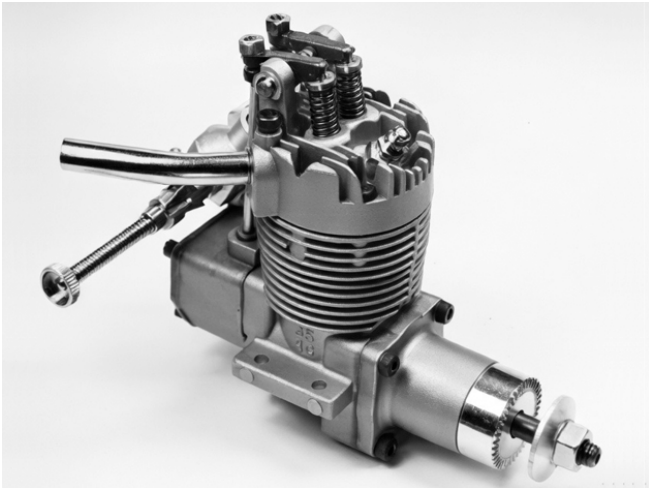


Enya 35-4C four-stroke tested



Left: Now available through RipMax dealers, the new Enya 35-4C four- stroke engine. On test, it proved to be a lively performer for its size.

This engine, the Enya brothers first model four-stroke to be put into production, was introduced to the Japanese home market last summer and is now available in the United Kingdom through Ripmax stockists.

The 35-4C is one of the smallest model four-strokes offered to date: it has a capacity of 5.8cc and weighs 12.4oz. Only the 4.97cc Saito FA-30, which is 0.7oz lighter, is smaller, although, in fact, the Enya looks the smaller of the two because it is of more compact external dimensions. It requires only 1¼ in. between the engine bearers, above which it is only just over 3 in. high. It is quite a bit more powerful than the Saito but, against this, is more expensive. So, "you pays your money ", etc.

In common with most of the other current model four-strokes, the Enya is a pushrod- OHV unit. Like the O.S. FS-60 and Kalt FC-1 before it (but unlike the Saito which places its camshaft, pushrods, etc., above the crankshaft main journal) the 35-4C has its valve gear at the back. However, instead of a single camshaft, it features the somewhat unconventional arrangement of the inlet and exhaust cams placed side by side and individually geared to the timing pinion. The timing shaft runs in ball bearings front and rear and, of course, picks up the drive from the crankpin, while the two camshafts run in bronze bushed bearings.



Right: Parts of the Enya 35-4C. Engine features twin camshafts and has a ringless aluminum piston running in a chromed aluminum liner.

The valves have 8mm dia. heads and 2.5mm dia. stems and operate in one piece bronze guides and seats. They are placed side by side and slightly angled in a pressure die cast aluminum cylinder head which has integral posts supporting the valve rocker shaft. The rockers are of hardened steel and have the usual screw adjustment for setting tappet clearances the pushrods are of aluminum with steel ends and are lifted through 5mm dia. hardened steel tappets running directly in the timing case casting. Cam profiles are of the round flank type.

The rest of the engine is fairly conventional except, perhaps, for its cylinder liner. This features Enya's All-Chrome set-up of a chromed-bore aluminum liner in which the matched aluminum piston runs without a compression ring. The- 35-4C has a short stroke (S/B ratio 0.811) and a relatively short connecting-rod (1.7x stroke) which help to keep the engine's overall height fairly low. The conrod is of machined aluminum with bronze bushes at both ends. The crankshaft has a 10mm main journal and 7mm front journal, both running in ball bearings in a separate pressure cast front housing.

The carburettor is of typical Enya design, with non-adjustable automatic fuel metering supplemented by an airbleed screw for adjusting the idling mixture. It is mounted on the timing case at an angle and connects with the inlet port in the cylinder head by means of a short

Enya 35-4C four-stroke tested

chromium plated copper inlet pipe. A pipe of similar material is used for the exhaust.

On test, the performance of the Enya 35- 4C was interesting. The engine was distinctly lively by four-stroke standards as the performance data indicates. For example, its 10.000 rpm plus on a 10 x 6 prop would not disgrace a sport type .35 two-stroke and its specific output of 124 bhp/litre is above average by four-stroke standards.

The manufacturer's advised fuel mixture for the 35-4C is a blend containing between 5 and 15 per cent nitromethane and between 18 and 20 per cent castor oil or a suitable high-grade synthetic lubricant. We used 10 per cent nitro and 18 per cent castor oil which is in line with the fuels used in most of our previous tests of four- stroke motors (O.S. FS- 60, Kalt FC-1, Saito FA-30, O.S. FT-120, Webra T4). This seemed to suit the 35-4C very well.

According to the maker's literature, the 35- 4C should develop between 0.40 and 0.45 bhp. This claim was certainly fully substantiated by our tests which indicated an output of almost 0.45bhp at 11.000rpm on 10 per cent nitro.

One thing that we encountered with the 35-4C that has not been previously experienced, was a tendency for the engine to 'knock' (i.e. detonate) if the needle-valve was closed to the point where the engine was running too weak. Obviously, this does not do the engine any good: it could also result in the prop being loosened and thrown off, so care needs to be exercised in adjusting the needle-valve (which can be critical) for the last hundred revs or so, once the motor has warmed up.

Before leaving this subject it is only fair to mention that our tests relate to a pair of Enya 35-4C engines received from Japan last September, since which time, the tendency to detonate may have been dealt with by the manufacturer and eliminated from current production models. It is not unreasonable that a reduction in the engine's compression ratio and/or a modification to the combustion chamber shape may have solved this problem.

Specifications and performance data for ENYA 35-4C 4-stroke:

General data:

Type: single-cylinder, glow plug ignition, twin-camshaft pushrod-OHV four-stroke with twin ball bearing crankshaft.

Bore and stroke: 20.95 x 17.0mm (0.8248 x 0.6693in.)

Stroke/bore ratio: 0.811:1

Measured combustion chamber volume: 0.78ml.

Nominal compression ratio: 8.5:1

Swept volume: 5.860cc (0.3576cu in).

Valve Timing:

Inlet opens: 20° BTDC.

Inlet closes: 60° ABDC.

Exhaust opens: 40° BBDC.

Exhaust closes: 40° ATDC

Carburettor: Enya fixed automatic mixture control type with 4.5mm choke (12sq mm effective choke area).

Silencer: Not supplied. Exhaust pipe only.

Weight: 352 grammes (12.4oz).

Required bearer spacing: 31.5mm.

Performance tests:

Power output, gross: 0.445bhp at 11.000rpm.

Torque, gross: 46oz.in. at 7.000rpm.

Specific output, gross: 124bhp/litre.

Power/weight ratio, gross: 0.57 bhp/lb.

Typical prop rpm:

7.900rpm on a 12 x 6 Top Flite maple

8.800rpm on a 12 x 5 Zinger maple

9.000rpm on an 11 x 5 Zinger maple

9.300rpm on an 11 x 5 Top Flite maple

9.700rpm on an 11 x 4 Power Prop maple

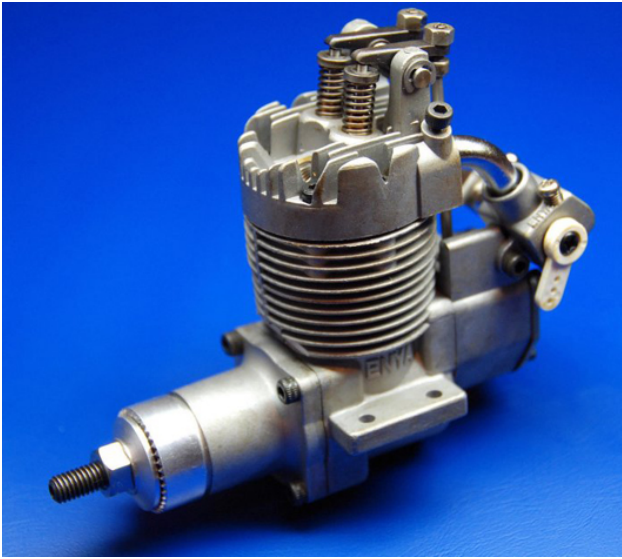
9.900rpm on a 10 x 6 Power Prop maple

10.200rpm on a 10 x 6 Zinger maple

10.800rpm on a 10 x 5 Zinger maple

Test conditions: 10% nitromethane fuel; air temperature 14°C, pressure 747mm Hg, relative humidity 70%.

Enya 35-4C four-stroke tested



More: https://flyinghlsat.com/search.php?search_keywords=Enya-Engines