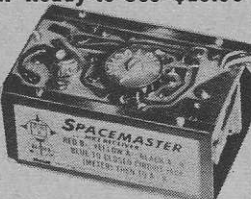


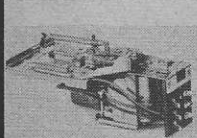


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Incorporates "single-touch" tuning, 2 "twin-matched" transistors, plus lo-drain hard tube. "Locked-in", deep etched printed circuit guarantees trouble-free performance.



Can be tuned over all newly allotted frequencies.
 • Battery requirements: 30 V.B., 1½ V.A. • Relay operation: 5MA on idle, rises to over 4 MA on signal for positive relay operation • Factory built, tested & guaranteed • Metal case • Wgt. 1¼ ozs.



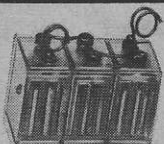
Aristomatic COMPOUND ACTUATOR for R/C perfect for boats, includes electrical switching action: forward-stop-reverse-stop; Mechanical directional control: left-neutral, right-neutral. 3-6V. operation... \$10.95



Aristol MOPA TRANSMITTER Features printed circuit chassis, extended range transmission, 27¼ freq. & "tuning-eye" for fast, accurate checking, quality hi-tolerance components & specially designed crystal. Kit \$14.95 Ready-to-use (less batt.) \$19.95 **BATTERY CHARGER** With Selector switch, 110 Volt AC input \$7.95

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From Top to Bottom:

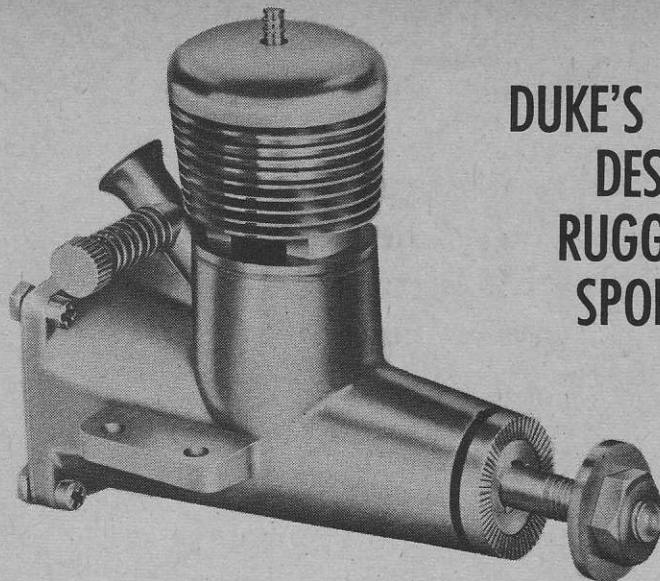
- No. 15 - RPM 6000-7000... 90¢
- No. 25 - " 5500-6500... \$1.00
- No. 35 - " 5000-6000... 1.25
- No. 45 - " 6500-7500... 1.50
- No. 55 - " 6000-7000... 1.75
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POLK'S HOBBIES

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DUKE'S .09 ENGINE DESIGNED FOR RUGGED USE BY SPORTS FLYERS

■ By combining the old and the new in engine design, Duke Fox has come up with an usual and easy starting .09. Through the years there have been many variations of fuel intake design, such as the straight intake as used on the granddaddy of model motors, the Brown Jr., and the then popular Super Cyclone. The crankshaft rotary was made popular by the Ohlsson 23. The disc rotary was used on the Bantam, DeLong, McCoy, Hornet. The metered jet type on the Atom and the reed type on the Thimble Dromes.

Aside from these methods of fuel entry into the crankcase, various methods of fuel transfer and exhaust have been used. From the single by-pass and single exhaust system, the poppet valve, up to the use of multiple transfer ports and 360 degree exhaust porting found on many of the smaller engines of today.

Naturally, as is the case with all design features, there were and still exist advantages and disadvantages both technical and mechanical to all variations. From a purely mechanical standpoint to name a few; without an ignition system to time the firing, the straight intake, the poppet valve, the metered jet and the reed valve designs will run in either direction. Although not always a disadvantage this is considered by many to be quite an annoyance. The crankshaft rotary by its very nature, limits the size of the port and weakens the crankshaft. The disc valve allows an exceptionally large port to be employed, but increases drag or friction through use of the rotating disc.

The advantages of many of these designs are self-evident either in increased power, rpm or simplicity of production. Surely some of the more complex designs proved themselves excellent engines but in the struggle to maintain high production standards and yet compete price-wise, their complexity proved their downfall.

The Fox .09 fits the category of the straight intake design. However, it utilizes modern multiple transfer ports and double exhaust scavenging. While it can be forced into clockwise rotation, it is exceptionally easy to start in the normal counterclockwise direction of rotation. No tendencies to reverse itself while running either way was evident during the test period.

The Fox .09, while not the most powerful engine in its class, was designed especially for the beginner and is suitable

for control line models up to 30" span weighing up to one pound. The 7-3 or 6-4 propeller recommended by the factory is rather small for an engine of this displacement but it sings a happy tune when running wide open. Larger propellers, tried for comparative purposes, are not recommended.

The engine as received from the factory requires that the fuel tank rear cover and gasket, fuel line and needle valve be assembled in their respective positions. The fuel line supplied had a tendency to kink so it was replaced with the clear type available at most hobby shops.

The main crankcase casting includes the fuel tank and the venturi intake tube as integral parts. Beam mounting lugs are provided but radial mounting is also possible.

The angled venturi located to the rear of the crankcase allows entry of the fuel mixture into the crankcase just below the exhaust ports from where it travels upwards via two transfer ports located within the bridges of the exhaust ports.

The counterbalanced one piece machined steel crankshaft runs in a bath of oil supplied to it via an exceptionally large hole located in the front of the crankcase and angled down through the wall leading to the bearing surface of the crankshaft.

The brass needle valve body is a push fit into the venturi tube. The straight tapered steel needle is held under tension by a steel coil spring. No floating was encountered. Adjustments are not critical in the least and the engine is capable of quick starts over a very broad needle valve setting.

The machined steel cylinder barrel is quite heavy, accounting for most of the engine's weight. It threads into the crankcase. A soft aluminum gasket ring ensures a good seal.

The Fox .09 employs a Glow Head which combines the machined aluminum cylinder head with its hemispherical combustion chamber and the glow plug as an integral part. Additional Glow Heads are available at 75 cents per unit.

The flat topped piston is unique in that it appears to be machined from a mild steel which is then copper plated, then chrome plated on its full length running surface. The steel connecting rod is of the ball and socket type, eliminating the need for a wrist pin and allowing full rotation of the piston.