

**Special tools required:**

- [13 3 010](#)
- [16 1 171](#)
- [16 1 174](#)
- [16 1 176](#)

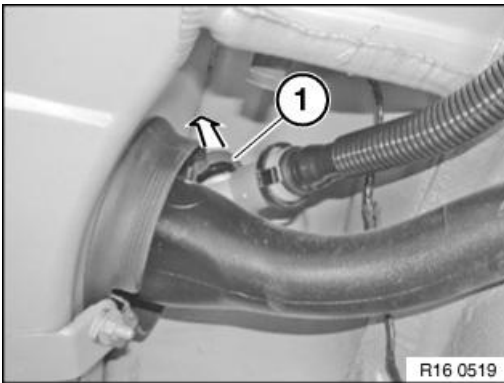
**Necessary preliminary tasks:**

- Remove rear right [wheel arch panel](#)

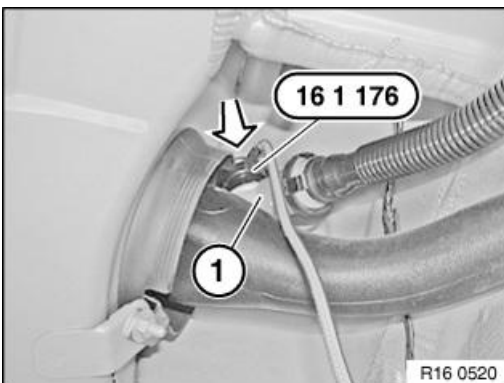


Comply with the following conditions in order to obtain plausible measuring results:

- Content of fuel tank:
 1. Maximum 90 %
 2. Minimum 13 % (fuel reserve indicator light must not light up).
- Park the vehicle in the workshop at least 2 hours before the test so that the fuel temperature is approximately that of the workshop temperature (ideal fuel temperature approx. 10 ... 20 °C)



Pull off protective cap (1) vertically upwards from fuel filler pipe. **Important!**
The original protective cap must be refitted on completion of work!



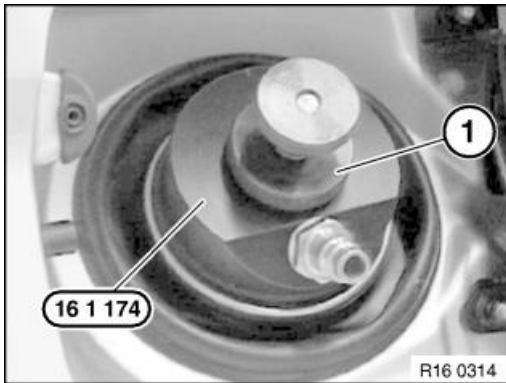
Attach special tool [16 1 176](#) vertically from above to valve on fuel filler pipe (1). **Important!**

Special tool [16 1 176](#) must perceptibly and audibly engage!

**Important!**

Make sure that special tool [16 1 176](#) is removed again on completion of the work!

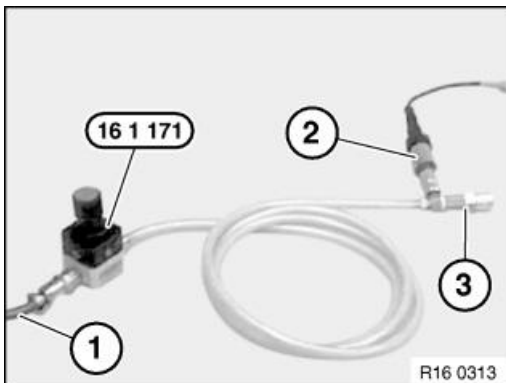
Otherwise, tank ventilation will not be possible and this will result in damage to or failure of the tank system!



Remove fuel filler cap and connect special tool [16 1 174](#) to fuel filler neck. Using handwheel (1), clamp special tool [16 1 174](#) to fuel filler neck.

**Important!**

Turn pressure regulator on special tool [16 1 171](#) anticlockwise as far as the stop.



Using compressed air line (1), connect special tool [16 1 171](#) to workshop compressed air system (8 ... 10 bar).

Connect pressure sensor (2) from Diagnosis and Information System with a measuring range of 0 ... 25 bar.

Important!

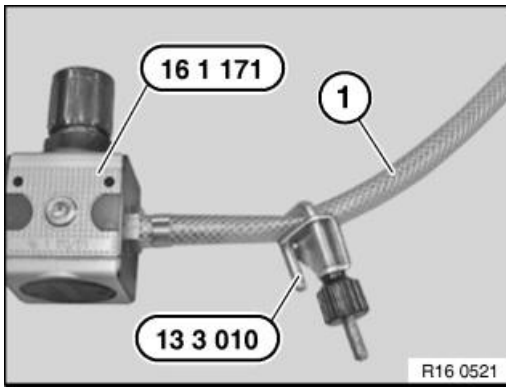
Do not connect quick-release coupling (3) of special tool [16 1 171](#) as yet.



1. Select "Measurement" function on Diagnosis and Information System (DIS).
2. Using pressure regulator on special tool [16 1 171](#), increase displayed pressure by 0.20 bar.
3. Connect special tool [16 1 174](#) to quick-release coupling of special tool [16 1 171](#).
4. Wait until the value at the Diagnosis and Information System has levelled out.
5. Using pressure regulator on special tool [16 1 171](#), reset pressure in fuel tank to 0.20 bar excess pressure.

**Important!**

Do not under any circumstances increase pressure by more than 0.30 bar as this would result in damage to the fuel tank and tank ventilation system.



Using special tool [13 3 010](#) , disconnect feed line from special tool [16 1 171](#) to fuel filler neck.

Allow a rest period of approx. 20 sec.

Read off and note down starting pressure value.

Wait approx. 120 sec.

Read off final pressure value and compare with starting pressure value.



Measurement evaluation:

- Pressure drop up to 0.01 bar:
System OK
- Pressure drop over 0.02 bar:
System leaking beyond permitted levels

If the system is leaking, a leak detection must be carried out and the defective components replaced.

16 00 009 Cleaning complete fuel system (in event of incorrect filling of diesel cars with petrol/gasoline)



Important!

Do not start engine!

Please refer to the current Service Information bulletins and PuMA measures for the exact procedure in the event of diesel vehicles being incorrectly filled with petrol!

16 00

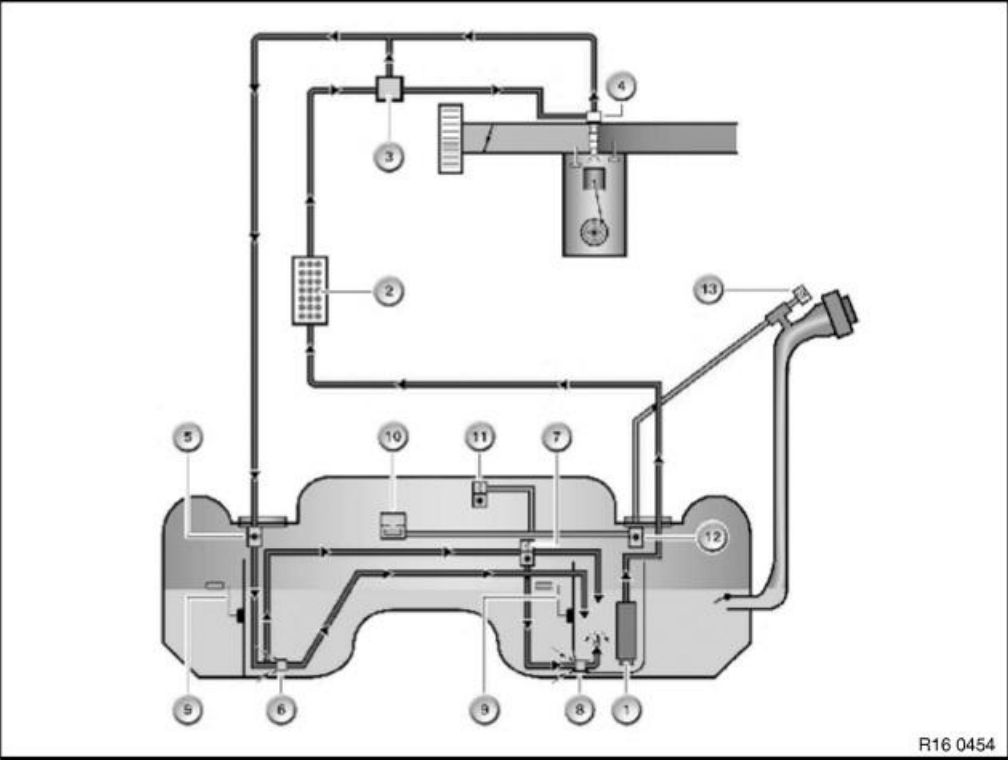
Diesel fuel supply system

1. General

[General function description of fuel system.](#)

2. Part designation

Schematic drawings of fuel supply systems



Diesel fuel supply system

1. Electric fuel pump	8. Suction jet pump, right
2. Fuel filter with electr. filter heater	10. Level sensor
3. High-pressure pump	10. Filler vent valve
4. Injector	11. Service vent valve
5. Outlet protection valve	12. Roll-over valve
6. Suction jet pump, left	13. Insect strainer
7. Pressure limiting valve	

3. Functional description (see also graphic)

Fuel system

The saddle-shaped fuel tank contains the surge chamber with integrated electric fuel pump on its right side.

The surge chamber ensures that the fuel pump is properly supplied in all vehicle operating states.

The fuel is pumped from the right side of the fuel tank into the surge chamber via the suction jet pump integrated in the surge chamber.

The suction jet pump in the left fuel tank half pumps the fuel through the tank expansion line to the right side of the fuel tank.

The suction jet pump is operated via the fuel feed line.

Fuel supply to engine:

Fuel is pumped by the electric fuel pump to the injector via the fuel feed line, the fuel filter with electric heater

and the high-pressure pump.

The fuel tank is vented during refueling via the filler vent valve.

Venting during vehicle operation is performed via the service vent valve.

The filler vent valve in the tank is closed by the rising fuel if the tank is overfilled. The residual volume thus created replaces the expansion tank. The ventilation function is maintained by a second float valve.

Both valves are designed as rollover valves. This prevents fuel from escaping from the fuel tank in extreme vehicle positions (overturning, inclined position).

Determining fill level in fuel tank:

The fuel level is measured by means of lever sensors on both sides of the fuel tank. The combination of the determined ohm values from the right and left lever-type sensors produces the actual level in the fuel tank.

Operating principle of electric filter heater:

The electric filter heater cuts in under the following conditions as a function of fuel pressure and fuel temperature:

- Cold, viscous fuel exceeds a specific fuel pressure (in the filter inlet).
- Fuel drops below a specific temperature (under 2 °C).

4. Operating data, fuel system

Operating pressure in rail up to 1600 bar.

Operating pressure ahead of high-pressure pump approx. 5.6 bar.

**Special tools required:**

- [16 1 080](#)

**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!**

Ensure adequate ventilation in the place of work!

Avoid skin contact (wear gloves)!

Connect the exhaust and extraction systems to the exhaust tailpipe.

The electric fuel pump must not operate without fuel! After completing repairs but before starting the engine for the first time, fill the fuel tank with min. 5 l fuel through the fuel filler pipe.

Do not damage non-return flap when pulling out extraction hose.

**Diesel vehicles: Note:**

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:**

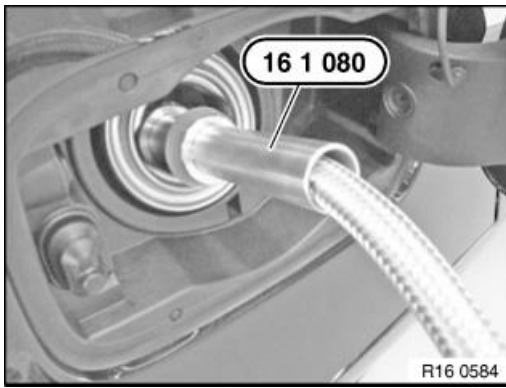
Start engine and allow to run.

Note:

The electric fuel pump runs.

In this way, the fuel is repumped through the suction jet pump from the left to the right side of the fuel tank.

Fuel can be drawn out of left and right sides of tank through filler neck, leaving only a small residue. The residual quantity is drawn off through the service opening (on right/left).



Insert special tool [16 1 080](#) into filler neck.

Special tool [16 1 080](#) has two different diameters for petrol and diesel vehicles!

Slide extraction hose of extractor unit, refer to BMW Service Workshop Equipment and Planning Documentation, through special tool [16 1 080](#) into the fuel filler pipe, turning in the process if necessary.

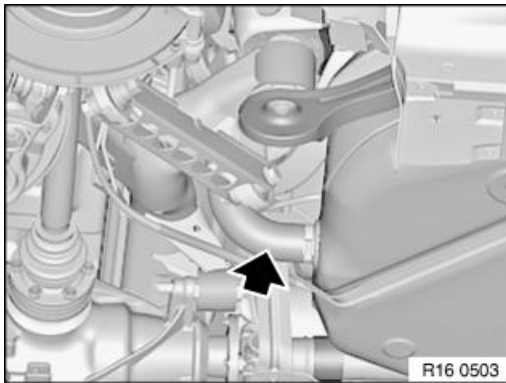
Insertion length approx. 120 cm.

Important!

Comply with the following instruction if the extraction hose can only be inserted approx. 100 cm before meeting resistance.

Draw off fuel as much as possible with extractor unit, refer to BMW Service Workshop Equipment and Planning Documentation.

Follow drawing off of fuel on fuel gauge in instrument cluster.



Note:

If the extraction hose meets resistance at an insertion length of approx. 100 cm, a second person must press gently against the rubber hose of the filler pipe.

Only for US cars with N51 engines (metal filler pipe)!

The extraction hose is correctly positioned in the tank at an insertion length of approx. 120 cm.

Important!

Watch out for escaping fuel when withdrawing the extraction hose from the filler pipe.



Drawing off residual fuel quantity:

Drawing off residual fuel amount is not included in the time value of this operation.

Important!

Ensure car interior is adequately ventilated.

Catch dripping fuel in a suitable container.

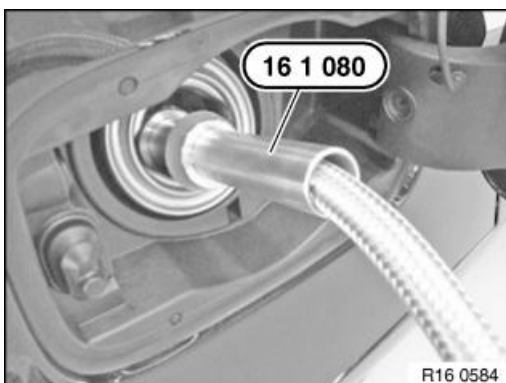
Remove [left sensor unit](#).

Remove [right sensor unit](#).

Draw off residual fuel quantity through service openings.

Note:

Only for US cars with N51 engines!



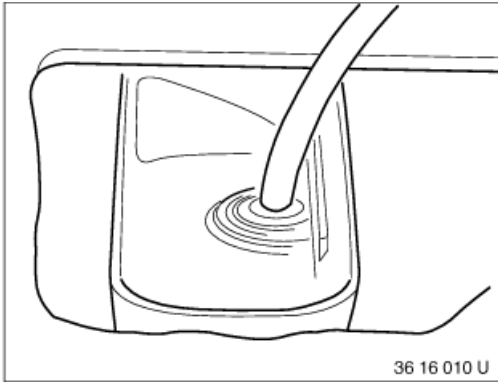
Fuel filling:

Insert special tool [16 1 080](#) into filler neck.

Special tool [16 1 080](#) has two different diameters for petrol and diesel vehicles!

Slide extraction hose of extractor unit, refer to BMW Service Workshop Equipment and Planning Documentation, approx. 40 cm into fuel filler pipe.

Fill fuel from suction extractor unit.



Drawing off after fault in suction jet pump:

Draw off right half of tank completely through fuel filler pipe.

Remove cap from left service opening.

Insert extraction hose through service opening in tank, fuel (also residual quantity) can be drawn off.

16 00 Functional description for general fuel supply systems

Petrol engine fuel supply systems

Fuel system

The fuel pump in the fuel tank generates pressure in the fuel system, which is set by the electronic pressure control valve to a certain level.

Tank-venting system

The tank safety valve is a closed system that is bled via a carbon canister. The carbon in the canister is stored as granules. The large surface of the granules traps the fuel vapour, that occurs in the fuel tank. The carbon canister needs to be refreshed regularly in order to be able to continue to store fuel vapour. This is done by flushing it with fresh air from the intake pipe. This process is controlled by the engine control unit.

Diesel engine fuel supply system

Fuel system

The fuel pump in the fuel tank supplies the engine with fuel. Two types of high pressure pump are used for direct injection.

1. The distributor-type injection pump. This supplies each cylinder directly with fuel via individual injector nozzles.
2. The high pressure pump for the common rail systems. This generates the required pressure in the injector pipe for all injector nozzles.

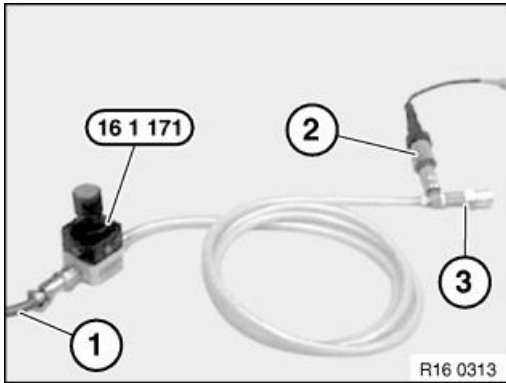
With common rail systems another pump (inline pump, M57/geared pump, M67) is connected between the high pressure pump and the fuel pump. This pump aids the fuel pump in the fuel tank during times of high fuel requirement.

Tank-venting system

Diesel fuel is slow-evaporating, therefore no carbon canister is required. The fuel tank is bled directly into the atmosphere.

**Special tools required:**

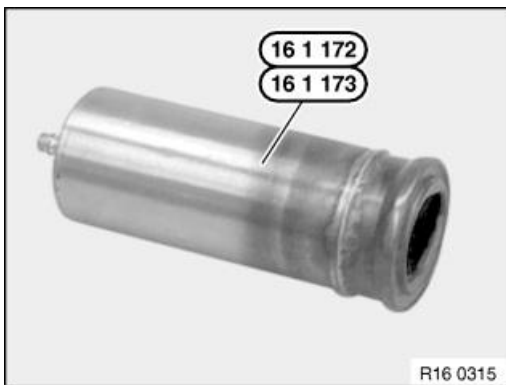
- [13 3 010](#)
- [16 1 171](#)
- [16 1 172](#)



Set pressure regulator on special tool [16 1 171](#) fully in "–" direction.

Connect special tool [16 1 171](#) using compressed air line (1) to workshop compressed air system (8 ... 10 bar).

Connect pressure sensor (2) from Diagnosis and Information System.



Connect special tool [16 1 172](#) to quick-release coupling of special tool [16 1 171](#).

Install fuel filler cap on special tool [16 1 172](#) (3).

**Note:**

Only the absolute pressure is indicated in the display of the Diagnosis and Information System (DIS). The current ambient air pressure is already displayed without additional pressurisation.



Check testing equipment for leaks!

Select "Measurement/ Pressure" function on Diagnosis and Information System (DIS).

Using pressure regulator on special tool [16 1 171](#) , increase pressure by 0.2 bar.

Using special tool [13 3 010](#) clamp off feed line from special tool [16 1 171](#) .

Read off and note down pressure.

Wait 60 secs.

Read off pressure again and compare with initial pressure value.

Measurement evaluation:

Pressure drop > 0.012 bar	Testing equipment leaking. Check connection points for leaks.
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Check fuel filler cap pressure relief valve!

Select "Measurement/ Pressure" function on Diagnosis and Information System (DIS).

Using pressure regulator on special tool [16 1 171](#) , increase pressure by 0.3 bar.

Using special tool [13 3 010](#) clamp off feed line from special tool [16 1 171](#) .

Read off and note down pressure.

Wait 60 secs.

Read off pressure reading again and compare with initial pressure value.

Measurement evaluation:

Pressure drop > 0.012 bar	Fuel filler cap pressure relief valve faulty. Replace fuel tank cap.
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**Recycling**

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

Catch and dispose of escaping fuel.

Observe country-specific waste disposal regulations.

**Important!**

Ensure adequate ventilation in the workbay!

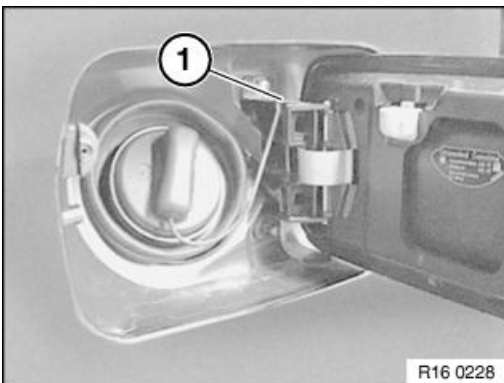
Avoid skin contact (wear gloves)!

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

- Fill fuel tank with at least 5 litres of fuel.
- Check earth connection at fuel filler neck to body for continuity. If necessary, clean contact surface between body and fuel filler pipe screw connection.

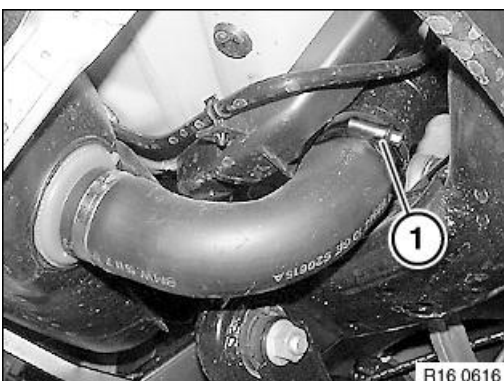
**Necessary preliminary tasks:**

- [Extract fuel from fuel tank](#)
- Remove [rear right wheel arch trim](#)
- Lower [rear axle](#).



Unhook retaining strap (1) from tank flap.

Open cap and set to one side.

**Important!**

There may still be residual amounts of fuel in the tank.

Catch and dispose of escaping fuel.

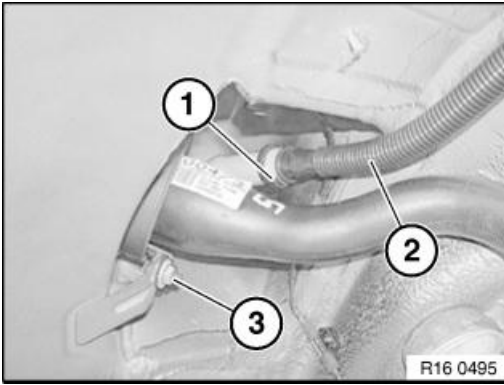
Unfasten hose clamp (1).

Detach fuel filler hose from fuel filler pipe.

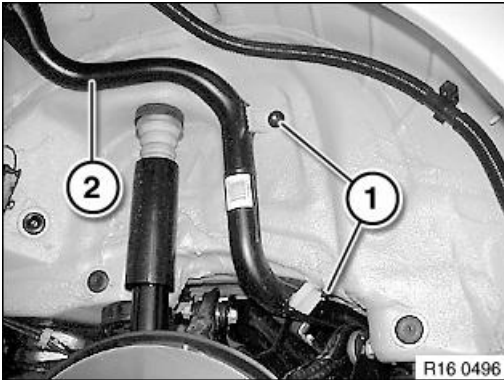
Installation note:

Replace hose clamp.

Tightening torque [16 12 1AZ](#).



Unlock snap fastener (1) and detach vent hose (2).
Unscrew nut (3).



Unscrew nuts (1).

Installation note:

Tightening torque [16 12 2AZ](#).

Withdraw fuel filler pipe (2) completely out of rubber cup at wheel arch and feed out.

Installation note:

Make sure rubber cup fits correctly.



Installation note:

Clean **contact surface** on body and earth cable on fuel filler pipe.

Ground connection must be guaranteed.

**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!**

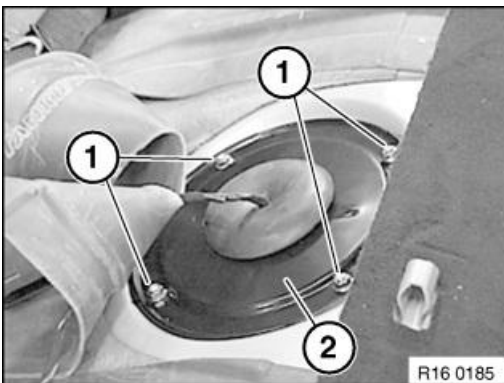
Ensure adequate ventilation in the place of work!

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

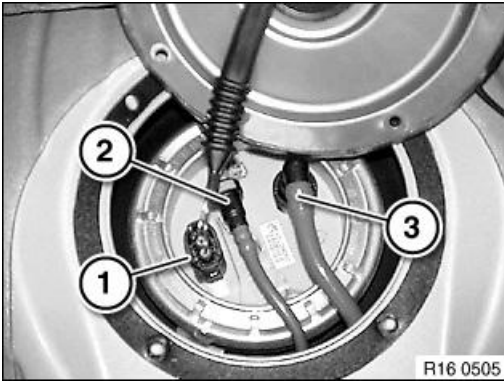
- Check ground connection at fuel filler neck to body for continuity. If necessary, clean contact surface between body and fuel filler pipe screw connection.
- Fill fuel tank with min. 5 l fuel.
- Check [transfer function of suction jet pump](#).

**Necessary preliminary tasks:**

- [Draw off fuel from fuel tank](#)
- Remove [rear seat bench](#)
- Remove [guide tube for handbrake cables](#)
- Remove right [wheel arch trim](#)
- Remove [rear left and right underbody panelling](#)
- Remove left and right [underbody cover](#)



Release screws (1) and remove cover (2) from left and right sides of fuel tank.



Left sensor unit:

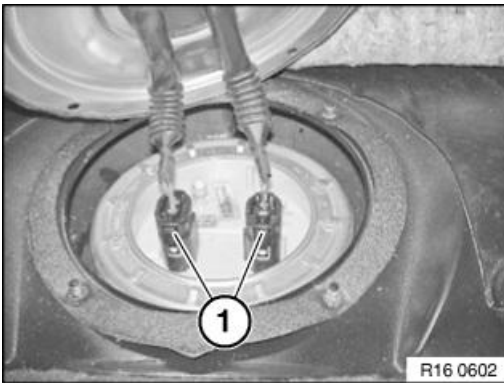
Disconnect plug connection (1).

Unlock quick-release fastener (2) and detach line towards front.

Unlock quick-release fastener (3) and detach line towards top.

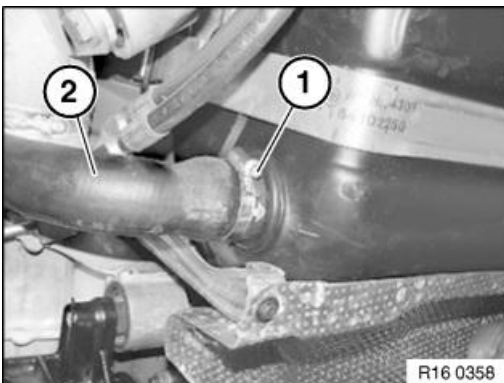
Installation:

Make sure quick-release fasteners engage correctly.



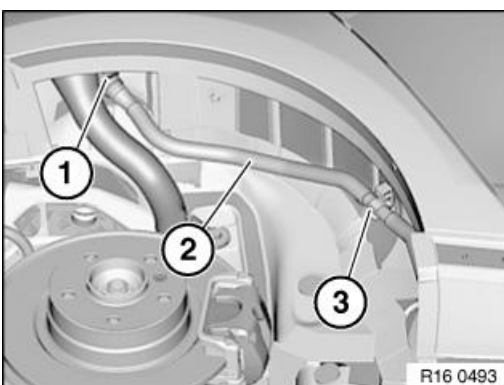
Right sensor unit:

Disconnect plug connection (1).



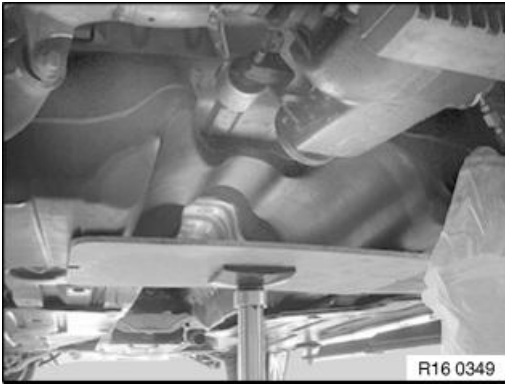
Release hose clamp (1) and detach fuel filler hose (2). *Installation:*

Tightening torque [16 12 1AZ](#).

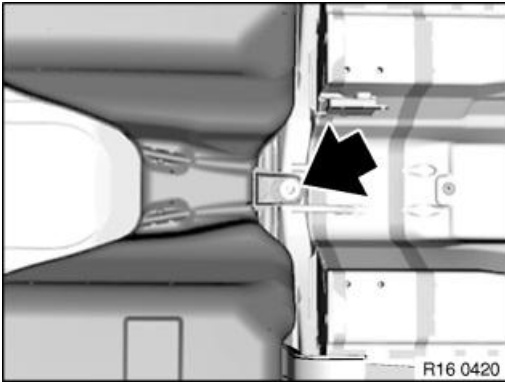


Unlock quick-release fastener (1) and detach vent line (2).

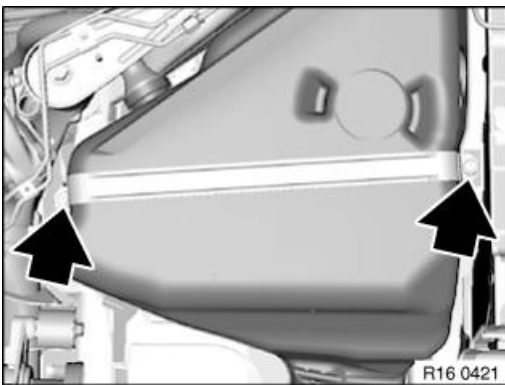
Detach vent line (2) from holder (3).



Heavily support the fuel tank.



Unfasten nut. *Installation:*
Replace self-locking nut.
Tightening torque [16 11 1AZ](#).



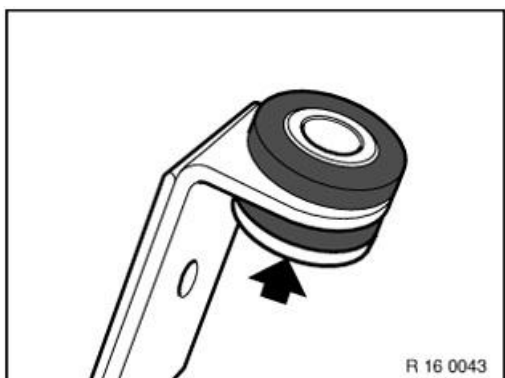
Release screws for tightening straps on left and right and remove tightening straps.

Important!

Carefully feed the vent line through the body when lowering the fuel tank.

Carefully lower fuel tank.

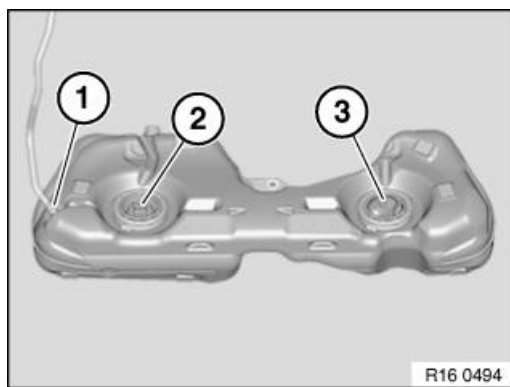
Installation:
Tightening torque [16 11 2AZ](#).



Installation:

Note rubber mount with spacer bush.

Wide collar on spacer bush points to screw head.



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

- Vent line (1)
- [Right sensor unit](#) (2)
- [Left sensor unit](#) (3)

**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!**

Ensure adequate ventilation in the place of work!

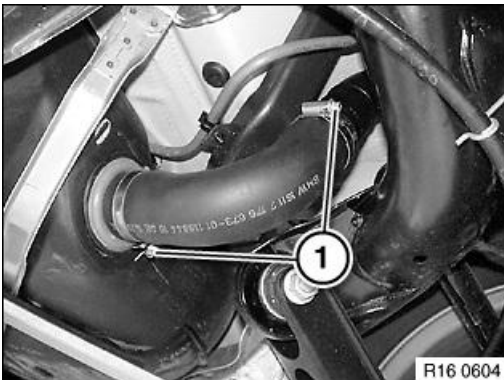
Avoid skin contact (wear gloves)!

Before starting the engine for the first time:

- Fill fuel tank with at least 5 litres of fuel.
- Check ground connection at fuel filler neck to body for continuity. If necessary, clean contact surface between body and fuel filler pipe screw connection.

**Necessary preliminary tasks:**

- Draw off [fuel from fuel tank](#)

**Important!**

There may still be residual amounts of fuel in the tank.

Catch and dispose of escaping fuel.

If necessary, draw off residual amount of fuel via filler hose.

Loosen hose clamps (1).

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

Installation:

Tightening torque [16 11 3AZ](#).

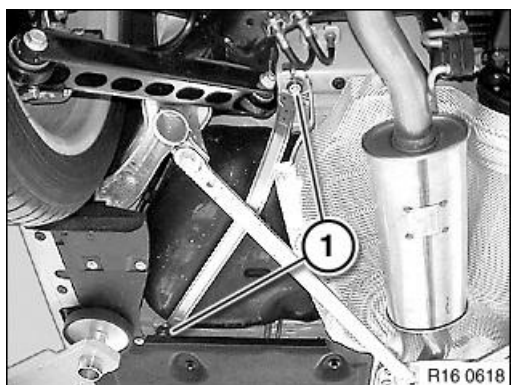
**Necessary preliminary tasks:**

- Partially detach rear [underbody panelling](#).
- If necessary, remove cross reinforcement.

**Important!**

Secure fuel tank against slipping and falling out.

Heavily support the fuel tank.



Release screws (1) and remove clamping band. *Installation note:*
Tightening torque [16 11 2AZ](#).

16 12 ... Checking repumping function of suction jet pump with BMW diagnosis system



Important!

Ensure adequate ventilation in the workbay!

Ensure absolute cleanliness when working on the open fuel tank.

Contaminants in the fuel tank can impair driving operation or may even result in vehicle breakdown!

Collect escaping fuel in a suitable collecting vessel.



Necessary preliminary tasks:

- Fluid level must be ≤ 28 l
 - If necessary, [draw off fuel from fuel tank](#)
- Pour two to three litres of fuel into the left tank chamber via the flange opening
- Connect diagnosis system
 - Path:
 - KOMBI - instrument cluster vehicle test
 - Diagnosis control unit functions
 - Diagnosis requests
 - Fuel level sensor 1, fuel level sensor 2.

Note:

Fuel level sensor 1 = Fuel level sensor, right

Fuel level sensor 2 = Fuel level sensor, left



Start engine.

Compare display for left and right tank chambers.

Repumping function OK

When filling level of fuel level sensor 2 (left chamber) is falling (about 1 l per min).

Repumping function not OK

When filling level of fuel level sensor 2 (left chamber) is stable or rising.



Special tools required:

- [16 1 020](#)



Recycling

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

Catch and dispose of escaping fuel.

Observe country-specific waste disposal regulations.



Important!

Ensure adequate ventilation in the workbay!

Avoid skin contact (wear gloves)!

Ensure absolute cleanliness when working on the open fuel tank.

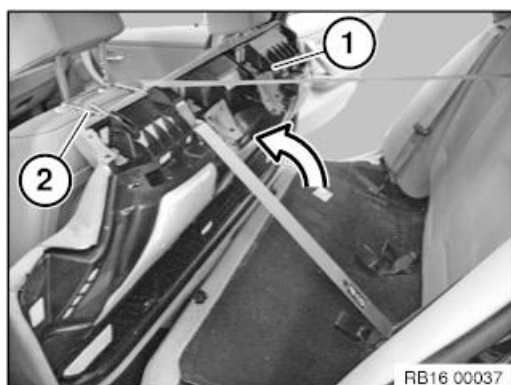
Before starting the engine for the first time:

- Fill fuel tank with at least 5 litres of fuel.



Necessary preliminary tasks:

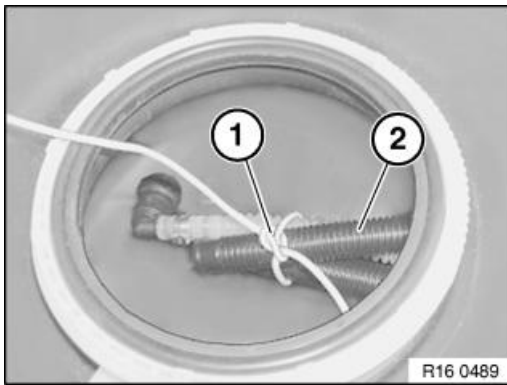
- [Draw off fuel from fuel tank](#)
- Remove [rear seat bench](#)
- Remove [right sensor unit](#)



Only for E84, E87, E91:

Only unclip seat bench (1) on the left and right and fold up in direction of arrow as illustrated.

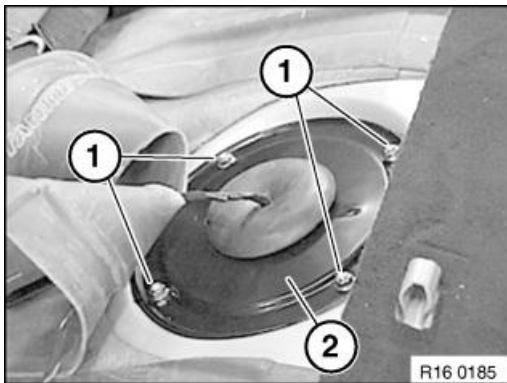
Secure seat bench on front seat (2).



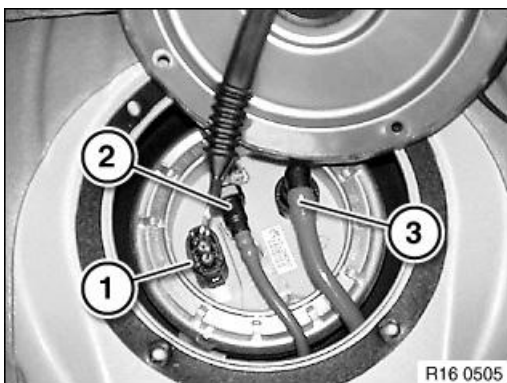
Attach an auxiliary lead (1) to hose pack (2) through sensor opening.
The auxiliary lead is pulled through with the hose pack towards the left and facilitates subsequent reinstallation.

Installation note:

Make sure when pulling through the hose pack that the tank ventilation system in the tank tunnel is not damaged.



Release screws (1) and remove cover (2) from left side of fuel tank.



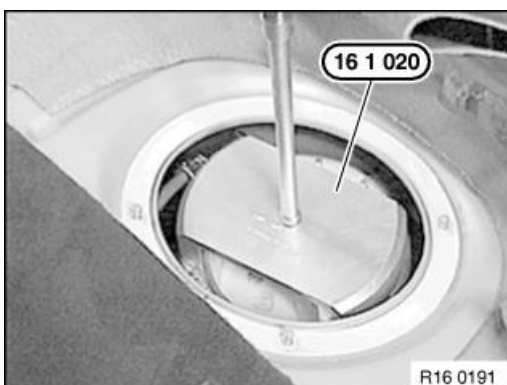
Disconnect plug connection (1).

Unlock quick-release fastener (2) and detach line towards front.

Unlock quick-release fastener (3) and detach line towards top.

Important!

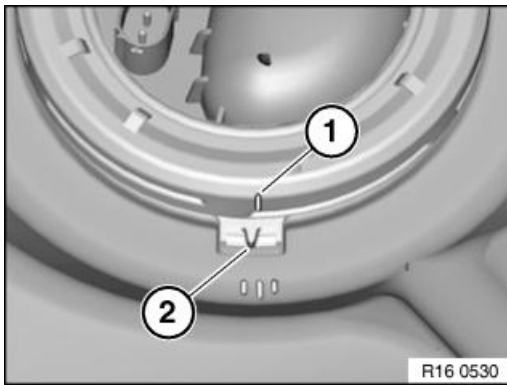
Do not use any tools to unlock the quick-release fasteners.



Release screw cap with special tool [16 1 020](#) and remove service cap.

Installation note:

Procedure for tightening screw cap, see next work step.



Important!

Fit screw cap without using a tool and tighten hand-tight.

Then tighten screw cap with special tool [16 1 020](#) until notch (1) points to marking (2).

Note:

Illustration shows the tank removed.

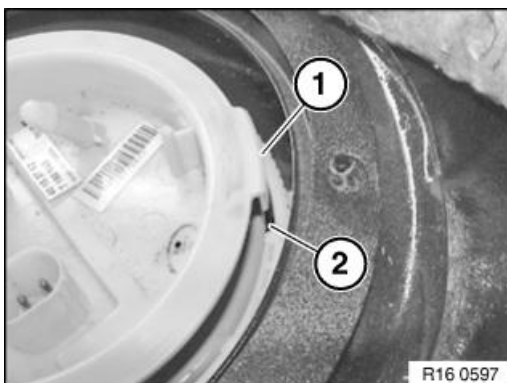


Carefully lift sensor unit (1) out of tank.

In so doing, press tab (2) against spring force in order to make it easier to feed sensor unit out of tank.

Note:

Illustration shows the tank removed.



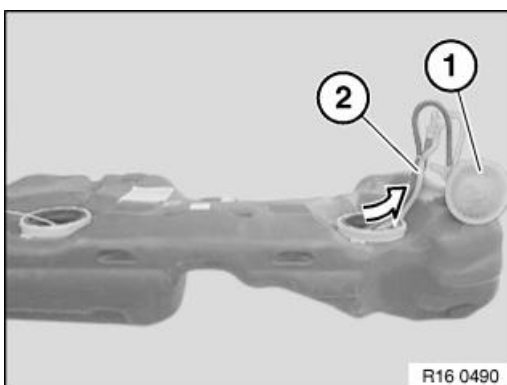
Installation note:

Clean sealing surfaces and install new rubber sealing ring.

Service cap can only be installed in one position.

When installing, make sure lug (1) of service cap engages in corresponding opening (2) on fuel tank.

Make sure that the lever sensor moves freely before fitting the service cap.



Remove sensor unit (1) and hose pack (2) with auxiliary cable to left.

Installation note:

When replacing the sensor unit, modify the end of the auxiliary lead to the new hose pack and carefully pull in through the tank.

Note:

Illustration shows the tank removed.



Special tools required:

- [16 1 020](#)



Recycling

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

Catch and dispose of escaping fuel.

Observe country-specific waste disposal regulations.



Important!

Ensure adequate ventilation in the workbay!

Avoid skin contact (wear gloves)!

Ensure absolute cleanliness when working on the open fuel tank.

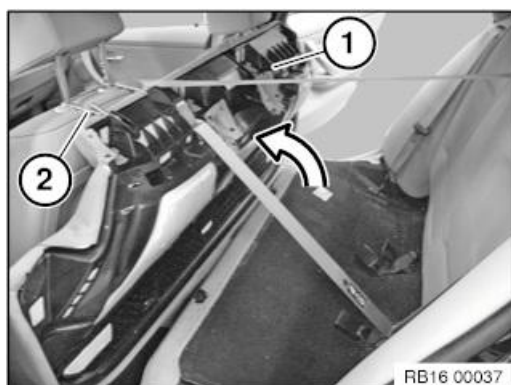
Before starting the engine for the first time:

- Fill fuel tank with at least 5 litres of fuel.



Necessary preliminary tasks:

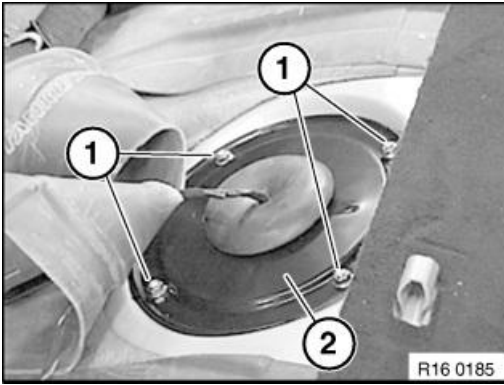
- [Draw off fuel from fuel tank](#)
- Remove [rear seat bench](#)



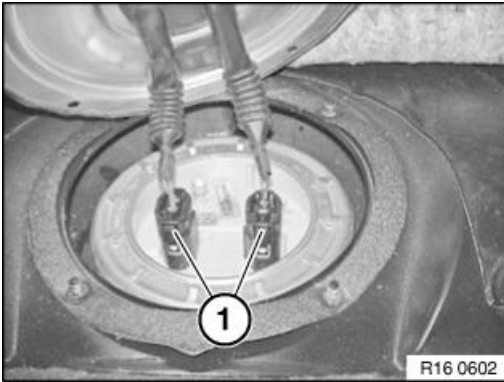
Only for E84, E87, E91:

Only unclip seat bench (1) on the left and right and fold up in direction of arrow as illustrated.

Secure seat bench on front seat (2).

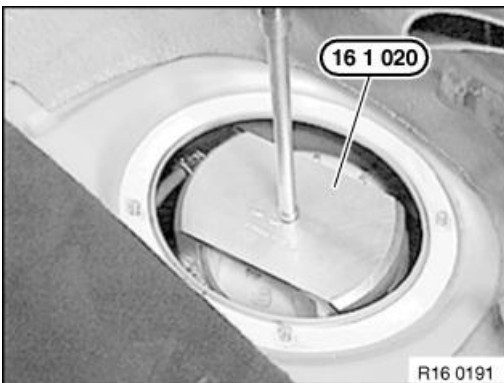


Release screws (1) and remove cover (2) from right side of fuel tank.



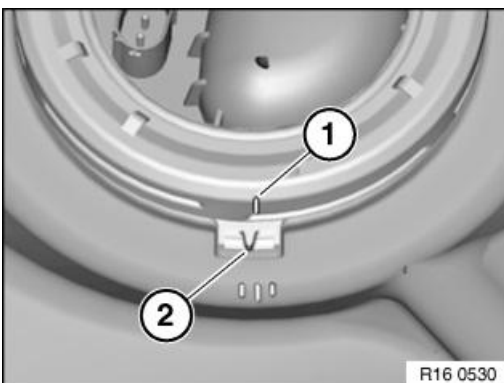
Disconnect plug connection (1).

If necessary, remove fuel line for auxiliary heater.



Release screw cap with special tool [16 1 020](#) and remove service cap. *Installation note:*

Procedure for tightening screw cap, see next work step.



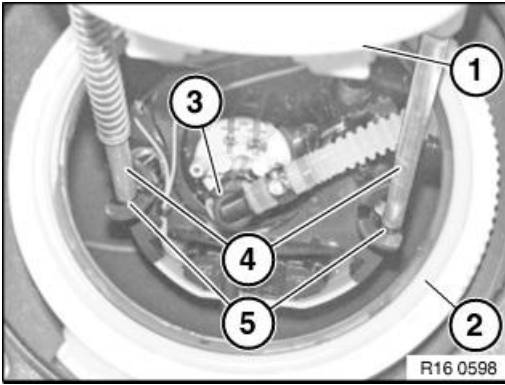
Important!

Fit screw cap without using a tool and tighten hand-tight.

Then tighten screw cap with special tool [16 1 020](#) until notch (1) points to marking (2).

Note:

Illustration shows the tank removed.



Pull out service cover (1).

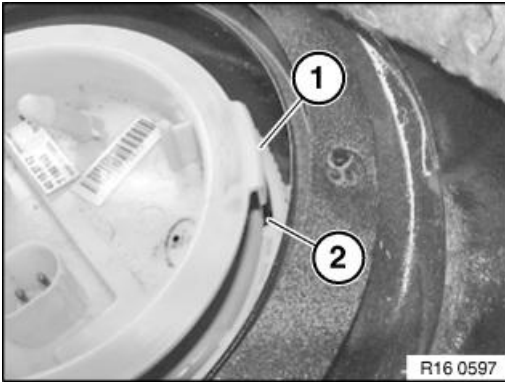
Unlock and disconnect quick-release fastener (3) of fuel delivery line.

Installation note:

Clean sealing surfaces and install new rubber seal (2).

Locating rods (4) must fit correctly in the hole (5) of the delivery unit.

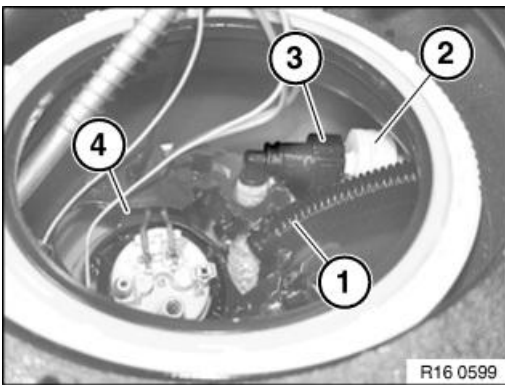
Make sure that the lever sensor moves freely before fitting the service cap (1).



Installation note:

Service cap can only be installed in one position.

When installing, make sure lug (1) of service cap engages in corresponding opening (2) on fuel tank.



Disconnect line (1) towards top

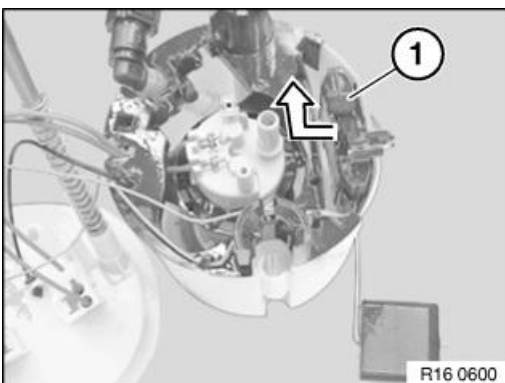
Unlock quick-release fastener (3) and detach fuel return line (2).

Important!

Do not use any tools to unlock the fuel delivery line.

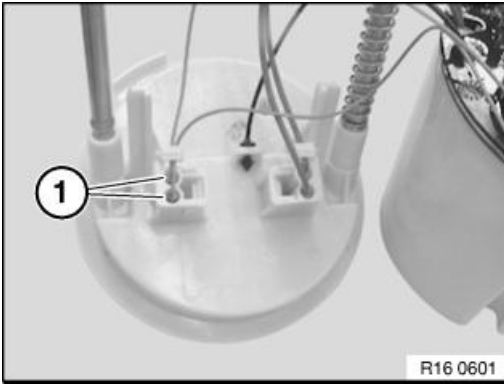
Draw off remaining fuel from surge tank.

Carefully lift fuel pump with fuel level sensor (4) out of fuel tank.



Remove fuel level sensor in direction of arrow. *Installation note:*

Fuel level sensor must snap audibly into place!



Detach line from brackets.

Unlock plug connection (1) and detach from service cap.

Important!

Risk of damage:

Carefully feed cable out of cable guide.

Do not kink cable.



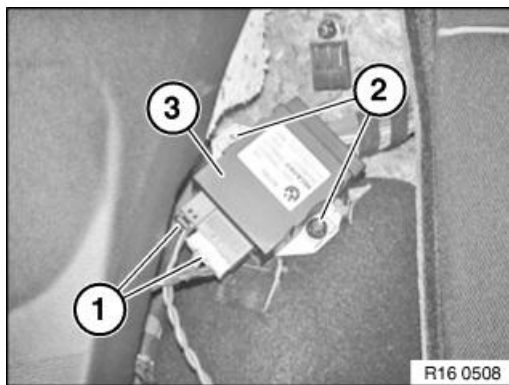
Important!

Read and comply with notes on [protection against electrostatic discharge \(ESD protection\)](#).



Necessary preliminary tasks:

- E81, E82, E87, E91, E92 and E84:
Remove [backrest side section](#) for right rear seat
- E90:
Remove [backrest](#)



Disconnect plug connection (1).

Release nuts (2) and remove control unit (3).

Installation:

Tightening torque [16 14 2AZ](#).



Replacement:

- Except for M3, carry out [programming/coding](#) (M3 is not programming- or coding-relevant)

**Special tools required:**

- [16 1 020](#)

**Recycling**

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

Catch and dispose of escaping fuel.

Observe country-specific waste disposal regulations.

**Important!**

Ensure adequate ventilation in the workbay!

Avoid skin contact (wear gloves)!

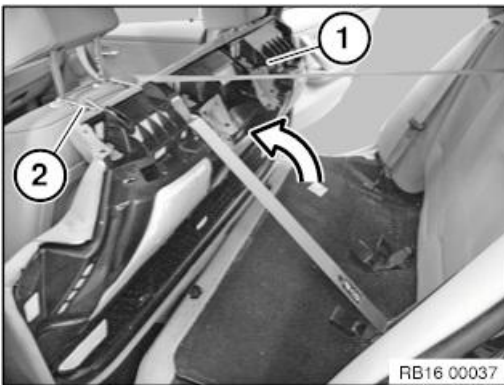
Ensure absolute cleanliness when working on the open fuel tank.

Before starting the engine for the first time:

- Fill fuel tank with at least 5 litres of fuel.

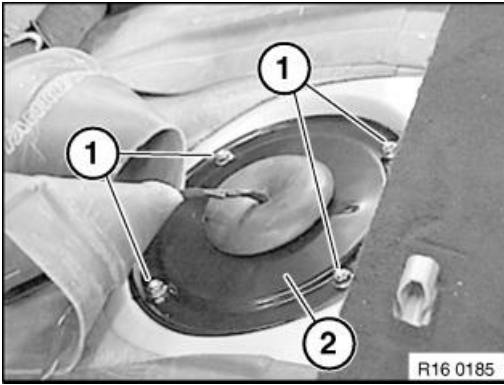
**Necessary preliminary tasks:**

- [Draw off fuel from fuel tank](#)
- Remove [rear seat bench](#)

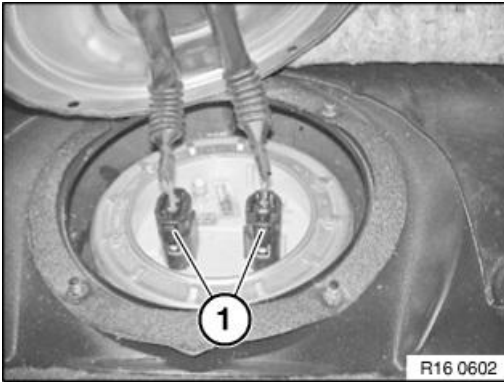
**Only for E84, E87, E91:**

Only unclip seat bench (1) on the left and right and fold up in direction of arrow as illustrated.

Secure seat bench on front seat (2).

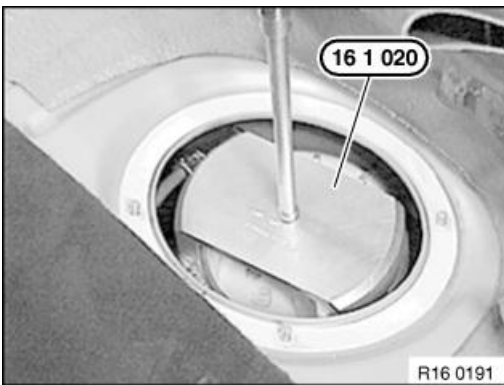


Release screws (1) and remove cover (2) from right side of fuel tank.



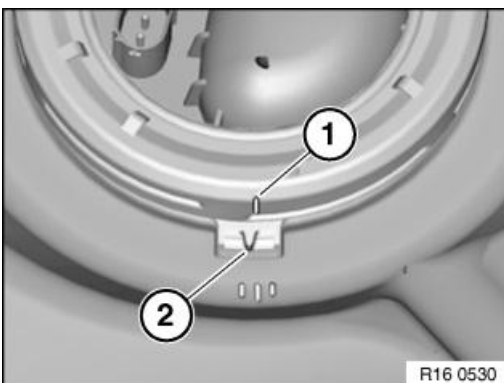
Disconnect plug connection (1).

If necessary, remove fuel line for auxiliary heater.



Release screw cap with special tool [16 1 020](#) and remove service cap. *Installation note:*

Procedure for tightening screw cap, see next work step.



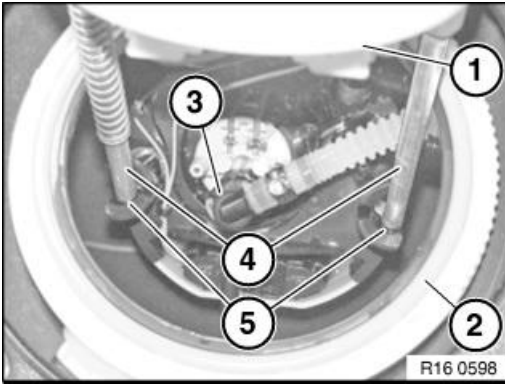
Important!

Fit screw cap without using a tool and tighten hand-tight.

Then tighten screw cap with special tool [16 1 020](#) until notch (1) points to marking (2).

Note:

Illustration shows the tank removed.



Pull out service cover (1).

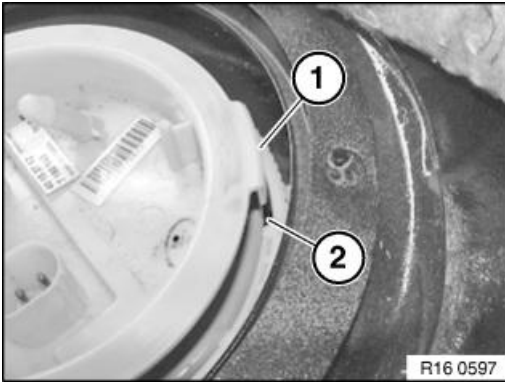
Unlock and disconnect quick-release fastener (3) of fuel delivery line.

Installation note:

Clean sealing surfaces and install new rubber seal (2).

Locating rods (4) must fit correctly in the hole (5) of the delivery unit.

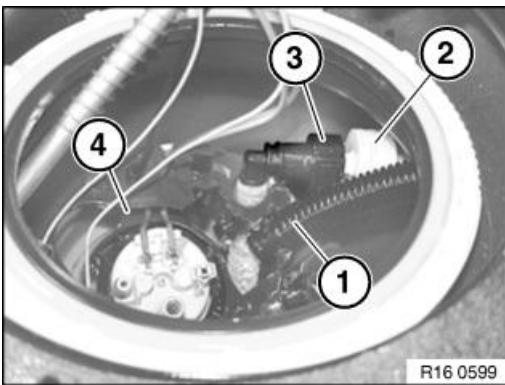
Make sure that the lever sensor moves freely before fitting the service cap (1).



Installation note:

Service cap can only be installed in one position.

When installing, make sure lug (1) of service cap engages in corresponding opening (2) on fuel tank.



Disconnect line (1) towards top

Unlock quick-release fastener (3) and detach fuel return line (2).

Important!

Do not use any tools to unlock the fuel delivery line.

Draw off remaining fuel from surge tank.

Carefully lift fuel pump with fuel level sensor (4) out of fuel tank.

64 00 ... Information on using cleaning agent/paints (personal protection equipment)



Warning!

Use of cleaning agents/paints not compliant with instructions can cause serious injuries or burns!

Handling cleaning agents/paints can trigger allergic skin and respiratory reactions!



Important!

Observe following instructions:

- Store cleaning agents/paints only in a secure cabinet.
- Keep cleaning agents/paints away from naked flames and other sources of ignition.
- Protect cleaning agents/paints from high temperatures and direct sunlight.
- Always keep an eye douche on hand, change the water regularly (once a month).



Important!

Observe following instructions before use:

- Manufacturer's instructions (on container/packaging)
- Hazard warnings (on container/packaging)
- Manufacturer's instructions on package insert
- Material safety data sheet of manufacturer
- Product information in EPC
- National market regulations



Important!

Observe following instructions during use:

- Do not eat, drink or smoke while working with these products.
- Avoid direct contact with skin and eyes.
- Wear personal protective clothing/equipment.
- Ensure that all enclosed areas are well ventilated or extract fumes directly.
- Immediately change working clothes soiled with cleaning agent/paint.
- After finishing work, wash your hands and apply protective skin cream.



Important!

Follow hazard warnings and wear personal protection equipment!

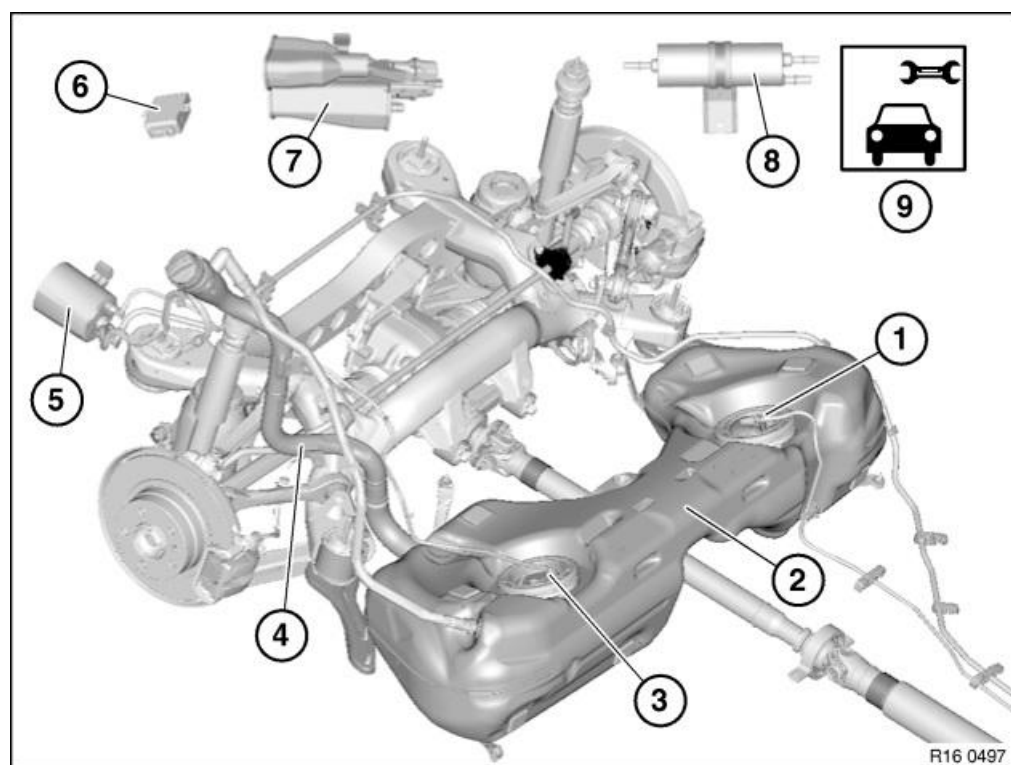
**First Aid:**

- If product comes in contact with eyes, immediately flush with running water for about 10 - 15 minutes. Seek the advice of eye specialist.
- In the event of skin contact and where applicable an allergic skin reaction, clean the affected areas immediately with soap and water and then apply silicone-free skin cream. Seek advice of physician.
- If an adhesive product is swallowed, rinse mouth/parts of mouth thoroughly with running water. Drink 1-2 glasses of water. Do not induce vomiting. Consult a doctor.
- After inhaling vapours ensure ample supply of fresh air. Keep calm, keep respiratory tracks clear and call doctor.

**Recycling:**

Dispose of cleaning agents/paints in a professional manner!
Observe national/country-specific disposal regulations.

16 Overview of fuel supply system



0 [General / drawing off fuel](#)

- | | |
|-------------------------------------|---|
| 1 Left sensor unit | 6 Electric fuel pump control unit |
| 2 Fuel tank | 7 DMTL (US only) |
| 3 Right sensor unit | 8 Outer fuel filter (S1AKA only) |
| 4 Fuel filler pipe | 9 Testing |
| 5 Carbon canister | |