



# LIFTGATES

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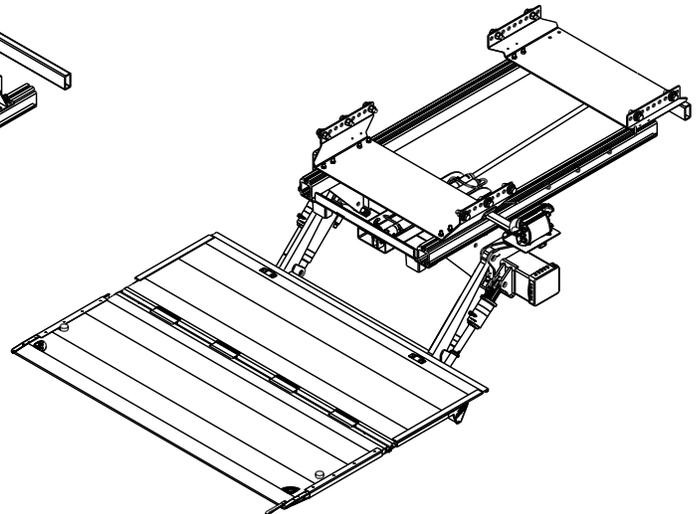
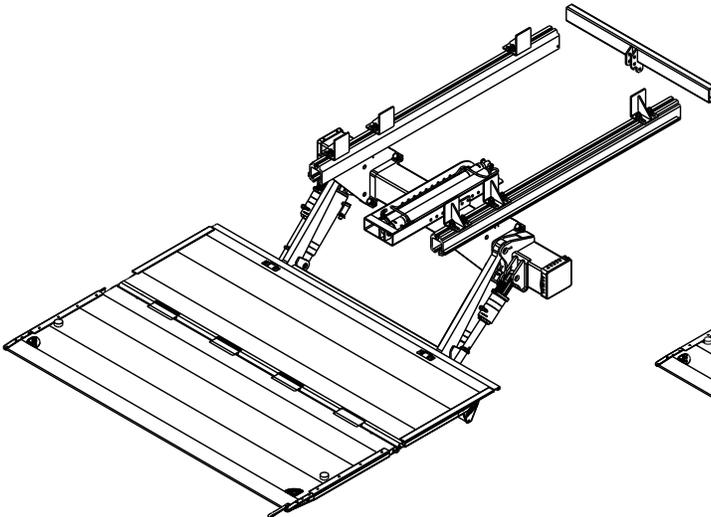
## OWNER'S MANUAL

**ILUK 33, 3300 lbs. Capacity**

**ILUK 44, 4400 lbs. Capacity**

**ILUK 55, 5500 lbs. Capacity**

**ILUK 60, 6000 lbs. Capacity**



**ILUK 33/44/55/60 Owner's Manual**  
**Document Part Number: 90-0513-100 / 13-691\_90-00\_01-00**  
**ECN-M01205, Rev. 1.5, 06-04-18**  
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**Visit [www.palfinger.com](http://www.palfinger.com) for up to date information and notifications.**

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

**Parts Order**  
**[liftgateparts@palfinger.com](mailto:liftgateparts@palfinger.com)**

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**Company Information:**

**Company Name:** \_\_\_\_\_

**Advisor Name:** \_\_\_\_\_

**Vehicle Year Make & Model:** \_\_\_\_\_

**Liftgate Information:**

**Liftgate Serial Number:** \_\_\_\_\_

**Liftgate Model Number:** \_\_\_\_\_

**Date of Purchase:** \_\_\_\_\_

**Date of Installation:** \_\_\_\_\_

**Thank you for choosing Palfinger Liftgates.**

## 1 Manual Updates

Revision	Description
v1.5	<ul style="list-style-type: none"><li>• Reformatted manual to standard format.</li><li>• Revised Liftgate Operational Instructions.</li><li>• Updated Electrical Schematic.</li></ul>

## 2 Important Notes

### 2.1 Attention

Before starting any operations of the liftgate, please read and understand this OWNER'S MANUAL. Its intention is to act as a guide for the operation personal as well as to give help with preventive maintenance but does not take place of unauthorized usage or repair by unqualified personnel.

Please contact your nearest PALFINGER Liftgates distributor or PALFINGER Liftgates in California or New Jersey for assistance if you have questions regarding installation, operation or maintenance.

This owner's manual applies to the following models: **ILUK Under Slider 33, 44, 55 & 60**



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.

### 2.2 Important Notes

This PALFINGER Liftgate is an electro-hydraulically driven lift gate, designed to be stored underneath the truck or trailer for ultimate dock loading as well as offering up to seven foot platform.

The Hydraulic Power Unit (HPU) is easily accessible for service and exchange. The whole assembly slides out and can be serviced at that point. To exchange the Hydraulic Power Unit (HPU), two hoses and the battery cables need to be disconnected.

The platform folded in half is supported by two arms, linked with a torsion tube. The platform in a stored position acts as the under ride guard. Lifting actions are carried out by hydraulic cylinders mounted on the lift arms.

Two hydraulic tilt cylinders, one on each side of the lift arms are controlling the platform's tilting action. This enables the platform to maintain its position throughout the lift mode, regardless of the terrain.

The hydraulic cylinders are equipped with solenoid operated valves located at the port of each cylinder which prevents the platform from lowering accidentally unless the operator is activating the controls. This system also enables you to store the lift gate without a separate platform latch.

The piston rods are treated against corrosion and also protected with plastic or rubber boots to protect from road gravel and dirt. The HPU is equipped with a built-in pressure relief valve, which prevents overloading when lifting or tilting up.



**The valves do not prevent overloading of the platform when lowering or tilting down.**



The electric supply is taken from the vehicle battery. If the vehicle battery is not sufficient or not existing (like on trailer units), an auxiliary battery kit needs to be installed. The electric control power is protected via a 20 Amp fuse and an on-off switch. The switch has L.E.D. lights indicating when the control power is on. (Trailer application have an on-off switch located in the lockable control box).

The liftgate is operated from an outside control box which is located on the curbside underneath the body. A standard 2-button hand held remote control is also supplied with the lift. Foot controls are standard (except for the ILUK 33), which enables the operator to handle the cargo and operate the lift by foot. A variety of different products can be purchased with the PALFINGER Liftgate as well.

## 2.3 General Information

### REMEMBER!

It is the fleet manager's responsibility to educate the operator on the liftgate and its intended use. The operator's attention should be drawn to the permitted load limits and an understanding of the operation to ensure the safety throughout the operation.

### ONE-MAN OPERATION!

Never let an "outsider" operate the liftgate while you are handling the cargo.

A "misunderstanding" can result in serious personal injury.



In the interest of safety it is important that all operating personnel properly understand the functions of the lift gate, possible hazards, dangers, the load limits and load positioning for that specific unit.

### IMPORTANT NOTICE!



Before the operator uses the lift gate, they should be thoroughly familiar with the lift's functions and usage according to the following:

1. Improper operation of this lift can result in serious personal injury. Do not operate unless you have been properly instructed, have read and are familiar with the operation instructions. If you do not have a copy of the instructions please obtain them from your employer, distributor or lessor, as appropriate, before you attempt to operate the lift.
2. Be certain the vehicle is properly and securely stopped before using the lift.

3. Always inspect this lift for maintenance or damage before using it. If there are signs of improper maintenance, damage to vital parts or slippery platform surface, do not use the lift. Do not attempt your own repairs unless you are specifically trained.
4. Do not overload. See the 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 body of the truck/trailer.
6. Never stand in, move through or allow anyone else to stand in or move through the area in which the lift operates, including that area in which a load might fall.
7. This is not a passenger lift. Do not ride the lift with unstable loads or in such a manner that a failure would endanger you. The lift is not equipped with a back-up system to prevent falling cargo in the event of a failure.

**The maximum loads must be observed and followed!**



**IMPROPER USE**



It is not permitted to use the tail lift:

- As an elevating work platform
- To push loads
- To carry people (Only the operator may travel on the platform)
- To clear snow

Please read through the operational and technical description of this PALFINGER Liftgate.

Thank you for choosing PALFINGER Liftgates.

### 3 Safety Information

This manual follows the Guidelines set forth in ANSI X535.4-2007 for alerting you to possible hazards and their potential severity.



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



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



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



**CAUTION** without the safety alert symbol is used to address practices not related to personal injury.

*(In this manual we use it to alert you to potentially hazardous situation which, if not avoided, may result in property damage.)*



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

**⚠ 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. We have designed this manual to illustrate the steps needed for the basic operation of this ILUK liftgate. It also provides safety information and simple preventive maintenance tips.

**NOTICE**

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

This Manual has been designed for use in conjunction with the ILUK series liftgate only which is designed for different capacities. You have different options to determine the type of your Liftgate:

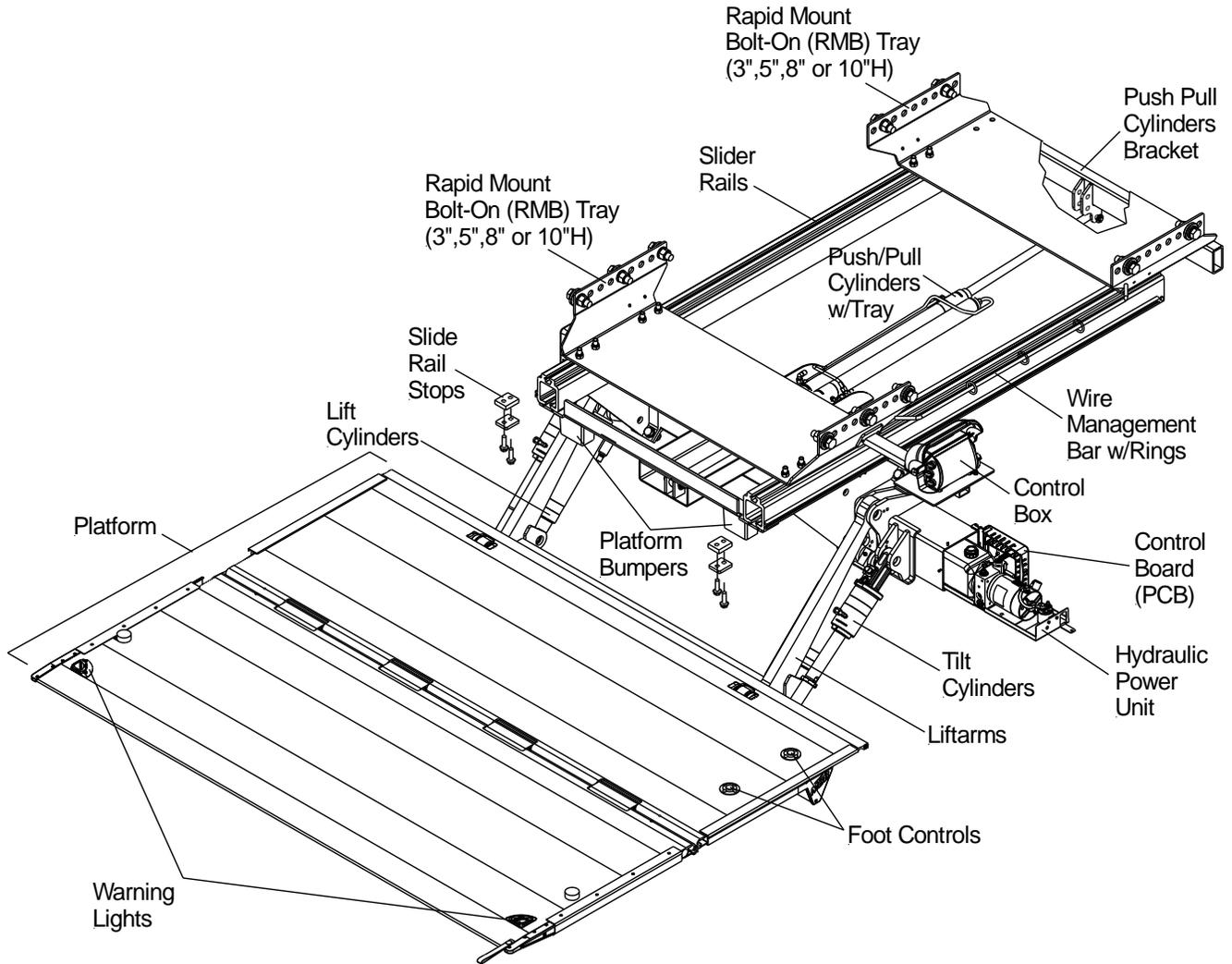
- 1) Refer to the serial number tag on the Liftgate.
- 2) Ask your employer or lessor.
- 3) Call your PALFINGER Liftgates Authorized Service Center for assistance.
- 4) Call PALFINGER Liftgates for assistance in the USA at 888-774-5844. You can also contact PALFINGER Liftgates by fax (562) 924-8318, or on the internet- [www.PALFINGER.com](http://www.PALFINGER.com)

If you are facing any problems or are in need of repair, contact PALFINGER Liftgates for information regarding experienced and trained Authorized Service Center in your area.

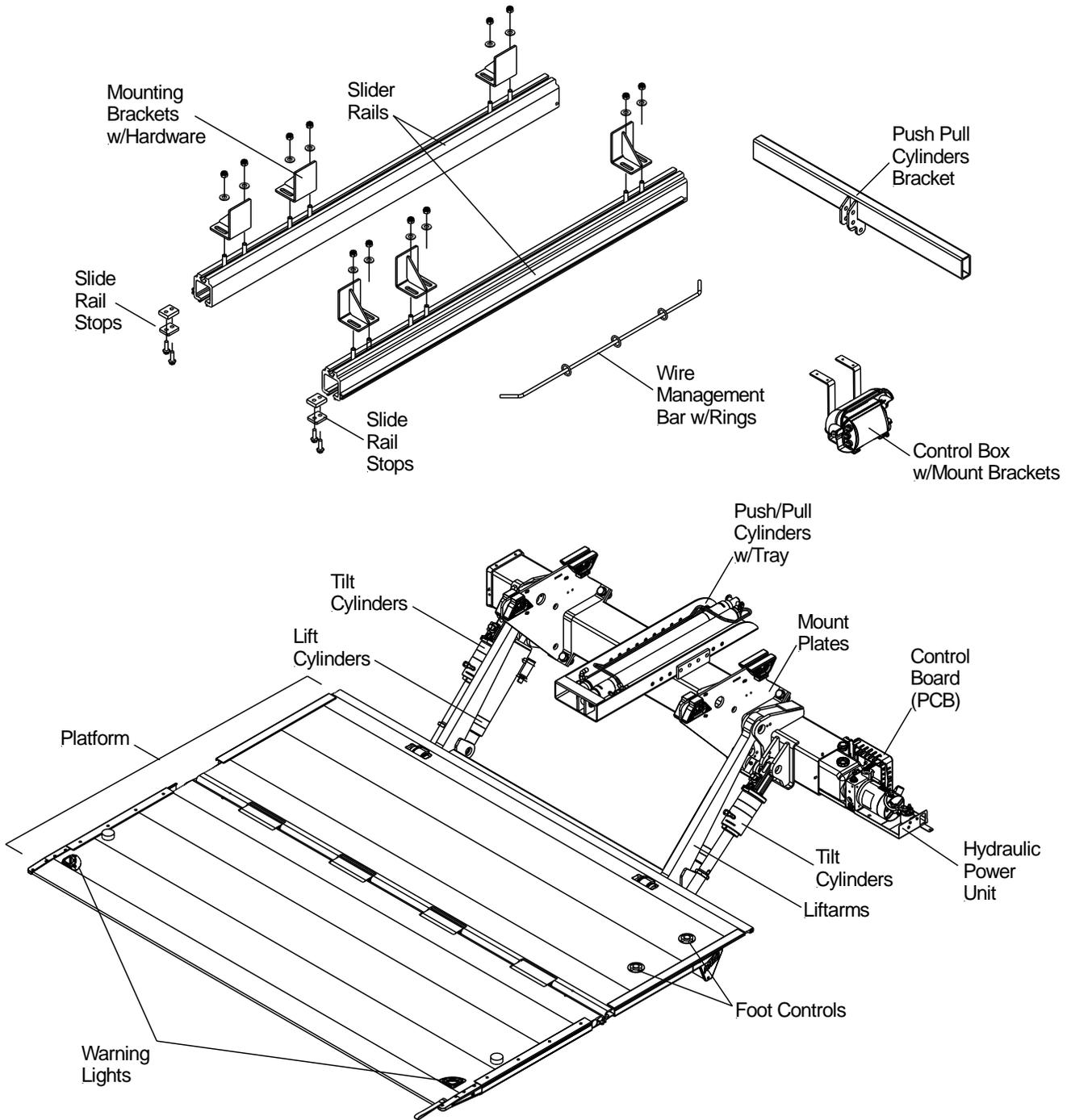
***Replacement manuals are available to download at [www.palfinger.com](http://www.palfinger.com).***

## 4 General View of Liftgate

### 4.1 ILUK 33/44/55/60 General Overview for Trailers

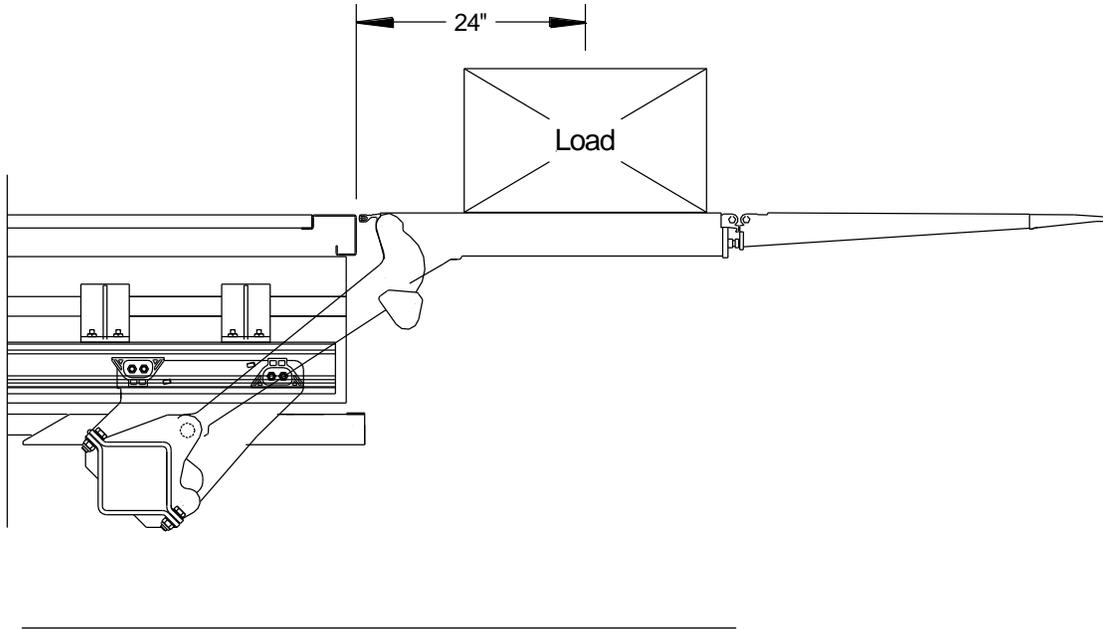


### 4.2 ILUK 33/44/55/60 General Overview for Trucks



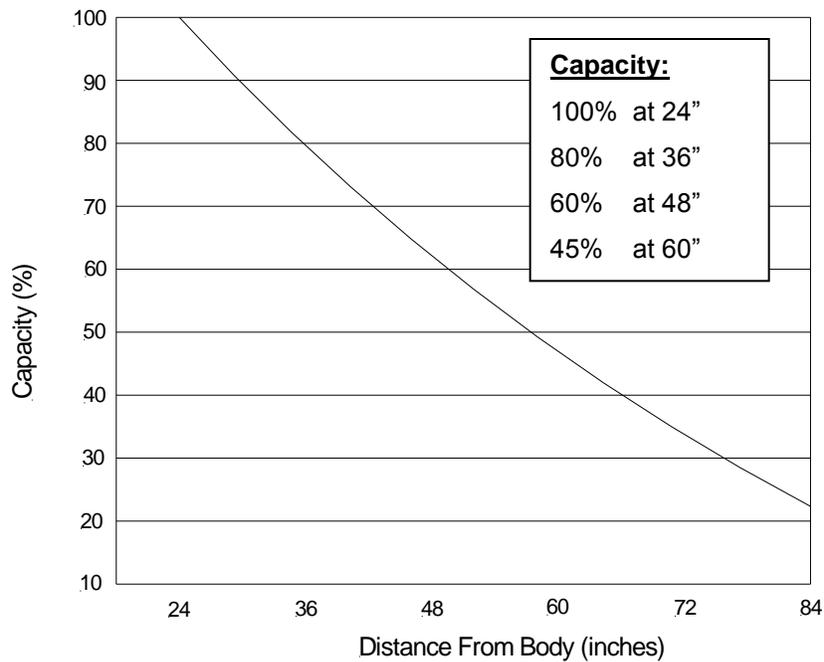
## 5 Maximum Load and Placing of Load on Platform

Every Palfinger Liftgate is rated up to a maximum load. The point of maximum load is rated at a defined distance. The center point of maximum load is at 24" from the rear of the bed extension out to the platform.



By increasing this distance the maximum load of the liftgate is decreasing.

An overview about the rating depending, on the distance from the end of the platform is shown in the following load diagram.



## 6 Operation of Liftgate

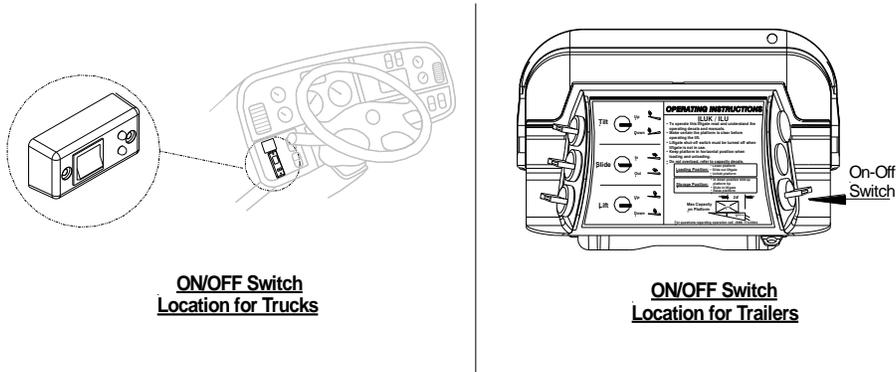
### 6.1 Operation with Control Box



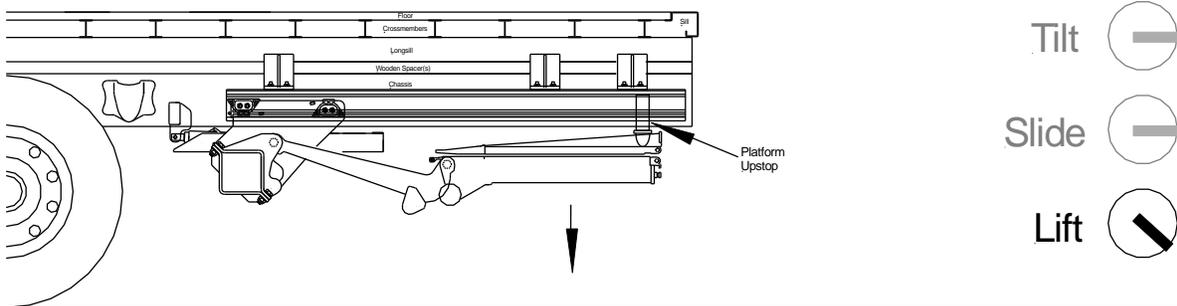
Always stand clear of platform area when operating the liftgate.

#### To Open Liftgate

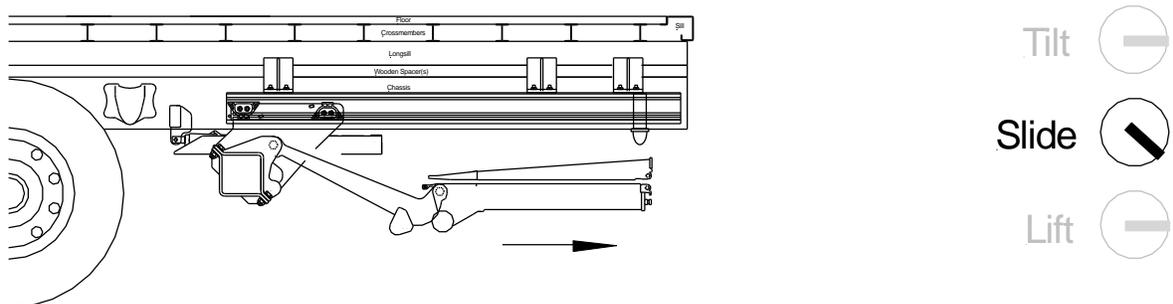
1. Power on the liftgate by switching the ON/OFF switch ON. ON/OFF switch location for a truck is located in the cab, for a trailer it will be located on the control box.



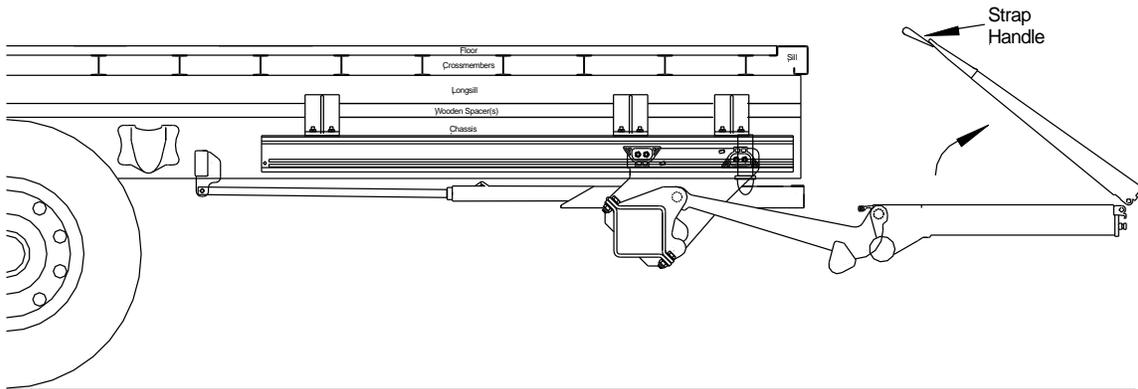
2. Use the **Lift Down** switch lower the platform approximate 5" from the platform upstop.



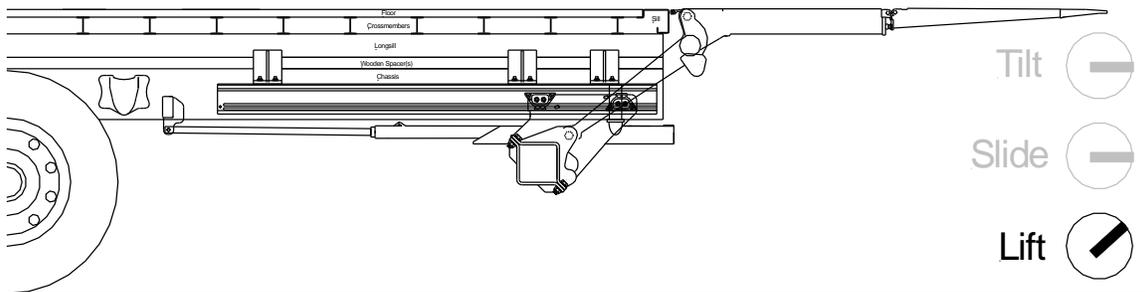
3. Use the **Slide Out** switch to slide out the entire liftgate until the mount frame makes contact with the slide rail stop.



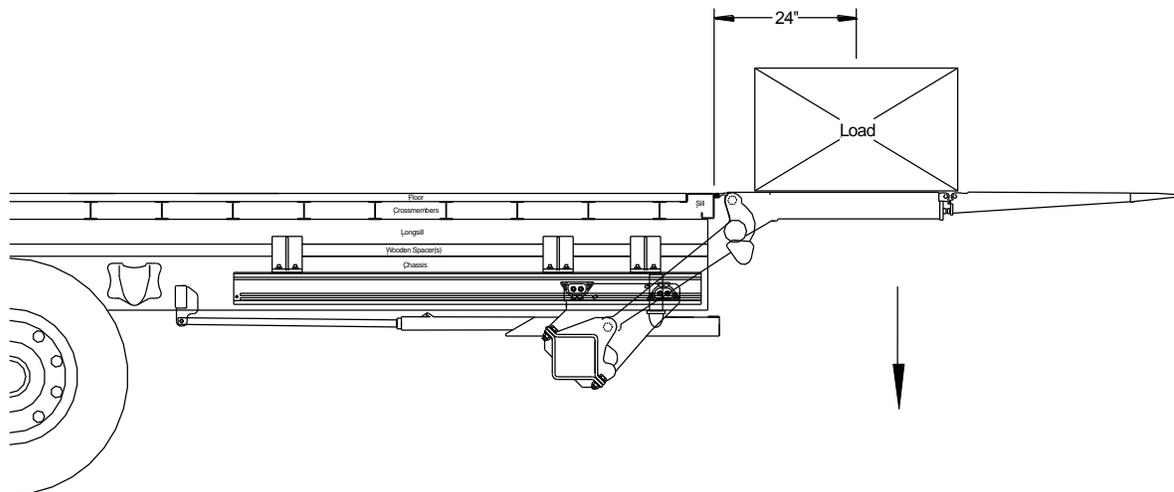
4. Use the strap handle on the tip to manually open the platform tip.



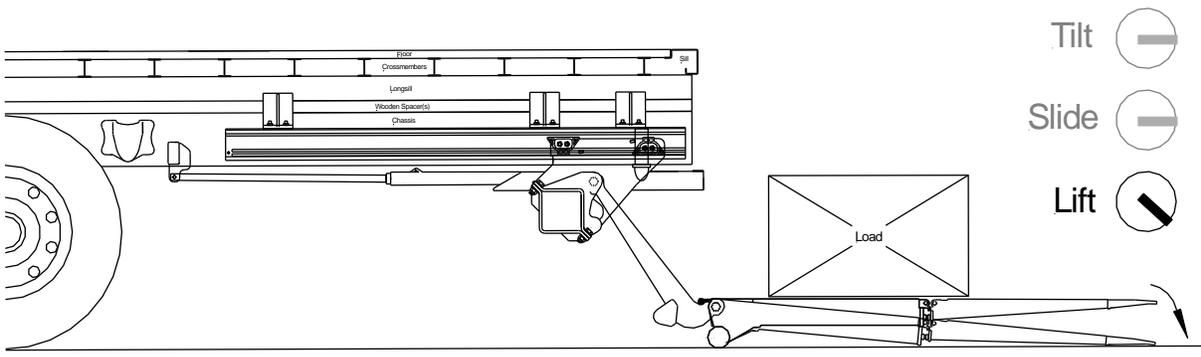
5. Use the **Lift Up** switch to raise the platform up to bed level until the liftarms are in contact with the liftarm upstops.



6. Center the load on the platform 24" away from the rear of the vehicle sill.

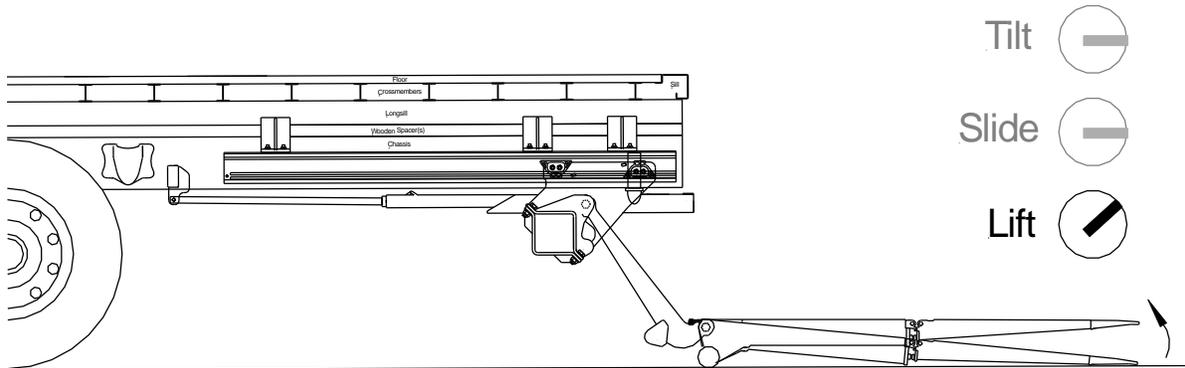


- Use the **Lift Down** switch to lower the platform until the ground rollers on the platform reach the ground. NOTE: Maintaining the **Lift Down** switch down will cause the platform to tilt down.

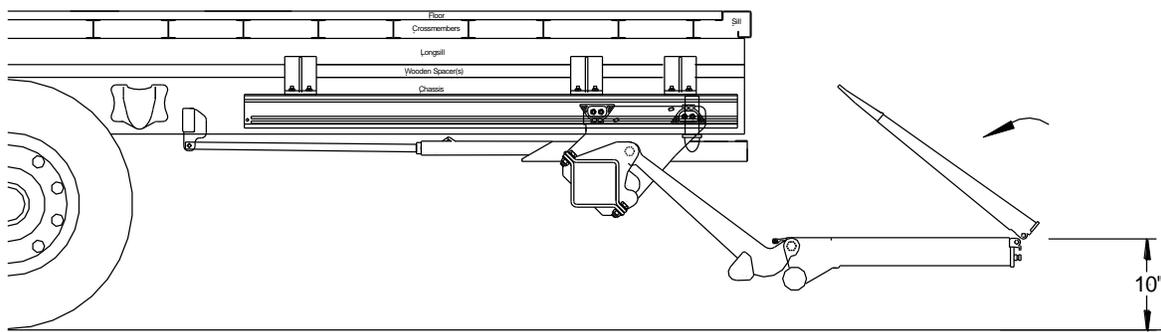


**To Store Liftgate**

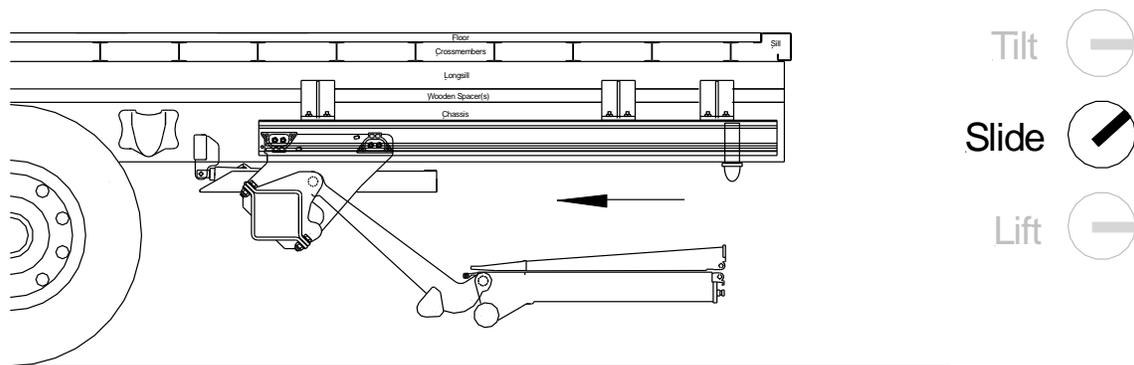
1. Use the **Lift Up** switch to raise the platform parallel to the ground.



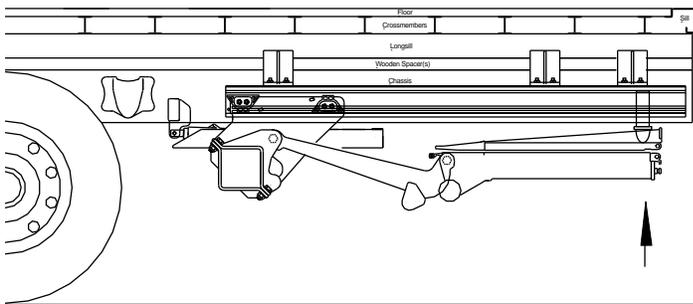
2. Use the Lift Up switch to raise the platform approximately 10" from the ground. Fold the tip manually using the strap and secure the tip to the main with same strap.



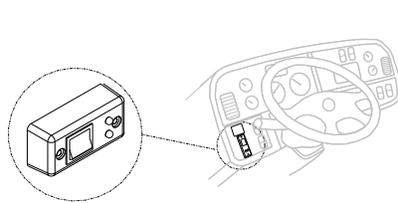
3. Use the **Slide In** switch to store the gate.



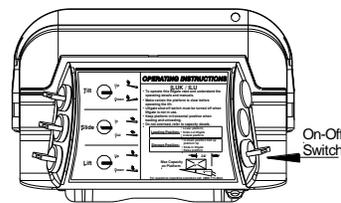
4. Use the Lift Up switch to raise the platform up to the platform bumpers



5. Turn liftgate OFF.



**ON/OFF Switch**  
**Location for Trucks**



**ON/OFF Switch**  
**Location for Trailers**

## 6.2 Hand Held Remote Control

**Reminder: Do not store remote inside refrigerated vehicles. Control will be damaged.**

### 1. Lowering Down

Press and hold the black button to lower platform.

### 2. Lifting Up

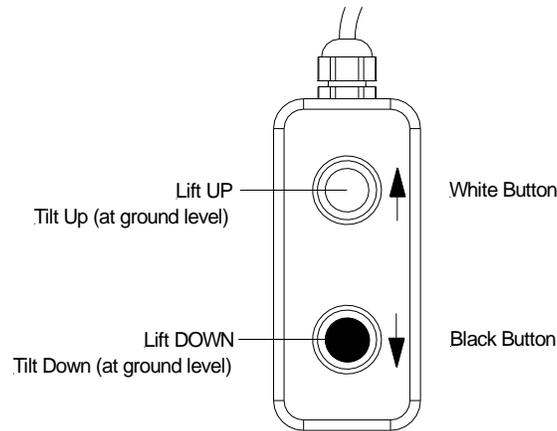
Press and hold the white button to raise platform.

### 3. Tilt Down (at Ground Level)

Press and hold the button until the platform starts tilting down.

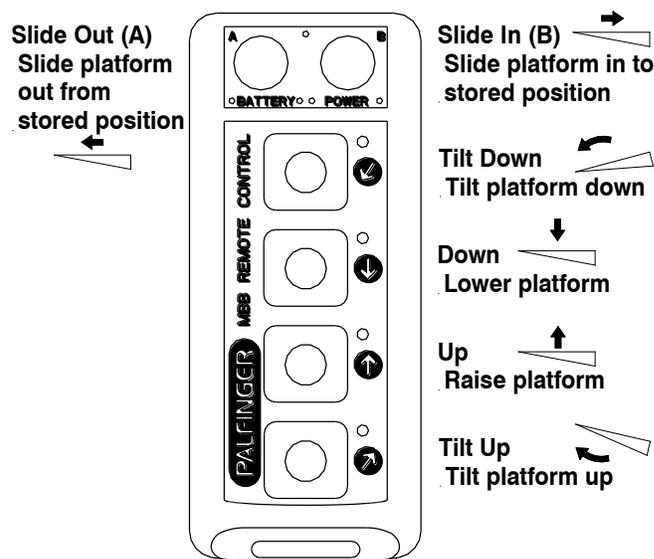
### 4. Tilt Up (at Ground Level)

Press and hold the button until the platform starts tilting up.



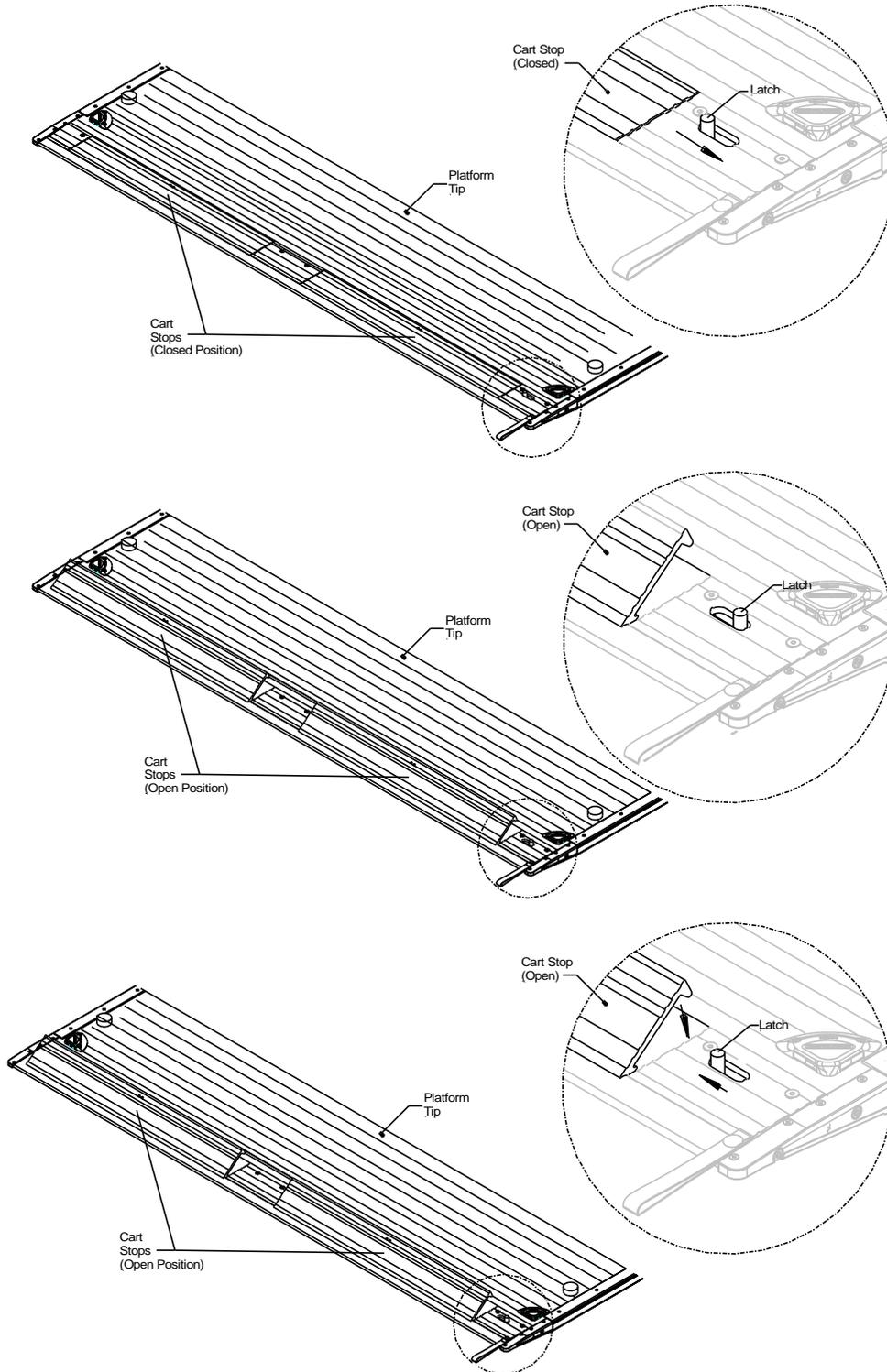
## 6.3 Wireless Hand Held Remote (Optional)

1. Read the wireless remote owner's manual before operating the liftgate.
2. Power the remote by using the ON/OFF switch on the rear of the control.
3. Each function has a separate button. Functions are displayed below.
4. After finishing using the gate, switch the power OFF on the remote.
5. Maintain the remote in the cab of the vehicle.



### 6.4 Aluminum Platform Cart Stop Operation (Optional)

1. Push the cart stop latch out toward the curb side. The cart stop will spring open automatically once the latch has been moved from its original position.
2. To close the cart stops, push the cart stop latch inward towards the street side. After the latch is in place close each cart stop by pushing each stop down.



**Note: One latch is used for both cart stops.**

### 6.5 Foot Controls Operation (Optional)

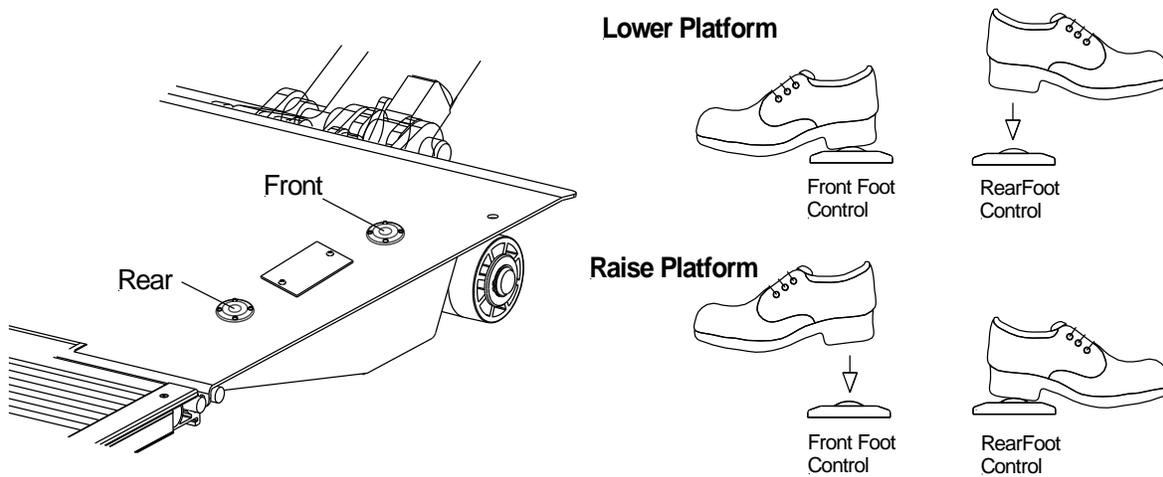
**Lower Platform:**

Step on the front foot control and hold, wait three seconds before stepping on the rear foot control. For auto tilt, stay on the switches until the platform starts tilting.

**Raise Platform:**

Step on the rear foot control and hold, wait three seconds before stepping on the front foot control. The platform will tilt up to preset position before raising.

**IF THE PLATFORM IS NOT RESPONDING TO THE CONTROLS WITHIN THREE SECONDS, REPEAT STEPS ABOVE.**



## 7 Preventive Maintenance and Quick Check

The ILUK needs preventive maintenance to perform at its fullest capability. Lubricate and inspect regularly. Also, check that all details are not damaged: Hoses, cables, controls, etc.



**REPAIR OR REPLACE FAULTY PARTS IMMEDIATELY**



### 7.1 Maintenance and Care

The following inspection and maintenance should be performed at the recommended intervals depending on operation and amount of cycles or at the time when the unit shows any signs of damage or abuse. Remember that the secret to a long life of your PALFINGER Liftgates is to maintain it through preventive care.

* Recommended bases for inspection and maintenance	Depending on use	Daily	Monthly	Quarterly
Cleaning	✓			
General lubrication of pins and bushings				✓
General lubrication of Slider Rails with WD-40 and Push-Pull Cylinder zerks with grease				✓
Oil level inspection				✓
Oil change	✓			
Check hydraulic hoses and pipes for leaks				✓
Check controls and connections				✓
Check platform retention bar			✓	
Check pins and pin retaining bolts			✓	
Check batteries and connections				✓
Check warning labels and other safety equipment for effectiveness and visibility		✓		
Visual check for loose or missing parts and un-usual noise during operation		✓		
Check lock bolts and pins for tightness				✓
Check complete function of gate		✓		
Check mounting brackets of lift gate to frame for cracks or damage visually		✓		

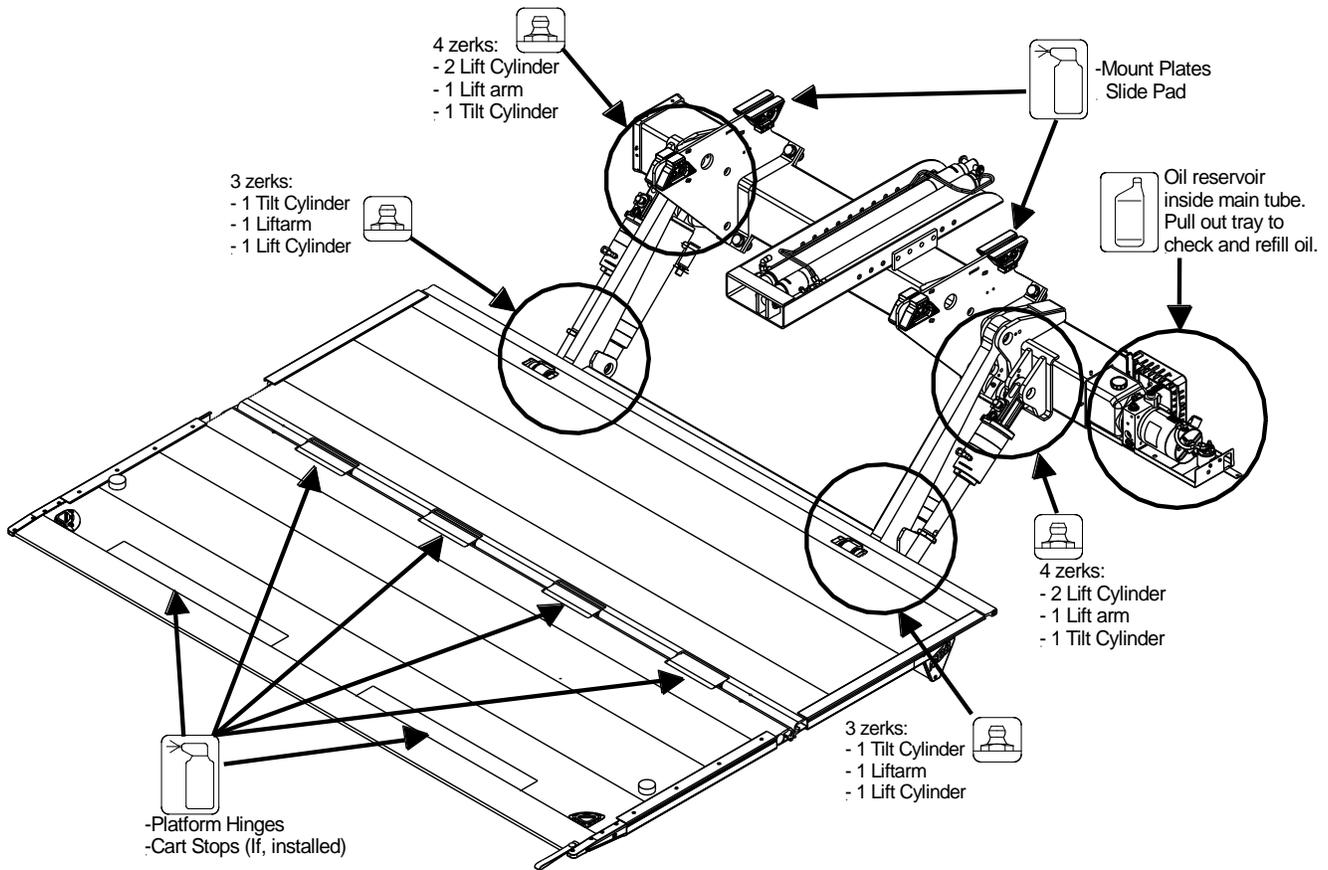
** DANGER**

**Do not cover up any accidents or damage; it can be dangerous for you and your co-workers.**

## 7.2 Lubrication

Properly lubricated, the ILUK PALFINGER Liftgate will ensure longevity. Therefore, lubricate the lift at the same time as the truck/trailer. Grease more frequently if the liftgate is heavily used. The liftgate should be greased every 500 cycles (depending on use – estimated every 3 month).

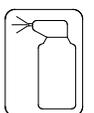
Check the oil level in the tank. The level should be between the two marks 5 and 7 when the platform is tilted down at ground level in stored position. Use a good quality of hydraulic fluid, ISO 32. Change oil at least once a year, preferably in the fall before the weather gets cold. The operation of the lift gate will accumulate condensation and some dirt which can interfere with the lift gate functions.



**Grease:** Location of Grease Zerks (7 on each side, 14 total).



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

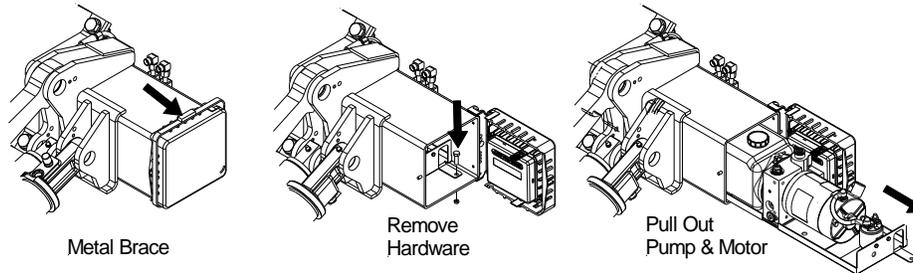


**Penetrating Oil:** Platform hinges, Slide Rails and optional Cart Stops.

### 7.3 Checking and Changing the Oil

**To check fluid:**

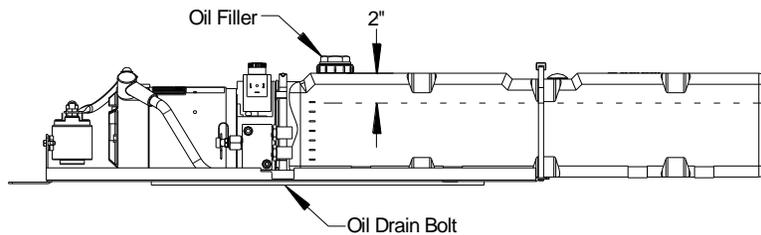
1. To begin, lower gate to ground and tilt platform down.
2. Remove the cover from the Hydraulic Power Unit enclosure. The cover is hinged and opens to right.
3. The level of the oil should be 2" from the top of the oil reservoir when the platform is tilted down at ground level. If fluid is required, use a recommended fluid from the table below.



**Pump and Motor Located Inside Mount Frame on the Right Side.**

**To change fluid:**

1. Unscrew the Oil Drain Bolt and let the fluid drain out of the reservoir into an approved container. When reservoir is empty fill the reservoir up 2" from the top of the reservoir. Change oil at least once a year, preferable in the fall before the weather gets cold.
2. Place the cover back on to the Hydraulic Power Unit enclosure.



When changing or adding fluids, it is highly recommended to use alternatives fluid brands and types listed below:

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

## 7.4 Decal Placement and Inspection



For operator's safety, all decals appearing in "Decal Kit" must be placed visibly on the control side of liftgate to be read by operator. This is typically a combination of decals on the liftgate and truck/trailer body.

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

Decal Kit			
Decal	Qty.	Part No.	Description
A	1	ATG-URGWA	Urgent Warning: Elevating Gate Instructions
B	1	ATG-ILUK	Operating Instructions
C	1	ATG-BKR	Circuit Breaker Reset (must be located at the circuit breaker)
D	2	ATG-XXXX	Capacity (check the serial number plate to find out the gates specific capacity).
E	1	ATG-RESET	Circuit Breaker Protection
F	2	ATG-WLH	Warning: Liftgate Can Crush
G	2	ATG-PLAT	Warning: Always Stand Clear of Platform Area
H	1	ATG-CAB	Liftgate Shut-Off (Place Decal next to the On-Off Switch in the Cab)
I	1	ATG-WNG	Warning: Use handle to open (must be located underneath handle (main section))
J	1	ATG-FC	Foot Controls (Optional)
K	1	2032626	Palfinger Logo (Trailer Only)

## NOTICE

It is the installer's responsibility to determine 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>

**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 dealer, 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.

Decal - A

**OPERATING INSTRUCTIONS**

**ILUK / ILU**

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

**Loading Position:**

- Lower platform
- Slide out liftgate
- Unfold platform

**Storage Position:**

- In down position fold up platform tip
- Slide in liftgate
- Raise platform

Max Capacity on Platform

24"

For questions regarding operation call (888) 774-5844

Decal - B

**NOTICE**

ELECTRICAL SYSTEM PROTECTED BY RESETTABLE CIRCUIT BREAKER

TO RESET - PUSH RESET TAB IN

Decal - C

**CAUTION**

**MAXIMUM LOAD CAPACITY**

**XXXX LBS.**

CENTER LOAD ON PLATFORM TO AVOID PERSONAL OR PROPERTY DAMAGE

Decal - D

**NOTICE**

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

Decal - E

**WARNING**

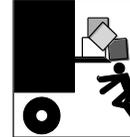
LIFTGATE HAZARDS CAN RESULT IN CRUSHING OR FALLING

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 - F



**WARNING**

**ALWAYS STAND CLEAR OF PLATFORM AREA**

Decal - G

**NOTICE**

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

Decal - H

**WARNING**

USE HANDLE TO OPEN & CLOSE ALWAYS STAND CLEAR OF PLATFORM AREA WHEN OPERATING THE GATE

Decal - I

**OPERATING INSTRUCTIONS**

Read all Decals and Owner's Manual before operating liftgate

**DOWN:**

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

**UP:**

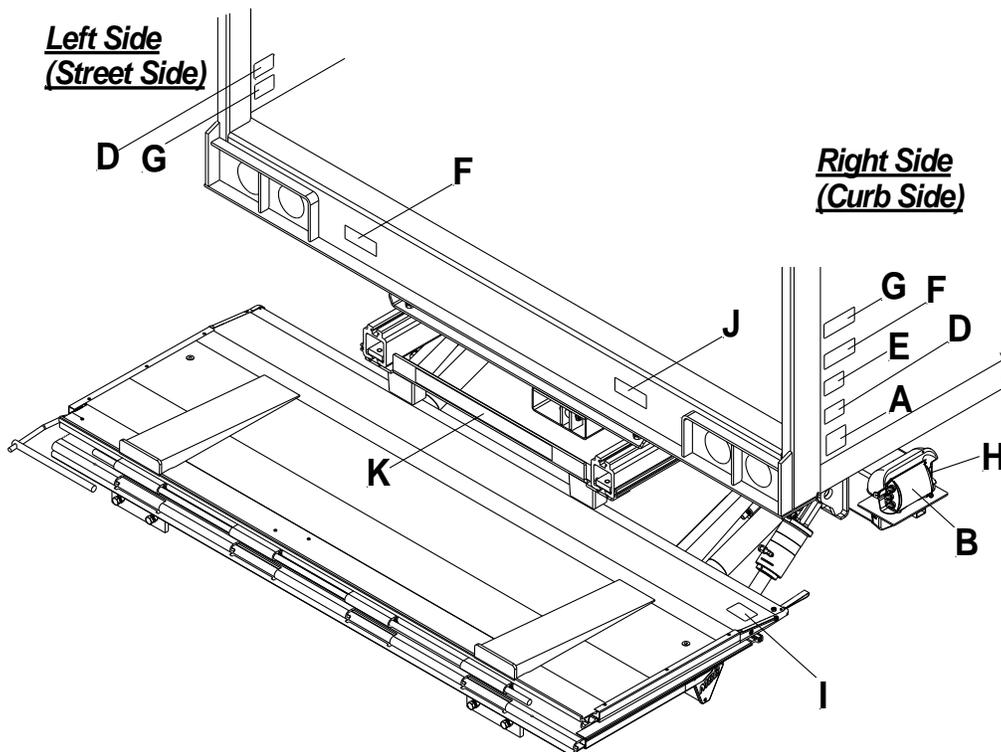
Step on switch 2 and hold - wait between one and three seconds before you step on switch 1. The platform will lift up to present position before rising.

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

Decal - J

← ←  **PALFINGER**  → →

Decal - K



## 7.5 Quick Check List

1. Operate the liftgate throughout its entire operation and check for noise and damage such as bent parts or cracked welds.
2. Inspect all welds and fasteners that attach the mount frame to the truck. All pins and bolts that connect the lift arm to the mount frame and to the platform.
3. Visually inspect the hydraulic lines for damage, scratches, bending or leakage.
4. Inspect the cylinders for leakage and that the cylinder pins are secured with lock bolts.
5. Check the oil level when the platform is down at ground level. The level should fall between the markings 5 and 7 on the tank. We recommend replacing oil after the first 1200 cycles, after that on a yearly basis in the fall before winter begins.
6. Check for oil leakage around the power pack and inside mount tube. Tighten or replace components if needed. If you perform work on any hydraulic components bleed the air out of the system by operating all functions several times.
7. Check all electrical connections. Clean and protect battery terminals and check for tightness.
8. Inspect all the terminals on the solenoid-operated valves at the port of the cylinder. Lubricate the terminals for better protection from oxidation if needed. Please check the valve block on the back of the main tube and its connections additionally.
9. Grease all zerks on the lift gate and make sure they all take grease. Sometimes it helps to operate the lift gate while you do this. There are 14 zerks.
10. Test all the lift gate functions, if possible with maximum loads placed according to load diagrams.
11. Check the function of the pressure relief valve.
12. When performing daily checks and you find any kind of damage that can make the use of the liftgate dangerous, it must be repaired before using. All repairs should be made by an authorized technician. Use only original spare parts. If in doubt contact your PALFINGER Liftgates distributor or call PALFINGER Liftgates directly.



**Do not cover up any accidents or damage; it can be dangerous for you and your co-workers.**

## 8 Troubleshooting



Dangerous injuries are possible from tools short circuiting main battery connections.



Every time you are finished troubleshooting, close the rubber cover on the curbside of the mount frame. **REINSTALL THE METAL CLAMP ON THE RUBBER COVER WHEN FINISHED.**



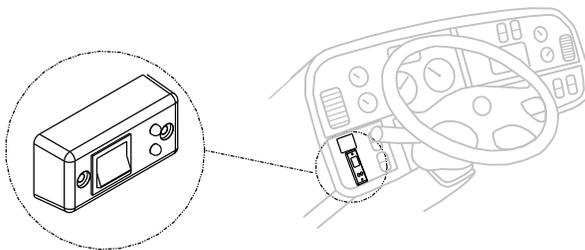
**Please check the following points before looking for faults:**

- Please change oil after working on hydraulic unit (removal of valves, opening of cylinder etc.)
- There is a possibility of injury if somebody other than an authorized technician works on the electrical system!
- Injuries are possible if short circuits are caused by tools on the main battery connections.

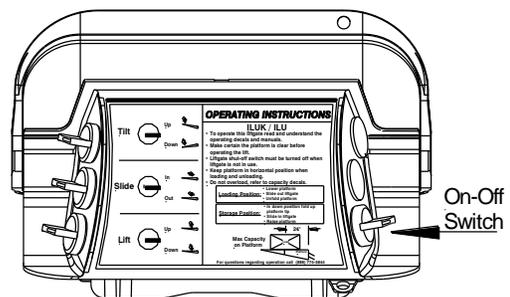
### 8.1.1 Liftgate will not power on.

#### 1. Check the shut off switch.

Turn ON the ON/OFF switch located inside the vehicles cab (Truck) or control box (Trailer).



**ON/OFF Switch**  
**Location for Trucks**

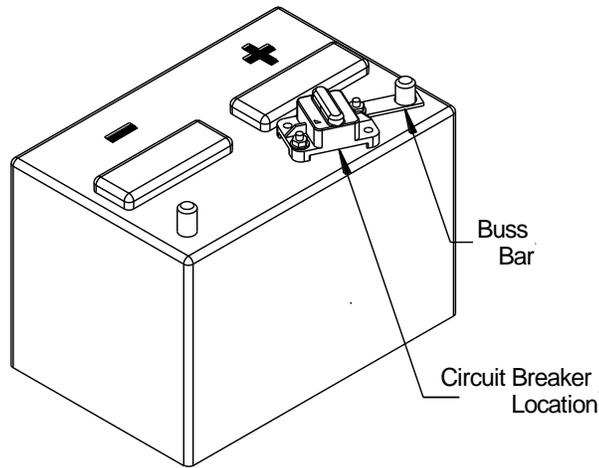


**ON/OFF Switch**  
**Location for Trailers**

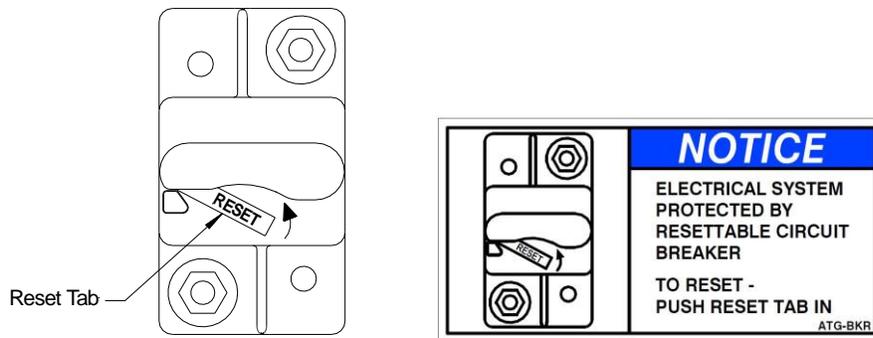
**2. Check the circuit breaker at the main batteries.**

Every truck has a circuit breaker on top of the main batteries or if you have an auxiliary battery kit as shown in the illustration below.

If circuit breaker reset tab is exposed, push the tab back in as shown.

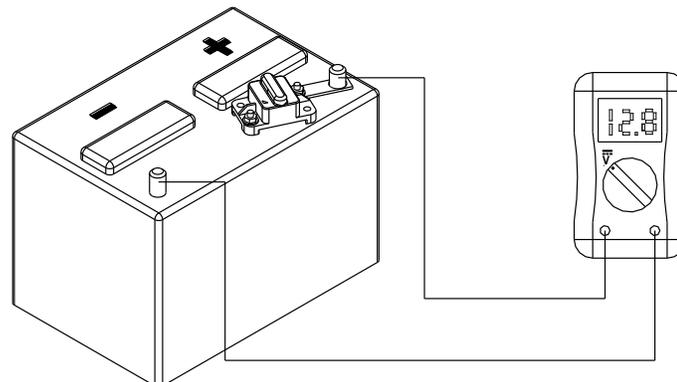


***Circuit Breaker at Truck Batteries or Auxiliary Battery Box***



**3. Are the vehicle batteries charged?**

Check batteries and the truck/trailer charging system. Start truck and run engine in fast idle for charging the batteries. If liftgate starts working, recharge and load test batteries. Measure battery voltages: Flooded Batteries = 12.6V; AGM Batteries = 12.8V

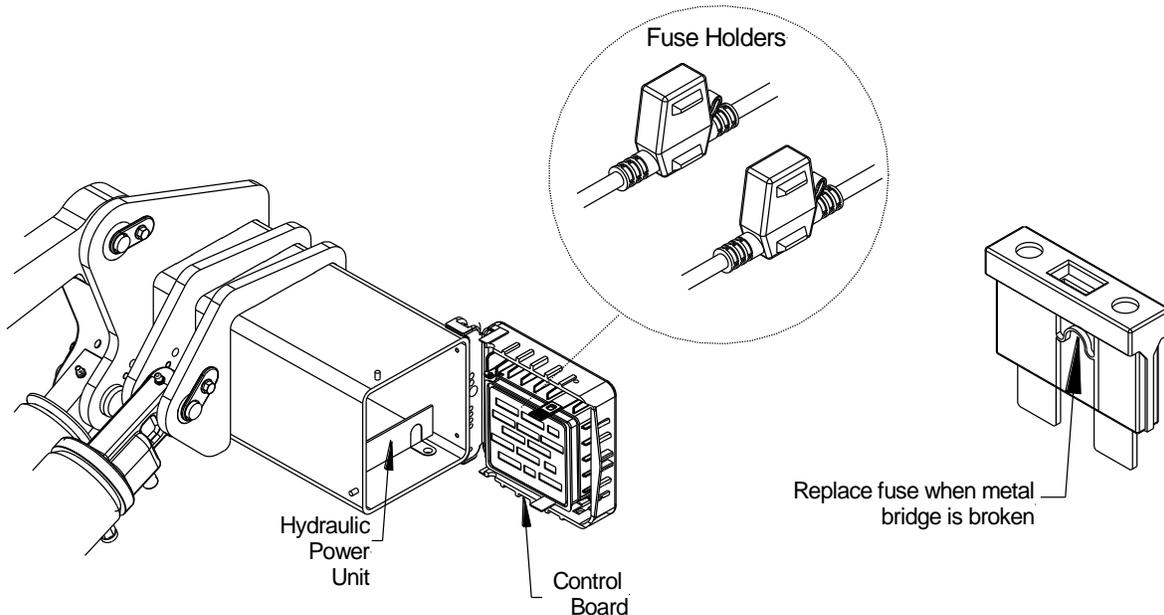


#### 4. Check the fuse at the batteries.

Check for burned fuse and replace with the same amperage fuse.



**DO NOT use higher amperage fuse.**



#### 5. Is the connection to ground on hydraulic power unit OK?

Is the ground connection from the liftgate to vehicle properly grounded?

#### 6. Check the oil level in the hydraulic power unit.

The power unit is located inside the enclosure mounted on the mount frame. To access the oil reservoir, remove the enclosure cover. The oil must be 1" down from the top of the reservoir.

#### 7. Are there any damages on mechanical or electrical parts (such as damaged cables)?

Perform a visual inspection of all electrical wiring and mechanical components.

### 8.1.2 ON-OFF Switch is On, But All Functions are Dead

Possible Malfunctions:

1. Short in hand held remote or its wiring. ⇒ Unplug hand controls.
2. Short in Control box wiring. ⇒ Remove Plug J-30 (Reference Electrical Schematic to location Plug J-30).
3. After disconnecting plugs, reboot board by unplugging J-1 for 5 seconds and plug it back.

### 8.1.3 Warning Lights ON, after ON-OFF Switch is Turned OFF

1. B-15 Sensor is not working.

Make sure the wire strain relief is always parallel with the top of the platform.

### 8.1.4 Platform Tilts Down Before it Reaches The Ground

1. Adjust B-13 liftarm sensor.
2. B-13 is not working. ⇒ Unplug J41 (Gate operates without sensor but loses auto tilt function).



If gate is still not working, take Truck/Trailer to a repair station



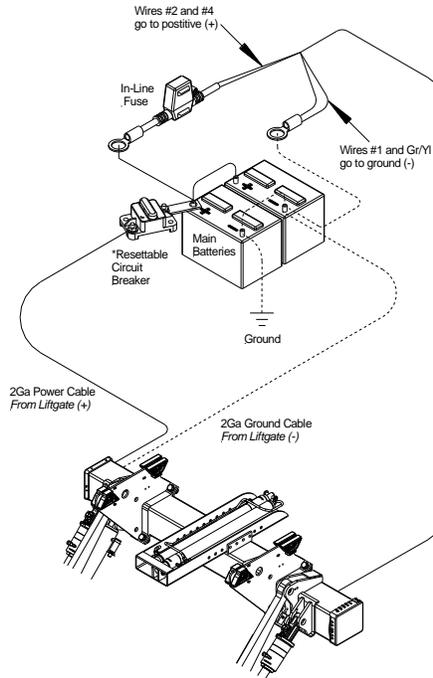
## 8.2 Electrical Wiring – Batteries – Truck/Trailer

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

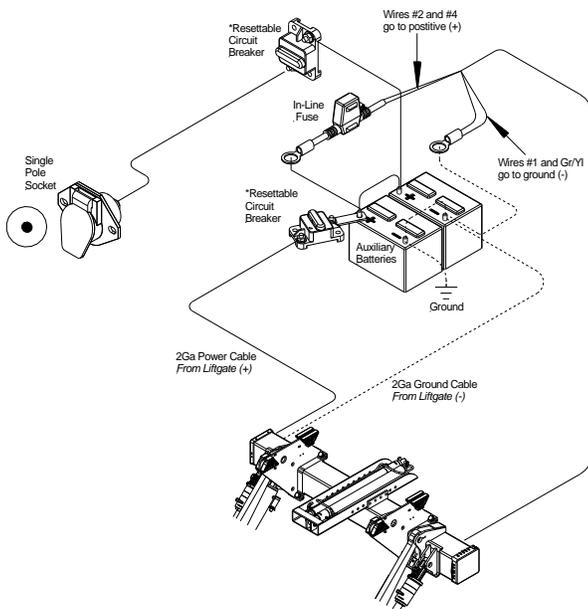
Ground: For optimal grounding, ground all batteries and power units to the body side rails of the vehicle.

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

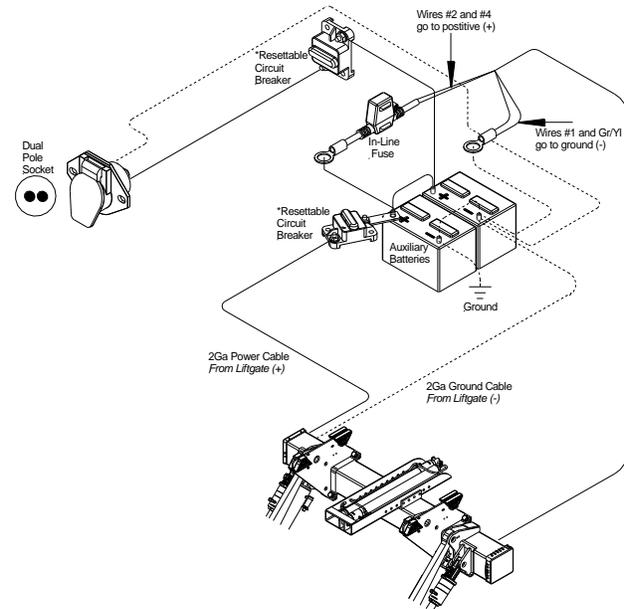
**Do not increase the amperage rating of fuse. Serious harm to the liftgate will result when standard practices are not followed.**



Wiring Diagram – Truck



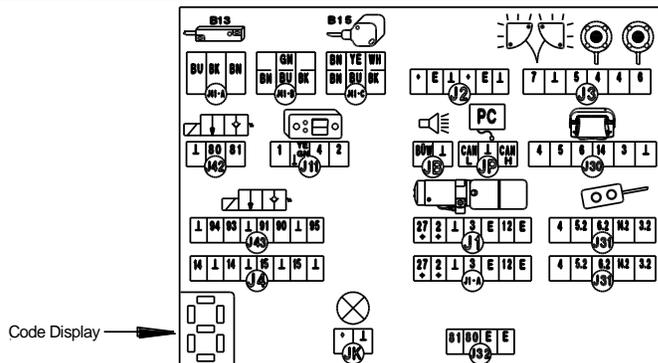
Wiring Diagram – Single Pole – Trailer



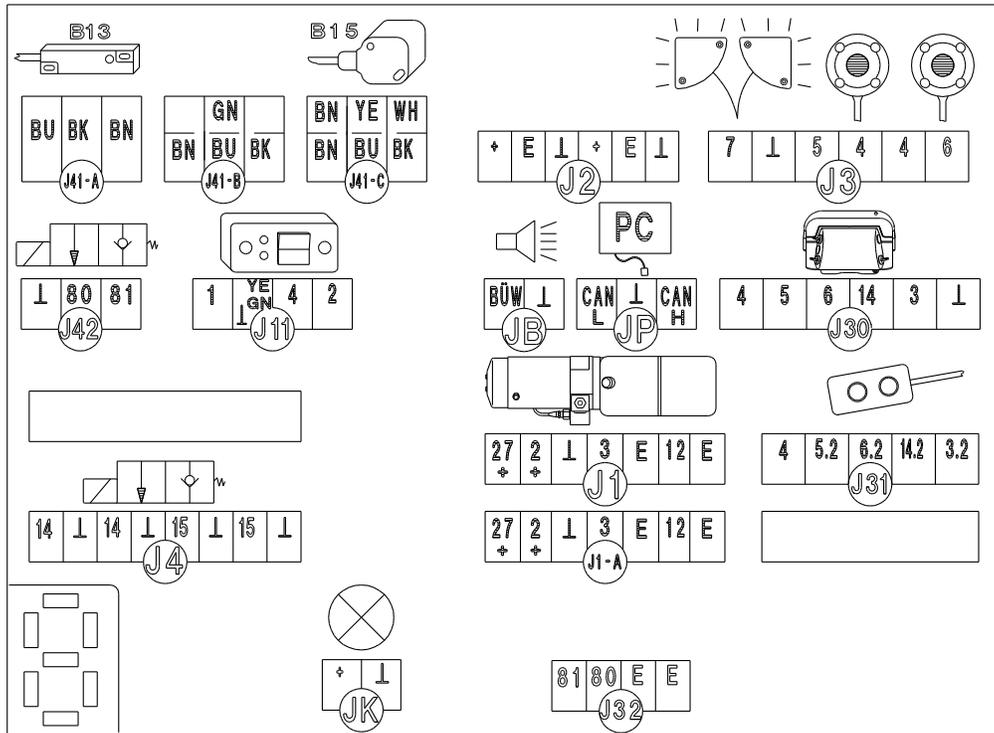
Wiring Diagram – Dual Pole – Trailer

### 8.3 Electrical System Codes

Code:	Description:	Reason:	Solution 1:	Solution 2:	Solution 3:	Solution 4:
0	System OK / Control System: OFF	System OK / Control System: OFF	System OK / Control System: OFF	--	--	--
1	System OK / Control System: ON	System OK / Control System: ON	System OK / Control System: ON	--	--	--
2	Low Voltage	Voltage J1 Pin 2 too low	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check the battery condition / battery charged	Motor could have worn carbon brushes / motor could be bad	--
3	Liftarm sensor (B-13): Broken wire, short	J41-C shorted; J41 pin BLUE: wire getting more than 5 Volts (right upper location J41)	Check adjustment B-13	Check sensor for signal Blue wire with platform 10"-12" off ground	Change B-13 liftarm sensor	--
5	Platform sensor (B-15): Broken wire, short	J41-C shorted; J41 pin BLUE: wire getting more than 5 Volts (right upper location J41)	Check adjustment B-15 platform	Unplugged, plugged in wrong location	Change B-15 platform sensor	To temporary by-pass, jump Black to Blue
8	Short on warning lights	Power consumption J3 Pin 7 to high	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check warning light cables for damage	--	--
7	Short in cab Switch, control system	Power consumption J11 Pin 1 to high	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check cab cut off/ warning light cable for damage	--	--
8	General Short in electric wiring	General power consumption to high	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Unplug wires one by one, check for correct plug location	Repair cables, connections, check for burnt or crushed wires	--
9	Defect in motor solenoid during lifting	Power consumption J1 Pin 3 to high	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check the battery condition / battery charged	Possible short in diode jumper wire on Motor Solenoid: Remove Jumper	Possible short in Thermo Switch inside motor Bypass and test, replace Thermo Switch
8	Fuse 15A damaged on power pack (J1, Pin 2)	Defective fuse J1 Pin 2	Check fuses at power pack	Check fuse holder Replace fuse with same amp fuse	--	--
b	During opening, an error was recognized on the valve spool for opening (S3/S4) or at the motor solenoid. NOTE: ONLY APPLIES TO ILK CANTILEVER LIFTGATE.	Power consumption J1 Pin 3 to high; ohm reading J4 pins 14 have changed	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check the battery condition / battery charged	Check ohm reading of the coils	Change coils or cables
c	During closing, an error was recognized on the motor solenoid or on the valve spool S-5. NOTE : ONLY APPLIES TO ILK CANTILEVER LIFT GATE.	Power consumption J1 pin 3 too high; ohm reading J1 pin 12 has changed	Check J-1 & J-2 power cable at PC board and battery for tight connection, oxidation and damage.	Check the battery condition / battery charged	Check ohm reading of the coil motor solenoid	Change coils or cables
d	During lowering, an error was recognized on S-1/S-2 lowering valves or valve spool S-5	Resistance J1 pin 12 has changed; ohm reading J4 pins 15 have changed	Check resistance of the coils	Change valve coils and cables	Check ohm reading of the coils	Change coils or cables
e	Emergency mode active (all logic fuctions and comfort fuctions are switched off)	Activate by pressing OPEN and LOWERING button (and Second Hand if in use) simultaneously for over 10s	Deactivate by turning cab switch or on off switch OFF then back ON	--	--	--
p	Error diaganstic mode active	Attached service plug	--	--	--	--
	NOTE: ILK, B-15 Sensor wire points toward ground when platform stored vertical	NOTE: B-13 sensor wire points toward front of vehicle			To Clear Code: 1. Unplug J-11 and plug back in	
	NOTE: ILF, ILU, ILUK b-15 sensor wire points toward front of vehicle when platform is up at bed level	NOTE: Purple side of sensors always face outward, where you can see purple			2. Cab switch off and on to clear code	



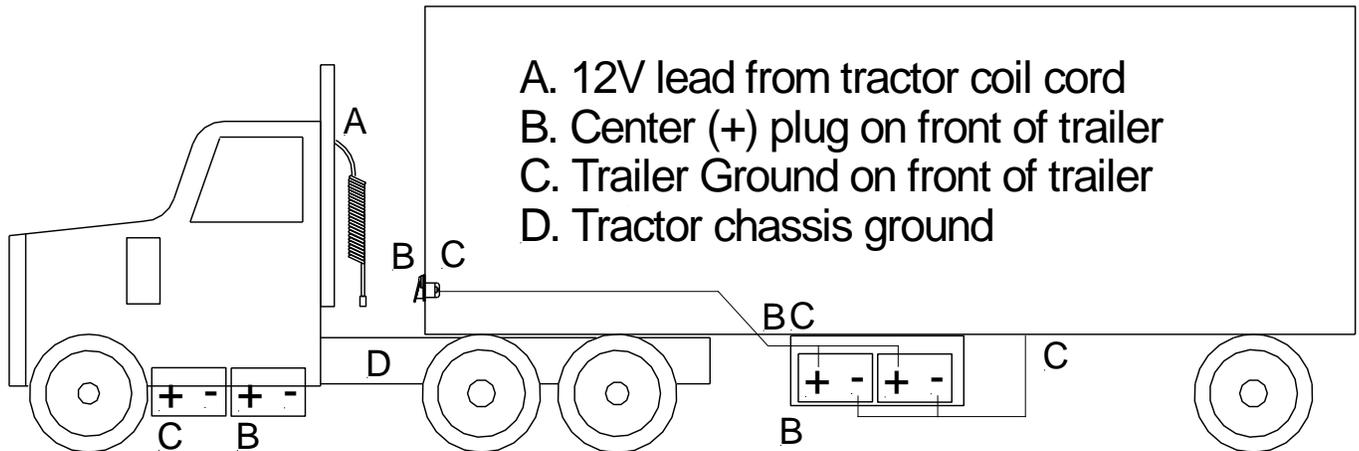
### 8.4 Connector Overview



<u>Port Number</u>	<u>Port Designation</u>
J1	Power Pack
J1-A	Valve
J2	Not Used
J3	Warning Lights & Foot Controls on Platform
J4	Valves
J11	On/Off Switch
J30	Control Box
J31	Hand Held Remote
J32	Not Used
J41-A	B-13 Sensor
J41-B	Not Used
J41-C	B-15 Sensor
J42	Valves
JB	Not Used
JK	Not Used
JP	PC Diagnosis

## 8.5 Cross Test on Single Pole Plug Charge System

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



### 1. Tractor Test:

- Ground battery load tester on tractor chassis point (D)
- Connect positive load tester cable on positive pole of single pole plug at end of tractor coil cord (A)
- Run load test- This will test entire circuit on tractor including ground

### 2. Trailer Test:

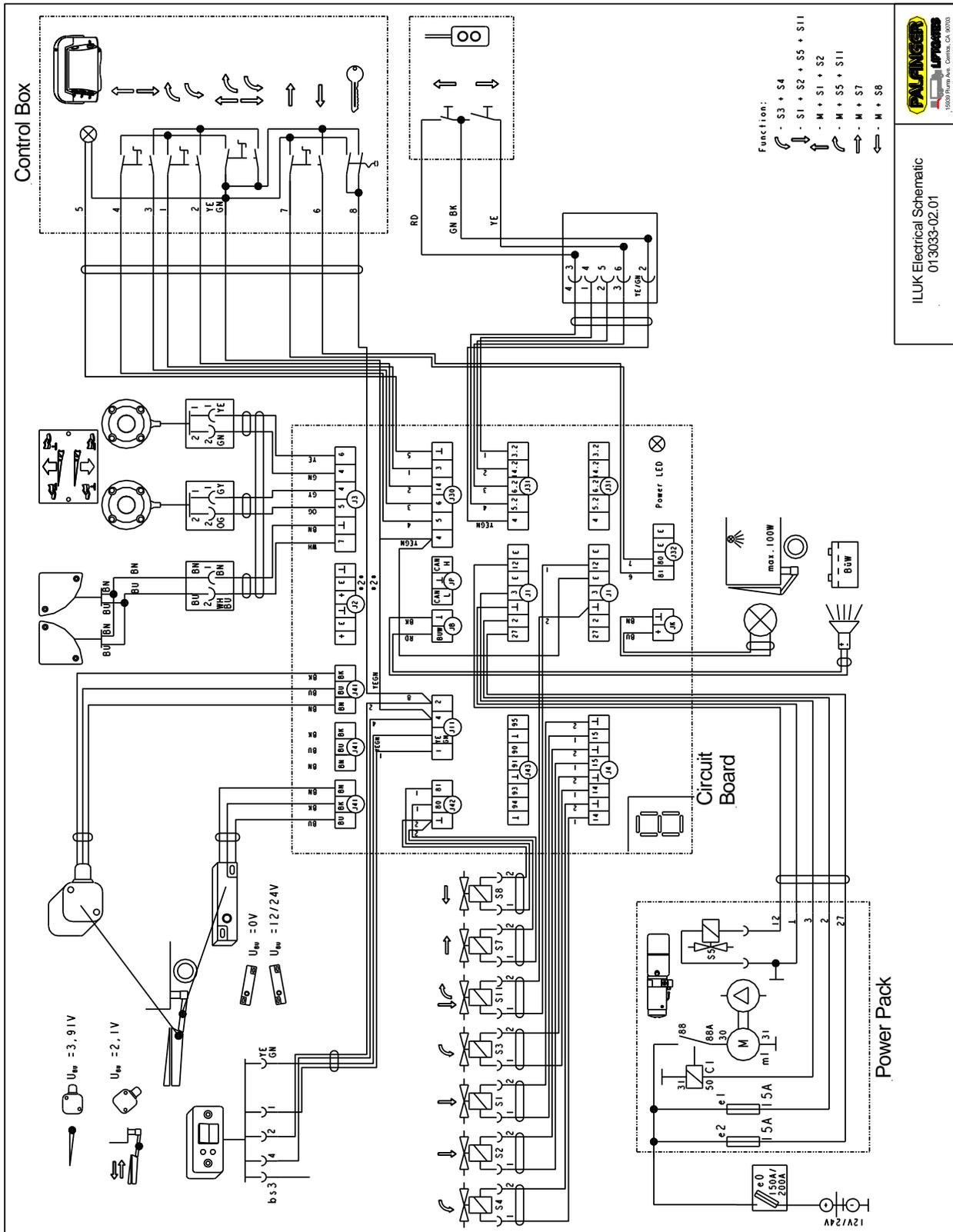
- Ground battery load tester on trailer chassis point (C)
- Connect positive cable on positive pole of single pole plug receptacle on trailer (B).
- Run load test- This will test entire circuit on tractor including circuit breakers and ground between trailer batteries and trailer chassis.

### 3. Tractor and Trailer Charging system test while connected:

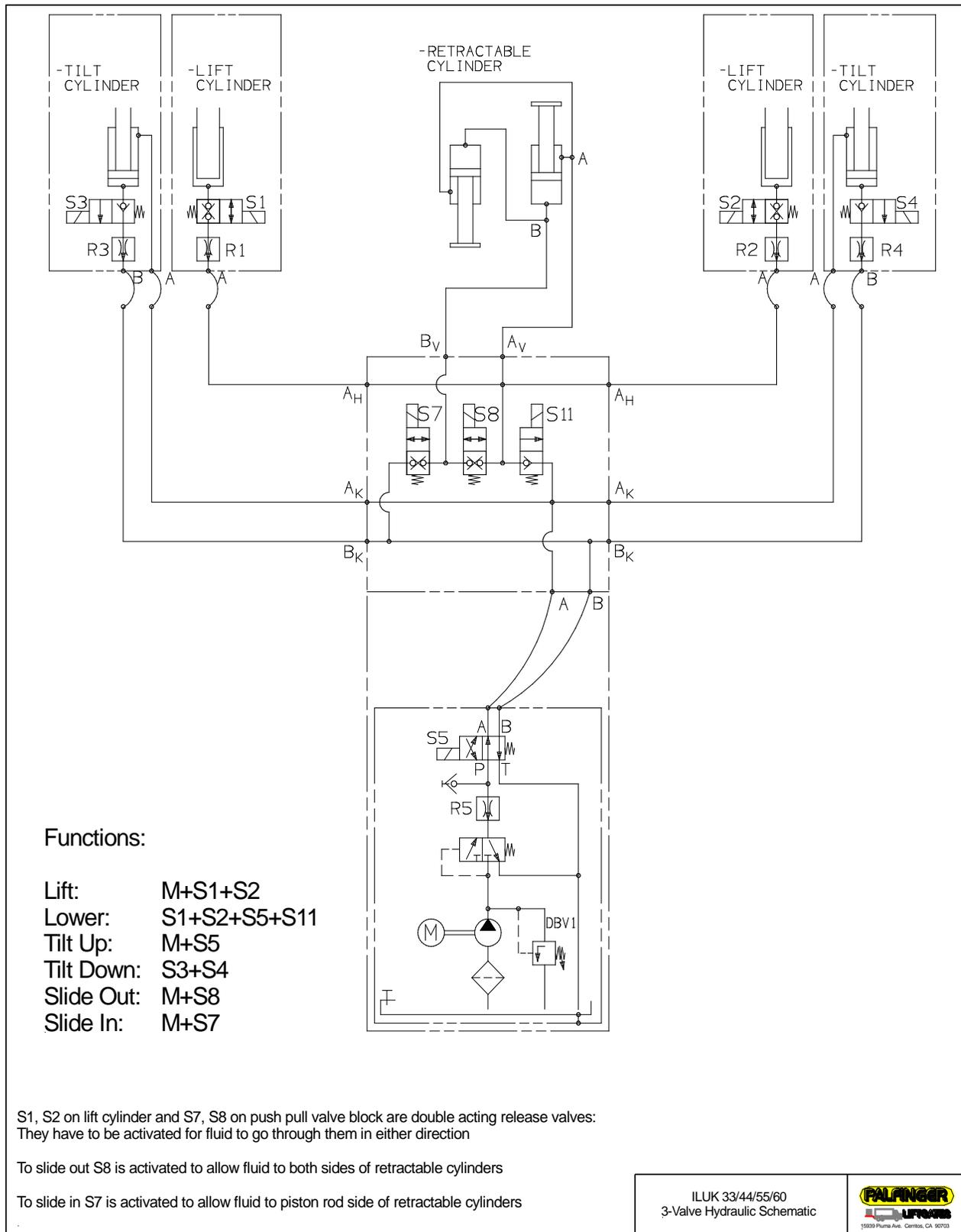
- Ground battery load tester on tractor chassis point (D)
- Connect positive cable on positive pole of single pole plug receptacle on trailer (B).
- Run load test- This will test entire circuit on tractor and trailer including ground between tractor, trailer, and circuit breaker on trailer.

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

### 8.6 Electrical Schematic



### 8.7 Hydraulic Schematics



## 8.8 Functional Description of Hydraulics When Operating

The following operating functions are relating to Section 8.6. Please use the schematic to understand the specific functionality of the ILUK liftgate.

### 8.8.1 Slide Out Function

- As soon as the Motor starts to run, valve S8 is energized.
- Oil pressure on input "A" sets exits "Av" and Bv" at the valve block under pressure.
- The surface at the end of the piston rod on input "B" is larger than on the shaft at input "A".
- This creates a stronger force at the piston rod ("B") than at the shaft ("A").
- This factor forces the cylinder to extend.
- The lift gate will slide out to the end of the rails.

### 8.8.2 Lower Down and Auto Tilt Function

- The shift valve S5 at the pump and the solenoid release valves S1 and S2 at the cylinders will get energized. In addition the leaking down stop valve S11 in the back of the mount frame is also energized.
- The gate is designed to lower down by gravity. It will push the hydraulic oil out of the lift cylinder into the reservoir. The oil passes the solenoid release valves S1 and S2. It also has to pass the energized S11 valve in the back of the mount frame and the shift valve S5 at the pump.
- When the platform touches the ground the auto tilt function will get activated (B-13).
- Solenoid release valves S3 and S4 at the tilt cylinders will be activated.
- The existing oil in the tilt cylinder runs back through the energized solenoid release valves S3 and S4 and the energized shift valve S5.
- Speed of tilting down will be reduced by passing through the restrictor R5.

### 8.8.3 Level Out Activity

- Motor starts running and S5 valve is energized.
- Oil pressure on input "B" sets pressure on exits "BK" at the valve block.
- The Oil pressure on exit "BK" at the valve block sets the input "B" at the tilt cylinder on pressure.
- The platform will tilt up and get in a level position. When the platform is leveled, the B-15 Platform sensor shuts down the shift valve S5 and activates the S1 and S2 valves at the Lift Cylinders which directs the fluid into the Lift Cylinders. This causes the platform to raise.

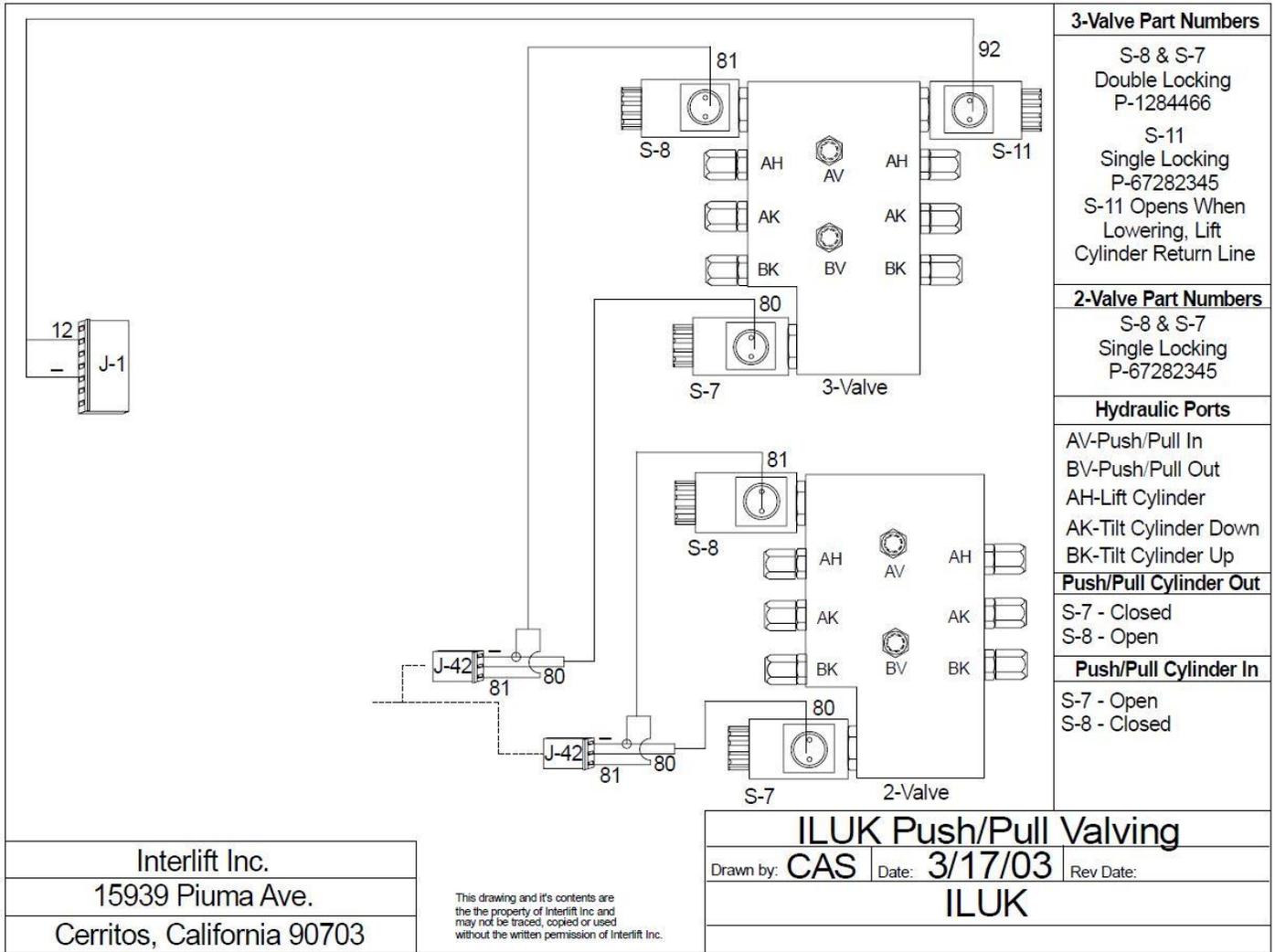
#### **8.8.4 Lift Up Function**

- Motor starts running and double locking release valves S1 and S2 are energized.
- The pressure is on input “A” at the valve block. The oil passes the S11 valve and sets pressure on exit “AH”.
- The energized double locking release valves S1 and S2 forces the fluid to push the lift cylinders to extend. The platform raises up.

#### **8.8.5 Slide In Function**

- Motor starts running and S7 valve is energized.
- Oil pressure on input “A” sets pressure on exits “Av” at the valve block.
- The Oil pressure on exit “Av” at the valve block sets pressure on input “A” at the cylinder.
- The energized valve S7 is allowing the oil at the bottom of the piston rod to get back through the S5 into the reservoir.
- The pressure on the end of the shaft will force the piston rod to retract.
- The liftgate will slide in under the body.

### 8.9 ILUK Push Pull Valving



<b>3-Valve Part Numbers</b>
S-8 & S-7 Double Locking P-1284466
S-11 Single Locking P-67282345 S-11 Opens When Lowering, Lift Cylinder Return Line
<b>2-Valve Part Numbers</b>
S-8 & S-7 Single Locking P-67282345
<b>Hydraulic Ports</b>
AV-Push/Pull In BV-Push/Pull Out AH-Lift Cylinder AK-Tilt Cylinder Down BK-Tilt Cylinder Up
<b>Push/Pull Cylinder Out</b>
S-7 - Closed S-8 - Open
<b>Push/Pull Cylinder In</b>
S-7 - Open S-8 - Closed

Interlift Inc.  
15939 Piuma Ave.  
Cerritos, California 90703

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<b>ILUK Push/Pull Valving</b>		
Drawn by: <b>CAS</b>	Date: <b>3/17/03</b>	Rev Date:
<b>ILUK</b>		

## 9 Technical Data

### 9.1 Torque Specifications

#### Imperial Fasteners

Fastener Size	Grade 2 Torque (ft-lbs)		Grade 5 Torque (ft-lbs)		Grade 8 Torque (ft-lbs)	
	Coarse	Fine	Coarse	Fine	Coarse	Fine
1/4"	4	4.7	6.3	7.3	9	10
5/16"	8	9	13	14	18	20
3/8"	15	17	23	26	33	37
7/16"	24	27	37	41	52	58
1/2"	37	41	57	64	80	90
9/16"	53	59	82	91	115	129
5/8"	73	83	112	128	159	180
3/4"	125	138	200	223	282	315
7/8"	129	144	322	355	454	501
1"	188	210	483	541	682	764

#### Metric Fasteners

Fastener Size	Class 8.8 Torque (Nm)		Class 10.9 Torque (Nm)		Class 12.9 Torque (Nm)	
	Coarse	Fine	Coarse	Fine	Coarse	Fine
M5	5.75	-	8.1	-	9.7	-
M6	9.9	-	14	-	16.5	-
M7	16.5	-	23	-	27	-
M8	24	-	34	-	40	-
M8x1	-	25	-	35	-	42
M10	48	-	67	-	81	-
M10x1.25	-	49	-	68	-	82
M12	83	-	117	-	140	-
M12x1.25	-	88	-	125	-	150
M14	132	-	185	-	220	-
M14x1.5	-	140	-	195	-	235
M16	200	-	285	-	340	-
M16 x1.5	-	210	-	295	-	350
M18	275	-	390	-	470	-
M18 x1.5	-	305	-	425	-	510
M20	390	-	550	-	660	-
M20x1.5	-	425	-	600	-	720
M22	530	-	745	-	890	-
M22 x1.5	-	570	-	800	-	960
M24	675	-	960	-	1140	-
M24x2	-	720	-	1000	-	1200

## 10 Needed Information for Ordering Spare Parts and Repairs

### 10.1 Ordering Spare Parts

In order to assure quick delivery of spare parts, please always state the following information when making orders:

1. Liftgate model & serial number. Parts manuals are available at [www.palfinger.com](http://www.palfinger.com) if necessary.
2. Designation and number of the spare part in accordance with the spare parts list.
3. Designation and number marked on the individual component (if available).

### 10.2 Repairs

Parts sent to Palfinger Liftgates to repair must be accompanied by a letter (in separate cover) giving details and scope of the repairs required.

## 11 Warranty

Palfinger Liftgates provides warranty as part of its conditions of delivery. Spare part deliveries are first of all billed. Palfinger Liftgates then issues credit for all or part of the invoiced sum when Palfinger Liftgates has been able to determine that the warranty claim is justified as defined by its warranty conditions. Palfinger Liftgates does this by inspecting the defected parts which are sent back to Palfinger Liftgates freight-prepaid as well as the written description of the problem which must have been filled out in full.

The parts that are sent back to Palfinger Liftgates, marked with serial number and address, become Palfinger Liftgates' property if the warranty claim is accepted.

All warranty claims must be received **within 30 days** of repair or replacement. Including the following information:

1. Liftgate model.
2. Liftgate serial number.
3. Description of problem.
4. Itemized bill of repair with breakdown of number of hours to perform warranty work and labor changes per repair.
5. Parts used for repair with Palfinger Liftgates part number.
6. RMA#.
7. Contact at Palfinger Liftgates, if applicable.

Model	Pump and Motor	Cylinders	Hardware	Control System	Hydraulic
ILUK 33/44/55/60	2 yrs	3 yrs	2 yrs	2 yrs	2 yr

*Warranty Coverage Schedule<sup>1</sup>*

<sup>1</sup> Effective: Aug. 2010

## 12 Contact Address



**LIFTGATES**

15939 Piuma Ave

Cerritos, CA 90703

Phone: (562)-924-8218

Fax: (562)-924-8318

E-mail (parts order):

[liftgateparts@palfinger.com](mailto:liftgateparts@palfinger.com)



**LIFTGATES**

572 Whitehead Road

Trenton, NJ 08619

Phone: (609)-587-4200

Fax: (609)-587-4201

E-mail (parts order):

[liftgateparts@palfinger.com](mailto:liftgateparts@palfinger.com)