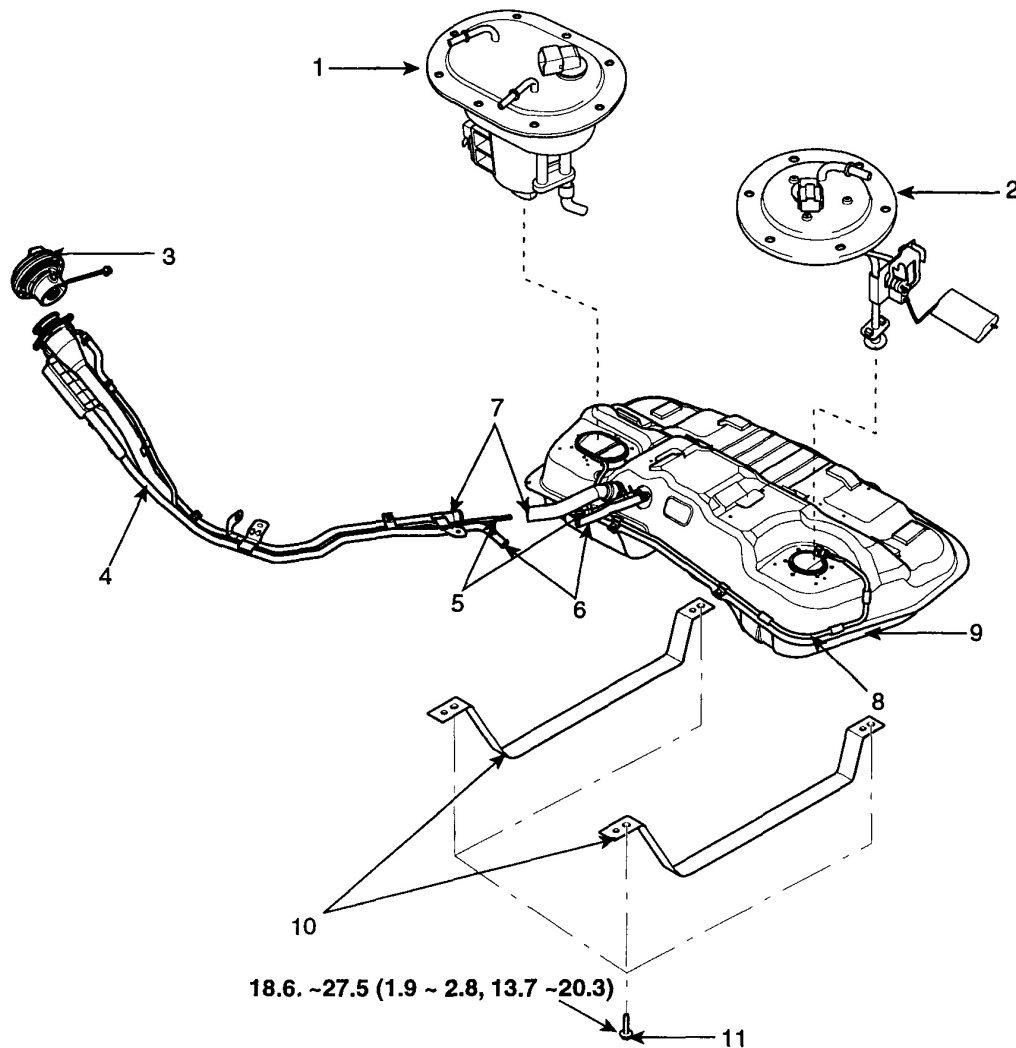


2005-06 ENGINE PERFORMANCE

Fuel Delivery System - 2.7L - Sportage

COMPONENTS LOCATION



Tightening Torques: N·m (kgf·m, lbf·ft)

- | | |
|--|-------------------------------------|
| 1. Fuel Pump Assembly
(Including Fuel Filter and Fuel Pressure Regulator) | 6. Ventilation Hose |
| 2. Sub Fuel Sender | 7. Fuel Filler Hose |
| 3. Fuel Filler Cap | 8. Suction Hose |
| 4. Fuel Filler Neck assembly | 9. Fuel Tank |
| 5. Leveling Hose | 10. Fuel Tank Band |
| | 11. Mounting Bolts - Fuel Tank Band |

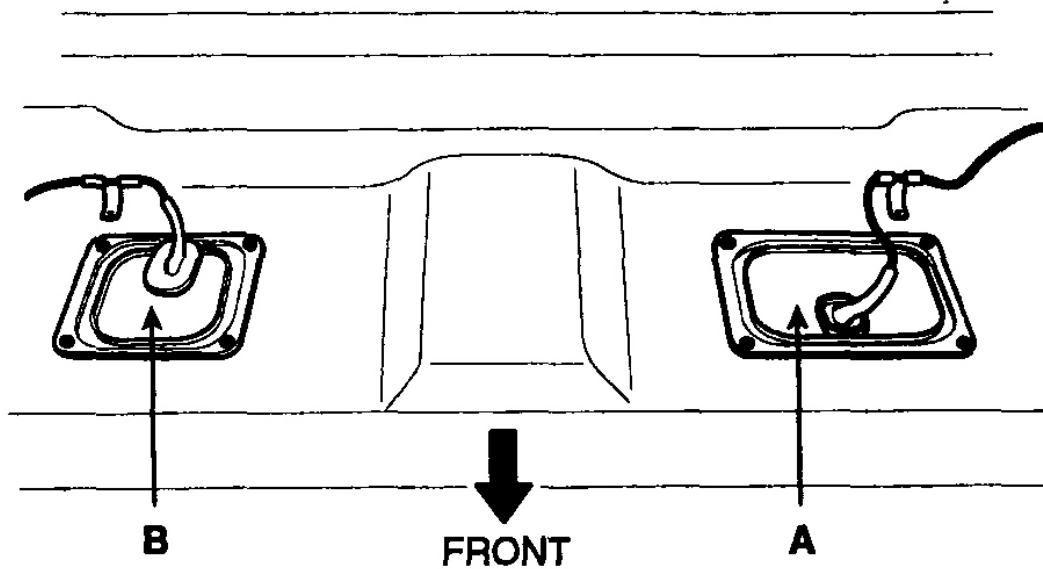
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Fig. 1: Identifying Fuel Delivery System
Courtesy of KIA MOTORS AMERICA, INC.

FUEL PRESSURE TEST

1. PREPARING

1. Remove the rear seat (Refer to **SEAT**).
2. Open the service cover (A) under the rear seat.



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Fig. 2: Opening Service Cover Under Rear Seat
Courtesy of KIA MOTORS AMERICA, INC.

2. RELEASE THE INTERNAL PRESSURE

1. Disconnect the fuel pump connector.
2. Start the engine and wait until fuel in fuel line is exhausted.
3. After the engine stalls, turn the ignition switch to OFF position and disconnect the negative (-) terminal from the battery.

NOTE: Be sure to reduce the fuel pressure before disconnecting the fuel feed hose, otherwise fuel will spill out.

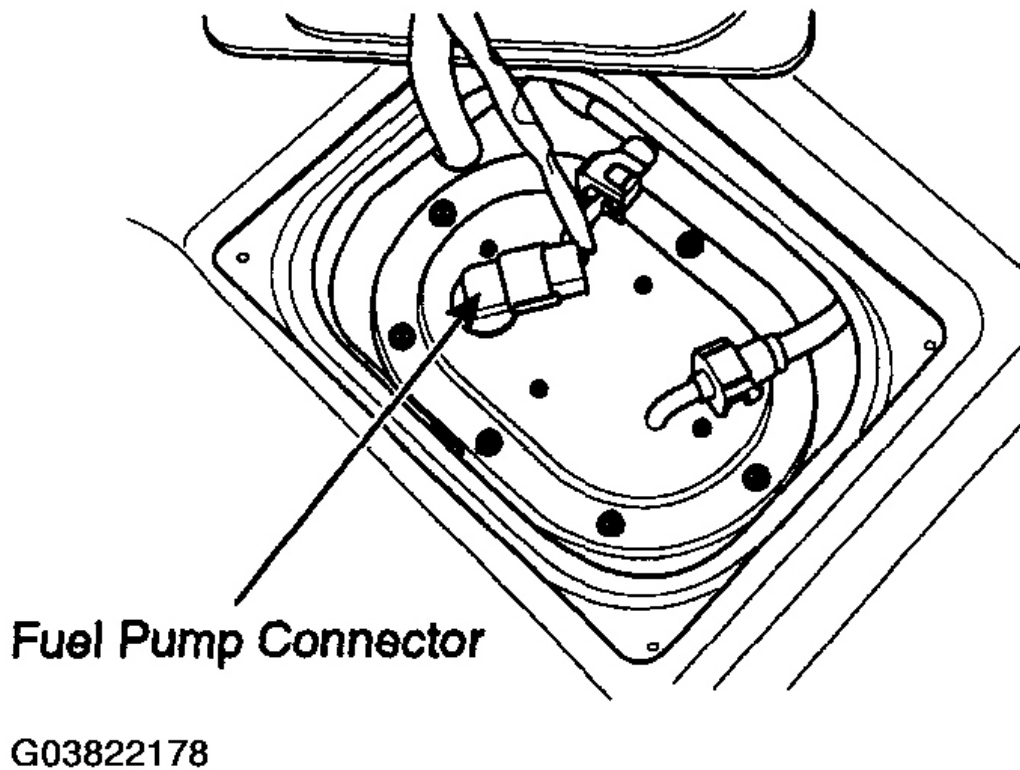


Fig. 3: Releasing Internal Pressure
Courtesy of KIA MOTORS AMERICA, INC.

3. INSTALL THE SPECIAL SERVICE TOOL (SST) FOR MEASURING THE FUEL PRESSURE

1. Disconnect the fuel feed hose from the delivery pipe.

CAUTION: Cover the hose connection with a shop towel to prevent splashing of fuel caused by residual pressure in the fuel line.

2. Install the Fuel Pressure Gage Adapter (09353-38000) between the delivery pipe and the fuel feed hose.
3. Connect the Fuel Pressure Gage Connector (09353-24000) to the Fuel Pressure Gage Adapter (09353-38000).
4. Connect the Fuel Pressure Gage and Hose (09353-24100) to Fuel Pressure Gage Connector (09353-24000).
5. Connect the fuel feed hose to the Fuel Pressure Gage Adapter (09353-38000).

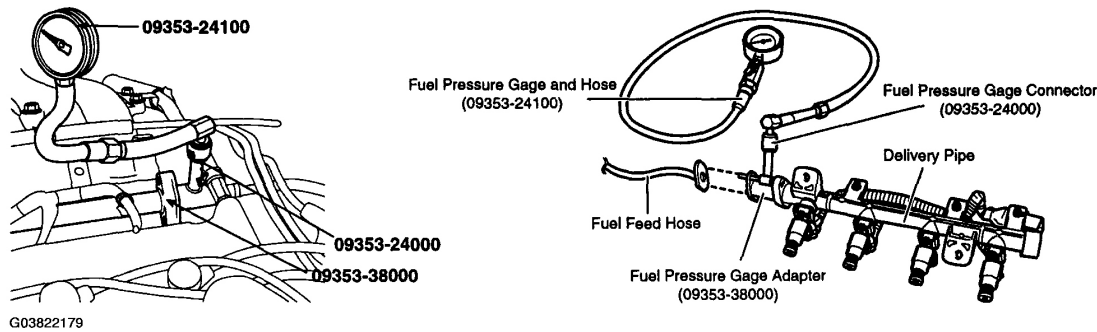


Fig. 4: Measuring Fuel Pressure

Courtesy of KIA MOTORS AMERICA, INC.

4. INSPECT FUEL LEAKAGE ON CONNECTION

1. Connect the battery negative (-) terminal.
2. Apply battery voltage to the fuel pump terminal and activate the fuel pump. With fuel pressure applied, check that there is no fuel leakage from the fuel pressure gauge or connection part.

5. FUEL PRESSURE TEST

1. Disconnect the negative (-) terminal from the battery.
2. Connect the fuel pump connector.
3. Connect the battery negative (-) terminal.
4. Start the engine and measure the fuel pressure at idle.

Standard Value: 343 kpa (3.5 kg/cm, 49.8 psi)

- If the measured fuel pressure differs from the standard value, perform the necessary repairs using the table below.

FUEL PRESSURE TEST

Fuel Pressure too low	Clogged fuel filter	Fuel filter
	Fuel leak on the fuel-pressure regulator that is assembled on fuel pump because of poor seating of the fuel-pressure regulator.	Fuel Pressure Regulator
Fuel Pressure too High	Sticking fuel pressure regulator	Fuel Pressure Regulator

5. Stop the engine and check for a change in the fuel pressure gauge reading.

After engine stops, the gage reading should hold for about 5 minutes

- Observing the declination of the fuel pressure when the gage reading drops and perform the necessary repairs using the table below.

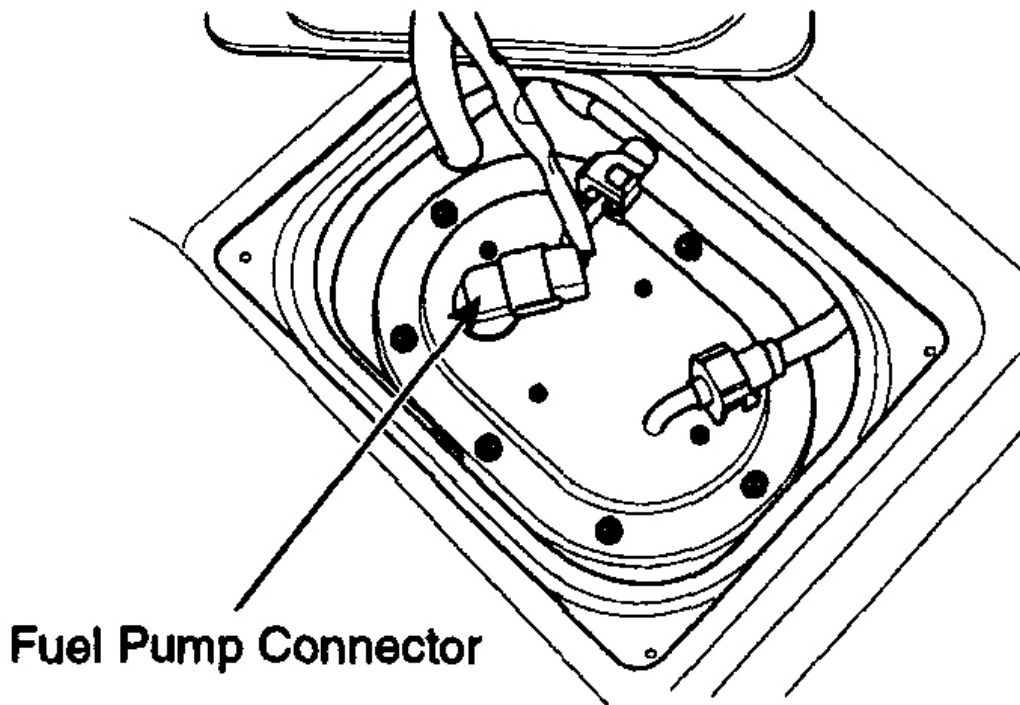
FUEL PRESSURE TEST

Fuel pressure drops slowly after engine is stopped	Injector leak	Injector
Fuel pressure drops immediately after engine is stopped	The check valve within the fuel pump is open	Fuel Pump

6. RELEASE THE INTERNAL PRESSURE

1. Disconnect the fuel pump connector.
2. Start the engine and wait until fuel in fuel line is exhausted.
3. After the engine stalls, turn the ignition switch to OFF position and disconnect the negative (-) terminal from the battery.

NOTE: Be sure to reduce the fuel pressure before disconnecting the fuel feed hose, otherwise fuel will spill out.



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Fig. 5: Releasing Internal Pressure
Courtesy of KIA MOTORS AMERICA, INC.

7. REMOVE THE SPECIAL SERVICE TOOL (SST) AND CONNECT THE FUEL LINE

1. Disconnect the Fuel Pressure Gage and Hose (09353-24100) from the Fuel Pressure Gage Connector (09353-24000).
2. Disconnect the Fuel Pressure Gage Connector (09353-24000) from the Fuel Pressure Gage Adapter (09353-38000).
3. Disconnect the fuel feed hose from the Fuel Pressure Gage Adapter (09353-38000).
4. Disconnect the Fuel Pressure Gage Adapter (09353-38000) from the delivery pipe.

CAUTION: Cover the hose connection with a shop towel to prevent splashing of fuel caused by residual pressure in the fuel line.

5. Connect the fuel feed hose to the delivery pipe.

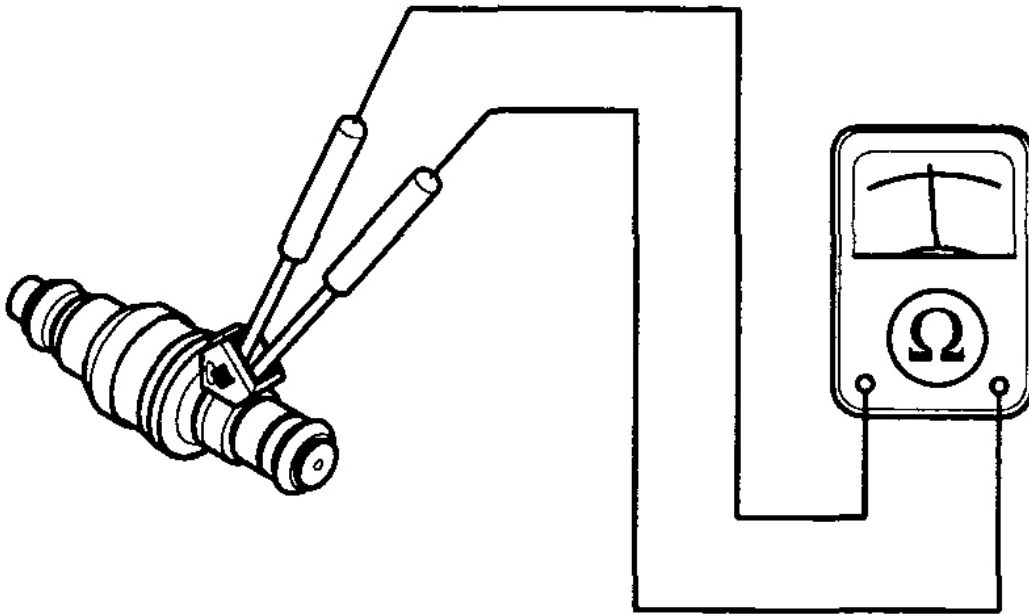
8. INSPECT FUEL LEAKAGE ON CONNECTION

1. Connect the battery negative (-) terminal.
2. Apply battery voltage to the fuel pump terminal and activate the fuel pump. With fuel pressure applied, check that there is no fuel leakage from the fuel pressure gauge or connection part.
3. If the vehicle is normal, connect the fuel pump connector.

FUEL INJECTOR**INSPECTION**

1. Measure resistance between the terminal 1 and 2 of the injector.

Injector Resistance: 13.8 ~ 15.2 ohm at 20°C (68°F)



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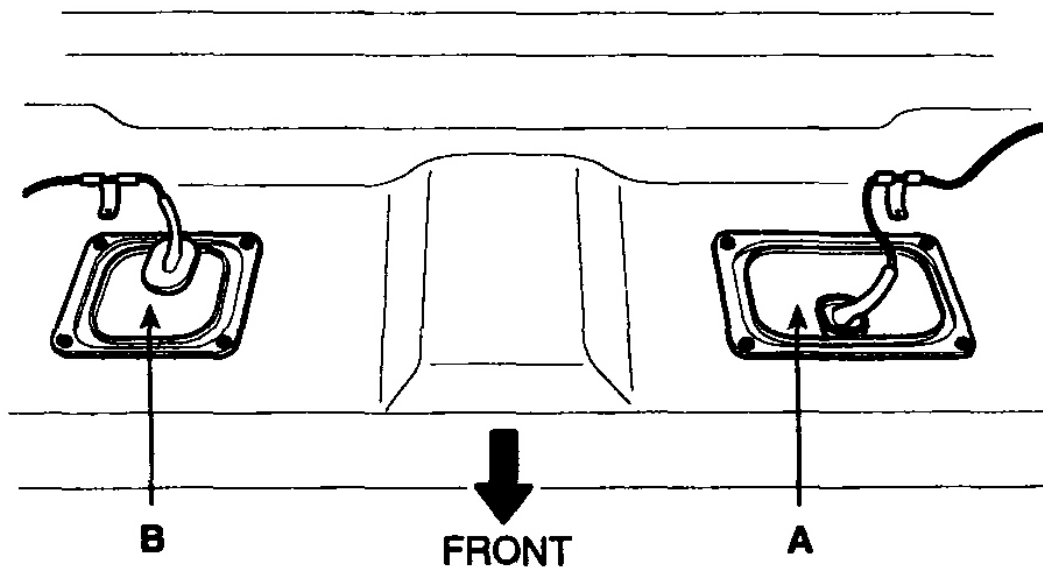
Fig. 6: Measuring Resistance Between Terminal 1 And 2 Of Injector
Courtesy of KIA MOTORS AMERICA, INC.

2. If the resistance is not within specification, replace the injector.

FUEL PUMP (FP)

REMOVAL (INCLUDING FUEL FILTER AND FUEL PRESSURE REGULATOR)

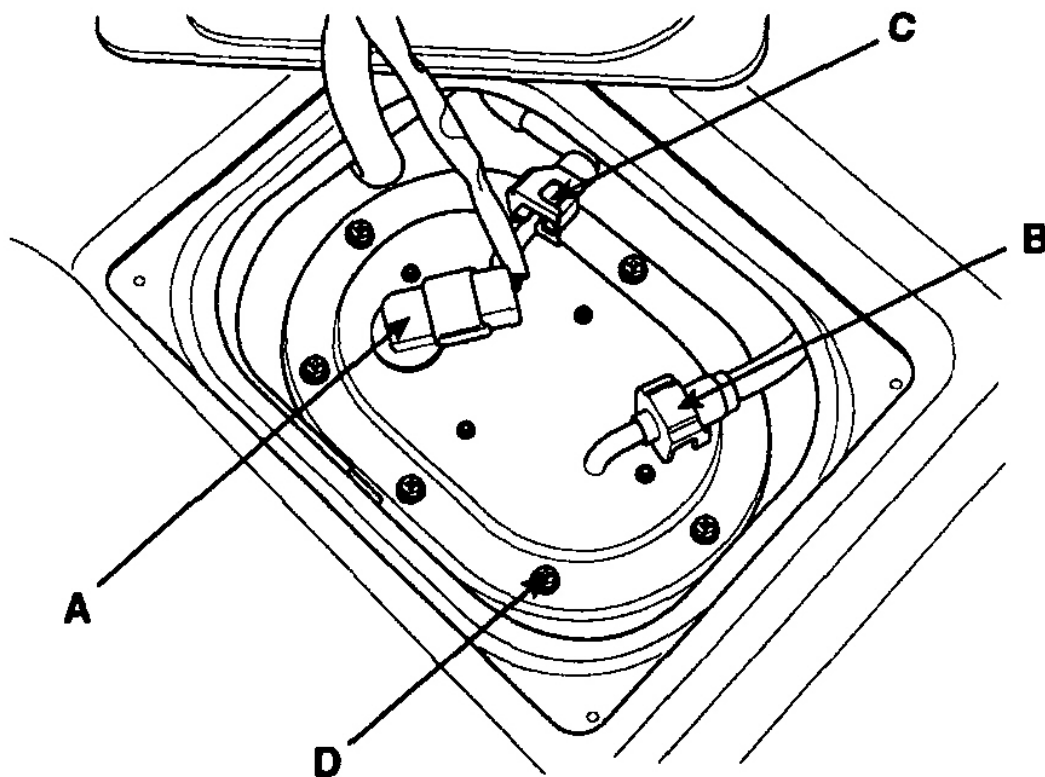
1. Turn ignition switch to " OFF" and disconnect the battery negative (-) terminal.
2. Remove the rear seat cushion flame hinge bolts, and then lift the cushion (Refer to **SEAT**).
3. Remove the service cover (A) under the carpet.



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Fig. 7: Removing Rear Seat Cushion Flame Hinge Bolts
Courtesy of KIA MOTORS AMERICA, INC.

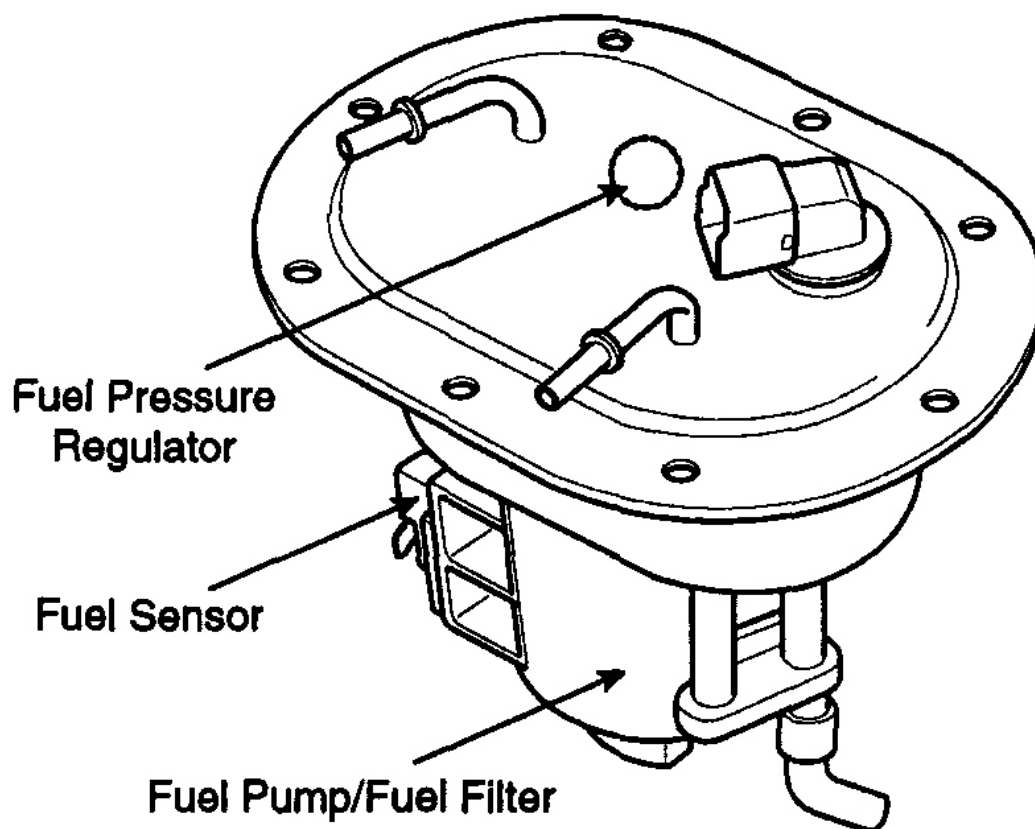
4. Disconnect the fuel pump wiring connector (A).



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Fig. 8: Disconnecting Fuel Pump Wiring Connector
Courtesy of KIA MOTORS AMERICA, INC.

5. Remove the fuel feed hose (B) and suction hose (C).
6. Remove the fuel pump plate mounting bolts (D).
7. Remove the fuel pump assembly.



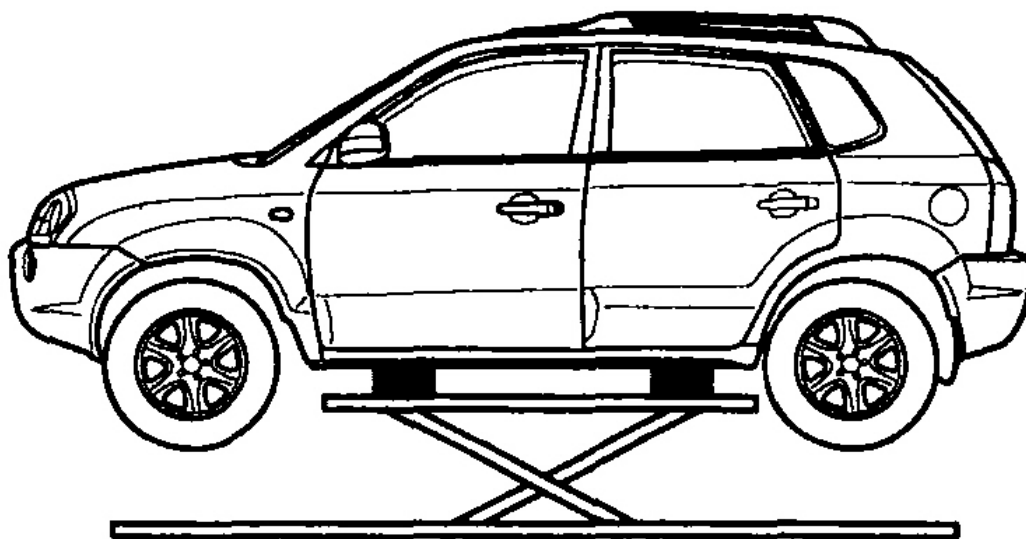
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Fig. 9: Removing Fuel Pump Assembly
Courtesy of KIA MOTORS AMERICA, INC.

FUEL TANK

REMOVAL

WARNING: When lifting up or down vehicle, be sure to place blocks between vehicle and lifter to prevent fuel tank from being damaged.

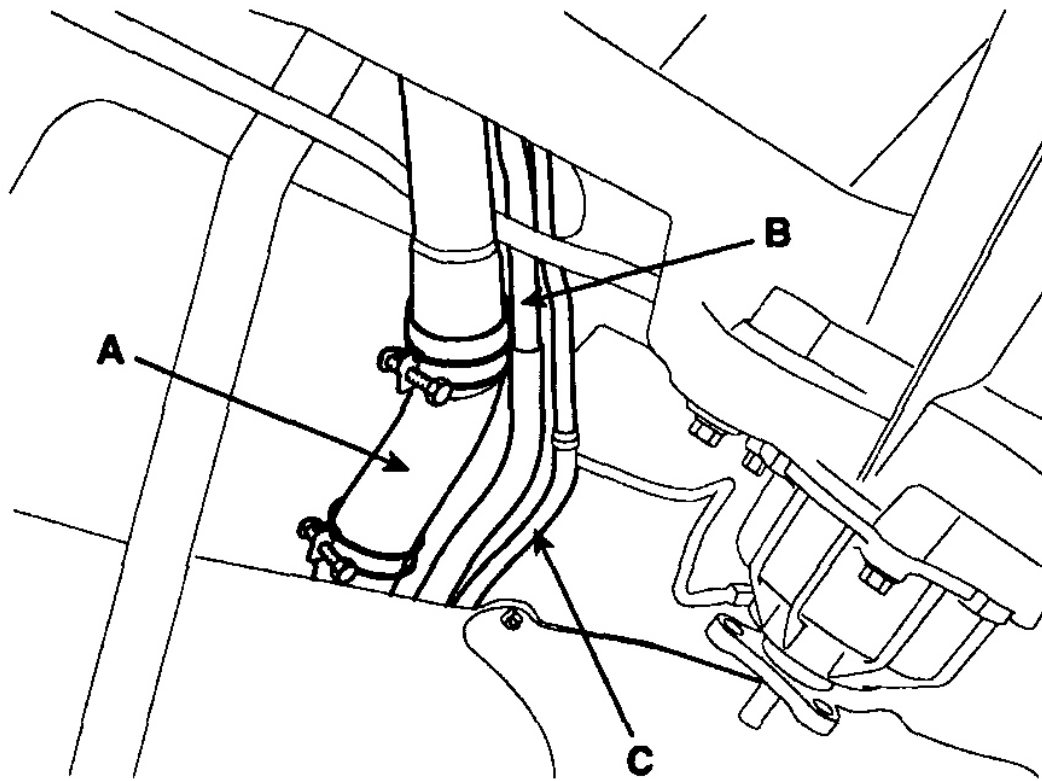


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Fig. 10: Removing Fuel Tank

Courtesy of KIA MOTORS AMERICA, INC.

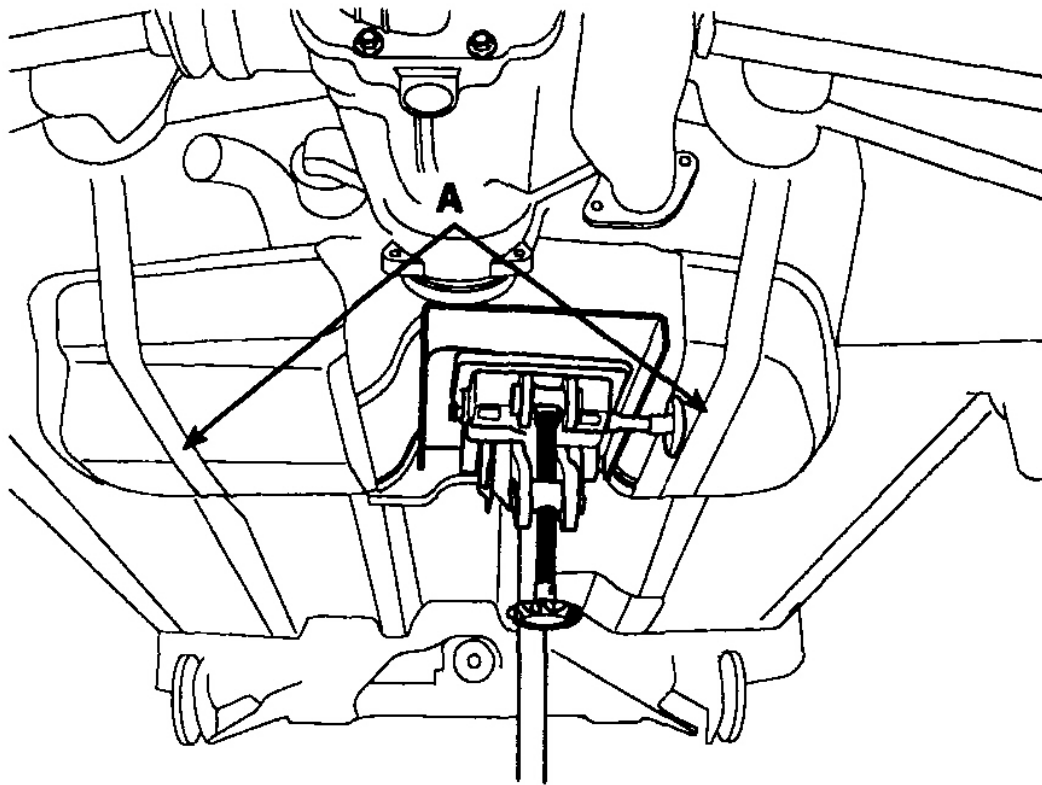
1. Remove the front and main muffler assembly (Refer to **INTAKE AND EXHAUST SYSTEM - 2.7L**).
2. Remove the propeller-shaft (For 4WD only).
3. Disconnect the fuel filler hose (A), fuel leveling hose (B) and ventilation hose (C).



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Fig. 11: Disconnecting Fuel Filler Hose
Courtesy of KIA MOTORS AMERICA, INC.

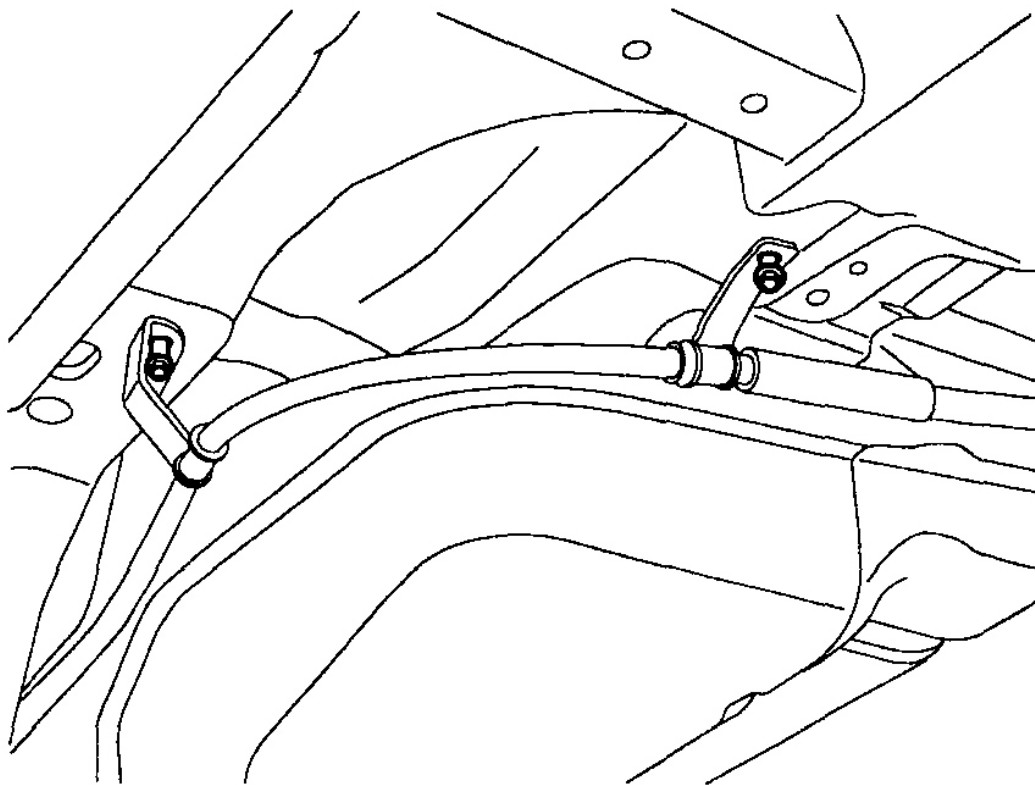
4. Lift the vehicle and support the fuel tank with a jack, and then remove the two fuel tank band.



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Fig. 12: Removing Fuel Tank Band
Courtesy of KIA MOTORS AMERICA, INC.

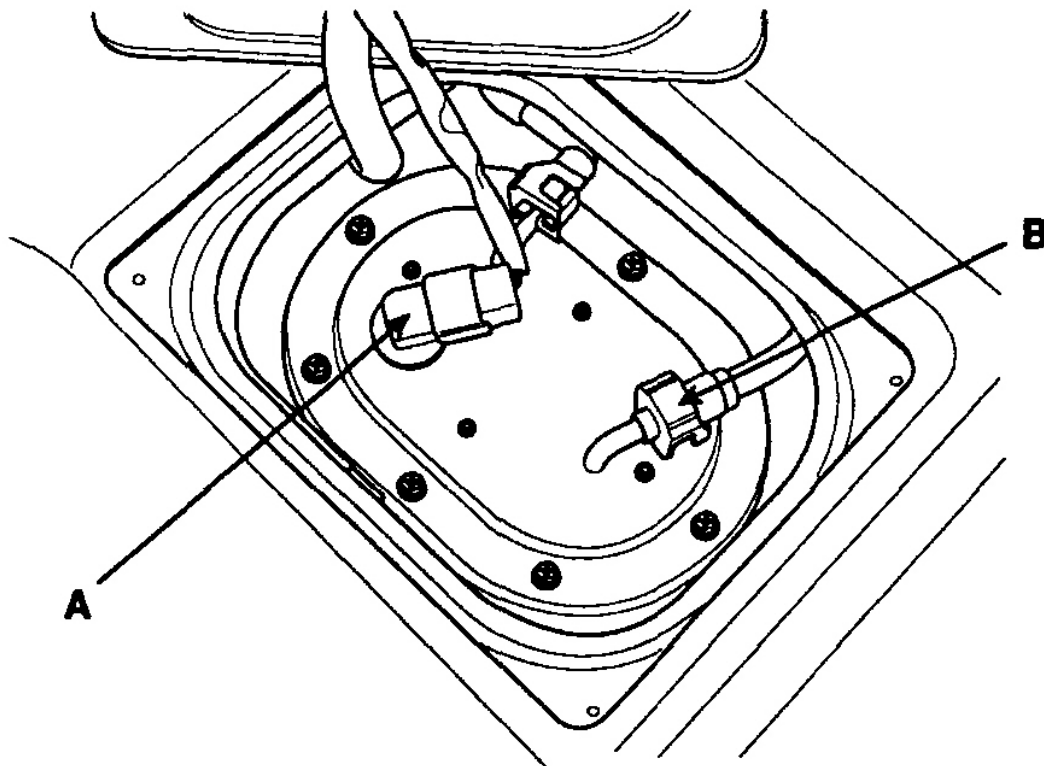
5. Remove the four parking brake mounting bolts (A).



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Fig. 13: Removing Four Parking Brake Mounting
Courtesy of KIA MOTORS AMERICA, INC.

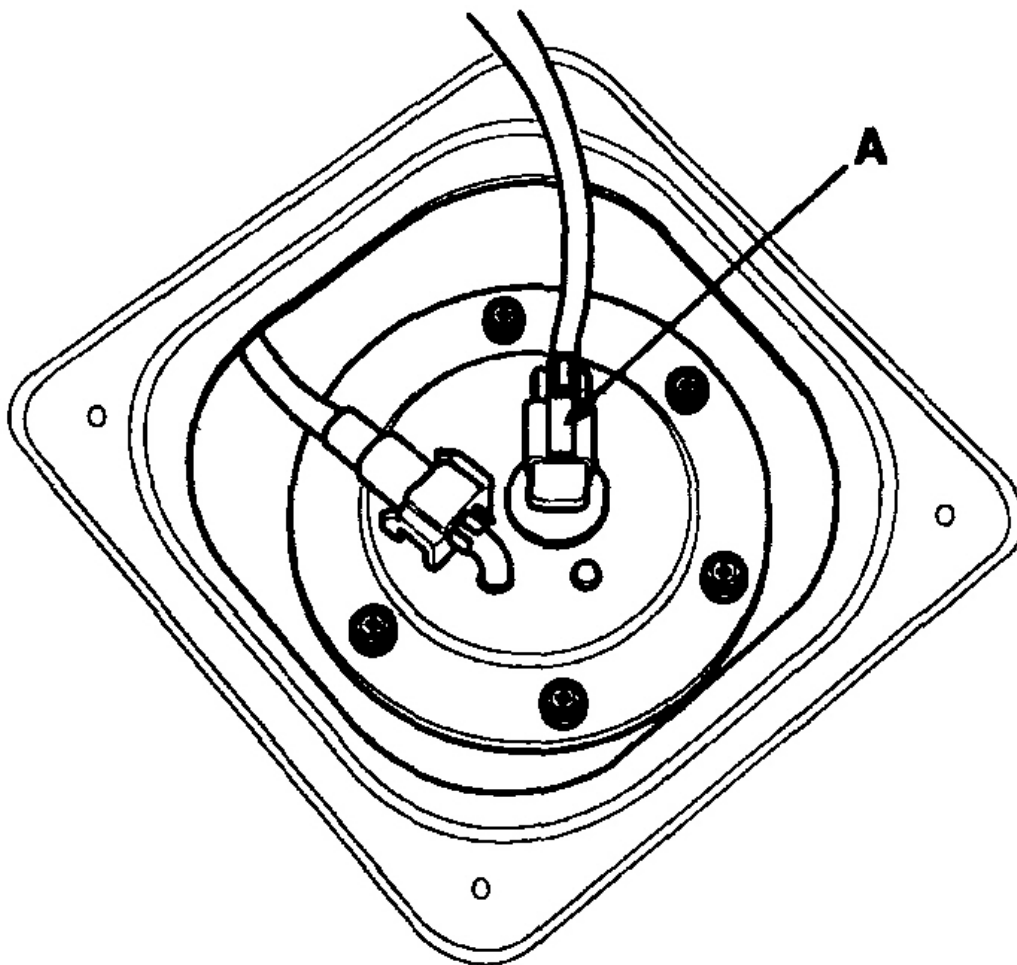
6. Down the fuel tank slowly until work space is made, and then disconnect the fuel pump connector (A) and fuel feed hose (B).



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Fig. 14: Disconnecting Fuel Pump Connector
Courtesy of KIA MOTORS AMERICA, INC.

7. Disconnect the sub fuel sender connector (A).



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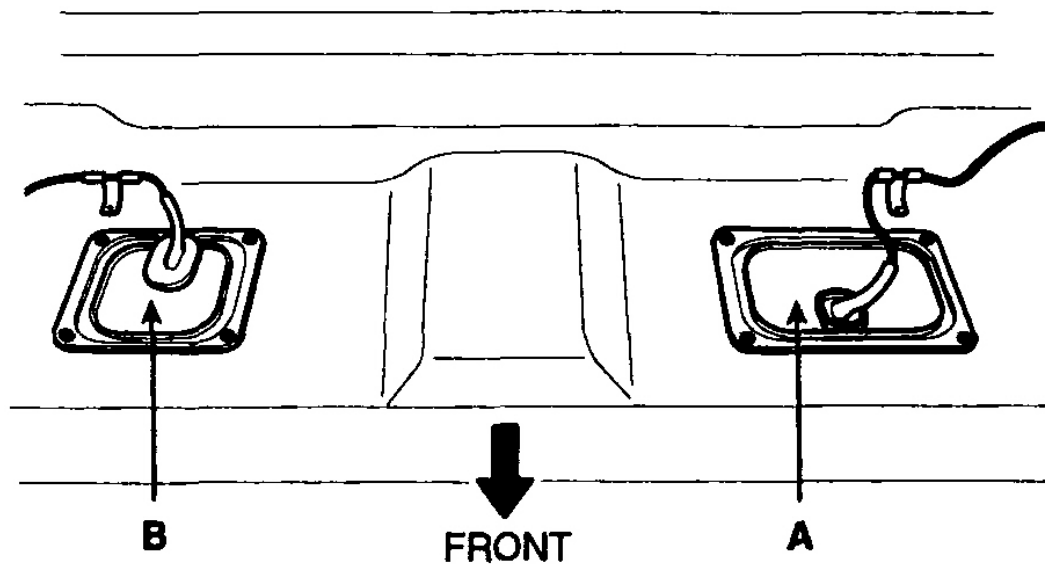
Fig. 15: Disconnecting Sub Fuel Sender Connector
Courtesy of KIA MOTORS AMERICA, INC.

8. Remove the fuel tank.

SUB FUEL SENDER

REMOVAL

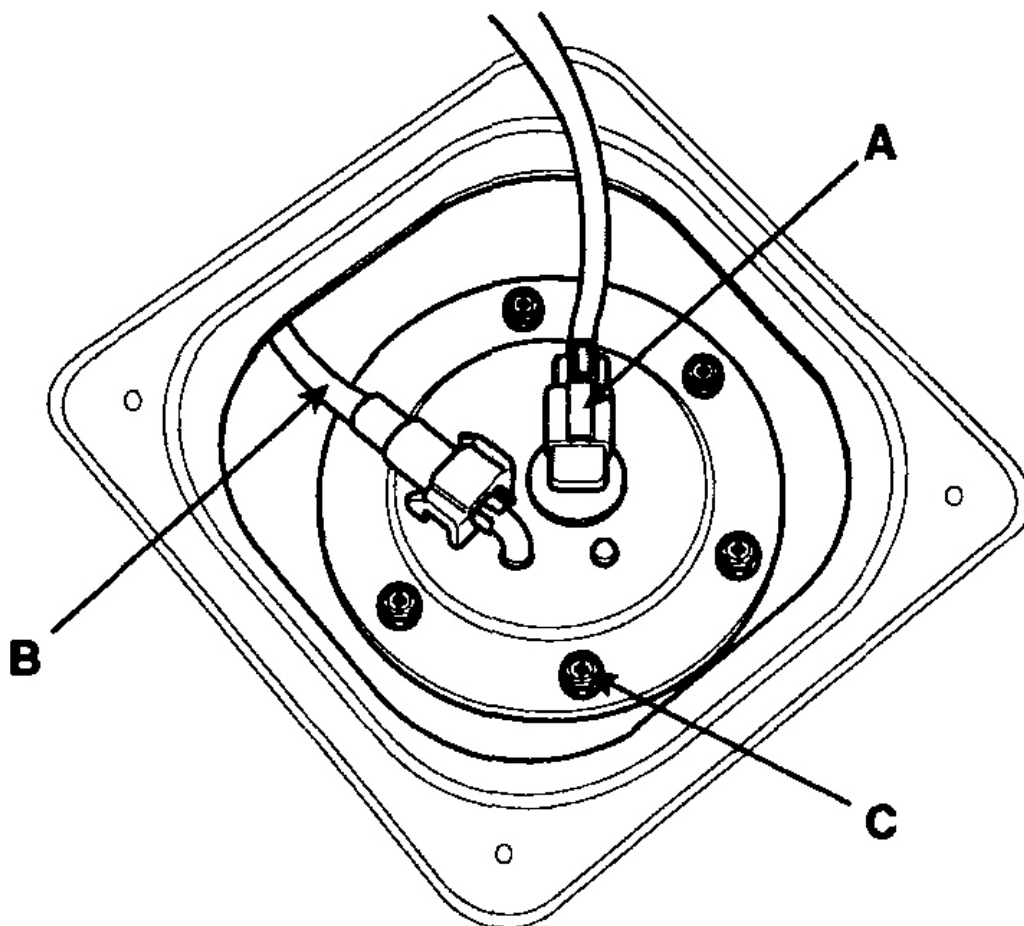
1. Turn ignition switch to " OFF" and disconnect the battery negative (-) terminal.
2. Remove the rear seat cushion flame hinge bolts, and then lift the cushion (Refer to **SEAT**).
3. Remove the service cover (B) under the carpet.



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Fig. 16: Removing Service Cover (B) Under Carpet
Courtesy of KIA MOTORS AMERICA, INC.

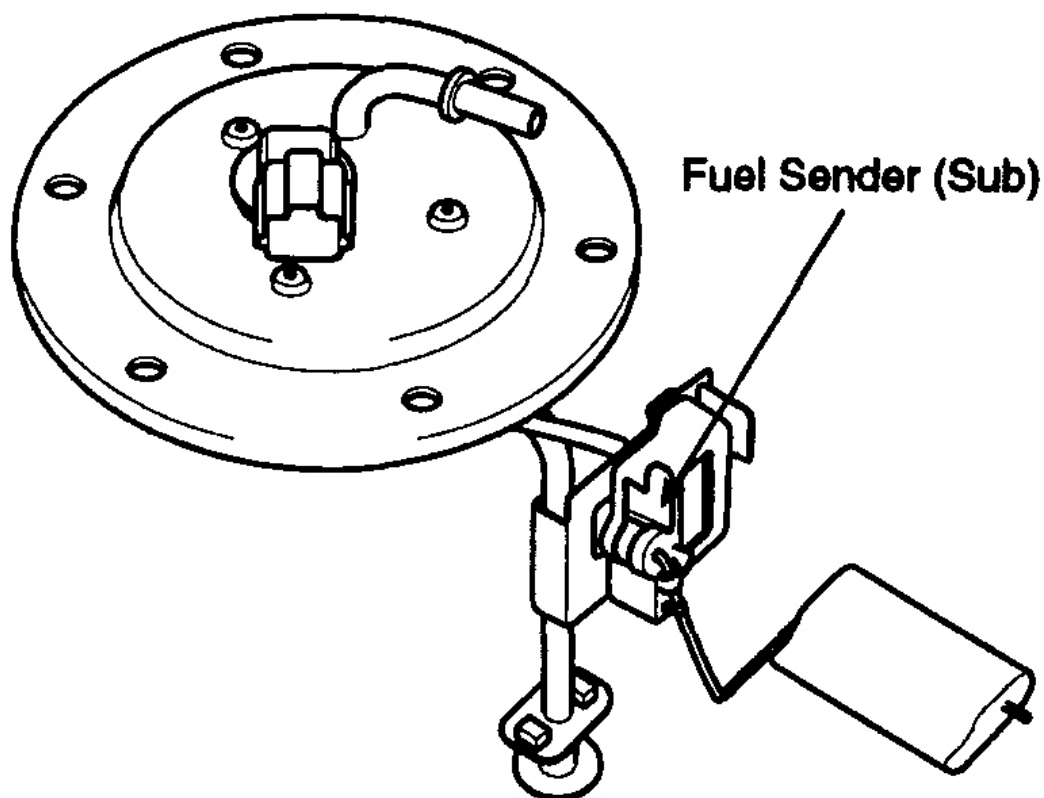
4. Disconnect the fuel sender (Sub) wiring connector (A).



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Fig. 17: Disconnecting Fuel Sender (Sub) Wiring Connector
Courtesy of KIA MOTORS AMERICA, INC.

5. Disconnect the suction hose (B).
6. Remove the fuel sender (Sub) plate mounting bolt (C).
7. Remove the fuel sender (Sub) assembly.



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Fig. 18: Removing Fuel Sender (Sub) Assembly
Courtesy of KIA MOTORS AMERICA, INC.