OWNER'S MANUAL FOR FOX 25BB
JUNE, 1993

Bore ..... **.680**	**Stroke** ..... **.680**
Disp ..... **.247**	**RPM** **15,000**

MESSAGE FROM FOX MANUFACTURING

We are very proud of our Fox 25BB and want it to give you the best possible service. Please read the Owner's 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 501-646-1656.

NOTE:

The Fox 25BB has a unique design feature of being able to turn the cylinder 90 degrees or 180 degrees from the standard side exhaust configuration with no additional parts required. If you wish to have the exhaust in the rear or to the opposite side, just pull the four cylinder head bolts, turn the cylinder the way you wish, and install the cylinder head bolts. **Be careful that the cylinder liner also turns with the cylinder casting, and that you do not get the ports out of position.** Also, be careful that you do not damage the thin gasket between the cylinder section and the case.

CAUTION: Turning the cylinder must be done before the motor is broken in. We do not recommend repositioning the cylinder to another configuration after break-in.

SUITABLE MODELS

The Fox 25BB is intended for all sport and scale models airplanes that their size and weight would fit. They are suited to model helicopters if auxiliary cooling is provided. Your Fox 25BB also makes an excellent race car engine if a suitable heat sink is provided. Your Fox 25BB is also well suited to model boat use if a cool clamp is provided for the head.

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.

INSTALLATION

Your Fox 25BB mounts in the normal manner. If your airplane calls for a firewall mount, we recommend a very rigid one piece mount. If your airplane 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, provision should be made for both air inlet and outlet, with the air outlet being approximately 50% larger than the air inlet.

PROPELLERS TO USE

We recommend a 9" diameter, 5" pitch propeller for most models. We recommend hardwood propellers of maple, birch, or cherry wood. We do not recommend using a metal, fiberglass, or nylon propeller on your airplane because they are more likely to cut off 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 Fox 25BB will run very well on Fox Gold Star fuel (5% nitro, 20% castor oil) in warm weather. In temperatures below 40 degrees F, it may be necessary to use Fox Duke's Fuel (10% nitro, 20% castor oil) to prevent an RPM drop when the battery wire is removed. We do not recommend the use of fuel with synthetic oils.

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

GLOW PLUGS
Your Fox 25BB should be fitted with Fox RC Long glow plugs for best performance.

TO START YOUR MOTOR
1. Mount your motor securely on a mount that does not put a strain on the mounting lugs. #4-40 screws are the size to use. The fuel supply should be so positioned so 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.

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 seats, then back it out 1 turn.

4. Screw the high speed needle in until it seats then back it out 4 turns.

5. Set throttle at 1/3 open position, connect the glow plug wire and try choking it a turn or two. Then crank counter clockwise with a quick, snappy, flipping motion. 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 is has been running.

BREAK-IN
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), continue to run with the high speed needle set rich enough so that it doesn't want to quit for a couple of tanks of fuel, or until it will hold a full power setting. You should be aware that it takes a minimum of 1 hour running time to fully break-in. 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 FOX 25BB CARBURETOR
The most reliable settings are those in which the lower 2/3 of the throttle range is as lean as possible without stalling, and becomes slightly rich in the 3/4 to full throttle setting. The needle on the fuel nipple side is the high speed needle and controls the mixture in the wide open throttle position. The needle on the other side is the low speed needle and controls the mixture through idle and mid-range. Both screw in to lean and out to richen. For normal tank installations and flight conditions, we recommend that the low speed mixture adjustment be made for maximum RPM. The high speed needle is adjusted by screwing the high speed needle in until the motor obtains maximum RPM, then backing it out until the motor slows down 200 RPM.

NOTE:
A lot of causes of the motor quitting in maneuvers can be corrected by shortening the flopper tube. We recommend you leave a 3/4" to 1" space between the back of your tank and the flopper tube weight. Many cases of excessive plug failure can be traced to power panels that do not work right. Unfortunately, there are power panels on the market that do not work as well as they are supposed to. If in doubt, resort to the hobby battery and see if this corrects the problem.

WHEN THINGS DON'T GO SO WELL

Motor Won't Start: Bad plug; fuel tank empty; fuel line collapsed, leaky or off.
Motor Quits Right After take Off: Flopper tube stuck in forward position.
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 case flooded.

IN CASE OF CRASH, DO NOT TURN 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 AS FOLLOWS:
Remove head screws, lift off head, head button and cylinder assembly. Remove crankcase screws and remove rear cover. Slide off the connecting rod. After removing the thrust washer, you can drive the crank back out with a wood or plastic mallet.

RE-ASSEMBLY:
Re-assembly is straightforward, but 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 dis-assembly 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 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 C.O.D.. It has not proven practical to make any sort of estimates. We will assure you, however, that our charges will never be more than 50% of the list price of a new motor.

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

PARTS FOR 1993 MODEL FOX 25BB

PART NAME	NUMBER	PRICE
Crankcase	22601	20.00
Rear Cover	22011	8.00
Cylinder Head	22002	9.00
Cylinder Head Button	22643	6.00
Cylinder Casting	22625	18.00
Cylinder Liner, Piston & Rod Assembly	22605	26.00
Crankshaft (Normal)	22608	16.00
Crankshaft (Reverse)	22628	18.00
Crankshaft Stud	22518	3.00
Thrust Washer (Rear)	22609	6.00
Thrust Washer Taperlock	22005	4.00
Prop Nut	13512	2.00
Prop Washer (Front)	11913	2.00
Screw & Gasket Set	22614	4.00
Bearing - Rear Main	13742	18.00
Bearing - Front Main	26043	12.00
Muffler - Tilt Up	90219	16.95
Muffler - Tilt Down	90220	16.95
Carburetor - Complete W/Mtg. Screws	22050	28.00
Throttle Casting & Barrel Assembly	22059	18.00
Idle Stop Screw & Spring	23662	3.00
Low Speed Needle	22063	2.00
High Speed Needle	21964	2.00
Servo Arm	24066	2.50
Friction Clip for L.S. & H.S. Needle (Pair)	24067	2.50
#10-32 Knurled Nut (2)	21670	2.00
Jet Assy. W/Fuel Nipple	22071	16.00
Cam Screw	22072	2.50
Fuel Nipple	21973	2.50
Mounting Screws	23675	2.00