

Relies on **coolant** to transfer heat away from the engine into the radiator

Indirect cooling system components include: radiator, hoses and cap, cooling fans, thermostat, water pump, water jacket, frost plugs, electrical sensors, drive belts, reservoir tank, oil coolers
Indirect cooling fans are **Solid state fan, Flex fan, Variable speed fan** and **Electric fan**

Indirect Cooling Systems

Indirect Cooling System Advantages

- Operating temperature of the engine can be monitored and controlled,
- low engine operating noise
- even distribution of engine heat

Possible engine damage from overheating

- blown head gasket
- seized engine
- cracked cylinder head
- friction damaged engine bore
- damaged hoses

Indirect Cooling System Disadvantages

- High maintenance costs
- Heavy engine construction
- Regular servicing required