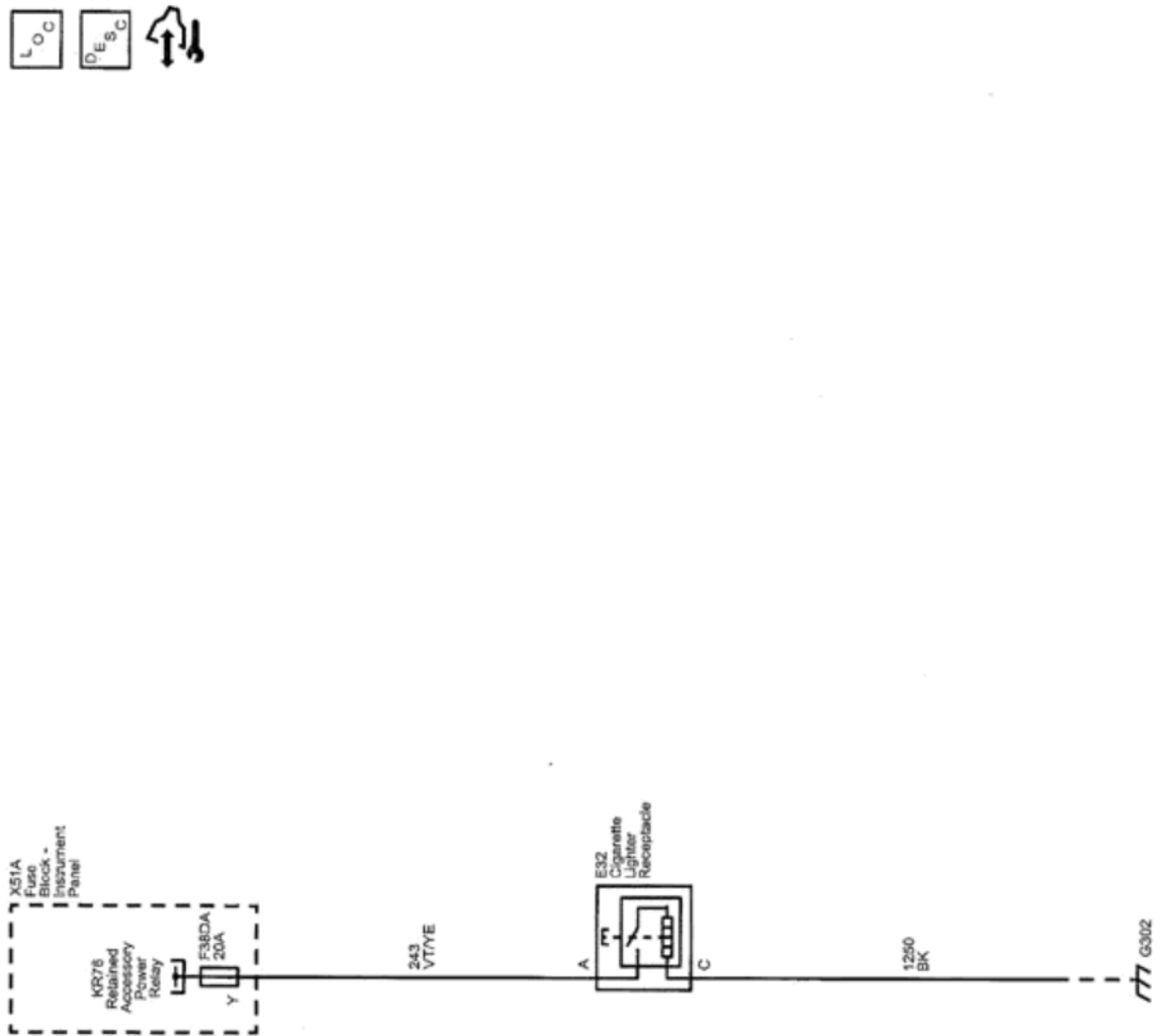


Power Outlets

Schematic and Routing Diagrams

Cigar Lighter/Power Outlet Schematics (Lighter)



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Diagnostic Information and Procedures

Symptoms - Power Outlets

Visual/Physical Inspection

- Inspect for aftermarket devices which can affect the operation of the power outlets. Refer to *Checking Aftermarket Accessories* on page 11-525
- Inspect the accessible system components or the visible system components for obvious damage or for obvious conditions which can cause the symptom.

Intermittent

Electrical connections or wiring may be the cause of intermittent conditions. Refer to *Testing for Intermittent Conditions and Poor Connections* on page 11-531

Symptom List

Refer to *Power Outlet Receptacle Malfunction* on page 11-74 in order to diagnose the system.

Power Outlet Receptacle Malfunction

Diagnostic Instructions

- Perform the *Diagnostic System Check - Vehicle* on page 6-66 prior to using this diagnostic procedure.
- Review *Strategy Based Diagnosis* on page 6-58 for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions* on page 6-59 provides an overview of each diagnostic category.

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Ignition	1	1	—	—
Ground	—	1	1	—
1. Cigarette Lighter Receptacle Malfunction				

Circuit/System Description

The vehicle is fitted with a 12 V Cigarette Lighter Receptacle. The Cigarette Lighter Receptacle is controlled by an ignition operated relay. The Cigarette Lighter Receptacle is operational when the ignition is turned to either the On or the Accessories positions.

Diagnostic Aids

It may be helpful to discuss with the customer the usage of any device that may have drawn too much current and caused an open fuse.

Reference Information

Schematic Reference

Cigar Lighter/Power Outlet Schematics on page 11-73

Connector End View Reference

Component Connector End Views on page 11-269

Description and Operation

Power Outlets Description and Operation on page 11-78

Electrical Information Reference

- Circuit Testing* on page 11-526
- Connector Repairs* on page 11-548
- Testing for Intermittent Conditions and Poor Connections* on page 11-531
- Wiring Repairs* on page 11-537

Circuit/System Verification

- Ignition ON, connect an appropriate device to the E32 Cigarette Lighter Receptacle.
 - Verify the device is powered by the E32 Cigarette Lighter Receptacle.
- ⇒ **If the device is not powered**
Refer to *Circuit/System Testing*
- ⇓ **If the device is powered**
- All OK.

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the appropriate E32 Cigarette Lighter Receptacle.
2. Test for less than 10 Ω between the ground circuit terminal C and ground.
 - ⇒ **If greater than 10 Ω**
 - 2.1. Ignition OFF.
 - 2.2. Test for less than 2 Ω in the ground circuit end to end.
 - ⇒ If 2 Ω or greater, repair the open/high resistance in the circuit.
 - ⇒ If less than 2 Ω , repair the open/high resistance in the ground connection.
 - ⇓ **If less than 10 Ω**
3. Ignition ON.
4. Verify that a test lamp illuminates between the control circuit terminal A and ground.
 - ⇒ **If the test lamp does not illuminate and the circuit fuse is good**
 - 4.1. Ignition OFF.
 - 4.2. Test for less than 2 Ω in the control circuit end to end.
 - ⇒ If greater than 2 Ω , repair the open/high resistance in the circuit.
 - ⇒ If less than 2 Ω , verify the fuse is not open and there is voltage at the fuse. Refer to *Retained Accessory Power Malfunction* on page 11-520.
 - ⇒ **If the test lamp does not illuminate and the circuit fuse is open**
 - 4.1. Ignition OFF.
 - 4.2. Test for infinite resistance between the control circuit terminal A and ground.
 - ⇒ If less than infinite resistance, repair the short to ground on the circuit.
 - ⇒ If infinite resistance, replace the appropriate E32 Cigarette Lighter Receptacle.
- ⇓ **If the test lamp illuminates**
5. Replace the appropriate E32 Cigarette Lighter Receptacle.

Repair Instructions

Perform the *Diagnostic Repair Verification* on page 6-92 after completing the repair.

Accessory Power Receptacle Replacement on page 11-76.

Repair Instructions

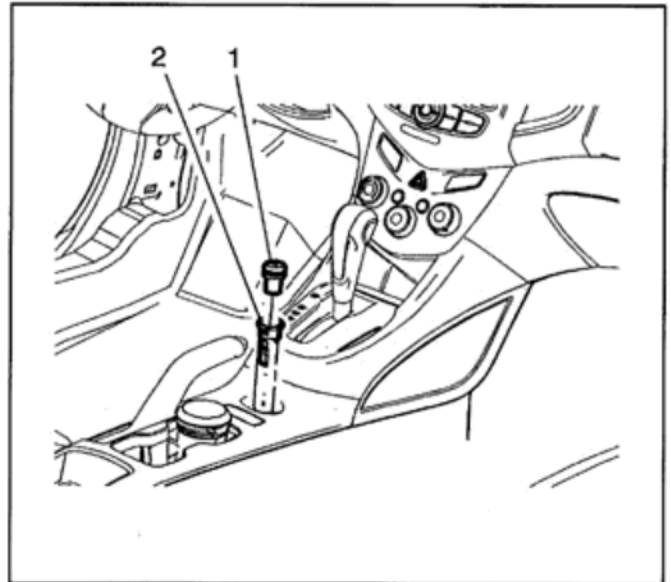
Cigarette Lighter Receptacle Replacement

Special Tools

EL-42059 Cigar Lighter Socket Remover.

For equivalent regional tools. Refer to *Special Tools* on page 11-78

Removal Procedure

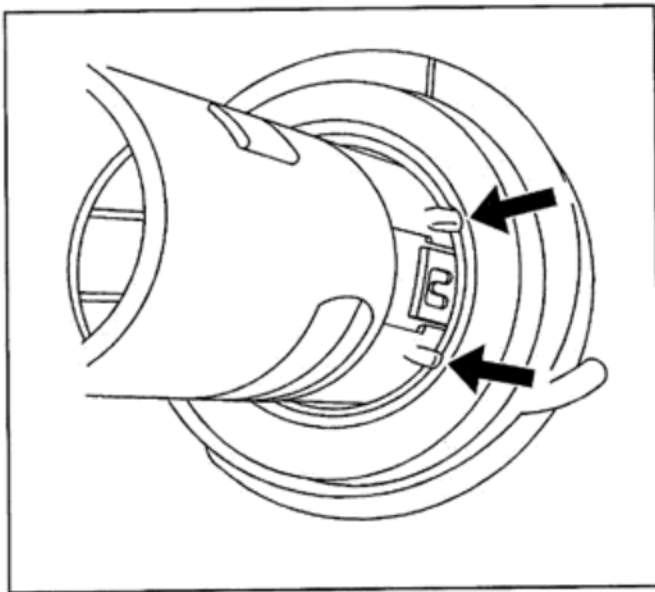


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1. Remove the auxiliary power outlet fuse from the fuse block.
2. Remove the receptacle:
 - 2.1. Look into the receptacle(2). There are two 3 mm (0.11 in) tab windows 12 mm (0.47 in) from the front of the receptacle. The EL-42059 Cigar Lighter Socket Remover pushes the plastic latches from these tab windows and the receptacle can be pulled straight out.
 - 2.2. Place one side of the "T" portion of the EL-42059 Cigar Lighter Socket Remover into the tab window. The EL-42059 Cigar Lighter Socket Remover will not fit straight into the receptacle. Angle the slightly for insertion into the receptacle.
 - 2.3. Insert the other side of the "T" into the opposite tab window.

You must move the EL-42059 Cigar Lighter Socket Remover handle toward horizontal to engage the other tab window.
 - 2.4. Use the EL-42059 Cigar Lighter Socket Remover to pull the receptacle straight out.

Installation Procedure



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1. Route the connector through the retainer. Align the accessory power receptacle retainer to the slot in the opening.
2. Install the retainer by pressing into place fully seated.
3. Connect the electrical connector to the receptacle.
4. Align the tabs on the receptacle to the slots in the retainer. Install the accessory power receptacle by pressing into place until fully seated.
5. Install the accessory power receptacle fuse.

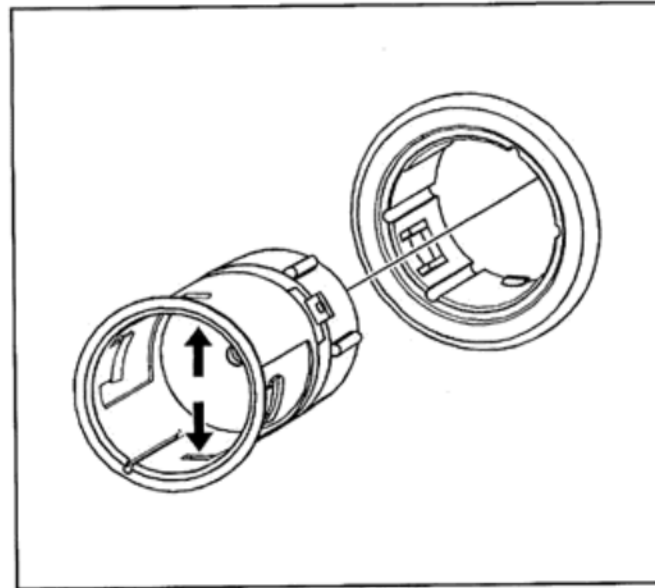
Accessory Power Receptacle Replacement

Special Tools

EL-42059 Cigar Lighter Socket Remover.

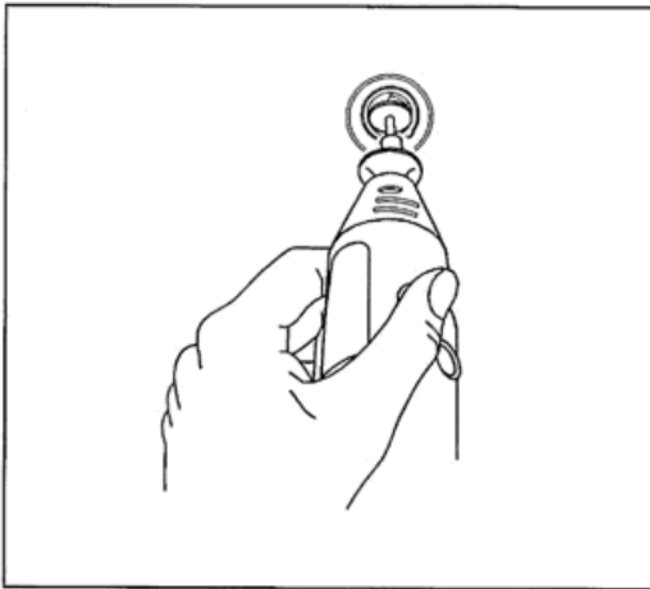
For equivalent regional tools. Refer to *Special Tools* on page 11-78

Removal Procedure



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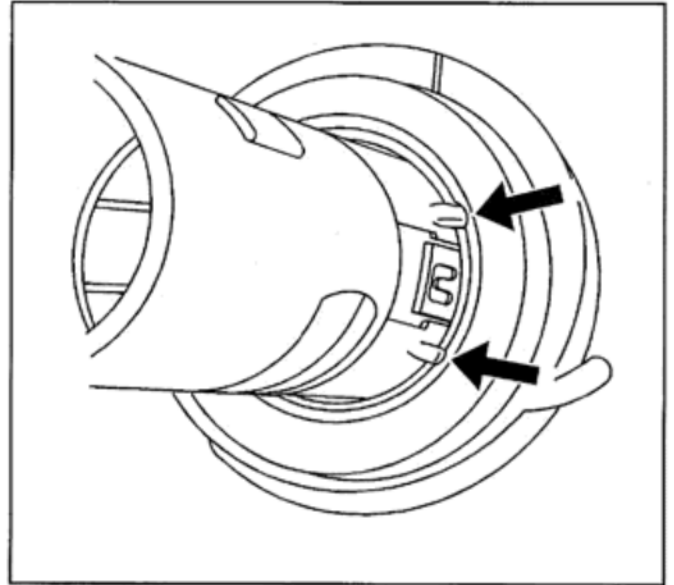
1. Remove the auxiliary power outlet fuse from the fuse block.
2. Remove the receptacle:
 - 2.1. Look into the receptacle. There are two 3 mm (0.11 in) tab windows 12 mm (0.47 in) from the front of the receptacle. The *EL-42059 Cigar Lighter Socket Remover* pushes the plastic latches from these tab windows and the receptacle can be pulled straight out.
 - 2.2. Place one side of the "T" portion of the *EL-42059 Cigar Lighter Socket Remover* into the tab window. The *EL-42059 Cigar Lighter Socket Remover* will not fit straight into the receptacle. Angle the slightly for insertion into the receptacle.
 - 2.3. Insert the other side of the "T" into the opposite tab window.
You must move the *EL-42059 Cigar Lighter Socket Remover* handle toward horizontal to engage the other tab window.
 - 2.4. Use the *EL-42059 Cigar Lighter Socket Remover* to pull the receptacle straight out.



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3. If *EL-42059* Cigar Lighter Socket Remover tool fails to release the lighter socket from the retainer, perform the following alternate method:
 - 3.1. Insert a small grinding tool with a cutoff wheel into the socket.
 - 3.2. Remove the plastic latches in the 3 mm (0.11 in) square windows.
 - 3.3. Use the *EL-42059* Cigar Lighter Socket Remover as directed above to remove the socket.

Installation Procedure



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1. Route the connector through the retainer. Align the accessory power receptacle retainer to the slot in the opening.
2. Install the retainer by pressing into place fully seated.
3. Connect the electrical connector to the receptacle.
4. Align the tabs on the receptacle to the slots in the retainer. Install the accessory power receptacle by pressing into place until fully seated.
5. Install the accessory power receptacle fuse.

Description and Operation

Power Outlets Description and Operation

System Description

The vehicle is fitted with a cigarette lighter and/or with a 12 V accessory power receptacle. The accessory power receptacle and cigarette lighter are operational when the ignition is turned to either the On or the Accessories positions. To operate the cigarette lighter, press in the lighter knob. When the element is hot, the lighter automatically pops out and is ready for use.

Special Tools and Equipment

Illustration	Tool Number/ Description
 345719	EL 42059 J 42059 Cigar Lighter Socket Remover