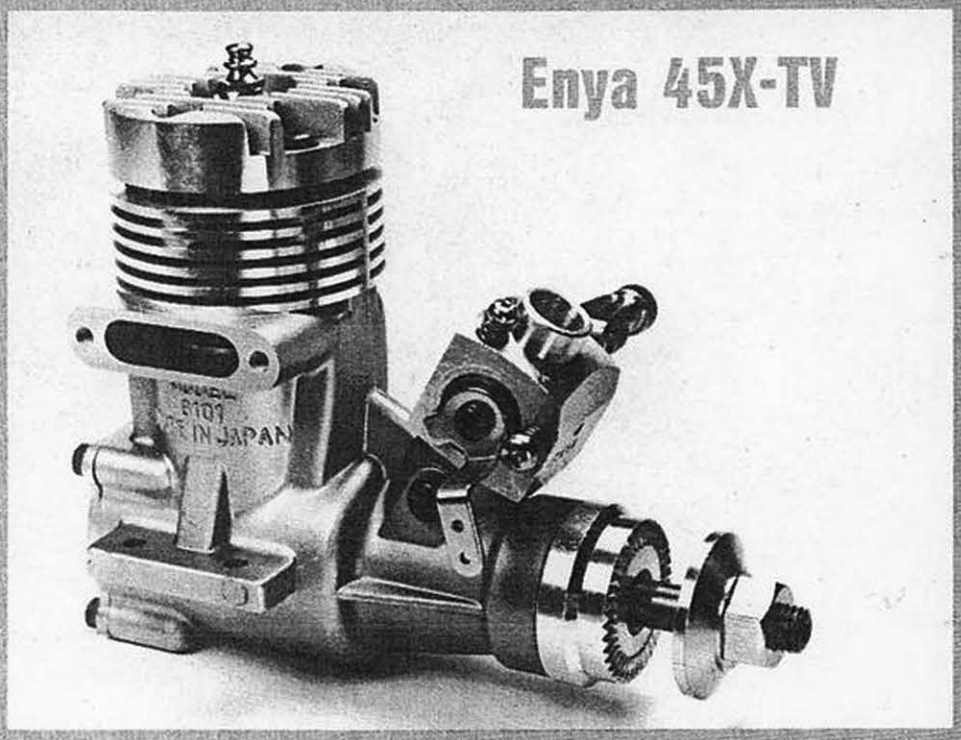
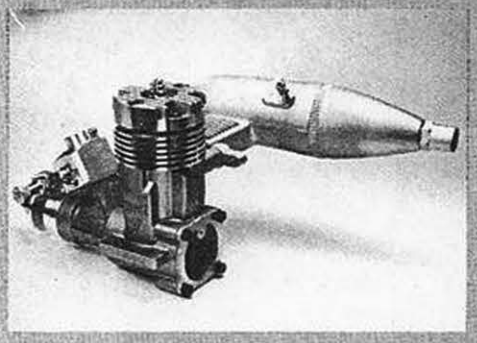
ENGINE REVIEW



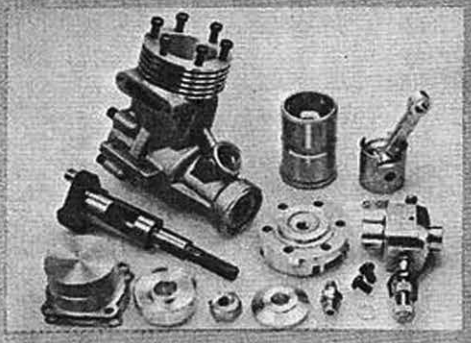
Distributed by MRC, Enya 45X-TV is one of the best 45 RC engines available.

SPECIFICATIONS

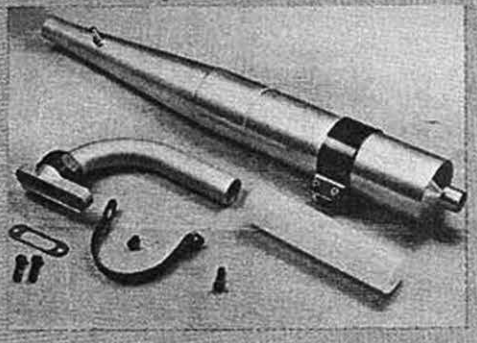
Type: Air-cooled, single-cylinder, side-exhaust, two-stroke cycle with crankshaft rotary-valve and Schnuerle scavenging.
Bore: 21.6 mm (0.8504")
Stroke: 20.4 mm (0.8031")
Displacement: 7.475cc (0.4562 cu in.)
Measured Compression Ratio: 9.5:1
Speed Control: Enya G-Type carburetor.
Checked Weights: 340 grams (12.0 oz) less muffler; 422 grams (14.9 oz) with standard Enya muffler; 505 grams (17.8 oz) with Enya tuned muffler system.
Manufacturer's claimed power output: 1.3 bhp at unspecified rpm.
Manufacturer: Enya Metal Products Co. Ltd., Tokyo 176, Japan.
U.S. Distributor: Model Rectifier Corporation, 2500 Woodbridge Avenue, Edison, NJ 08817.



Enya 45X-TV comes equipped with large Enya expansion-chamber muffler shown.



Similar externally to 40X-TV, but all parts are new, including aluminum sleeve.



Optional extra for 45X-TV is this Enya tuned pipe muffler assembly.

• The Enya 45X-TV is basically a bored and stroked version of the Enya 40X-TV that was the subject of a full test report in the June 1978 issue of *M.A.N.* However, although it looks almost identical, externally, to the 40X-TV, it has certain features of its own and very few of its parts are interchangeable with those of the 40X-TV.

The most important changes are to the piston and cylinder. Whereas the 40X uses a Dykes-ringed aluminum piston running in a case-hardened steel cylinder-liner, the 45X features a special "Al-Chrome" assembly. This, first seen on the Enya 60XF (see *M.A.N.*, April 1977, for full test report), employs a ringless aluminum piston running in an *aluminum* cylinder-liner having a hard-chrome plated bore. In other words, it is similar to the ABC system pioneered by Super-Tigre, but uses a chromed aluminum sleeve rather than a chromed brass one. As with a brass sleeve, the aluminum liner, because of its similar coefficient of expansion, enables the piston to be fitted without a ring and also maintain more intimate contact with the surrounding casting, thereby improving heat transference to the cooling fins. An aluminum sleeve does not appear to have any significant mechanical advantage over a brass one, but as aluminum is only about a third of the weight of brass (or, for that matter, of iron or steel, the other commonly used cylinder materials), it not only makes for a lighter engine but enables a thicker liner to be used so that angled ports—as in a Schnuerle-scavenged engine—are more effective in directing gas flow. The 45X, for example, is 6 percent lighter in weight than the 40X, despite its larger displacement and in spite of having a 23 percent thicker cylinder wall.

In many instances where a manufacturer offers a stretched version of an existing motor, the only thing that is altered is the cylinder bore, or the piston stroke, or both. With the Enya 45X, however, some additional modifications have been made that are in keeping with its increased displacement. For example, the carburetor choke area has been increased from 29 sq mm to 34 sq mm. The actual choke bore is

(Continued on page 100)

ENYA 45X-TV

(Continued from page 34)

unchanged and the increased effective area has been achieved by fitting a shorter, smaller o.d. jet tube. Also slightly enlarged is the gas passage through the shaft, which is 11.4 mm i.d. instead of 11.1 mm. Rotary-valve timing is unaltered at 37 degrees ABDC to 50 degrees ATDC, but there are some changes to the cylinder porting. The exhaust port is not centrally bridged and is appreciably larger in area. The third port, on the other hand, is smaller, while the two main bypass ports, fractionally wider and shallower, are angled slightly upward as well as away from the exhaust port. The exhaust period, at a measured 142 degrees of crank angle, is the same as for the 40X, while the transfer and third port periods are slightly less at 114 degrees and 110 degrees, respectively.

The cylinder head has a much shallower (1.7 mm) combustion chamber and wider (4 mm) squishband, and compression ratio is reduced from 10.5 to 9.5 according to our measurements. The main casting is, of course, bored out to take the larger o.d. cylinder liner and there is also a channel in the crankcase wall to provide the conrod clearance made necessary by the engine's increased crank throw.

In all other respects, the 45X follows the 40X. The main casting is sturdy but well finished, and houses two steel-caged ball journal bearings to support the robust crankshaft, which has a 15 mm dia. main journal, a ⅜ in. dia. front journal and a 6 mm dia. crankpin. The conrod is of forged aluminum, bronze bushed at both ends. The G-Type carburetor has non-adjustable automatic fuel metering, with an airbleed screw for altering the idling mixture.

The engine is supplied complete with an Enya expansion chamber muffler of 78cc volume and 64 sq mm outlet area. Available as an optional extra is the well-made Enya TM 40/49 tuned muffler assembly. This can be expected to raise output by 20 percent, compared with the performance available on the standard muffler, thereby making good all the power loss attributable to the latter type muffler, compared with the open-exhaust condition.

The factory rates the Enya 45X-TV at a gross output of 1.3 bhp. The rpm at which this figure may be reached is not stated, but it is reasonable to suppose that it would be fairly close to that of the 40X-TV which, in our tests, reached its bhp peak at just over 16,000 rpm.

When we tested the 40X-TV we found it a very nice engine—very easy to handle, smooth and powerful—and we would expect the 45X-TV to be the same, but with a useful edge in output. Both engines are quality products, well engineered and finely finished.

Will it fit?

Enya 45X-TV mounting dimensions, less muffler:



