Information in this document is subject to change without notice.
Visit 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
## Table of Contents

1. Manual Update ........................................................................................................ 6
2. Safety Information .................................................................................................. 7
3. Important Information .......................................................................................... 8
   3.1 Recommended Tools for Installation ............................................................. 10
4. Dimension Sheet ................................................................................................... 11
5. General View of Minifix ....................................................................................... 12
6. Mounting Notes: ................................................................................................... 13
7. Chassis and Body Preparation for Installation ................................................... 13
   7.1 Checks Before Assembly ................................................................................. 13
   7.2 Preliminary work on the vehicle ..................................................................... 13
8. Mount Plate and Liftgate Installation ................................................................. 14
   8.1 Ford Transit Vehicle ....................................................................................... 14
      8.1.1 Mounting Bracket Kit Overview - P/N: 65-0915-011 ..................................... 14
      8.1.2 Chassis Preparation ................................................................................ 15
      8.1.3 Bracket Installation .................................................................................. 16
      8.1.4 Liftgate Installation .................................................................................. 17
   8.2 Mercedes Sprinter Vehicles ............................................................................ 18
   8.3 Mounting Bracket Kit – 128" Wheelbase, 35" Overhang (Vehicle Models After 2007)
      P/N: 65-0915-007 ............................................................................................ 18
      8.3.1 Chassis Preparation ................................................................................. 18
      8.3.2 Bracket Installation .................................................................................. 19
      8.3.3 Liftgate Installation .................................................................................. 19
   8.4 Mounting Bracket Kit - 144"/170"/170" Ext. Wheelbase, 49"/64"/79" Overhang, Single/Dual
      Wheel (Vehicle Models After 2007) – P/N: 65-0915-008 ..................................... 20
      8.4.1 Chassis Preparation ................................................................................. 20
      8.4.2 Bracket Installation .................................................................................. 21
      8.4.3 Liftgate Installation .................................................................................. 21
   8.5 Mounting Bracket Kit – 144"/170" Wheelbase, 49"/79" Overhang, Dual Wheel (Vehicle
      8.5.1 Chassis Preparation ................................................................................. 22
      8.5.2 Bracket Installation .................................................................................. 23
      8.5.3 Liftgate Installation .................................................................................. 24
   8.6 Mounting Bracket Kit – 170" Wheelbase, Dual Wheel; 64" Overhang (Vehicle Models After
      2007) – P/N: 65-0915-010 ................................................................................ 26
8.6.1 Chassis Preparation ................................................. 26
8.6.2 Bracket Installation .................................................... 27
8.6.3 Liftgate Installation ..................................................... 28
8.7 Nissan NV Vehicles ..................................................... 29
  8.7.1 Mounting Bracket Kit – Wheelbase 146“ – P/N: 65-0915-014 .... 29
  8.7.2 Chassis Preparation ................................................. 29
  8.7.3 Bracket Installation .................................................... 30
  8.7.4 Liftgate Installation ................................................... 31
8.8 Dodge Promaster Vehicles ............................................. 32
  8.8.1 Exhaust Modification Kit – 159“ Wheelbase P/N: 60-0914-000 ... 32
  8.8.2 Exhaust Modification .................................................. 32
  8.8.3 Exhaust Modification Kit – 136“ Wheelbase - P/N: 60-0916-000 ... 36
  8.8.4 Exhaust Modification .................................................. 36
  8.8.5 Mounting Kits Overview ............................................. 40
  8.8.6 Bracket Installation .................................................... 41
  8.8.7 Liftgate Installation ................................................... 45
9 Electrical Installation .................................................. 46
  9.1 Battery Wiring Diagram ............................................ 47
  9.2 Wire Crimping ............................................................. 48
  9.3 Circuit Breaker Installation ........................................... 49
  9.4 Cab On/Off Switch Installation ...................................... 50
    9.4.1 Operating Push Button Installation ........................... 52
  9.5 2-Button Hand Held Remote Control Installation ................. 55
  9.6 D-Bumper Installation .................................................. 57
  9.7 Platform Installation .................................................... 58
  9.8 Tilt Cylinder Adjustment .............................................. 61
  9.9 Flip Ramp Installation .................................................. 62
  9.10 Setting of B-13 Sensor ................................................ 64
  9.11 Setting of B-16 Sensor ................................................ 65
  9.12 License Plate Light ................................................... 66
  9.13 Foot Control Installation (Optional) ................................ 68
  9.14 Warning Lights Installation (Optional) ......................... 70
  9.15 Lubrication ............................................................. 73
10 Hydraulic Schematic .................................................. 74
11 Electrical Schematic .................................................. 75
Company Information:

Company Name: 

Advisor Name: 

Vehicle Year/Make/Model: 

Liftgate Information:

Liftgate Serial Number: 

Liftgate Model Number: 

Date of Purchase: 

Date of Installation: 
## Manual Update

<table>
<thead>
<tr>
<th>Revision</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>v1.5</td>
<td>• Reformatted manual.</td>
</tr>
</tbody>
</table>
| v1.6     | • Updated the different vehicle mounting bracket installation instructions.  
           | • Added Nissan, Sprinter, Promaster, and Transit mount plate installation instructions. |
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 it is used to alert the user 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 it is to alert you to special instructions, steps, or procedures.)

- Always be aware of your surroundings.
- Wear eye protection at all times during installation.
- Ear protection and gloves should be used when necessary.
3 Important Information

Before Getting Started
“READ FIRST”

NOTICE

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

1. Read Manual completely before beginning any work.

2. For Sprinter Series MY2007 and newer models Mercedes-Benz requires auxiliary battery kits.

3. Refer to your truck manufacturer’s instructions before adding any auxiliary equipment.

4. Pay Special attention to items marked with this symbol: ⚠️

5. All welding should be performed by qualified personnel per AWS standards.

6. Always Ground closest to your welding point to prevent arcing through moving parts.

7. Contact PALFINGER Liftgates for Special Installations not covered in this Installation Manual.

8. Do not paint cylinder shafts or nylon rollers (Use non-chlorinated brake cleaner to remove over spray)

9. Verify that pin lock bolts are tight.

10. Grease all pivot points.

11. Verify that ALL decals are placed properly (Contact PALFINGER Liftgates to replace any missing decals).

12. ⚠️ Final Check-Off-Sheet at rear of this manual MUST be filled out and kept in your records for future reference.

13. Refer to owner’s manual for troubleshooting & repairs.

14. Mercedes allows the following lifting capacities for SPRINTER models at 24” center point of load.

   1) 1100 lbs. for SPRINTER Cargo Van Setup
   2) 1320 lbs. for SPRINTER Chassis Cab Setup
**WARNING**

Improper operation of this liftgate may result in severe personal injury or death. DO NOT operate unless you have been properly instructed, have read and are familiar with the procedures in this manual. This manual has been designed to illustrate the steps needed for the basic installation of the MiniFix 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 MiniFix series liftgate only which is designed for different capacities and features.

1) Refer to the serial number tag on the liftgate parallel arm (Driver side).

![Serial Number Tag]

2) Ask your employer or lessor;
3) Call your Palfinger Liftgates Authorized Service Center for assistance.
4) Call Palfinger Liftgates for assistance in the USA at 888-774-5844. You can also contact Palfinger Liftgates by fax (562) 924-8318 or on the internet at [www.palfinger.com](http://www.palfinger.com) For technical support, contact Palfinger Liftgates or an authorized Palfinger service center. [www.palfinger.com](http://www.palfinger.com)
Special Notes on installs of the MiniFix liftgate on Dodge Promaster Vans:
1. Liftgate will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Vehicles exhaust system will require modification.

Special Notes on installs of the MiniFix liftgate on Ford Transit Vans:
1. Liftgate will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Sensors on bumpers, rear camera (if applicable) will need relocation.
3. Remove the hitch as the liftgate will occupy that space.
4. Overhangs beyond 49” will require modifications to the vehicles springs due to soft suspension.

Special Notes on installs of the MiniFix liftgate on Mercedes Sprinter Vans:
1. Liftgate will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Sensor Bumpers will not work once bumper is removed.
3. Step bumpers will need to be replaced with flat bumper.
4. Must have auxiliary battery.

### 3.1 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>Digital Multimeter</td>
<td>Snap Ring Pliers</td>
<td>Hammer</td>
<td>Metric Allen Set</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</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>Measuring Tape</td>
<td></td>
</tr>
</tbody>
</table>

**Special tools required:** 7/8” hole saw for installation of switches.
## Dimension Sheet

![Minifix Chassis Dimension Sheet](image)

### Contact Information

- **Quote#/SO#:** ____________________
- **Company:** ____________________
- **Phone:** (______) ________
- **Fax:** (______) ________
- **Email:** ____________________

### Vehicle Information

<table>
<thead>
<tr>
<th>Vehicle Manufacture</th>
<th>Vehicle Model</th>
<th>Model</th>
<th>Year</th>
<th>Rear Wheel</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodge**</td>
<td>Promaster**</td>
<td>Single Rear Wheel (SRW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ford***</td>
<td>Transit***</td>
<td>Dual Rear Wheel (DRW)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercedes***</td>
<td>Sprinter***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nissan</td>
<td>NV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions

- **A = Wheelbase:** Center of front axle to center of rear axle .......................................................... ________
- **B = Overhang:** Center of rear axle to end of rear bumper ................. 35” 49” 64” 79” 80” Other: ________

*Special Notes on installs of the Minifix liftgate for **Dodge Promaster:**
1. Liftgate will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Vehicles exhaust system will require modification.

**Special Notes on installs of the Minifix liftgate for **Ford Transit Vans:**
1. Liftgate will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Sensors on bumpers, rear camera (if applicable) will need relocation.
3. Overhangs beyond 49” will require modifications to the vehicles spring due to soft suspension.

***Special Notes on installs of the Minifix liftgate for **Mercedes Sprinter Vans:**
1. Liftgate will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Sensor Bumpers will not work once bumper is removed.
3. Step bumpers will need to be replaced with flat bumper.
4. Must have auxiliary battery.
5  General View of Minifix

Power Pack
(Pump and Motor
Enclosure)

Mount Tube

Lift Cylinder

Foot Controls
(Optional)

Tilt Cylinder

Liftarms

Parallel Arm

Platform

Cart Stops

Warning Lights
(Optional)

Control Board

Control Board
(PCB)

Power Pack
(Pump and Motor Enclosure)
6 Mounting Notes:
1. Read and clearly understand this manual BEFORE beginning ANY work

```
Important

Min bed height: 18” with Van maximum loaded
Max bed height: 31” with Van unloaded
```

Minimum bed height dimensions are ALWAYS MAXIMUM LOADED Vehicle
Call tech support before starting the installation if you have any questions or concerns on mounting dimensions → Toll free: 888-774-5844 - technical support

7 Chassis and Body Preparation for Installation

7.1 Checks Before Assembly
1. Does the liftgate match your order?
2. Do you have the correct mount plates for your particular chassis?
   - Each Vehicle model requires its own specific mount plates.
3. Are the assembly instructions for the Palfinger Liftgates MiniFix included?
4. Does the operating voltage of the Palfinger Liftgates MiniFix match the vehicle voltage?
5. Is a flip ramp included?
6. Observe the chassis guidelines of the vehicle manufacturer for accessory equipment.
7. Check size of battery for adequate capacity.
8. Is there a compartment under passenger seat designed for an auxiliary battery?

7.2 Preliminary work on the vehicle

```
NOTICE
```
Follow vehicles documentation for the removal of the

1. Remove any spare wheels and their mounts from the vehicle rear underside.
2. Remove any trailer and towing hitches as well as steps attached to the rear of the vehicle.
3. Replace special step bumpers fitted with standard bumpers.
4. Remove the licence plate on the rear doors and re-attach it in a visible position after assembly of the Palfinger Liftgates MiniFix (observe local and federal regulations).
8  Mount Plate and Liftgate Installation

⚠️ IMPORTANT:

To install the liftgate it is very important to have the correct vehicle mount plates for the vehicle.

8.1  Ford Transit Vehicle

NOTICE

Special Notes on installs of the MiniFix liftgate on Ford Transit Vans:

1. Liftgate will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Sensors on bumpers, rear camera (if applicable) will need relocation.
3. Remove the hitch as the liftgate will occupy that space.
4. Overhangs beyond 49” will require modifications to the vehicles springs due to soft suspension.

8.1.1  Mounting Bracket Kit Overview - P/N: 65-0915-011
8.1.2 Chassis Preparation

For all vehicle modification, reference the manufacturer’s manual.

1. Remove the hitch, if applicable.
2. Remove the four (two per side) preinstalled M12 bolts located on the chassis. Do not discard the hardware; it will be used to complete the installation.
3. Drill two M12 holes on the chassis as shown. Use the mounting bracket as a template to mark the drill locations.
8.1.3 Bracket Installation

1. Use the M12 hardware to mount the bracket to the vehicle's chassis. Reuse the M12 bolts that were originally attached to the chassis. Follow the installation orientation of the hardware as shown below. Repeat the mounting process for the curb side bracket.

Torque Specifications
M12 – 59 ft./lbs. (80 Nm)
8.1.4 Liftgate Installation

1. Secure the MiniFix Mount Tube to the mounting brackets by bolting the sides of the mount tube to the side of the brackets with the six (3 each side) M14 hardware provided with the liftgate.

**Torque Specifications**

M14 – 140 ft./lbs. (190 Nm)
8.2 Mercedes Sprinter Vehicles

**NOTICE**

Special Notes on installs of the MiniFix liftgate on **Mercedes Sprinter Vans**:
1. Liftgate will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Sensor Bumpers will not work once bumper is removed.
3. Step bumpers will need to be replaced with flat bumper.
4. Must have auxiliary battery.

8.3 Mounting Bracket Kit – 128” Wheelbase, 35” Overhang (Vehicle Models After 2007) 
P/N: 65-0915-007

8.3.1 Chassis Preparation

Attention: For precise drilling, use the mount plate bracket as a template to mark drilling locations. Driver side chassis frame shown below, repeat drill procedure on curb side.
8.3.2 Bracket Installation

- Mounting Bracket (Driver Side)
  - M12x100mm Bolt
  - M12 Nylock Nut
  - M12 Washer
  - Chassis Frame (Driver Side)
  - *Spacers

  *NOTE: Spacers must be trimmed to the width of chassis frame.

  Width of Chassis Frame

  Mounting Bracket

Torque Specifications
M12 – 55 ft./lbs. (75 Nm)

8.3.3 Liftgate Installation

1. Secure the MiniFix Mount Tube to the mounting brackets by bolting the sides of the mount tube to the side of the brackets with the six (3 each side) M14 hardware provided with the liftgate.

Torque Specifications
M14 – 129 ft./lbs. (175 Nm)
8.4 Mounting Bracket Kit - 144”/170”/170” Ext. Wheelbase, 49”/64”/79” Overhang, Single/Dual Wheel (Vehicle Models After 2007) – P/N: 65-0915-008

8.4.1 Chassis Preparation
Attention: For precise drilling, use the mount plate bracket as a template to mark drilling locations. Driver side chassis frame shown below, repeat drill procedure on curb side.

Chassis Frames Before Drilling

Chassis Frames After Drilling

Chassis Frame: Drill Dimensions
Side View

Rear of Vehicle

Front of Vehicle

100mm

400mm

50mm

Inside Wall

Outside Wall

2x Ø12mm

2x Ø20mm

Drill 2x Ø12mm
(Inside Wall)

Drill 2x Ø20mm
(Outside Wall)
8.4.2 Bracket Installation

**Torque Specifications**

M12 – 55 ft./lbs. (75 Nm)

8.4.3 Liftgate Installation

1. Secure the MiniFix Mount Tube to the mounting brackets by bolting the sides of the mount tube to the side of the brackets with the six (3 each side) M14 hardware provided with the liftgate.

**Torque Specifications**

M14 – 129 ft./lbs. (175 Nm)
8.5 Mounting Bracket Kit – 144”/170” Wheelbase, 49”/79” Overhang, Dual Wheel (Vehicle Models After 2007) – P/N: 65-0915-009

8.5.1 Chassis Preparation

Attention: For precise drilling, use the mount plate bracket as a template to mark drilling locations. Driver side chassis frame shown below, repeat drill procedure on curb side.
8.5.2 Bracket Installation

144" Wheelbase with 49" Overhang
Mount bracket on the outside of chassis frame.

*NOTE: Spacers must be trimmed to the width of chassis frame.

170" Wheelbase with 79" Overhang
Mount bracket on the inside wall of chassis frame.

*NOTE: Spacers must be trimmed to the width of chassis frame.

**Torque Specifications**
M12 – 55 ft./lbs. (75 Nm)
8.5.3 Liftgate Installation

1. Secure the MiniFix Mount Tube to the mounting brackets by bolting the sides of the mount tube to the side of the brackets with the six (3 each side) M14 hardware provided with the liftgate.

Torque Specifications
M14 – 129 ft./lbs. (175 Nm)
8.6 Mounting Bracket Kit – 170” Wheelbase, Dual Wheel; 64” Overhang (Vehicle Models After 2007) – P/N: 65-0915-010

8.6.1 Chassis Preparation

Attention: For precise drilling, use the mount plate bracket as a template to mark drilling locations. Driver side chassis frame shown below, repeat drill procedure on curb side.
8.6.2 Bracket Installation

*Spacers

M12x100MM Bolt

Chassis Frame (Driver Side)

Nylon Spacer

*NOTE: Spacers must be trimmed to the width of chassis frame.

Torque Specifications

M12 – 55 ft./lbs. (75 Nm)
8.6.3 Liftgate Installation

1. Secure the MiniFix Mount Tube to the mounting brackets by bolting the sides of the mount tube to the side of the brackets with the six (3 each side) M14 hardware provided with the liftgate.

Torque Specifications
M14 – 129 ft./lbs. (175 Nm)
8.7 Nissan NV Vehicles

8.7.1 Mounting Bracket Kit – Wheelbase 146” – P/N: 65-0915-014

8.7.2 Chassis Preparation

For all vehicle modification, reference the manufacturer’s manual.

1. Remove the hitch, if applicable. When removing OEM equipment, reference the vehicles manufacture’s manuals.
2. The chassis frames are equipped with preinstalled threaded nuts on each frame. Verify the nuts are in place prior to beginning installation.
8.7.3 Bracket Installation

**Torque Specifications**
M12 – 55 ft./lbs. (75 Nm)
8.7.4 Liftgate Installation

Torque Specifications
M14 – 81 ft./lbs. (110 Nm)
8.8 Dodge Promaster Vehicles

**NOTICE**

Special Notes on installs of the MiniFix liftgate on Dodge Promaster Vans:
1. All gates will be mounted in the same location as spare tire. Space inside van will be required for spare tire.
2. Vehicles exhaust system will require modification.

8.8.1 Exhaust Modification Kit – 159" Wheelbase P/N: 60-0914-000

8.8.2 Exhaust Modification

1. Remove the exhaust from the vehicle. Do not cut or remove any mounting components that are attached to the exhaust.

---

**Top View of Vehicle**
2. Cut section of exhaust as shown below. Replace the cut section of the exhaust with the Exhaust Elbow. Use the 7/16″-14 Hardware, Brace Clamps, and grease packs to fasten the Exhaust Elbow and the trimmed exhaust pipes in the two indicated areas below. Wrap the Brace Clamp around the pipe and tighten with the provided bolts and nuts.
3. Mount the modified exhaust back onto the vehicle. Maneuver the threaded end of the long angled rod through the In opening shown below until the threaded end is out through the Out opening. Hand tighten the 3/8” nut. The long angled rod should reach the rod holder located on the exhaust. Insert the other end of the rod through the top hole of the rod holder. Tighten the 3/8” nut when exhaust is in place.
4. **If necessary**, the short angled rod will be installed on the longer piece of exhaust. The longer piece of exhaust also has a pre-welded rod with a rod holder attached. Drill a \( \frac{1}{2}'' \) hole on the side of the cross member. Maneuver the short angled rod through the \( \frac{1}{2}'' \) drilled hole and out the pre drilled punched holes on the cross member. Secure the short angled rod to the cross member with the 7/16" washer and 3/8" nut.
8.8.3 Exhaust Modification Kit – 136” Wheelbase - P/N: 60-0916-000

8.8.4 Exhaust Modification

1. Remove the exhaust from the vehicle. Do not cut or remove any mounting components that are attached to the exhaust.

OEM Exhaust System

Modified Exhaust System

Top View of Vehicle
2. Cut section of exhaust as shown below. Replace the cut section of the exhaust with the Exhaust Elbow. Use the Brace Clamp to fasten one end of the Exhaust Elbow and the trimmed exhaust pipes in the two indicated areas below. Wrap the Brace Clamp around the pipe and tighten with the provided bolts and nuts.
3. Mount the modified exhaust back onto the vehicle. Maneuver the threaded end of the long angled rod through the In opening shown below until the threaded end is out through the Out opening. Hand tighten the 3/8” nut. The long angled rod should reach the rod holder located on the exhaust. Insert the other end of the rod through the top hole of the rod holder. Tighten the 3/8” nut when exhaust is in place.
8.8.5 Mounting Kits Overview

Mount Plate Kit
Non-Extended Overhang
P/N: 60-0915-012

Mount Plate Kit
Extended Overhang
P/N: 60-0915-013
8.8.6 Bracket Installation

1. Remove the rear plastic center bumper from the vehicle’s body. See the vehicle manufacturer’s documentation for removal of the bumper.

2. On a non-extended overhang, remove the bump stop holder and the bump stop from the chassis. Do not discard the bump stop and holder, these components will be re-installed later. For an extended overhang, the bump stop **is not** required to be removed for installation.
3. Install the mounting brackets as shown below. Use the M10 and M12 hardware to secure the components to the chassis. Do not tighten completely until instructed to do so in this manual. Use the tall U-bracket on the rear of the mounting bracket for an extended overhang.

**Torque Specifications**

- M10 – 44 ft./lbs. (60 Nm)
- M12 – 59 ft./lbs. (80 Nm)
- M14 – 92 ft./lbs. (125 Nm)
4. To install the Angled Support Bracket begin by removing the grommet located to the right of the spring hanger. Slide the Threaded Plated in through the opening.
5. Finalize the bracket mounting installation on the non-extended overhang by installing the bump stop holder and bump stop back to its original position wedging the mount bracket between the chassis and bump stop. For an extended overhang, install the threaded plate into the chassis channel to secure the front of the mount bracket.

**Torque Specifications**
M14 – 92 ft./lbs. (125 Nm)
8.8.7  Liftgate Installation

1. Remove the liftarm bolts and nuts which are preinstalled on the liftgates mount frame. Add one of the provided tubes through the Mounting Bracket Tab. Align the Mounting Bracket Tab and tube with the liftarm adjustable bolts holes and re-insert the bolt and nut wedging the mounting bracket tab between the bolts and the mount tube.

2. Finish securing the mount tube to the mounting brackets by bolting the sides of the mount tube to the side of the brackets with the six M14 bolts and nuts provided with the liftgate. Verify the mount tube is squared vertically and horizontally.

**Torque Specifications**

- M20 – 133 ft./lbs. (180 Nm)
- M14 – 92 ft./lbs. (125 Nm)
9 Electrical Installation

**WARNING**

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

**NOTICE**

- Prior to starting electrical installation insure that the liftgate batteries are fully charged. 12.6V for Flooded Acid Batteries, and 12.8V for AGM Batteries. Charge batteries if necessary.

- Never exceed rating of existing fuses located at the battery, control board and/or the pump and motor which may result in serious damage to the equipment.

- Never jump the 150 Amp circuit breaker at the batteries unless otherwise instructed by the PALFINGER Liftgates technical support team.

- All connections should be heat shirk protected and all open ended terminals must be replaced with closed end terminals or the open ends must be protected with heat shrink tubing.

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

- It is highly recommended to use 2 gauge wire throughout the electrical system when connecting to batteries.

- Do not splice battery cables unless otherwise instructed by the Palfinger Liftgates technical support team.
9.1 Battery Wiring Diagram

*In-Line ATC Fuse: 20 Amp. Replace with same amperage fuse when necessary.
**Resettable Circuit Breaker: 150 Amp Min. Replace with same amperage breaker when necessary.
***Ground: For optimal grounding, ground all batteries and power units to the body side rails of the vehicle.
NOTICE: DO NOT attempt to jump in-line fuses with other objects other than the specified fuse.
Do not increase the amperage rating of fuse. Serious harm to the liftgate will result when standard practices are not followed.
Liftgates with Auxiliary Battery will have the Resettable Circuit Breaker mounted on the side of the battery box.
9.2 Wire Crimping

All grounding surfaces MUST be cleaned, prepped, and sealed per this manual. “Cut to size” cables MUST be properly crimped and sealed as factory supplied. All connections MUST be dressed with dielectric grease or equivalent sealer.

Battery Cable Crimping

1. Prepare the wire to be crimped. Straighten out the exposed copper wire and insert into the battery terminal.
2. Use a crimping tool designed for crimping battery terminals for best results. The use of other tools could possibly damage the battery terminal and make poor connections between the wire and terminals.
3. Slide the provided heat shrink over the battery terminal and cable to seal the connection.
9.3 Circuit Breaker Installation

1. Mount the circuit breaker securely in battery box or at positive battery terminal using the buss bar.
2. Connect the liftgate 2 Gauge cable to AUX post on the circuit breaker.
3. Install one end of the buss bar on the “BAT” post on the circuit breaker and the other end to the positive post on battery. Secure buss bar and circuit breaker with the provided hardware.

   **Note: 150 amp minimum circuit breaker required.**

**WARNING** On hazardous goods vehicles, connect the ground cable to the battery or in accordance with the set-up guidelines of the respective vehicle manufacturer.
9.4 Cab On/Off Switch Installation

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

<table>
<thead>
<tr>
<th>Cable Number / Marking</th>
<th>Color</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>White</td>
<td>Hot lead to red LED lights</td>
</tr>
<tr>
<td>-</td>
<td>Yellow/Green</td>
<td>Ground to LED lights</td>
</tr>
<tr>
<td>2</td>
<td>Red</td>
<td>12V Power from batteries</td>
</tr>
<tr>
<td>4</td>
<td>Blue</td>
<td>Control power to liftgate</td>
</tr>
<tr>
<td>3 (BS3)</td>
<td>Blue</td>
<td>Not Used</td>
</tr>
</tbody>
</table>
9.4.1 Operating Push Button Installation

1. Unscrew the five (5) wires from the switches attached to the J30 cable harness; but do not remove the jumper wires going from switch to switch.

2. Separate the contact block and push button assembly by pulling the push button release tab up.

3. Drill three (3) $\frac{7}{8}$" holes approximately 15" from rear of corner post on the curb side of the vehicle. Switches can be mounted vertically or horizontally.
4. The operating buttons must be arranged in accordance with the diagram below.

![Diagram of operating buttons]

**Front View of Switches (From outside of vehicle)**

5. Route the J30 wire harness to the inside of the vehicle. Re-wire the harness wires back on to each contact block as shown below. Test each switch for proper functionality. **NOTE:** Follow the wiring schematic below for both horizontally and vertically mounted switches.

![Diagram of wiring schematic]

**Rear View of Contact Blocks**
6. After re-wiring the three contact blocks, secure the blocks to the wall of the vehicle by tightening the set screws on the rear of each contact block. Insert the push button back to the contact block. Notice the alignment indicators on the contact block and the push button.
9.5 2-Button Hand Held Remote Control Installation

1. Mount the holster approximately 40”- 48” from the floor, or determine the best location as preferred by end user. Route the cable from the liftgate up through the inside corner of the vehicle. Use the wire clamp to secure the incoming cable.

2. Splice the cables harness from the liftgate to the hand held remote harness by crimping butt connectors and seal each connection with heat shrink. Use the wiring table below to wire the 2-button hand held remote.

<table>
<thead>
<tr>
<th>Function</th>
<th>Remote</th>
<th>Wires from Gate &amp; Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>5</td>
<td>5 / Red</td>
</tr>
<tr>
<td>Down</td>
<td>6</td>
<td>6 / Yellow</td>
</tr>
<tr>
<td>12V (Hot)</td>
<td>4</td>
<td>4 / Green</td>
</tr>
</tbody>
</table>

Join wires with butt splice

Use heat shrink to seal splice
3. **OPTIONAL.** Use a plug and socket when the vehicle is a refrigerated body. Remove the set screw to access the wire terminals. *Never store remote inside refrigerated vehicles, control will be damaged.*

### Plug

**Plug to Control Wiring Table**

<table>
<thead>
<tr>
<th>Function</th>
<th>Plug</th>
<th>Remote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>5</td>
<td>5.2 / Red</td>
</tr>
<tr>
<td>Down</td>
<td>6</td>
<td>6.2 / Yellow</td>
</tr>
<tr>
<td>12V (Hot)</td>
<td>4</td>
<td>4 / Green</td>
</tr>
</tbody>
</table>

### Socket

**Socket to Control Board**

<table>
<thead>
<tr>
<th>Function</th>
<th>Socket</th>
<th>Control Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>5</td>
<td>5.2 / Red</td>
</tr>
<tr>
<td>Down</td>
<td>6</td>
<td>6.2 / Yellow</td>
</tr>
<tr>
<td>12V (Hot)</td>
<td>4</td>
<td>4 / Green</td>
</tr>
</tbody>
</table>
9.6  **D-Bumper Installation**

1. Remove any inside covers on the door. See vehicles documentation for removing door components.
2. Verify mounting position and door location. See below for applicable vehicles. Use the dimensions below to determine the hole pattern for each specific vehicle. Drill holes as shown.
3. The mounting bolts are preinstalled on the D-Bumper. Feed the bolts through the drilled holes and secure the D-Bumper to the vehicle with the nylock nuts.
4. Verify that the doors open and close without any interference.

---

**Mounting Hole Pattern**

- **Ford Transit**
  - 2X ø 1/4"
  - 1-1/2"

- **Dodge Promaster**
  - 2X ø 1/4"
  - 1-5/8"

- **Mercedes Sprinter**
  - 2X ø 1/4"

- **Nissan NV**
  - 2X ø 1/4"
  - 2-1/4"
  - 1-5/8"

---

**Mercedes Sprinter Vehicles**
- Rear Passenger Side Door
  - *No drilling required. Use emblem hole pattern to mount D-Bumper*

---

**Ford Transit Vehicles**
- Rear Passenger Side Door

---

**Dodge Promaster Vehicles**
- Rear Passenger Side Door
9.7 Platform Installation

When attaching the platform be careful that it does not drop since there is no fluid in the cylinders at this point. Use suitable lifting equipment to raise the liftarm until it reaches the cargo floor height. Support the liftarm with a jack.

**WARNING**

Never work under platform without safety supports

⚠️ Make sure the liftcan move freely while lifting it up.

1. Loosen the adjustable stop bolts located on the mount tube.

2. Manually raise both liftarm stops to bed level and assure the liftarms are at the same height. Place jacks or similar device to keep the arms in the leveled position.

Attention: On Ford Transit and Nissan NV vehicles, the liftarm might not reach bed height and will have an offset due to the vehicles bumper.
3. Set the stop bolts against the liftams to prevent any misalignment. Tighten bolts and nuts.

4. Hoist the platform up using a forklift or similar device. Align the platform pin holes with the liftarms pin holes. Maintain two plastic spacers on each side of the liftarms. Secure the platform to the liftarms using the Ø25mmx90mm pins provided. Use the M12 bolt to secure the pin to the platform clevis. Repeat pin installation on the opposite side.
5. Tilt the platform 35-40° or enough to get the parallel arm in the install position. Use the provided wheel kit pins (Ø25x179mm) to secure the parallel arm to the platform clevis. The liftgate only has one parallel arm. On the opposite side, install the second roller wheel in the same orientation done on the parallel arm side. Secure all pins with the M12 bolts.
9.8 Tilt Cylinder Adjustment

1. Raise the gate all the way up against the D-bumper.
2. Look at the platform and the angle the platform is at when raised flushed against the D-bumper.
3. If platform is not completely in vertical position, open the platform about 15-20 degrees and lower the platform down approximately 2”-8”.
4. Remove the bellows off the tilt cylinder, loosen the locknut, and adjust the tilt cylinder by rotating the piston inward or outward of the cylinder head.
5. Repeat the tilt cylinder adjustment until the platform is in vertical state. Use the lock nut to secure the vertical position of the platform by tightening it to 81 ft.lbs (110 Nm).
6. Reinstall the bellow after adjustment is complete.
9.9 Flip Ramp Installation

1. Position the ramp in the vehicle directly behind the closed doors. Leave a 2.00” gap between the end of the flip ram and the side profiles.

Rear of Vehicle
Top View
2. Drill four holes (two per hinge) thru the vehicles floor. Secure the flip ramp hinges using the hardware provided.

NOTE: Use the hinges bolt holes as a drilling template for precise drilling.
9.10 Setting of B-13 Sensor

1. Lower the platform to about 8”-10” above the ground and set the switch B-13 on the lift arm in a horizontal position. Verify the resin side of the B-13 sensor is facing the street side of the vehicle.

2. Loosen the M6 adjustment bolt, retighten after setting at the correct position and bend the metal clip to fix position of the switch.

3. Route the harness to the control board and plug into J41 Port.
9.11 Setting of B-16 Sensor

1. Mount the platform sensor B-16 to the platform clip. The sensor should be installed as shown with the color resin side of the sensor facing the street side of the vehicle.
2. Route the harness to the control board and plug to the J41 Ports.
9.12 License Plate Light

**NOTICE** Observe local and federal regulations.

1. Depending on the vehicle, determine how much additional wire is necessary to reach the tail lights of the vehicle. Splice one end of the additional wire to the 7" LED light wire leads, splice and seal all connections.
2. Remove the plastic cover. Drill through the headers exterior wall and through the headers interior wall to be able to route the LED light wires out of the platform. To mount the LED light, drill three holes per the mounting hole pattern shown below. Feed the LED light harness through the ½" hole and route the harness down the platform and out. Secure the LED light to the platform using the provided sheet metal screws. Reinstall the plastic cover.
9.13 Foot Control Installation (Optional)

1. Unscrew the covers to expose the slots for each foot control module. Remove the side covers from the platform by unscrewing the four screws.

2. Mark or label each foot control harness to avoid confusion after the harnesses have been routed. The platform is designed with internal notches for routing harnesses. Feed each harness through each foot control slot on the platform and route each harness to the outlet located at the bottom the platform, as shown.
3. Route harnesses to the control board and connect the Front Foot Control Harness to pins 5, 4 on J3. Connect Rear Foot Control Harness to pins 4, 6 on J3.

![Diagram of harness connections]

<table>
<thead>
<tr>
<th>Wiring Table</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Front Foot Control Harness</strong></td>
</tr>
<tr>
<td>Pin/Color</td>
</tr>
<tr>
<td>4 (Hot)/Blue</td>
</tr>
</tbody>
</table>

4. Test functionality of each foot control. Follow the steps below.

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

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

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

5. Once operation has been verified, check all connections and verify that all screws are properly fastened. Finally, install the operation plate and make sure the arrows on the plate match the foot control operation.
9.14  Warning Lights Installation (Optional)

1. Remove the side extrusions by removing the three screws. Drill holes to mount the warnings light using dimensions below.

![Diagram showing side extrusion and drill hole dimensions]

2. Cut the female connector at the end of the harness. Feed the left warning light harness into the slot and route the harness through the inside of the platform and out of the right side. For the right warning light, trim and leave a minimum of 6” of harness attached to the right warning light. Do not discard the excess harness from the right warning light, it will be required to finish the installation.

![Diagram showing female connector and harness routing]

---

Rev. 1.6
3. Use butt splice connectors to join the left and right harness wires together, make sure the same color wires are joined together from each harness and crimp the butt splice. On the other side of the butt splice connector, slide a piece of heat shrink over the excess harness prior to feeding the wires into the open end of the butt splice. Crimp but splice connector and seal.

4. Notch the end of the extrusion to allow the harness to be routed along the side of the platform and to prevent the harness from being crushed after re-installing the side extrusions. Route the crimped harness to the harness outlet on the platform. Plug the male connector onto the female connector. Reinstall the side extrusion (from step 1) on the platform and secure it with the screws.
5. Secure the lights to the platform with the provided screws.
9.15 Lubrication

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

Grease: Location of Grease Zerks

Oil: Oil Level in the power pack tank

Lubrication: Cart Stops (use WD-40 spray for lubrication).
10 Hydraulic Schematic

Functions:

- **S1** = Release Valve for lowering function
- **S2** = Release Valve for tilt down function
- **R1** = Flow Restrictor located inside hose adaptor on lift cylinder
- **R2** = Flow Restrictor located inside hose adaptor on tilt cylinder
- **S5** = Shift Valve is activated on tilt up and lowering function
- **R5** = Restrictor Valve located in power pack

Flow Divider is activated, when fluid is going back into the power pack.
If Flow Divider is loose or hanging up the fluid is circulated back in to tank.

---

**Shift Valve S5**

**Restrictor Valve R5**

**Flow Divider**

**Pressure Relief**
2850 PSI
200 bar

---

**Lift:** M
**Lower:** S1 + S5
**Tilt Up:** M + S5
**Tilt Down:** S2
**Horiz. Open:** M + S2
11 Electrical Schematic
**Control Board Codes:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Reset</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>System ok / Cab switch off, (or missing bridge J11/2&lt;-&gt;4)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>System ok / Cab switch on, (or bridge J11/2&lt;-&gt;4)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Low Voltage</td>
<td>Cab switch: off/on (or disconnect bridge J11/2&lt;-&gt;4)</td>
</tr>
<tr>
<td>3</td>
<td>Missing tilt switch B-13 at lift arm or defective.</td>
<td>Automatically when the valves are back to normal</td>
</tr>
<tr>
<td>4</td>
<td>Missing tilt angle sensor B-15 at lift platform or defective</td>
<td>Automatically when the valves are back to normal</td>
</tr>
<tr>
<td>5</td>
<td>Missing tilt angle sensor B-15 at platform or defective</td>
<td>Automatically when the valves are back to normal</td>
</tr>
<tr>
<td>6</td>
<td>Warning lights shorted</td>
<td>Cab switch: off/on (or disconnect bridge J11/2&lt;-&gt;4) or close tail lift</td>
</tr>
<tr>
<td>7</td>
<td>Short in cab switch/on-off switch or aux port</td>
<td>Cab switch: off/on (or disconnect bridge J11/2&lt;-&gt;4) or close tail lift</td>
</tr>
<tr>
<td>8</td>
<td>General short in electrical wiring</td>
<td>Cab switch: off/on (or disconnect bridge J11/2&lt;-&gt;4) or voltage interruption MBB control</td>
</tr>
<tr>
<td>9</td>
<td>Defect at motor solenoid detected during lifting</td>
<td>Automatically when the valves are back to normal</td>
</tr>
<tr>
<td>10</td>
<td>Voltage V02 (J1 pin 2) is missing, defective fuse</td>
<td>Replace the fuse</td>
</tr>
<tr>
<td>11</td>
<td>Defect at opening, valve (S3/S4) or motor relay detected during opening</td>
<td>Automatically when the valves are back to normal</td>
</tr>
<tr>
<td>12</td>
<td>S5 valve detected during closing or motor solenoid defective</td>
<td>Automatically when the valves are back to normal</td>
</tr>
<tr>
<td>13</td>
<td>S5 valve detected or defect at lowering valve (S1/S2)</td>
<td>Automatically when the valves are back to normal</td>
</tr>
<tr>
<td>14</td>
<td>Emergency program (all sensors are bypassed). Activation by: Press Open+Open &gt;10 seconds</td>
<td>Cab switch: off/on (or disconnect bridge J11/2&lt;-&gt;4)</td>
</tr>
<tr>
<td>15</td>
<td>Diagnosis mode activated</td>
<td>Removing service connector</td>
</tr>
</tbody>
</table>
12 Decal Placement and Inspection

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

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

<table>
<thead>
<tr>
<th>Decal</th>
<th>Qty.</th>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>ATG-URGWA</td>
<td>Urgent Warning: Elevating gate instructions</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>85-0915-000&lt;br&gt;85-0915-001</td>
<td>Operating Instructions (Horizontal Buttons)&lt;br&gt;Operating Instructions (Vertical Buttons)</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>ATG-XXXX</td>
<td>Capacity (Liftgate capacity can be found on serial number plate located on the liftarm)</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>ATG-CAB</td>
<td>Liftgate Shut-Off (located next to shut-off switch in cab)</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
<td>ATG-BKR</td>
<td>Max. Circuit Breaker Reset (must be located at the circuit breaker)</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
<td>ATG-WLH</td>
<td>Warning: liftgate can crush</td>
</tr>
<tr>
<td>G</td>
<td>2</td>
<td>ATG-PLAT</td>
<td>Warning: Always stand clear of platform area</td>
</tr>
<tr>
<td>H</td>
<td>1</td>
<td>ATG-RESET</td>
<td>Circuit Breaker Protection (at vehicle batteries or auxiliary battery box)</td>
</tr>
<tr>
<td>J</td>
<td>1</td>
<td>ATG-FT</td>
<td>Notice for Foot Control (if applicable)</td>
</tr>
<tr>
<td>K</td>
<td>1</td>
<td>2038837</td>
<td>Palfinger Logo (Yellow)</td>
</tr>
</tbody>
</table>
13 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.

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 filled out at the facility where the liftgate was installed and **must** be sent to Palfinger Liftgates for warranty activation.

**Structural Inspection**
- All nuts, bolts, mounting hardware, pins, chain anchors are tight.
- All mounting dimensions are correct and liftgate is square and parallel per this manual.

**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 properly protected.
- 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 (if applicable) have been capped.
- Platform travels up and down smoothly and freely, without any hesitation or unusual noises.
- Platform is flush with the floor when raised completely.
- Platform rests on the ground evenly when lowered completely.
- Platform raises and lowers properly and at correct speed. (2 to 4 inches per second)
- Liftgate is clean all around. Cylinders are clean and rubber & plastic caps are in place.
- The liftgate serial number and model number are documented on the Owner’s Manual, as well as the installation manual in the space provided. (pg. 6)
- Owner’s Manual is in the vehicle’s glove box.
- Supervisor has demonstrated the instructions in the Owner’s Manual to the customer/driver upon delivery.

**Inspection Information (Please Print):**

Name: ___________________________________________ Signature: ______________________________
Completed by: ______________________________________ Date: ________________________________
Title: __________________________________________ Date: ________________________________
Liftgate Model: ______________________ Liftgate Serial Number: ________________________

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Rev. 1.6 - 79 -