

**2007 ENGINE****Fuel Supply System - Repair Instructions - Cooper****00 FUEL PICK-UP, CLEANING SYSTEM****16 00 005 DRAINING AND FILLING FUEL TANK****IMPORTANT:**

- **Observe country-specific safety regulations.**
- **Make sure the work bay is adequately ventilated.**
- **Connect an exhaust extractor system to exhaust tailpipe.**
- **Carefully withdraw extraction hose so as not to damage non-return flap.**
- **The electric fuel pump must not operate without fuel!**
- **On conclusion of repair work and before starting the engine for the first time, the fuel tank must be filled via the fuel filler pipe with at least 5 liters of fuel.**

**NOTE:****Vehicles with diesel engines:**

**Before starting the engine for the first time, if the tank has been run dry or drawn off, fill with diesel fuel and turn on ignition for approx. 1 minute. The fuel circuit is thus filled and vented, which results in the engine firing more quickly.**

**Drawing off fuel:**

Start engine and allow to run. The electric fuel pump runs.

The pump delivers fuel via the suction jet pump and the tank expansion line from the left to the right side of the fuel tank.

Fuel can be drawn off from the left and right tank halves through the fuel filler pipe down to a small residual amount. This residual amount is drawn off after removal of the sensors for the fuel gauge (right/left).

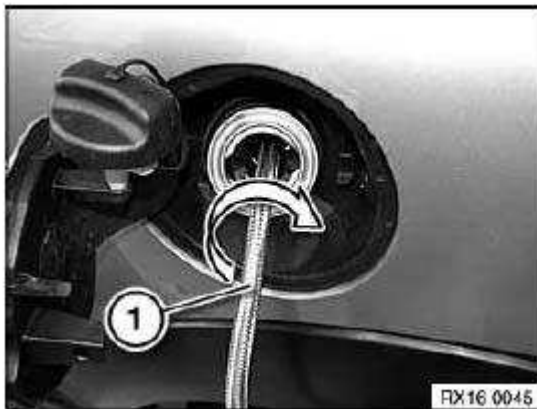
Feed suction hose (1) of extractor unit into filler pipe. In so doing, turn hose slightly if necessary.

**Insertion length:**

90 cm

Draw off fuel with suction extractor unit as far as possible.

Observe the fuel gauge in the instrument cluster while extracting fuel.



**Fig. 1: Suction Hose**

Courtesy of BMW OF NORTH AMERICA, INC.

Drawing off residual fuel quantity:

**IMPORTANT: Make sure vehicle interior is adequately ventilated.  
Catch dripping fuel in a suitable container.**

Remove fuel gauge sensor (right) (50-litre tank only).

Remove (left) fuel gauge sensor.

Draw off residual fuel quantity through installation openings.

**Fuel filling:**

Slide suction hose of extractor unit approx. 40 cm into fuel filler pipe.

Fill fuel from suction extractor unit.

**NOTE:** Drawing off after a fault on suction jet pump (50-litre tank only):  
Completely empty left half of fuel tank via fuel filler pipe.  
Remove (right) fuel gauge sensor.  
Insert extractor hose through installation opening of sensor into the fuel tank.  
The fuel (also residual quantities) can now be drawn off.

## 11 FUEL TANK WITH MOUNTING

### 16 11 030 REMOVING AND INSTALLING FUEL TANK (40-LITRE TANK)

**IMPORTANT: After installation of fuel tank/prior to first engine start-up:**

- Check electrical resistance between metal filler bowl and wheel hub.

- **Measured value: approx. 0.65 ohms.**
- **Fill fuel tank with at least 5 liters of fuel.**

*Necessary preliminary tasks:*

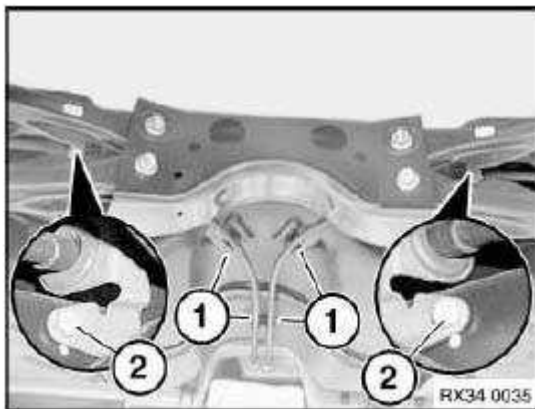
- Draw off fuel from fuel tank.
- Remove underbody panelling on left and right
- Remove exhaust system
- Remove heat shield
- Remove rear left wheel arch trim
- Disconnect parking brake Bowden cables from brake caliper

Release bolts (2) from rear axle carrier.

*Installation:*

Disengage parking brake Bowden cables from holders (1) and feed out through rear axle carrier.

**NOTE:        Parking brake Bowden cables remain suspended on handbrake lever.**

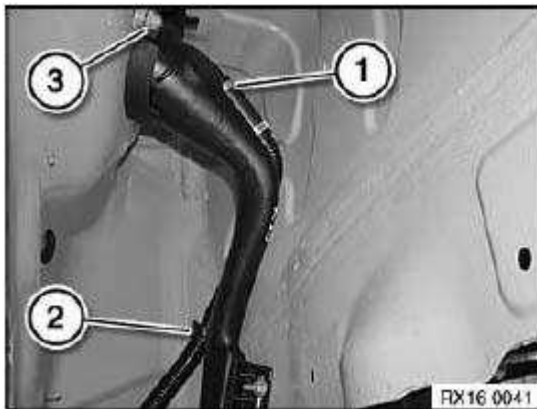


**Fig. 2: Parking Brake Cables Holders And Bolts**  
**Courtesy of BMW OF NORTH AMERICA, INC.**

Release hose clamp (1) and disengage filler vent line from holder (2).

*Installation:*

Replace hose clip.



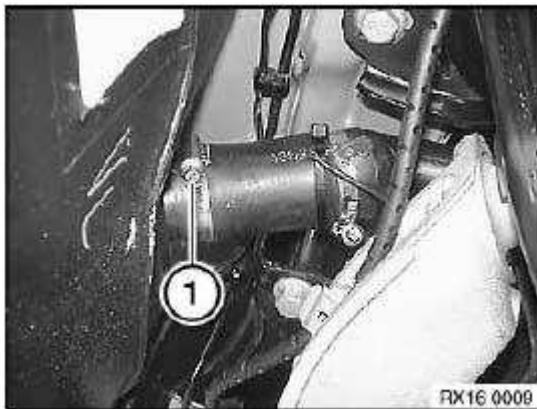
**Fig. 3: Hose Clamp And Holder**

Courtesy of BMW OF NORTH AMERICA, INC.

Release hose clamp (1) and remove filler hose from fuel tank.

*Installation:*

Tightening torque: 16 11 4AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .



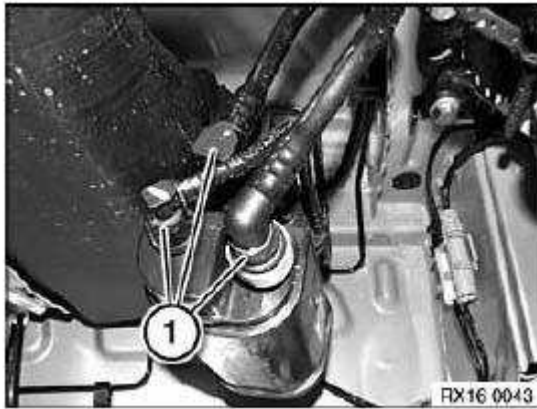
**Fig. 4: Hose Clamp**

Courtesy of BMW OF NORTH AMERICA, INC.

Unlock quick-release fasteners (1) on carbon canister and detach.

*Installation:*

Make sure quick-release fasteners engage correctly.



**Fig. 5: Quick-Release Fasteners**

Courtesy of BMW OF NORTH AMERICA, INC.

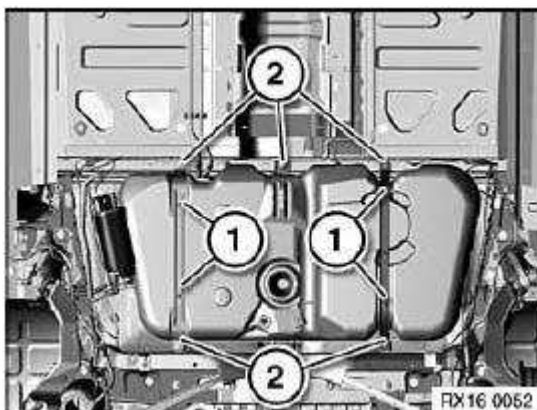
**IMPORTANT:** Secure fuel tank over a wide area with a suitable workshop jack and secure against falling down.

Remove expansion rivets (1).

Release screws (2) and lower fuel tank a little.

*Installation:*

Tightening torque: 16 11 3AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .



**Fig. 6: Lower Fuel Tank Rivets**

Courtesy of BMW OF NORTH AMERICA, INC.

Disconnect plug connection (1).

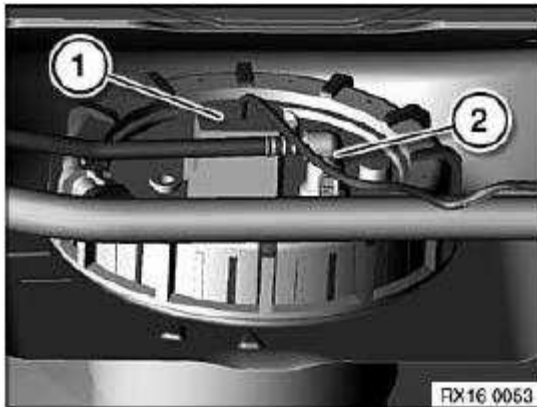
Unlock quick-release fastener (2) and detach fuel feed line.

Pass filler vent line through body and slowly lower fuel tank.

*Installation:*

Make sure that quick-release fastener is correctly engaged.

Make sure lines and wiring harness are not trapped or crushed during installation.



**Fig. 7: Quick-Release Fastener And Plug Connection**  
Courtesy of BMW OF NORTH AMERICA, INC.

The following components must be modified when the fuel tank is replaced:

- Fuel pump
- Carbon canister

## **16 11 060 REMOVING AND INSTALLING/REPLACING FUEL FILLER PIPE**

*Recycling*

Fuel escapes when fuel lines are detached. Have a suitable collecting container ready.

Catch and dispose of escaping fuel.

Observe country-specific waste-disposal regulations.

**IMPORTANT: Observe country-specific safety regulations.**

**Ensure adequate ventilation in the place of work!**

**Avoid skin contact (wear gloves)!**

**After installation of fuel tank/prior to first engine start-up:**

- Check electrical resistance between metal filler bowl and wheel hub.
- Measured value: approx. 0.65 ohms.
- Fuel tank must be filled with at least 5 liters of fuel.

*Necessary preliminary tasks:*

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### 2007 ENGINE Fuel Supply System - Repair Instructions - Cooper

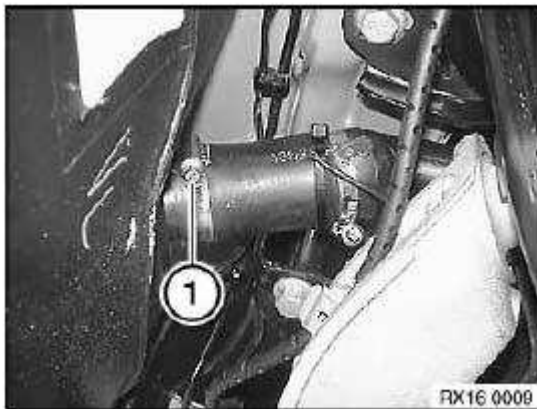
- Draw off fuel from fuel tank, see **16 00 005 Draining and filling fuel tank**
- Remove rear left wheel arch trim, see **51 71 041 REMOVING AND INSTALLING/REPLACING REAR LEFT OR RIGHT WHEEL ARCH COVER**
- Remove left underbody panelling, see **51 47 ... REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT UNDERBODY PANELLING**
- Unscrew fuel filler cap from fuel filler pipe

Unfasten hose clip (1).

Detach fuel hose from fuel tank.

*Installation:*

Tightening torque: 16 11 4AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .



**Fig. 8: Hose Clamp**

Courtesy of BMW OF NORTH AMERICA, INC.

Unfasten hose clip (1).

*Installation:*

Replace hose clip.

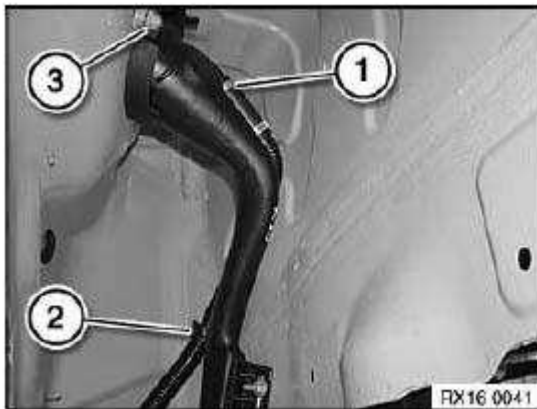
Unclip vent line from holder (2).

Unscrew nut (3).

*Installation:*

Replace nut.

Tightening torque: 16 11 1AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .



**Fig. 9: Hose Clamp And Holder**

Courtesy of BMW OF NORTH AMERICA, INC.

Unscrew nut (1).

*Installation:*

Tightening torque: 16 11 1AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .

Wind grounding cable (2) back around fuel filler pipe.

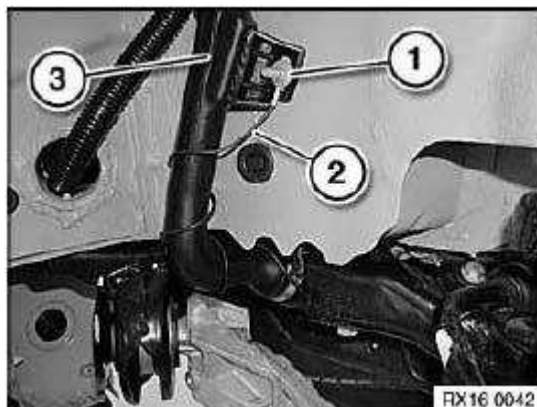
Remove fuel filler pipe (3).

*Installation:*

Make sure grounding cable (2) is correctly fitted.

Following seals must be correctly fitted:

- Vent hose to fuel filler pipe
- Fuel filler pipe to body cutout



**Fig. 10: Grounding Cable With Fuel Filler Pipe**  
**Courtesy of BMW OF NORTH AMERICA, INC.**

## **16 11 071 REPLACING RUBBER SLEEVE BETWEEN FUEL FILLER PIPE AND FUEL TANK**

### *Recycling*

Fuel escapes when fuel lines are detached. Have a suitable collecting container ready.

Catch and dispose of escaping fuel.

Observe country-specific waste-disposal regulations.

### **IMPORTANT: After installation of fuel tank/prior to first engine start-up:**

- **Check electrical resistance between metal filler bowl and wheel hub.**
- **Measured value: approx. 0.65 ohms.**
- **Fuel tank must be filled with at least 5 liters of fuel.**

### *Necessary preliminary tasks:*

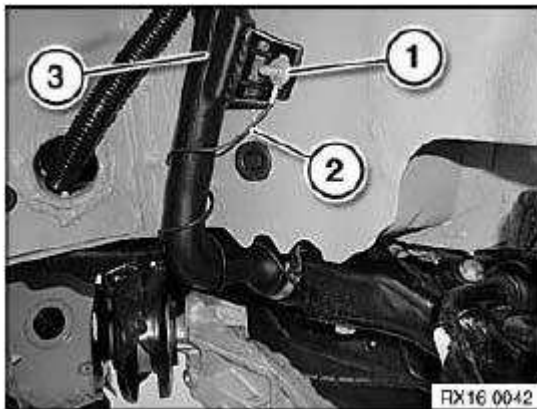
- Remove rear left wheel arch trim, see **51 71 041 REMOVING AND INSTALLING/REPLACING REAR LEFT OR RIGHT WHEEL ARCH COVER**
- Remove left underbody panelling, see **51 47 ... REMOVING AND INSTALLING/REPLACING LEFT OR RIGHT UNDERBODY PANELLING**
- Draw off fuel from fuel tank, see **16 00 005 Draining and filling fuel tank**

Unscrew nut (1).

### *Installation:*

Tightening torque: 16 11 1AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .

Make sure grounding cable (2) is correctly laid and secured.



**Fig. 11: Grounding Cable With Fuel Filler Pipe**  
Courtesy of BMW OF NORTH AMERICA, INC.

Cut open cable tie (1).

Loosen hose clamps (2).

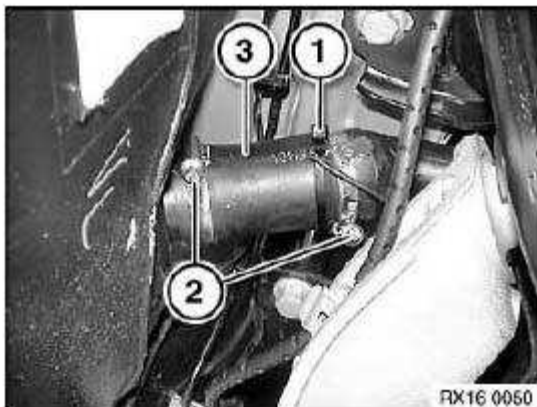
Detach rubber sleeve (3) first from fuel filler pipe and then from fuel tank.

*Installation:*

Tightening torque: 16 11 4AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .

Replace cable ties.

Make sure grounding cable is correctly fitted.



**Fig. 12: Hose Clamps And Rubber Sleeve**  
Courtesy of BMW OF NORTH AMERICA, INC.

**Special tools required:**

- **16 1 020 PIN WRENCH**

*Recycling*

Fuel escapes when fuel lines are detached. Have a suitable collecting container ready.

Catch and dispose of escaping fuel.

Observe country-specific waste-disposal regulations.

**IMPORTANT: Observe country-specific safety regulations.  
Ensure adequate ventilation in the place of work!  
Avoid skin contact (wear gloves)!  
Before starting the engine for the first time:**

- **Fill fuel tank with at least 5 liters of fuel.**

*Necessary preliminary tasks:*

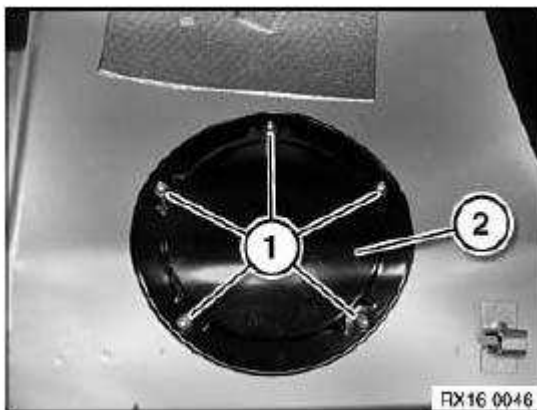
- Draw off fuel from fuel tank, see **16 00 005 Draining and filling fuel tank**
- Remove rear seat

Fold carpet forwards slightly.

Release nuts (1) and remove cover (2).

*Installation:*

Tightening torque: 16 11 2AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .



**Fig. 13: Delivery Unit Cover And Nuts**  
Courtesy of BMW OF NORTH AMERICA, INC.

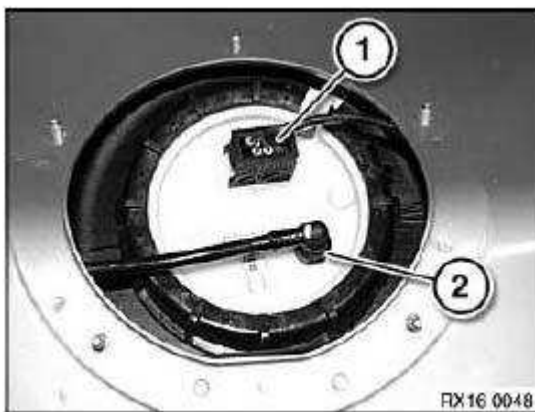
Disconnect plug connection (1).

Unlock and disconnect quick-connect coupling (2).

*Installation:*

Make sure that quick-release fastener is correctly engaged.

**IMPORTANT: Catch escaping fuel in a suitable container.**



**Fig. 14: Plug Connection And Quick-Connect Coupling**  
Courtesy of BMW OF NORTH AMERICA, INC.

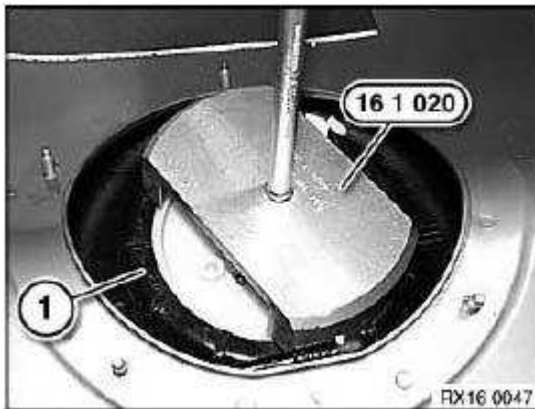
Release screw cap (1) with special tool 16 1 020 .

*Installation:*

Replace screw cap (1).

Replace rubber gasket.

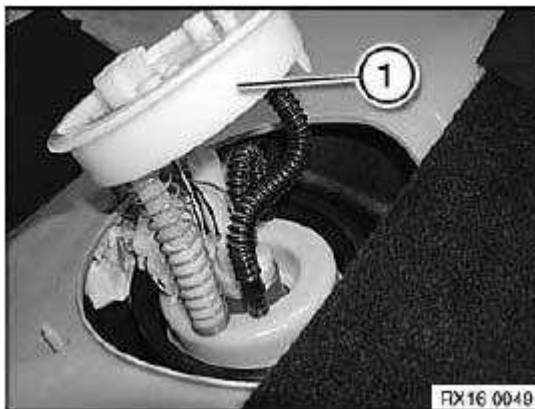
Tightening torque: 16 14 2AZ, see **16 14 FUEL PUMP** .



**Fig. 15: Special Tool (16 1 020) With Screw Cap**  
Courtesy of BMW OF NORTH AMERICA, INC.

Carefully feed fuel pump (1) out of tank.

**IMPORTANT: Do not bend sensor.**  
**Catch escaping petrol/gasoline.**



**Fig. 16: Feed Fuel Pump**  
Courtesy of BMW OF NORTH AMERICA, INC.

## 12 FUEL TRANSFER, SENSOR FOR GAUGE

### 16 12 010 REMOVING AND INSTALLING/REPLACING CARBON CANISTER (40-LITRE TANK)

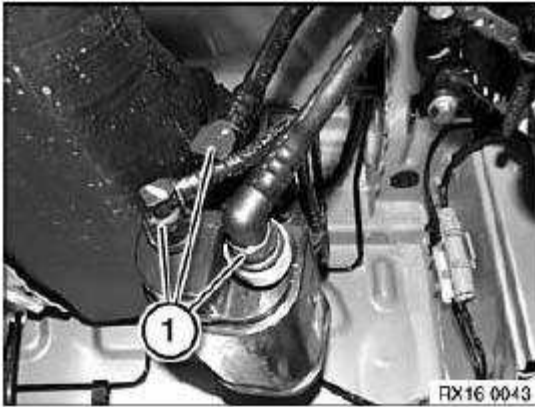
*Necessary preliminary tasks:*

- Remove rear right wheel arch trim, see **51 71 041 REMOVING AND INSTALLING/REPLACING REAR LEFT OR RIGHT WHEEL ARCH COVER**

Unlock and detach quick-connect couplings (1).

*Installation:*

Make sure quick-release fasteners engage correctly.

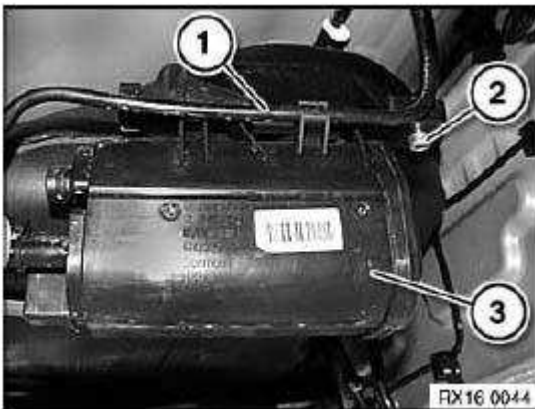


**Fig. 17: Quick-Release Fasteners**

Courtesy of BMW OF NORTH AMERICA, INC.

Unclip line (1).

Release screw (2) and swing out carbon canister (3).



**Fig. 18: Unclip Line And Carbon Canister**

Courtesy of BMW OF NORTH AMERICA, INC.

## **14 FUEL PUMP**

### **16 14 017 REMOVING AND INSTALLING/REPLACING FUEL FILTER WITH FUEL LEVEL SENSOR (50-LITRE TANK)**

Special tools required:

- **16 1 020 PIN WRENCH**

*Necessary preliminary tasks:*

- Drain fuel tank, see **16 00 005 Draining and filling fuel tank**
- Remove rear seat
- Remove complete sensor unit (left)

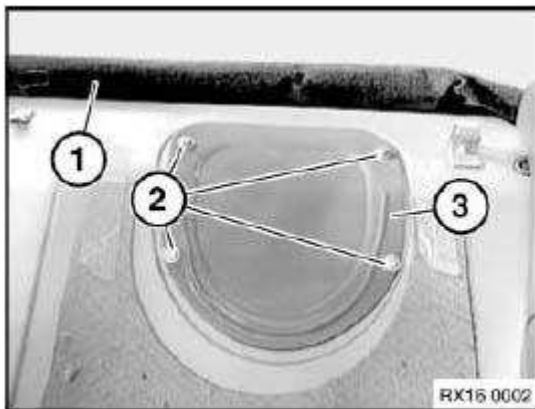
Push trim panel (1) forward.

Unfasten screws (2).

*Installation:*

Tightening torque: 16 11 2AZ, see **16 11 FUEL TANK AND FASTENING ELEMENTS** .

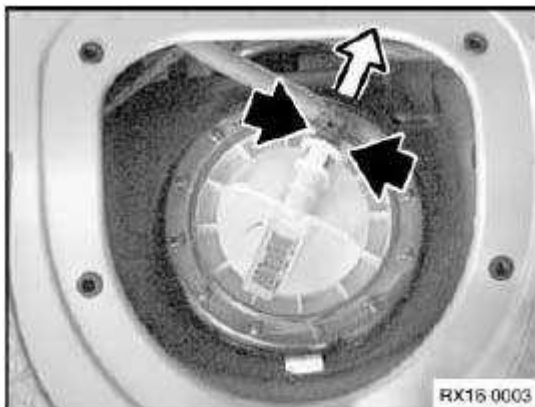
Remove the cover (3).



**Fig. 19: Trim Panel And Screws**

Courtesy of BMW OF NORTH AMERICA, INC.

Unlock and withdraw fuel hose.



**Fig. 20: Locating Fuel Hose**

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### 2007 ENGINE Fuel Supply System - Repair Instructions - Cooper

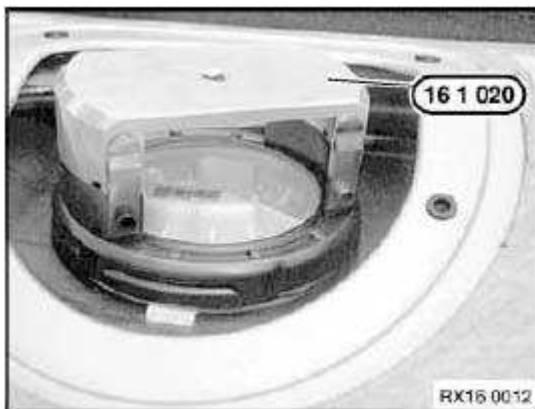
Courtesy of BMW OF NORTH AMERICA, INC.

Release locking ring with special tool 16 1 020.

*Installation:*

Replace rubber seal.

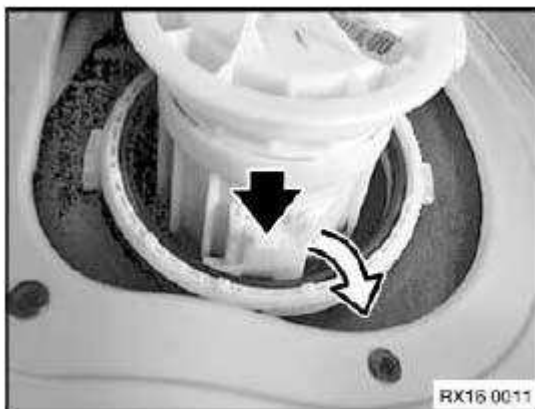
Tightening torque: 16 14 1AZ, see **16 14 FUEL PUMP** .



**Fig. 21: Special Tool (16 1 020)**

Courtesy of BMW OF NORTH AMERICA, INC.

Remove line holder from sensor unit. Lift sensor unit and lines out of fuel tank.



**Fig. 22: Removing Line Holder From Sensor Unit**

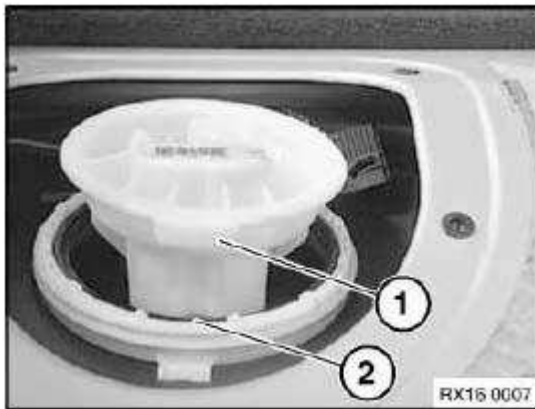
Courtesy of BMW OF NORTH AMERICA, INC.

*Installation:*

When installing fuel filter, make sure lug (1) engages in recess (2) on tank.

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### 2007 ENGINE Fuel Supply System - Repair Instructions - Cooper



**Fig. 23: Fuel Filter**

Courtesy of BMW OF NORTH AMERICA, INC.