ILU
INSTALLATION MANUAL & CHECK-OFF SHEET

ECN-M1143 Rev. 1.6, Date 12-19-17 Part #90-1313-200

PALFINGER Liftgates, LLC. 15939 Piuma Ave., Cerritos, CA 90703
Tel (888)-774-5844 Fax (562)-924-8318

PALFINGER Liftgates, LLC. 572 Whitehead Road, Trenton, NJ 08619
Tel (609)-587-4200 Fax (609)-587-4201

Visit our website at www.palfinger.com for up to date information and notifications
If you received this product with damaged or missing parts,
Please contact PALFINGER Liftgates at (888)-774-5844
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Safety Information</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Important Notes:</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Chassis Dimension Sheets</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>Installation Dimensions</td>
<td>9</td>
</tr>
<tr>
<td>4.1</td>
<td>General Bed Height Ranges for ILU liftgates</td>
<td>10</td>
</tr>
<tr>
<td>4.2</td>
<td>Chassis and Body Preparation</td>
<td>11</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Mount frame clearance</td>
<td>11</td>
</tr>
<tr>
<td>4.2.2</td>
<td>Rear sill preparation</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>Gate Installation</td>
<td>14</td>
</tr>
<tr>
<td>5.1</td>
<td>Slide rail bracket installation (Truck)</td>
<td>14</td>
</tr>
<tr>
<td>5.2</td>
<td>Liftgate attachment (Truck)</td>
<td>15</td>
</tr>
<tr>
<td>5.3</td>
<td>Liftgate Installation (Trailer)</td>
<td>17</td>
</tr>
<tr>
<td>5.4</td>
<td>Control power wiring setup</td>
<td>18</td>
</tr>
<tr>
<td>5.5</td>
<td>Platform installation</td>
<td>19</td>
</tr>
<tr>
<td>5.5.1.1</td>
<td>Swing-door platform modifications</td>
<td>19</td>
</tr>
<tr>
<td>5.6</td>
<td>Lift arm Up-stop installation and rail stops setup</td>
<td>20</td>
</tr>
<tr>
<td>5.7</td>
<td>Control box installation</td>
<td>21</td>
</tr>
<tr>
<td>6</td>
<td>Gate adjusting and detailing</td>
<td>22</td>
</tr>
<tr>
<td>6.1</td>
<td>Setting B-13 lift arm sensor</td>
<td>22</td>
</tr>
<tr>
<td>6.2</td>
<td>Setting B-15 Platform sensor</td>
<td>23</td>
</tr>
<tr>
<td>6.3</td>
<td>Platform adjusting with bolts</td>
<td>24</td>
</tr>
<tr>
<td>7</td>
<td>Electrical Installation</td>
<td>25</td>
</tr>
<tr>
<td>7.1</td>
<td>Breaker Installation</td>
<td>25</td>
</tr>
<tr>
<td>7.2</td>
<td>Wiring schematic main battery power - Truck</td>
<td>26</td>
</tr>
<tr>
<td>7.3</td>
<td>Wiring schematic main battery power - Trailer setup</td>
<td>27</td>
</tr>
<tr>
<td>7.4</td>
<td>On/Off Switch Installation</td>
<td>28</td>
</tr>
<tr>
<td>7.4.1</td>
<td>Truck Setup</td>
<td>28</td>
</tr>
<tr>
<td>7.4.2</td>
<td>Trailer Setup</td>
<td>28</td>
</tr>
<tr>
<td>7.5</td>
<td>Control Board Wiring and Connector Setup</td>
<td>29</td>
</tr>
<tr>
<td>7.6</td>
<td>Control Board Plug Setup and System Codes</td>
<td>30</td>
</tr>
<tr>
<td>7.7</td>
<td>Control box wiring (internal)</td>
<td>31</td>
</tr>
<tr>
<td>7.8</td>
<td>2 Button Remote Hand Control</td>
<td>31</td>
</tr>
<tr>
<td>8</td>
<td>Hydraulic schematic</td>
<td>32</td>
</tr>
<tr>
<td>8.1</td>
<td>Lubrication</td>
<td>33</td>
</tr>
</tbody>
</table>
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decal Placement</td>
<td>34</td>
</tr>
<tr>
<td>Final Inspection Check List</td>
<td>36</td>
</tr>
</tbody>
</table>

### Recommended Tools For Installation

<table>
<thead>
<tr>
<th>Metric Wrench Set</th>
<th>Basic Screwdrivers</th>
<th>Pliers</th>
<th>Wire Crimp Pliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Light</td>
<td>Snap Ring Pliers</td>
<td>Hammer</td>
<td>Metric Allen Set 1.5mm-10mm</td>
</tr>
<tr>
<td>½” Impact &amp; Sockets</td>
<td>Sm. Metric Socket Set</td>
<td>Assorted Drill Bits</td>
<td>Floor Jack or Equiv.</td>
</tr>
<tr>
<td>Sm. To Med. Bottle Jack</td>
<td>Forklift or O/H Crane</td>
<td>Hand Held Grinder</td>
<td>Paint Gun</td>
</tr>
<tr>
<td>Pry Bar</td>
<td>3/8 Drill Motor</td>
<td>Grease Gun</td>
<td>Heat Gun or Equiv.</td>
</tr>
<tr>
<td>Min. 250 Amp Welder</td>
<td>Cutting Torch or Equiv.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1 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.)
2 Important Notes:

1. **Read Manual completely before beginning any work**
2. Refer to your truck manufacturer instructions before adding any auxiliary equipment.
3. Pay Special attention to items marked with this symbol: ⚠️
4. All welding should be performed by qualified personnel per AWS standards
5. Always Ground closest to your welding point to prevent arcing through moving parts
6. Contact PALFINGER Liftgates for Special Installations not covered in this Installation Manual
7. ⚠️ Do not paint cylinder shafts or nylon rollers (Use non-chlorinated brake cleaner to remove over spray)
8. Verify that pin lock bolts are tight
9. Grease all pivot points
10. Verify that ALL decals are placed properly (Contact PALFINGER Liftgates to replace any missing decals)
11. ⚠️ Final Check-Off-Sheet at rear of this manual MUST be filled out and kept in your records for future reference.
12. Refer to owner's manual for troubleshooting & repairs.

**Important Dimensions:** (Refer to line drawing on following pages)

1) **BED HEIGHT**  Bed Height Ranges: Max=Unloaded / Min=Loaded Truck  
   - Measure from top of body floor to ground. Vehicle must be on flat level ground
2) **MOUNT FRAME CLEARANCE**  
   - Measure from BACK of truck/trailer to spring/tire or air suspension components that can interfere with the liftgate installation
3) **REAR SILL HEIGHT and DESIGN**
   - Measure top of floor to bottom of buck plate and verify design regarding to Figure 1.
Mounting Notes:

Read and clearly understand manual BEFORE beginning ANY work

⚠️ Important!!! ⚠️

The basic rule for installing an ILU Palfinger Liftgate is to MOUNT THE FRAME AS HIGH AS POSSIBLE
to achieve MAXIMUM GROUND CLEARANCE and MINIMIZE THE “F” DIMENSION.

⚠️ WARNING ⚠️

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

Installing a gate at or close to minimum bed height normally results in a gate that will NOT open and close from stored position if the minimum floor height is exceeded when truck is loaded.

Call tech support before starting the installation if you have any questions or concerns on mounting dimensions → 888-774-5844
A = Bedheight: Top of trailer floor to level ground (with airbags up)
B = Top of floor to bottom of trailer cross member
C = Rear sill height (Top of floor to bottom of buck plate): If Stepped sill complete M, N; If Tapered sill complete O, P
D = Crossmember height
E = Tire to end of vehicle body
F = Bogie to end of vehicle body
G = Inside horizontal width of sliding suspension angles
H = Diameter of sliding suspension holes
I = Hole spacing
J = Bottom of crossmembers to bottom of sliding ramp box, if applicable
K = Rear sill face to first slider hole
L = Top of floor, where liftgate platform will meet floor, to the center of the trailer slider holes
X = Eyebrow depth
Z = Top of floor, where the liftgate platform will meet the top of the eyebrow

Notes:

Type of Body (check applicable)
- Van
- Flatbed
- Reefer
- Other (specify)

Type of Rear Door (check applicable)
- Flip-Up
- Roll-Up
- Swing
- Other (specify)

Customer Information
Quote#/SO#:____________________________________________________
Company:______________________________________________________
Phone:_________________________________________________________
Email: _________________________@______________________________

Trailer Information
Trailer Specifications:
- Manufacturer: (ex. Utility)
- GVWR: (ex. 68,000 lbs)
- Length: (ex. 53ft)
- Width: (96", 102")

Type of Body (check applicable)
- Van
- Flatbed
- Reefer
- Other (specify)

Type of Rear Door (check applicable)
- Flip-Up
- Roll-Up
- Swing
- Other (specify)

Trailer Dimensions
- A = Bedheight: Top of trailer floor to level ground (with airbags up)
- B = Top of floor to bottom of trailer cross member
- C = Rear sill height (Top of floor to bottom of buck plate): If Stepped sill complete M, N; If Tapered sill complete O, P
- D = Crossmember height
- E = Tire to end of vehicle body
- F = Bogie to end of vehicle body
- G = Inside horizontal width of sliding suspension angles
- H = Diameter of sliding suspension holes
- I = Hole spacing
- J = Bottom of crossmembers to bottom of sliding ramp box, if applicable
- K = Rear sill face to first slider hole
- L = Top of floor, where liftgate platform will meet floor, to the center of the trailer slider holes
- X = Eyebrow depth
- Z = Top of floor, where the liftgate platform will meet the top of the eyebrow

Notes:
Truck Chassis Dimension Sheet

Customer Information
Quote#/SO#: ____________________________________________
Company: ____________________________________________
Phone: _____________________________________________
Email: _____________________________________________

Liftgates Information:
Model
Capacity
Platform Size
Platform Material

Type of Body (check applicable)
Van  ☑
Flatbed
Reefer
Other (specify) __________

Type of Rear Door (check applicable)
Flip-Up  ☑
Roll-Up
Swing
Other (specify) __________

Trailer Specifications:
Manufacturer: (ex. Hino)
GVWR: (ex. 68,000 lbs)
Length: (ex. 53 ft)
Width: (96", 102")

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

Notes:

Side View of Truck

Rear View of Truck

Figure 2 Truck dimension sheet
4 Installation Dimensions

- Installation Dimension sheets are supplied with each individual ILU, as there are too many different setup combinations for a generic installation drawing. When ordered a liftgate, PALFINGER Liftgates supplies a drawing based upon the Chassis dimension sheet (Figure 1 and Figure 2) supplied by your company.

**IMPORTANT:**

Before starting the installation, make sure that you have your own reference sheet that was supplied to PALFINGER Liftgates together with the installation lay-out drawing. Compare it with the truck you are about to start the installation on. If the units are different than the supplied lay-out, contact your supervisor and PALFINGER Liftgates to go over the differences.

**NOTICE**

Do not start installation if your truck/trailer does not match up with PALFINGER Liftgates supplied drawing!

*Figure 3 Installation Drawing - Provided by PALFINGER Liftgates Engineering Department*
4.1 General Bed Height Ranges for ILU liftgates.

⚠️ Minimum bed height is when truck/trailer is loaded to MAX GVW (all dimensions in inches)

**NOTICE**

| ILU 40-50 800mm arm | 36”- 56” |
4.2 Chassis and Body Preparation

4.2.1 Mount frame clearance

**NOTICE**
- Determine the correct mounting clearance according to your specific lift and chassis.
- With long overhangs it is even more important to maintain Max ground clearance.
  - GROUND CLEARANCE = BOTTOM OF LIFTGATE FRAME TO GROUND
- Determine if you need to move chassis U-bolts or if you have any other interferences, then proceed with installing the liftgate slide rails to the frame

**IMPORTANT (Truck Installation):**
- Before start of installation make sure body long rails are connected to truck frame welded with flat bars and secured against forward movement of the body.
  - If body and frame are not connected the liftgate might push body forward.

---

*Figure 4 Mounting Clearance*
4.2.2    Rear sill preparation

To assure that the gate is reaching the body floor, you need to cut out the rear sill of your truck/trailer.

**NOTICE**

- If sill is less than 4” high → No sill cut out needed
- If no cut out height is determined in drawing, cut out for best fit. **Keep at least a minimum of 4” of sill.**

**CAUTION**

- Reinforce every cut out of the sill to regain sill strength, required by truck/trailer OEM.

Height of the cut out is determined in the gate specific drawing

Figure 5 Sill cut-out dimensions - rear view

Figure 6 Sill cut-out – side view
On trailers, you have to check the eyebrow clearance, and in case of interference cut eyebrow down until platform clears.

The eyebrow cut out can be done when gate and platform are installed and you raise up gate for the first time. That gives the opportunity to keep as much of the eyebrow as possible to keep rear frame strength.

**IMPORTANT!!!**

- A proper preparation of the truck/trailer sets the basics for a safe, clear and fast installation process and assures a proper function of the lift gate without damage to truck/trailer or lift gate.
5 Gate Installation

5.1 Slide rail bracket installation (Truck)

![Diagram of slide rail installation](image)

**WARNING** Never work under mount frame or platform without safety supports

1) Make sure the specific install drawing sent with the liftgate matches the truck and gate you are about to install.

2) Install the slider rail frame according to drawing sent with the gate. Spot weld the mount brackets to prevent the liftgate from moving when testing. Remove bumper bracket if necessary.
5.2 Liftgate attachment (Truck)

3) Slide liftgate main frame assembly into previous installed slide rails.
4) Connect pin in front of push-pull cylinder to bracket towards truck cabin.

5) Connect platform to frame by using supplied pins and lock bolts.
6) Connect lift arm to inside clevis holes. Tighten lock nuts at pin tab to avoid pin getting loose
7) Connect tilt cylinder to outside holes at clevis. Tighten lock nuts at pin tab to avoid pin getting loose
   a. To extend or retract tilt cylinders you have to connect the power supply of the gate (see chapter 5.5)
   b. Hold B-15 sensor in a level position, the cable retainer pointing towards the front of the truck
When gate is completely installed and tested for proper function weld a 100% around the brackets to assure a safe and secure connection of gate and truck frame

8) Weld mount brackets 100% to chassis after testing. Add a bridge plate above the bracket for additional support. Re-install bumper bracket.
5.3 Liftgate Installation (Trailer)

**NOTICE**

Rapid Mount Bolt-On Plates are designed for 42.625” wide and 48.625” wide tandem slide rails.

---

1) Slide liftgate main frame assembly under the trailers tandem slide rails.
2) Make sure the specific install drawing sent with the liftgate matches the trailer and gate you are about to install.
3) Raise the liftgates assembly and match the mounting holes on the tandem rails with the mounting holes on the liftgate mount plates (reference install drawing). Install hardware in the orientation shown, torque bolts to 375 ft/lbs. Use the proper configuration of the spacer based on the slide rail hole diameter.
5 Gate Installation

5.4 Control power wiring setup

To maintain the best possible power supply, install the auxiliary batteries as close as possible to the gate.

- Truck installations might not have an auxiliary battery kit (PALFINGER Liftgates **always** recommends a kit). In this case you have to run the control power straight off the truck battery.

- Trailer installations always have a trailer battery kit (at least 2 batteries recommended)

Connect your control power to the positive (#2 & #4) and the negative (#1 & gr/ye) post of the batteries.

![Diagram showing control power wiring connection and Main Power supply setup]

*Figure 12 Board control power wiring connection and Main Power supply setup*
5.5 Platform installation

To install the platform (if not preinstalled by manufacturer) follow these steps:

1) Unfold platform and clamp on to forklift or overhead crane.
2) Slide out gate to the point that you are able to attach platform clevis to lift arm and tilt cylinders.
3) Bring platform close to gate and attach lift arm to platform using provided pins.
4) To attach tilt cylinders, hold B-15 platform sensor so that you are able to extend tilt cylinders when turning the tilt switch until you match pin holes on platform and tilt cylinder head.
5) If all 4 pins (2 each side) are in place and secured with lock bolts install B-15 sensor to platform and connect foot control and warning light cables.
6) Push all excessive cable inside platform to protect connections from environmental influences.

Figure 13 Platform installation and wiring

5.5.1.1 Swing-door platform modifications

On swing door applications there might be cutouts necessary to clear the lower cam locks:

- If cut outs have not been made, damage to platform tip is possible.
- To avoid unnecessary gaps between trailer and platform, keep cut out as small as possible.
5.6 Lift arm Up-stop installation and rail stops setup

With gate power set up and fully functional, place gate and platform in final operational position for installation of up and slide out stops. Start with up stops and verify flush fit, then continue with slide stops.

![Diagram of lift arm and up-stops](image)

- Make sure platform is aligned and flush with floor.
- Up Stops MUST be installed to avoid damage to platform or sill
- Install stops when 3/16" Angle is still between platform and body
- make sure Up-stops are sitting tight against lift arm when platform in upper position

**NOTICE**

Assure that platform main section is not set under pressure against truck/trailer body when install up stops.

![Diagram of mount plate slide stops](image)

When platform is in correct position (see Figure 10) and up stops are in place, set slide stops tight against Mount plates and fasten bolts tight with counter nut.

With Up-stops and slide stops in place, run gate through several cycles and check perfect match of gate and body floor. Make sure slide stops are tight and alignment of platform and body is ok.
5.7 Control box installation

Install the control box on the passenger side by welding or bolting the z-brackets to the cross members of the truck or trailer. Run the cable along the slide rail and tie it down so it cannot interfere with the mount plates when gate is sliding in or out. Note: Control box should not protrude outside the vehicle's body width once installed.

Figure 16 Control box placement
6 Gate adjusting and detailing

6.1 Setting B-13 lift arm sensor

- To set the sensor correctly, lift unfolded platform up about 10” to 12” above ground.
- Adjust the B-13 sensor in a way that it is level with the ground like shown in Figure 17.
- Raise gate all the way up after adjusting and lower to the ground. Platform tip will tilt towards ground if operator stays on the lower switch for about “3” seconds after nylon rollers touching ground.
- Cycle platform several times to check operation after tightening.
- Fold down Lock Tab tightly onto Lift Arm (see Figure 18).

**NOTICE**

- At **NO** time the platform tip should tilt towards ground **while lowering**.
- Platform should **only tilt** after Nylon rollers contact ground and operator is on the down switch.
- After sensor is properly set, tighten lock bolt to 43 in.lbs/3.5 ft.lbs.
- Never over torque B-13 lock bolt. Sensor will break and malfunction.
- Verify colored side of sensor is out (facing away from arm).
- Under torqueing B-13 lock bolt may allow sensor to shift during normal gate operation.
6.2 Setting B-15 Platform sensor

- Mount the platform sensor B-15 to the right-hand side of the platform as shown in Figure 18. Make sure to loop wire around to give it enough slack in normal operation and route clear of any pinch points.
- Verify B-15 is set correct, when cable restrainer is parallel with platform surface.
- **B-15 is working correct if platform finds preset level position while tilting up form ground position**
- If platform is only lifting, without leveling out - battery power supply is low, check and charge battery. (On trucks – start truck and run in high idle for 5 – 10 Min)

---

Figure 18 B-15 adjustment on platform

Figure 19 Platform wiring with B-15 and controls
6.3 Platform adjusting with bolts

At the bottom between the main and the tip section are 4 bolts to adjust the platform. These adjusting bolts are horizontal to the platform. To level the platform the bolts need to be adjusted. To tilt the tip section up the bolts have to be rotated counter clockwise. To tilt the tip down the bolts have to be rotated clockwise.

To adjust the bolts the platform needs to be folded.

1. Adjust bolts to the right length for a level platform
2. Tighten down the lock nuts properly for a secure fit.
7 Electrical Installation

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

**WARNING**
- ANY deviation from PALFINGER Liftgates’ recommended power setup (see 7 Electrical Installation) will **void warranty and product liability** unless you have a written confirmation by PALFINGER Liftgates that allows you to do specific changes.
- Never tie the power cables to gas or diesel lines on trucks – it is a fire hazard.

**NOTICE**
- Never exceed rating of existing fuses located at the battery, control board and/or the pump and motor which may result in serious damage to the equipment.
- Never jump the 150 Amp circuit breaker at the batteries unless otherwise instructed by the PALFINGER Liftgates technical support center
- Assure all connections are tight and securely fastened
- Heat shrink any connection to all cables.
- Never secure a cable in a way where it can make contact with other wiring, brake-, fuel- or air-lines etc. or get pinched against other objects.

7.1 Breaker Installation

- Mount circuit breaker securely in battery box or at positive battery post using supplied buss bar
- Connect liftgate 2Ga. cable to open stud on circuit breaker
- Connect 2Ga. jumper from open stud on breaker to positive battery post if circuit breaker was not mounted straight at battery with buss bar

![Figure 20 Circuit breaker installation](image-url)
Wiring schematic main battery power - Truck

Wires #2 and #4 go to positive (+)

*In-Line Fuse

Wires #1 and Gr/Yl go to ground (-)

**Resetable Circuit Breaker

Figure 21 Main wiring - Truck and Trailer Setup
7.3  Wiring schematic main battery power - Trailer setup

Figure 22 Main wiring - trailer setup - single pole charging system

Figure 23 Main wiring - trailer setup - dual pole charging system
7 Electrical Installation

7.4 On/Off Switch Installation

7.4.1 Truck Setup

Lead the 4-wire cab switch (J-11 plug) together the 4 wires for the control power (J1 #2 and #27; J2 #“-“) to the batteries along the sub-wood, run the battery cable to the auxiliary batteries (if no aux. kit ordered, run battery cables also to the truck battery). Secure the cable every 12 inches against the sub-wood with cable staples. Run the cab switch only into the cab.

![Cab Cut-Off Switch](image)

Figure 24 Cab Cut-off switch connection

7.4.2 Trailer Setup

Trailer units do not have a cab switch. The on-off switch is integrated into the control box. The switch is on the right hand side in the control box. It is prewired and does not need any additional work.

![On-Off Switch - Trailer](image)

Figure 25 On-Off Switch - Trailer
7.5 Control Board Wiring and Connector Setup

![Control Board Wiring Schematic](image)

Figure 26 Control board wiring schematic
# Control Board Plug Setup and System Codes

<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>2</td>
<td>Low Voltage Voltage J1 Pin 2 too low</td>
<td>Check J1 &amp; J2 power cable or PC board and battery for light connection, oxidation and damage.</td>
<td>Check the battery condition: battery charged Motor could have worn carbon brushes / motor could be bad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Liftarm sensor (B-13): Broken wire, short</td>
<td>J41-C shorted; J41 pin BLUE: wire getting more than 1.5 Volts (right upper location J41)</td>
<td>Check adjustment B-13</td>
<td>Check sensor for signal Blue wire with platform 10'-12' off ground</td>
<td>Change B-13 liftarm sensor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Platform sensor (B-15): Broken wire, short</td>
<td>J41-C shorted; J41 pin BLUE: wire getting more than 1.5 Volts (right upper location J41)</td>
<td>Check adjustment B-15 platform</td>
<td>Unplugged, plugged in wrong location</td>
<td>Change B-15 platform sensor</td>
<td>To temporary bypass, jump Black to Blue</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Short on warning lights Power consumption J3 Pin 7 too high</td>
<td></td>
<td>Check warning light cables for damage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Short in cab switch, control system Power consumption J11 Pin 1 too high</td>
<td></td>
<td>Check cab cut off warning light cable for damage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>General Short in electric wiring General power consumption to high</td>
<td></td>
<td>Repair cables, connections, check for burnt or crushed wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Defect in motor solenoid during lifting Power consumption J1 Pin 3 too high</td>
<td></td>
<td>Possible short in dode trimming wire on Motor solenoid: Remove jumper Possible short in Thermo Switch inside motor Stamps and test, replace Thermo Switch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Fuse 15A damaged on power pack (J1, Pin 2)</td>
<td></td>
<td>Change 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 speed for opening (OVS) or on the motor amplifier for the STOP feature TO /LK CANTILEVER LIFT GATE. Power consumption J1 Pin 3 too high, when reading J4 pin 14 have changed</td>
<td>Check J1 &amp; J2 power cable and battery for light connection, oxidation and damage.</td>
<td>Check the battery condition: battery charged Replace fuse with same amp fuse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>During closing, an error was recognized on the motor solenoid for the STOP feature NOTE: ONLY APPLIES TO LK CANTILEVER LIFT GATE. Power consumption J1 Pin 3 too high, when reading J4 pin 13 have changed</td>
<td>Check J1 &amp; J2 power cable and battery for light connection, oxidation and damage.</td>
<td>Check the battery condition: battery charged</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>During cleaning, an error was recognized on the valve speed for closing (CVC) or on the motor amplifier for the STOP feature NOTE: ONLY APPLIES TO LK CANTILEVER LIFT GATE. Power consumption J1 Pin 3 too high, when reading J4 pin 15 have changed</td>
<td>Check J1 &amp; J2 power cable and battery for light connection, oxidation and damage.</td>
<td>Check the battery condition: battery charged</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) Acute by pressing OPEN and LOADING button and 2 sec hold until long delay timer disabled by turning cab switch OFF back ON</td>
<td>Check resistance of the coils</td>
<td>Change valve coils and System Codes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Error diagnostic mode active Attached service plug</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 27 PC Board and System Codes**
7.7 Control box wiring (internal)

10 wire harness ILUK Plus control box setup

Figure 28 Control box wiring schematic

J-2 #2: Main Battery power
J-30: Control box PC-board input gate operation functions
J-32: Control box PC-board input gate sliding functions (#80 slide in; #81 slide out)

7.8 2 Button Remote Hand Control

The hand held remote control plug is integrated into the control box. No separate wiring is needed.

Wire coding inside hand control:

- UP - RED
- DOWN - YELLOW
- 12V HOT - GREEN
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 29 Hydraulic schematic ILU
8.1 Lubrication

Location of Grease Zerks (6 on each side, 12 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)

- Open platform and raise lift gate to bed level
- Remove red caps, apply grease until grease begins to flow from bushing ends
- Lower platform to ground and repeat
- Cycle platform open and closed several times and grease again
- Wipe excess grease from joints and replace ALL red caps
Decal Placement

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.
Final Inspection Check List

**WARNING**
Liftgate failure or malfunction could result in property damage, personal injury or death if you fail to check each of the following items listed. DO NOT USE the liftgate if any of the following points are NOT verified and checked.

**NOTICE**
Installation is NOT complete and all WARRANTIES are VOID if you have not checked and verified all items listed on this inspection sheet. Inspection sheet is to be filed at the facility where liftgate was installed.

**Structural Inspection**
- All welds are 100% complete per this manual.
- All nuts, bolts, mounting hardware, pins, chain anchors are tight.
- All mounting dimensions are correct and liftgate is square and parallel per this manual.
- Liftarm upstops are installed.

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

**Electrical Inspection**
- Battery cable(s) attached are clamped tight and dielectric grease is used to seal all connections.
- All electrical lines are secured with cable ties, hoses clamps, or other fasteners and are away from sharp edges and moving parts.
- Circuit Breakers installed and wired per instructions.
- Battery voltages: Flooded Batteries = 12.6V; AGM Batteries = 12.8V
- Lights wired properly and operate per DOT, State, and Federal requirements.

**Operational Inspection**
- All decals are in place and legible per instructions.
- All pivot points are lubricated per instructions, and Zerk fittings have been capped.
- Platform travels up and down smoothly and freely, without any hesitation or unusual noises.
- Platform is flush with the sill/floor when raised completely.
- Liftgate and platform slide in and out without any hesitation or unusual noises.
- Platform rests on the rollers evenly when lowered completely and tilts when operator uses the tilt function.
- Platform raises and lowers properly and at correct speed. (2 to 4 inches per second)
- Gate is painted, body is clean around gate. Cylinders are clean and rubber & plastic caps are in place.
- The liftgate serial number and model number are documented on the inside of the front cover of the Owners Manual, as well as the installation manual in the space provided.
- Owners Manual is in the vehicle's glove box.
- Supervisor has demonstrated the instructions in the Owners Manual to the customer/driver upon delivery.

**Inspection Information:**
Name (please print): ____________________________________________________________
Completed by (signature): ________________________________________________________
Title: ________________________________________________________________ Date: ____________________________