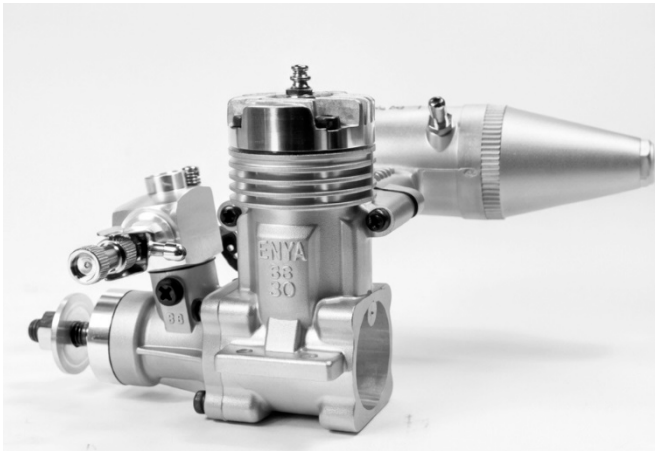
Engine Review Round-Up

By Peter Chinn

Enya Super-Sport 30 & 30-Ring

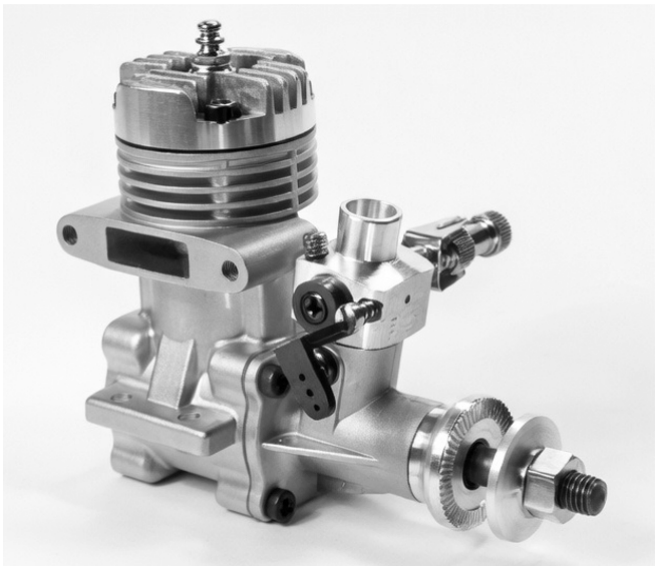


Enya Super-Sport 30-Ring, top model in the Super-Sport series, has twin ball bearings, Enya G-Type carb, and ringed aluminum piston.

SPECIFICATIONS

Type: Air cooled single cylinder side exhaust two stroke cycle with crankshaft rotary valve and Schnuerle scavenging.
Bore: 19.0 mm (0.7480 in.)
Stroke: 17.0 mm (0.6693 in.)
Displacement: 4.820cc (0.2941 cu in.)
Nominal Compression Ratio (full stroke): 11.5:1-12.0:1
Speed Control: SS-30 Enya standard air bleed type carburetor with 5 mm choke. SS-30-RING Enya “G-Type" automatic mixture control carburetor with 5.5 mm choke.
Checked Weights: SS-30 211 grams (7.44 oz.) bare, 259 grams (9.14 oz.) with Enya M251 muffler; SS-30- RING 227 grams (8.00 oz.) bare. 275 grams (9.70 oz.) with M251 muffler.
Mounting Dimensions:
Crankcase width: 29.5 mm
Length from prop driver face: 72.5 mm
Height above CL (less glow plug): 58.5 mm
Bolt-hole spacing: 57x 15 mm
Manufacturer's Claimed Power Output: SS-30 0.6-0.75 PS less muffler, 0.5-0.65 PS with muffler; SS-30-RING 0.7-0.85 PS less muffler, 0.6-0.75 PS with muffler.
Manufacturer: Enya Metal Products Co. Ltd., Nerimaku, Tokyo 176, Japan.
U.S. Distributor: Altech Marketing, P.O. Box 286. Fords. NJ 08863.

In 1956, the Enya brothers, whose Enya Metal Products Company had then been making model engines for about five years, introduced two motors that, more than any other, were responsible for bringing Enya engines to the notice of serious model builders outside Japan. One was the Enya 15-D, a compression-ignition engine which, breaking completely with orthodox European model diesel design, came nearer than any other 2.5cc contest diesel, at that time, to equalling the hitherto unchallenged British Oliver Tiger. The other was the Enya 29 Series III, a bushed bearing glow plug engine that, on test, proved capable of outpacing almost every other 29 of the period.



Basic Super Sport 30 has bronze bushed main bearing, standard air bleed carburetor, and lapped cast-iron piston.

Enya SS30 & SS30-Ring R/C

Super-Sport castings are used for smaller displacement SS-25 models as well as 30. Parts shown are for 30-RING.

The Enya company has always had a 29 in its product list. The 29-III was eventually succeeded by the 29-IV (ironically, this failed to equal our 29-III in tests) and 29-IVB, and then by the present 29-V model in both plain bearing and ball-bearing versions. All these have been traditional crossflow-scavenged engines but now, with the Super-Sport 30, the Enya company has moved over to the Schnuerle-plus-third-port scavenging system that has been a feature of all its more recent two-strokes. Incidentally, notwithstanding the "30" designation, this is still a "29": its 19x17 mm bore and stroke give a displacement of 4.820cc or 0.2941 cu in. (Actually, just for the record, Enya "29s" have all been .30 rather than .29 cu in. They all use a nominal 18.7x17.9 mm bore and stroke, indicating a swept volume of 4.916cc or almost exactly 0.300 cu in.)

Engine buffs who think that the new Super-Sport 30 looks just like the Super-Sport 25 featured in the July M.A.N. are absolutely right. Both engines are available in a choice of bushed-bearing and ball- bearing models. The former are virtually identical externally in both displacement sizes, while the ball-bearing models are similarly related. However, whereas both 25s have lapped cast-iron pistons, the ball-bearing version of the 30 shown has a ringed aluminum piston.

Here we should mention that this is not the whole story, as there are also two other related Super-Sport models. First, the ball-bearing SS-25 is manufactured in a special, slightly more powerful, version, known as the "25 Al-Chrome" model, which has a ringless aluminum piston running in a chromed-bore aluminum cylinder-liner. Second, the ball bearing SS-30 is also listed with the option of a lapped cast-iron piston, instead of a ringed aluminum one. In this form it is simply designated "30-BB."

As in the case of the Super-Sport 25s, the ball-bearing equipped version of the 30 has one or two other luxuries not found on the plain bearing models, such as an Enya G-5.5 carburetor with fixed automatic fuel metering in addition to the adjustable air bleed idle-mixture control found on the simpler carburetor fitted to the standard 30. The muffler supplied with the plain bearing 30, however, is the same M251 type supplied with the ball-bearing engine, not the smaller volume M250 supplied with the plain-bearing 25.

A comparison between the checked weights of the 25 and 30 models reveals that the bigger displacement models are actually fractionally lighter than the 25s. This is due to the fact that the 30 size cylinder liners are reduced in wall thick-ness from 1.8 mm to 1.2 mm necessary to accommodate the 30's larger cylinder bore within the same sized casting.

Except insofar as they are similarly affected by differences in bore and stroke, other internal parts and dimensions are also similar to those of the 25 models.

Crankshaft and piston/cylinder components of the Super Sport 30-RINC. Note sturdy crankshaft and quality finish.

Enya SS30 & SS30-Ring R/C

Thus the standard 30 crankshaft has an 11.5 mm diameter main journal running in a bronze bushed main bearing, whereas the 30-RING shaft has a 12.0 mm main journal and runs in 12 x 24 mm and ¼ x ¾ in. ball bearings.

The two engines share the same cylinder head, although, as the data table shows, the measured combustion chamber volumes produced slight variations in compression ratio. The ringed aluminum piston is of course much lighter, approximately 5½ grams lighter, in fact, than the cast-iron piston. The complete piston, rod and wristpin assembly for the 30-RING checked out at only 8.1 grams, compared with 13.6 grams for the lapped piston engine.

According to the manufacturer, the best prop size for these two Super-Sport 30 models is 9 ½ x 6. Both engines will operate satisfactorily on a straight 80/20 blend of methanol and castor oil (or a good quality synthetic) or, for extra power, on a fuel containing a moderate quantity (10-15 percent) of nitromethane.

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