

75ZT Community

Fuel Burning Heater Explained..... By Cowley_MOA and Duncan

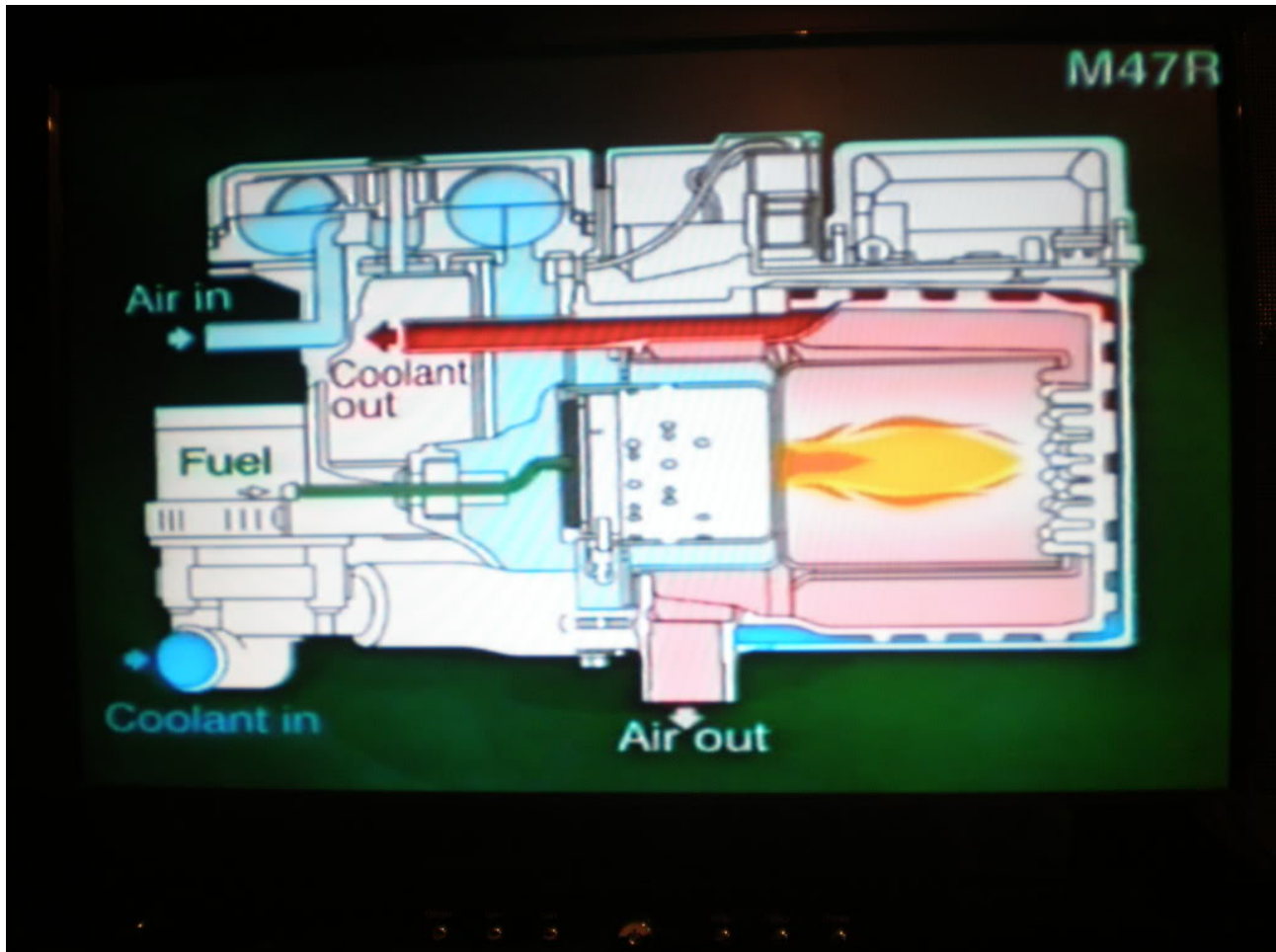


An FBH is pictured above (minus the exhaust)

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What it does...

If when the engine is started the ambient air temperature is below 5c the coolant heater will draw fuel from the tank and burn it. As a result the coolant is heated which accelerates the warm up of both the engine and passenger compartment. And because the engine reaches optimum operating temperature quickly the Auxiliary heater has a negligible affect on the overall fuel consumption.



Above: A diagram of how it works.

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The heater is controlled by a built in ECU. This monitors temperature, controls the flow of the fuel, and makes sure that the system lights properly.

When the heater starts up, it starts the air fan and blows air through the combustion chamber. After a short time the fuel pump is started slowly and a glow-plug inside the heater is switched on. The fuel mixes with the air, and the glow plug lights it. Once lit, the glow plug resistance changes so the ECU know it's lit properly, and increases the fuel and air flow. If it doesn't light as expected, the system will shut down to make sure that unburned fuel does not start going everywhere.

As the water heats up, the ECU changes the heating rate, by adjusting the fuel flow and airflow, finally switching the fuel off but running the fan for a short time, when hot enough.

The fuel pump is not a rotating motor like most. It is a shuttle pump that moves backwards and forwards. It delivers a squirt of fuel on each stroke, so the rate at which fuel is delivered is controlled by how many strokes per minute the pump delivers. This can usually be heard by listening near the right hand rear wheel.