

| Engine Cooling | Water pump | Warranty diagnosis tool | Information

Water pump diagnosis module

Introduction

In order to give a support to his customers during warranty analysis, Valeo Service created a water pump diagnosis module.

This module includes the majority of defects which we can be detected on a water pump. These defects are not due to the water pump itself, but in its environment, its assembly or its use.

They are grouped by felt then by visual observation.

How to use this diagnosis module ?

1. To understand the defect felt by the customer.
2. To do a visual analysis of the part.
3. To select the corresponding index card

If no index card corresponds to the defect, we thank you for sending us the warranty form. We will analyze the issue.



Summary

1. Water pump leakage

- 1.1 Limestone's presence
- 1.2 Presence of rust
- 1.3 Coolant liquid overheated
- 1.4 Burnt aspect
- 1.5 Sealant paste contamination

2. Damage bearing

- 2.1 Bluish colour of the pulley (for models with timing belt)
- 2.2 Ragged broken belt
- 2.3 Belt side wear
- 2.4 Knock on the tensioner (VW engine)

1. Water pump leakage

1.1 Limestone's presence

Defect description: leakage on the water pump

Diagnosis: limestone's presence on the body of the water pump



Potential cause: Use of tap water containing lime, which scratches the surfaces of the mechanical seal.

VALEO advice:

Only use the correct coolant fluid containing corrosion inhibitor recommended by car manufacturer.

1. Water pump leakage

1.2 Presence of rust

Defect description: leakage on the water pump

Diagnosis: presence of rust on contact surface between engine and water pump



Potential cause: Damaged mechanical seal due to:

- Dirtiness trapped between the seal faces.
- Incorrect cleaning of the system.
- Bad coolant liquid.

VALEO advice:

Before fitting a new water pump, please carry out the following:

-Thoroughly flush the cooling system, including radiator and hoses etc otherwise when the pump starts working the coolant may move dirt through the cooling system, causing pump failure.

-Change the coolant fluid.

-Clean engine contact surface

1. Water pump leakage

1.3 Coolant liquid overheated

Defect description: leakage on the water pump

Diagnosis: coolant liquid overheated



Potential cause:

- Coolant liquid in poor condition (boiling point).
- Air inside the coolant circuit, causing corrosion.

VALEO advice:

Before fitting a new water pump, please carry out the following:

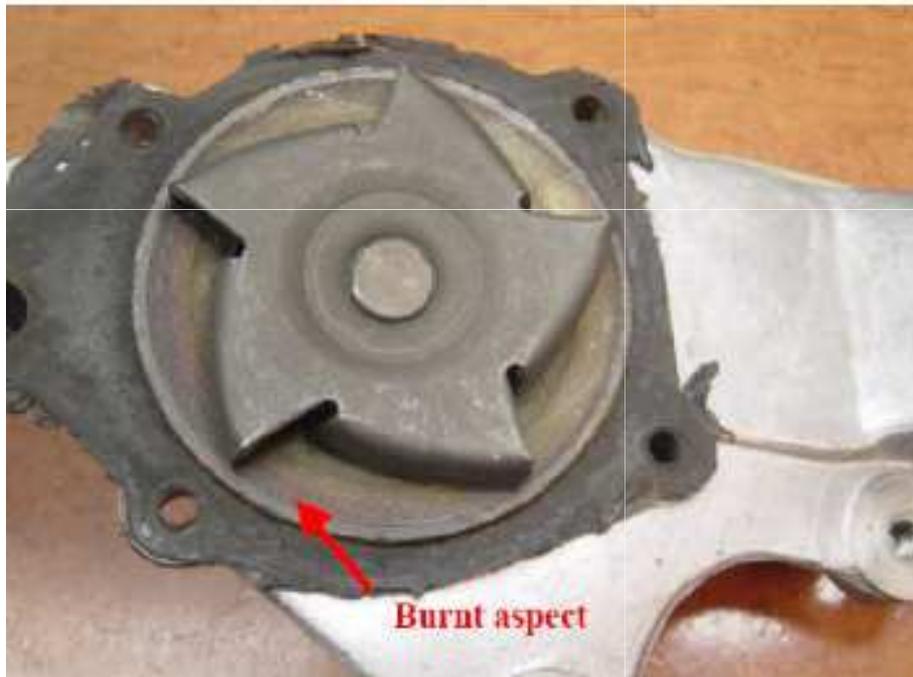
- Change the coolant fluid.
- Bleed coolant circuit

1. Water pump leakage

1.4 Burnt aspect

Defect description: leakage on the water pump

Diagnosis: the water pump has a burnt aspect



Potential cause:

- Overheating of coolant circuit
- Blocked coolant circuit.
- Lack of coolant.

VALEO advice:

Before fitting a new water pump, please carry out the following:

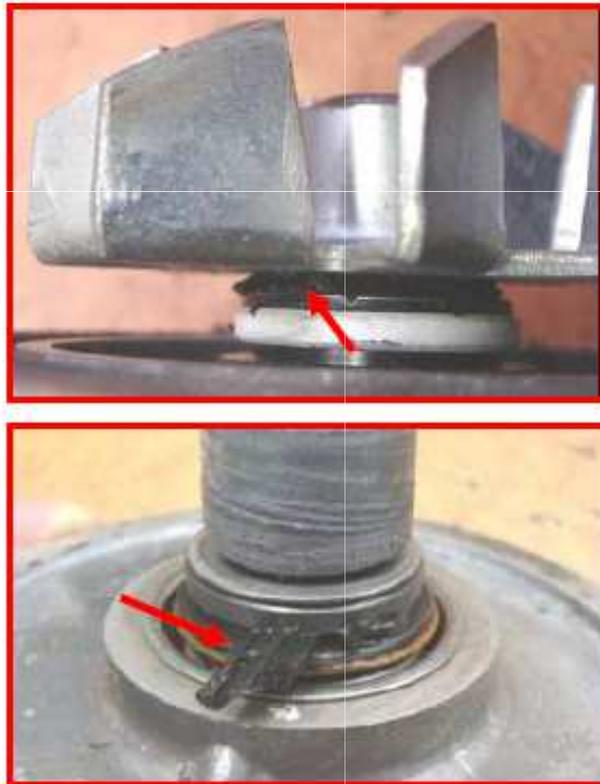
- Change the coolant fluid.
- Bleed coolant circuit
- Only use the correct coolant fluid containing corrosion inhibitor recommended by car manufacturer.
- Check and replace if necessary thermostat and fan switch

1. Water pump leakage

1.5 Sealant paste contamination

Defect description: leakage on the water pump

Diagnosis: contamination by an sealant past excess



Potential cause:

- Application of sealant paste where it is not needed
- Application of excessive amount of sealant

VALEO advice:

Before fitting a new water pump, please carry out the following:

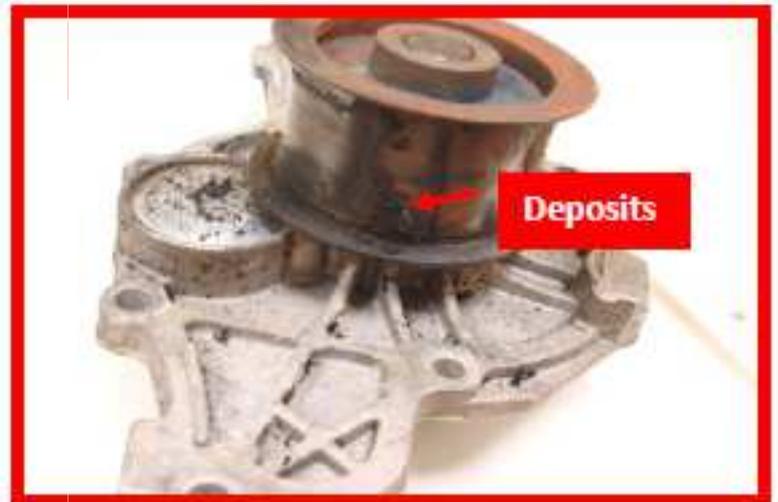
- Control on the notice if sealant past is necessary
- Apply only a little line of sealant paste

2. Damage bearing

2.1 Bluish colour of the pulley (for models with timing belt)

Defect description: Coolant circuit overheated

Diagnosis: Deposits of belt on the pulley and bluish color of the pulley



Potential cause:

- Excessive tension of the timing belt
- Misalignment of the timing belt

VALEO advice:

During fitting a new water pump, please carry out the following:

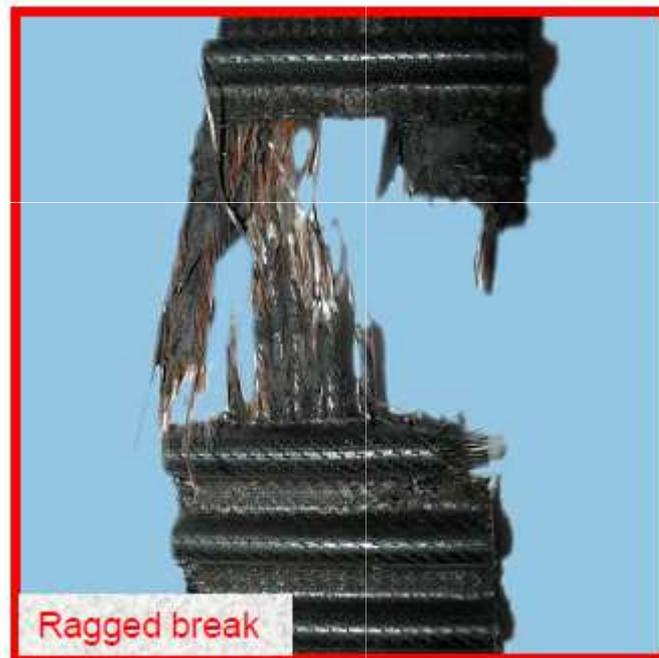
- Replace the timing belt, pulley and tensionner
- Check and replace if necessary thermostat and fan switch

2. Damage bearing

2.2 Ragged broken belt

Defect description: Engine stops

Diagnosis: Ragged broken belt



Potential cause:

- Penetration of foreign matter in the transmission
- Locking of a transmission component
- Excessive assembly tension

VALEO advice:

Correct belt assembly is required as excessive belt tension has a negative impact on the bearings and may cause premature water pump failure.

Use a timing belt tension test device.

2. Damage bearing

2.3 Belt side wear

Defect description: Engine dysfunction

Diagnosis: Side wear of the belt or loose teeth belt



Potential cause:

- Misalignment of one of the transmission components (tensioner, idler...)
- Low working tension of the belt
- Penetration of foreign matter in the transmission

VALEO advice:

Correct belt assembly is required as excessive belt tension has a negative impact on the bearings and may cause premature water pump failure.

Use a timing belt tension test device.

2. Damage bearing

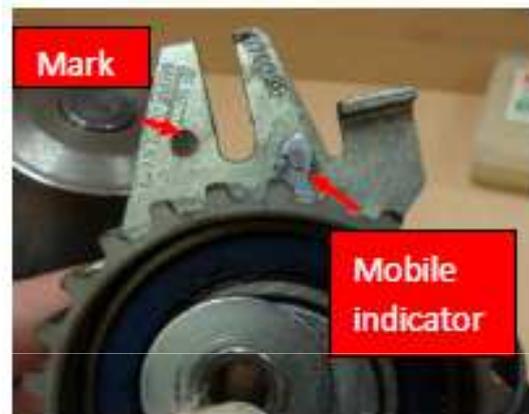
2.4 Knock on the tensioner (VW engine)

Defect description: Engine stops

Diagnosis: Knocks on the tensioner



The mobile indicator must be aligned with the mark



Potential cause:

- Wrong fitting

VALEO advice:

Control the timing belt notice to ensure respect of fitting instruction.

