



The *Lincoln* / MERCURY Old Parts Store



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ENGINE OVERHEATING

There are many possible reasons for a cast iron engine to overheat or consistently run hot. Some are easy to correct, others are more difficult. My greatest knowledge is in 1950's and 1960's Lincoln and Mercury cars but this should be applicable to many other brands and engines.

Look for the obvious and don't over think the problem;

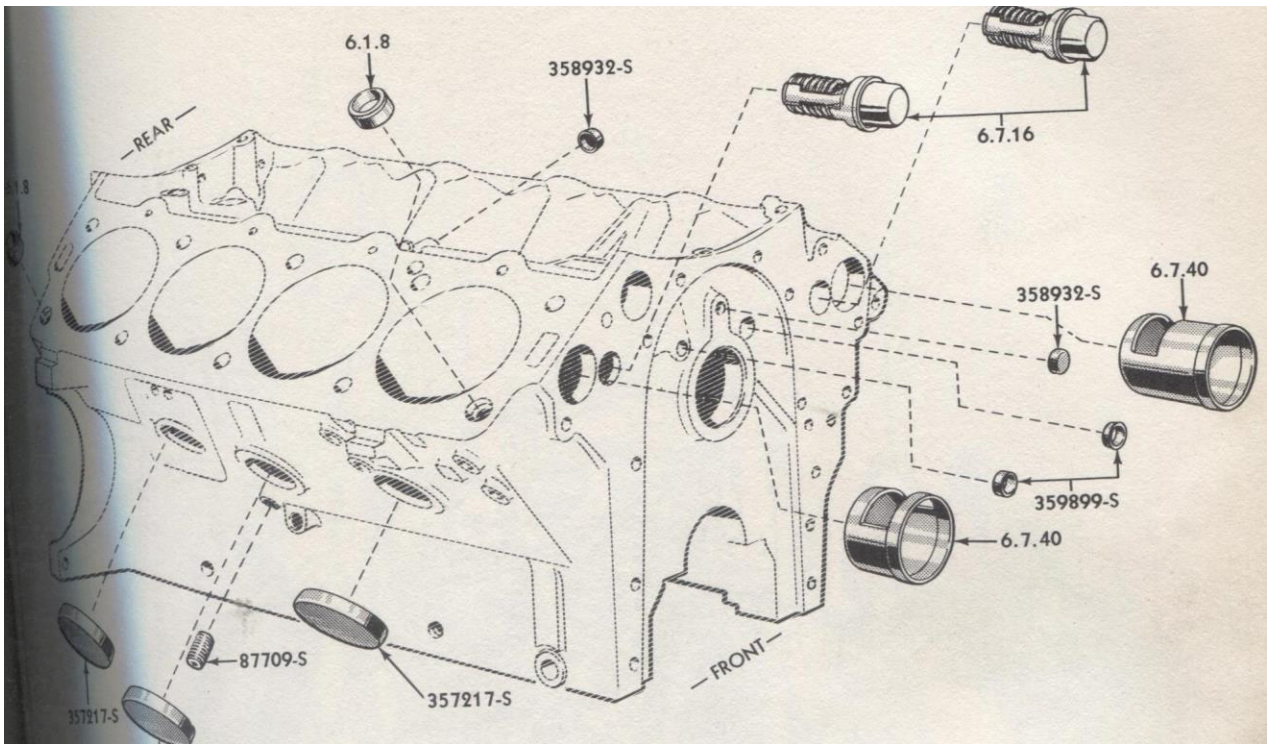
1. Low on coolant.
2. Thermostat may be too warm. With a cast iron block, lower fuel octane, and the necessary reduction in timing the engine tends to run hotter. I recommend a 160 degree thermostat.
3. Thermostat may be stuck in the closed position.
4. Radiator cap may be worn and cannot pressurize the cooling system.
5. Radiator may be plugged or partially plugged. Take it to a radiator shop and have them test it. If it has this problem they can sometimes clear it with pressurizing it and blowing it clear. If the radiator core is sound they can do a process called "Rodding" which is literally sticking a rod through the radiator core passages to clean them. If the radiator core is bad, then recoring the radiator is the only option.
6. If the engine has only a four blade fan, replace it with a five or six blade fan to increase air flow. There are also after market high velocity fans available for sale.
7. If the engine is equipped with a fan clutch on the fan, make sure it has resistance when it is cold and you spin it by hand.
8. Make sure the water pump is in good working order and not leaking or making strange noises.

Now for the messy part when the engine continues to run warm. This is primarily the process I recommend when working on the MEL engines 383, 410, 430, and 462. The process can also be used on other engines. One of the most common reason for running hot is the accumulation of "silt" partially plugging the cooling passages in the engine.

1. Drain all coolants.

2. Remove all accessible freeze plugs from the engine. The rearmost freeze plugs on the engine block.
3. Remove the water pump and if it is old and crusty, replace it.
4. Behind where the water pump mounts you will see two holes that are 1 5/8" Diameter (There are a few that measure 1 1/2"). Inside are cylindrical shaped Water Diverters. Inspect them to make sure they do not have any rust through or even pinholing from rust. If they are in poor shape, REPLACE them. They are easy to remove since they were made from very thin galvanized steel. Aftermarket Water Diverters are generally machined from solid billet aluminum or brass (both will outlast the car and us) and are very sturdy and easy to install. It really helps to remove them when flushing the engine.
5. Also behind the water pump mounting are two thermostats about the size of a quarter. These are called internal engine thermostats and should be removed and discarded. They really serve no useful purpose and restrict coolant flow. You don't need them so please don't leave them in the engine.
6. Now for the fun part. Start running water through the engine starting in the front of the engine. A hose will do but a pressure washer is better. You want to go into the openings you have from removing the water pump and freeze plugs. You should see a lot of rust pouring on the ground. I do this repeatedly. If you put your finger in the furthest back freeze plug holes you should find a good amount of "silt" there. Also as you look around inside the freeze plug holes and inside the water diverter opening you will see some build up of rust on the inside walls. Remove the buildup if possible. I also will spray in high detergent engine cleaner in the openings and then flush everything out with clean water. Do this carefully till you are confident it is as clean as possible.
7. Install the freeze plugs, water diverters, Water Pump (Don't forget to replace the water bypass hose located between the intake manifold and water pump. It is a 7/8" hose).
8. Point of concern but not necessary at this time: there are three freeze plugs located on the bottom of the intake manifold.
9. Button everything up, flush the heater core(s), replace all hoses, fill the system up (I usually start with plain water in case there are any leaks, then flush and refill with the proper mix of anti freeze).

Hopefully this should help cool down an overheating problem.



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