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**100% Effective Natural Hormone Treatment**  
**Menopause, Andropause And Other Hormone Imbalances**  
**Impair Healthy Healing In People Over The Age Of 30!**

**The Cooling System**

**By Kevin Schappell**

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The purpose of the engine's cooling system is to remove excess heat from the engine, to keep the engine operating at its most efficient temperature, and to get the engine up to the correct temperature as soon as possible after starting. Ideally, the cooling system keeps the engine running at its most efficient temperature no matter what the operating conditions are.

As fuel is burned in the engine, about one-third of the energy in the fuel is converted into power. Another third goes out the exhaust pipe unused, and the remaining third becomes heat energy.

A cooling system of some kind is necessary in any internal combustion engine. If no cooling system were provided, parts would melt from the heat of the burning fuel, and the pistons would expand so much they could not move in the cylinders (called "seize").

The cooling system of a water-cooled engine consists of: the engine's water jacket, a thermostat, a water pump, a radiator and radiator cap, a cooling fan (electric or belt-driven), hoses, the heater core, and usually an expansion (overflow) tank.

Fuel burning engines produce enormous amounts of heat; temperatures can reach up to 4,000 degrees F when the air-fuel mixture burns. However, normal operating temperature is about 2,000 degrees F. The cooling system removes about one-third of the heat produced in the combustion chamber.

The exhaust system takes away much of the heat, but parts of the engine, such as the cylinder walls, pistons, and cylinder head, absorb large amounts of the heat. If a part of the engine gets too hot, the oil film fails to protect it. This lack of lubrication can ruin the engine.

On the other hand, if an engine runs at too low a temperature, it is inefficient, the oil gets dirty (adding wear and subtracting horsepower), deposits form, and fuel mileage is poor— not to mention exhaust

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emissions! For these reasons, the cooling system is designed to stay out of the action until the engine is warmed up.

There are two types of cooling systems; liquid cooling and air cooling. Most auto engines are cooled by the liquid type; air cooling is used more frequently for airplanes, motorcycles and lawnmowers.

Liquid cooled engines have passages for the liquid, or coolant, through the cylinder block and head. The coolant has to have indirect contact with such engine parts as the combustion chamber, the cylinder walls, and the valve seats and guides. Running through the passages in the engine heats the coolant (it absorbs the heat from the engine parts), and going through the radiator cools it. After getting "cool" again in the radiator, the coolant comes back through the engine. This business continues as long as the engine is running, with the coolant absorbing and removing the engine's heat, and the radiator cooling the coolant.

A cooling system pressure tester is used to check the pressure in the cooling system, which allows the mechanic to determine if the system has any slow leaks. The leak can then be found and fixed before it causes a major problem.

The above information is directly from the Auto Insight program which you can buy online from

.

### Common Problems:

Let's look at the common problems cars have with the cooling system.

**Broken hose.** Hoses wear out and can leak. Once the coolant has left the system it can no longer cool the engine and it overheats.

**Broken fan belt.** The water pump is driven by the engine through a belt. If the belt breaks the water pump can not turn and coolant will not be circulated through the engine. This will also lead to engine overheating.

**Faulty radiator cap.** The radiator cap is designed to hold a certain pressure in the coolant system. Most caps hold 8 – 12 PSI. This pressure raises the point in which the coolant will boil and maintains a stable system. If your cap does not hold pressure, then the car could overheat on hot days since the system never becomes pressurized.

**Water pump failure.** Most commonly you will hear a screeching noise and will be able to see coolant leaking from the front of the pump or under the car. Early signs are small spots of coolant under the car after being parked overnight and a strong coolant odor while driving.

**Head gasket...** have large amounts of white smoke flowing out of your exhaust? Could be a head gasket. The head gasket seals the cylinder head to the engine block and also seals the coolant passages. When this gasket fails coolant can enter the cylinder and it will be turned to vapor as the

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engine fires. Head gaskets most often fail after the engine has experienced an overheating situation. When super hot, the cylinder head can warp and allow the gasket to fail.

Preventive Maintenance:

Check all belts and hoses regularly. (at oil change is a good time)

Look out for coolant leaks underneath the car, they could be signs of trouble to come.

Change your coolant every 2 – 3 years depending on the manufacturer's recommendations.

Inspect your radiator cap for deterioration of the rubber seal. Replace if you think it is worn. \$5 – \$10 is cheap insurance.

Have your coolant system flushed every 5 years. It gets all the corrosion which has built up out of the system.

What to discuss with your mechanic:

Let your mechanic know when your overheating problems occur. Overheating when idling points to a different problem than overheating at highway speeds.

Ask your mechanic if it's worth changing the timing belt or chain while he is replacing your water pump. Many times the timing belt turns the water pump so it has to be removed anyway to access the water pump.

**WARNING:** Never open your radiator when the engine is hot. The pressure in the system can cause hot coolant to splash out and burn you.

Kevin Schappell maintains

where he gives advice on buying, selling,

insurance, and financing. A mechanical engineer and car guy, Kevin has decided to spend his online time helping others learn about automobiles. To learn more about how your car works, Kevin has created

### **Cooling With Evaporation?**

**By Myra Johnson**

Do you think it is really possible to cool an AC unit by evaporation? Do you know what cooling coils

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are? Do they have the same function as the evaporator coil? Read on and find out the answer to these questions.

Some people use the term cooling coils and evaporator coils interchangeably. Cooling coils are found in your air conditioning system. They are used in air-handling units as well. They are different from the ones in your air conditioning unit however. The unit uses evaporator coils and these consist of chilled water.

So actually cooling coils is not the right word to use in a small air condition unit. You should use evaporator coils instead. They have to contain a refrigerant liquid that will evaporate into gas.

The liquid absorbs heat and turns to gas in the air conditioning system. The heat is then transferred to the refrigerant. That is how the heat is moved from one location to another.

The evaporator coils can be found in the low-pressure system of a refrigeration circuit.

If the air conditioner is not running but the evaporator blower is, you might encounter a burst tube in the evaporator. This can become expensive so don't let that happen!

Why does that happen? The heat has no where to go if the air conditioner is turned off causing pressure to build up in the tubes. So be careful and keep these things in mind.

Now you know the difference between an evaporator coil and cooling coils. And you know how they work. So there is no excuse for you to encounter any problems, just make sure you have both the ac and evaporator running at the same time and hopefully you will not encounter any problems. Take care and have you AC checked on a regularly basis.

Myra Johnson is a successful freelance author that writes regularly for

. Her

articles have also been featured on related sites such as

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