Instructions

H-BOM505-DC Blackout Module
2024 Ford F-150
* Not for use on Canadian vehicles
Contact InterMotive for additional vehicle applications

System Overview

The H-BOM505 module has the ability to eliminate all exterior lighting (except DRL's if activated) to aid in covert operations. When activated, with the headlights turned off, The H-BOM505 will eliminate the reverse lights and the Service Brake lights. The driver will want to manually turn the instrument cluster backlighting down to its minimum level, which will also dim the center stack LCD.

Installation Instructions

Disconnect vehicle battery before proceeding with installation.

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.

H-BOM505 Module

Remove the lower dash panel below the steering column area and find a suitable location to mount the H-BOM505 module. Locate the module in an area away from any external heat sources (engine heat, heater ducts, etc.). Do not actually mount the module until all wire harnesses are routed and secure. The last step will be to mount the module.

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H-BOM505 Module Mounting

Ensure all harnesses are properly connected and routed, and are not hanging below the dash area. Mount the H-BOM505 module using screws or double sided tape. Reinstall the lower dash panel.

Gateway Plug and Play Harness (6-pin connector)

1. Remove the upper centerstack bezel using a plastic trim tool. There are 8 clips securing it to the dash.

2. Remove the RH instrument panel trim using a trim removal tool. The trim starts at the ignition switch and ends at the silver clip. The glove compartment can be opened to better access the back side of the trim.

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Gateway Plug and Play Harness (Continued)

3. Remove the left and right lower centerstack trim panels. They each have 5 clips securing it to the dash.

4. Remove the (4) 7 mm screws from the lower centerstack trim panel.

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Gateway Plug and Play Harness (Continued)

5. Grab the centerstack trim panel and pull towards the rear to release the clips holding it to the dash. There is no reason to disconnect any of the connectors.

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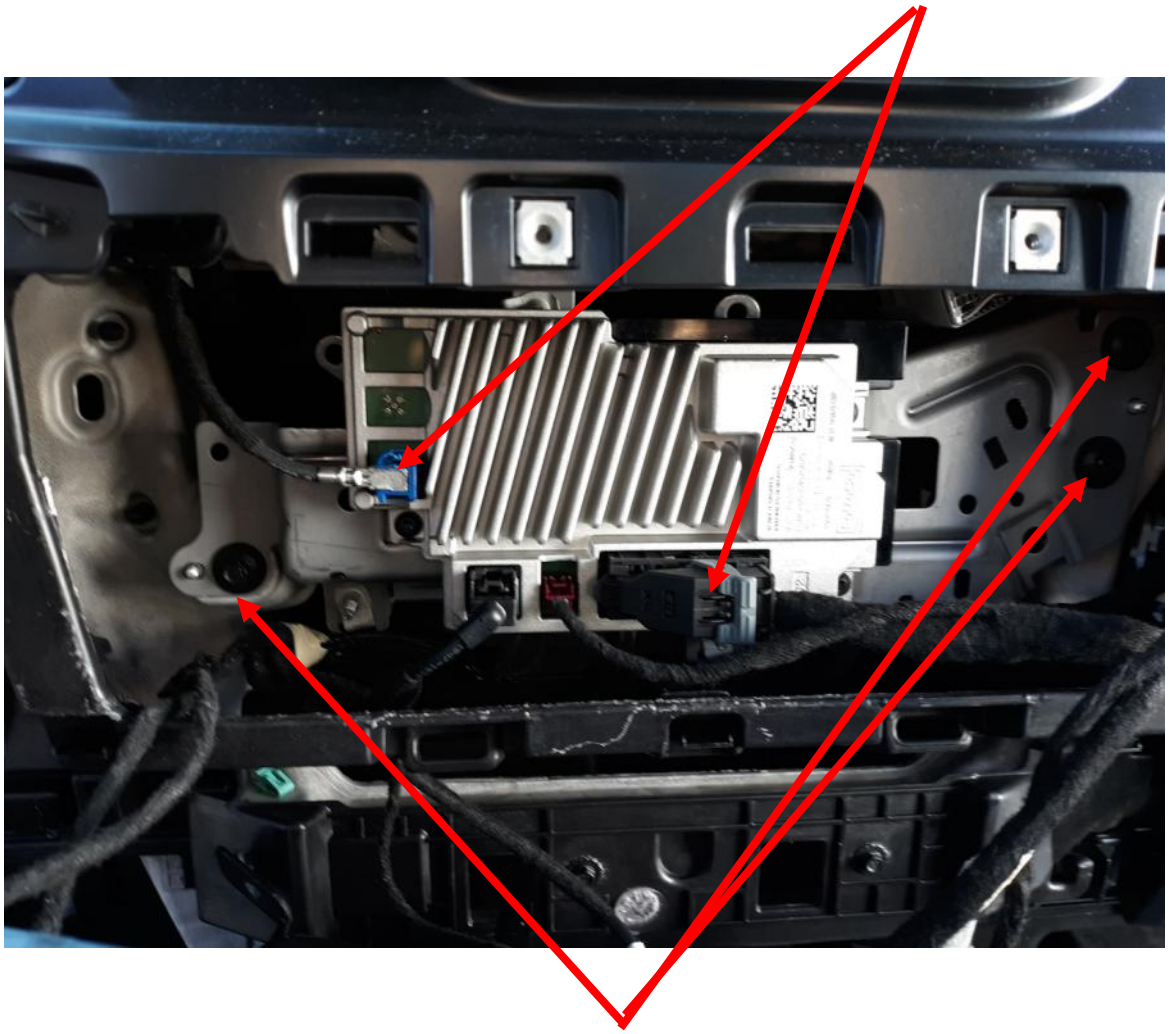
Gateway Plug and Play Harness (Continued)

6. Locate the module below the radio and remove the connectors from the module.



7. Remove the (3) 8 mm screws from the module located below the radio. Carefully move the bracket away from the dash and rotate it to access the Gateway module mounted on the backside of the bracket.

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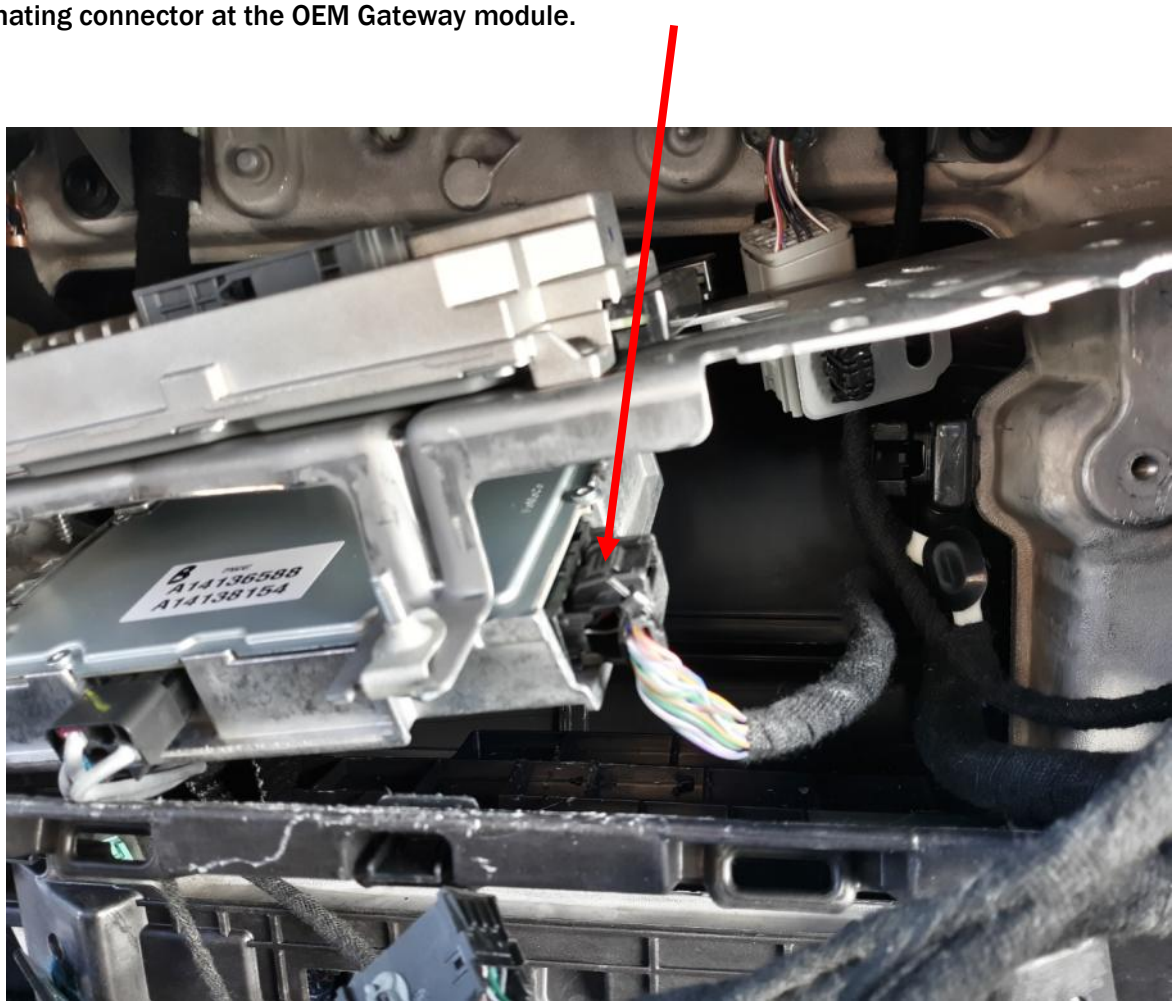
Gateway Plug and Play Harness (Continued)

8. Locate the 26-pin connector and disconnect it from the Gateway Module. Plug the 26-pin connector into the mating connector on the Intermotive harness. Plug the Male connector from the Intermotive harness into the mating connector at the OEM Gateway module.



9. Reverse the instructions to reassemble the vehicle.

10. Plug the free end of the Data Link harness into the mating 6-pin connector on the H-BOM505 module.

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16-Pin BOM Relay Connector

The 16 Pin Molex connector (S-H117FX) will be used to connect the harness side of the rear light circuits.

Pin #3 - Black, connect female bullet to male bullet from the included momentary push button.

Pin #9 - Orange, connect to harness side of Center High Mounted Brake Lamp Circuit (page 12).

Pin #11 - Green, connect to harness side of Reverse Lamp Circuit (page 11).

Pin #13 - Violet, connect to harness side of Right Rear Brake Lamp Circuit (page 12).

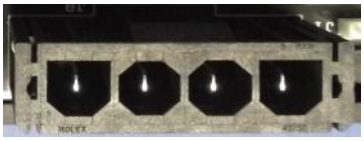
Pin #15 - Gray, connect to harness side of Left Rear Brake Lamp Circuit (page 13).

16 Pin Molex

4-Pin BOM Relay Connector Pin-Out Definition

Connector J8 contains the 4 BOM fused relay output pins. These 4 fused output pins are connected to 4 relay outputs. Each relay output is capable of 10A maximum.

Pin # 1 2 3 4



4 Pin Output

The 4 fused relay output pins on connector J8 are defined as follows:

- Pin #1 - Brown, connect to BCM side of Center High Mounted Brake Lamp Circuit (page 12).
- Pin #2 - Green/Brown, connect to BCM side of Reverse Lamp Circuit (page 11).
- Pin #3 - Violet/Orange, connect to BCM side of Right Rear Brake Lamp Circuit (page 12).
- Pin #4 - Gray/Brown, connect to BCM side of Left Rear Brake Lamp Circuit (page 13).

4-Pin BOM LCO Connector Pin-Out Definition

Connector J5 contains the H-BOM505 (LCO) pins. Each output is rated at 1A.

4 Pin Output

The 4 LCO pins on connector J5 are defined as follows:

- Pin #1 - LCO 1, Purple Wire, Cargo Lamp Circuit (page 11).
- Pin #2 - LCO 2, Pink Wire, Not Used.
- Pin #3 - LCO 3, Yellow Wire, Chime Mute Output (page 10).
- Pin #4 - LCO 4, Tan Wire, Not Used.

Connect the outputs to the vehicle equipment as indicated.

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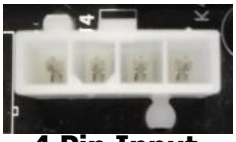
4-Pin BOM Input Connector Definition

Connector J4 (S-H119GX) contains the BOM's 4 discrete wire inputs. Two of these are active low (1 and 2), The active low inputs have their own internal pull up resistors so they can be left floating when not used or not active.

The 4 input pins on connector J4 are defined as follows:

- Pin #1 - Blackout Input, Active low, Green/White Wire, Momentary low to activate Blackout Mode, connect the female bullet to the male bullet from the included momentary push button (photo below).
- Pin #2 - Armed Input Active low, Violet/White Wire, Momentary low to activate DarkCar. Connect this wire to a momentary switch that will ground the input.
- Pin #3 - Blackout Input, Active High, Red/White Wire, Momentary +12V to activate Blackout Mode.

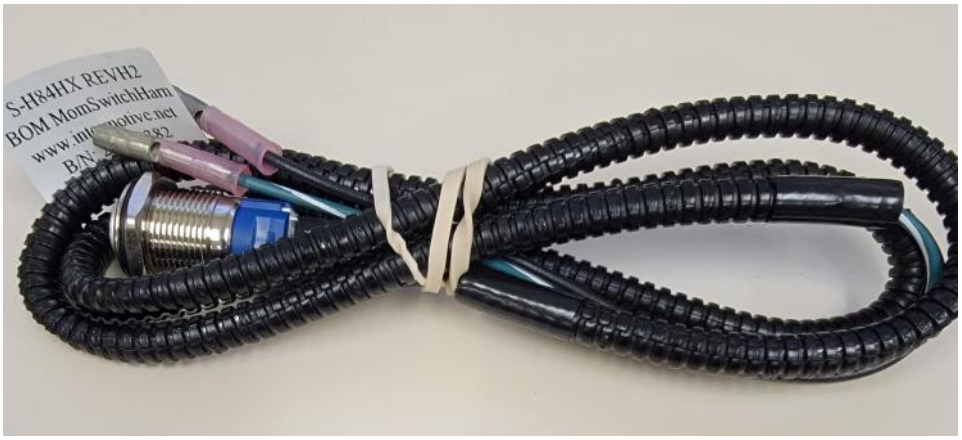


4 Pin Input

Momentary Push Button (S-H84HX)

A switch with LED is provided in the kit which is used for Black Out Input.

1. Drill a 16mm (0.630") hole in the desired mounting location.
2. Route the harness through the hole to mount the switch in the hole:
   A. Remove lock nut from switch
   B. Do not dis-assemble the switch to install
   C. Pull the harness through the hole
3. Slide the lock nut onto the harness and snug it down onto the back of the switch.
4. Connect the bullet connectors to the mating bullet connectors from the BOM505-DC module.



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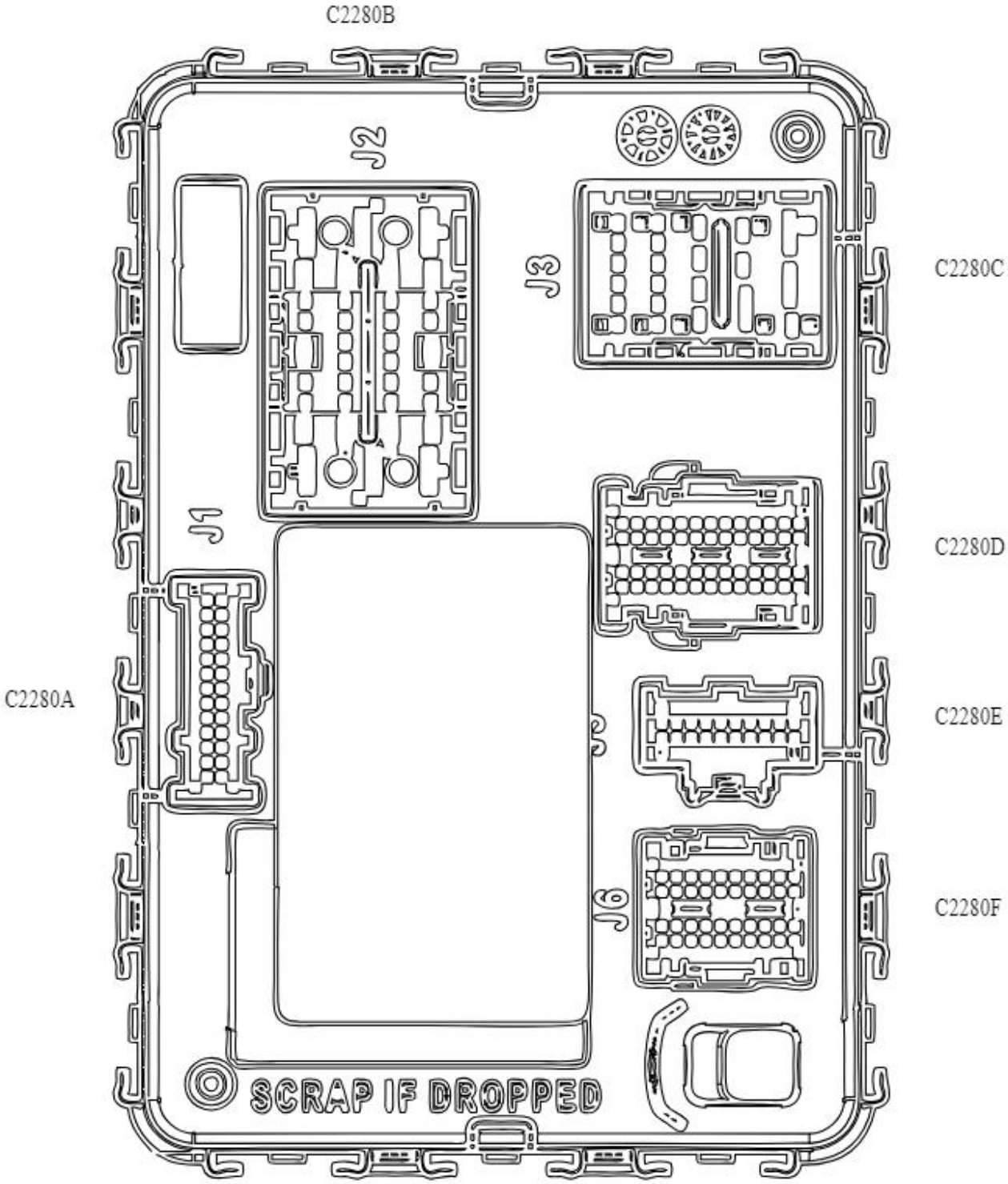
BODY CONTROL MODULE (BCM)



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Chime Mute Installation Instructions

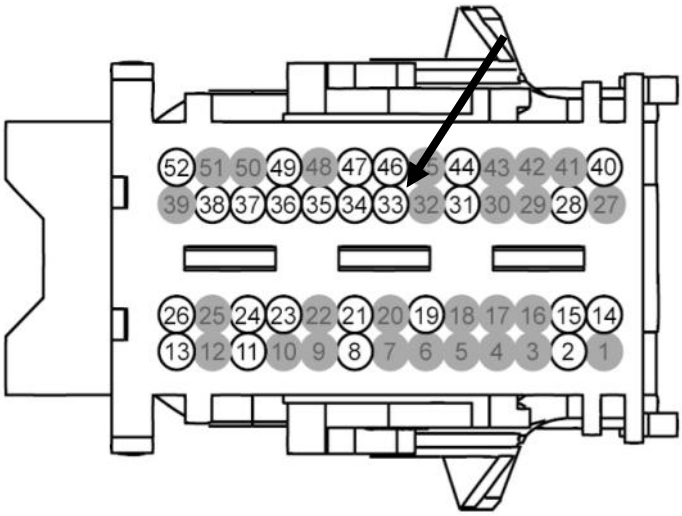
Yellow Wire Connection

The H-BOM505 kit provides a harness which consists of a white 4 pin connector with a Yellow wire.

Connect the yellow wire to the vehicle as follows:

Locate the BCM near the passenger compartment. Locate the **blue** connector **C2280E** plugged into the BCM and disconnect it. Note the Pin Numbers on the connector.

1. Locate Pin #33 Green Wire. It will be a 22 gauge wire.
2. Verify with a DVM that there is Ground signal on the Green wire when the Driver Door is closed.
3. Verify Ground signal goes away when Driver Door is open.
4. Strip a small amount of wire insulation from the Green wire (do not cut wire) and attach the Yellow wire using solder and tape.



Connector C2280E

Chimes Mute Post Installation Test

With vehicle in Park, Park Brake applied:

1. Turn Key to Run (do not start engine) and plug the 6 pin Data Link connector into the H-BOM505 module. This allows the H-BOM505 to read the vehicles VIN to verify which vehicle it is plugged into.
2. Verify that the LED's on the module are not scrolling (meaning it has successfully acquired and recognizes the VIN).
3. Verify the following chimes no longer sound:

- **Door Ajar Warning Chime** - Key in Run (engine on or off), Trans in Park, Door ajar
- **Key-in-Ignition Warning Chime** - Key in ignition (Off or ACC), door ajar
- **Headlamps On Warning Chime** - Key removed, Headlights on, door ajar
- **Safety Belt Warning Chime** - Key switched to Run, driver seatbelt unbuckled. Note: this last chime may sound occasionally due to the electrical architecture of the vehicle. This is normal behavior and cannot be avoided.

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BCM Connections

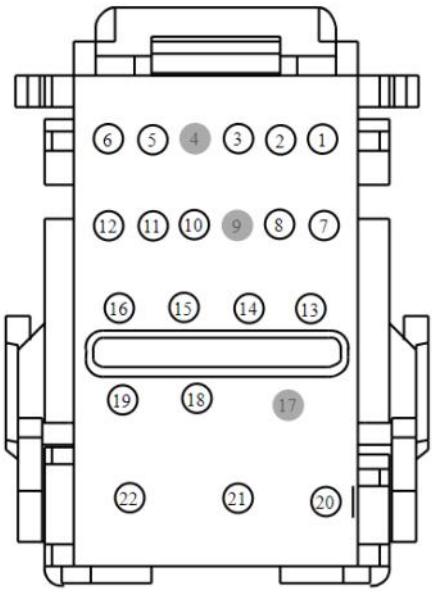
Locate the BCM near the passenger compartment. Locate the connector **C2280C** plugged into the BCM and disconnect it. Note the Pin Numbers on the connector. The supplied white 4-pin pigtails will be tapping into several of these wires.

The supplied **male** pigtail has Brown and Green/Brown wires. The **female** pigtail has Orange and Green wires.

Note: Performing one step at a time, attach the correct wire to the appropriate 4-pin pigtail wire. These connections must be made using solder and the supplied heat shrink tubing. Cut the tubing to 1" lengths for this purpose.

Reverse Lamp Circuit

1. Locate Pin #3 Green/Blue wire of Connector C2280C.
2. Verify with a DVM that there is 12V on the Green/Blue wire when the vehicle is in Reverse and 0V when the vehicle is in any gear other than Reverse.
3. Cut the Green/Blue wire, pin #3 about 3 inches from the connector.
4. Attach the BCM side of the Green/Blue wire to the **male** connector Green/Brown wire.
5. Attach the harness side of the Green/Blue wire to the **female** connector Green wire.
6. Plug connector back into the BCM.



Connector C2280C

Cargo Lamps Circuit

1. Locate Pin #12 White/Green wire of connector **C2280C**.
2. Verify with a DVM there is 12V when the cargo lamps are on and 0V when cargo lamps are off.
3. Cut the White/Green wire about 3 inches from the connector
4. Attach the BCM side of the White/Green wire to Violet/White wire on supplied harness.
5. Attach the connector side of the White/Green wire to Violet/Black wire on supplied harness.

Continue to next page.

Instructions

BCM Connections (cont.)

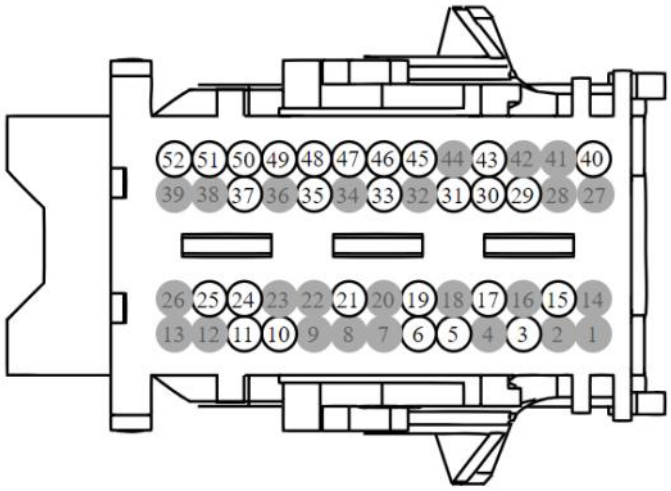
Locate **Black** connector **C2280D** plugged into the BCM and disconnect it. Note the Pin Numbers on the connector. The supplied white 4-pin pigtails will be tapping into several of these wires.

The supplied **male** pigtail has Gray/Brown and Violet/Orange wires. The **female** pigtail has Gray and Violet wires.

Note: Performing one step at a time, attach the correct wire to the appropriate 4-pin pigtail wire. These connections must be made using solder and the supplied heat shrink tubing. Cut the tubing to 1" lengths for this purpose.

Right Rear Brake Lamp Circuit

1. Locate Pin #37 Gray/Violet wire on connector C2280D.
2. Verify with a DVM that there is 12V on the Gray/Violet wire when brake lamps are on and 0V when the brake lamps are off.
3. Cut the Gray/Violet wire about 3 inches from the connector.
4. Attach the BCM side of the Gray/Violet wire to the **male** 4-pin connector Violet/Orange wire.
5. Attach the harness side of the Gray/Violet wire to the **female** 16-pin connector Violet wire.



Connector C2280D

Center High Mounted Brake Lamp Circuit

1. Locate Pin #52 Yellow/Gray wire of Connector **C2280D**. It will be a 22 gauge wire.
2. Verify with a DVM that there is 12V on the Yellow/Gray wire when the Service Brake is depressed and 0V when the Service Brake is ***not*** depressed.
3. Cut the Yellow/Gray wire about 3 inches from the connector.
4. Attach the BCM side of the Yellow/Gray wire to the **male** 4-pin connector Pin #1, Brown wire.
5. Attach the harness side of the Yellow/Gray wire to the **female** 16-pin connector pin #9, Orange wire.

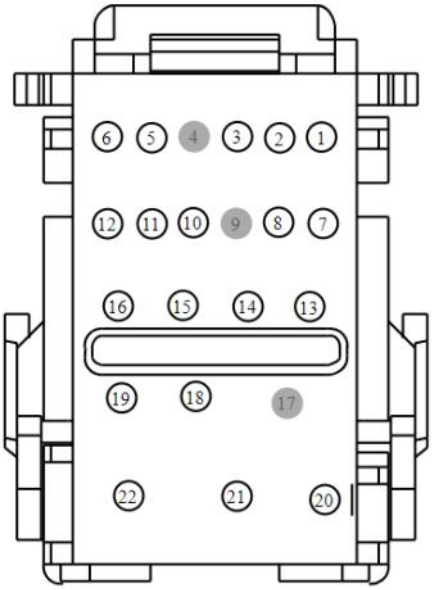
Instructions

BCM Connections (cont.)

Left Rear Brake Lamp Circuit

1. Locate Pin #6 White/Green wire on connector C2280C.
2. Verify with a DVM that there is 12V on the White/Green wire when the Service Brake is depressed and 0V when the Service Brake is ***not*** depressed.
3. Cut the White/Green wire about 3 inches from the connector.
4. Attach the BCM side of the White/Green wire to the **male** 4-pin connector Gray/Brown wire.
5. Attach the harness side of the White/Green wire to the **female** 16-pin connector Gray wire.

Plug in the 4-pin pigtails into the respective H-BOM505 harness connectors.



Connector C2280C

Post Installation / Check List

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

1. Turn ignition key on (to “Run”).
2. Apply the Parking Brake and Turn Off all lights (High Beams, Low Beams, and Parking Lights).
3. Apply the Black Out Input (Green/White wire or Red/White wire).
4. Hold Service Brake and verify the Brake lights are disabled.
5. Turn on Low Beams, this will disable Blackout.
6. Hold Service Brake and verify the Brake Lights are on.
7. Turn Off all lights (High Beams, Low Beams, and Parking Lights).
8. Apply the Black Out Input.
9. Place transmission in Reverse and verify the reverse lights are not on.
10. Turn on Low Beams.
11. Verify that the Reverse Lights are On.

DO NOT PUT VEHICLE IN SERVICE IF IT DOES NOT PASS ALL OF THE ABOVE TESTS
Contact InterMotive at 530-823-1048 for technical assistance

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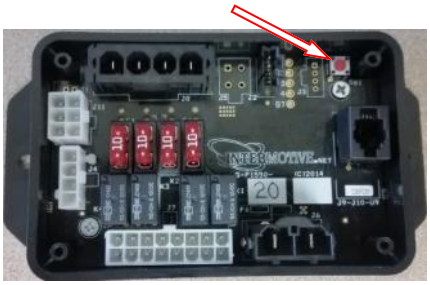
Toggle Dark Car Control (Default = Disabled)

1. Put the Key in the **RUN** position.
2. Place the transmission in **PARK**.
3. Press the test button on the module to enter diagnostics mode. Verify the Status LED illuminates.
4. Apply the Parking Brake.
5. Cycle High Beams On/Off 3 times within 5 seconds.
6. All LED's will flash once for confirmation.

Diagnostics

Diagnostic mode is entered by pressing the test button on the module. The module provides diagnostic LEDs which illuminate according to the following table. There are multiple pages of diagnostics and the page can be determined by the Status LED. Pressing the test button will cycle through the different pages.

STATUS LED	1-1	2-2	3-3
LED 1	Chimes Enabled	Black Out Active	High Beams
LED 2	Dark Car Control	Armed Enabled	Speed override
LED 3	Not Used	VSS < Max speed	Internal Use
LED 4	Not Used	Headlamp Switch OFF	Internal Use



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Blackout Operating Instructions

System Operation

The H-BOM505 module has the ability to eliminate all exterior lighting (except DRL's if activated) to aid in covert operations. When activated, with the headlights turned off, the H-BOM505 will eliminate the reverse lights and the Service Brake lights. The driver will want to manually turn the instrument cluster backlighting down to its minimum level, which will also dim the center stack LCD.

ARMED Input

The ARMED Input is used only if the vehicle has Dark Car disabled. These are not ideal conditions for the vehicle to be "Blacked Out" so the ARMED Input will enable Dark Car. If the Input is not "Armed", the module will not enter Blackout Mode.

Note: The input is not used if vehicle has Dark Car enabled.

Black Out Preconditions:

- Parking lights must be OFF.
- Headlights must be OFF.
- Vehicle speed must be less than exit speed (configurable).
- Vehicle Armed input enabled (if used).
- Momentarily apply Black Out input. (Pin 1 Green/White)

Once in Black Out mode, the stop lamps and reverse lamps are inactive.

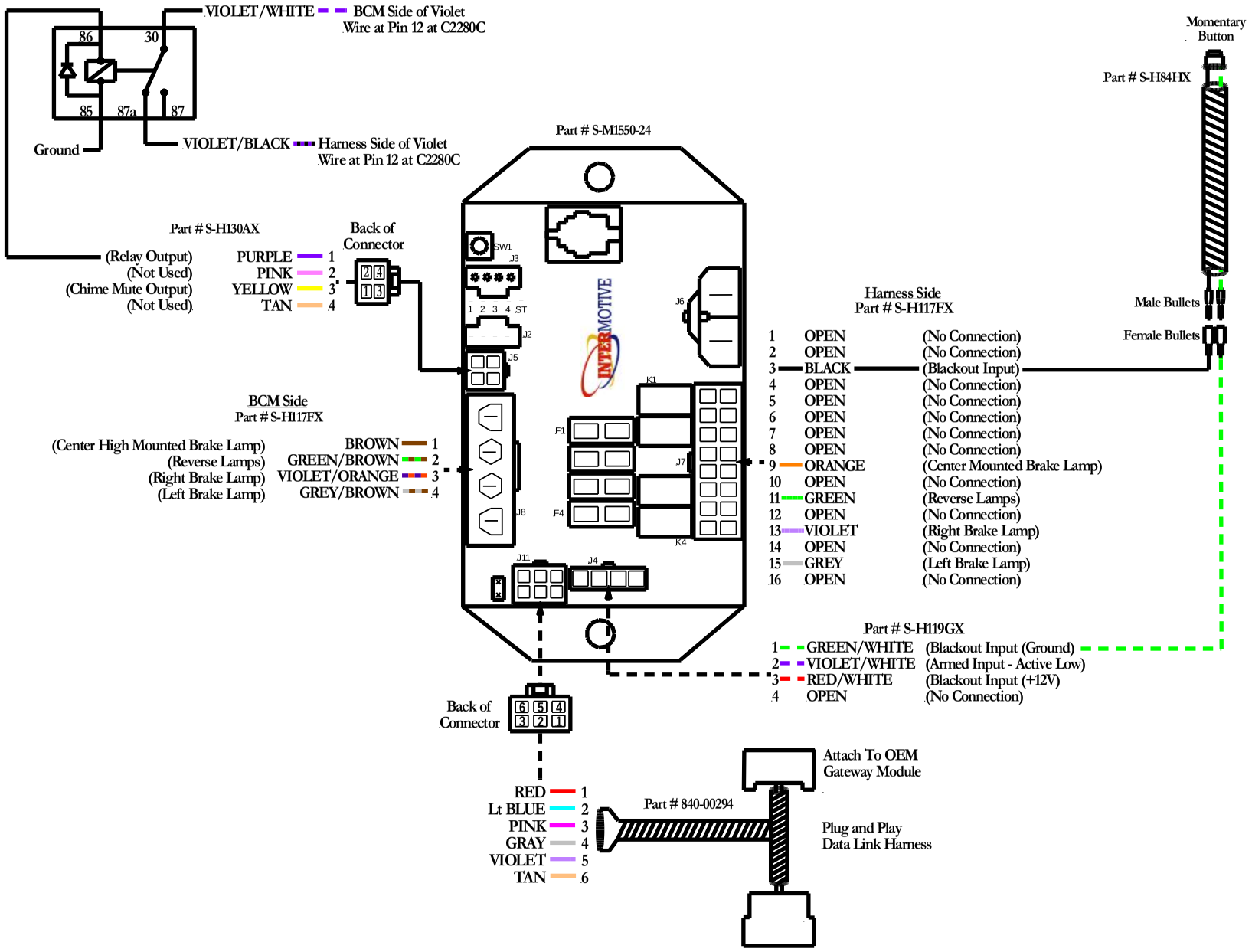
To disable Black Out, apply one of the following:

- Momentarily apply Black Out input.
- Turn ON parking lights.
- Turn ON Headlights.
- Vehicle speed goes over exit speed.

To bypass the "exit speed", hold the Black Out input while driving and the module will keep the tail lights inactive.

Speed Override

The configurable Exit Speed is used for safety purposes and the speed can be set between 5-20 MPH. To bypass the Exit Speed, enter Black Out Mode by momentarily applying the Black Out Input. Once entered, hold the Black Out input and the module will keep the lights disabled at any speed as long as the input is continuously pressed.



Submit product registration at www.intermotive.net

If the H-BOM505-DC 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.