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Warm Running Device also known as WRD

This component is part of the [Engine](#). Also see the related topic [Fuel Injection](#). For a comprehensive look at how this all works together, see [Engine Starting Aid Tour](#).

Definition

Function

The Warm Running Device (WRD) controls additional air and fuel to the engine during the warm up cycle. Smooth engine idle and correct idle speed depends on the proper function of the WRD especially during the warm up cycle.

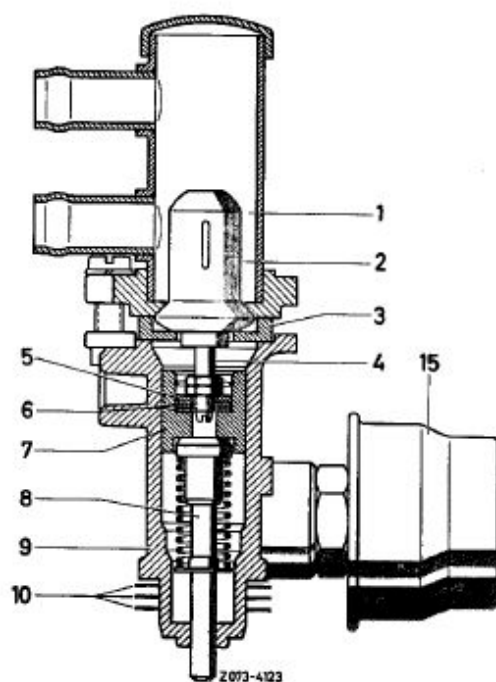
It is located on the top rear of the fuel injection pump. The (WRD) on the earlier W113 engines (230SL) is different from those on the later 230SL, 250SL and 280SL, but the function is the same.

The Warm Running Device consists of an upper stage with a "heat feeler" which senses engine coolant temperature and a lower stage, which moves a slide valve in the WRD. The slide valve opens and closes an air passage which supplies additional air to the engine during warm up. In addition the "heat feeler" also changes the fuel mixture of the engine during the warm up cycle by moving a pin which moves the rack in the injection pump.

The WRD has three hoses connected to it. The two hoses on the top stage are for circulating engine coolant to the "heat feeler". The hose on the lower stage is an air supply line which supplies additional air for the engine during the warm up cycle. Air is drawn in a small circular air filter canister on the WRD and passes through the air valve in the WRD then travels down the hose and metal line and eventually into the bottom of the cold start valve on the intake manifold.

As the engine coolant temperature rises the "heat feeler" gradually adjusts the amount of additional fuel and air supplied to the engine. At 150-155 degrees F the air passage should be closed off entirely.

The WRD can become stuck from long periods of inactivity. Verify that it is working by listening to air rushing in the small air filter when the engine is cold. As the engine warms the air flow will slowly decrease, then should cease at 150 to 155 degrees F. You can use a rubber coolant hose as a stethoscope to assist in the test.



- 1. Coolant Housing
- 2. Thermostat
- 8. Plunger
- 15. Air Filter



Maintenance

Describe common maintenance procedures, and common faults that may occur. Describe how these may be diagnosed and resolved. Again, include diagrams, photographs and explanations. Where possible, include measures, tolerances, weights etc.

- Symptoms when it faults
- How to test if it is faulty - what tools to use
- How to fix / change

Link to related components where appropriate.

< [Cold Start Valve](#) | [Main.TrailIndexPage](#) | [Removal and installation](#) >