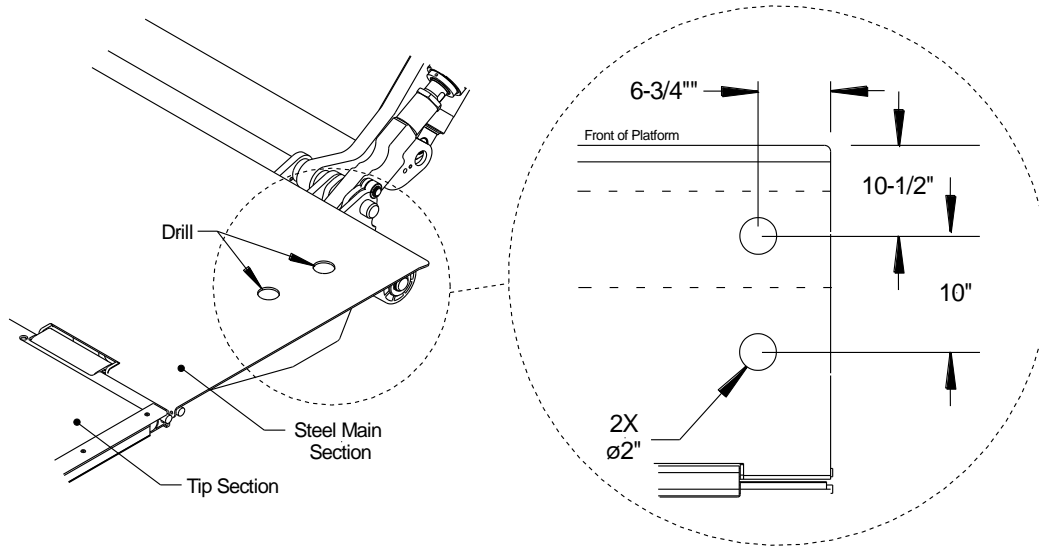
Function	Plug	Remote
Up	#5	5.2 / Yellow
Down	#3	6.2 / Brown
12V (Hot)	#4	4.3 / Red
Tilt Down	#2	14.2 / Green
Tilt Up	#1	3.2 / White



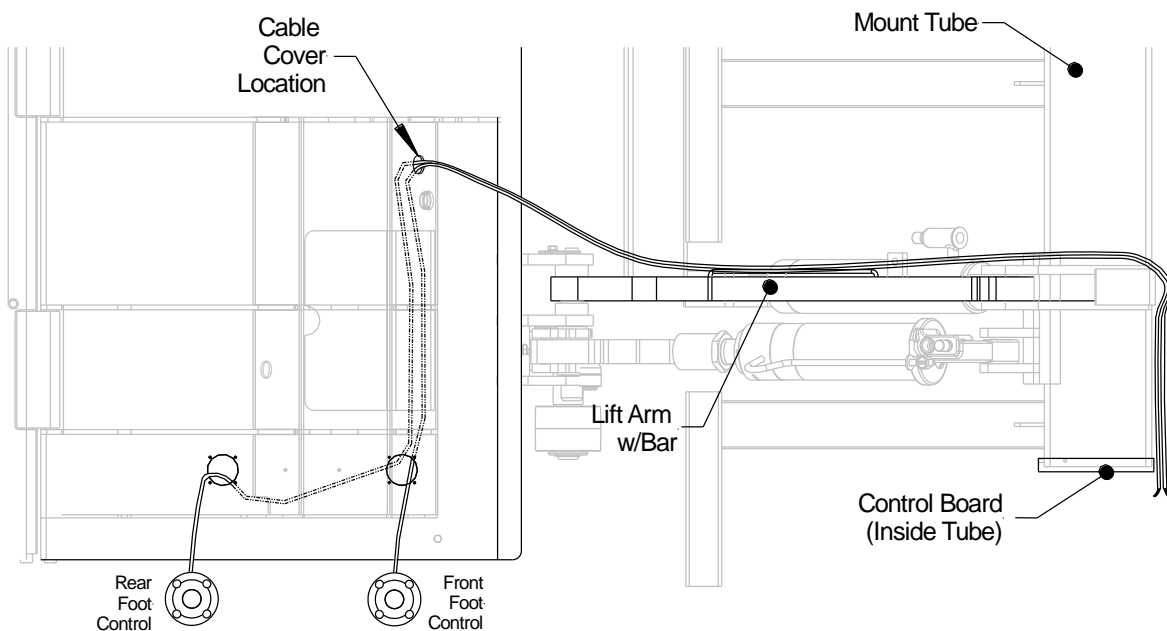
Hand Held Remote

9.8 Foot Control Installation (Optional)

1. Measure and drill two $\varnothing 2''$ holes on the main section of the platform (curb side). Use the dimensions shown below.



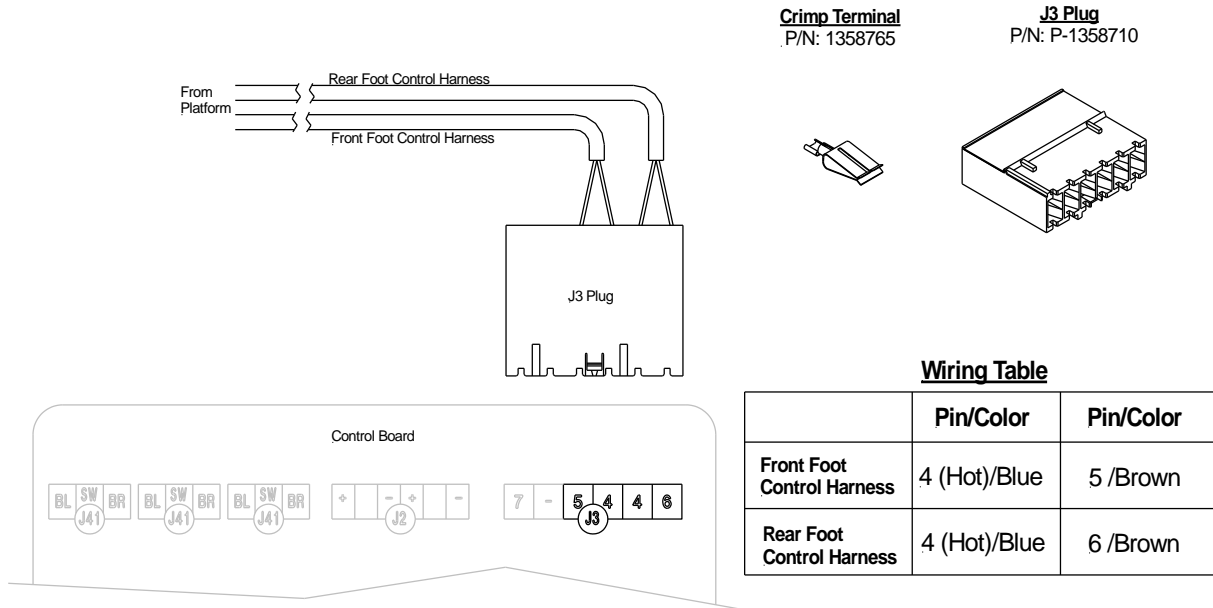
2. Mark or label each foot control harness to avoid confusion after the harnesses have been routed. The platform main is designed with pre-drilled holes underneath for routing each harness. Feed each cable harness through each foot control slot on the main section of the platform and route each harness as shown below. Remove the cable cover to pull routed cable out of the platform. Once the cable is out of the platform, the lift arm is equipped with a bar that serves as a guide for the harnesses to be routed along and secured to. Next, secure each foot control module with the provided screws on the platform.



***Platform Main
Top View***

When routing the cable, make sure to allow cable slack to prevent any damage to the cable(s).

- Use crimp terminals on the end of the wires. Insert the Front Foot Control Harness wires to pins 5, 4 on the J3 plug. Connect Rear Foot Control Harness to pins 4, 6 on J3 plug.



- Test functionality of each foot control. Follow the steps below:

DOWN

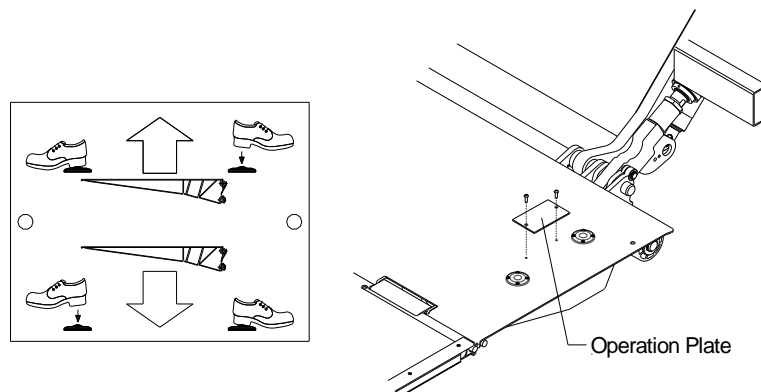
Step on the front foot control and hold – wait between one to three seconds before you step on the rear foot control.

UP:

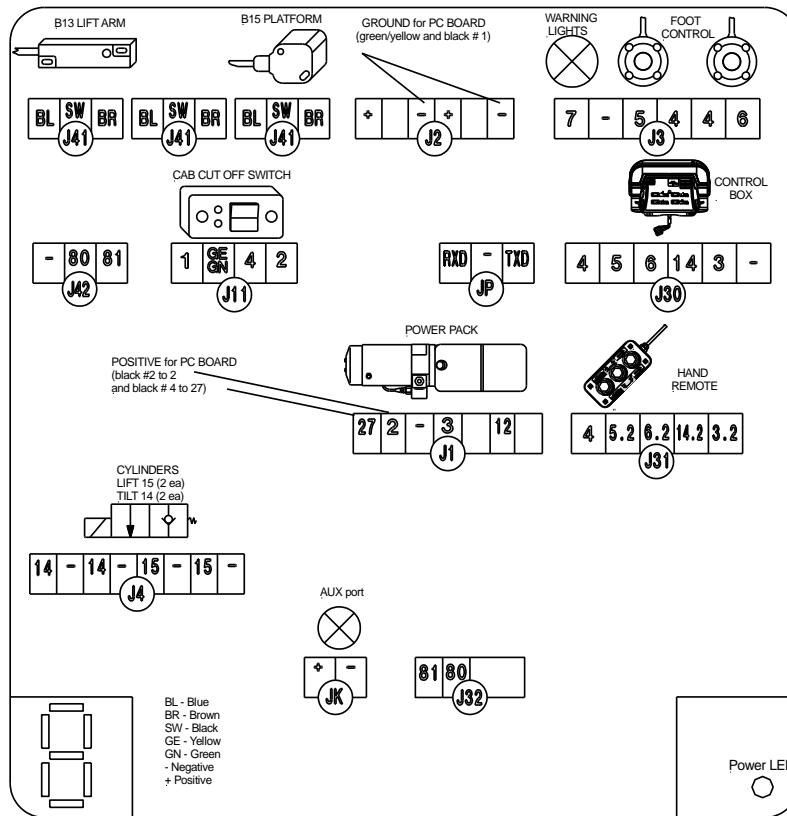
Step on the rear foot control and hold – wait between one to three seconds before you step on the front foot control.

IF BOTH SWITCHES ARE NOT ACTIVATED BETWEEN ONE TO THREE SECONDS, START OVER.

- Once operation has been verified, check all connections and verify that all screws are properly fastened. Finally, install the operation plate and make sure the arrows on the plate match the foot control operations.



9.10 Control Board Codes



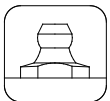
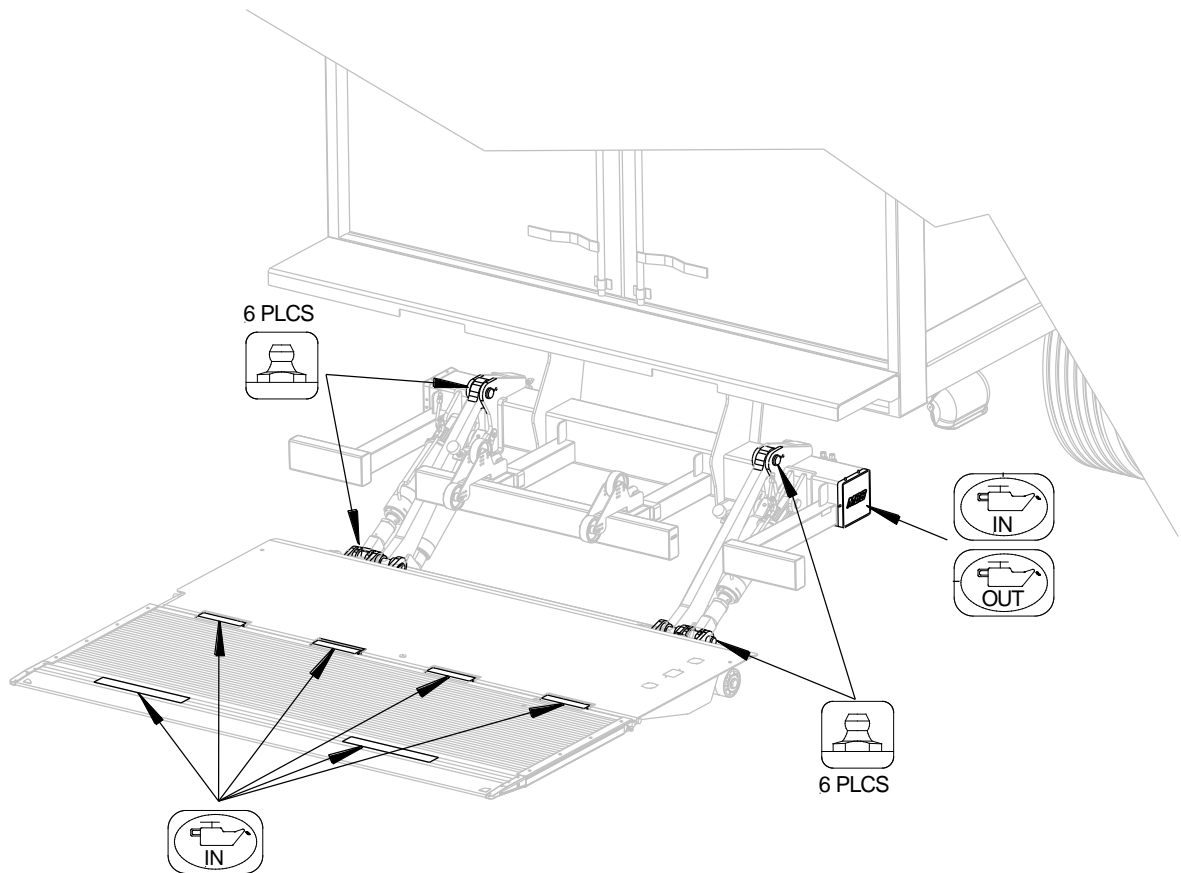
Control Board Codes:

Code	Description	Reset
00	System ok / Cab switch off, (or missing bridge J11/2<->4)	
01	System ok / Cab switch on, (or bridge J11/2<->4)	
02	Low Voltage	Cab switch: off/on (or disconnect bridge J11/2<->4)
03	Missing tilt switch B-13 at lift arm or defective.	Automatically when the valves are back to normal
04	Missing tilt angle sensor B-15 at lift arm or defective	Automatically when the valves are back to normal
05	Missing tilt angle sensor B-15 at platform or defective	Automatically when the valves are back to normal
06	Warning lights shorted	Cab switch: off/on (or disconnect bridge J11/2<->4) or close tail lift
07	Short in cab switch/on-off switch or aux port	Cab switch: off/on (or disconnect bridge J11/2<->4) or close tail lift
08	General short in electrical wiring	Cab switch: off/on (or disconnect bridge J11/2<->4) or voltage interruption MBB control
09	Defect at motor solenoid detected during lifting	Automatically when the valves are back to normal
10	Voltage V02 (J1 pin 2) is missing, defective fuse	Replace the fuse
11	Defect at opening, valve (S3/S4) or motor relay detected during opening	Automatically when the valves are back to normal
12	S5 valve detected during closing or motor solenoid defective	Automatically when the valves are back to normal
13	S5 valve detected or defect at lowering valve (S1/S2)	Automatically when the valves are back to normal
14	Emergency program (all sensors are bypassed). Activation by: Press Open+Lower>10 seconds	Cab switch: off/on (or disconnect bridge J11/2<->4)
15	Diagnosis mode activated	Removing service connector

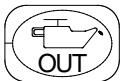
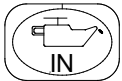
Electrical Wiring, Components Overview, and System Codes

10 Lubrication

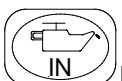
1. Lower the platform to the ground.
2. Remove red protector caps from each component. Lubricate, grease, and oil per diagram below.
3. Cycle platform up and down several times. Lubricate and grease all points again.
4. Wipe any excess grease and replace all red protector caps on zerks.



Zerk Fitting – 12 places, (3 in the mount frame, 3 in the cylinder/platform area).



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

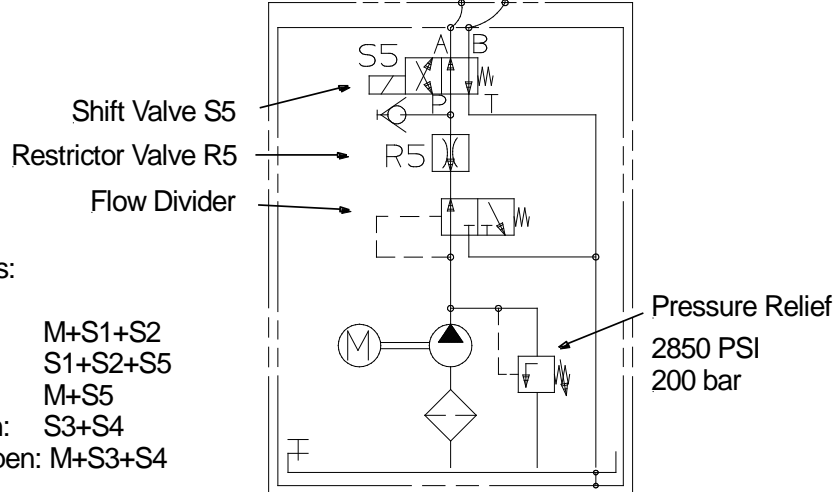
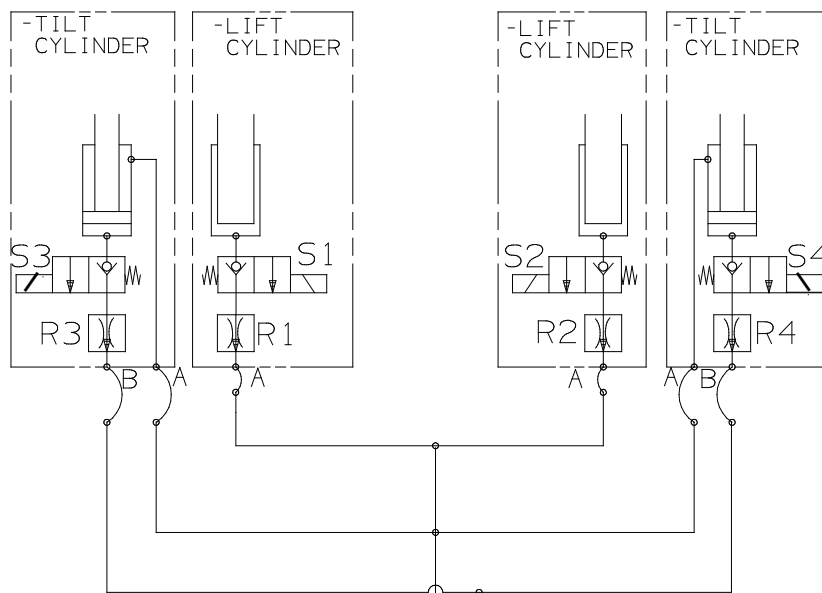


Platform hinges and optional cart stops (use WD-40 lubricant or equivalent).

11 Hydraulic Schematic

Functions:

- S1 and S2 = Release Valve for lowering function
- S3 and S4 = Release Valve for tilt down function
- R1 and R2 = Flow Restrictor located inside hose adaptor on lift cylinder
- R3 and R4 = Flow Restrictor located inside hose adaptor on tilt cylinder
- S5 = Shift Valve is activated on tilt up and lowering function
- R5 = Restrictor Valve located in power pack
- Flow Divider is activated, when fluid is going back into the power pack
- If Flow Divider is loose or hanging up the fluid is circulated back in to tank



Functions:

- Lift: M+S1+S2
- Lower: S1+S2+S5
- Tilt Up: M+S5
- Tilt Down: S3+S4
- Horiz. Open: M+S3+S4

Hydraulic Schematic
4 cylinder gate (2 lift & 2 tilt cylinder)



12 Decal Placement and Inspection

For operator safety, all decals appearing in “Decal Kit” must be in a conspicuous place on control side of liftgate. This is typically a combination of decals on the liftgate and truck or trailer body. Please make sure to place the maximum capacity decal (C) on driver and curb side.

Important: Never remove or paint over any decal. If any decals below require replacement contact Palfinger Liftgates.

Decal Kit			
Decal	Qty.	Part No.	Description
A	1	ATG-URGWA	Urgent Warning: Elevating gate instructions
B	1	ATG-BKR	Circuit Breaker Reset (must be placed where the circuit breaker was installed)
C	2	ATG-XXXX	Capacity (please check the serial number plate to find out your specific capacity)
D	1	ATG-RESET	Circuit Breaker Protection
E	2	ATG-WLH	Warning: liftgate can crush
F	2	ATG-CTN	Caution: Always stand clear of platform area
G	1	ATG-CAB	Liftgate Shut-Off (Place Decal next to the On-Off Switch in the Cab)
H	1	ATG-WNG	Warning: Use handle to open (Must be located underneath handle (main section)
I	1	ATG-FT	Notice for Foot Control
J	Strip		Conspicuity Tape (Place tape along bumper)
K	1	ATG-ILF	Operating Instructions (Place in control box)
L	1	85-0816-000*	Operating Instructions (Place on the curb side of vehicle body above control box)

***Stake and Flatbed Vehicles:** It is recommended to install a plate on the stakes of the vehicle to serve as a surface to install Decal L. Part number 60-0115-200 maybe used for flatbed vehicles with no stakes. **Fig. 27.**

NOTICE

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

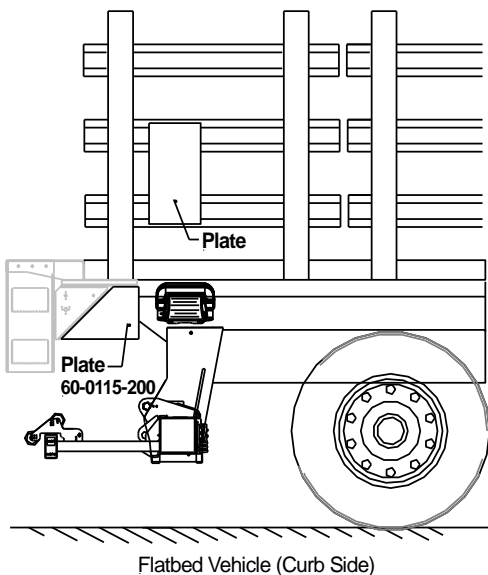
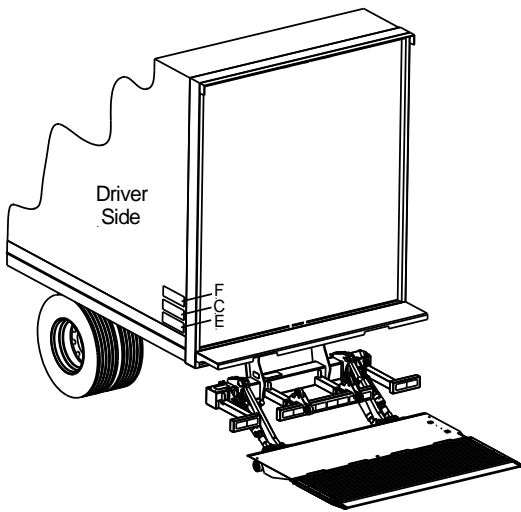
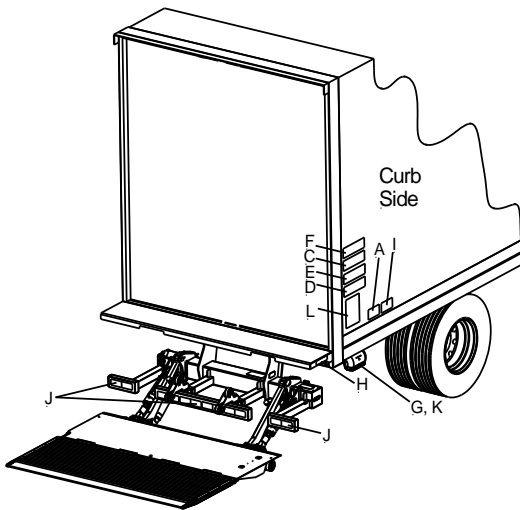


Fig. 27

URGENT WARNING

BEFORE OPERATING LIFT, BE SURE YOU UNDERSTAND:

1. 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.
2. Be certain the vehicle is properly and securely braked before using the liftgate.
3. 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.
4. 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.
5. Each load should be placed in a stable position as near as possible to the center of the platform.
6. 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.
7. 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-0000

Decal - A

NOTICE

ELECTRICAL SYSTEM PROTECTED BY RESETTABLE CIRCUIT BREAKER

TO RESET - PUSH RESET TAB IN

ATG-BKR

Decal - B

CAUTION

Maximum Load Capacity

xxxx pounds.

Center load on platform to avoid personal or property damage.

ATG-0000

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 - 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

WARNING

ALWAYS STAND CLEAR OF PLATFORM AREA

Decal - F

NOTICE

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

ATG-046

Decal - G

WARNING

USE HANDLE TO OPEN ALWAYS STAND CLEAR OF PLATFORM AREA WHEN OPERATING THIS GATE

ATG-0000

Decal - H

NOTICE

DOWN: Step on switch 1 and hold - wait between one and three seconds before you step on switch 2.

UP: Step on switch 2 and hold - wait between one and three seconds before you step on switch 1. The platform will lift up to desired position before rising.

If both switches are not activated within three seconds start over.

ATG-0000

Decal - I



Decal - J

OPERATING INSTRUCTIONS

ILF 33/44/55

To operate this liftgate read and understand the operating decals and manuals.

- Make certain the platform is clear before operating the liftgate.
- Liftgate shut-off switch must be turned off when liftgate is not in use.
- Keep platform in horizontal position when loading and unloading.
- Do not overload, refer to capacity decals.

Max Capacity on Platform

24"

For questions regarding operation call: (888) 774-5644

Decal - K

OPERATING INSTRUCTIONS

ILF 33-44-55

Match the Diagram (See CHAPTER 4) and the labels on the unit with the labels on the truck to make the correct hook-up for operation.

1. Use the liftgate's electrical system to power the liftgate.

2. Use the liftgate's electrical system to power the liftgate.

3. Use the liftgate's electrical system to power the liftgate.

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Decal - L

13 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

- 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.
- Capped frame cutout with flat bar or angle.

Hydraulic Inspection

- Pump reservoir is filled to 1.5" from top when cylinders are completely compressed (platform is resting on the ground).
- Hydraulic components and connections do not leak.
(Should be checked after unit is hydraulically locked for five (5) minutes.)
- All hydraulic lines are secured with cable ties, hoses clamps, or other fasteners. No hoses or components rub on the frame, platform, or any other components while unit is in operation or in storage. No hoses are kinked or bent.

Electrical Inspection

- Battery cable(s) attached and clamped tight and dielectric grease is used to seal all connections.
- All electrical lines are secured with cable ties, hoses clamps, or other fasteners and are properly protected.
- Circuit Breakers installed and wired per instructions.
- Lights wired properly and operate per DOT, State, and Federal requirements.
- All connectors at the control board are properly connected to their corresponding ports.
- Measured 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, and Zerk fittings have been capped.
- Up stops are in place. Wheel is set for proper opening when lowering. Snubber pads are tight against platform.
- Platform travels up and down smoothly and freely, without any hesitation or unusual noises.
- Platform is flush with the bed extension, tip is pitched approximately 2"-2.5" above rear bed extension when raised completely.
- Platform rests on the ground when tilted via the operational control.
- Platform raises and lowers properly and at correct speed. (2 to 4 inches per second)
- Gate is painted, body is clean around gate. Cylinders are clean and rubber & plastic caps are in place.
- The liftgate serial number and model number are documented on the inside of the front cover of the Owners Manual, as well as the installation 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.

Inspection Information:

Name (please print): _____

Completed by: _____

(Signature)

Title: _____ Date: _____

