Shift Interlock (Manual Lift Door)

C-ILISC704-BD 2022-2023 RAM ProMaster

C-ILISC704-BDPB 2022-2023 RAM ProMaster

Introduction

The C-ILISC704 is a wheel chair lift interlock system which is capable of working with the ignition key on or off (can be configured to only operate with key off). Key off operation requires the use of discrete wires for sensing the lift door status. Lift operation is enabled when Park and Park Brake are set and the lift door is open. The shifter is locked when either Park Brake is set, or the lift door is open. Optional lift harnesses are available for most popular wheel chair lifts.

The C-ILISC704 comes with an LED panel which can be mounted to the dash, and informs the user of the system status.

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, or 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 when installing upfitter circuits.

Installation Instructions

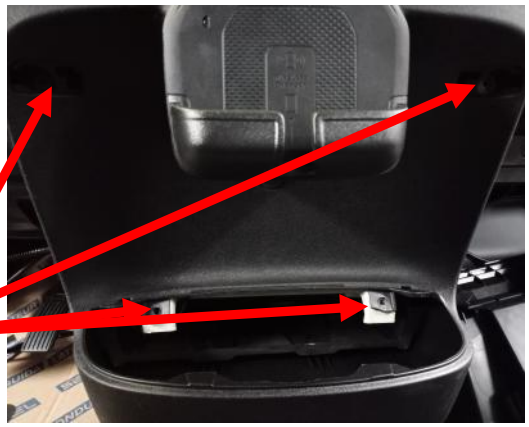
Disconnect vehicle battery before proceeding with installation.

C-ILISC704 Module

Locate a suitable location to mount the module on the passenger side of the vehicle. Attempt to position the module for the ability to view the Diagnostic LEDs during testing. Place the module in an area away from any high external heat sources (engine heat, heater ducts, etc.). Do not mount the module until all wire harnesses are routed and secured. The last step of the installation is to mount the module.

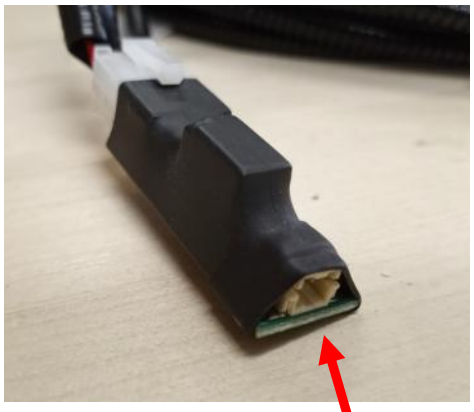
Shift Lock Solenoid T-Harness

1. Remove the four screws from the lower center panel below the shifter. It will be necessary to remove the cup holder to access the lower 2 screws.
2. Remove the lower center panel by firmly grasping the panel and pulling toward the rear of the vehicle.
3. The C-ILISC704 kits provide a "T" Shift Lock harness which must be installed between the OEM harness and the shifter PCB. Locate the OEM 2-pin shift lock solenoid connector (located on the underside of the shifter). <u>There is a layer of foam that will need to be repositioned to locate the connector and it may be necessary to cut an OEM zip tie.</u> Pinch the connector tab, unplug it, and insert it into the C-ILISC704 mating connector. Plug the C-ILISC704 male connector into the OEM shift lock solenoid connector on the PCB.



4. Route the shift lock harness 12-pin connector over to where the module will be installed and plug the white 12-pin connector into the module.

View from floor looking up at underside of transmission shifter PCB. Arrow points to the 2 pin Shift Lock Harness.

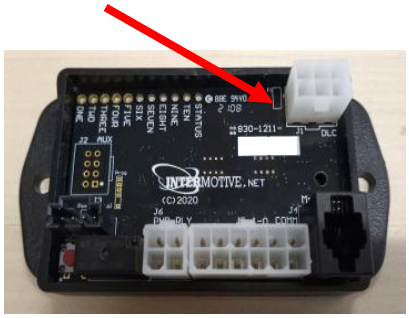


Plug OEM 2-Pin connector here

Data Link Harness — 6 pin connector

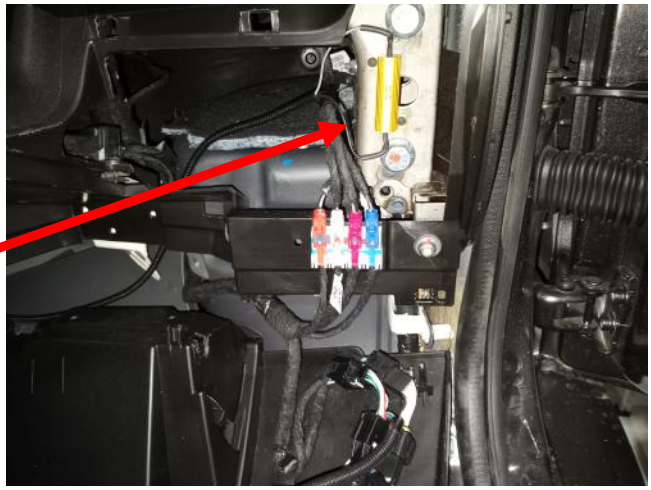
The Promaster has an OEM Gateway module located behind the glovebox. Follow the steps below to access it:

1. Open the glovebox door.
2. Locate the 2 release tabs on the inside of the glovebox (one on the left and one on the right) and drop the door into the full down position.
3. Locate the two fasteners securing the glovebox assembly to the vehicle and remove them.
4. Locate the 4 fasteners on the outside of the glovebox assembly and remove them.
5. Remove the glove box assembly.
6. The Gateway module is located behind the glove box assembly as shown in the picture.
7. Remove the 12-pin and 8-pin connectors from the Gateway module and plug in the 12-pin and 8-pin connectors from the Intermotive C-ILISC704 Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-ILISC704 Data Link harness.
8. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-ILISC704.



Power Resistor Installation

1. Locate the piece of exposed metal above the Gateway module from the instructions above.
2. Install the power resistor to the exposed metal using the included screws. It will be necessary to pre-drill the holes first using a #39 drill bit.



LED Display Panel Mounting

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 panel will be located, being careful not to damage anything behind the dashboard.
2. Attach the Black 4-pin connector of the LED display panel harness to the C-ILISC704 module.
3. Route the other end of the harness behind the dash and out through the 5/8" hole. Secure harness leaving enough takeout to prevent strain on the connectors.
4. Plug the harness into the back of the LED Display Panel.
5. Ensure the panel is level and secure using supplied screws.

Key on only applications

For applications which only use the lift when the key is on, the C-ILISC704 will read lift door status via the OBDII CAN network. Connecting a discrete lift door sense wire is not required; however, the module will then need to be assigned a lift door, if different from the default. The module comes with the passenger side slider door set as the default lift door. If this is the door being used for the lift, nothing further needs to be done. If the lift is installed using the rear doors, the following procedure must be done to tell the module to use the rear door.

Selecting the Lift door

1. To change to the rear door, make sure the Rear and Slider doors are closed.
2. Sitting at the wheel, make sure the vehicle is in Park with the Park Brake set.
3. The vehicle ignition switch must be in the ON position.
4. Enter the module's Diagnostic Mode by pressing the Red test button. The Status LED will begin flashing. Press the Service Brake 6 times within 5 seconds. The Status LED will begin to flash rapidly. Open the Rear door within 1 minute to select it as the Lift door. The module will exit Diagnostic Mode after it senses the door opened.
5. To revert back to the side slider door as the lift door, perform the steps above starting at step 2 and open the slider during step 4.

Key off applications

For applications which require the use of the lift when the ignition switch is off, the door status is not available over the OBDII CAN network, a discrete wire must be connected to a lift door switch. See next page.

If using a non-OEM door, skip to page 6 and connect the wire to the door switch that you have installed.

Connecting a Lift Door Input (Key Off Operation)

If "Key OFF" operation is desired, a discrete Lift Door input must be made to the module. This is accomplished by connecting into the existing vehicle switch harnesses. Securely connect the Gray wire of the 8-pin harness to the Yellow OEM wire. If using a Posi-Tap, follow the below instructions.

The **slide door** wire (Black/Violet) is located in the wire bundle above the slide door (see picture). Unscrew the Grey cap on the Posi-Tap connector and install it on the Black/ Violet wire, then screw the rest of the connector onto the cap snugging it down but not overly tight.

Unscrew the other end of the Posi-Tap connector, strip 1/4" insulation off the Grey wire coming from pin-10 on the 12-pin connector, and insert it through the loose piece so the wire end is even with the piece edge. Hold the wire so it doesn't push back out of the Posi-tap, and screw it back into the main Posi-Tap body. Holding the main Posi-Tap body, gently pull on the just-installed wire to make sure it is solidly connected. Secure the connection using tape.

The **rear door** wire (White/Blue) is located in the wire bundle next to the passenger side rear door (see picture). Unscrew the Grey cap on the included Posi-Tap connector and install it on the White/Blue wire, then screw the rest of the connector onto the cap snugging it down but not overly tight.

Unscrew the other end of the Posi-Tap connector, strip 1/4" insulation off the Grey wire coming from pin-10 on the 12-pin connector, and insert it through the loose piece so the wire end is even with the piece edge. Hold the wire so it doesn't push back out of the Posi-tap, and screw it back into the main Posi-Tap body. Holding the main Posi-Tap body, gently pull on the just-installed wire to make sure it is solidly connected. Secure the connection using tape.

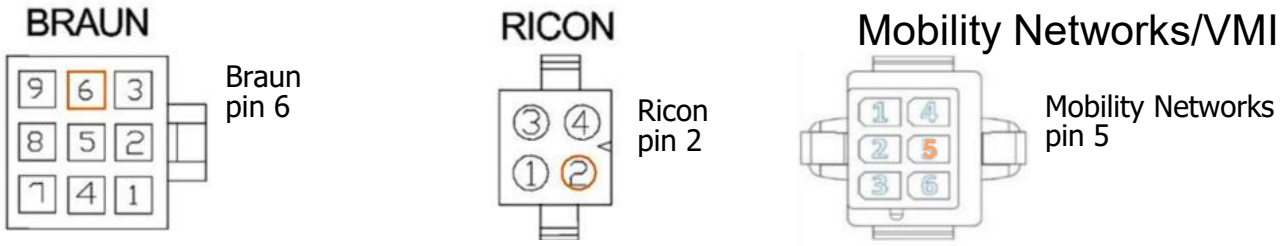
Control Inputs/Outputs

The C-ILISC704 can be ordered with optional full length harnesses for Braun and Ricon wheel chair lifts, which can be cut to length. The mating specific lift connectors are included in the kits. See schematics for pin numbering information. There is also a short universal blunt cut harness option. All three of the lift harnesses provide control connections to the vehicle/lift as follows:

4-Pin Connector—J6:

Vehicle Secure - Orange (output) - Pin 2 of J6 - This output provides 12V @ 8 Amp when it is safe to operate the lift. The lift should not operate unless this output is asserted (12V). Connect this wire to a diode clamped relay (Digikey # 2449-A2F1CSQ12VDC1.6D-ND). See schematics for wiring Ricon & Braun lifts.

Vehicle Secure Power Input - Yellow (input) - Pin 4 of J6 - This ***Lift Enable/Vehicle Secure*** input is the source for the 12V output on Pin 2. Connect this input to a 12V source (10 amp fuse).



Drawings are looking into the backside of the connectors where the wires exit the connector.

Note: Connecting the Lift Enable/Vehicle Secure Orange wire to the wrong lift pin can damage the interlock. Refer to lift instruction manual to ensure proper lift connection.

Consult the lift's instruction manual for rated current draw. Using a meter to measure current, try connecting a fused (8A) source 12V signal to the correct pin to ensure it enables the lift and does not draw too much current. If the lift draws more then 8 amps on its enable signal, a control relay will need to be installed.

Control Inputs/Outputs

12 Pin Connector—J5:

Q Enable - Purple (optional output) - Pin-9 of J5 - This output provides 12V @ 0.5A when the key is in run, vehicle is in park, and the park brake is set. This was added so that those with a Q'Straint One (a wheelchair securement system) can send a signal when it is safe to operate.

OEM Lift Door - Gray (optional input) - Pin-10 of J5 - Connect this to the Lift door switch if the system must operate with the key off. Leave disconnected and tape up or remove this wire if the lift will only be used when the key is in Run. This should cause the Door Ajar dash panel indicator to light continuously when the lift door is open. This will also lock the shifter if in Park. See page 5 for instructions on how to install.

NOTE: The Gray discrete door input will put the module in discrete door mode. Refer to page 4 door selection procedure to exit the mode.

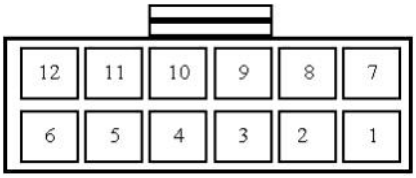
NOTE: The OEM Lift Door input signal is Active High Pulsed.

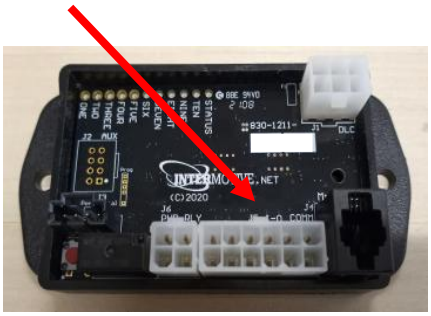
Non-OEM Lift Door - White (optional input) Pin-4 of J5 - If the system must operate with the key off and upfitter door switches are installed, connect this wire to the lift door switch.

NOTE: this input must receive a ground level value when the door is open (Low-True).

Aux Door - Dark Green (optional input) - Pin-11 of J5 - Only use to indicate a non-lift door(s) is ajar. This does not affect lift operation and does not lock the shifter. This pre-crimped Green wire is included in the Door Ajar dash panel bag. Insert the terminated end of this wire into Pin #11 of the 12-pin connector with the terminal tabs oriented towards the connector housing tab. You should feel it click into place. Improperly oriented terminals will back out and cause problems. Extend this wire as needed and connect to desired door switch(es) which provide ground when the door is open.

Connect the 4-Pin and 12-Pin connectors to the module and dress out harnesses appropriately.





Pin #1 - N/A
Pin #2 - N/A
Pin #3 - N/A
Pin #4 - WHITE (Non-OEM Lift Door Input (Optional)
Pin #5 - N/A
Pin #6 - N/A
Pin #7 - N/A
Pin #8 - YELLOW (Shift Lock Output)
Pin #9 - PURPLE (Q'en - Active High (Optional)
Pin #10 - GRAY (OEM Lift Door Input - Active High Pulsed (Optional)
Pin #11 - GREEN (Aux Door Input - Active Low (Optional)
Pin #12 - N/A

C-ILISC704 Module Mounting

Ensure all the harnesses are properly connected, routed, and are not hanging below the dash area. Mount the C-ILISC704 module as described on page one. Secure using screws or doubled sided tape.

Reconnect the vehicle battery

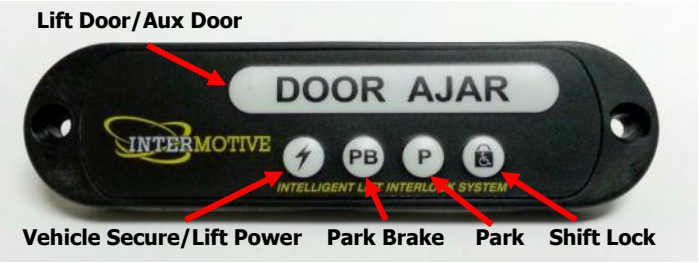
Post Installation / Check List

C-ILISC704

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. If operate in key off only mode, make sure to open the Lift door before power on the module to initialize discrete signal. After module initialization, proceed to the checklist.

Begin the checklist with the vehicle in the following state:

- Lift stowed
- All vehicle doors 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.



1. Turn ignition key to the Run position, verify the module wakes up and all LEDs illuminate for approximately 2 seconds. Verify that the Park, Park Brake, and Shift Lock LEDs remain illuminated. Verify that the Door Ajar and Vehicle Secure indicators are off.
2. Attempt to deploy the lift. The lift must not deploy with the lift door closed.
3. Open the lift door and all LEDs should be illuminated. Attempt to deploy the lift. Verify the lift deploys, then stow the lift, leaving the lift door open.
4. Release Park Brake. Verify that the Park Brake (PB) and Vehicle Secure LEDs go out. Attempt to deploy the lift. Verify the lift does not deploy with Park Brake released.
5. Close the lift door. Press Service Brake and attempt to shift vehicle out of Park. Verify transmission will not shift out of Park (due to Park Brake being set - prevents inadvertent driving with Park Brake on).
6. Release Park Brake, press Service Brake and verify transmission will shift out of Park.
7. Open lift door, press Service Brake and verify transmission shifter is locked.
8. If Aux Door input has been connected to a door switch, open door. Door Ajar indicator will flash.

If the system fails any of the above tests, do not release the vehicle into service. Perform the diagnostic tests on the next page.

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, Park Brake set, and turn the ignition switch to the Run position.
2. Press the Red test button to enter Diagnostic Mode. The Status LED will flash once, to indicate diagnostic page One. In page one, the table below designates the status of the system.

LED #	Description
Status	Page #
10	Lift Door Open
9	PB Applied
8	TR = Park
7	SL = On

"Key OFF Only" procedure (discrete Lift Door input must be installed)

The C-ILISC704-BD module comes from the factory with the ability to power the lift with the Key On or Off. To enable the module to work with Key Off only, perform the following procedure:

1. Sit at the wheel with the vehicle in Park, Park Brake not engaged, key ignition On, and the engine Off.
2. Enter special "Page 2" diagnostics by pressing the Red test button, waiting 5 seconds, and then pressing it once more. The Status LED should flash twice repeatedly.
3. Press the Service Brake 6 times within 5 seconds.
4. Verify no Vehicle Secure/Lift Door operation with the Key On.
5. To revert back, perform steps 1-3 again.

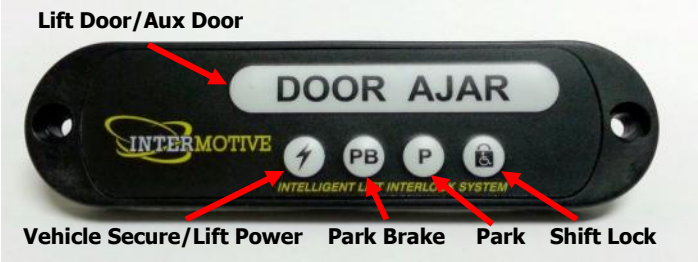
Leave in vehicle
C-ILISC704 Wheel Chair Lift Interlock Operating Instructions
2022-2023 Ram ProMaster

C-ILISC704 (Manual Lift Door)

The C-ILISC704 is a microprocessor driven system for controlling wheelchair lift operation. Depending on installation, the system may operate with the vehicle ignition On or Off. Lift operation will be enabled when transmission is in Park, Park Brake is set, and the lift door is open. It will lock the transmission shifter in Park when the wheelchair lift is in use or when Park Brake is set. This eliminates excessive Brake wear due to driving with the Park Brake on.

Key On function

- When the vehicle is in Park the (P) LED will be illuminated.
- When the Park Brake is applied, the (PB) LED will be illuminated.
- When the Lift door is open, the Door Ajar LED will be illuminated.
- When the Park Brake is applied or the Lift door is open, the Shift Lock LED will be illuminated, and the vehicle cannot be shifted out of Park.



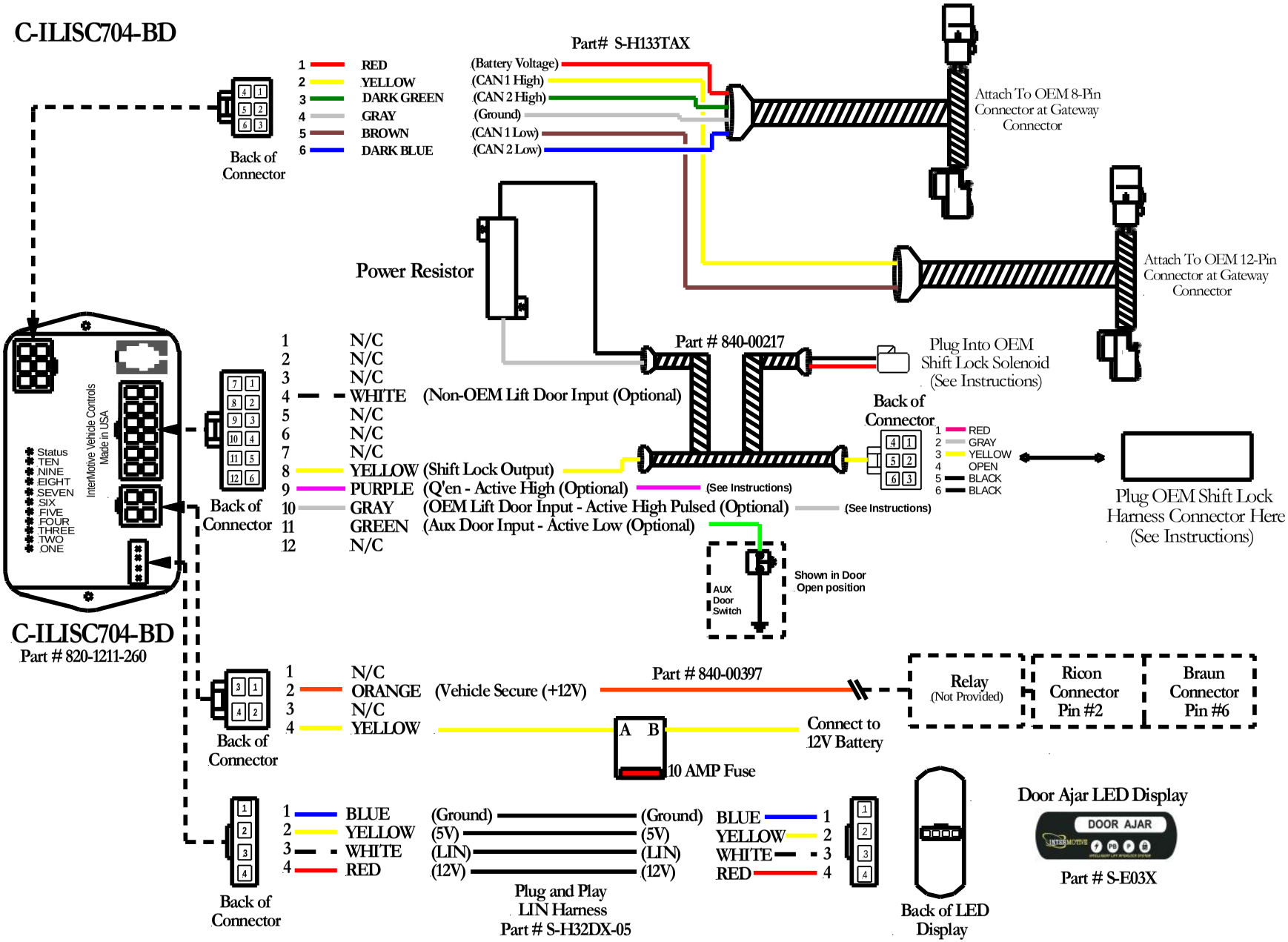
- With the vehicle in Park, Park Brake applied and Lift door open, the Vehicle Secure LED will be illuminated and the lift will be operational. At this point **all** LEDs will be illuminated.

Key off function (if installed with this capability - requires discrete lift door connection)

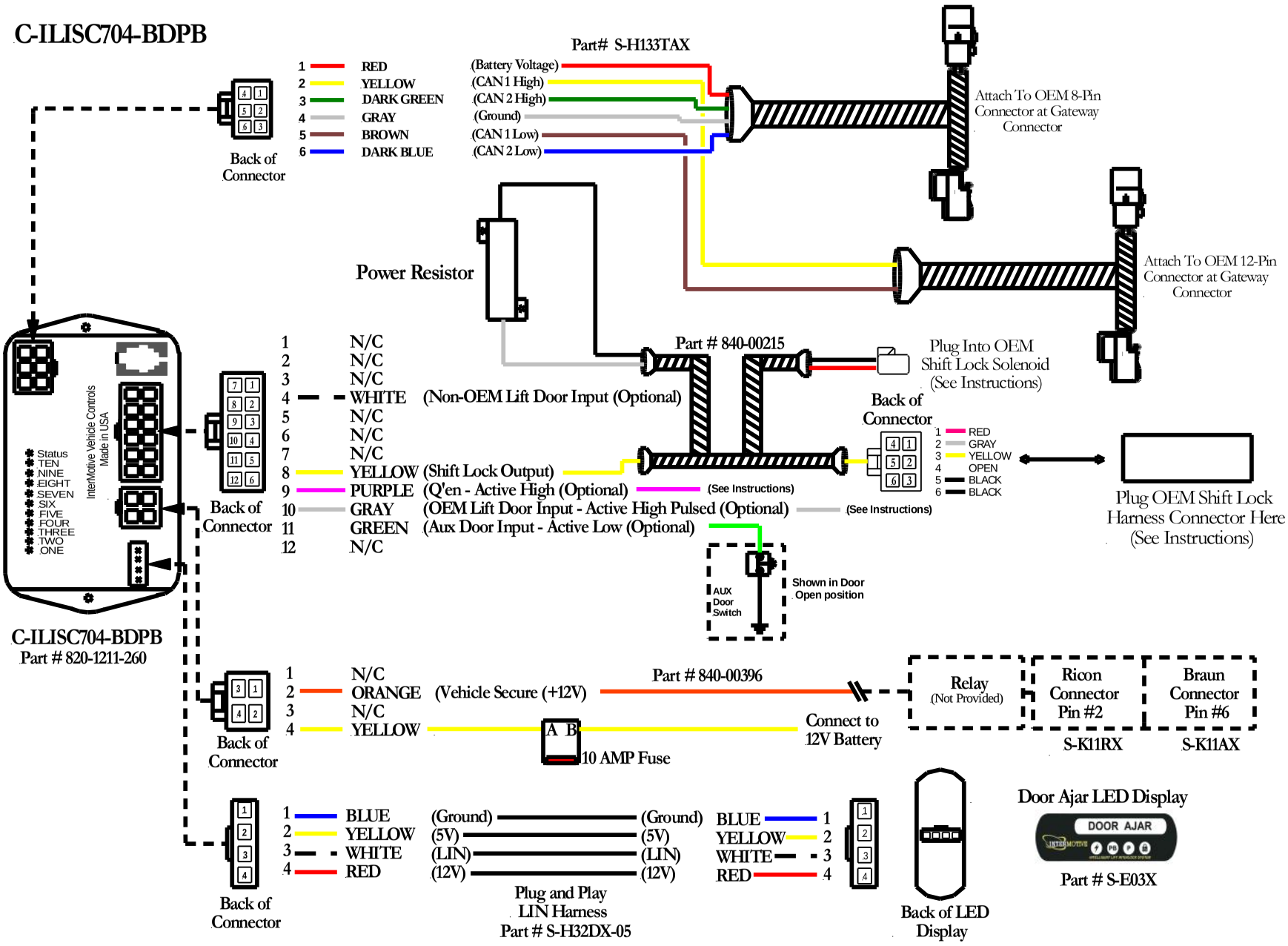
- Vehicle must be in Park before turning key off.
- With the vehicle in Park, and Park Brake set, the (P), (PB) and Shift Lock LEDs will be illuminated.
- With the Lift door open, all LEDs will be illuminated and the lift will be operational.

Aux Door Ajar indication: When the lift door is open, the Door Ajar LED will light solid. If the lift door is closed and any other door is open, the Door Ajar LED will flash.

Do not leave the lift door open when the vehicle is not in use. This will cause a draw on the vehicle's electrical system and may result in a dead battery.



If the C-ILISC704-BD fails any step in the Post Installation Test, review the installation instructions and check all connections. If necessary, call InterMotive Technical Support at (530) 823-1048.



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