

Shore Power System

Shore Power (120V) System

The sleeper compartment of VN cabs can be equipped with 120V outlets. These outlets can be used to power optional accessories, such as a microwave oven. An external source must be connected to the cab power plug, located on the exterior of the cab on the driver's side. The Shore Power System provides this "shore" or "hook-up" power for the vehicle.

Some vehicles may be equipped with power inverters to change 12 volt DC battery power to 120 volt AC power. All factory installed power inverters are integrated with the Shore Power system.

For more information, see

- ["Shore Power \(120V\) System" page 2](#)
- ["120V Load Center, Replacement" page 5](#)
- ["120V Receptacle, Replacement" page 7](#)

Design and Function

Shore Power (120V) System

Note: See “Shore Power (120V) System” page 1 for more information. This reference is for electronic use only.



DANGER

When parked on wet ground, do not use an external power source to connect to the cab power plug. Water is a conductor of electricity, and personal injury or death can occur in wet conditions.

When an external power source is connected to the cab power plug, current is directed by an auxiliary power cable to a circuit breaker box, or load center. A connection to the load center is made through the floor of the driver's side luggage compartment. Current is supplied to each 120V outlet by additional auxiliary power cables.

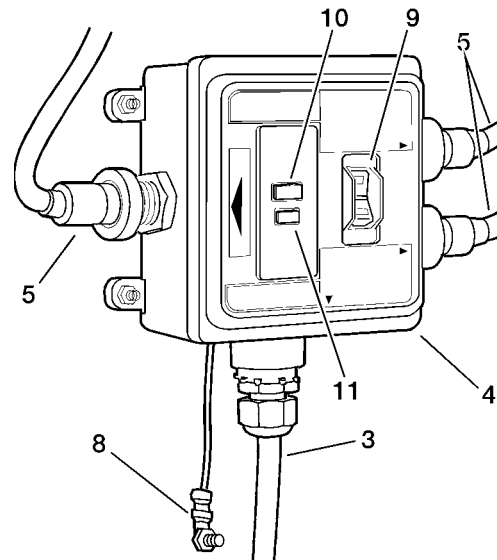
The load center on early model VN770 is supplied with an electrical distribution unit ground, which connects to a ground stud. The ground stud is attached to the bunk bulkhead assembly, or through the wiring harness to another ground location. The load center on VN610/660, and later models of VN770, are supplied with ground in the wiring harness.

Load Center

The load center is equipped with a 15 amp manual-reset type circuit breaker. If high current flow causes the circuit to become overloaded, the breaker's contacts are opened, and current will not flow to the 120V outlets.

The load center is also equipped with a ground fault circuit interrupter (GFCI). If the GFCI detects a failure in the ground circuit, it will open the power circuit. The GFCI must be reset by depressing the red button located on the load center. A black button is provided for testing the device. The early generation load center is shown. The later generation is equipped with a receptacle incorporated into the load center.

Important: A tripped circuit is usually an indication of a fault in the circuit. Every effort should be made to identify and correct any fault that exists.

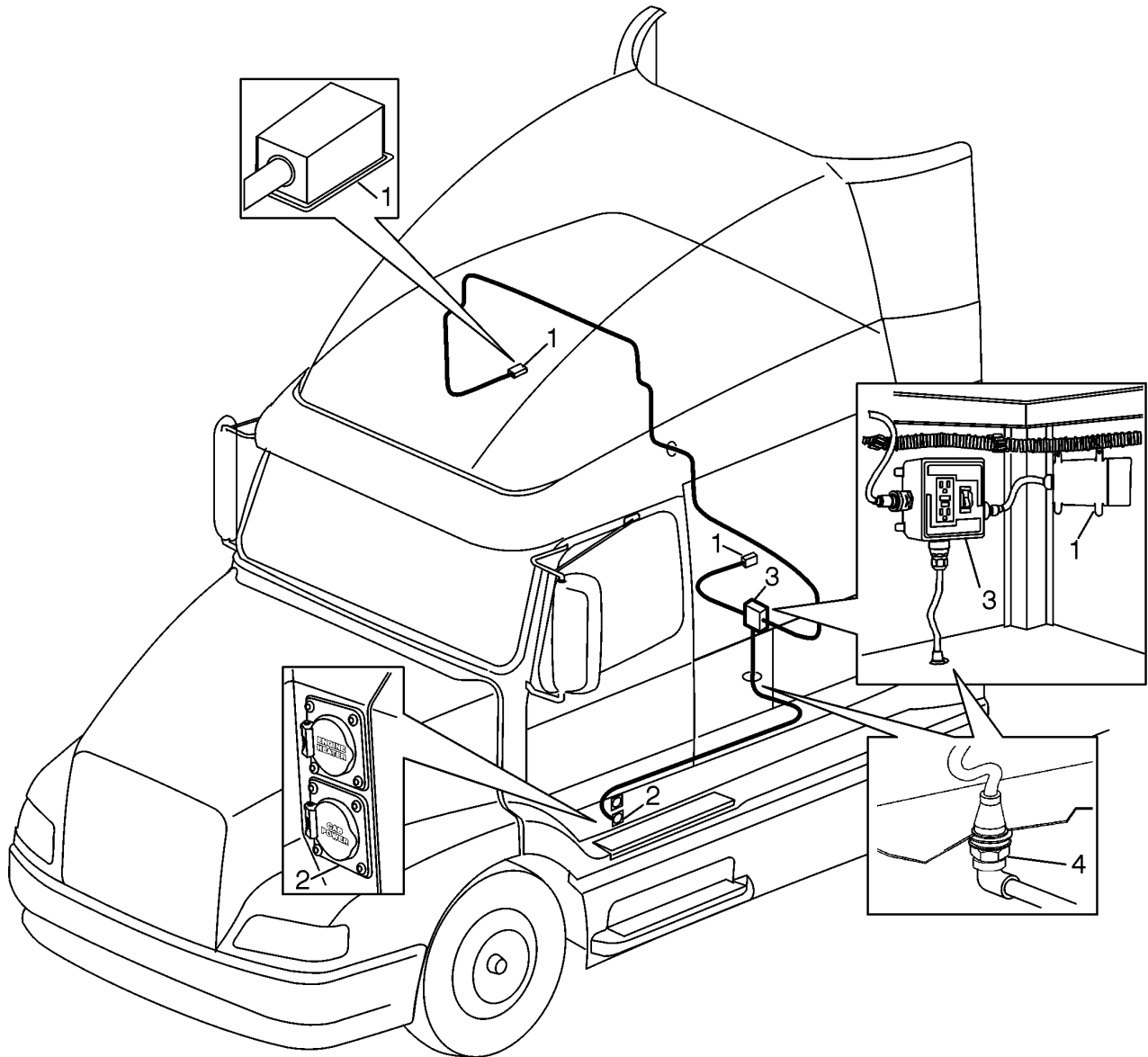


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Early model load center shown

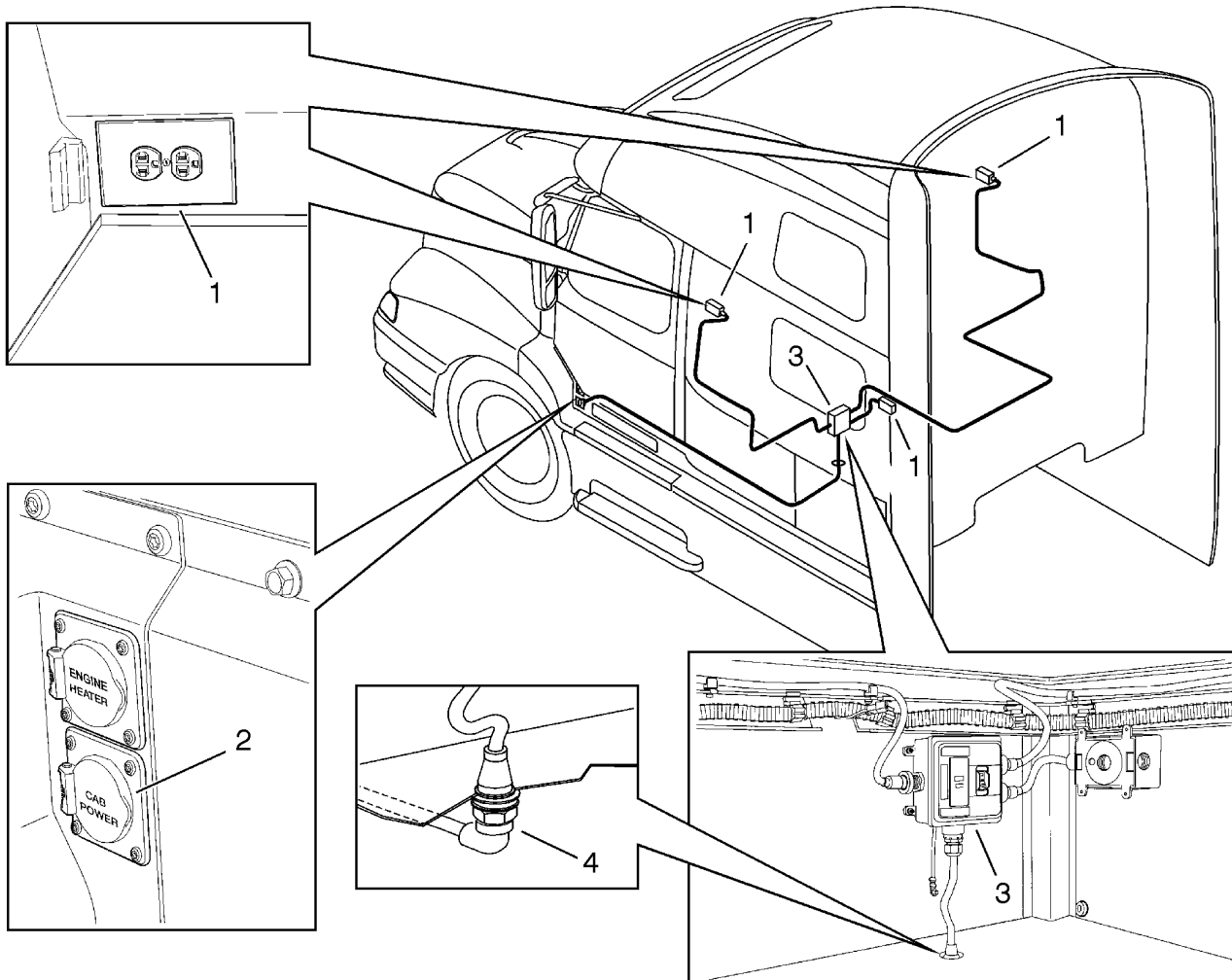
- 1 120V Power Outlet
- 2 External Power Plug
- 3 120V Power Supply Cable
- 4 Load Center
- 5 120V Power Cable
- 6 120V Supply Connection
- 7 12V Connection
- 8 Ground Wire
- 9 On/Off Switch
- 10 Test Button
- 11 Reset Button

120V Power, VN610/660



- 1 120V Power Outlet
- 2 External Power Plug
- 3 Load Center
- 4 120V Power Supply Connector

120V Power, VN770



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- 1 120V Power Outlet
- 2 External Power Plug
- 3 Load Center
- 4 120V Power Supply Connector

Service Procedures

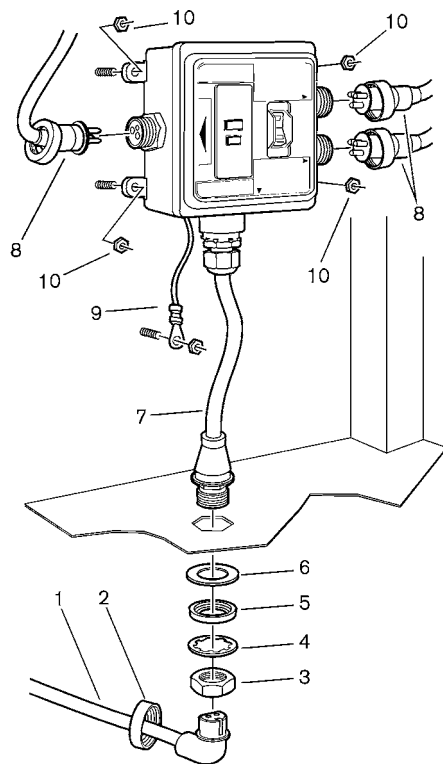
3723-03-02-06

120V Load Center, Replacement



DANGER

Disconnect external power source prior to servicing the load center. Failure to do so could result in serious electrical shock, personal injury or death. Connect only after servicing is complete.



W3002400

Note: Early production model shown

- 1 120V Power Supply Cable
- 2 Cable Coupling
- 3 Mounting Nut
- 4 Lock Ring
- 5 Spacer
- 6 Sealing Gasket
- 7 Load Center Supply Cable
- 8 120V Power Cable
- 9 Ground Wire (if equipped)
- 10 Load Center Mounting Nut

Removal

1

Disconnect the 120V power supply cable from outside the cab, underneath the driver's side luggage compartment. Unscrew the cable coupling and unplug the cable. Remove the supply cable housing nut which mounts in the floor. A sealing gasket, spacer and lock ring must be removed. Push the load center supply cable up through the floor into the luggage compartment.

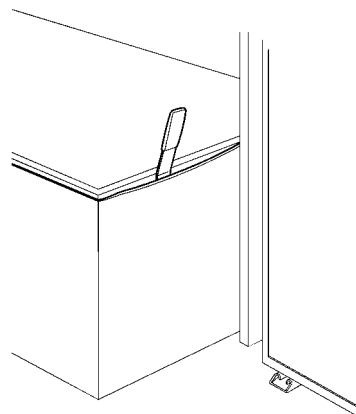
2

From inside the cab, at the driver's side luggage compartment, remove the 120V power cables from the load center. Unscrew each coupling and disconnect the cables.

3

Remove the mounting nut attached to the load center's ground wire. Disconnect the ground wire (if equipped).

4

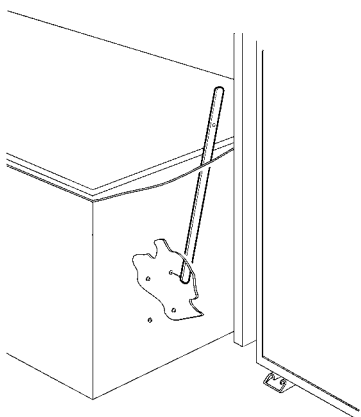


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To remove the load center from the luggage compartment wall, the torx bolts attaching the load center must be removed. To access these bolts, use the trim pad remover (Kent-Moore P/N J-38778) to release the plastic clips holding the carpet trim to the bunk support.

Kent-Moore
P/N J-38778

5



W3002446

Pull the carpet trim far back enough to slide the torx bit strap tool (J-43144) onto one of the bolts on the load center. The nut on the bolt may have to be turned to allow alignment of the tool and bolt head.

Kent-Moore
P/N J-43144

6

Using the torx tool to hold the bolts in place, remove the four nuts on the load center. Due to the tight fit of the trim panel, a long screwdriver may be needed to release the tool from the lower bolts.

7

Remove the load center from the luggage compartment.

Installation

8

Install the load center onto the bunk support with the four mounting bolts. Using the torx bit strap tool, hold each of the four mounting bolts in place while tightening the mounting nut. Torque each mounting nut 3.5 ± 0.5 Nm (31 ± 4 in-lb).

3.5 ± 0.5
Nm 31 ± 4 in-lb

9

Install the plastic clips to the carpet trim.

10

Attach the ground wire connector on the load center (if equipped) to the mounting bolt on the bunk support. Torque the mounting nut to 3.5 ± 0.5 Nm (31 ± 4 in-lb).

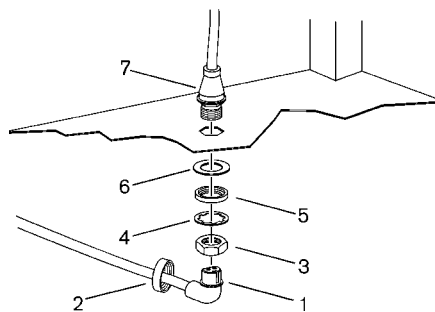
3.5 ± 0.5 Nm
(31 ± 4 in-lb)

11

Install the 120V power cables to the connections on the sides of the load center. Hand-tighten the couplings.

Important: Observe polarity when attaching the connectors. The 120V power cables have indexing pins on the connectors. However, it is possible to force the connectors, causing a reverse in polarity. In this case, the 120V system will fail to work.

12



W3002398

Main supply connection is through luggage compartment floor.

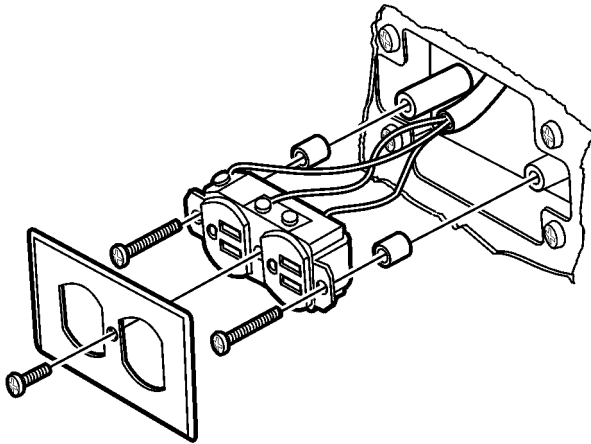
- 1 120V Power Supply Cable
- 2 Cable Coupling
- 3 Mounting Nut
- 4 Lock Ring
- 5 Spacer
- 6 Sealing Gasket
- 7 Load Center Supply Cable

Direct the main supply cable through the floor. Install the plastic gasket, spacer and lock ring. Next, place the mounting nut over the assembly and torque the nut to 16 ± 1 Nm (141 ± 9 in-lb). Hand-tighten the cable coupling to the 120V power supply cable.

16 ± 1 Nm
(141 ± 9 in-lb)

3723-03-02-05 120V Receptacle, Replacement

1



W3005005



DANGER

Disconnect external power source prior to servicing the load center. Failure to do so could result in serious electrical shock, personal injury or death. Connect only after servicing is complete.

The 120 volt receptacles may be individually replaced per the illustration, observing the following precautions:

- Black commercial grade receptacles are required for proper repair.
- Observe proper polarity.
- Use the original spacers to stand off the receptacle from the cab trim.
- If the receptacle is purchased from a local supplier, it may be necessary to remove the receptacle's drywall ears to avoid putting stress on the cab trim.