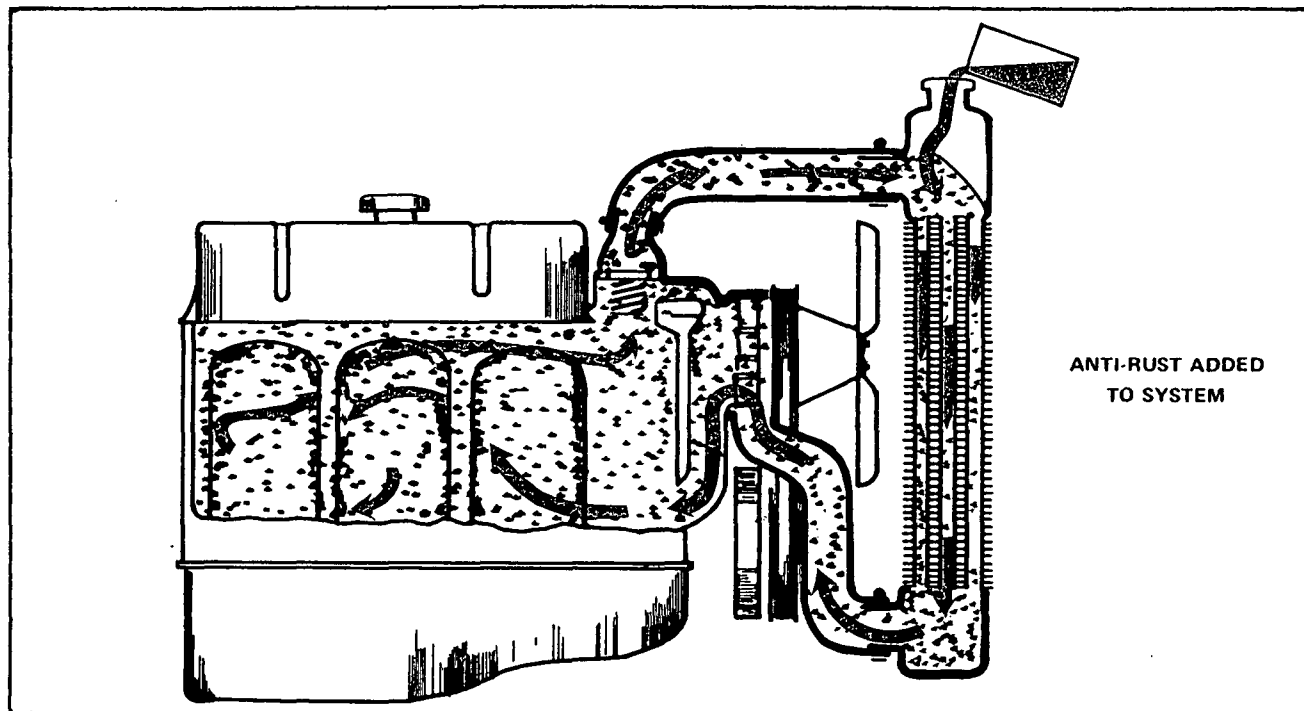


NAPA AUTOMOTIVE CAREER TRAINING

Coolants for Cooling Systems - Continued



There are a number of chemical solutions designed especially to clean out rust, scale and other undesirable elements from cooling systems. Most people refer to these solutions as "radiator flushes". To be truly accurate, they should be called "cooling system cleansers". There are two basic types of cleansers: (1) fast flushes; and (2) heavy duty cleansers.

Fast flushes are simply poured into the coolant and permitted to circulate through the cooling system. As the solution circulates, it dissolves much of the grime, grease and dirt into the coolant and allows it to be drained away. Fast flushes are left in the cooling system for a very short period of time—usually only 10 or 15 minutes, depending on manufacturer's recommendation. During these few minutes, the vehicle should be standing still with the engine running, or driven. At the end of the recommended time, all of the fast-flush additive and old coolant is drained from the system and new coolant is added with fresh water.

Heavy duty cooling system cleansers require more time to use but perform a more thorough cleaning job. Usually in powder form, these cleansers mix into the coolant and are allowed to circulate for a period of time—generally 35 minutes to an hour. The engine runs at low speed while the cleanser works, but in most cases, the car is not permitted to be driven while

heavy duty cleansers are being used. When the recommended time is up, the coolant is drained from the system. After that, clear water is run into the system with the drain-cock open or a lower radiator hose removed. The water flushes through the entire system until all traces of the cleanser and the grime it has loosened disappears.

As people use their cars and drive under many kinds of road conditions and weather, leaks can develop in cooling systems. If these leaks are not checked and stopped, coolant drips out. Without enough coolant, the car begins to overheat and costly engine damage may result.

Leaks in hoses and connections are corrected simply by replacing the faulty hose or tightening the loose connection.

However, some leaks in radiators and engine parts cannot readily be stopped by mechanical means. To seal these leaks, leading manufacturers have developed chemical additives. These products are called "stop leaks" and/or "sealers".

Stop leaks and sealers are all formulated on the same principle, and work pretty much the same way. They are usually liquids, which contain thousands upon thousands of tiny particles. As the stop leak flows through the cooling system along with the coolant,