

# PALFINGER



## LIFTGATES

### ILK

# INSTALLATION MANUAL & CHECK-OFF SHEET

ECN-M1508 Rev. 1.6, Date 09-21-20 Part #90-0413-200

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If you received this product with damaged or missing parts,

Please contact PALFINGER Liftgates at (888)-774-5844

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**Manual Updates**

Revision	Description
V1.6	<ul style="list-style-type: none"> <li>Updated mount plate installation instructions, Section 5.3</li> </ul>

**Recommended Tools for Installation**

Metric Wrench Set	Basic Screwdrivers	Pliers	Wire Crimp Pliers
Test Light	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
Pry Bar	3/8 Drill Motor		Heat Gun or Equiv.
Min. 250 Amp Welder	Cutting Torch or Equiv.		

## 1 **Important Notes:**

1. **Read Manual completely before beginning any work**
2. Mount fixture must be ordered separately (for Part number refer to **Error! Reference source not found.** )
3. Refer to your truck manufacturer's instructions before adding any auxiliary equipment.
4. Pay Special attention to items marked with this symbol: 
5. All welding should be performed by qualified personnel per AWS standards
6. For flip up door or full seal kit applications, please read 4.1 first
7. For swing door applications, please read 4.2 first
8.  Always Ground closest to your welding point to prevent arcing through moving parts
9. Contact PALFINGER Liftgates, LLC for Special Installations not covered in this Installation Manual
10.  Do not paint cylinder shafts or nylon rollers (Use non-chlorinated brake cleaner to remove over spray)
11. Verify that pin lock bolts are tight
12. Grease all pivot points
13. Verify that ALL decals are placed properly (Contact PALFINGER Liftgates replace any missing decals)
14.  Final Check-Off-Sheet at rear of this manual **MUST** be filled out and kept in your records for future reference.
15. Refer to owner's manual for troubleshooting & repairs.

### **Important Dimensions:**

(Refer to line drawing on following pages)

- 1) BED HEIGHT [H] Bed Height Ranges: Max=Unloaded / Min=Loaded Truck
  - Measure from top of body floor to ground. Vehicle must be on flat level ground when measured.
- 2) MOUNT TUBE HEIGHT [F]
  - Measure from **TOP** of Mount Tube to **TOP** of body floor
- 3) MOUNT TUBE [K]
  - Measure from **rear of body** to forward edge of Mount Plate.
- 4) REAR SILL CUT OUT [S]
  - Refer to H, K & S Charts and Cut Out diagrams on following pages
- 5) GROUND CLEARANCE
  - Measure from **BOTTOM** of Mount Tube to ground

## Mounting Notes:

Read and clearly understand manual BEFORE beginning ANY work



The basic rule of PALFINGER Liftgates ILK installation is to raise mount frame to achieve **MAXIMUM** ground clearance **WITHOUT** exceeding Min “F” dimension.

Refer to mounting tables and determine the proper [S] dimension. If the sill is greater than what’s allowed, the sill has to be notched and capped to achieve original strength. Bend flat stock and weld 100% around the notch.

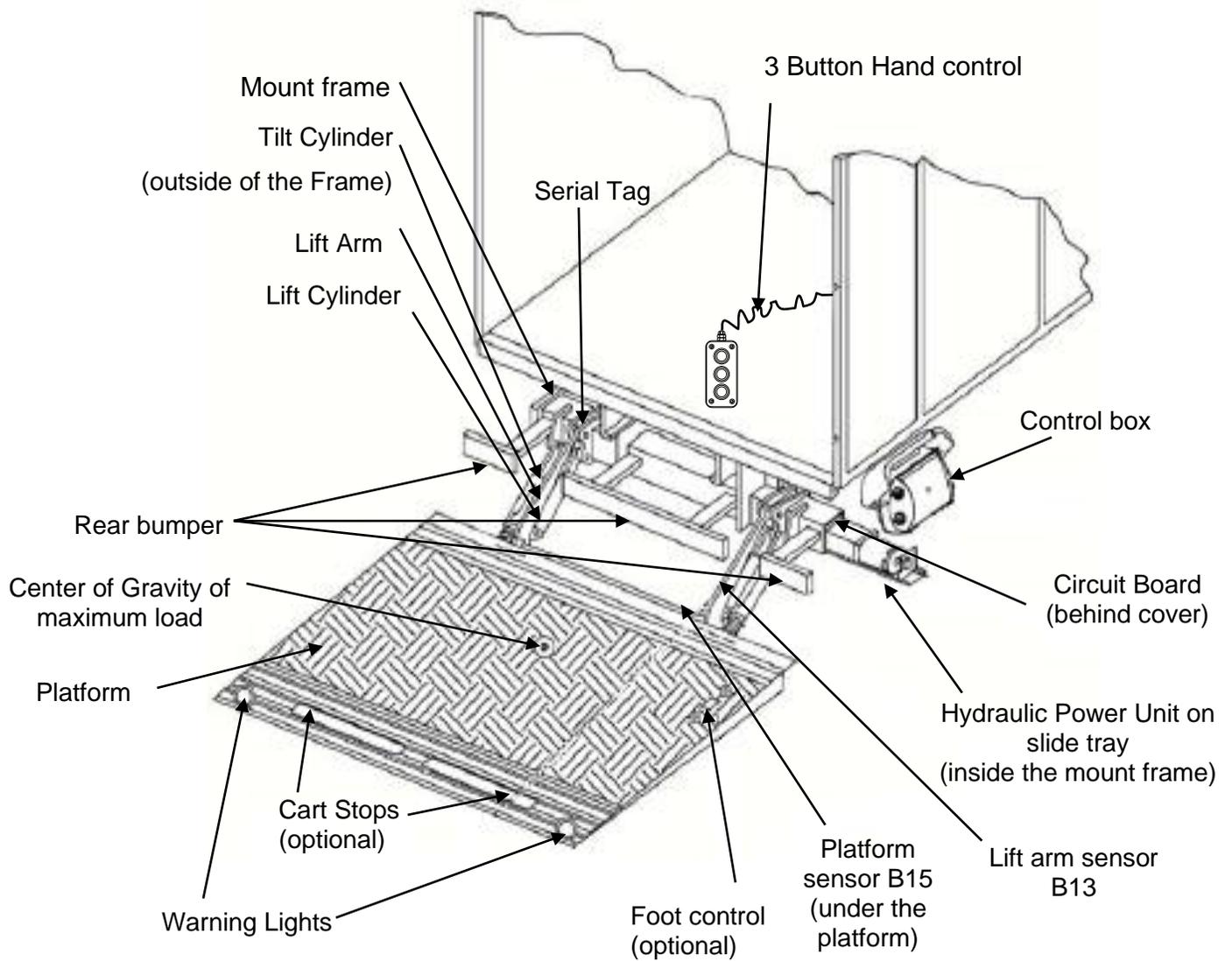
 **Warning**

- Minimum bed height dimensions are ALWAYS MAXIMUM LOADED TRUCK
- Floor Height Ranges: Max=Unloaded Truck; Min=Loaded

**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.**

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

## 2 Gate Overview and Components



**NOTES**

3 Dimension Sheets



# Truck Chassis Dimension Sheet

**Customer Information**

Quote#/SO#: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_ @ \_\_\_\_\_

Liftgates Information:
Model
Capacity
Platform Size
Platform Material

**Truck Information**

<b>Truck Specifications:</b>	
Manufacturer: (ex. Hino)	
GVWR: (ex. 68,000 lbs)	
Length: (ex. 53ft)	
Width: (96", 102")	

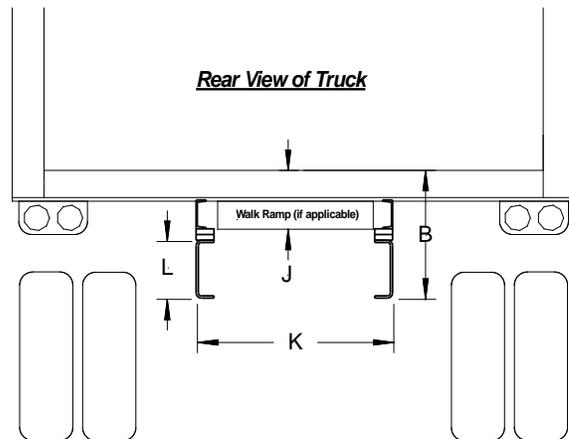
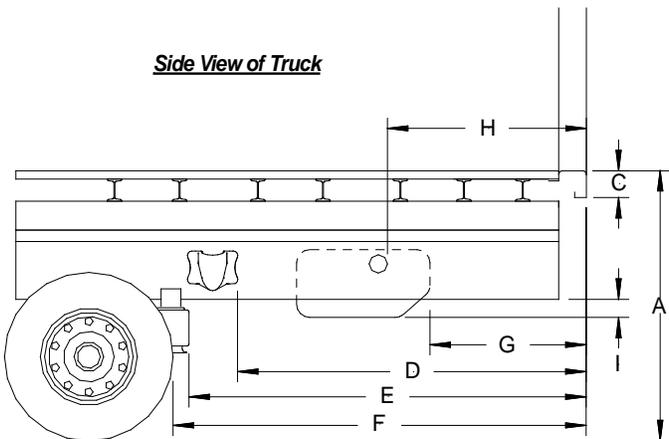
<b>Type of Body</b> (check applicable) <input checked="" type="checkbox"/>	
Van	<input type="checkbox"/>
Flatbed	<input type="checkbox"/>
Reefer	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>

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

**Truck Dimensions**

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

Notes:



90-9813-003\_b



# Trailer Chassis Dimension Sheet

### Customer Information

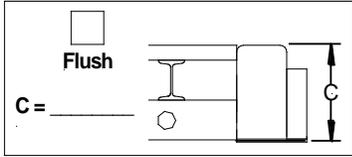
Quote#/SO#: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_ @ \_\_\_\_\_

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

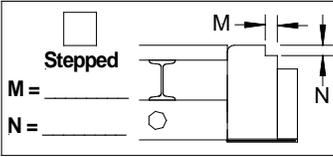
### Trailer Information

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

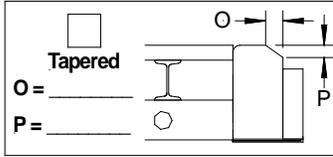
### Trailer Dimensions

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

Flush  
C = \_\_\_\_\_

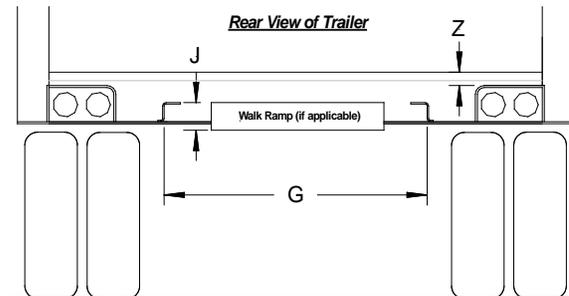
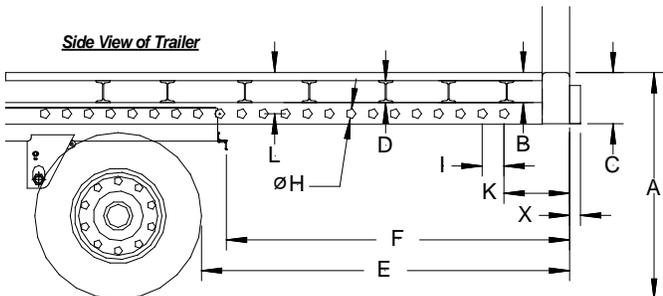


Stepped  
M = \_\_\_\_\_  
N = \_\_\_\_\_



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

Notes:



90-9813-002\_b

3.1 Installation Dimensions ILK22 and ILK 33- "Low Mount" 700 mm arm

**IMPORTANT:**

Always use the **smallest F-dim possible** for best ground clearance (do not exceed max. ground clearance!)

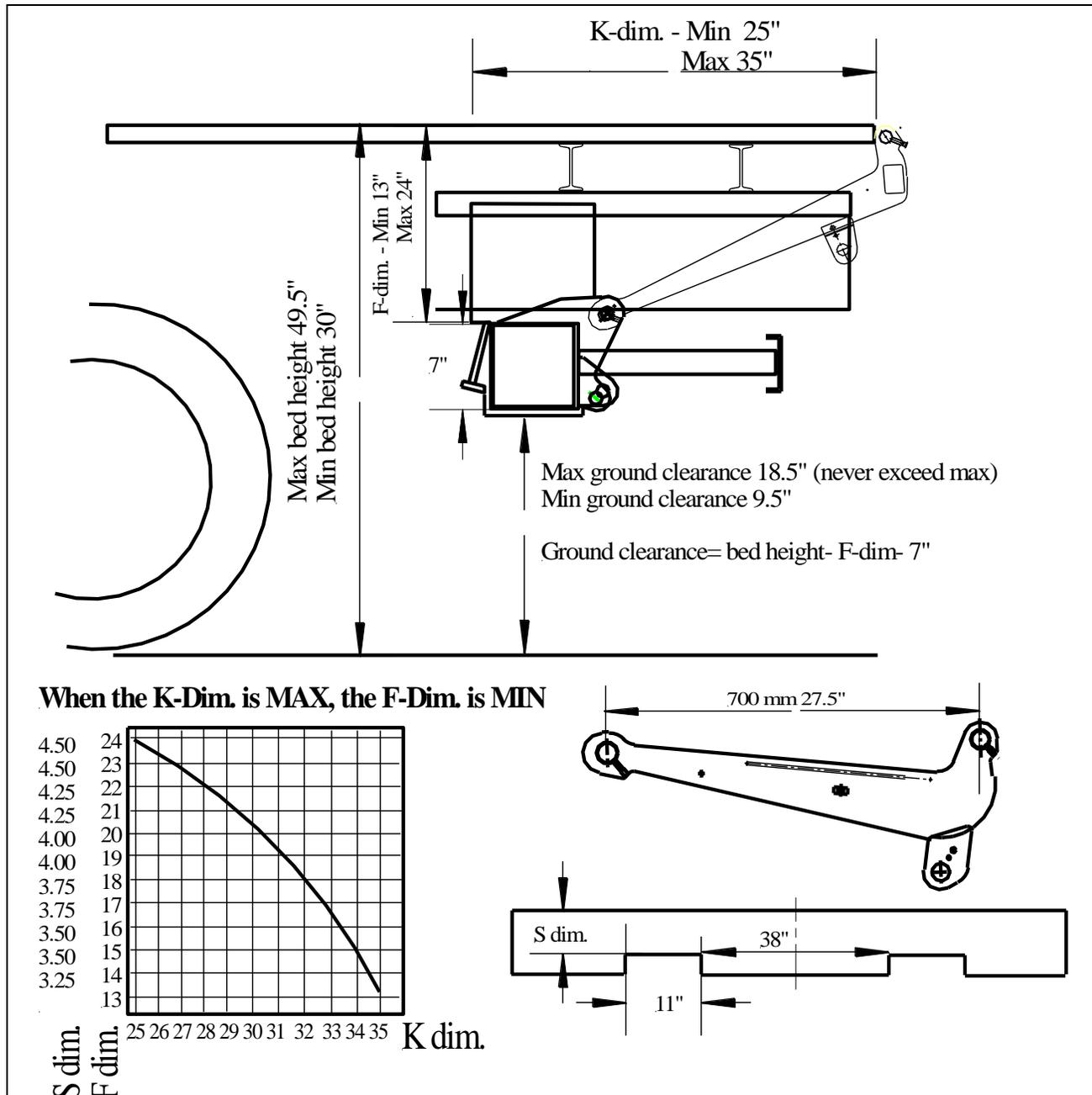


Figure 3.1: ILK22 and ILK33 Installation table

Part number for ILK 22 Mounting Fixture: 1-00015, Part number for ILK 33 Mounting Fixture: 1-00016

**⚠ ILK22 comes with 2 different mount plates (bolted or welded)**

**⚠ MINIMUM bed height is defined as truck/trailer loaded to MAX GVW**

3.2 Installation Dimensions ILK33, ILK44, ILK55 800mm arm

**IMPORTANT:**

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

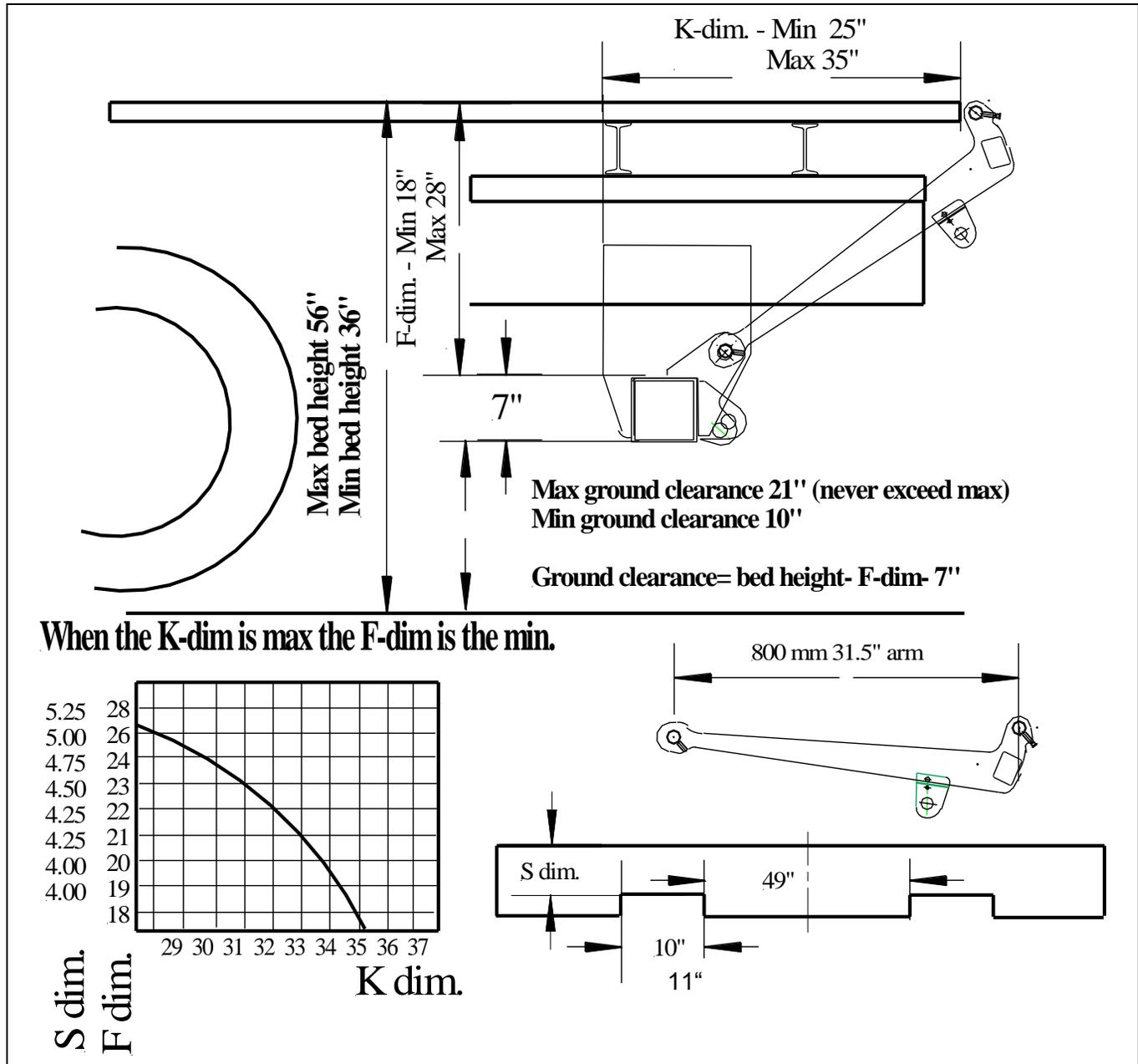


Figure 3.2: ILK33, ILK44, ILK55 installation table

Part number for ILK 33 Mounting Fixture: 1-00016, for ILK 44 and ILK 55 Mounting Fixture: 1-00017

**⚠ MINIMUM bed height is defined as truck/trailer loaded to MAX GVW**

**Note: Special arm sizes available for different installation circumstances**

3.3 Installation Dimensions ILK66 900mm arm

**IMPORTANT:**

Always use the **smallest F-dim possible** for best ground clearance (do not exceed max. ground clearance!)

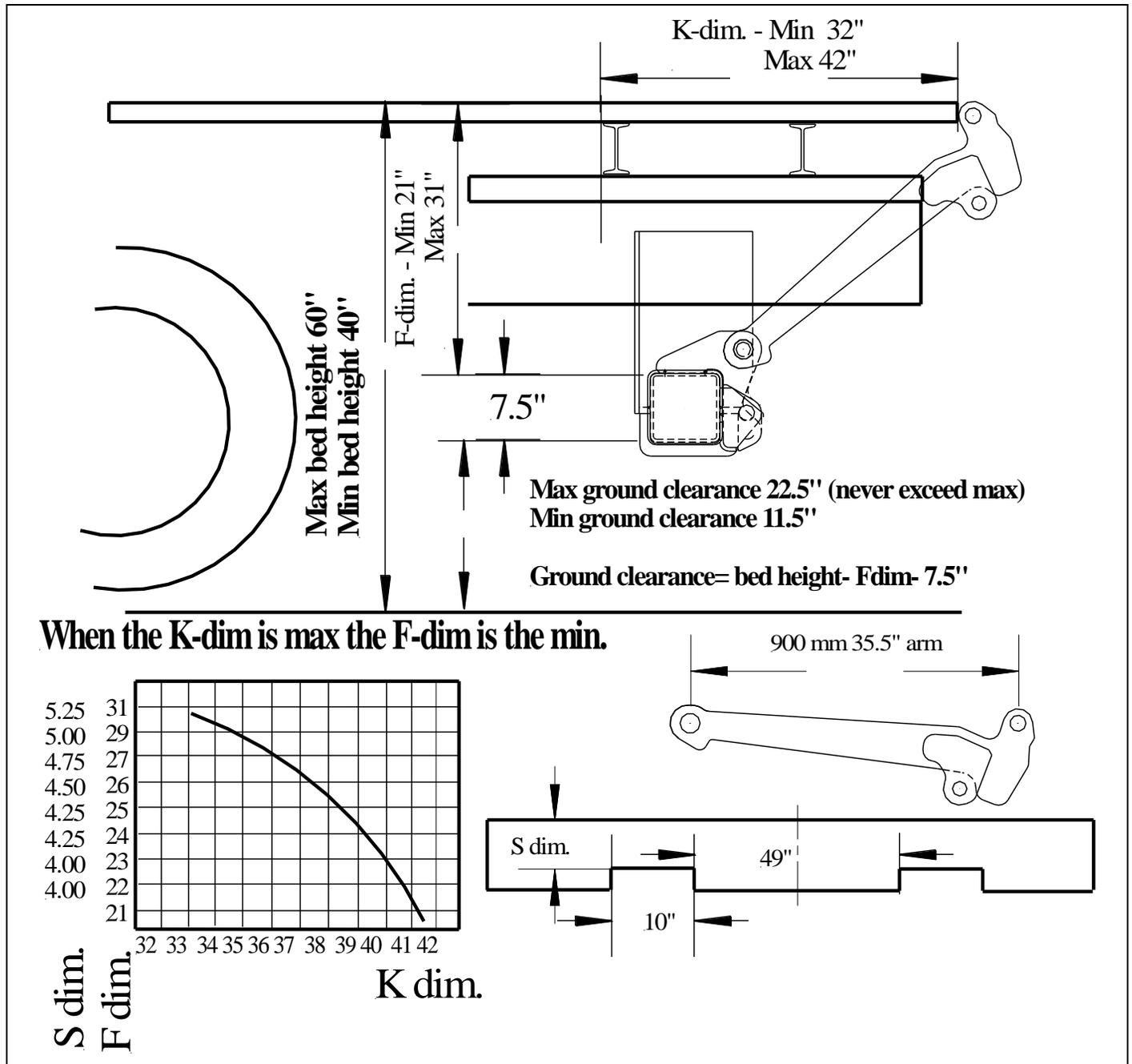


Figure 3.3: ILK66 installation table

Part number for ILK 66 Mounting Fixture: 1-00018

**!** MINIMUM bed height is defined as truck/trailer loaded to MAX GVW

## 4 Chassis and Body Preparation for special applications

### 4.1 Flip-Up door & Full-door seal kit installation

1. Install 1/2" x 1-1/2" HR flat bar to the lower rear body seal

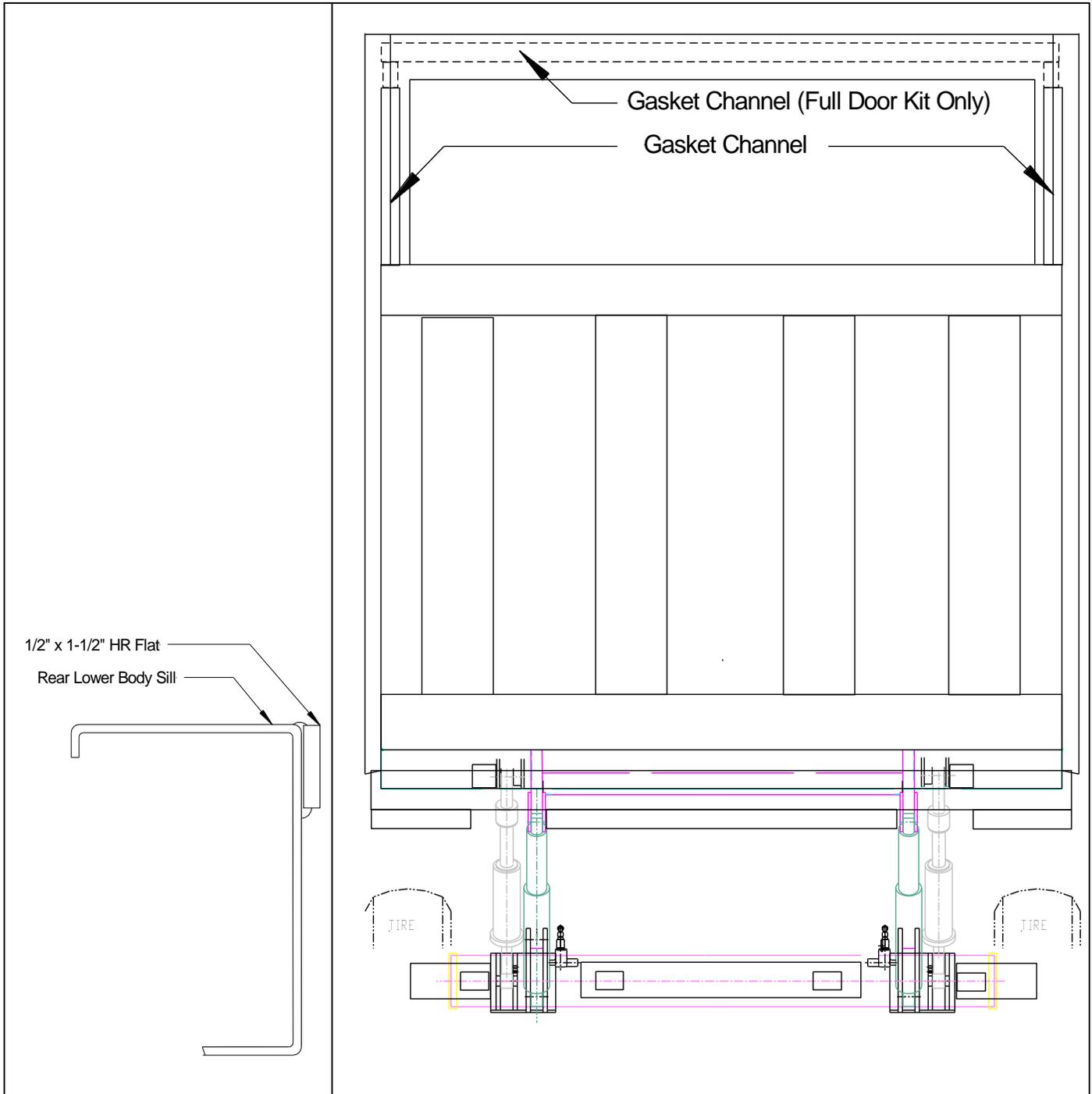


Figure 4.1: Full door seal kit

2. Install gate per instructions per 5.1

3. Install gasket channels on rear vertical body posts to make contact with the platform surface.

**! Gasket must NOT make contact with platform edge caps. Doing so will cause leaks.**

4. For full door seal kits install gasket channel along header at edge of platform

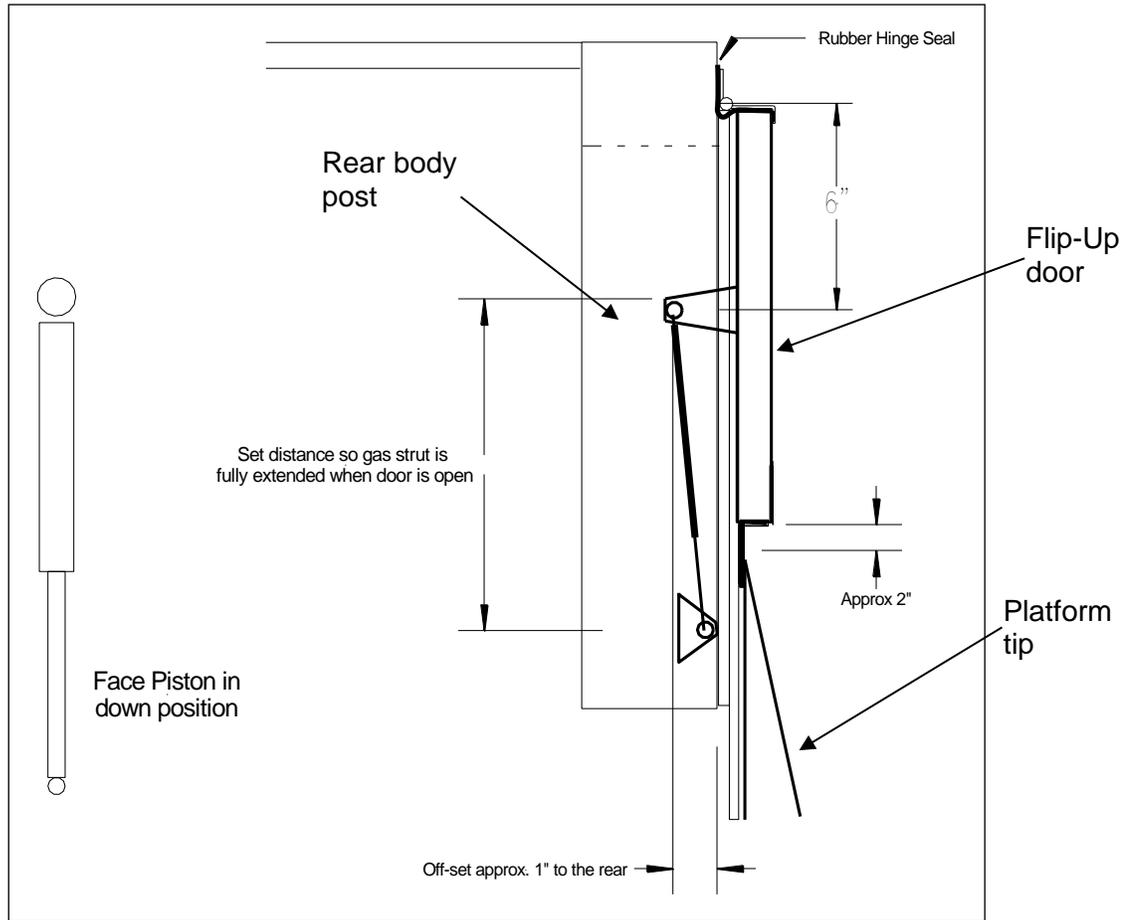


Figure 4.2: Flip up door

5. Apply Silaprene (or equivalent) to gasket channel and slide gasket into channel

6. Trim gasket flush with channel and crimp channel slightly at top and bottom to lock gasket

7. Install flip-up door

8. Verify Hinge Seal is approx. 3/16" above top hinge and even before tightening any fasteners

**! Open door several times before tightening any top hinge fasteners !**

9. Install lower gas strut mount so that gas strut is fully extended when door is open

10. Lower gas strut mount should be off set (approx. 1") to the rear of body to pull door in when closed

4.2 Swing door applications



A bridge kit is recommended for the usage of an ILK liftgate behind swing doors. Due to the shifted pivot points all welding and cut out points have to be shifted accordingly.

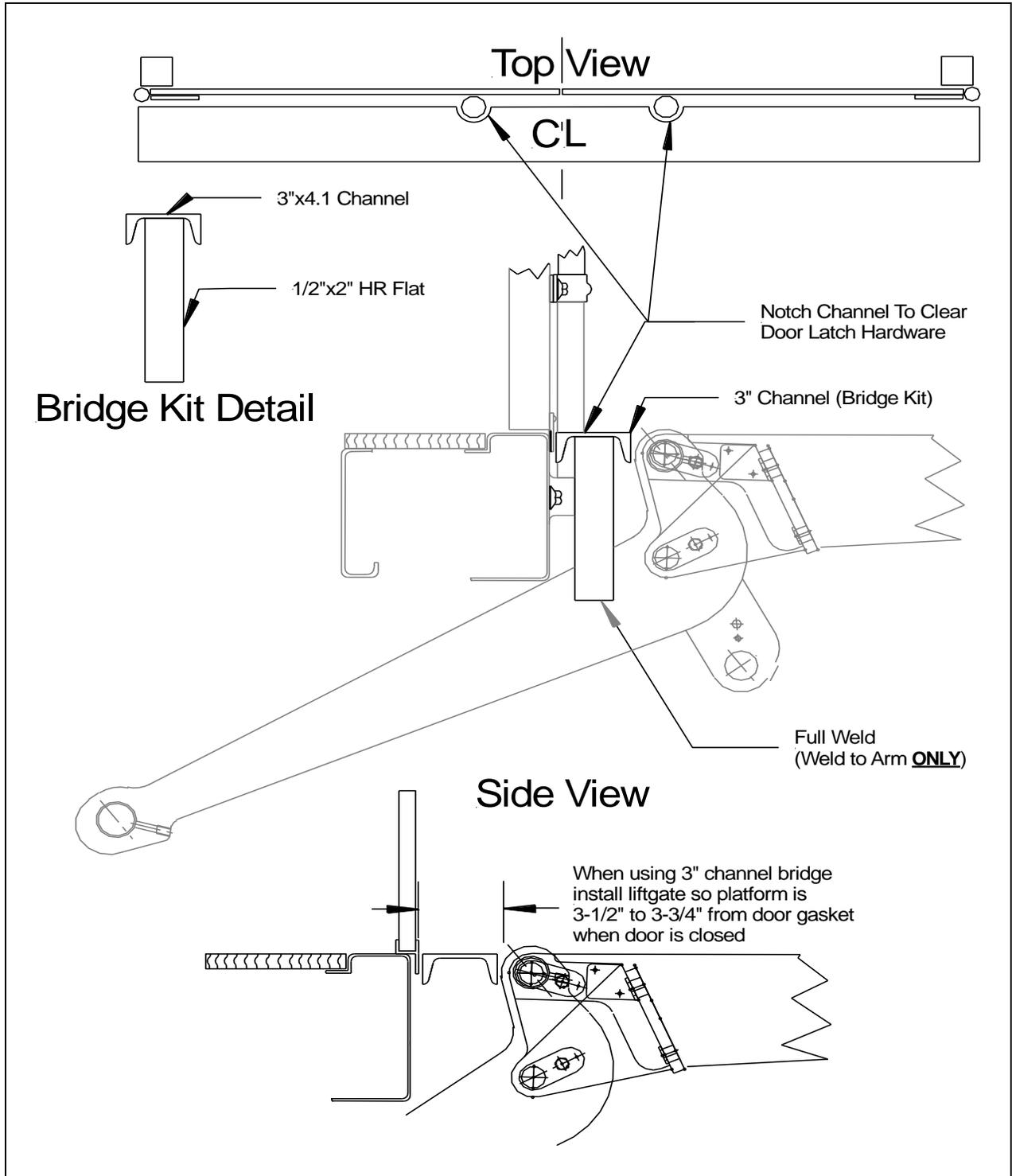


Figure 4.3: Bridge kit for swing doors

Please consider your particular door frame. Set up for best solution for your application.

## 5 Gate and Platform Installation



Refer to 4.1 for flip-up door/full seal kit and swing door applications **BEFORE INSTALLATION**



Refer to 5.2 for installs with Mounting Fixture **BEFORE INSTALLATION**

### 5.1 Sill Preparation

1. Reinforce back sill by welding a ½” flat bar to the rear, 8 welds each on top and bottom.
2. Notch rear sill, if necessary, per installation table (Section 3.1) for your particular model.
3. Box in notch with flat bar to maintain sill strength.

### 5.2 Installation with mounting fixture

1. Locate and mark out the center of the rear body or bed sill.
2. Attach the PALFINGER Liftgates mounting fixture centered to the sill by tack welding it in place.  
(The mounting fixture must be ordered separately from PALFINGER Liftgates. Once purchased it can be used over and over)
3. Tie tilt cylinders with rope or wire to lift arm to avoid dragging on the ground

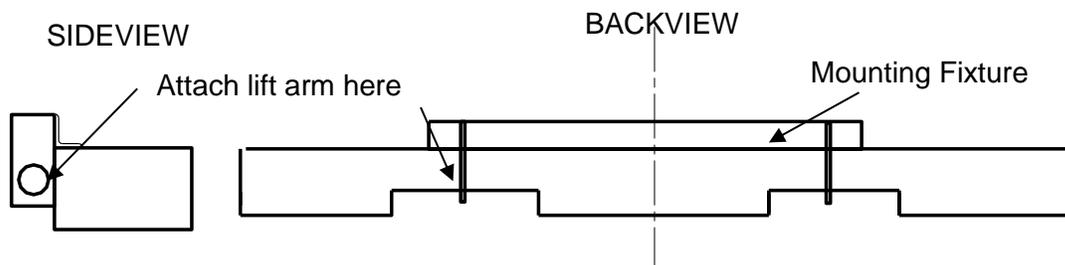


Figure 5.1: Mount fixture welded to rear sill

4. Prepare the body for the mount plates. The mount plates lie flat against body rail/ truck frame/ sub frame.
5. Slide mount tube under the truck frame/ sub frame and attach the lift arm to the mounting fixture. At this point you should place the mount tube in the pre-determined position, keeping the given **maximums and minimums in mind** (K- and F- dimensions). Use a forklift, a floor jack or a similar device to position the mount tube. Make sure **the mount tube is placed at a 90-degree angle to the truck bed.**

Always make sure to  
pursuit the policy of

**MAXIMUM GROUND  
CLEARANCE**

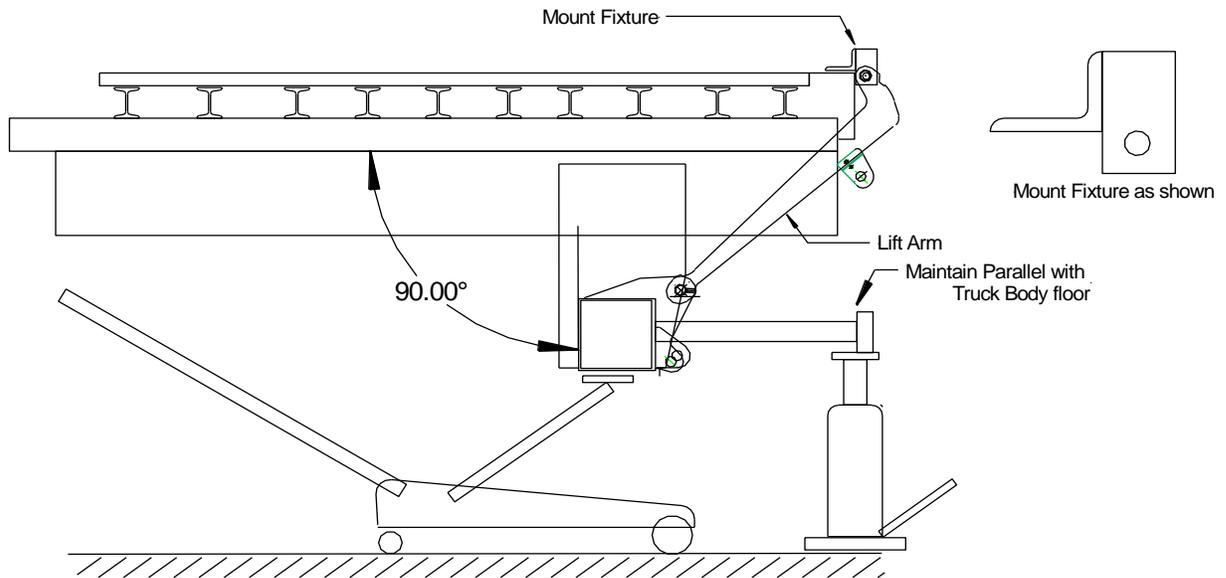


Figure 5.2: Mount frame alignment with fixture

6. With the mount tube held in place, position the mount plates over tube and against truck frame. Position them with angle facing to back of truck and clamp them to truck frame.
7. Refer to 5.3 for Bolt-On Mount Plates for model ILK22 only

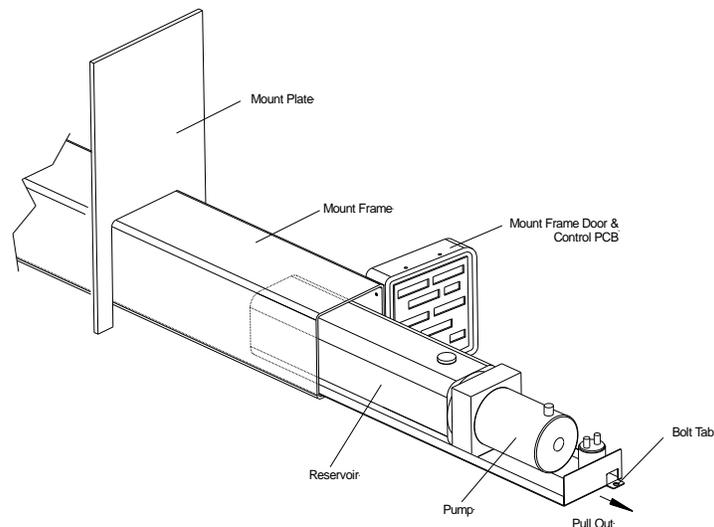


**Before any welding is started, check that liftgate is balanced and not binding in mounting fixture, you should have equal pressure on each lift-arm pin. This is very important to make platform align with truck sill.**



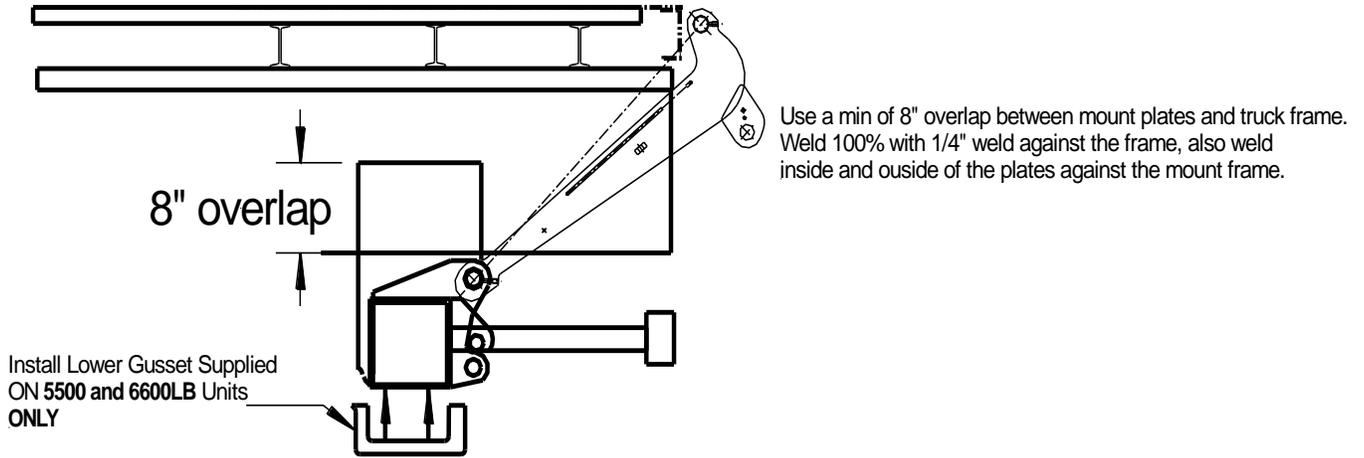
**Be certain to pull out power tray before welding. IMPORTANT!!!!!!**

8. The reservoir is made of plastic and you will burn it while welding. To pull out tray, open curb side mount tube rubber cover, simply remove the clamp and the tray holding bolt and detach the ground strap and control power connector for the tray. Pull on tray until the hoses are stretched and the tank is further out than the point of welding, open driver side to verify that hoses or cables are not touching inside of tube wall. Insulate the inside of the mount tube to protect the hoses from the heat during welding



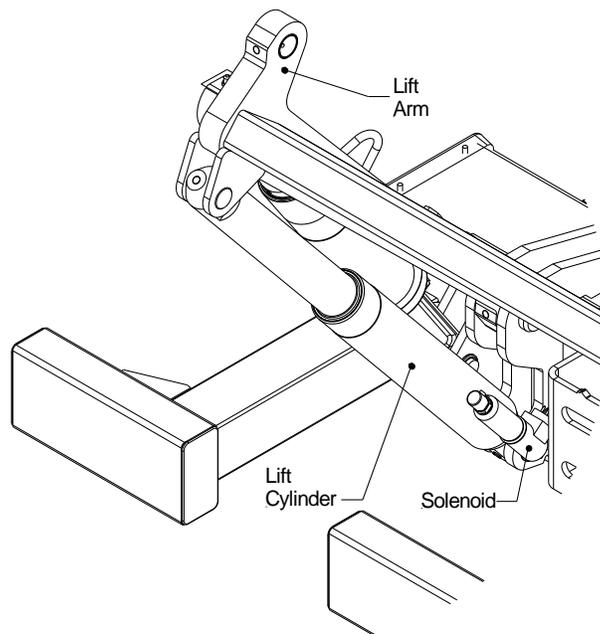
- Tack weld mount plates to mount tube with a minimum of three 2" and three 2" welds to the truck frame.

**!** Before finishing up all welding we recommend doing the electrical installation (see 6, Page 30) and platform installation (see 5.4, Page 23) to make sure that everything aligns like it should.



**!** Before running the unit through its cycle, make sure that the In-Cab Switch is in the "ON" position (lights on)

**!** Before running the unit through its cycle, make sure that the solenoids on the lift cylinders are free of obstruction while cycling gate. Verify curb side and driver side.



**5.3 Bolt-On Mount Plate Installation – ILK 22/33/44/55**

**IMPORTANT:** When drilling into the vehicles C-Channels, make sure to observe the vehicle manufacture’s guidelines and recommendations before drilling.

When installing the mount plates on a C-Chassis use the following amount of bolts listed below along with their torque specificaitons:

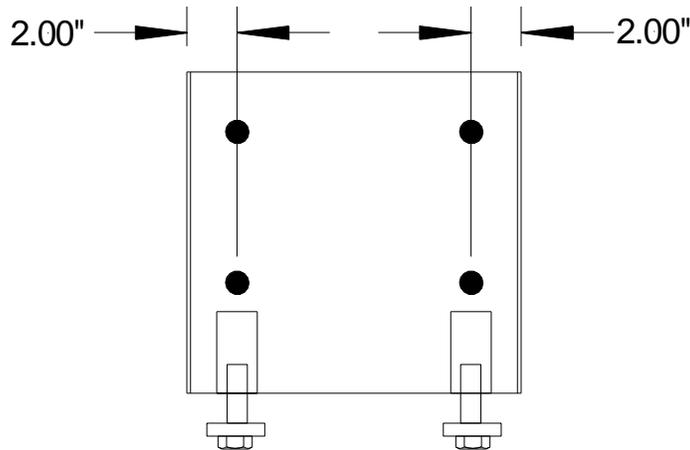
Model	No. of Bolts	Bolt Type	Torque Specification
ILK 18	4	14 x 1.5 St. 10.9	140 ft./lbs. [140 Nm]
ILK 22	4		
ILQ 22	4		
ILK 33	6		
ILK 44-55	10		
ILK 66	14		



Before If it is necessary to perform any welding make sure to slide out the power pack out of the mount tube to prevent any damage to the oil tank.

**Bolt Spacing**

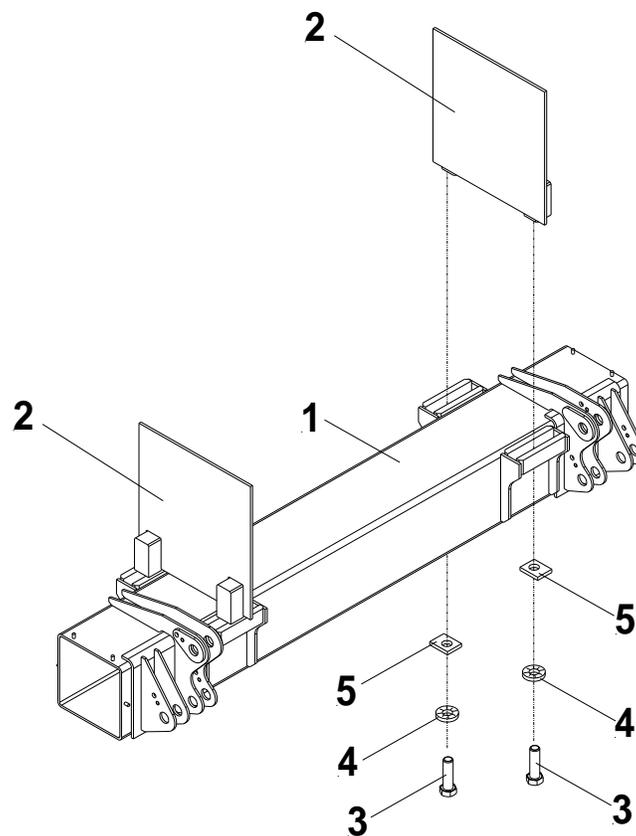
1. Space bolts approximately 2” from the edge of the plates.



### 5.3.1 Mount Plate Installation

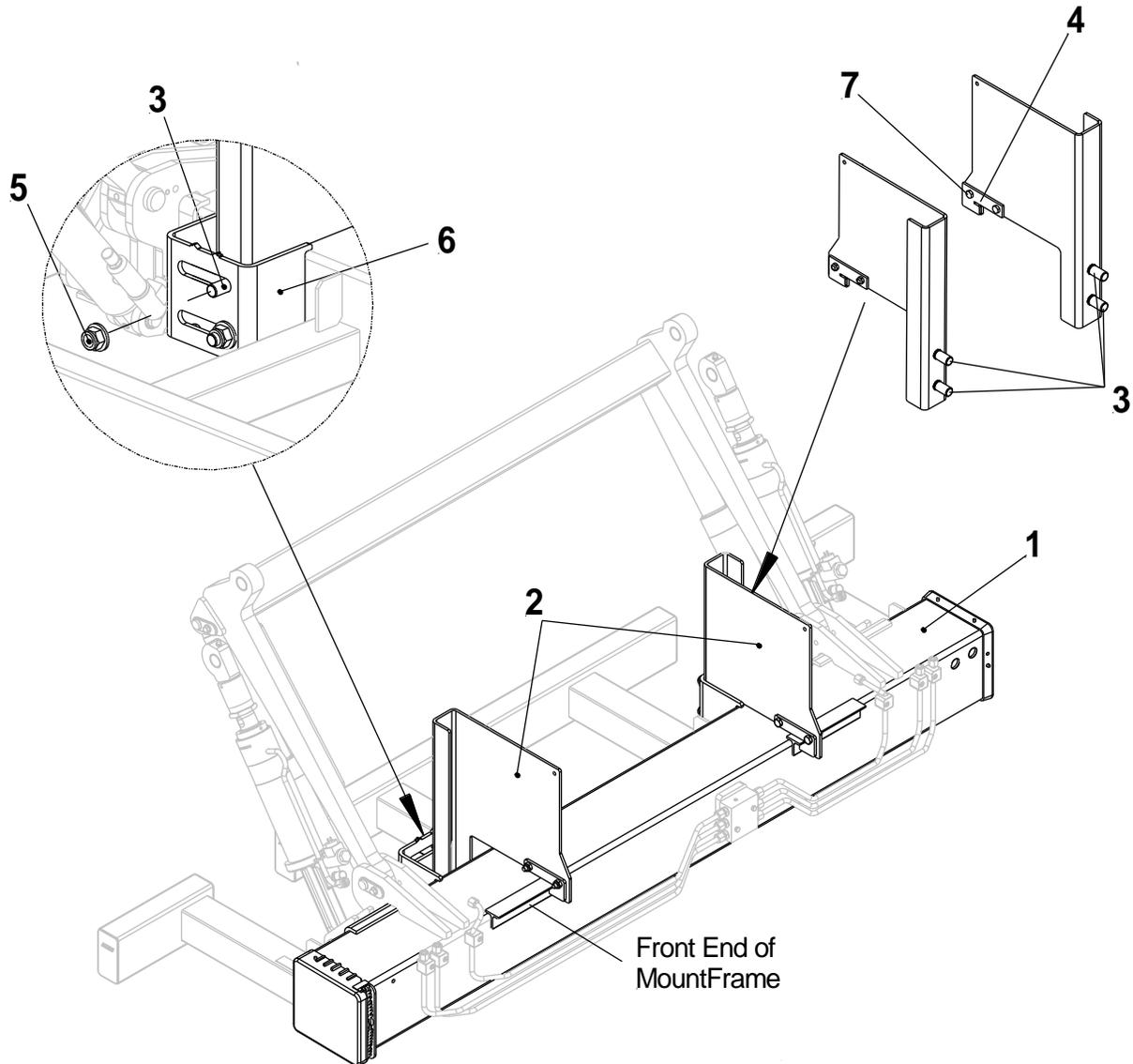
#### ILK 22 Bolted Mount Plates

- 1) Set up mount plates (2) on top of mount frame (1)
- 2) Connect mount plate (2) to mount frame (1) with Hex head bolts (3), lock washer (4) and (5) square washer.
- 3) Slide mount plates in position to frame width and slide gate under truck frame.
- 4) Tack weld mount plates (2) to frame when gate is in position and aligned.
- 5) Double-check position of gate (centered underneath the truck)
- 6) Tighten up hex head screws (3) to secure mount frame (1) and mount plates (2).  
Torque on screws (5) = 295 ft./lbs. [400 Nm].



### ILK 33 Bolted and Clamped Plates Installation

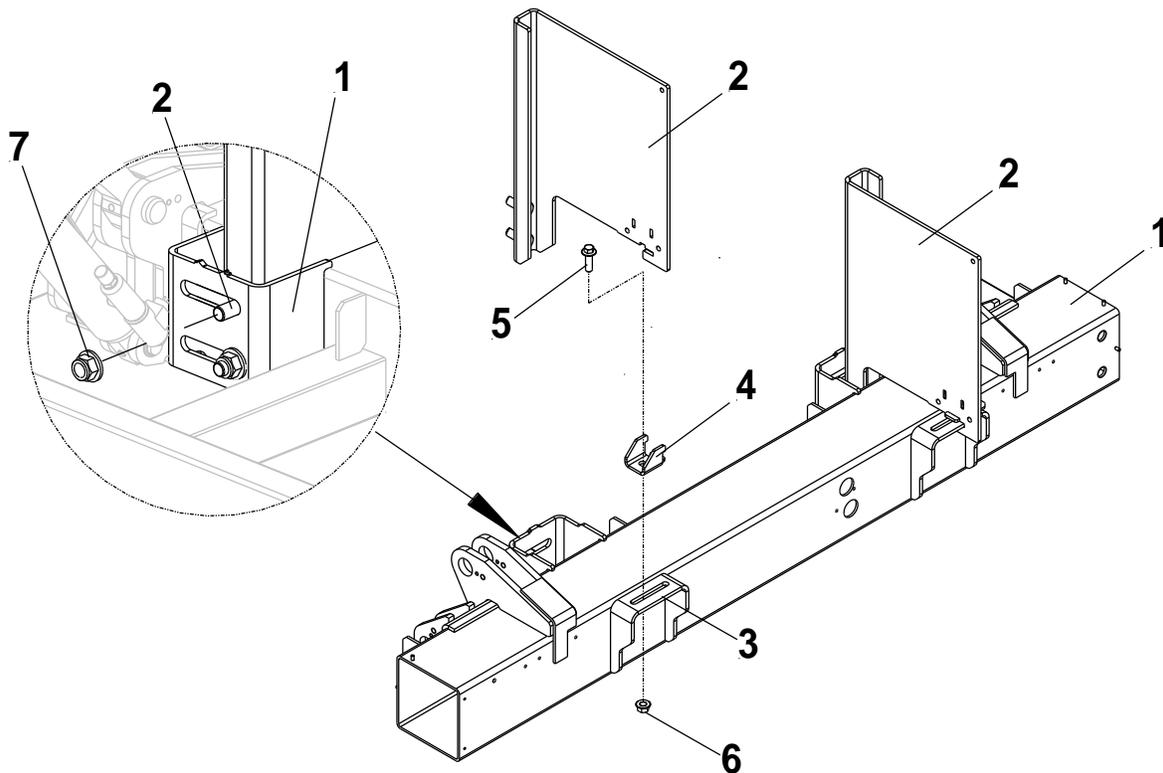
1. Insert the mount plates (2) with the bolts (3) onto the mount frame (1) and secure the mount plate (4) hook to the mount frame.
2. Tighten the M20 hex nuts (5) onto the bolts (3) to secure the mount plate (2) to the mount frame U-section (6).
3. Align the two mount plates according to chassis frame width and snug the M20 hex nuts.
4. After the mount frame (1) is positioned correctly to the chassis, torque down the rear facing M20 hex nuts (5) to 295 ft./lbs. (400 Nm).



ILK 33 Mount Plate Assembly Components	
1. Mount Frame	4. Mount Plate Hook
2. Mount Plates	5. M20 Hex Nuts
3. M20 Bolt	6. Mount Frame U-Section
7. M10 Bolt	

## ILK 44/55 Bolted Plates

1. Install the preinstalled bolts on the mount plate (2) on mount frame (1). Install nuts (7) but do not tighten completely. Hook the front end of the mount plate (2) to the mount frame bracket (3). Install locking bracket (4) in between mount plates (2) and mount frame (3). Secure mount plates (2), locking brackets (4) and mount frame brackets (3) with M14 bolts (5) and nuts (6).
2. Tighten the M14 hex nuts (6) onto the M14 bolts (5) to secure the mount plate (2) to the mount frame U-section (6).
3. Align the two mount plates according to chassis frame width and snug the M20 hex nuts (7).
4. After the mount frame (1) is positioned correctly to the chassis, torque the rear facing M20 hex nuts (7) to 295 ft./lbs. (400 Nm) and M14 hex bolts (5) and nuts to 140 ft./lbs.



**5.4 Platform Installation**

- If power pack is still removed from mount tube for welding, reconnect the ground cable and power connection. Do not push back in, welding is not finished!!!!!!

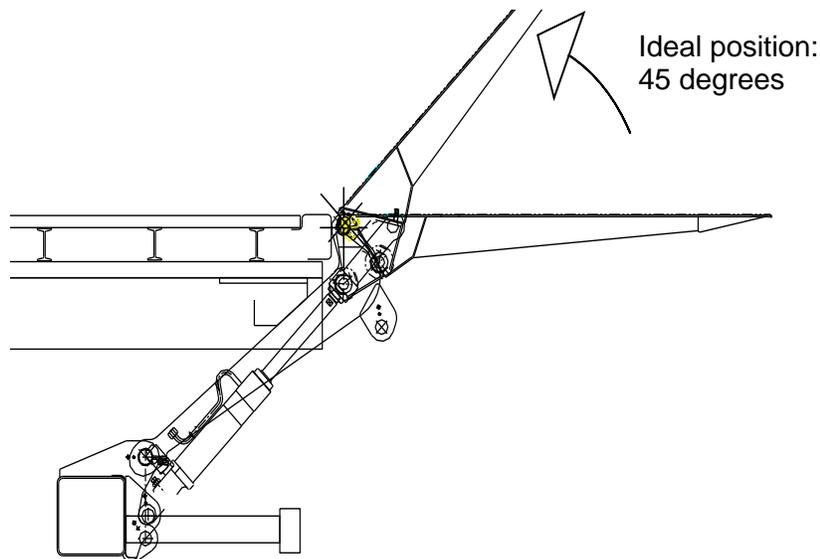
**Attention: check all PC-Board connections for tightness**

**5.4.1 Attach platform to liftarm**

1. Remove pins attached to mounting fixture and lift arm. Lift arm will drop about 12" - 16".
2. Remove mounting fixture from truck bed.
3. Lower lift arm to ground to bleed air out.
4. Support platform horizontally with forklift, overhead crane or similar equipment.
5. Install platform onto lift arm using small pins.
6. Tighten up pin lock bolts.

**5.4.2 Installation and Adjusting the tilt cylinders**

**Pin only one cylinder at a time to the platform**



1. Tilt platform up to a point of easy access of the tilt bushings (using the forklift, overhead crane, etc.)
2. When installing the tilt cylinder into the platform, extend the tilting cylinder by pressing the switch for opening and closing until the pins fit in the tilt cylinder and the platform bushings. For this purpose, hold the platform sensor B-15 with the cable straight down.
3. For the platform to be in the required end position, the **tilting cylinder must be fully extended**
4. Verify that reservoir breather cap is installed and hydraulic fluid is at proper level with platform on the ground



**Make sure to tighten the tilt piston rod lock nuts when you are finished.**



**Wrench Sizes for Tilt Cylinder Adjustments**

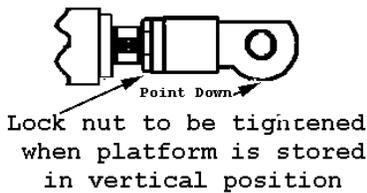
Gate Model	Nut	Piston
ILK 22	29MM	29MM
ILK 33	50MM	36MM
ILK 44-55	65MM	42MM
ILK66	71 MM	50 MM

How to adjust the tilt cylinders:

1. Raise the gate all the way up against the truck body.
2. Close the platform – tilt cylinders fully extended.
3. Look for a gap at the platform tip and the body.
4. If platform is not completely in a vertical position, open up platform about 15-20 degrees and lower down about 5”-10”. Adjust the tilt cylinders by rotating the piston in the cylinder head.
5. Repeat step 4 till platform is vertical and even with body.
6. Tighten left and right lock nut at tilt piston to keep.



**Round side of tilt cylinder clevis MUST face down towards ground**



If you have not finished the welding, **carefully** run lift to see if it is properly aligned with the floor sill, remove pump & motor from tube and finish all welding work before continuing with detail work.



**Never power the lift hard against anything if you have not finished welding.**



**For Warning lights and foot control cable if platform is equipped**

1. Connect cables verifying that connectors are deep seated.
2. The Connectors from platform and gate are marked from the factory for easy identification
  - Green connector #17 – warning lights;
  - #14 with cable tie – up button
  - #8 without marks – down button

Tie off cable and connectors into platform so that large portion of cable is clamped in cover and all connectors are inside platform. **Do not pinch cable under plastic cover!!!**

## 5.5 Installation without mount fixture

1. Connect platform to lift arms using short pins.
2. Tie tilt cylinders with rope or wire to lift arm to avoid dragging on the ground.
3. Support platform with forklift, overhead crane or similar device.
4. Lift platform up and support mount tube with rolling floor jack or similar device.
5. Slide platform/mount tube assembly under the vehicle frame .
6. Set platform so it is centered level and flush with body floor.
7. Secure and attach platform to body using 3" channel or equivalent with tack welds (steel platform) or clamps (aluminum platform) to assure level position of platform to body floor (shown in Figure 4.3)



**Warning: Never work or place yourself under unsupported Platform**



8. Place the mount tube in the predetermined position, keeping the given maximums and minimums F- and K-Dim. in mind. Use floor jack or a similar device to position the mount tube. Make sure that you **place the tube at a 90-degree angle to the truck bed.**

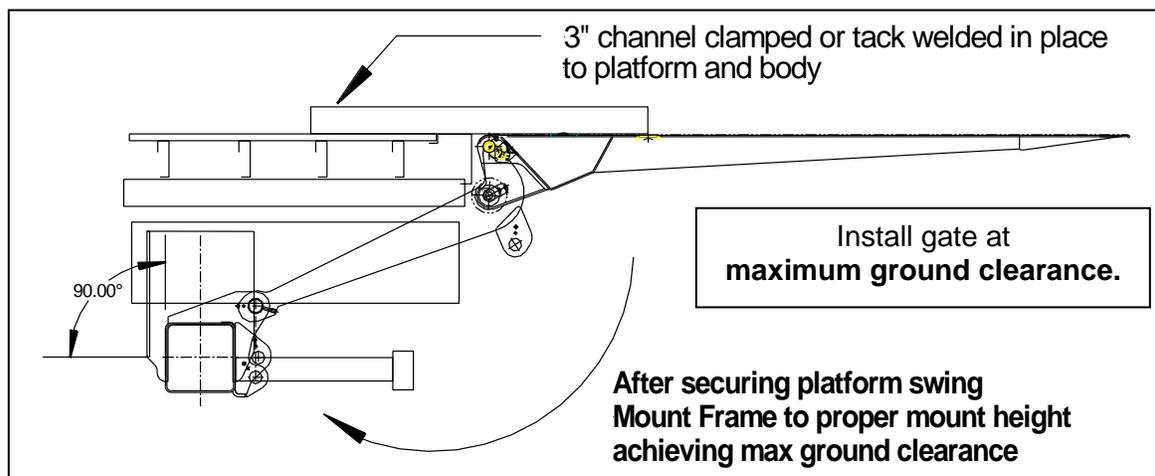


Figure 5.3: Platform install without fixture

9. When mount frame is in place, tack weld mount plates to mount tube with minimum three 2" welds and three 2" welds to the frame.
10. Before finishing all welding we recommend doing the electrical installation (see chapter 6 on page 30) and to make sure that everything aligns like it supposed to be.
11. Remove the 3" channel and follow instructions to install tilt cylinder as shown in **chapter 5.4.2**

### 5.6 Setting and Operation of B-15 Sensor

1. Mount the platform sensor B-15 to the right-hand side of the platform as shown in Fig.4.4. Make sure to **loop wire around to give it enough slack** in normal operation and route clear of any pinch points.
2. Close the platform as much as possible to body of vehicle. (**Tilting cylinder is fully extended**). Relieve tilting cylinder pressure with the 'tilt open' switch. Adjust the platform to required vertical position by turning the piston rod in or out of the clevis using a wrench (See page 24). Repeat the setting procedure if necessary. **It is important that both of the cylinders are adjusted equally.**
3. Verify that the platform sensor B-15 is set correctly by placing platform in stored position (fully vertical) and check that warning lights are off (with cab switch off). If lights still on when gate is stored, loosen the 5mm x 50mm Allen Head mount screws at sensor and rotate slightly until lights turn off. Retighten screws

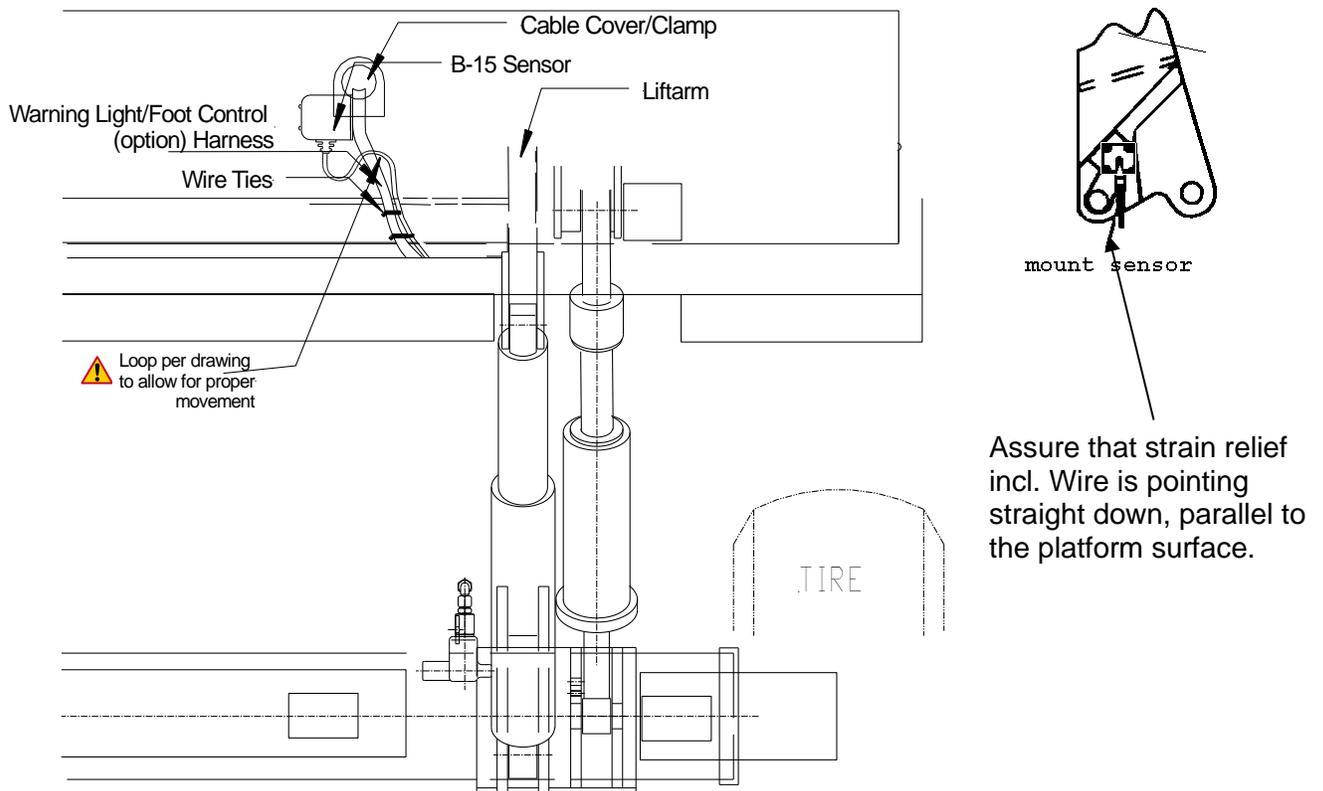
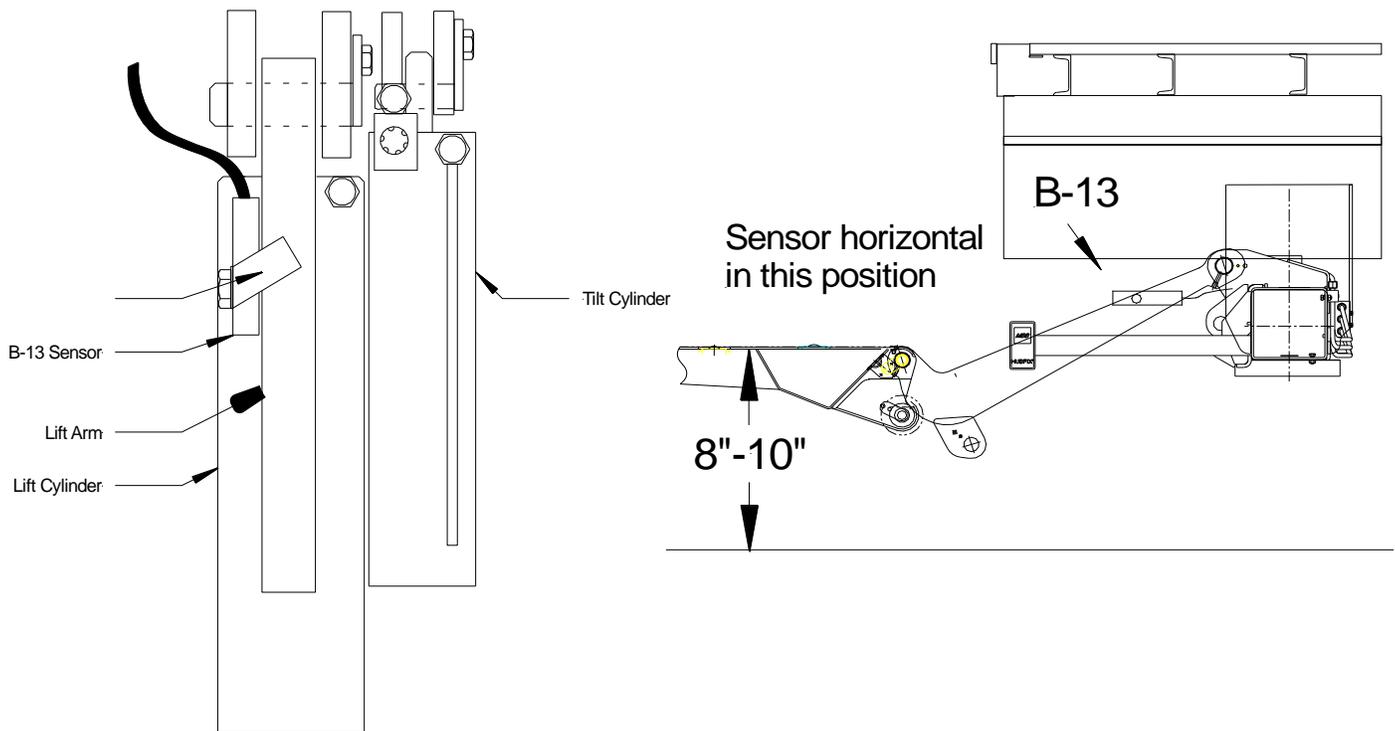


Figure 5.4: B-15 Sensor and warning light cable installation and placement

-  Warning Light/Foot Control (option) **MUST** have all connectors tied off and inserted into platform profile after connections are made.
-  Route cables secure to avoid damaging harness during regular operation

### 5.7 Setting and Operation of B-13 Sensor

1. Raise platform approx. 8" – 10" off ground and verify platform is level (tilt if necessary)
2. Loosen lock bolt and **set sensor level with platform surface/ground** (verify colored side of sensor is out, plastic housing is facing to lift arm)
3. Lower platform to ground. When properly set, platform should remain level for approx. 2 seconds, then tip will tilt towards 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.

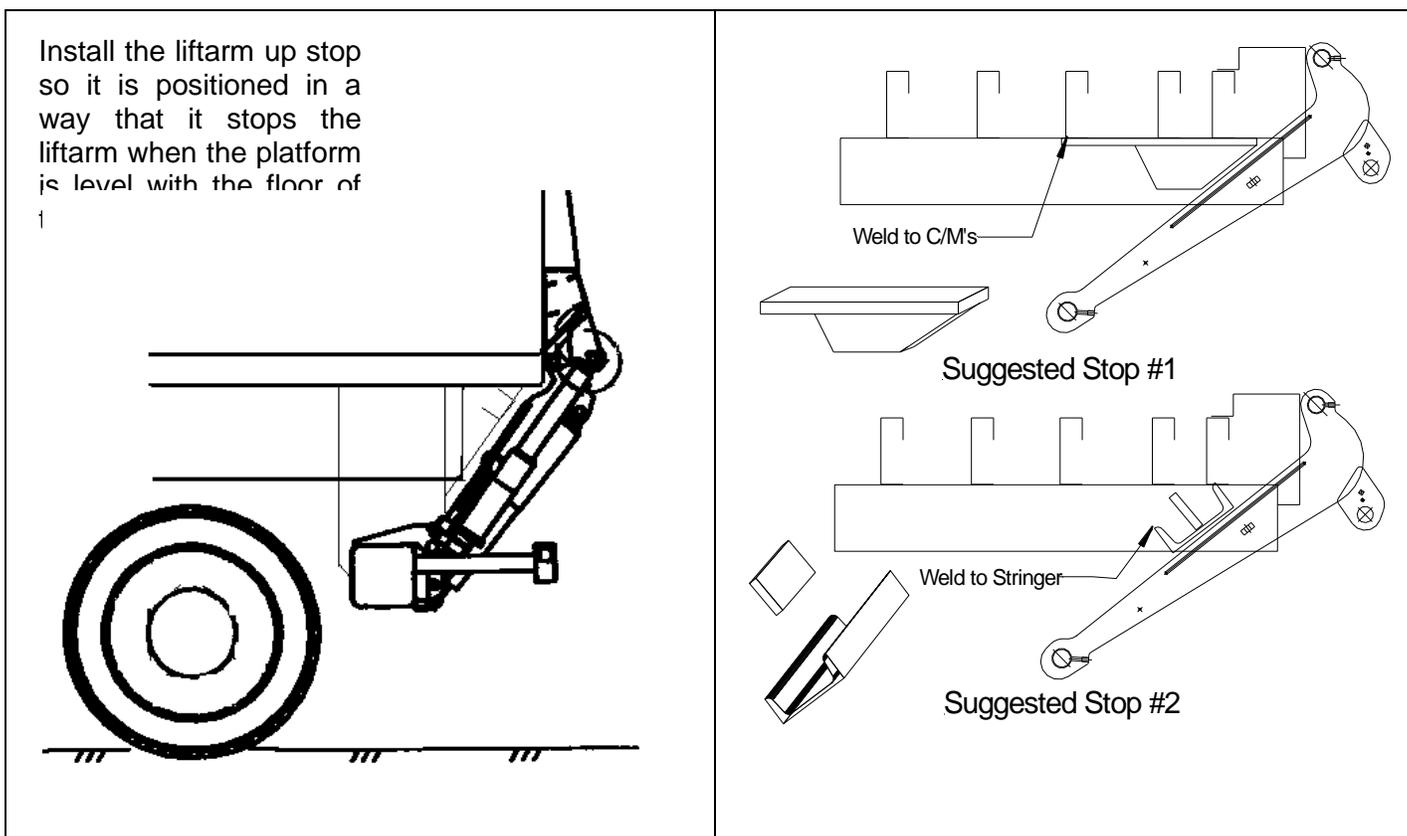


**⚠ At NO time should the platform tilt towards ground while lowering. Platform should ONLY tilt AFTER Lift Arms/Nylon Rollers contact ground.**

5. After sensor is properly set, tighten lock bolt to 43 in.lbs/3.5 ft.lbs.
6. Cycle platform several times to check operation after tightening.
7. If Platform does not level, but lifts up only, check batteries, start truck in fast idle.
8. Fold down Lock Tab tightly onto Lift Arm (see above).

- ⚠ Never over torque B-13 lock bolt.**
- ⚠ Verify colored side of sensor is out (facing away from arm)**
- ⚠ Under torquing B-13 lock bolt may allow sensor to shift during normal gate operation.**

## 5.8 Installation of left and right Up Stops



Damage to the body may occur if up stops are not installed properly

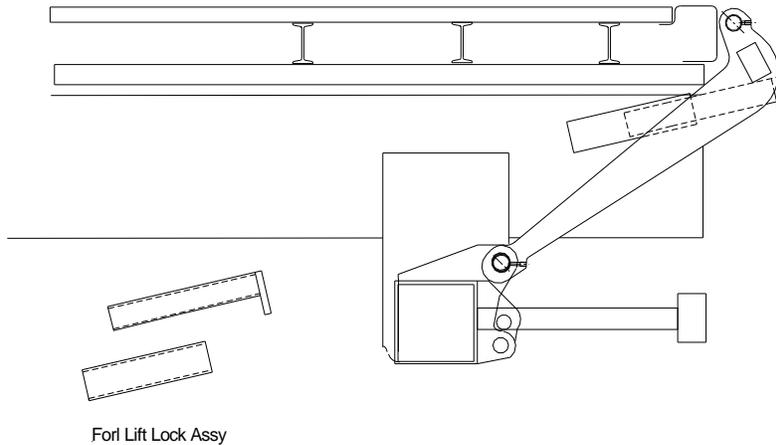


How to install the Up-stop:

1. Raise platform up to rear sill verifying it is level with body floor and there is a slight gap (approx. 1/8") between lift arm and rear sill.
2. Determine type of up stop for your installation.
3. Set up stop so that it makes contact with liftarm.
4. Tack weld in place.
5. Cycle gate to verify liftarm makes contact with left and right up stops before making contact with rear sill.
6. There **is not** an excess gap between rear sill and liftarm
7. Platform is level with body floor.

### 5.9 Fork lift locks installation for re-enforced platforms

1. Install optional forklift locks to the outside of chassis frame. Angle slightly as shown to prevent extension due to vibration while driving.
2. Set Fork Lock Assembly so the Slide Tube completely supports the Lift Arm Torsion Tube.
3. Apply full length 1/4" Min. fillet welds on Receiver Tube.



**Lubricate with Silicon based spray at every service to prevent rusting**

### 5.10 Final Welding

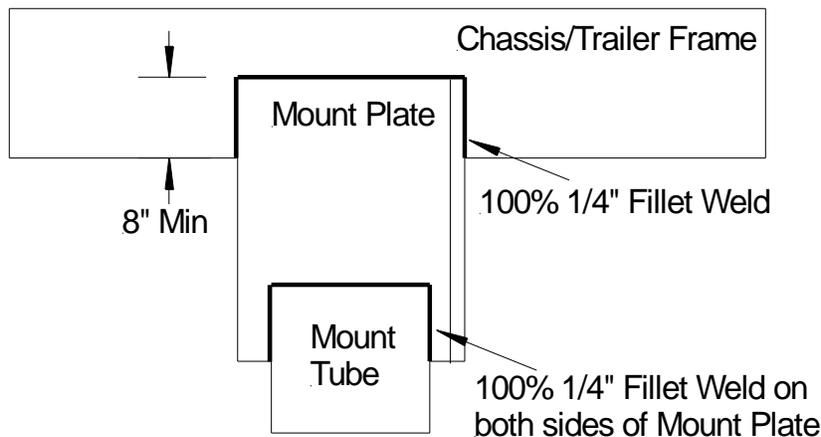


**Make sure to have power pack pulled out and hoses and cables are away from walls when welding the tube**



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

1. Verify the platform is in the correct position in relation to truck sill.
2. Weld tube and mount plates (and lower gusset on 5500 and 6600 lb models) with a 1/4" fillet weld 100% of the area around mount tube and around frame on both sides of plates. The plates must have a minimum of 8" of overlap on the frame. PALFINGER Liftgates recommends adding 1/4" flat bar or plate to the top of mount plates if needed to tie Liftgate mount plates to body stringer.



## 6 Electrical Installation

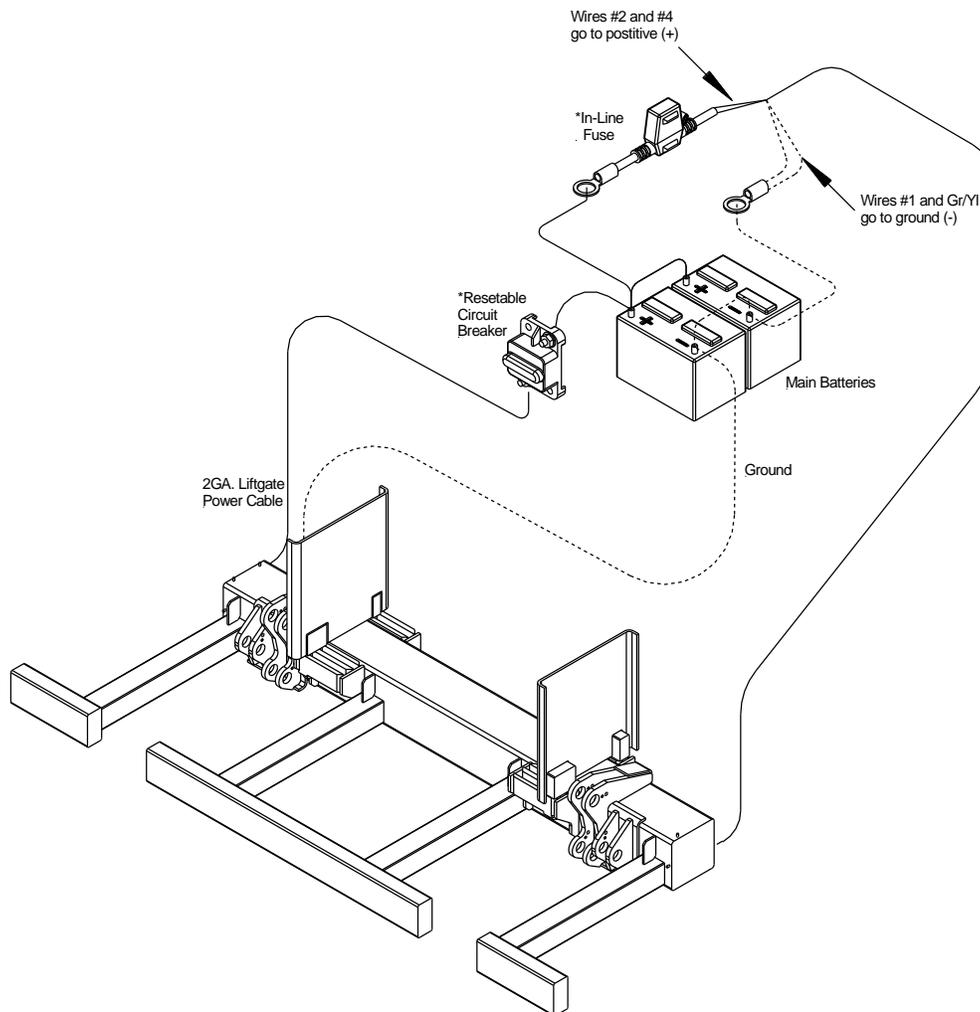
When performing electrical installation, always install and secure everything in a way where it is not subject to damage from moving parts, sharp edges, exhaust systems, etc.



**Never exceed rating of existing fuses located at the battery and control board at the pump and motor**

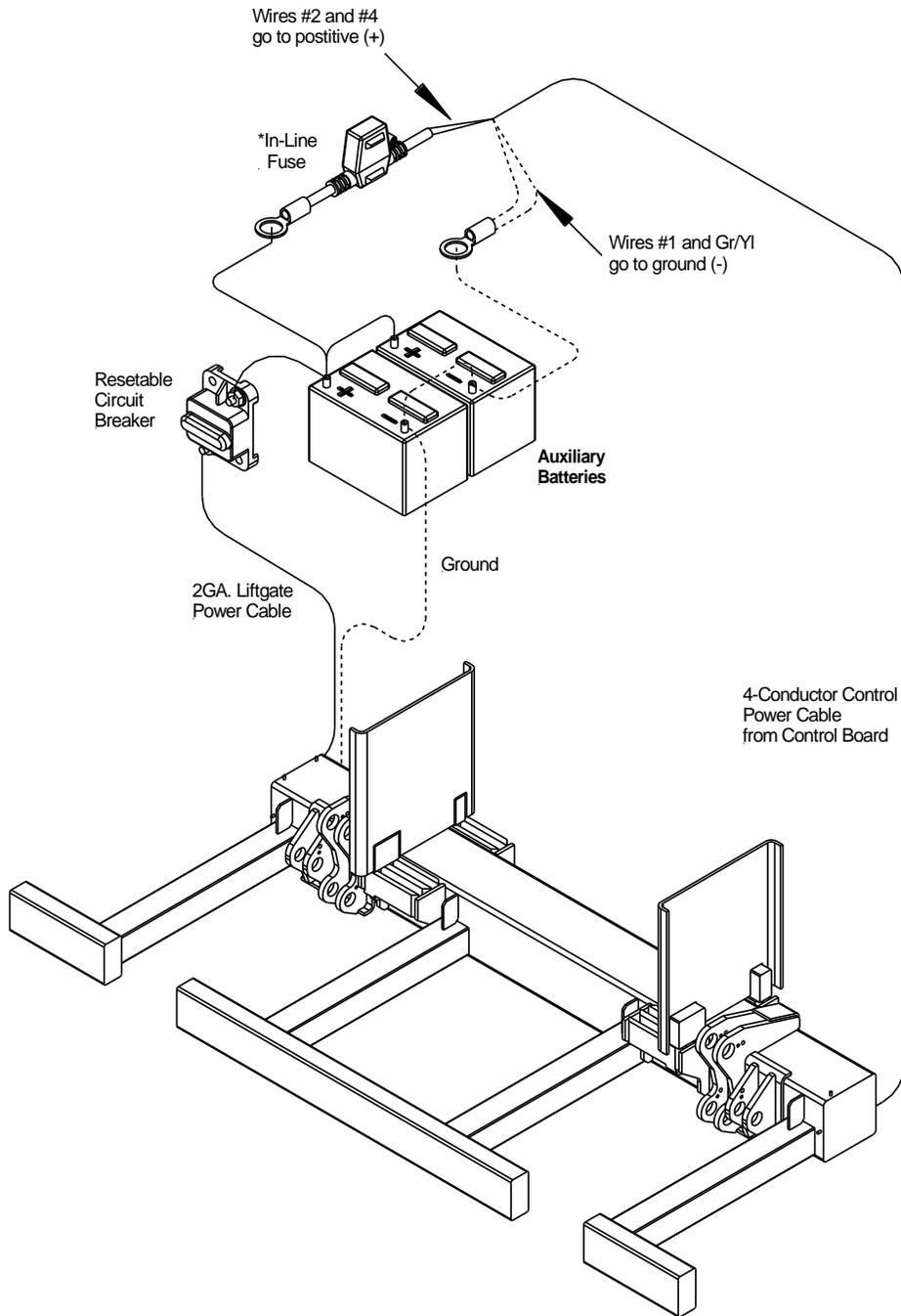
### 6.1 Main Power Connections

1. Group the main cable, the cab switch cable and the cable for the pc board together (so it is easier to install).
2. Install the 2 Ga. battery cables securely from mount frame to battery.
3. Secure the cable every 12 inches, keep them always away where it cannot make contact with other wiring, brake fuel or air lines etc. or get pinched against other objects.
4. Heat shrink lug connection to cable.
5. Assure all connections are tight and securely fastened.



\*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.

### Truck Wiring Diagram



\*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.**

Trailer Wiring Diagram



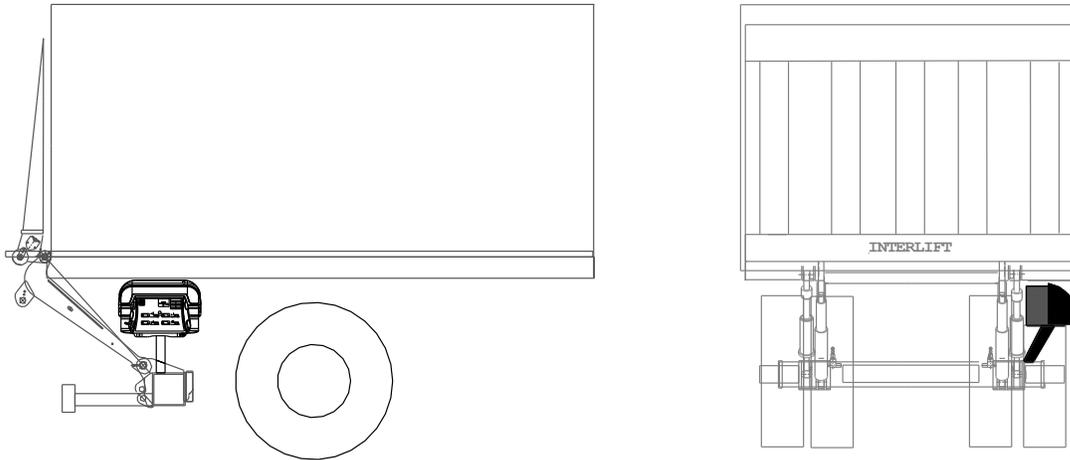
**Never secure cable in a way where it can make contact with other wiring, brake fuel or air lines etc. or get pinched against other objects.**



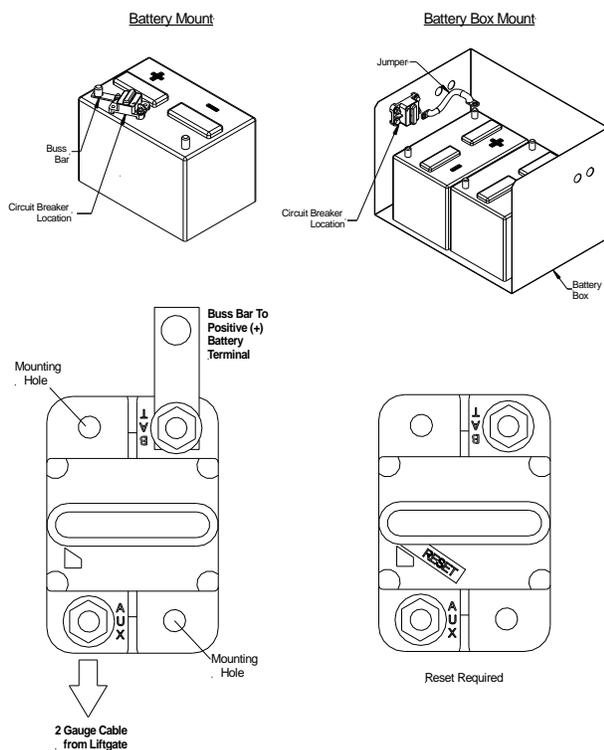
**Never run wiring next to fuel hoses or attach to them.**

**Breaker Installation (Fig. 6.1)**

1. Determine location for fixed control box; locate it in a way that the operator can view the platform and surrounding areas while operating the liftgate. Also, locate in a way where the lid does not extend outside the van body when open.



2. Lead the 4-wire cab switch together with the battery cable and the 4 wires for the control power to the batteries along the sub-wood. Secure the cable every 12 inches against the sub-wood with cable staples. Run only the cab switch into the cab. Battery cable and 4 wire control power cable will go directly to the truck battery. (#2 and #4 go to positive post **with an inline 20 amp fuse**; #1 and green/yellow go to negative post)
3. Install the supplied breaker to the positive terminal of the battery using copper buss bar.
4. Mount circuit breaker securely on top of battery
5. Connect 2Ga. Cable from liftgate to the circuit breaker



**ALWAYS CUT OFF EXCESS CABLES!!!**  
**DO NOT COIL UP UNDER DASH OR IN FRAME!!!**

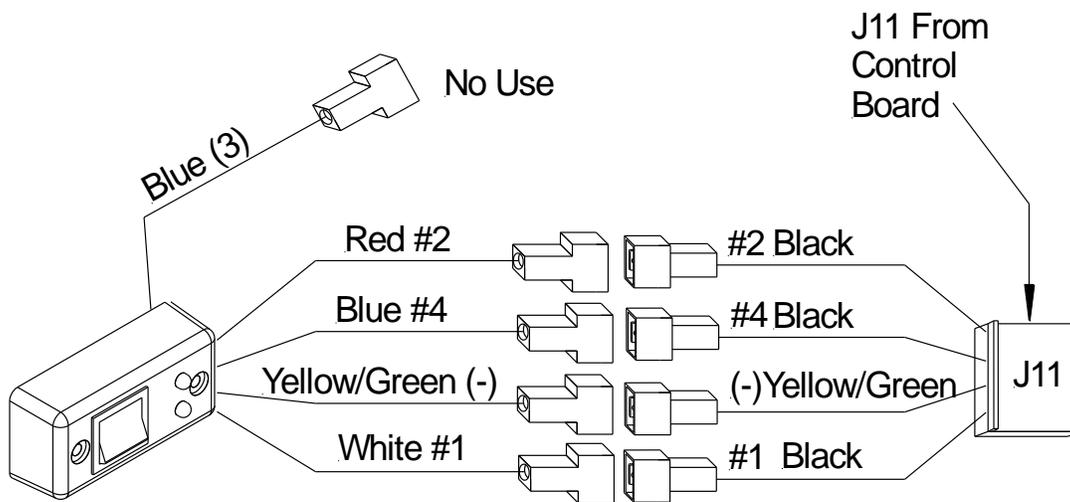
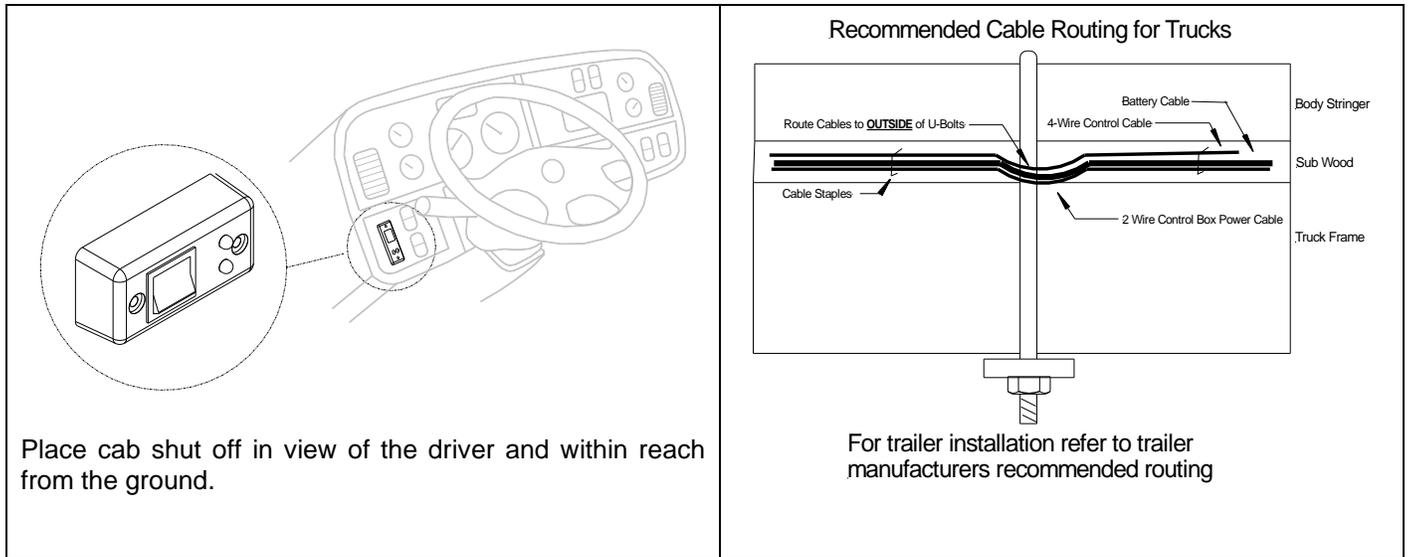
Figure 6.1: Circuit Breaker installation

**!** Always connect 4 wire harnesses directly to Truck/Trailer Battery.

**On-Off Switch Installation Truck Application (In Cab)**

Install the cab shut-off switch inside the cab. Locate it where it can conveniently be seen and reached from the driver’s seat as well as from the ground.

**!** Do Not use In-Cab Switch for Trailer Applications. Your Liftgate should be outfitted with a trailer shut-off Switch and wiring in control box from the factory. If not, refer to “Cut Off Switch for Trailer Application” 6.2.



**In-Cab Switch Color and Number Coding**

**Cab Cut off Switch Code**

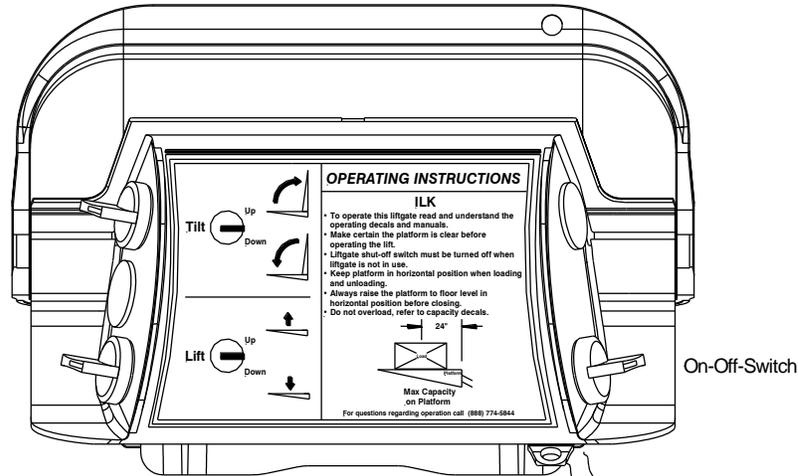
- WHITE
- GREEN YELLOW
- RED
- BLUE

**Cable wires are marked:**

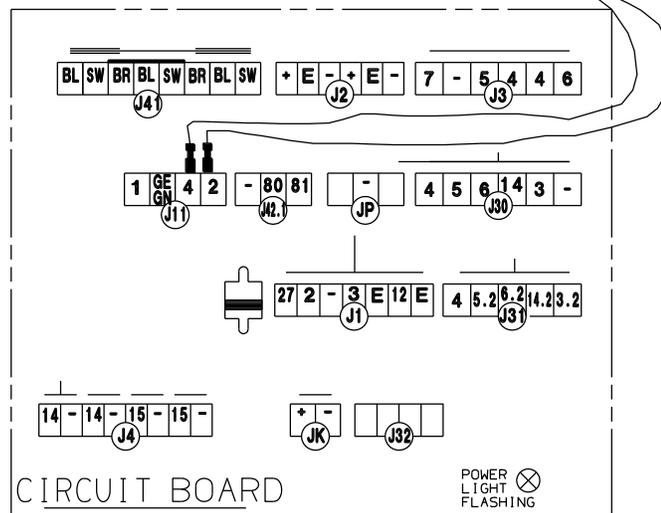
- 1 = Hot Lead To Red L.E.D. Lights -
- (-) = Ground To L.E.D. Lights
- 2 = 12 Volt Power
- 4 = Control Power To Liftgate

6.2 On-off Switch Trailer application

On a trailer installation the control port J11 has to be connected with a on off toggle switch connecting 2 and 4 on port J11 together.



- 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



The Circuit Board is located behind the rubber cover on the curb side of the 7" x 7" mount tube.

Use a 2-wire harness to install the on-off switch at control box.

**When harness and switch are installed, always replace the plastic clamp back on the rubber cover.**

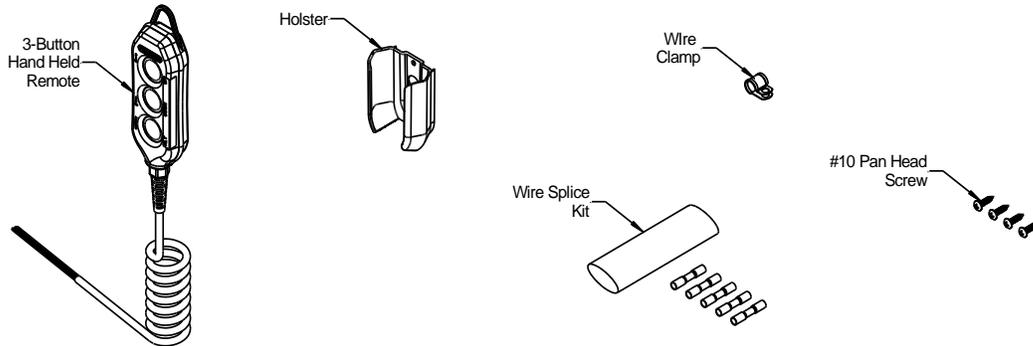


**Inspect and test all electrical connections, wiring and the different functions to make sure that the electrical installation is complete.**

### 6.3 Remote Hand Control Installation

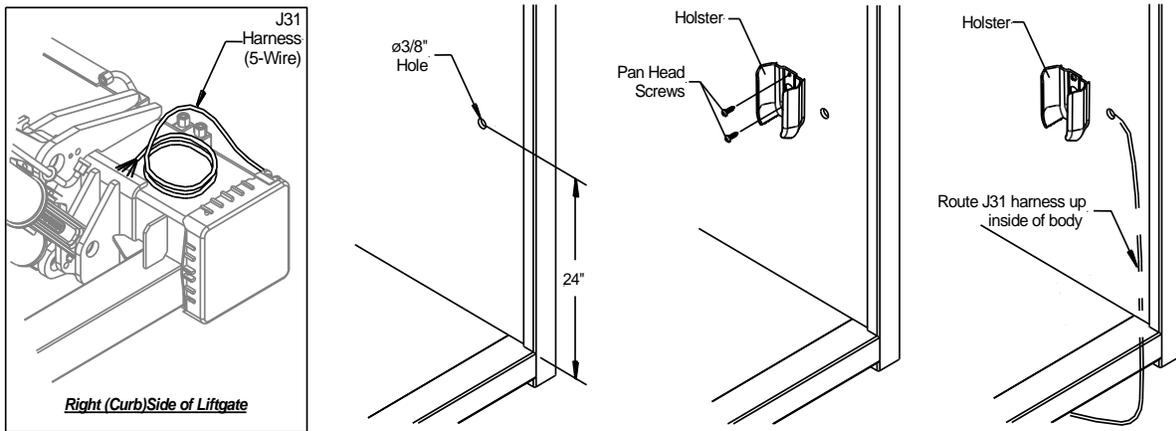


Hand Controls are NOT weatherproof and have to be stored inside body in holster or in weatherproof box (PALFINGER Liftgates option). For “Refer”, Flatbed installations or stored in cab solutions we recommend “plug & socket” option.



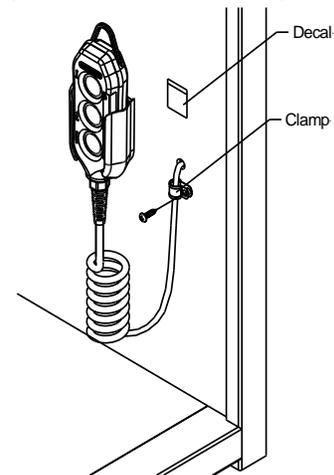
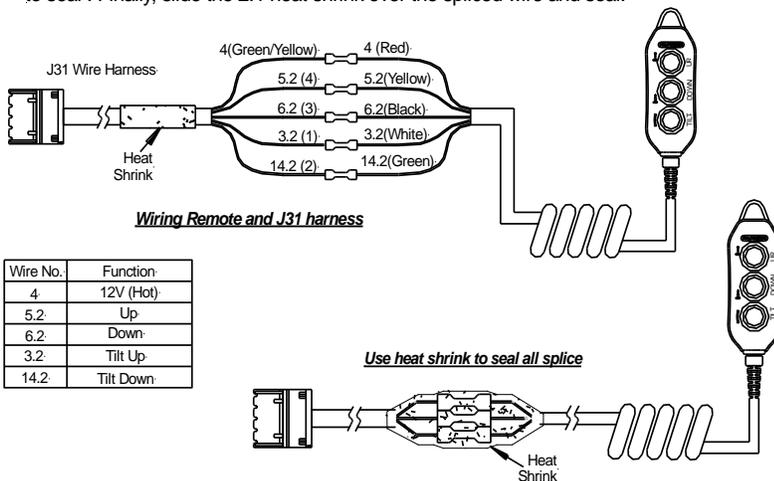
**Steps:**

1. Locate the J31 (5-Wire Harness) on the right side of the liftgate. Drill a  $\varnothing 3/8$ " hole on the surface for cable routing. Install the control holster next to the drilled hole. Route the J31 harness from the liftgate up through the  $\varnothing 3/8$ " hole inside the vehicle body.



2. Use the provided splicing kit to connect the J31 wires to the 3-button control wires. First add the 2:1 heat shrink over one of the harnesses. Second use the butt splice heat shrink connectors provided. Crimp the corresponding wires from each harness together as shown per wire number. Apply heat to each individual butt connector to seal. Finally, slide the 2:1 heat shrink over the spliced wire and seal.

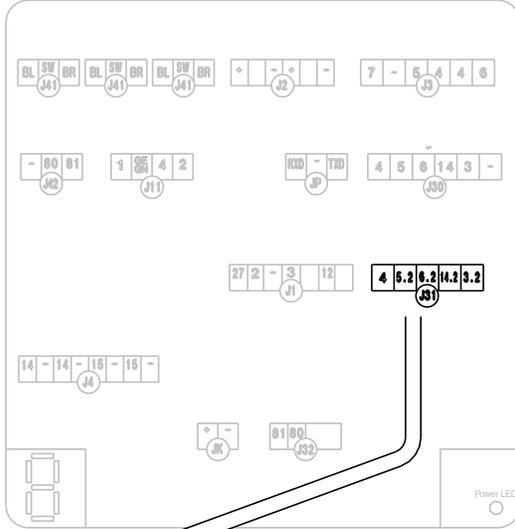
3. Test each function to verify the control is functioning as intended. Use the provided wire clamp to secure the control harness from any tugging. Apply the decal within the vicinity of the control. Installation complete.



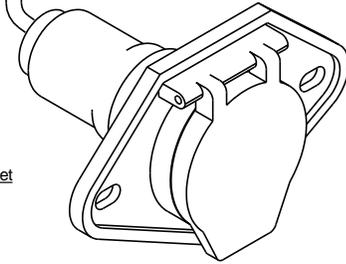


# 6-Pin Socket/Plug Connectors

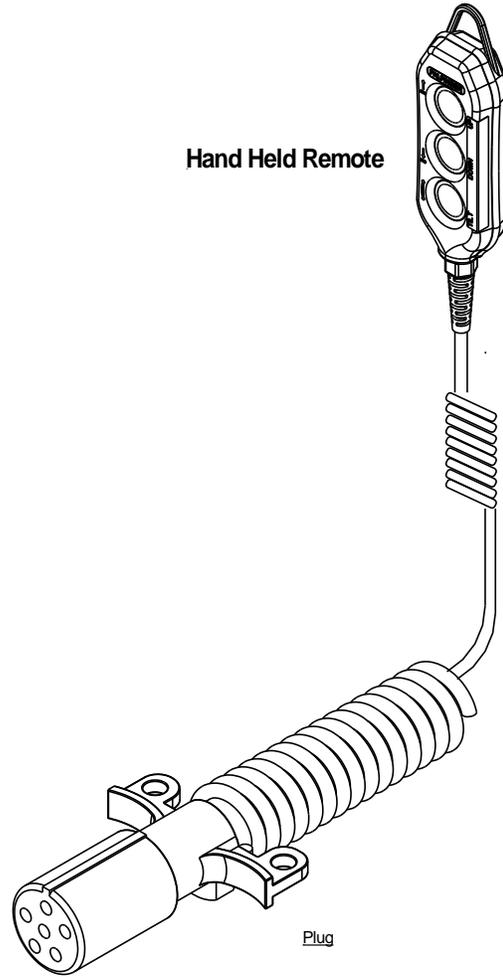
Control Board



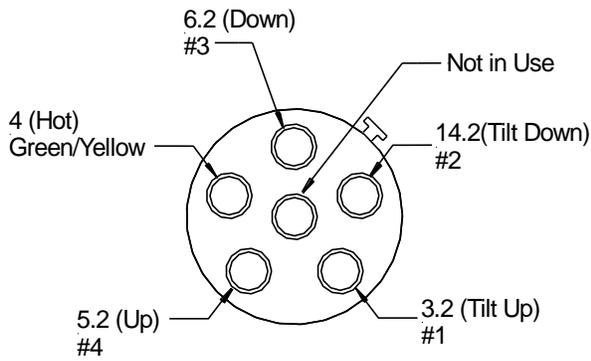
Socket



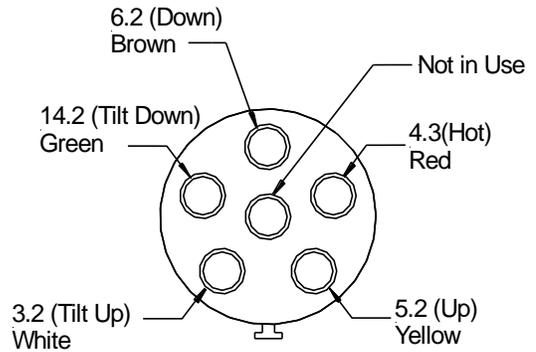
Hand Held Remote



Plug



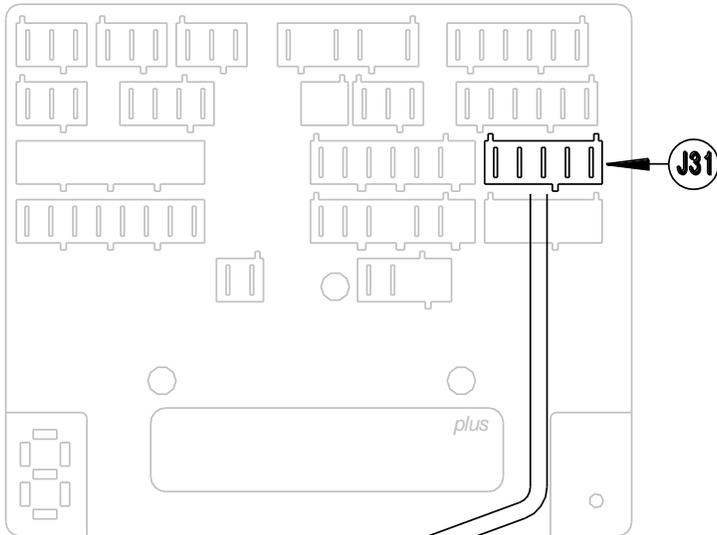
Wiring Socket Connection  
Rear View



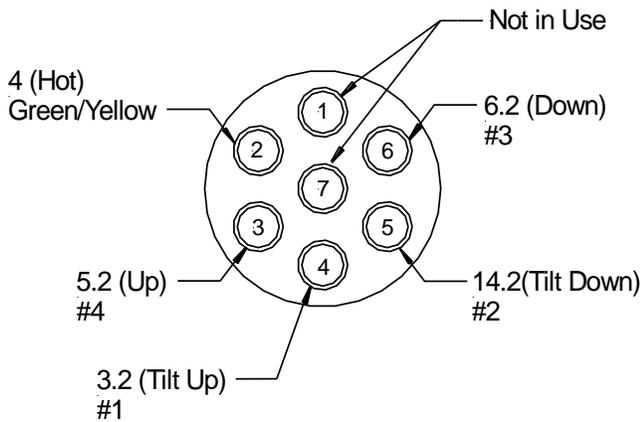
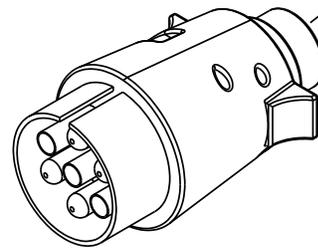
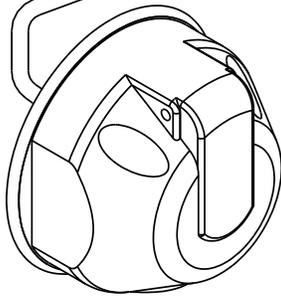
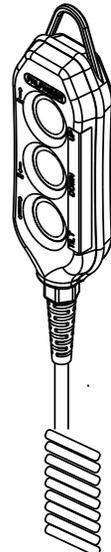
Wiring Plug Connection  
Rear View

# Hella 7-Pin Socket Connectors (5 Wire)

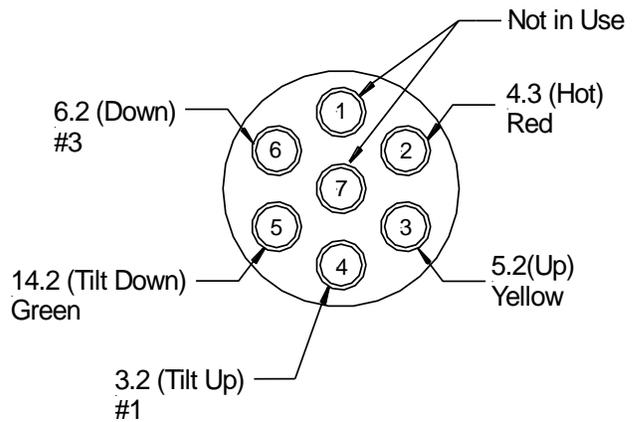
Control Board



Hand Held Remote



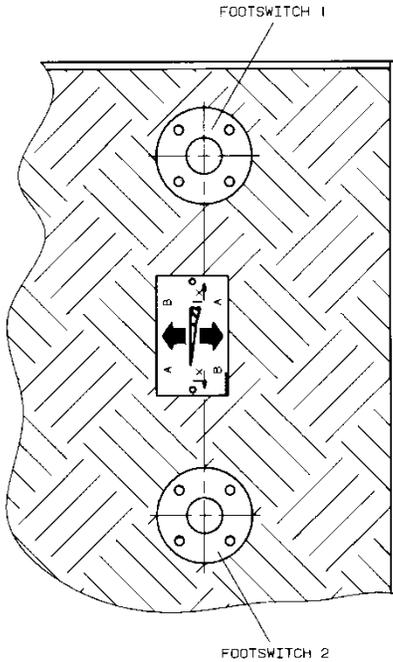
**Wiring Socket Connection  
Rear View**



**Wiring Plug Connection  
Rear View**

**6.5 Foot Control installation**

After installing the platform, connect the wiring harness from the platform to the connections at the liftarm. (see page 24). Each foot switch has a hot wire (#4) on plug J3. Switch (1) connects in addition to port #5 on J3; switch (2) connects to port #6 on J3. Make sure that connections are wire tied together and pushed inside the platform.



**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. If platform tip is tilted to ground, platform will tilt up to preset position before rising.

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

6.6 Wiring Diagrams

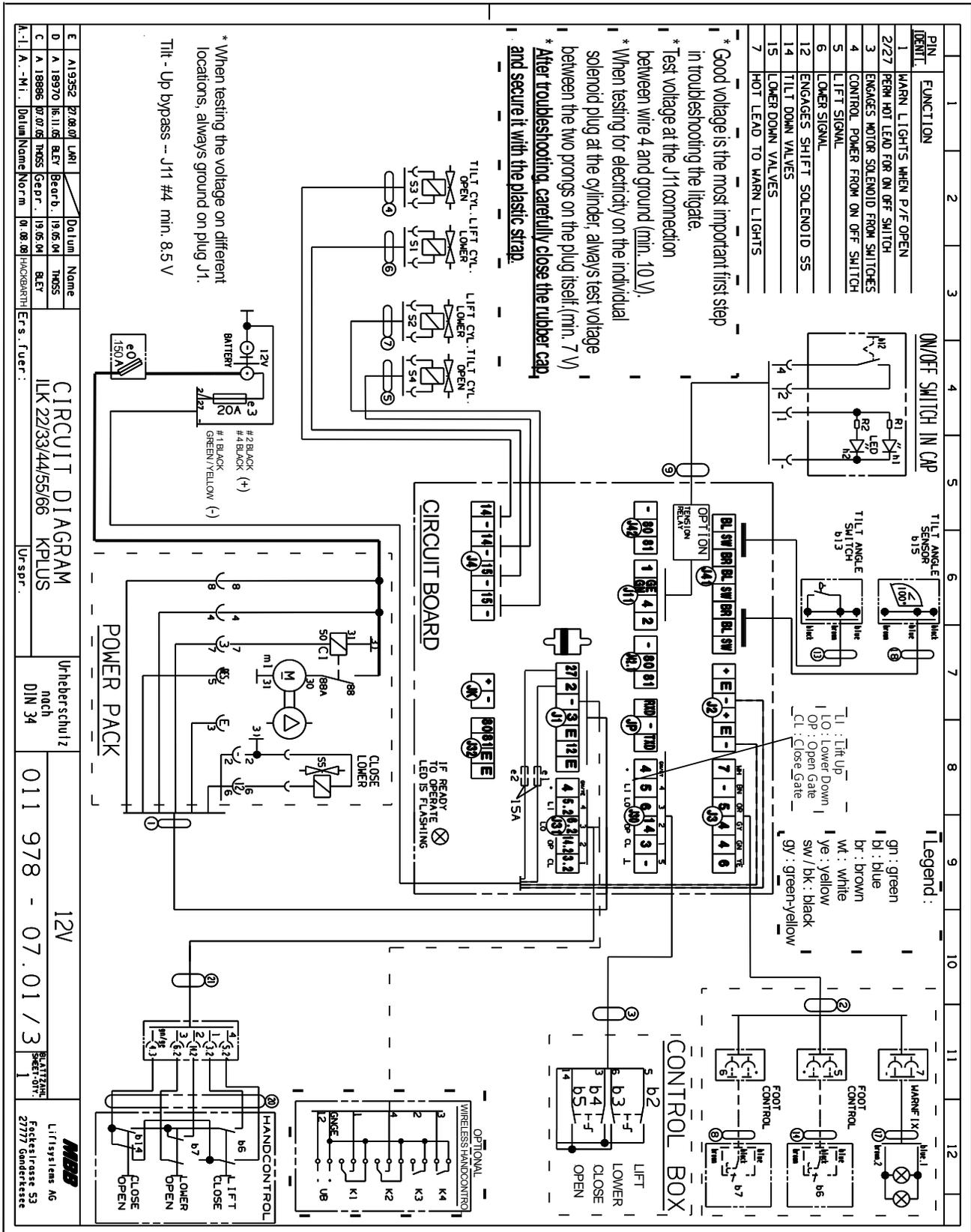
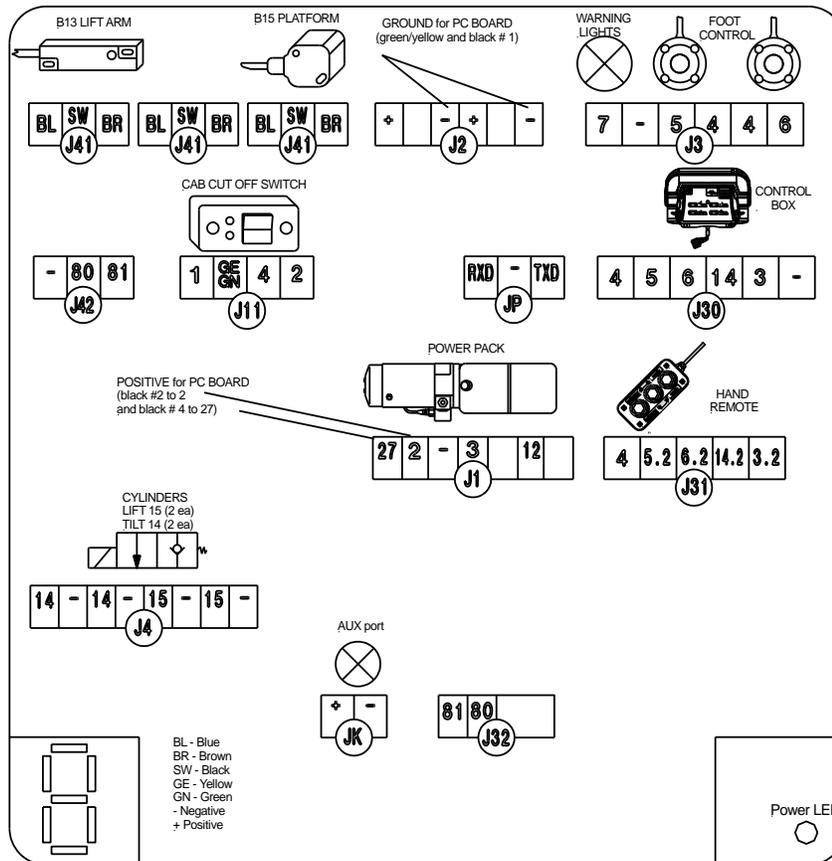


Figure 6.2: Electrical schematics



Control Board Codes:

Code	Description	Reset
0	System ok / Cab switch off, (or missing bridge J11/2<->4)	
1	System ok / Cab switch on, (or bridge J11/2<->4)	
2	Low Voltage	Cab switch: off/on (or disconnect bridge J11/2<->4)
3	Missing tilt switch B-13 at lift arm or defective.	Automatically when the valves are back to normal
4	Missing tilt angle sensor B-15 at lift platform or defective	Automatically when the valves are back to normal
5	Missing tilt angle sensor B-15 at platform or defective	Automatically when the valves are back to normal
6	Warning lights shorted	Cab switch: off/on (or disconnect bridge J11/2<->4) or close tail lift
7	Short in cab switch/on-off switch or aux port	Cab switch: off/on (or disconnect bridge J11/2<->4) or close tail lift
8	General short in electrical wiring	Cab switch: off/on (or disconnect bridge J11/2<->4) or voltage interruption MBB control
9	Defect at motor solenoid detected during lifting	Automatically when the valves are back to normal
R	Voltage V02 (J1 pin 2) is missing, defective fuse	Replace the fuse
t	Defect at opening, valve (S3/S4) or motor relay detected during opening	Automatically when the valves are back to normal
c	S5 valve detected during closing or motor solenoid defective	Automatically when the valves are back to normal
d	S5 valve detected or defect at lowering valve (S1/S2)	Automatically when the valves are back to normal
E	Emergency program (all sensors are bypassed). Activation by: Press Open+Lower>10 seconds	Cab switch: off/on (or disconnect bridge J11/2<->4)
P	Diagnosis mode activated	Removing service connector

Figure 6.4: Electrical Wiring overview

6.7 Hydraulic Schematic

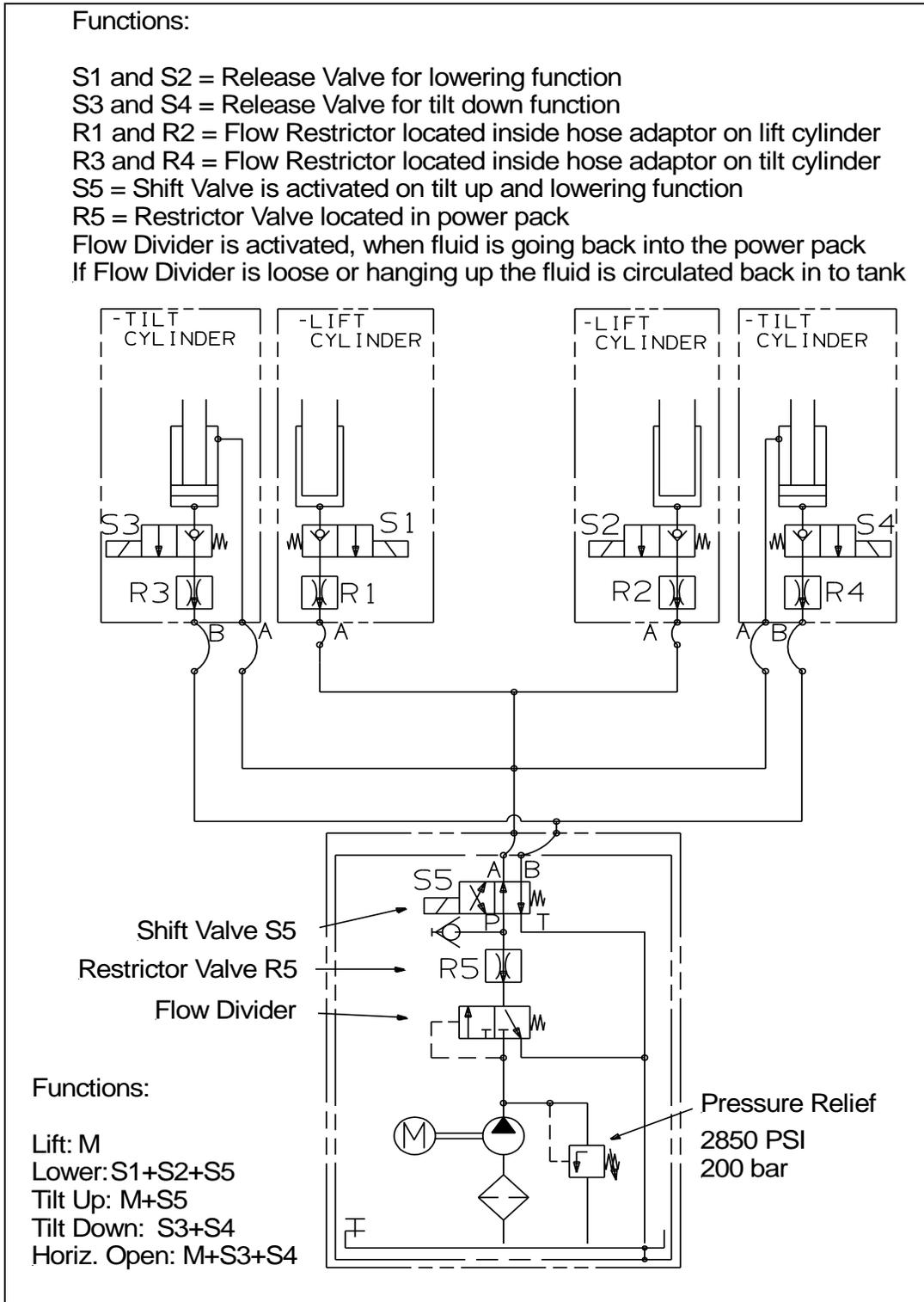


Figure 5.7: Hydraulic schematic

## 7 Lubrication and Final Inspection

1. Open platform and lift gate to bed level
2. Remove red caps, apply grease until grease begins to flow from bushing ends
3. Lower platform to ground and grease left over grease zerks.
4. Cycle platform open and closed several times and grease again (Fig. 6.1)
5. Wipe excess grease from joints and replace ALL red caps
- 6. Check ALL pin lock bolts for proper torque of 14 ft-lbs**
7. Paint all welded areas and area that have been scratched during installation



**Note: Do not paint chrome hydraulic piston rods**

8. Remove any overspray from cylinder piston rods
9. Check for any wires or hoses that may rub during operation.
10. Re-route and/or tie up wires and hoses as necessary
11. Lower platform completely to ground and slide out pump/motor to check oil level
12. Check Plugs on PC Board. Push tight and reinstall clamp on rubber cover
13. Install all operation and safety decals

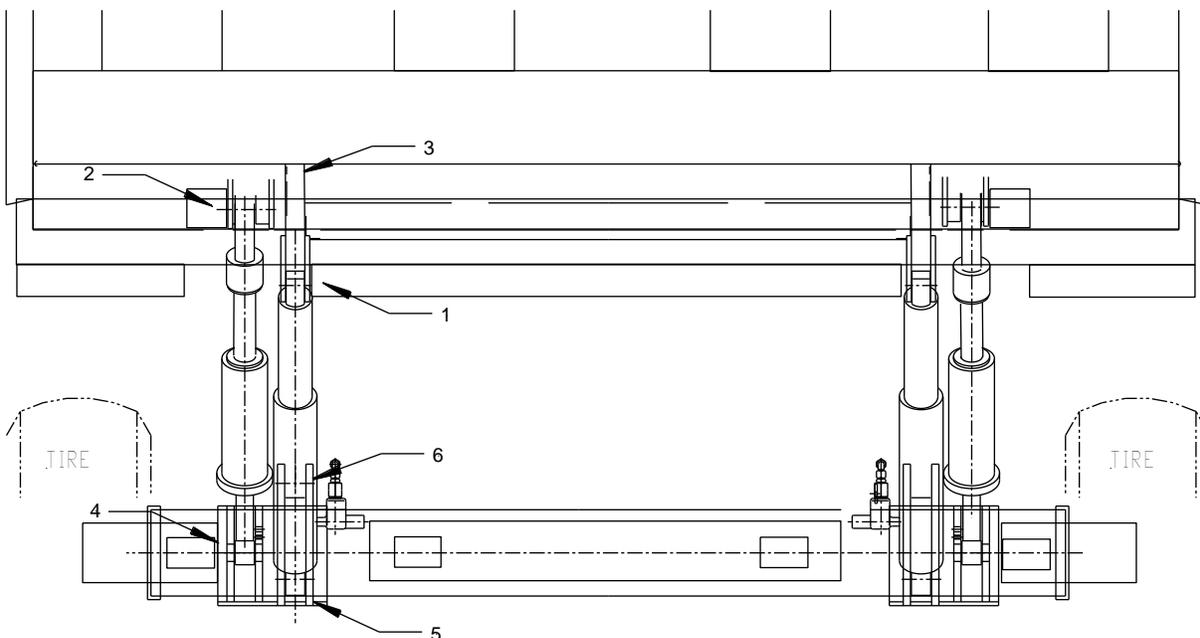


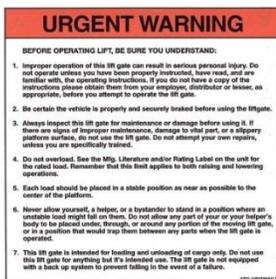
Figure 7.1: Lubrication Points (opposite direction on curb side )

## 7.1 Decal Placement and Inspection

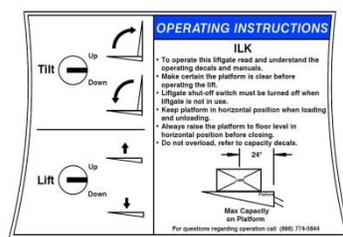
For operator’s safety, all decals appearing in “Decal Kit” must be in a conspicuous place on control side of liftgate to be read by operator. This is typically a combination of decals on the liftgate and truck body. Please make sure to place the maximum capacity decal (C) on driver and curb side.

**IMPORTANT: Never remove or paint over any decal.**

- (A) 1 ATG-URGWA - Urgent warning: Elevating gate instructions
- (B) 1 ATG-ILK - Main Operation (Control Box)
- (C) 2 ATG-XXXX - Max. Capacity (please check the serial number plate to find out your specific capacity)
- (D) 1 ATG-CAB - Liftgate Shut-Off (must be placed next to the Shut-Off Switch)
- (E) 1 ATG-BKR - Circuit Breaker Reset (must be located at the circuit breaker)
- (F) 2 ATG-WLH - Warning: liftgate can crush
- (G) 2 ATG-CTN - Caution: Always stand clear of platform area
- (H) 1 ATG-RESET - Circuit Breaker Protection
- (J) 1 ATG-OPENILD - Notice for Open & Close
- (K) 1 ATG-FT - Notice for Foot Control (if applicable)
- (L) 1 85-0415-000 – Torque Specifications (Bolt On Mount Plates)



Decal - A



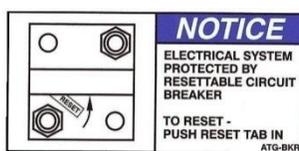
Decal - B



Decal - C



Decal - D



Decal - E



Decal - F



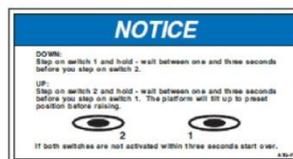
Decal - G



Decal - H



Decal - J



Decal - K



Decal - L

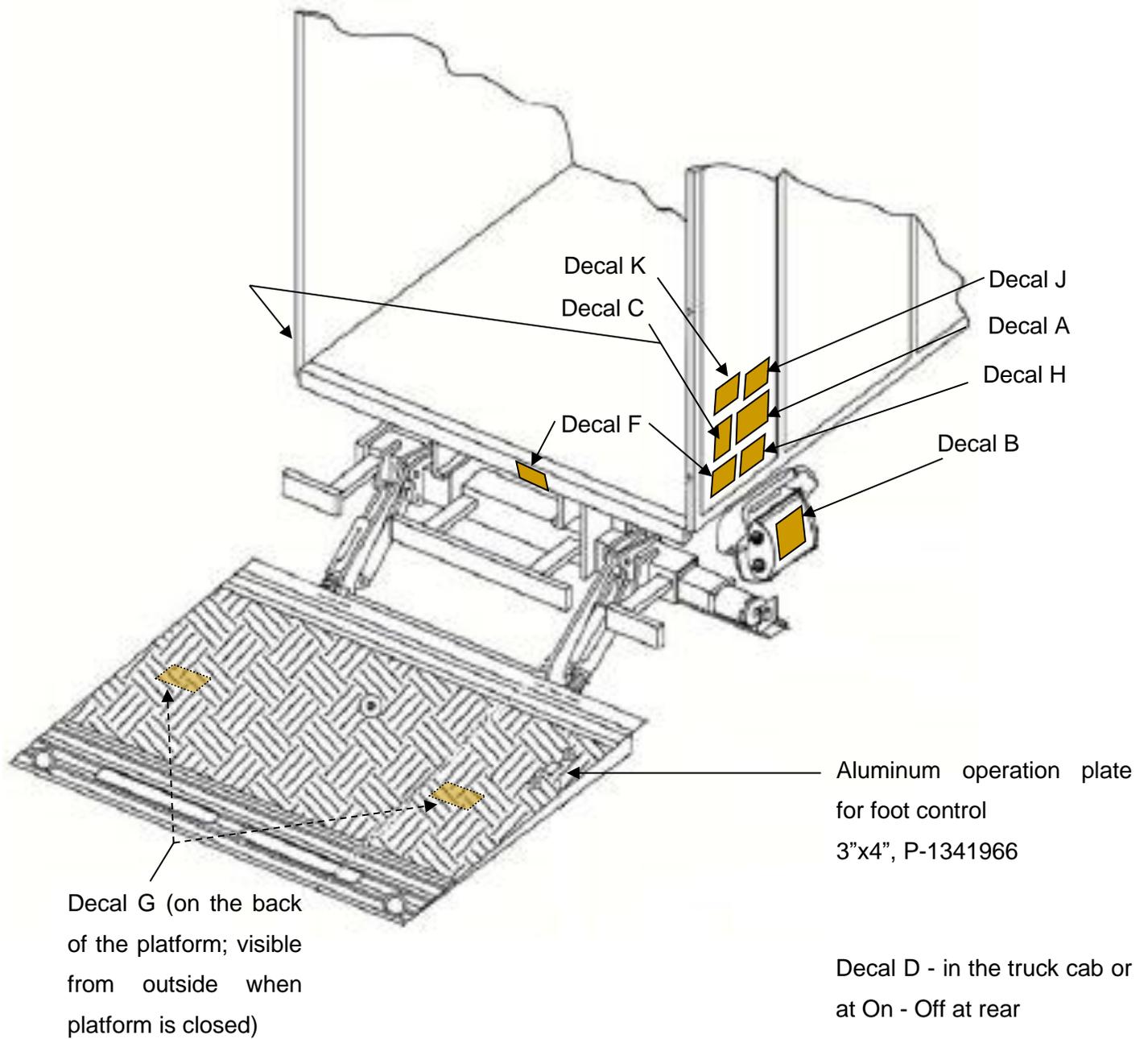
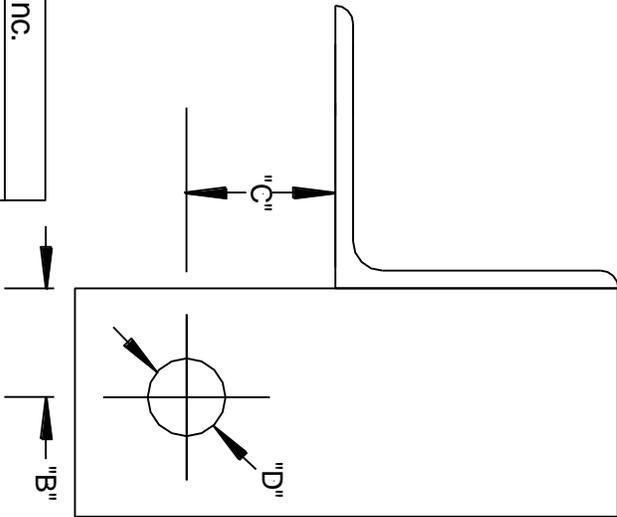
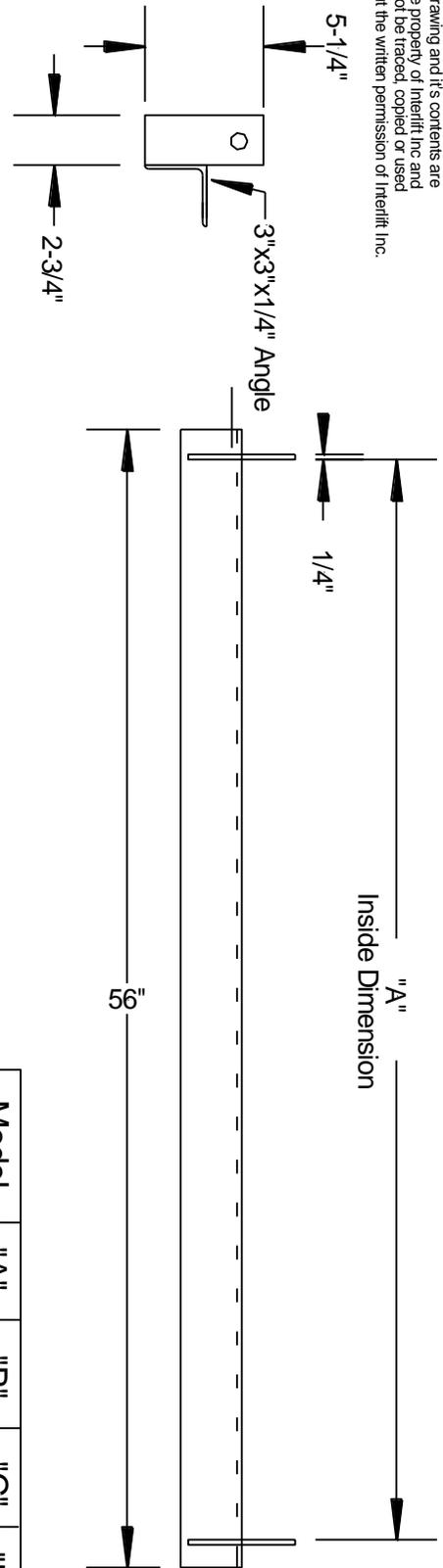
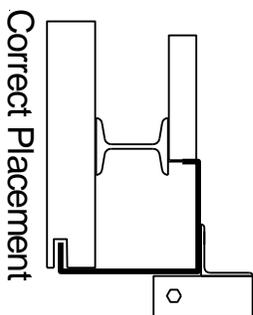


Figure 1: Decal Placement Guideline

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Model	"A"	"B"	"C"	"D"
ILK 22	44-3/4"	15/16"	7/8"	1"
ILK 33	53-1/4"	1-3/8"	1-1/4"	1-1/4"
ILK 44/55	53"	1-1/2"	1-5/16"	1-7/16"
ILK 66				



Interlift Inc.  
15939 Piuma Ave.  
Cerritos, California 90703

Liftgate Mounting Fixture  
 Drawn by: **MH** Date: **3/03/09** Rev Date:  
**ILK 22/33/44/55/66**

# 8 Check Off Sheet

JOB NO. \_\_\_\_\_

GATE NO. \_\_\_\_\_

VIN NO. \_\_\_\_\_

- OWNER'S MANUAL IN CAB
- ON-OFF SWITCH WORKING & DECAL IN PLACE

- WIRING**
- 1. Power Cord Secured
  - 2. Cables Not Rubbing Steel
  - 3. 12V Control Wire Secured
  - 4. Loomed & Stapled
  - 5. Circuit Breaker & Fuse Installed & Decal In Place
  - 6. Loop in platform sensor wire

- HYD. LINES SECURED**
- 1. No Rubbing On Frame
  - 2. No Rubbing On Platform
  - 3. Up-Down Clear
  - 4. Storing Platform Clear

- HYD. OIL LEAKS**
- 1. None At Hoses
  - 2. None Power Pack
  - 3. Cylinders

- WELDS**
- 1. Full Welds Mount Plates
  - 2. Ground Off / Clean
  - 3. Frame Capped Off

- PUMP & MOTOR**
- 1. Check Fluid With Platform On Ground
  - 2. Connections Tight With Heat Shrink
  - 3. Power Cable Tight
  - 4. Ground Cable Tight
  - 5. Breather Installed
  - 6. Cables Tied Off
  - 7. Fuses Tight
  - 8. Clamp on cover

- PINS**
- 1. Grease Zerks In Place
  - 2. Red Grease Caps On Zerks
  - 3. Bolts Tight On Pins
  - 4. Ground Rollers On

- OPERATION**
- 1. All Functions Operate On outside Control & Hand Control
  - 2. Up Stops In Place
  - 3. Platform Meets Body
  - 4. Sensor Set For Proper Auto tilt
  - 5. Warning lights stop flashing when platform stored
  - 6. Cab switch not flashing when platform stored and switch off
  - 7. Platform hits rear sill even at the same time
  - 8. Tilt cylinder clevis lock nuts tight
  - 9. No Paint on cylinder shafts

- FINAL INSPECTION**
- 1. Platform Touches Ground
  - 2. Lights Working On Chassis
  - 3. Lic. Plate Bolts & Lights
  - 4. Decals Installed
  - 5. Rubber & Plastic Caps on
  - 6. Gate Painted Completely
  - 7. Body Clean Around Gate
  - 8. Pin Greased - 12 Places
  - 9. Cylinders Clean
  - 10. Clamp on cover
  - 11. Exhaust mud flaps are ok

- OPTIONS**
- 1. All Options On Gate
  - 2. Circuit Breaker Tight
  - 3. Cart Stops Working

CHECKED BY \_\_\_\_\_

DATE \_\_\_\_\_

**Note:**

**This must be filled out and kept for your records. A copy of this sheet must be presented to PALFINGER Liftgates for any warranty compensation.**