

JOB ROLE – AUTOMOTIVE SERVICE TECHNICIAN

Sector: Automotive
(Qualification Pack Code : **ASC/Q01402**)



PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462013, Madhya Pradesh, India

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UNIT 5 : Regular Maintenance of an Engine
Session 6: Tuning of engine cooling system

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Session Objectives

1. The student will be able to explain importance of cooling
2. Able to list general steps during checking cooling system

Introduction

Cooling system in a car protects the engine from overheating. Cooling system removes 30% of the heat of the engine. An efficient cooling system keeps the engine protected. Rise in engine temperature may causes over heating of engine, which changes its performance. Components of the engine will get distorted and reduce its life. Hence, it is necessary to check the functioning of the cooling system at specified intervals.

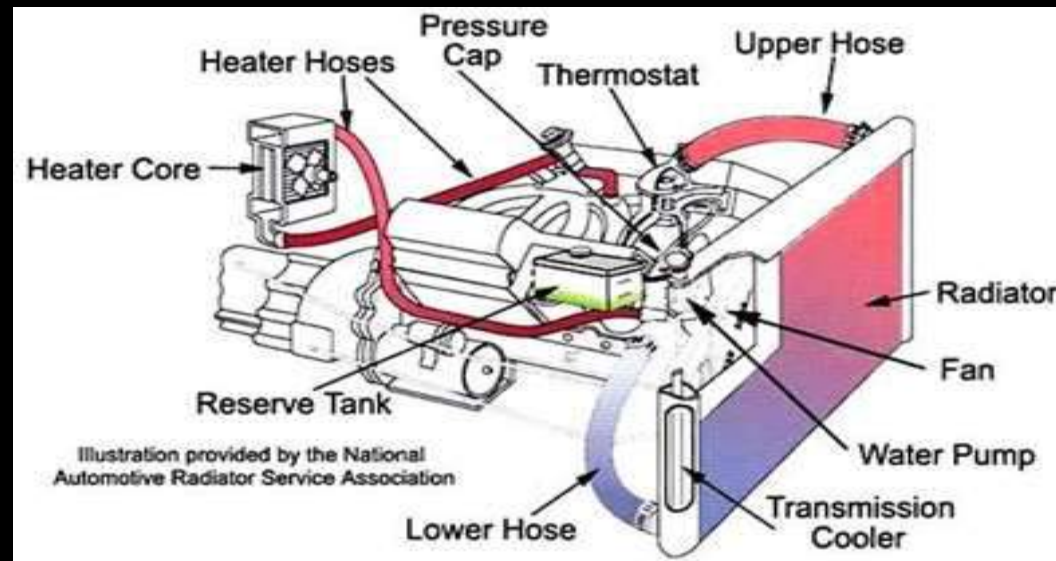


Fig : Automobile Cooling System

Parts of Cooling System

The cooling system includes the engine's water jacket, thermostat, water pump, radiator and radiator cap, cooling fan (electric or belt-driven), hoses, heater core and overflow tank.

Checking Circulation of water in cooling system

- Switch off the ignition switch of vehicle
- Remove the negative terminal from the battery

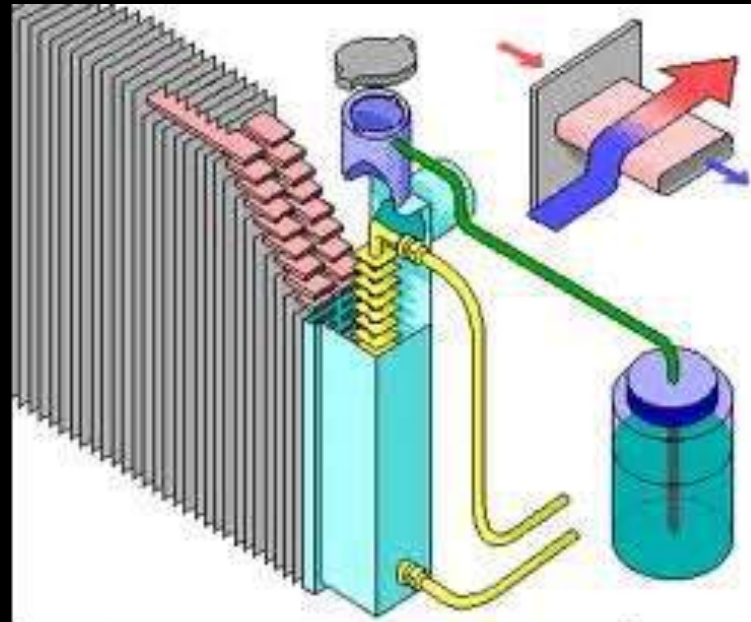


Fig : Cooling Circulation

Checking Circulation of water in cooling system

- Turn the upper radiator cap slowly and allow the stem /water vapors to release from the radiator
- Turn the radiator cap and remove the cap from the neck of the radiator
- Connect the battery terminal and switch on the ignition.
- Run the engine at idle speed
- Inspect the circulation of water in the radiator
- Circulation of water should be observed as rate of inlet must be equal to rate of outlet of coolant
- This shows healthy running of coolant system

Checking of Coolant Leakage

- Inspect coolant tank and its connections
- Inspect radiator hose clips for looseness and if notice leakage, tighten the clips
- Check hose pipe for distortion/ deterioration and replace
- Inspect radiator cap, neck and radiator core for coolant leakage
- Inspect for torn thermostat housing gasket for leakage
- Inspect for water pumps seal and gasket for leakage of coolant

Setting of cooling fan belt tension

1. Inspect belt for cracks, cut deformation, wear and cleanliness. If necessary, change the belt
2. Check belt tension as 6—7 mm as deflection
3. To adjust the belt to tight or loose, change the position of the alternator
4. Tighten belt adjusting bolt and alternator pivot bolt

Summary

In this session you have learnt about, Cooling system in a car protects the engine from overheating. Cooling system removes 30% of the heat of the engine. An efficient cooling system keeps the engine protected. Rise in engine temperature may causes over heating of engine, which changes its performance.

Parts of Cooling System

The cooling system includes the engine's water jacket, thermostat, water pump, radiator and radiator cap, cooling fan (electric or belt-driven), hoses, heater core and overflow tank.

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