

June 1, 1981
OWNERS INFORMATION MANUAL FOR THE FOX EAGLE III



Bore -- .907
Stroke - .937
Disp. -- .604
RPM -- 13,000 with an
11-7 prop
Weight - 18 oz.

MESSAGE FROM DUKE FOX

We are very proud of our Fox Eagle III and want it to give you the best possible service. Please read the owners manual in its entirety and follow its instructions to the best of your ability. If you have any questions not covered here, please feel free to call us at Area Code 501-646-1656.

NOTE:

Although it may appear the cylinder can be turned 90 degrees, we do not recommend it.

SUITABLE MODELS:

The Eagle III motor is intended for competition pattern model airplanes and all sport and scale type model airplanes that their size and weight would fit. They are suited to model helicopters if auxiliary cooling is provided.

WARNING:

There is always the possibility you may lose control of your model. Do not fly in any location where your model might strike people or do property damage should this occur.

INSTALLATION:

Your Fox Eagle III mounts in the normal manner. If your airplane calls for a firewall mount, we recommend the Fox #50604 one piece metal mount, as it is very rigid. If your plane is designed with a hardwood beam type mount, be sure they are well braced between the two beams, and the beams are gusseted to the firewall, and, preferably, to one another. Flimsy motor mounts will allow the engine to vibrate excessively and may damage the model and cause foaming of the fuel tank. If a cowling is used, provisions should be made for both air inlet and outlet.

PROPELLERS TO USE:

The side exhaust Eagle III would use an 11-7 1/2 for average sport or scale type models. For larger models you may have better luck with a 12-6. We recommend hardwood propellers of maple, birch or cherry wood. Never use an unreinforced nylon propeller. The Eagle III has enough power to throw the blades. We recommend you never use a metal, fiberglass, or nylon propeller on your airplane because they are more likely to cut off a part of your hand should you have an accident.

WARNING:

Always keep clear of the propeller. It is possible for a propeller to cut off a finger or for a piece to come off and put an eye out.

FUEL TO USE:

Your Eagle III should run very well on no nitro fuel in warm weather. The no nitro formula we recommend is castor oil - 20%, ucon - 2%, propylene oxide - 2%, methanol - 76%. In cool or cold weather it may be necessary to go to a nitro fuel to prevent an R.P.M. drop when the battery wire is removed. Duke's fuel is ideal and works better than many 10% mixes because it contains propylene oxide which helps idling and a detergent which helps keep the carbon down.

WARNING:

Model airplane fuel is both flammable and extremely poisonous. Use the same safety precautions you would use with a can of gasoline or a bottle of poison.

GLOW PLUGS:

Your Fox Eagle III should be fitted with Fox long thread glow plugs. For a good idle, the idle bar type seems better, however, these motors work surprisingly well on the cheaper standard variety.

TO START YOUR MOTOR:

1. Mount your motor securely on a mount that does not put a strain on the mounting leg. #6-32 screws are the size to use. The fuel supply should be so positioned that the fuel level is no more than 1/2" above or below the fuel nipple. The fuel line should not be higher than the fuel level at any point. Use Fox large silicone type fuel line.
2. Close the throttle - adjust the idle stop screw (the one on top), so you can see a hairline opening in the intake when the throttle is pushed closed.
3. Holding the throttle shut, screw the low speed needle (the one on the exhaust side) in until it is snug, then back out 1 1/2 turns.
4. Screw the high speed needle in until the outside edge of the knurled knob is even with the ends of the spring clip, then five more turns.
5. Set the throttle at 1/3 open throttle position, connect the glow plug wire and crank counter clockwise with a quick, snappy, flipping motion. If it does not start in a few flips, try choking it a turn or two. It should start and run at these settings.

WARNING:

A model airplane motor can get hot enough to cause a serious burn. Do not touch the motor right after it has been running.

BREAK IN:

No special break-in is required. Go ahead and install it in your airplane and fly. We do recommend you keep your carburetor set slightly rich at all times. In the interest of good compression and long life we have fitted your motor as tight as we dare. In the event yours is fit too close and you have trouble with the piston seizing (engine stops abruptly on lean), or the bearing binding (engine loses all power on lean), return it to us and state your problem and we will hone it out at no charge. You should be aware, however, that it takes 1 1/2 hours running time to set the rings. For this period any motor is likely to stop at idle speed, and it is really futile to try to fine tune the idle until the motor has been run this amount of time.

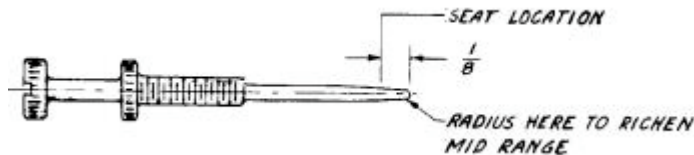
WARNING:

Never fly a control line model within 200 feet of power lines. Death by electrocution is possible if your model comes near a power line. Direct contact is not necessary.

FINE TUNING YOUR MARK X CARBURETOR:

The most reliable settings are those in which the lower half of the throttle range is as lean as possible without stalling and becomes slightly rich in the 3/4 to the full throttle setting. Both needles screw in to lean and out to richen. For normal tank installations and flight conditions, we recommend that the low speed mixture adjustments be made for maximum RPM. The high speed is adjusted by screwing the high speed needle in until the motor obtains maximum RPM, then backing out until the motor slows down 200 RPM.

If after your Fox Eagle III is run in and you wish to alter the mixture contour, you can do so by working on the tip of the low speed needle.



If the motor will not get rich enough at high speed: File 1/64 or so off the end at a 45 degree angle.

If the motor is lean at mid range: Sand a radius on the edge shown.

If the motor is rich at mid range: Get one of our low taper needles.

If the mid range can be made to work fine by screwing the needle in a bit too much for a good idle: Try sanding the seat location but avoid removing metal toward the tip.

If you do mess up you have not ruined an expensive part: Try to get it working just exactly the way you want.

WHEN THINGS DON'T GO SO WELL

Motor Won't Start:

- Bad plug - replace.
- Fuel tank empty.
- Fuel line collapsed, leaky or off.

Motor Won't Keep Running with Glow Plug Heater Off:

- Bad plug.
- Too rich a setting.
- Water in your fuel.

Motor Goes Lean and Quits after a Couple Minutes Flying:

- Hole in flopper tube in tank.

Glow Plug Burns Out Every Flight:

- Over voltage on battery (plug should glow orange, not white).
- Element crumpled. Caused by cranking with a case flooded.

IN CASE OF CRASH, DO NOT TURN THE PROP OVER YET!

- 1st - Remove from rest of model
- 2nd - Wash under hot water faucet
- 3rd - Remove plug and rear cover and wash in stoddard solvent
- 4th - Now check and see if it turns over freely. If so, it is probably not hurt.

OTHERWISE, CONTINUE TO DISASSEMBLE:

TO CONTINUE DISASSEMBLY

Remove head screws, lift off head, head button, and lift out cylinder liner. Remove cylinder screws and lift off cylinder casting. Remove crankcase screws and remove rear cover. Slide off the connecting rod. You must remove the thrust washer in order to release the taper lock. After removing the thrust washer you can drive the crank back out with a wood or plastic mallet.

REASSEMBLY

Reassembly is straightforward, but watch these three trouble spots:

1st - The crankshaft must have the taper lock hard against the crank shoulder, and usually requires a new taper lock. To get the taper lock in position, insert the crank in the case. Select a rod or shaft that will enter the crank hole. Put it in a vise vertically, the crank and case over it. Then tap the taper lock against the crank shoulder.

2nd - When sliding the cylinder assembly over the piston be sure to position the ring properly with respect to the ring positioning pin.

3rd - Be sure the wrist pin snap rings are seated in the piston groove and are tight. It is easy to squeeze the snap ring too much in disassembly and when re-installed it is not tight. If in doubt stretch the snap ring.

FACTORY SERVICE

We want your Fox engine to perform well for you. Technical advice can be obtained by phoning Area Code 501-646-1656. If your motor has become worn or crashed and you desire our factory repair service, mail it directly to us. We will disassemble the motor, replace all necessary parts, test run and return the motor to you charges collect. It has not proven practical to make any sort of estimates. We will assure you, however, that our charges will never be more than 60% of the list price of a new motor.

GOOD LUCK, AND ENJOY YOUR FOX MOTOR - IT IS ONE OF THE FINEST BUILT ANYWHERE.

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