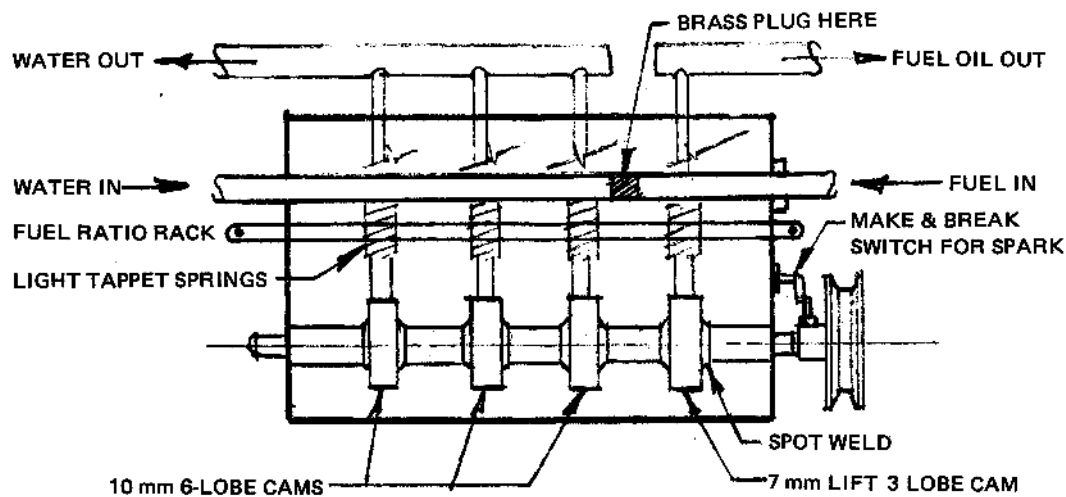


Experiments in Steam

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Well by now you will probably have an idea how my fuel injection burner operates, having read all about it in Vol. 24, No. 3. I have been using this system every day on my own domestic hot water generator. it is the cheapest oil burner to run, as far as I can make out, as the fuel is highly atomized giving diesel-like economy. I have made several of these burners for farmers to cure tobacco, for dairy use and for peanut driers. They are very reliable and, once installed, are easy to maintain and operate.

I modified a four element diesel pump years ago to pump fuel and water into a steam generator at a ratio of 10 parts of water to 1 of fuel. This pump was used on my own generator for a period of ten years. The steam temperature would hold steady for many hours at 6000F, with the pump being driven by a small steam engine.

The original plungers, 9 mm diameter for the water side, have been remade from stainless steel and are a sliding fit in barrel with neoprene o-rings fitted to the top and bottom of the plunger.

The fuel plunger is a standard 6 mm plunger with no modifications. The original heavy tappet springs have been replaced by light ones. The original hardened camshaft has been drawn, and the cams turned down to 20 mm.

The water cams have been made from hex nuts, 7/8" fine thread, bored out to push fit on the shaft. They were then heat treated to give long life, and then ground to give 7 mm lift. This is done on a 3/4" emery wheel after hand dressing the wheel to a round edge. When this pump was run ten years ago, I sent a description and photo to an English steam