

January 25, 1977

OWNERS MANUAL for the FOX 40BB and FOX 45BB MOTORS

MESSAGE FROM DUKE FOX

We are very proud of our Fox 40BB and Fox 45BB motors and we want yours to give you the best possible service. Please read this Owners Manual in its entirety and follow our instructions to the best of your ability. If you have any questions not covered here please feel free to call us at 501-646-1656.

NOTE

The Fox 40BB and the Fox 45BB differ only in the bore size. The cylinder, piston, wrist pin and head are different for the two motors. All other parts are the same.

BREAK-IN

Your Fox 40BB or Fox 45BB has been test run at full throttle with a full lean setting at the factory before it was shipped to you. You should not have to worry about it sticking or sagging. However, in the interest of getting the best possible break-in on the rod and ring it might be discreet to avoid over leaning your engine for the first few flights.

SUITABLE MODELS

Your Fox 40BB and Fox 45BB are ideally suited to a variety of applications. Some suggestions are: For sport type radio control model airplanes we suggest the standard RC throttle. Radio control racing events for shaft rotor engines such as Quickie 500, we suggest the oversize carburetor. For Control Line stunt type flying we suggest suction NV and lowered compression ratio. For Control Line speed events such as Rat Racing we recommend the pressure intake and needle valve. Radio Control Boats - we suggest you use an oversize RC throttle and the optional water cooled head and crankcase.

INSTALLATION

Your Fox motor should be mounted in the most rigid and secure manner possible. If the airplane design calls for a firewall mount we recommend the Fox one piece metal mount as it is very rigid. If your airplane is designed for hardwood beam type mounts be sure that they are well braced between the two beams. A plywood firewall alone without cross bracing and gussets just doesn't do the job right. A flimsy motor mount could result not only in structural damage due to vibration, but can damage the engine due to foaming of the fuel.

PROPELLERS TO USE

Your Fox 40BB or Fox 45BB seem happiest running in the 12,000 to 14,000 RPM range. We suggest you use a 10-6 or 10-7 narrow blade prop for average five pound Radio Control models. For very large models try an 11-4 or 11-5, and for small racing type models use a 9-7 or 9-8. Only Maple, Cherry or other hard-wood propellers should be used. Gum wood or other soft wood propellers will mash down and could possibly come off in flight. Tighten your propeller nut very tight.

We dislike plastic propellers because they usually vibrate more than wood ones and will hurt you worse if you should accidentally put your hand in it.

WARNING

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

GLOW PLUGS

Your Fox 40BB or Fox 45BB should be fitted with Fox Long Thread Glow Plugs. For a good idle on throttle motors the Idle Bar seems better, however these motors work surprisingly well on the cheaper standard variety.

CARBURETOR ADJUSTMENTS

The Fox carburetor is of unique design and it is important that you understand its operation. Basically, the carburetor has two rotary valves, both on the same rotating members. Large notches line up with the air passage and meter the air flow. On the bypass side there is a smaller notch contoured which gives matching fuel flow as the barrel is rotated. The contour is such that the mixture will be lean at idle and very rich at full throttle position. Additional fuel is provided at idle through another passage which can be adjusted by the small thumb screw on the exhaust side. To bring in the high speed adjustments a fuel limiting needle is positioned on the by-pass side. 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 and then slowly back the needle out until the motor speed slows down 500 RPM. The high speed is the same way, screw the high speed in until maximum RPM is obtained then back the high speed needle out until the motor slows down 500 RPM. We recommend you use rubber or neoprene fuel line with I.D. .080 or larger. Vinyl type fuel line tends to harden and leak, and the silicone (white semi-transparent) type fuel line tends to slip off badly.

FUEL TO USE

Any Fox Fuel works well in the Fox 40BB or Fox 45BB. We would normally use Duke's Fuel. Nitro is not necessary and your motor works quite well on fuel with no nitro.

WARNING

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

DIS-ASSEMBLY and RE-ASSEMBLY

With reasonable care you should have no problem dis-assembling and re-assembling these motors. On carburetor models the carburetor barrel is taper ground and should be taken out on the fuel nipple side.

WARNING

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

WARNING

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

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.

FACTORY SERVICE

We want your Fox engine to perform well for you. Technical advice can be obtained directly from Duke Fox 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 proven impractical 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.

**FOX MANUFACTURING CO.
5303 Towson Avenue
Fort Smith, Arkansas 72901**

PARTS LIST

	FOX 40BB		FOX 45BB	
Crankcase	14601	14.00	14601	14.00
Cylinder head Clamp	14042	4.50	14542	4.50
Cylinder Head Button	14143	3.50	14643	3.50
Cylinder Liner	14083	9.00	14583	9.00
Piston	14084	7.00	14584	7.00
Wrist pin	14006	1.00	14506	1.00
Wrist pin keeper	14040	.50	14040	.50
Piston ring	24018	2.00	24518	2.00
Connecting rod	14607	7.00	14607	7.00
Crankshaft	14608	14.00	14608	14.00
Left-hand crankshaft	14628	14.00	14628	14.00
Thrust washer	26009	2.50	26009	2.50
Thrust washer wedgelock	26005	1.00	26005	1.00
Rear cover	14611	6.00	14611	6.00
Prop nut	13512	.50	13512	.50
Prop washer (front)	13513	.50	13513	.50
Screw & gasket set	14514	1.00	14514	1.00
Bearing – rear main	26042	5.00	26042	5.00
Bearing – front main	26043	4.00	26043	4.00
Exhaust tube adapter	14517	4.00	14517	4.00
 Motors with Suction NV				
Assem complete	14530	5.00	14530	5.00
Casting	14531	3.00	14531	3.00
NV body, spg, nut	14032	1.50	14032	1.50
Needle only	14016	1.00	14016	1.00
NV assembly	14010	2.25	14010	2.25
 Motors with std. RC Carburetor				
Complete carb	26050	14.00	26050	14.00
Throttle casting	26060	6.50	26060	6.50
Throttle barrel	26061	6.00	26061	6.00
Idle stop screw, spg	26062	.50	26062	.50
Lo-speed mix needle	26063	1.00	26063	1.00
Hi-speed mix needle	26064	1.00	26064	1.00
Idle stop arm	26065	2.00	26065	2.00
Servo arm	26066	.75	26066	.75
Needle clip	26068	.50	26068	.50
Spacer	26069	.50	26069	.50
¼-32 Nuts	26070	.50	26070	.50
 Motors with Pressure Intake				
Assem complete	14020	7.00	14020	7.00
Intake casting	14021	4.00	14021	4.00
Mixture needle	13716	1.00	13716	1.00
Jet	13717	1.00	13717	1.00
Needle holder	13718	1.00	13718	1.00
Needle lock nut	13719	1.00	13719	1.00
 Motors with Oversize Carburetor				
Complete carb	27850	16.00	27850	16.00
Throttle casting	27860	7.50	27860	7.50
Throttle barrel	27861	7.00	27861	7.00
Idle stop screw, spg	26062	.50	26062	.50
Lo-speed mix needle	26063	1.00	26063	1.00
Hi-speed mix needle	26064	1.00	26064	1.00
Idle stop arm	26065	2.00	26065	2.00
Servo arm	26066	.75	26066	.75