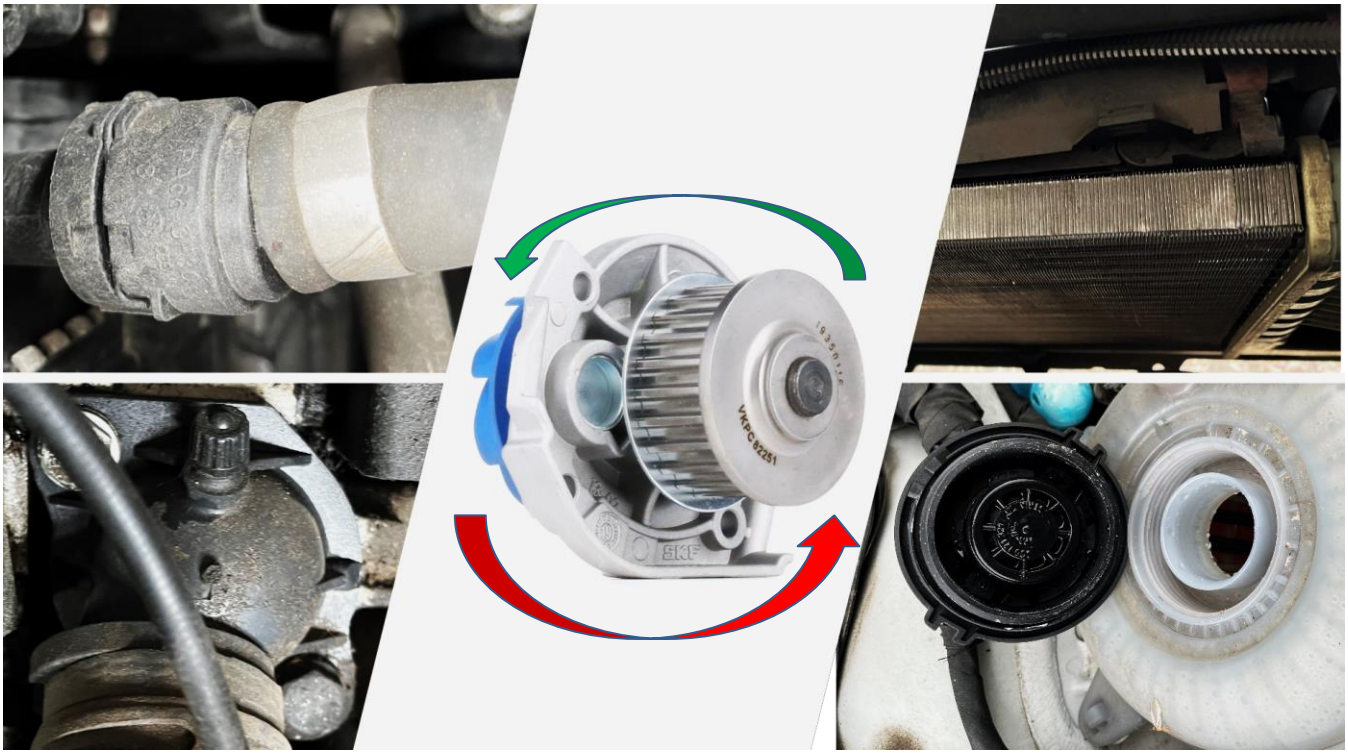
General recommendations for installing water pumps

All types of vehicles

Water pumps SKF VKPA,VKPC and kits containing mechanical or switchable water pumps

The following pages show essential procedures for replacing water pumps that are important for the correct operation of the cooling system and the long life of the water pump.

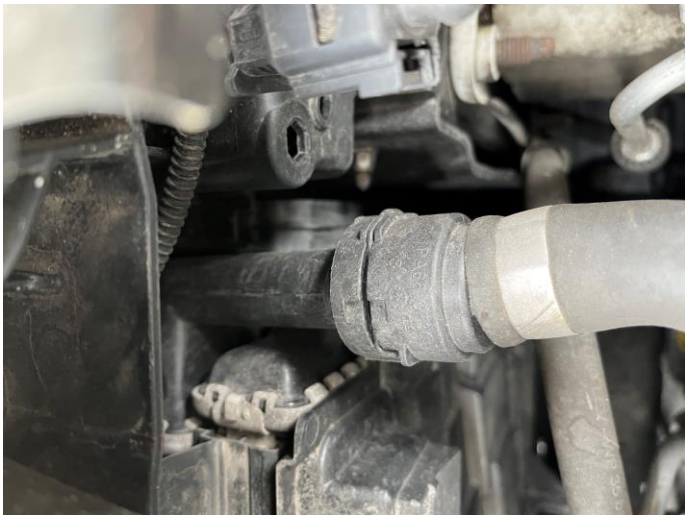


Always read the instructions for replacing the water pump and related parts, and especially for replacing the corresponding fluids of its quantity and pay due attention to the procedure for bleeding the system, which differs according to the design of the water pump and the engine.

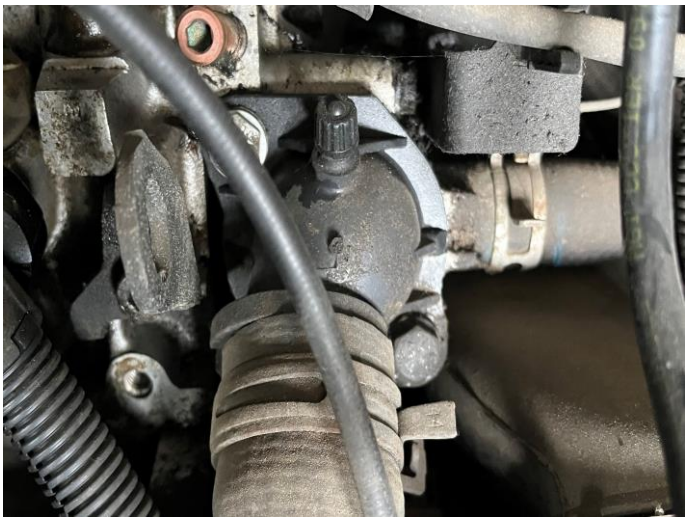
Checking the cooling system before installing the water pump and filling

Before installing the water pump, it is necessary to check the entire cooling system. All defects in the system and possible leaks should be eliminated. This is the only way to ensure the correct operation of the system and avoid complications during filling, venting and checking the functionality of the system.

Check the tightness of the expansion tank and the cap.



Check the connections and hoses for leaks



Find out if the thermostat, temperature sensors (e.g fan) are working properly

Keep the cooler clean and check for leaks.

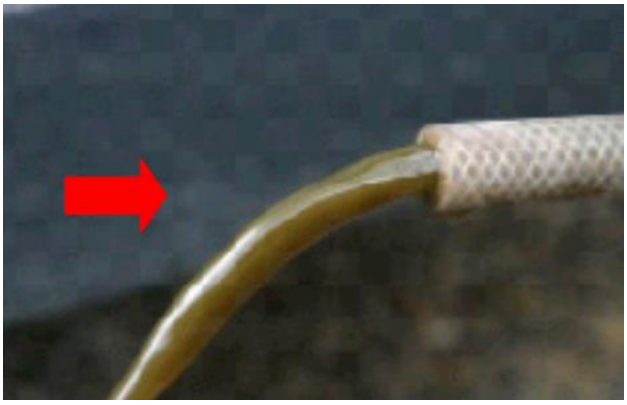
Note: Detecting fluid leaks from the system can be done by pressurizing the system with a leak detection tool. If impurities are detected in the system (corrosion, sediments, oil), it is necessary to flush the system before the pressure test to prevent impurities from being forced into the system components.

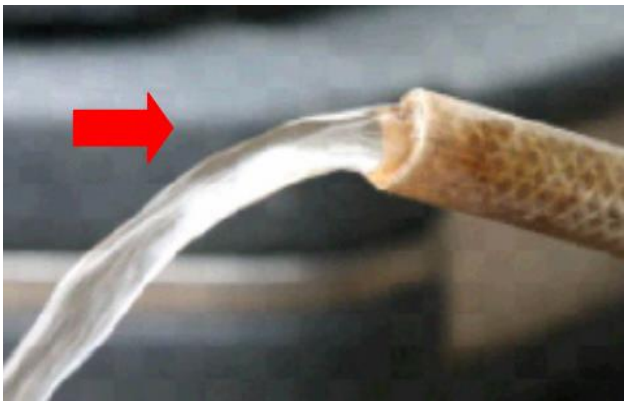
Dirt in the system requires flushing

When dirt is detected in the cooling circuit, it is necessary to flush the cooling system. In the case of weak dirt or prevention, rinsing with a chemical agent according to the instructions can be used. For heavy contamination, use the appropriate tools as recommended by the vehicle manufacturer.

Flush the system:

- With the exception of the engine block – close all of the bleed screws
- Unclip and pull off the top radiator hose and insert your garden water hose
- Flush until the water runs clear through the bottom hose
- Re-attach the bottom hose and rinse until the water runs clear through the engine block drain hole
- You can use chemicals recommended by the manufacturer to loosen larger dirt



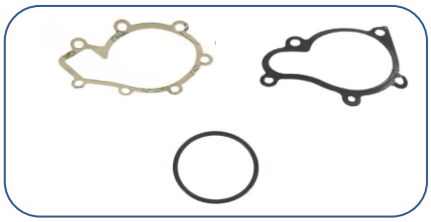


Why you need to clean the cooling system

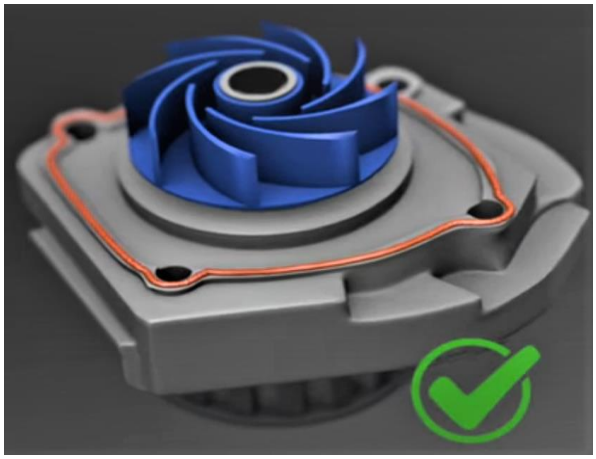
- The properties of the cooling liquid remain unchanged and fully functional during the entire period of operation until the next replacement interval
- You will prevent the destruction or shortening of the life of the water pump and other components that are part of the cooling system
- You will rule out engine overheating and engine temperature related problems

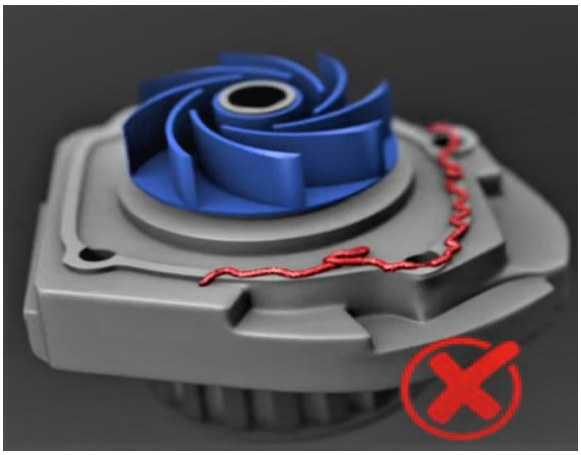
Note: If possible, flush the system using the original water pump before installing the new one.

General principles of installation of water pumps



A gasket must always be used between the water pump body and the engine block. Gaskets can be made of different materials and different shapes. SKF kits always include the appropriate seal. The seal is full and it is forbidden to use any type of sealing paste. When assembling, coat it only with a new cooling mixture to avoid cutting (o-ring) or fixing the position (e.g. paper seal).





If the water pump is intended for mounting on sealing paste, then it is necessary to follow the procedure of applying and then mounting the pump on the engine block. The paste must be dry without interfering with the wet part. Use only sealing paste intended for water pumps!

Coat the seal with a layer of clean liquid. Do NOT spin the propeller dry. Do NOT tamper with the diaphragm on switchable pumps.

Clean the landing surface. Follow the order of tightening the screws and tightening torques.

Changing the mixture in the system - mechanical pump

1. Confirm that the non-compliant original fluid has been drained. It is necessary to drain the liquid not only through the opening for the water pump but also by loosening some hoses, especially at the radiator and heating radiator. (depending on the model and type of vehicle).
2. Clear the vent inlets.
3. After emptying (or rinsing), return the hoses and close the drain screw.
4. Ensure that the expansion tank is at the highest level above the drained system. (in some cases, it is necessary to remove the container from the mounting)
5. Leave the bleed valves open except those on the block which must be closed
6. Start slowly filling the circuit by pouring coolant into the expansion tank.
7. Close the bleeder valves while blasting a continuous stream of coolant when no air bubbles are present (ie, no bubbles or air hissing - just a stream of liquid).
8. The vent screws must be closed, starting with the one located at the lowest point of the circuit.
9. Warm up the vehicle to operating temperature and check the cooling function - heating, fan switching, etc.
10. If there is a small lack of liquid, add it to the level prescribed by the vehicle manufacturer

Depending on the car manufacturer, the coolant type may differ. Always follow car manufacturers specifications when choosing the coolant type – failure to do so could result in water pump failure!

Permanent liquid -25°C / TypeG11 / G12 / G12+ / Pink color
Long-lifecoolant, containing corrosion inhibitors as specified by the vehicle manufacturer. Mostly used for VAG Group applications.

Permanent liquid -25°C / -30°C / Universal /Green color
Universal coolant, usually Ethylene Glycol based with the addition of corrosion inhibitors.

Permanent liquid type D /Yellow color
Long-life coolant, containing corrosion inhibitors as specified by the vehicle manufacturer. Mostly used for Renault applications.

Permanent liquid -25°C/-30°C/-35°C / Universal / Blue color
Universal coolant, usually Ethylene Glycol based

Never mix coolant types! It can lead to major technical issues by damaging the water pump and most probably the entire engine system!

Installation instructions for SKF switchable & mechanical water pumps (1)

Construction of the cooling system

The cooling system must be bled using a diagnostic toolIkit

Contains 5 systems for cooling various engine components:

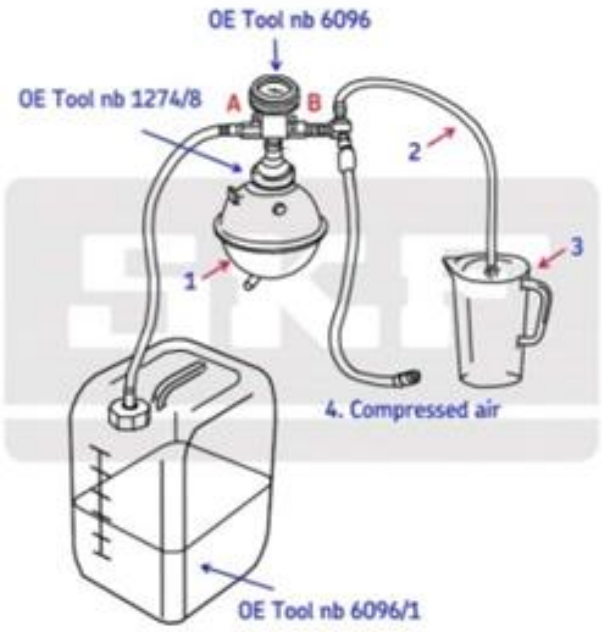
1. Main engine cooling system
2. Secondary engine cooling system
3. Additional cooling system of the turbocharger radiator
4. Additional cooling system for the heating radiator
5. Additional cooling system of the transmission cooler

Warning! If venting is not done correctly, it can lead to the following consequences:
- Electric pumps damage the cooling system of the secondary
- Longer engine warm-up time or abnormal increase in engine temperature
- Engine damage in case of insufficient filling/bleeding

- Fill the reservoir of the original tool OE 6096 with at least 8 liters pre-mixed coolants
- Place the filled tank on a high surface (workshop trolley or engine/transmission jack)
- Fit expansion coolant tank adapter (1) to OE tool 6096 to fit OE tool 1274/8
- Install breather hose (2) into small container (3)

Note! The exhaust air sucks along a small amount of coolant, which should be collected.

- Close valves (A) and (B) by turning the lever 90° in the direction of flow.
- Connect the hose (4) to the compressed air supply
- Set the pressure between 7-9 bar
- Open the valve (B) by turning the lever in the direction of flow



Installation instructions for SKF switchable & mechanical water pumps (2)

- Open the valve (A) by turning the lever in the direction of flow to fill the hose well from the coolant tank
- Close the valve (A)
- Leave valve (B) open for 2 minutes
- The pump continues to create a vacuum in the cooling system. Indicator pointer should remain in the green area of the pressure gauge
- Close the valve (B)
- The indicator pointer should remain in the green area, the vacuum inside the cooling system is sufficient to fill
- Repeat the process until the pointer is in the green area
  In the event of a significant drop in vacuum, check the cooling system gasket
- Remove the compressed air hose
- Open the valve (A)

Note! Always check that the coolant level is in the max position (1).