

# Instructions



## **B-ILISC511-C Shift Interlock (Manual Lift Door)**

### **2021 Ford E-Series**

Contact InterMotive for additional vehicle applications

## **System Overview**

The B-ILISC511 is a microprocessor driven system for controlling wheelchair lift operation. The system will operate with the vehicle ignition on or off. Lift operation will be enabled when specific vehicle safety conditions are met and will lock the transmission shifter in Park when the wheelchair lift is in use. Optional Plug and Play harnesses are available for most applications, making installation fast and easy.

## **Installation Instructions**

**Disconnect vehicle battery before proceeding with installation.**



### **WARNING**

Disconnect the battery to prevent setting a check engine light.

### **IMPORTANT — READ BEFORE INSTALLATION**

It is the installer's responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers.

Avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Avoid radio frequency energy from antennas or inverters next to the module. Avoid high voltage spikes in vehicle wiring by always using diode clamped relays and solenoids when installing upfitter circuits.

## **CAUTION**

All electronic products are susceptible to damage from Electrostatic Discharge or ESD. Ground yourself before handling or working with the module and harnessing by first touching chassis ground, such as the barrel of the cigarette lighter.



### **B-ILISC511 Module**

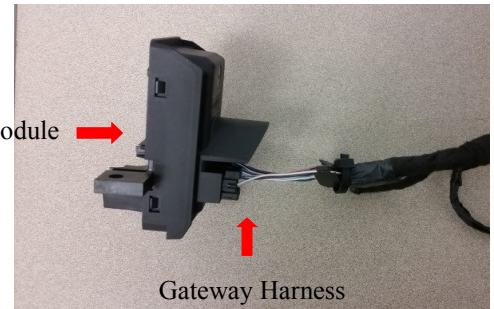
Remove the lower dash panel below the steering column area and find a suitable location to mount the module so that the Diagnostic LED's can be viewed with the lower dash panel removed. Locate the module in an area away from any high heat sources (engine heat, heater ducts, etc.). Do not actually mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module.

# Instructions

## Gateway Plug and Play Harness (4-pin connector)

1. Locate the vehicles Gateway Module. It will be mounted below the lower left dash panel.
2. Remove the harness behind the Gateway module by pressing the locking tab and pulling outward.
3. Plug the Female side of the InterMotive Gateway Harness into the back of the Gateway module. Ensure the connection is fully seated and secured by the locking tab.
4. Plug the Male side of the InterMotive Data Link Harness into the Gateway harness.
5. Secure the B-ILISC511 Gateway harness so that it does not hang below the lower dash panel.
6. Plug the free end of the Data Link harness into the mating 4-pin connector on the B-ILISC511-C module.

Gateway Module



## LED Display Panel Mounting - Black 4-pin connector

Locate a suitable position on the dashboard, within view of the driver to mount the LED Display Panel. Ensure there is open space behind the dash where the panel is mounted. The harness is 40" in length, which is the maximum distance the display can be from the module.

1. Drill a 5/8" hole in the dash where the center of the display will be located.
2. Attach the Black 4-pin connector of the LED display panel harness to the module.
3. Run the other end of the harness under the dash and out through the 5/8" hole.
4. Attach the end to the LED Display Panel.
5. Ensure the panel is level and secure using supplied screws.

# Instructions

## Control Inputs/Outputs - 8-pin connector

The B-ILISC511 provides three ground side inputs and one 12V, 1/2 amp output.

Refer to the B-ILISC511 CAD drawing as reference when reading these instructions.

Lengthen the following wires, using solder and heat shrink or tape.

The blunt-cut harness provides for control connections to the vehicle as follows:

**Orange or Red** – connect this output to the lift or lift relay. Refer to the particular lift model drawing when making this connection. This output provides 12V @ 8 amp when it is safe to operate the lift.

**Gray** – connect this input to the Lift Door switch. Ensure a ground signal is provided with the door open. When the door is open the vehicle is prevented from shifting out of Park. This door must be open in order to allow lift operation.

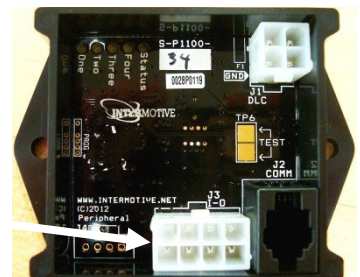
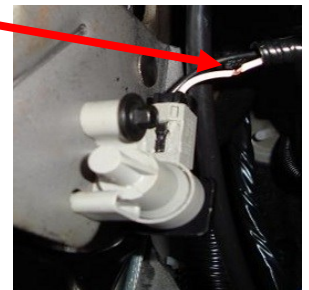
**Green** – This input is an **optional** connection for an additional door (passenger). This door does not have to be open to allow lift operation. Insert the pin and wire into cavity #4 of the 8-pin connector.

**Brown** – Connect this wire only if “key off” lift operation is desired.

Connect this **optional input** to the OEM Park Brake switch (as shown) such that the switch is made when the Park Brake is set. Install a standard rectifier diode (RL202-TPCT-ND or equivalent) as shown in the Blunt Cut CAD drawing, to isolate the Parking Brake ground signal. Strip back some insulation off the White/Violet wire, solder the Brown wire on, and tape or use heat shrink tubing. This connection is required if lift operation is desired when the vehicle ignition is OFF.

**Yellow** - Connect this output to the OEM Shift Lock circuit. (See next page for detailed instructions)

- Pin #1— N/C
- Pin #2 — N/C
- Pin #3 — Orange (Vehicle Secure (12V @ 8 Amp) Output)
- Pin #4 — Green (Passenger Door Open (GND) Input)
- Pin #5 — Brown (Park Brake (GND) Input) \*Optional
- Pin #6 — N/C
- Pin #7 — Yellow (Shift Lock Output)
- Pin #8 — Grey (Lift Door Open (GND) Input)



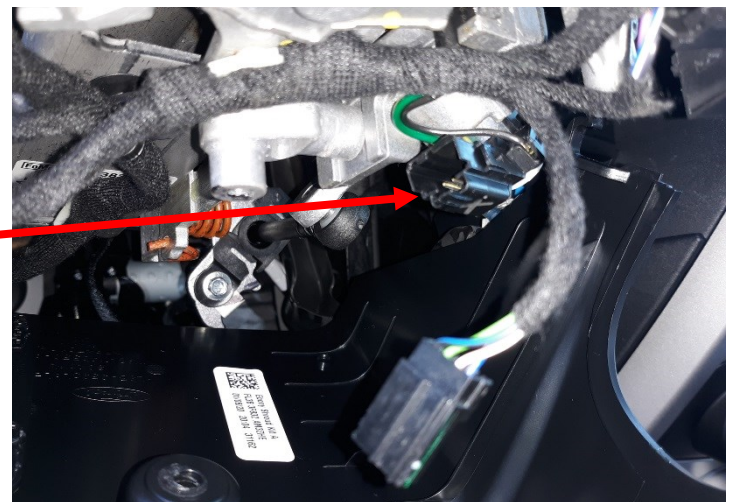
# Instructions

## Shift Lock Harness

1. Remove the upper and lower steering column covers by removing the 3 screws in the lower column cover.



2. Locate the Shift Lock (4-pin) harness.
3. Unplug the Shift Lock connector.
4. Plug the OEM Shift Lock connector into the mating connector on the B-ILISC511 harness.
5. Plug the 4-pin connector on the B-ILISC511 harness into the mating connector on the OEM Shift Lock harness.



**Connect the 8 pin connector to the module**

## B-ILISC511 Module

Ensure all the harnesses are properly connected and routed, and are not hanging below the dash area. Mount the B-ILISC511 module as described on page one and secure using screws or doubled sided tape.

## Reconnect vehicle battery



# Instructions

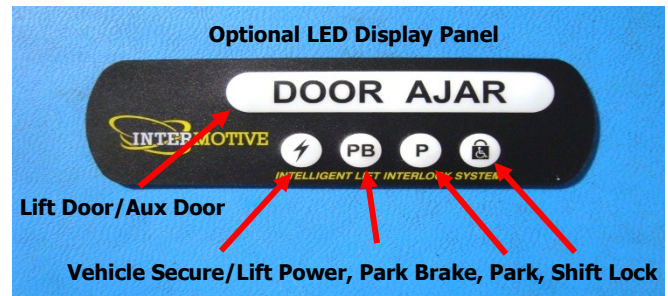
## Post Installation / Check List

### B-ILISC511 (Manual Lift Door)

The following checks must be made after installation of the system, 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
- Lift Door closed
- Park Brake set (PB)
- Transmission in Park (P)
- Ignition off (Key off). Wait until the module goes into "Sleep" mode (all panel LEDs OFF) which takes approximately 5 minutes.



### KEY ON CHECK: NOTE - you can skip this section if module set up for Key OFF Only

1. Turn ignition key on (to "Run"), verify the module wakes up and all 5 LEDs turn ON for approximately 2 seconds. The lower icon LEDs are backlit and should remain ON whenever the module is awake.
2. Verify that the Park, Park Brake, and the Shift Lock LED remain ON.
3. Attempt to deploy the lift. The lift must not deploy with the Lift Door closed. Next, open the lift door.
4. With Lift Door open, Park Brake set and transmission in Park, all 5 LEDs will be ON. Attempt to deploy the lift. Verify the lift deploys. Stow the lift.
5. With Lift Door open and transmission in Park, release Park Brake. Verify that the Park Brake (PB) and Vehicle Secure LEDs turn OFF, and attempt to deploy the lift. Verify the lift does not deploy.
6. With Lift Door closed and Park Brake set, verify transmission will not shift out of Park.
7. With Lift Door open and Park Brake released, verify transmission will not shift out of Park.
8. With Lift Door closed, Park Brake released and Service Brake applied, verify you can shift out of Park.

### KEY OFF CHECK:

NOTE: You must have both a discrete Park Brake and Lift Door input connected for the following test. If not, then test can be skipped:

1. Start with the same conditions as for KEY ON check above except do not wait for the module to go to sleep. The key remains OFF throughout this test.
2. Repeat Steps 2 - 5 (above) to complete this test.
3. Close the Lift Door and verify module goes to sleep after 5 min.
4. Open the Lift Door and verify module wakes up with display LED's proving out; then Park, Shift Lock, and Lift Door Open LEDs remain ON.

# Instructions

## Post Installation/Checklist (continued)

### Lift Interlock Diagnostic Mode Testing

Enabling Diagnostic Mode allows a visual indication of system status and is a good troubleshooting tool used in conjunction with the previous tests. The module is fully functional in this mode. Enter Diagnostic Mode by the following steps:

1. Place transmission in Park and turn the ignition switch to the run position.
2. Momentarily press the Red “Test” button on the module. LED’s on the module will prove out, then become status indicators:
  - LED 1 will be on when Shift Lock enabled.
  - LED 2 will be on when transmission is in park.
  - LED 3 will be on when Park Brake is set.
  - LED 4 will be on when Lift Door is open.
  - LED marked “status” indicates “Vehicle Secure” or “Lift enabled” meaning there is 12V on Pin 3 (Orange wire) which connects to the lift.
  - Cycling the key will exit Diagnostic Mode and all LED’s will be off.



# Instructions

## LEAVE IN VEHICLE

### Operating Instructions - Shift Interlock (Manual Lift Door)

B-ILISC511-C (2021 Ford E-Series)

#### System Operation

The B-ILISC511 is designed to control wheelchair lift operation. The system will operate with the vehicle ignition ON or OFF, (if optional Park Brake and Lift Door input supplied) or if so set up, the lift will only be energized if the Key is OFF. Lift operation is enabled when specific vehicle safety conditions are met and will lock the transmission in Park when the wheelchair lift is in use. The B-ILISC511 prevents the vehicle from being shifted out of park if the lift door is open. As an added feature, the vehicle cannot be shifted out of park anytime the parking brake is applied. This eliminates excessive parking brake wear due to driving with the parking brake applied.

#### Key On function:

1. When the vehicle is in "Park" the (P) LED will be ON.
2. When the Park Brake is applied, the (PB) LED will be ON.
3. When the Lift Door is open, the Door Ajar LED will be ON.
4. With the vehicle in Park and either the Park Brake applied or Lift Door open or external Shift Lock input enabled, the Shift Lock LED will be ON, and the transmission cannot be shifted out of Park.
5. With the vehicle in Park, Park Brake applied and Lift Door open, the Vehicle Secure LED will be ON, and the lift will be operational. All LEDs will be illuminated on either display panel.

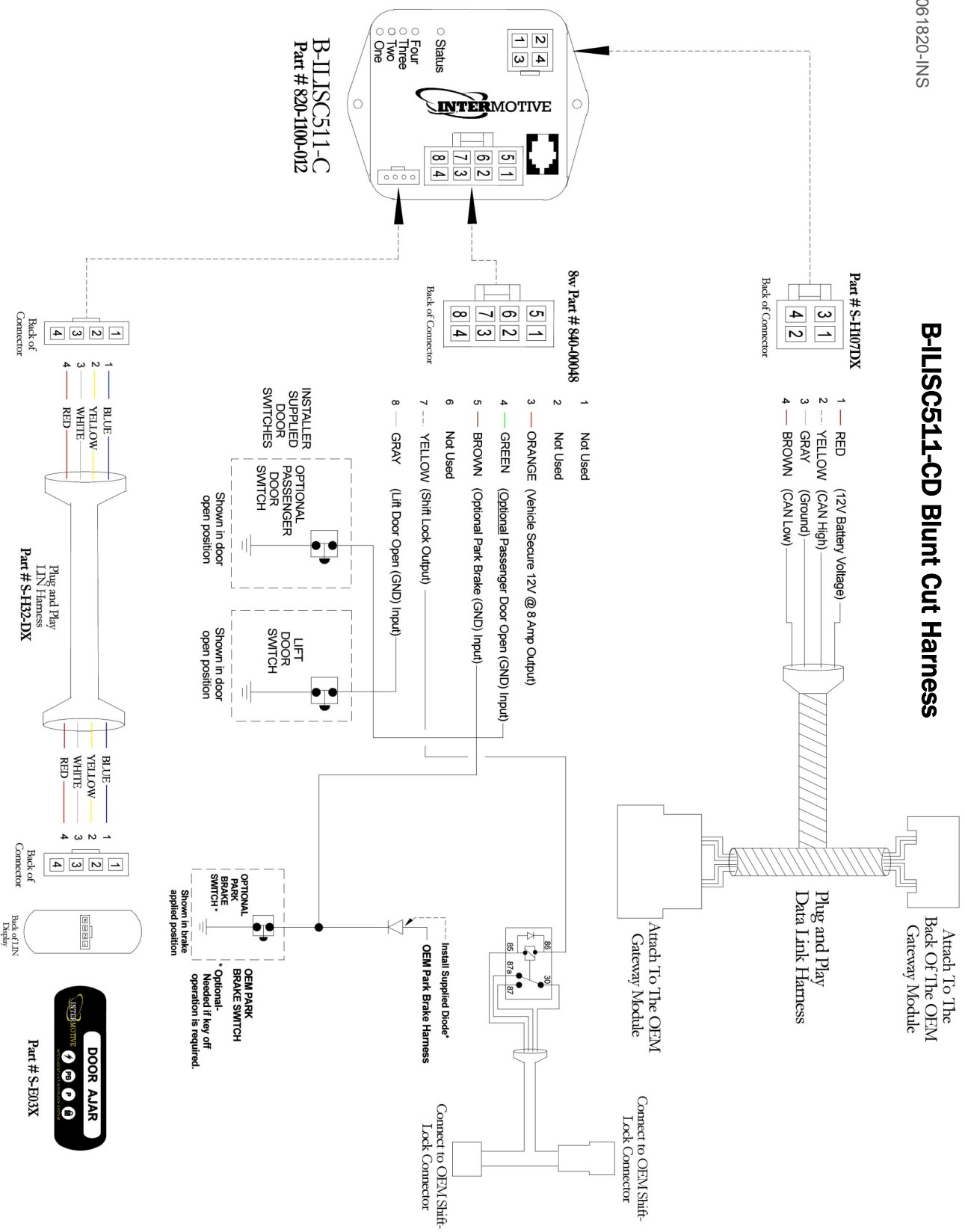
#### Key Off function: (if discrete Park Brake and Lift Door input supplied)

- Vehicle must be in Park before turning key off.
- With the vehicle in Park, the (P) LED and Shift Lock LED will be ON.
- With the Park Brake applied and the Lift Door open, all LEDs will be ON, and the lift will be operational.

**Sleep Mode:** When the lift door is closed and ignition power (Key) is turned OFF, the vehicle CAN communication traffic will stop after a delay. Around five minutes after this, the system will enter a low current "sleep" mode of operation with all LEDs OFF. To wake from "sleep" mode, turn the ignition on (key on) or open the lift door.

All display LEDs will turn ON for approximately 2 seconds as a "prove out". The backlit LEDs remain ON as long as the module is awake.

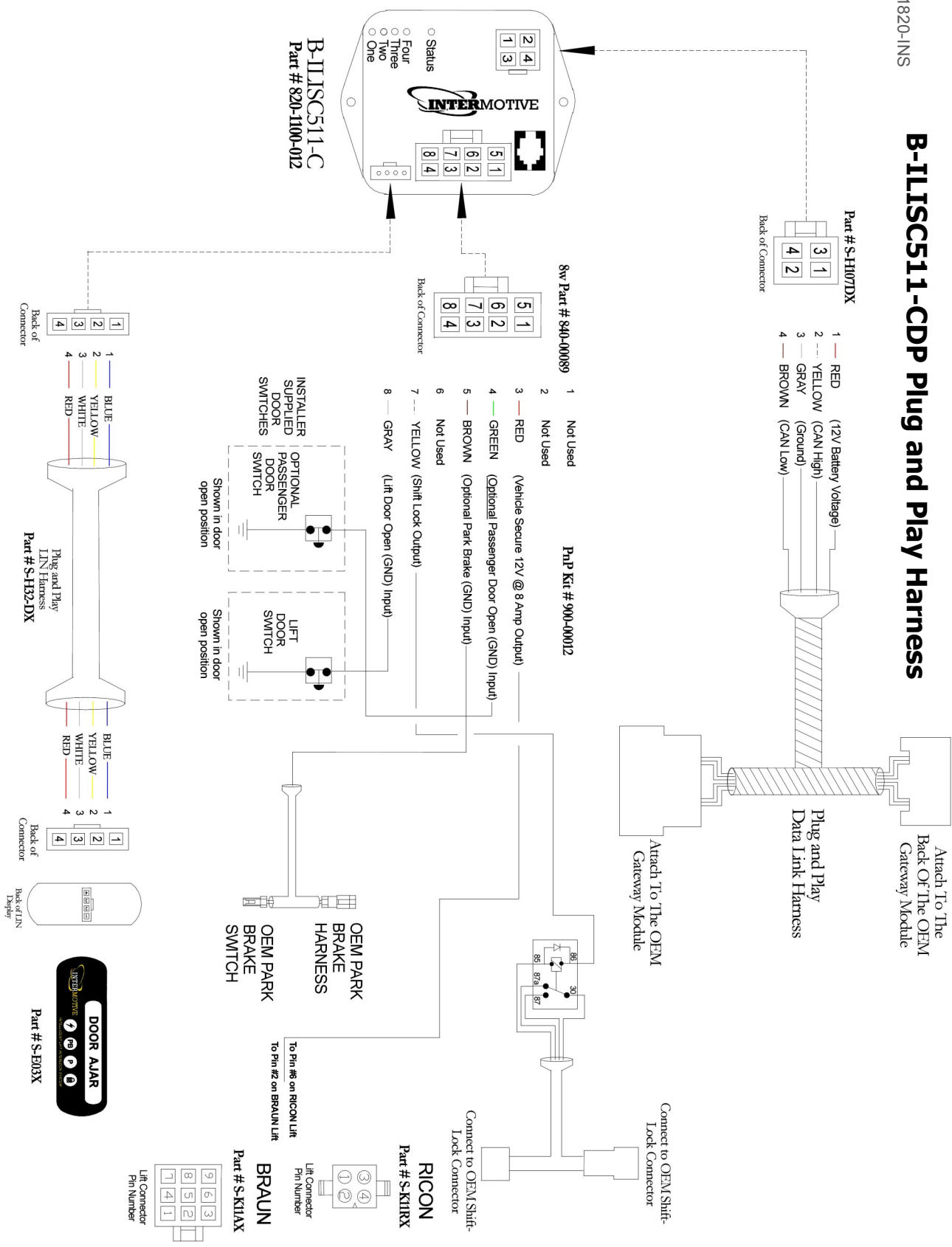
# B-LISC511-CD Blunt Cut Harness



If the B-LISC511-C fails any step in the Post Installation Check List, review the installation instructions and check all connections. If necessary, call InterMotive Technical Support at (530) 823-1048.



# B-ILISC511-CDP Plug and Play Harness



Submit product registration at [www.intermotive.net](http://www.intermotive.net)

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