ILU

OWNER’S MANUAL

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If you received this product with damaged or missing parts,
Please contact PALFINGER Liftgates at (888)-774-5844
# Table of Content

1. **Important Notes**
   - 1.1 Attention ........................................................................................................... 1
   - 1.2 Important Notes ................................................................................................. 1
   - 1.3 General Information ............................................................................................. 1

2. **Safety Information** ........................................................................................................... 4

3. **Basic Parts in Detail**
   - 3.1 General View of Liftgate ....................................................................................... 6
   - 3.2 Maximum Load and Placing of Load on Platform .................................................... 7

4. **Operation of Liftgate** ........................................................................................................... 8
   - 4.1 Operating the ILU by Control Box ......................................................................... 8
     - 4.1.1 General Instructions for the ILU Unfolding Process ........................................... 8
   - 4.2 Operation by Hand Held Remote Control ............................................................... 10
   - 4.3 Operation by Foot Control ...................................................................................... 11
   - 4.4 Operation by Wireless hand Held Remote (optional) ................................................. 11

5. **Preventive Maintenance and Quick Check** ......................................................................... 13
   - 5.1 Maintenance and Care ......................................................................................... 13
   - 5.2 Cross Test on Single Pole Plug Charge System ....................................................... 14
   - 5.3 Lubrication............................................................................................................. 15
     - 5.3.1 Lubrication Plan ................................................................................................. 15
     - 5.3.2 Checking and Changing the Oil ......................................................................... 17
     - 5.3.3 Recommended Hydraulic Fluids ........................................................................ 17
   - 5.4 Decal Placement and Inspection ............................................................................. 18
   - 5.5 Quick Check List .................................................................................................... 20

6. **Troubleshooting** ................................................................................................................. 21
   - 6.1 Basic Function Check ............................................................................................. 21
     - 6.1.1 LIFTGATE is completely DEAD (No Clicking or Movement at all) .................. 21
     - 6.1.2 ON-OFF switch on, but all functions are dead ................................................. 23
     - 6.1.3 Warning Lights on, after switch is turned off .................................................... 24
     - 6.1.4 Platform tilts down before it reaches the ground ................................................. 24
   - 6.2 Electrical and Hydraulic Schematic ....................................................................... 25
     - 6.2.1 Wiring Diagram .................................................................................................. 25
     - 6.2.2 Electrical Schematic .......................................................................................... 27
     - 6.2.3 Connector Overview .......................................................................................... 28
     - 6.2.4 Hydraulic Schematic .......................................................................................... 30
   - 6.3 Functional Description of Hydraulics when Operating ............................................. 31
     - 6.3.1 Slide Out Function ............................................................................................. 31
6.3.2 Lower Down and Auto Tilt Function ........................................ 31
6.3.3 Level Out Activity ........................................................................ 31
6.3.4 Lift Up Function ............................................................................ 32
6.3.5 Slide In Function ........................................................................... 32

7. Needed Information for Ordering Spare Parts and Repairs .................. 33
   7.1 Ordering Spare Parts ...................................................................... 33
   7.2 Repairs .......................................................................................... 33

8. Warranty ............................................................................................. 34

9. Contact Address .................................................................................. 35
1. Important Notes

1.1 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: ILU Under Slider 40, 50

![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.]

1.2 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 accidently 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.]

Revision 1.5
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 applications 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, 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.

1.3 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
2. Safety Information

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

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

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

⚠️ **CAUTION**  
**⚠️ CAUTION** indicates a potentially hazardous situation which, if not avoided, may result 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**  
**⚠️ 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.)
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 a PALFINGER Liftgates Authorized Service Center.

This Manual has been designed for use in conjunction with the ILU 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

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, just call us & order your manuals for FREE.*
3. Basic Parts in Detail
3.1 General View of Liftgate

Figure 1: ILU Under Slider
3.2 Maximum Load and Placing of Load on Platform

Every PALFINGER Liftgates 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” for all ILU liftgates from start of Truck or Trailer Body, as shown in Figure 2.

By increasing this distance the maximum load of the lift gate is decreasing.

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

![Figure 2: Center Point of Load](image)

![Figure 3: Load Diagram (ILU 40, 50)](image)

Capacity:
- 100% at 24”
- 80% at 36”
- 60% at 48”
- 45% at 60”
4. Operation of Liftgate

Before use: Turn Control power to “ON”. All lift gate functions can be controlled with the 3-button control box, which is mounted on the curb side of the truck or trailer.

**NOTE:** Never slide platform in or out with load on the platform.

4.1 Operating the ILU by Control Box

4.1.1 General Instructions for the ILU Unfolding Process

1. Turn on the liftgate by rotating the ON-button on the right side of your Control Box. Warning-Lights will start flashing.

2. Lowering down
   By rotating the lower button **down** you will lower the lift gate from its storage position.

3. Slide out the liftgate
   Rotate the center button **down** to slide out the gate completely until you hit the stops.

4. Unfold the platform manually by using the nylon strap.

5. Check out auto tilt function
   Rotate the lower button **down** to lower the platform to the ground. If you continue holding the switch, the tip of the platform will automatically tilt down.

6. Auto tilt up to level and raising
   To raise platform to the body floor, rotate the lower switch **up**.
7. Fold the platform manually
   Lower down the platform to the ground. To fold the platform, flip the tip section onto the main section.

8. Sliding in
   Rotate the center button up to slide the lift gate underneath your vehicle till the gate is in its final position and does not more further back.

9. Raising up
   By rotating the lower button up you will raise the lift gate up to its storage position.

10. Turn off all functions by rotating the right button into the OFF position. The flashing lights turns off.
4.2 Operation by Hand Held Remote Control

Hand Controls are NOT weatherproof and are designed to be stored inside body in holster or in weatherproof box.

![Figure 4: Hand Held Remote Control with Plug & Socket Wiring](image)

- Button No. 1 ➔ UP
- Button no. 2 ➔ DOWN
4.3 Operation by Foot Control

DOWN:
Step on switch 1 and hold – wait between one and three seconds before you step on switch 2.
→ For auto tilt, stay on the switches till platform starts tilting.

UP:
Step on switch 2 and hold – wait between one and three seconds before you step on switch 1.
→ The platform will tilt up to preset position before raising.

IF BOTH SWITCHES ARE NOT ACTIVATED WITHIN THREE SECONDS, START OVER.

4.4 Operation by Wireless Hand Held Remote (optional)

6-Way Wireless Remote (Optional)
1. Power the remote control unit using the ON/OFF switch located on the rear side of the control
2. Reference illustration below for gate operation.
4.5 Platform Cart Stops

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.
5. Preventive Maintenance and Quick Check

The ILU 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.

![Warning: Repair or replace immediately faulty parts]

5.1 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.

<table>
<thead>
<tr>
<th>* Recommended bases for inspection and maintenance</th>
<th>Depending on use</th>
<th>Daily</th>
<th>Monthly</th>
<th>Quarterly</th>
</tr>
</thead>
<tbody>
<tr>
<td>cleaning</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>general lubrication of pins and bushings</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Platform Torsion Bar lubrication</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>general lubrication of Slider Rails with WD-40 and Push-Pull Cylinder zerks with grease</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>oil level inspection</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>oil change</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>check hydraulic hoses and pipes for leaks</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>check controls and connections</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>check pins and pin retaining bolts</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>check batteries and connections</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>check warning labels and other safety equipment for effectiveness and visibility</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>visual check for loose or missing parts and un-usual noise during operation</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>check lock bolts and pins for tightness</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>check complete function of gate</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>check mounting brackets of lift gate to frame for cracks or damage visually</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Maintenance Schedule
5.2 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.
5.3 Lubrication

Properly lubricated, the ILU 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.

5.3.1 Lubrication Plan

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

Make sure NOT to lubricate the rails with grease as it catches all dirt and mud. Avoid this by using WD-40 for rail lubrication.
Location of Grease Zerks (9 on each side, 18 total)

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

Platform hinges, Slide Rails and optional Cart Stops (use WD-40 spray for lubrication)
5.3.2 Checking and Changing the Oil
Check the quality of hydraulic fluid. If bad, take the following steps to change the oil. In stored position, lower gate to ground and tilt platform down, remove lock bolt. Pull the power pack out till you can reach the oil filler cap. Unscrew the oil drainage bolt (bottom of tray) and let the fluid drain out of the reservoir into an approved container. If the reservoir is empty fill it up with hydraulic oil, as shown on table 2.

![Figure 6: Power Pack (Side View)](image)

![Figure 7: Power Pack (Top View)](image)

5.3.3 Recommended Hydraulic Fluids

<table>
<thead>
<tr>
<th>TEMP. RANGE</th>
<th>BRAND</th>
<th>USE MILITARY SPEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>-10 TO 150 F</td>
<td>EXXON</td>
<td>UNIVIS J26</td>
</tr>
<tr>
<td></td>
<td>MOBIL OIL</td>
<td>DTE 13M</td>
</tr>
<tr>
<td></td>
<td>CHEVRON</td>
<td>AW MV32</td>
</tr>
<tr>
<td></td>
<td>ROSEMEAD</td>
<td>MV 150 (32)</td>
</tr>
<tr>
<td>-50 TO 150 F</td>
<td>MOBIL</td>
<td>DTE 13M</td>
</tr>
<tr>
<td></td>
<td>SHELL</td>
<td>AERO FLUID 4</td>
</tr>
</tbody>
</table>

**Table 2: Recommended Hydraulic Fluids**
5.4 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 (D) on driver and curb side.

(A) 1 ATG-URGWA - Urgent warning: Elevating gate instructions
(B) 1 ATG ILU - Operational Instructions (placed on your Control Box).
(C) 1 ATG-FT - Notice for Foot Control (if applicable)
(D) 2 ATG-XXXX - Max. Capacity (please check the serial number plate to find out your specific capacity)
(E) 1 ATG-CAB - Liftgate Shut-Off (must be placed next to the Shut-Off Switch)
(F) 2 ATG-WLH - Warning: liftgate can crush
(G) 2 ATG-CTN - Caution: Always stand clear of platform area
(H) 1 ATG-BKR - Circuit Breaker Reset (must be located at the circuit breaker)
(J) 1 ATG-RESET - Circuit Breaker Protection
(K) 1 ATG-UD - Toggle Decal
(L) 1 ATG-WNG - Warning: Use handle to open (must be located underneath handle (main section))
The picture below will help you to place all decals visible in order to get maximum operational safety.
5.5 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 18 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.
6. **Troubleshooting**

**ATTENTION:**

⚠️ Dangerous injuries 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 PLASTIC STRAP 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.

6.1 **Basic Function Check**

6.1.1 **LIFTGATE is completely DEAD (No Clicking or Movement at all)**

1. Check the ON-OFF switch.

   To activate and start operating the ILU you will have to turn on the ON-OFF switch, which is located on the right side of your Control Box, as shown below.
2. Check the circuit breaker at the main batteries.

Every truck has a circuit breaker on top of the main battery. If you have a studio unit, or a trailer, you will also find an auxiliary battery kit as shown in the pictures below ("Truck Battery" and "Auxiliary Battery"). If circuit breaker reset arm is popped out, push it back in as shown on the decal ATG-BKR next to your breaker or on battery box lid.

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 batteries.

4. Check the fuse at the power pack.

In the Hydraulic Power Unit next to the motor you will find two fuses. Check for burned fuses and replace it with the same type.

⚠️ DO NOT use higher amperage fuse. ⚠️
5. Is the connection to ground in power pack OK?  
   Is the ground connection from the tail lift to vehicle OK?

6. Check the oil level in the power pack reservoir.

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

6.1.2 **ON-OFF switch on, but all functions are dead**

Possible malfunctions:

1. Short in hand held remote or its wire  → unplug Hand-Control.

2. Short in control box wire  → remove plug J-30.

After disconnecting plugs – reboot board by unplugging J-1 for 5 seconds and plug it back.
6.1.3 Warning Lights on, after switch is turned off

- B-15 is not working.

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

B-15 Sensor

6.1.4 Platform tilts down before it reaches the ground

- Adjust B-13 lift arm switch.
- B-13 is not working → unplug J-41 (gate operates without sensor but loses auto-tilt).

The B-13 switch is located on the curb side lift arm.

- Set the switch in a horizontal level when the bottom of platform is 10” off the ground.

B-13 Sensor

⚠️ If gate is still not working, take Truck/Trailer to a repair station. ⚠️
6.2 Electrical and Hydraulic Schematic

6.2.1 Wiring Diagram - Truck

*In-Line Fuse:
- Wires #2 and #4 go to positive (+)

**Resettable Circuit Breaker:
- Wires #1 and Gr/Yl go to ground (-)

Main Batteries (Truck)

Control Board Location (Inside)

2GA. Liftgate Power Cable

4-Conductor Control Power Cable from Control Board

Figure 8: Main Wiring for Truck

*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.
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 – Trailer- Single Pole – Dual Pole

Single Pole

Dual Pole

*Resettable Circuit Breaker

Auxiliary Batteries

2Ga Power Cable From Liftgate (+)

2Ga Ground Cable From Liftgate (-)

*Resettable Circuit Breaker

Dual Pole Socket

2Ga Power Cable From Liftgate (+)

2Ga Ground Cable From Liftgate (-)
6.2.2 Electrical Schematic

Figure 9: Electrical Schematic
6.2.3 Connector Overview

<table>
<thead>
<tr>
<th>Code</th>
<th>Description:</th>
<th>Reason:</th>
<th>Solution 1:</th>
<th>Solution 2:</th>
<th>Solution 3:</th>
<th>Solution 4:</th>
<th>Solution 5:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>System OK / Control System: Off</td>
<td>System OK / Control System: Off</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2</td>
<td>Low Voltage</td>
<td>Voltage J1 Pin 3 too low</td>
<td>Check battery condition; battery charged</td>
<td>Motor could have worn carbon brushes; motor could be bad</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3</td>
<td>Lift arm sensor (B-13): Broken wire, short</td>
<td>J1-C shorted; J1 pin BLUED wire getting more than 5 Volts (right upper location J1)</td>
<td>Check adjustment B-13</td>
<td>Check sensor for signal</td>
<td>---</td>
<td>B-13 lift arm sensor</td>
<td>---</td>
</tr>
<tr>
<td>4</td>
<td>Platform sensor (B-15): Broken wire, short</td>
<td>J1-C shorted; J1 pin BLUED wire getting more than 5 Volts (right upper location J1)</td>
<td>Check adjustment B-13</td>
<td>Unplugged; plugged in</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5</td>
<td>Short on warning lights</td>
<td>Power consumption J1 Pin 7 to High</td>
<td>Check J1 &amp; J2 power cable of PC board and battery for light connection, insulation and damage</td>
<td>Check warning light cable for damage</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6</td>
<td>Short in cab switch, control system</td>
<td>Power consumption J11 Pin 1 to High</td>
<td>Check J1 &amp; J2 power cable of PC board and battery for light connection, insulation and damage</td>
<td>Check cab cut off warning light cable for damage</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>7</td>
<td>General Short in electric wiring</td>
<td>General power consumption J1 to High</td>
<td>Check J1 &amp; J2 power cable of PC board and battery for light connection, insulation and damage</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>8</td>
<td>Defect in motor windings during lifting</td>
<td>Power consumption J1 Pin 3 to High</td>
<td>Check J1 &amp; J2 power cable of PC board and battery for light connection, insulation and damage</td>
<td>Check battery condition; battery charged</td>
<td>Possible short in Slave pump area on Motor Solenoid; Replace Jumper</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>9</td>
<td>Fuse 15A damaged on power pack (J1, Pin 2)</td>
<td>Defective fuse J1 Pin 2</td>
<td>Check fuse at power pack</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>10</td>
<td>During opening, an error was recognized on the valve signal for the lift arm sensors; NOTE: ONLY APPLIES TO USE CONTINUOUSLY</td>
<td>Power consumption J1 Pin 3 to High</td>
<td>Check J1 &amp; J2 power cable of PC board and battery for light connection, insulation and damage</td>
<td>Check battery condition; battery charged</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>11</td>
<td>During closing, an error was recognized on the motor signal or on the valve signal; NOTE: ONLY APPLIES TO USE CONTINUOUSLY</td>
<td>Power consumption J1 Pin 3 to High</td>
<td>Check J1 &amp; J2 power cable of PC board and battery for light connection, insulation and damage</td>
<td>Check battery condition; battery charged</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>12</td>
<td>Resistance J1 pin 12 has changed when reading 24 pins 15 have changed</td>
<td>Check resistance of the coils</td>
<td>Change wires and cables</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Emergency mode active (all logic functions and comfort functions are switched off)</td>
<td>Actively by pressing OPEN and STOP button when control panel is off or turn off switch OFF then back ON</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Error diagnostic mode active</td>
<td>Attached service plug</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>

Figure 10: Connector Overview and System Codes
6.2.4 Control Box Wiring (Internal)

10 wire harness ILUK Plus control box setup

Control Box

Backlight bulb

ON OFF

TILT SLIDE LIFT

up down in out up down

Hand Control

#9 wire is not connected open end on both sides of the wire harness
6.2.5 Hydraulic Schematic

S1, S2 on lift cylinder and S7, S8 on push pull valve block are double acting release valves:
They have to be activated for fluid to go through them in either direction

To slide out S8 is activated to allow fluid to both sides of retractable cylinders
To slide in S7 is activated to allow fluid to piston rod side of retractable cylinders

Functions:

Lift: M+S1+S2
Lower: S1+S2+S5+S11
Tilt Up: M+S5
Tilt Down: S3+S4
Slide Out: M+S8
Slide In: M+S7

Figure 11: Hydraulic Schematic
6.3 Functional Description of Hydraulics when Operating

The description in the following chapters are relating to Figure 11 “Hydraulic Schematic”. Please use this drawing to understand the specific functionality of the ILU lift gate.

6.3.1 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.

6.3.2 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.

6.3.3 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.
6.3.4 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.

6.3.5 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.
7. **Needed Information for Ordering Spare Parts and Repairs**

7.1 **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.
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).

7.2 **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.
8. 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 break down 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.

<table>
<thead>
<tr>
<th>Model</th>
<th>Pump and Motor</th>
<th>Cylinders</th>
<th>Hardware</th>
<th>Control System</th>
<th>Hydraulic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILU Under Slider</td>
<td>2 yr</td>
<td>3 yr</td>
<td>2 yr</td>
<td>2 yr</td>
<td>2 yr</td>
</tr>
</tbody>
</table>

*Table 3: Warranty Coverage Schedule*

---

1 Effective: Aug. 2010
9. Contact Address

PALFINGER Liftgates, LLC.
15939 Piuma Ave
Cerritos, CA 90703

Phone: (562)-924-8218
Fax: (562)-924-8318
E-mail (parts order): customerservice@PALFINGER.com
E-mail (technical support): technicalservice@PALFINGER.com

PALFINGER Liftgates, LLC.
572 Whitehead Road, Suite 301
Trenton, NJ 08619

Phone: (609)-587-4200
Fax: (609)-587-4201
E-mail (parts order): customerservice@PALFINGER.com
E-mail (technical support): technicalservice@PALFINGER.com