

Fox 15X

A High-Speed Mill: Duke's 4-oz "15X"

■ First indication of what Duke Fox had up his sleeve in the way of a new .15 engine came during a bull session at the '61 Nats. Seated on one of the work tables, discussing everything in general and engines in particular, the head man of Fox Manufacturing Co., Fort Smith, Arkansas, opined that 30,000 rpm speeds couldn't be too far off.

While Duke's 15X isn't the final answer, it approaches the goals mentioned. The 32,000 rpm mentioned is optimistic under average conditions. But no question about it, this Fox 15X is a high speed performer.

It is not an enlarged .07 nor a miniaturized version of bigger Fox engines. It's entirely new despite a striking resemblance to its larger kinfolk. A downdraft shaft rotary valve design, she runs only in a counter clockwise direction (viewed from the front).

An aluminum alloy crankcase casting features beam mounting lugs and a long air intake tube, belled at the top. An oil grooved main bronze bushing is part of the casting. A brass needle valve body, push-fitted through the intake tube, is quite long and takes a straight tapered needle. Positive fuel shut off and a coil spring tensioner are noteworthy features. Adjustment seems a bit critical for starting and idling.

The die cast aluminum rear cover is webbed on both sides of a central stud through which a pressure fitting may be mounted (fitting is not included). A paper gasket and two screws secure the rear cover.

A leaded steel cylinder barrel, slip-fitted into the case, has twin exhaust ports of generous dimensions and a single intake port. A dia. hole (which leads nowhere) below the exhaust bridge could be to trap oil and aid lubrication of the piston.



Duke's straight, fully machined Meehanite piston is flat topped, straight baffled and lightened internally below the wrist pin boss. Wrist pin is solid steel. No end pads are used. Connecting rod is die cast aluminum alloy, elliptical in cross section and robust to withstand the rigors of high speed operation.

A one piece counterbalanced steel crankshaft has a rectangular rotary valve. A knurled aluminum drive washer is splined to the shaft. Front steel prop washer is coined from flat stock.

New for Fox is the die cast aluminum cylinder head with its Swirl-Quench combustion chamber and angled glow plug. To remove plug, a 5/16" socket wrench is needed. The head is deeply grooved to retain a .01 aluminum gasket. Our test engine also sported an aluminum ring 1/16" thick. This ring leads us to believe that compression ratio experiments were still underway when our engine was released. Later models may or may not employ this ring. Four head bolts screw down into ribs between the cylinder cooling fins to prevent cylinder distortion. While the owner's manual was not off the press when our test was made no doubt it will be as thoroughly enlightening as past Fox manuals.

Fox Missile Mist and K&B Supersonic 100 fuels were used during our running tests. Equal results were obtained with both. Starts were not as fast as we have come to expect with Fox motors yet the 15X should not be classed as a hard starter. A tendency toward flooding probably accounted

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for early balks. However, the needle valve design makes clearing quite simple.

This high speed performer is not intended to lug a big club. It is happiest in the 20.000 rpm range. This is easily attained (after about 1% hours break-in) with 7" diameter props having 3" to 4" pitch. 23.000 rpm was recorded with a 7/3 Tornado. A 7/4 Power Prop dropped to just below the 20.000 rpm mark. An 8/6 is entirely too much for this speed demon as the 7.000 recorded will attest.

The Fox 15X is an excellently designed engine capable of outstanding performance in all phases of modeling where such size is dictated. The low \$6.95 price makes it quite a buy. The casting work on our early engine was not comparable to the usual high Fox standards. Although we do not encourage dismantling an engine unnecessarily, thorough inspection and, if necessary, removal of any flash material should be done before any attempts are made to run it. Flash was encountered at the base of the transfer port and on the connecting rod.

The Fox guarantee covers a period of 2 years from original sale or 10 hours operating time. With proper handling it should easily outlive this generous guarantee.

Specifications: Bore .590 inch: Stroke .540 inch. Displacement .15 cu. in. Bare weight 4 ounces.



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