

Nick's Project: Modifications to Seidel Radial Engine

Background

Seidel Radial Engines were originally produced in Germany with manufacture recently transferred to Switzerland and are recognised as the benchmark for RC model aircraft radial engines. The ST 726 is the result of 30 years of development.

As with most model aero engines they use a 2 stroke mixture of methanol and synthetic oil.

Problem and Solution

As this is a fairly big engine of 180cc it is very messy and due to only a 3% oil mix with the fuel there is excessive wear on the 3mm diameter cam followers.

To overcome these problems I converted it to have a separate oil system as in the full sized engine.



Figure 1 The Engine with New Inlet Pipes

The modifications include extending the crankshaft at the rear of the engine to drive a two stage oil pump (feed and scavenge) and a distributor for the spark ignition system. (Fig 4 and 1)

I have also made a bronze bush to replace the needle roller big end, modifying Honda GX25 pistons which are 35mm diameter and now machined down to 34mm and making new piston rings. (Fig 2 and 3)



Figure 2 The Modified Pistons with Home-Made Rings



Figure 3 Con Rod Assembly with New Big End Bush



Figure 4 Oil Pump

Problems. At present there is excessive oil getting in to the bottom two cylinders which should be rectified when the rings bed in. The project is still ongoing.

Here are more pictures showing the progress of the manufacture and construction of Nick's Seidel rotary engine



Optical pick-up inside the distributor



View inside cylinder showing a steel liner



Cutting gears for oil pump



Rear housing machine from solid



Cover plate for rear housing to form inlet manifold



Rear housing containing crank shaft follower



Prototype oil pump and crankshaft follower

Extension pieces for cylinders



Turning mehanite tube to make piston rings



Parted off piston rings



Jig for heat treating piston rings
(held at red heat for 3 minutes and allowed to cool)



Machining slots for oil rings



Using needle file to groove the ring ready for splitting



Splitting a piston ring, the ends of which will be trimmed up with a needle file to get the correct gap



View inside distributor cap



The assembled distributor