.

## COOLING SYSTEM

- Maintaining the cooling system is crucial to ensure optimal performance and longevity of equipment.

- Check the radiator for any damage and blocks
- Check the hoses that connect radiator and engine
- Check for any leakage
- Check the fan belt
- Use clean water in the radiation
- Test thermostat and pressure cap

| S.No | Complaints | Possible Cause | Check (or) correction |
|---|---|---|---|
| 1 | Loss of liquids coolant due to leaks. | External leak<br>Internal leak caused by a faulty gasket, loose cylinder head, cracked or wrapped head or, cracked engine block, which may allow some coolant to drain into the engine oil. | It can be noted by inspection and block the leak.<br>Proper fit gasket must be placed and the cylinder head and engine block required to be repaired. |
| 2 | Over heating | Insufficient quantity of water in the cooling system, coolant loss.<br>It also caused by the clogged radiator and water passages, in operative thermostat, too low engine oil level, clogged exhaust system etc. | Check the water, coolant level and top up if required.<br>Clean the passages and remove blockages if any present |
| 3 | Over cooling (if it is running below the normal operating range) | A thermostat that opens too soon or, remains open at all times.<br>The coolant by pass valve | Remove the thermostat, test for its faults and then replace it. |

| | | | |
|---|---|---|---|
| | | remaining open | |
| 4 | Incorrect temperature Gauge reading. | Temperature gauge fitted on the instrument panel may be faulty. | It should be either replaced or correct. |
| 5 | Noise | Dry bearing a loose pulley on the pump shaft an impeller loose on the shaft. | Some pumps require the addition of a special water pump lubricant to the coolant by which the operation become noise less. |
| 6 | Frozen coolant | When the vehicle is parked where the temperature is below freezing point. | Check the cooling system for possible change by the frozen coolant before operation vehicle. |

**Water Pump Failure**

Engine is located beneath a giant metal hood for better aerodynamics and fuel efficiency, it can't rely on air flow to stay cool. Thus, it uses liquid cooling in the form of water flowing through a series of hoses in order to reduce the heat. The water circulates using a device known as a water pump, which is powered by a pulley system that's turned by your serpentine belt. If this pump fails, the water can't flow through your engine system, and your engine will quickly overheat.

**Leaky Radiator Hoses**

Remember how we said that water flows through your engine and cools it through a series of hoses? Well, if one of those hoses springs a leak, not only will the water not have the pressure needed to properly complete its cycle, but eventually it will drain out. Radiator leaks also lead to rapid overheating, and as the water in these lines heats up and expands, they can actually make the leak worse, which only allows the water to drain out faster. Radiator hoses become more and more likely as they age, so be sure to change them periodically.

**Radiator Leaks**

Radiator is a large grid located just behind the front grill of your car. The purpose of this large and critical piece is to cool the water in your cooling system after it has absorbed heat from your engine, and it does this by running it through this grid, through which airflow from the front of the car is passed through to remove the heat. Small leaks in your radiator not only affect its ability to cool your engine, but have similar effects to a leaky radiator hose as well. However, if a rock or other piece of debris puts a large hole in your radiator, you'll probably have to replace it outright.

**Thermostat Failure**

A failed thermostat is another huge problem for cooling systems. Your thermostat is a device that regulates the temperature of your engine and controls how much coolant is allowed to flow through your radiator. When your engine is hot, the thermostat opens wide for maximum cooling. When your engine is cold, the thermostat remains closed, which then allows your engine to warm up to its optimal temperature faster. However, a failed thermostat may not open, preventing heat dissipation and resulting in your engine overheating and failing faster.