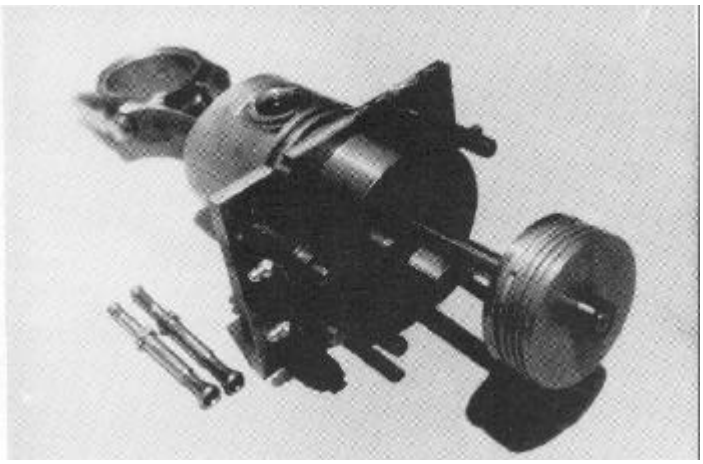
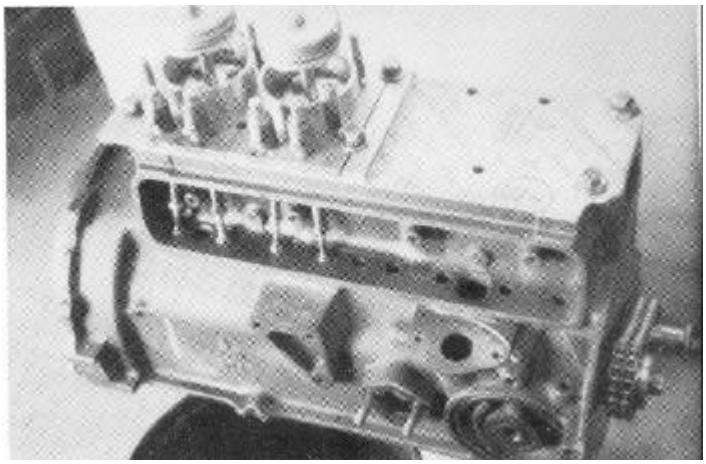




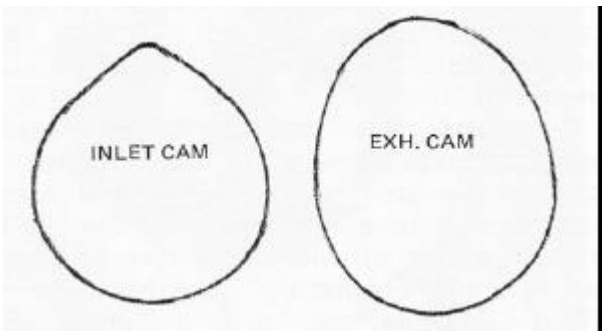
The camshaft has to be driven at crank speed rather than half crank speed. I use a duplex standard 3/8 pitch timing chain. The original camshaft has all the bearing journals cut out and bored to fit onto 3/4 inch hardened shaft. The oil pump gear and lift pump cam are also bored to fit. The inlet cams and exhaust cams are made as follows: inlet cams can be hand ground from the original cam to give 1/8 inch lift with a quick lift and quick shut action to give 40% cut off.

The exhaust cam is egg shaped. I use cams cut from a diesel pump camshaft. This is out of an English CAV pump and the part. number of the camshaft is 7100-39. This cam is perfect for the job and gives correct settings, opening 30 BBDC and shutting 50 BTDC with 1/4 inch lift.

When fitting the cam on the 3/4 inch shaft, make them a firm fit. Thsen they can be adjusted to their correct setting by tapping with a brass rod while checking with a dial gauge on top of the valve. Have all the pistons and pushrods fitted and the chain driving the camshaft when setting the timing this way. Once valves are in correct time, tack weld the cams to the shaft.

If the engine is configured as a single acting compound, two inlet and four exhaust cams are required.

When using air-cooled cylinders, grind off all fins and surplus metal. Leave the exhaust valve as-is, as this is already made and all that is needed is to lap it into its seat. Before fitting the spring and bottom spring plate, a special seal holder is to be made.



Cams shown exact size.

Measure the valve stem and valve guide O.D. Make a mild steel seal holder as illustrated. Wind Teflon tape around the valve stern to fill the packet, and fit an o-ring on the valve stem. Fit the spring, and fasten the spring plate. This seal is self-sealing by action of spring pressing on Teflon tape. Use this seal on all valves as they will seal very well if enough tape is used to enable the seal holder to compress the tape against the bottom of valve guide. This easily over- comes the problem of leaking valve stems while avoiding the extra-long valve stems used in steam engines of days gone by. The Teflon seal will last for