

FLA COE
FLB COE
FLD Conventional
Business Class
FLC 112 Conventional

Century Class Conventional
Argosy COE
Cargo
Columbia

Coronado
> Business Class M2
Cascadia
> 108SD/114SD

**Freightliner
Service Bulletin**

Description of Revisions: *This bulletin replaces the version dated March 2012. The bulletin is revised to include the second generation Virtual Technician HU. The first generation ECU is no longer available.*

General Information

IMPORTANT: This bulletin applies to EPA 2010 and later Detroit™ DD13 engines.

The Virtual Technician (VT) HU generates diagnostic information to aid the Detroit Diesel Customer Support Center and the technician in diagnosing vehicle fault issues. The system creates sensor log files, captures fault codes, and sends alert messages and other advanced diagnostic information to the Detroit Diesel Customer Support Center. The VT utilizes GPS navigation, GSM (cellular telephone) communication, and a J1939 connection for databus monitoring.

Virtual Technician does not require any driver input to function. The VT is located behind the top right of the dash.

Parts

See [Table 1](#) for the kit used in this procedure.

Kit		
Kit Number	Description (IMACS)	Description
A06-92491-000	KIT-VIRTUAL, TECH,M2,FLAT	Virtual Technician Kit - M2 or 108SD/114SD with a flat dash.
A06-92491-001	KIT-VIRTUAL, TECH,M2,WING	Virtual Technician Kit - M2 or 108SD/114SD with a wing dash.

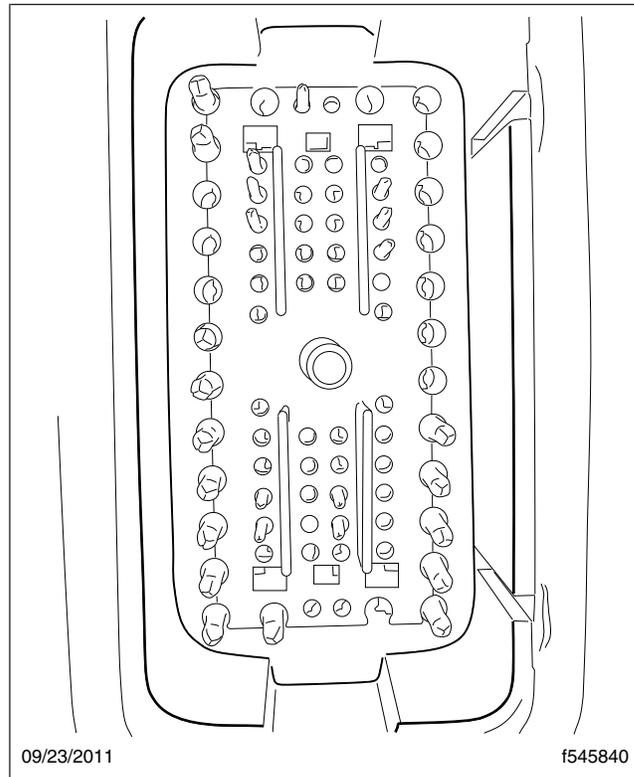
Table 1, Kit

Installation Instructions

1. Park the vehicle on a level surface, shut down the engine, and set the parking brake. Chock the rear tires.
2. **Install the power and ground wiring.**
 - 2.1 Disconnect the negative cables from the batteries.
 - 2.2 Remove the instrument cluster, trim piece from around front side of dash, top dash cover panel, passenger side dash cover that has two vents, and any other devices or panels necessary for harness routing. Refer to the *Business Class M2 Workshop Manual* for instructions.
 - 2.3 Remove the bulkhead connector on the frontwall.
 - 2.4 Access the ground and ignition splice packs, located on top center of dash.
 - 2.5 Remove the splice pack lock for ground and ignition, and insert the terminals.
 - 2.6 Insert the pink wire 81C from the A06-83264-000 harness to the ignition splice pack. Use any available cavity.
 - 2.7 Insert the black ground wire from the A06-83264-000 harness in the ground splice pack. Use any available cavity.
 - 2.8 Route the green power wire 433 on the A06-83264-000 harness behind the dash to the bulkhead connector.

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- 2.9 Remove the red connector lock and insert the green wire 433 from the A06-83264-000 harness in cavity 37 (or the corresponding cavity from the previous step) of the dash side bulkhead connector.
- 2.10 Insert green wire 433 of the A06-83265-000 harness in cavity 32 (or the corresponding cavity from previous step). See **Fig. 1**.

**Fig. 1, Bulkhead Connector**

- 2.11 Place 1/4-inch (7-mm) diameter conduit on the engine side circuit 433 wire and insert the other end of wire 433 (green) from the A06-83265-000 harness in PNDB cavity 3, which is powered by fuse C. The PNDB is located on the frontwall next to the bulkhead module. See **Fig. 2**.
- 2.12 Install both sides of the bulkhead connector on the frontwall.
3. **Connect the J1939 datalink.**
- NOTE: Refer to G06-83263 and D06-79308 for vehicles with a flat dash, and D06-79309 for vehicles with a wing dash.
- 3.1 Disconnect the two J1939 DL connectors labeled CPC, located on the top center of the dash.
- 3.2 Connect the two J1939 DL connectors from the A06-83264-000 harness to the two open J1939 connectors that were unplugged.
- NOTE: Refer to D06-83438 and D22-69205.
4. **Install the GPS antenna.**
- 4.1 Using a step drill bit, drill a 1/2-inch (15-mm) hole in the passenger side of the cowl.

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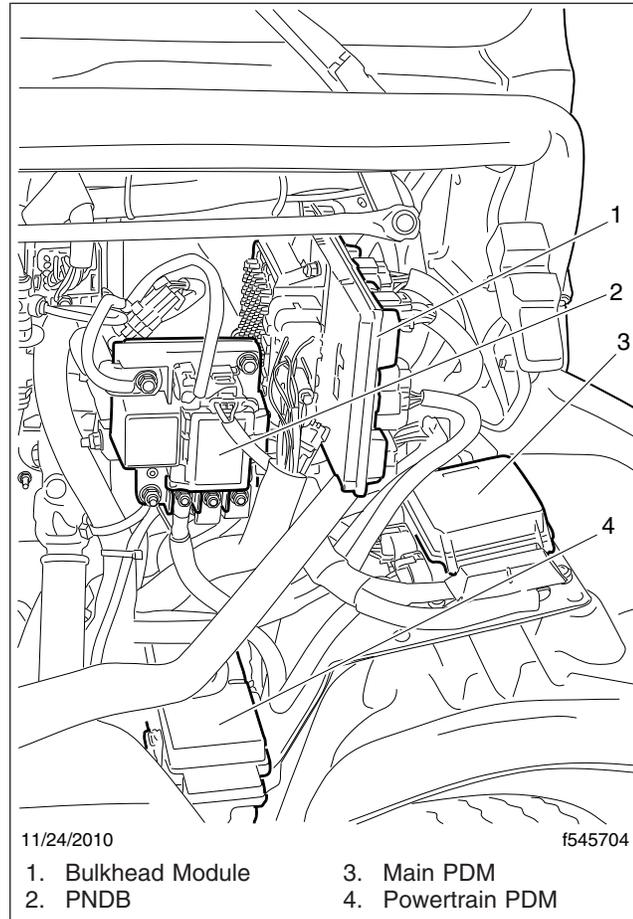


Fig. 2, Wire 33 Insertion Point

- 4.2 Remove the nut from the base of the GPS antenna.
- 4.3 Feed the connector and cable through the hole and secure it down with the nut. Apply a thin layer of 48-00094-501 sealant (or equivalent) to the foam pad on the base of the antenna.
- 4.4 Route the GPS antenna cable down through the right-hand side wall.
- 4.5 Orient the supplied grommet downward.
5. **Install the Virtual Technician HU.**

See [Fig. 3](#) for vehicles with a flat dash and [Fig. 4](#) for vehicles with a wing dash.

 - 5.1 Record the GPS ID, VIN, and ESN from the label on the back side of the new Virtual Technician HU.
 - 5.2 Install the VT mounting bracket. Use bracket 06-83325-000 on flat dash vehicles, and mounting bracket 06-83277-000 on wing dash vehicles.

NOTE: Vehicles built after July 11, 2011 already have these brackets installed.

 - 5.3 Use hook and loop tape to adhere the VT to the mounting bracket.

5.4 Connect the 4-pin and 10-pin connectors from the A06-83264-000 harness to the VT.

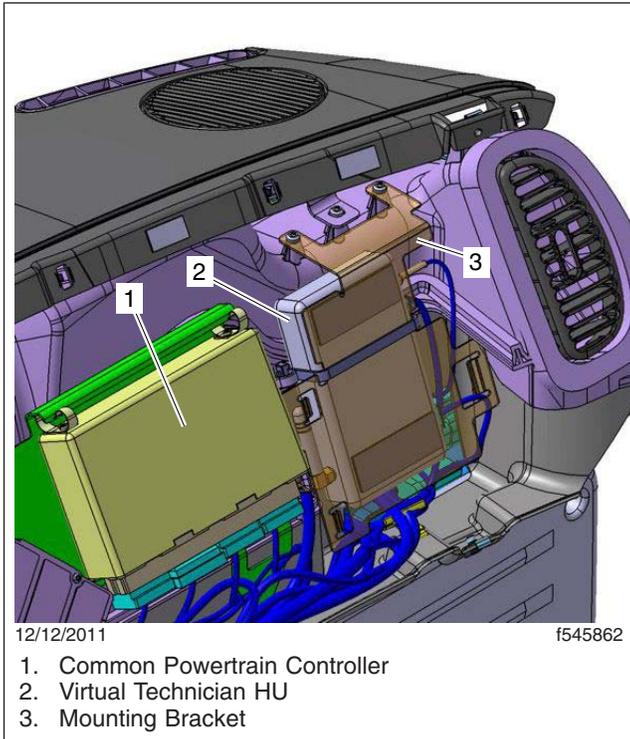


Fig. 3, Virtual Technician HU, Flat Dash Installation

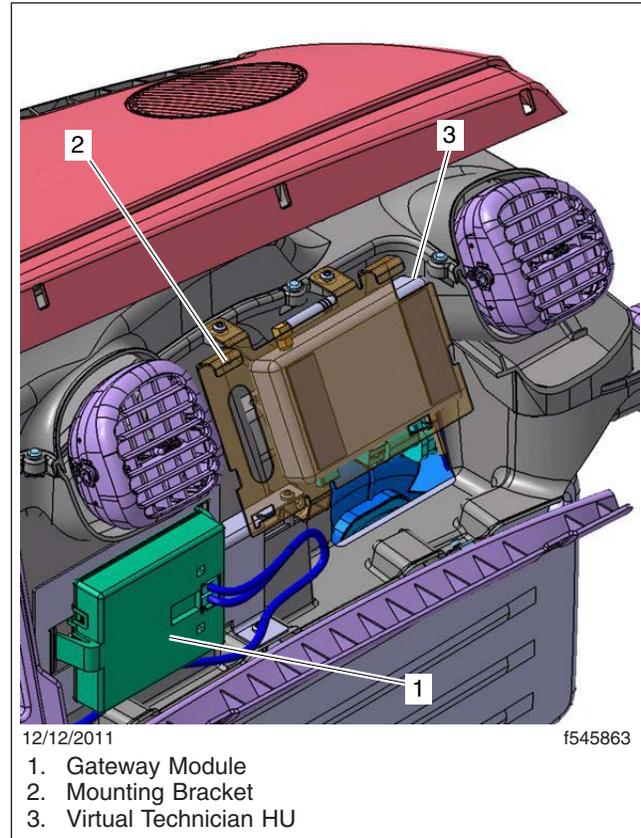


Fig. 4, Virtual Technician HU, Wing Dash Installation

5.5 Screw on the GPS antenna cable to the threaded GPS label connection.

6. Verify the installation of the Virtual Technician HU.

6.1 Connect the batteries.

6.2 If no LEDs light up with the ignition ON, diagnose supplied power and ground to the unit. See [Fig. 5](#) and [Table 2](#). There are seven LEDs visible on the VT module. Start the vehicle and drive to an open area, at least 40 feet (12 meters) away from any buildings. Park the vehicle and keep the ignition in the ON position. Apply the parking brake.

6.3 Call the *Detroit Diesel Customer Support Center*. Make sure to have the vehicle serial number and the Virtual Technician GPS ID number available so that the new VT can be registered.

6.4 Install the instrument cluster, the trim piece from around the front side of the dash, the top dash cover panel, the passenger-side dash cover, and any other devices or panels necessary for harness routing.

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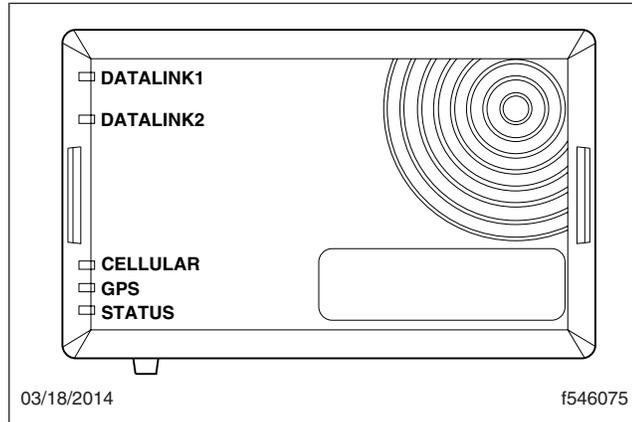


Fig. 5, Virtual Technician HU LEDs

Diagnostic LEDs			
Name	Color	Function	Action
DL1	Red	Red Blink (1Hz): J1708 connectivity (disabled). No J1708 activity detected (device is awake). Device is not wired for J1708 connectivity.	Red is the normal and expected state.
DL2	Red and Green	Red Blink (1Hz): J1939 connectivity. No J1939 activity detected (device is awake). Green Blink (1Hz): J1939 activity detected (device is awake) .	Green blink is expected, if LED is blinking red diagnose J1939 connectivity issue at the terminals.
GSM	Green	Solid: GPS connection successful. One Blink: Initializing. Two Blinks: Acquiring time zone information. Three Blinks: Attempting to make a GPS connection.	Solid is expected – if otherwise call the Customer Support Center for further instruction. NOTE: The VT must be in a 2G network service area.
GPS	Green	Solid: Satellites acquired. One Blink: Acquiring satellites.	Refer to J1939 Fault codes if a problem is suspected.

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Diagnostic LEDs			
Name	Color	Function	Action
Status	Green	Solid: Engine running. One Blink: Engine not running; no data to send. Two Blinks: Data is available to be sent. Four Blinks: GPS storage log is full.	Refer to J1939 Fault codes if a problem is suspected.
AUX	Red	Solid: GSM Modem Comm. Error, or panic line is active. Two Blinks: Not Used. Three Blinks: GSM modem is not starting up. Four Blinks: SIM Card read error. Five Blinks: GSM CTS (clear-to-send) line is active.	Refer to J1939 Fault codes if a problem is suspected.
Tamper	Red	Disabled	N/A

Table 2, Diagnostic LEDs

Warranty

This is an informational bulletin only. Warranty does not apply.