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The Cooling System – checks and fixes

Arguably better than many other marques, the cooling system on Land Rovers can be made far more reliable by some sensible and regular checks. Failure to do so will inevitably result in very expensive repairs to aluminium engines or related components. If the vehicle is overheating, the very first thing to do is get the system pressure tested and the fan coupling checked. This will almost certainly identify any weakness in the cooling system. Many other things you can do yourself and the following is a guide:

Belts – Check regularly – Any sign of fraying or delamination should be a warning signal for immediate replacement. This is especially critical with the serpentine belt on later models, where the smooth face drives the water pump.

Coolant – must obviously be maintained at the correct level. Water alone is NOT adequate and a reputable brand of coolant will help prevent over-heating and well as freezing. A reputable brand will contain corrosion inhibitors. It may be more expensive but is worth the money. Also consider using demineralised water – not tap water to prevent chemical incompatibility.

Fan – remove the cover and inspect the fan regularly. Replace it at any sign of a cracked or broken blade BEFORE it shatters and destroys the radiator, bonnet and anything else it can reach.

Header/overflow tank – the original metal tanks rarely gave trouble, but plastic header tanks work-harden around the outlet nozzles and at the join between the top and lower sections. Always wipe away any spilled coolant after topping up so that a leak becomes easy to see.

Heater Core, hoses & O-Rings - The heater cores on the P38 and later models are far superior to those on the earlier models but they can still cause serious problems. The first sign of trouble is coolant in the foot-well making the carpet wet and the problem should be fixed before the trickle becomes a catastrophic failure. A temporary fix can be made by looping the hose at the rear of the engine between the inlet and outlet, thus bypassing the heater completely.

Changing the core is relatively straightforward but is time consuming and it best left to a qualified workshop. On the P38, only a masochist would attempt the job. In most vehicle models, it is necessary to remove the entire dashboard, facias and centre-console.

Hoses – All hoses should feel solid and resist compression by hand. If soft, a hose has little life remaining and should be replaced. Do not overlook the thin tube between the radiator and the header tank.

Hose clamps – The standard spring-loaded clamps are effective but the ones in difficult positions are virtually impossible for an owner/driver to remove and refit. Except where the hose joins a plastic fitting, standard stainless hose clamps that may be tightened with a 7 mm socket will make running repairs much easier. Be careful they do not slip off the end of the hoses as they are tightened. Where a hose joins to plastic, the spring clips are safer in that they cannot be over-tightened and crack the fitting

Pressure cap - Occasionally lift the bonnet when the system is hot and check the cap (do NOT try to remove it at this time). Any sign of leaking coolant means that the cap should be replaced.

Radiator –Coolant on the chassis or under the vehicle is usually the first sign of trouble. It is smart to remove the covers and/or grille and look for signs of weeping in the radiator core. If this is found, it is only a matter of time before the leak becomes severe.

A temporary fix with a chemical weld (Barsleaks, Wynns, Tectaloy etc) is not recommended by GCA, but may provide up to some months of relief, but should not be relied upon as a permanent solution because it may block the cooling system.

Replacement radiators can be false economy unless the source is reliable. Re-cored or reconditioned items may have no more than a wash out and a coat of paint so ask for a 90-day warranty

Radiator blockage may be internal or external. Internal degrading is caused by corrosion and chemical incompatibility, especially in aluminium radiators. The use of demineralised water instead of tap water will greatly prolong radiator life. Regular back flushing also helps.

External blockage occurs more frequently than many might believe. Ordinary road grime is just as bad as dirt and mud off-road and the potential for trouble gets exponentially worse if there is oil sticking to the fins from a leak in the power steering (a common cause).

Temperature sensors may prevent the auxiliary fans from operating.

Thermostat: - These do not fail as often as folklore suggests because modern units are quite reliable, especially the expensive (\$100+) units on the P38 and later models. However, failure will certainly result in overheating and cause rough running. Although it varies depending on the vehicle model, as a guide at normal operating temperature, the top radiator hose should be warm – not cold, indicating correct thermostat operation.

Viscous fan coupling – this is a superior means of regulating fan speed so that the airflow increases when the engine is hot. If the vehicle is overheating, get this checked by a reputable service provider because they can only be replaced, not repaired.

Water pump – the first sign of trouble is usually a squealing noise as the bearings fail. Then it is only a matter of time before the seal fails too. As well as noise, any sign of coolant around the pump means it should be replaced as soon as possible.