



FUJI 19-IV-SBB ENGINE

TEST CONDUCTED BY FRED LIVESEY

THE introduction of the new family of Schnurle Ported engines brought an inevitable price increase to £40 — £50, and the Veco 19 at £25 seemed a thing of the past.

Even newcomers to the hobby are having to use the more powerful engines — so the introduction of the FUJI 19 Schnurle Ported engine at £26 seems quite a bonus for car beginners, i.e., reasonable price and Schnurle ported power.

ENGINE TYPE

19-IV-Schnurle Ball Bearing-Front Induction-Glow engine with Inner By-pass Porting (the ports are placed internally on the liner rather than in the crank-case). Bore — 16mm — Stroke 16mm — Displacement 3.21cc.

CRANKCASE

Die-cast aluminium alloy crankcase with separate front housing held by four socket cap screws — located by 24mm O/D x 12mm bore rear bearing — front bearing

16.75mm O/D x 9.0mm bore — back plate cast integral with case.

CRANKSHAFT

Hardened steel with 12mm diameter half-moon shaped counter balance — 7.5 diameter gas passage — 4.46 (4.5)mm diameter solid crank pin — inlet timing opens 42 deg after bottom dead centre — closes 28 deg after top dead centre — prop. driver located by tapered collet.

LINER

The liner appears to be cast iron with a thickness of 2.5mm to accommodate the transfer ports which are milled up the inside of the liner. Exhaust port duration is 140deg. — transfer port duration is 124deg. — liner has no top flange but is clasped between the cylinder head and a location flange in the crankcase.

PISTON

Hardened steel with oil groove — hollow gudgeon pin held in piston by circlips.

CONNECTING ROD

Aluminium forging — fitted with phosphor-bronze bush in later examples. No oil hole in big end.

CYLINDER HEAD

Black finned aluminium alloy — combustion chamber has 2mm wide squish band — brass insert fitted to accept glow plug.

CARBURETTOR

Fuji R/C air bleed type carb fitted by two Phillips head screws and sealing washers — 12mm diameter spigot in front housing — 5mm bore with 2mm diameter x 2mm long jet protruding into bore giving 15.64 sq. mm. cross sectional area.

Weight less silencer — 7.5oz.

PERFORMANCE

Test carried out using 'Dust Bin' type silencer, flywheel weight equivalent of 2oz.

After initial running in on 30% castor oil 70% methanol fuel mixture, a change was made to 20% Castor oil, 15% nitromethane 65% methanol mixture. Engine started easily.

Tick-over could be set steadily at 3500 RPM — increasing speed produced a vibration period at 7500 RPM enough to unscrew the slow running screw completely from the carburettor — passing on up the revolution range the vibration completely disappeared. Under load the engine produced a torque of 40oz./ins. at 13000 RPM which gives a figure of 0.516 bhp, and is comparable with the figure given by the manufacturer of 0.55 bhp.

CONCLUSIONS

Much more power could be obtained I'm sure with a change of carburettor to — say — 8mm bore. The inlet timing seems very short in these days of high performance Schnurle engines and the closing point is particularly early. With mods this engine could be made to go quite quickly — Cheap mods at that.

In conclusion it is only fair to say that this engine is well engineered — and certainly good value for money.

It is supplied with a detailed instruction sheet (albeit for the aircraft boys) and some quite useful information for the beginner in R/C cars.

