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## Guardian Lift Interlock (GRD501-BR) Installation Instructions

### Ford Econoline 2009-2010

It is not necessary to cut any Ford wires during the installation of the Guardian wire harnesses. Always disconnect the battery before installing any electrical devices. *It is imperative that each harness be installed into the correct module connector, or damage to the module will result. The connections are color coded to assist with proper installation.*

Identify each harness connector before installation into the Guardian module.

- **Do not** simply match up the number of pins in a harness connector with the number of pins in a module connector receptacle. **There are several connectors on the harness and module that if swapped, may cause permanent module or vehicle damage.**
- The harness will have a colored tape on the module connector end that will identify which module receptacle to plug into. The color of the tape on the harness must be matched up to the color of the lettering that identifies the connector receptacles on the module.

### **CONTROL/LED DISPLAY PANEL**

Locate a suitable position on the dashboard, within view of the driver for the mounting of the **Control/LED Display Panel**. The length of the display harness is 40". This is the maximum distance the display can be from the Control Module. Drill a 3/4" hole in the dashboard where you wish the center of the display to be. Attach the 8 pin connector of the **LED harness** to the Control Module in the **(Black Connection)** labeled "**LED**". Run the other end of the harness under the dash and out through the 3/4" hole. Attach the 6 pin connector of the display harness to the **LED Display Control Panel**. Ensure panel is level, and secure using the supplied screws.

### **DATA LINK HARNESS (White 6-Pin Connector) (Black 6-Pin Connector)**

Locate the vehicle **Data Link Connector**. It will be mounted below the lower dash panel on the driver's side. (See photo). Remove the 2 mounting screws for the Data Link Connector. Plug the red connector from the **Guardian Data Link Harness** into the vehicle **Data Link Connector**. Ensure the connection is fully seated and secure with the supplied wire tie. Mount the black connector from the **Guardian Data Link Harness** where the vehicle Data Link Connector originally was. Secure the Data Link Harness such that it does not hang below the lower dash panel.



### **WHITE 6 PIN DATA LINK 1**

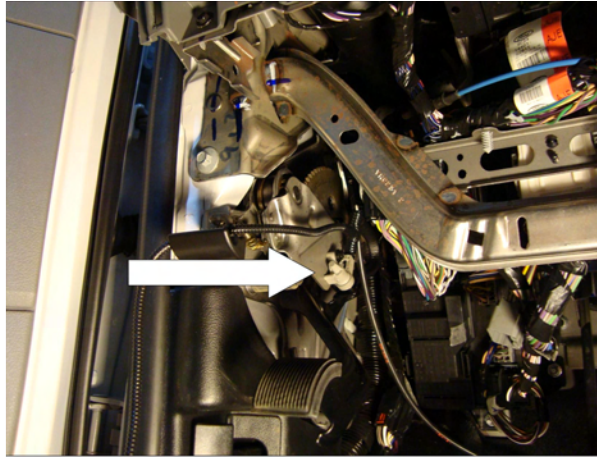
Plug the **White 6 pin Data Link 1** connector from the Data Link Harness into the “**Data Link 1**” (**Red Connection**) on the Control Module.

### **BLACK 6 PIN DATA LINK 2**

Plug the **Black 6 pin Data Link 2** connector from the Data Link Harness into the “**Data Link 2**” connector on the Control Module.

### **PARKING BRAKE CIRCUIT**

Disconnect the black Ford connector from the Parking Brake switch. Plug the female side of the connector from the **Park Brake Harness** to the parking brake switch. Install the male side of the connector on the **Park Brake Harness** to the female connector in the Ford harness. Plug the **White 4 pin Park Brake** connector from the **Park Brake Harness** into the “**Park Brake**” (**Orange Connection**) on the Control Module.



### **LIFT HARNESS**

This harness can be identified by the yellow tape near the 6-pin connector. Attach the appropriate wheelchair lift adapter to the lift harness, then attach adapter to the wheelchair lift. Run the **Lift Harness** from the wheelchair lift to the Guardian Module. Finally, snap the yellow taped end of the **Lift Harness** into the Guardian connector labeled in yellow “Lift”.

**Warning! Do not power any other loads (lights, motors, etc.) off the Vehicle Secure circuit that increase the current draw to greater than 8.0 amps.**

### **IGNITION POWER HARNESS**

Connect the RED wire from **Pin #4** of the **Ignition Power Harness** to **a fused, hot in run and start, ignition power source.**

Plug the **White 6 pin Ignition Power** connector from the **Ignition Power Harness** into the “**Ign Power**” (**Blue Connection**) on the Control Module.

**IMPORTANT! MUST HAVE 12 VOLTS AT RED WIRE PIN #4 IN RUN AND START ONLY!**

### ***Guardian 501-BR Module Suggested Mounting – 2009 Ford***



- Mount the Guardian module above the foam knee bolster, which is attached to the lower dash panel.
- Secure the control module using 2-sided foam tape.
- Verify that the harnesses are routed such that the tilt steering column will not contact them in the full down position
- When installing the harnesses, leave several inches of take out such that the lower dash panel can be removed if necessary.
- Perform Post Installation Check List.



**An ISO 9001:2000 Registered Company**

## **Guardian Personal Mobility Lift Interlock GRD501-BB/BG/BR**

### **Post Installation Check List**

**The following checks must be made after installation of the InterMotive GRD501 to ensure correct and safe operation of the lift. If any of the checks do not pass, do not deliver the vehicle. Recheck all connections as per the installation instructions.**

Begin the checklist with the vehicle in the following state:

- Lift stowed
  - Park brake set
  - Transmission in park
  - Ignition off
  - All Guardian LED's not illuminated (sleep mode)
  - Lift access door open
1. Turn on the ignition. Verify that all LED's prove out and green lift power LED remains illuminated.  
**If the vehicle has Daytime Running Lights they will be activated when the Lift Door is Open and/or the Park Brake is On, and the Ignition key is On.**
  2. Release the park brake. The green LED for lift power should now be off. Attempt to deploy the lift. The lift must not deploy.
  3. Set the park brake and shift the transmission out of park. The green LED for lift power should now be off. Attempt to deploy the lift. The lift must not deploy.
  4. Place the transmission in park. The green LED for lift power should now be illuminated.
  5. Attempt to deploy the lift. The lift should deploy and the red LED for lift-not-stowed should illuminate.
  6. With the lift deployed, attempt to shift the transmission out of park. The transmission shift lever must not be able to shift.
  7. Stow the lift. The red LED for lift-not-stowed should now be off. Turn off ignition.
  8. Wait a few minutes for the module to enter "sleep mode." This is verified when all LED's (including backlit icons) turn off.
  9. Attempt to deploy the lift. The module should prove-out all LED's and the lift should deploy.
  10. Stow the lift. Installation is complete.

**Confirmation Signal** – The vehicle lamps and radio will cycle briefly when the ignition is on and the lift door is initially closed. This is a confirmation signal sent from the 2009 Ford Econoline controller.



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## **Guardian Personal Mobility Lift Interlock GRD501-BB/BG/BR Operating Instructions**

The Guardian is a microprocessor driven system for controlling wheelchair lift operation. Lift operation will only be allowed when all of the following conditions are met:

1. The vehicle is in "Park"
2. The parking brake is applied.
3. The lift deploy switch is activated

The Guardian also will not allow the vehicle to be shifted out of park if the lift is not stowed.

The Guardian will operate with the vehicle ignition on or off. When the ignition is turned on or the lift deploy switch is activated, the LED panel will prove out by illuminating the red and green indicators briefly.

**If the vehicle has Daytime Running Lights they will be activated when the Lift Door is Open and/or the Park Brake is On, and the Ignition key is On.**

When the wheelchair lift is stowed and ignition power is not present for 5 minutes, the Guardian will enter a low current "sleep" mode of operation. To wake up from "sleep" mode, the ignition must be turned on or the lift deploy switch must be activated. After prove out, the operation of the indicators is as follows:

- Lift Power – Illuminates in green if power is available to the lift. This means that all conditions for lift operation have been met.
- Lift Not Stowed – Illuminates in red when the wheelchair lift is not stowed. If illuminated, the driver will not be allowed to shift out of park.

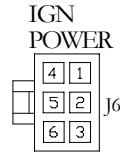
**Confirmation Signal** – The vehicle lamps and radio will cycle briefly when the ignition is on and the lift door is initially closed. This is a confirmation signal sent from the 2009 Ford Econoline controller.

The indicators can also be used for diagnostic purposes. For example, if the Lift Not Stowed icon is illuminated when the lift is stowed, the driver will not be able to shift out of park. This means that the Guardian detects that the lift is not stowed. Thus, a technician should inspect the lift stowed switch and its circuit for proper operation.

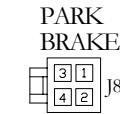
# Guardian

## REVISIONS

DATE: CHANGE:



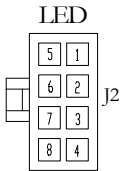
4 - RED ————— Attach to Ignition Power



3 - BROWN (Park Brake Input)

Attach to Park Brake Switch

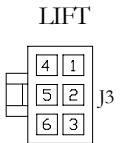
Back of connector



1 - YELLOW (5 V)  
 2 - BLUE (Vehicle Secure LED)  
 3 - OPEN (Not Used)  
 4 - BLACK (Backlight Ground)  
 5 - OPEN (Not Used)  
 6 - WHITE (Lift Not Stowed LED)  
 7 - OPEN (Not Used)  
 8 - RED (12 V)

Mount on Dashboard

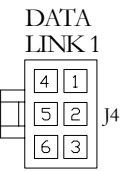
Back of connector



1 - OPEN (Not Used)  
 2 - GREEN (Vehicle Secure Signal)  
 3 - RED (Battery Power)  
 4 - OPEN (Not Used)  
 5 - BROWN (Lift Stowed Signal)  
 6 - WHITE (Wake-up Signal)

Attach to Lift Adapter

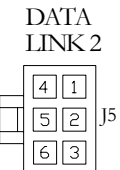
Back of connector



1 - RED (Battery Voltage)  
 2 - OPEN (Not Used)  
 3 - YELLOW (Ford CAN High)  
 4 - GRAY (Signal Ground)  
 5 - OPEN (Not Used)  
 6 - BROWN (Ford CAN Low)

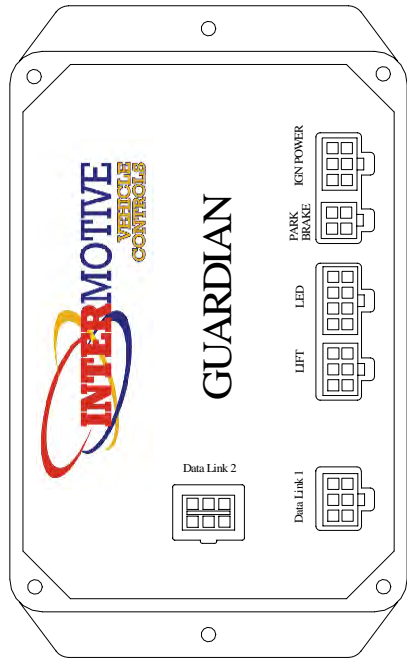
Data Link

Back of connector



1 - OPEN (Not Used)  
 2 - OPEN (Not Used)  
 3 - GREEN (Ford CAN High)  
 4 - OPEN (Not Used)  
 5 - OPEN (Not Used)  
 6 - BLUE (Ford CAN Low)

Back of connector



PRODUCT :

# GUARDIAN

DRAWN BY:

**BRUCE HODGE**

PART NO: GRD501-BB, BG, BR

DATE DRAWN: 8/6/08

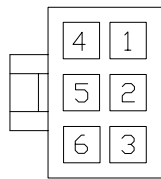
CHECK BY:

**Ken Quimby**

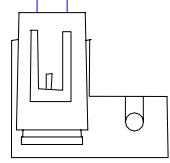
DATE CHECKED: 10/17/08

# REVISIONS

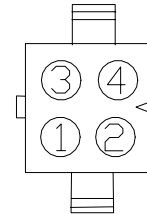
DATE: CHANGE:



- 1 — GREEN - Vehicle secure signal to Ricon pin # 2
- 2 — WHITE - Wake up signal to Ricon pin # 2
- 3 — OPEN - Not used
- 4 — BLACK - Gound to Ricon pin # 3
- 5 — BROWN - Lift stowed signal to Ricon pin # 4
- 6 — RED - Battery voltage to Ricon # 1



7.5 AMP FUSE



PRODUCT :

# Ricon Personal Lift Adapter

DRAWN BY:

Bruce Hodge

PART NO:

GRD1-AR

DATE DRAWN :  
12/23/05

CHECK BY :

Ed Prokopik

DATE CHECKED :