OWNERS MANUAL FOR
FOX 29 - FOX 36 - FOX 29RC - FOX 36RC

WARNING
These Fox motors have several unconventional features which you should understand before you attempt to operate the motor. Failure to read the instruction manual may result in your inadvertently damaging your motor.

SUITABLE MODELS
The Fox 29 and Fox 36 were primarily designed for control line models of the sport and stunt variety. Most kits calling for motors 29 thru 45 can be flown quite successfully with these motors. The Fox 29RC and Fox 36RC motors are designed for sport type radio control models and generally should be fitted to airplanes weighing 3 1/2 to 6 pounds and with wingspans in the neighborhood of from 48 to 70 inches. The Fox 36RC has successfully flown many models calling for 60s.

INSTALLATION
These motors should be mounted in the most rigid manner possible. If hardwood beams are used they should be well braced, and cross braced at the firewall with hardwood cross pieces and a strong fuel resistant glue such as epoxy should be used. If a firewall motor mount is used the firewall should be secured to the fuselage sides in such a way that it cannot flex. A flimsy motor mount can result in an engine that vibrates violently enough to eventually tear the airplane apart. Fox makes a nice zero thrust firewall type mount for airplanes utilizing this type of mount.

RECOMMENDED FUEL, PLUGS, PROPELLERS & FUEL TANKS
These motors seem to run best on Fox Missile Mist Fuel. Missile Mist is more tolerant on mixture adjustments and the motor runs cooler than on many fuels with less nitro. The Fox Long Standard plug or Long Heavy Duty or Long RC plug have all been used successfully. The low price plug is satisfactory for most control line uses, the Heavy Duty Fox plug will hold heat a bit better and is a bit more durable. The RC plug holds heat best of all and should be used whenever you have a problem with the motor quitting due to the plug cooling off. The Fox 29 and 29RC seem to run quite happily on a 9" diameter 6" pitch propeller. The Fox 36 and 36RC seem to do better with a 10" diameter 6" pitch propeller. These can be varied somewhat according to the needs of the model. Generally the propeller selected should load the motor so that at full throttle it runs in the 10,000 to 13,000 RPM range. Fuel tanks for control line models should be mounted directly back of and in line with the needle valve assembly. We do not recommend brass tanks as they corrode quickly and tend to clog the fuel lines. The upper and lower vent should be routed so that they both face into the oncoming wind. The 29RC and the 36RC function satisfactorily on the polyethylene fuel bottle tanks with the flexible pick up. When you assemble your tank be sure that there is at least 1/4" between the pick up and the bottom of the bottle as most flexible tube will expand with use and much engine trouble is caused if the pick up closes against the bottom of the bottle. At full throttle these motors burn about one ounce of fuel per minute. Thus, a 4oz. tank can reasonably be expected to produce about a four minute flight. A 6 oz. tank will produce a 6 minute flight, and an 8oz. tank will produce about an 8 minute flight. Of course, flying at reduced power extends these times.

STARTING THE MOTOR
An experienced modeler will start a motor so quickly you may wonder what he is doing. Through experience he has learned to anticipate whether the motor has too much fuel or too little fuel and take short cuts to get the correct mixture in the case and in the cylinder. He learns to sense this by a combination of feel and sound. Until you develop this sense I suggest that you follow this somewhat more lengthy procedure:

1. Avoid flooding the motor while filling the tank by pulling the fuel line off of the carburetor fitting When the tank is full put the hose back on.
2. Prime the motor by inserting 5 or 6 drops of fuel into the exhaust with the piston down. Then turn the engine over 3 or 4 times.
3. Connect one battery lead to the center piece of the glow plug and the other to any convenient place on the motor.
4. Start cranking the motor counter-clockwise with a short flipping action. The motor should start in the first dozen or so flips. If not, re-prime and try again.
5. Proceed to make the proper carburetor adjustments.
6. Now remove the battery leads.

A control line motor has one needle valve. If this is screwed in it will lean the motor, if it is screwed out it will richen. The proper adjustment for flying is to screw the needle in until the motor produces maximum power and then back the needle out one turn. If the motor is a radio control motor the adjustment is somewhat more complicated and is described in the next paragraph.

ADJUSTING THE CARBURETOR
The Fox 29RC and the Fox 36RC are both equipped with the same carburetor. This is a Fox carburetor with a 2-jet design. The small needle adjusts the low speed fuel slow and the larger needle adjusts the high speed fuel flow. Both needles screw in to lean, out to richen. (Not like some other carburetors) The mixture in the intermediate range is fixed and can only be altered by disassembly and reworking the parts. In normal use the low speed mixture adjustment should be run slightly rich so if you pinch the fuel line the motor will pick up a little speed and then die off. Likewise the high speed adjustment is the same way.

BREAKING IN
These motors have iron pistons which are a very close fit in the steel cylinder liner. They are as closely fitted as possible at the factory and for best results the motor should be run rich for 20 or 30 flights before you attempt to run it at full power. We feel however that prolonged bench running is not necessary.

DISASSEMBLY PROCEDURE
To disassemble the motor properly proceed as follows:

1. Remove the rear cover screws and the rear cover.

2. Remove the head screws and the cylinder head.

3. Lift out the cylinder liner. This is sometimes a bit tricky because the liner can stick. If you use pliers on the flange the liner will be ruined. The best way is to use a glow plug washer and put the piston down on the bottom dead center, push the washer over the edge of the piston just slightly so it catches the cylinder port and then by turning the crankshaft over the piston will push the cylinder up part way. Usually it can be removed by hand then.

4. Pull the crankshaft all the way forward with a pair of needle nose pliers, grasp the con rod thru the rear cover opening right beside the pin, and pull back. The rod should snap off if you do this just right.

5. The crankshaft can then be removed.

To disassemble the carburetor remove the nut and arm on the exhaust side. This will free the exhaust valve actuating arm. The carburetor barrel then can be removed from the by-pass side. This barrel is ground slightly tapered and should be removed ONLY from that side. The two screws on the front of the carburetor body are merely plugs to close the cross drilled hole. Upon disassembly the function of the carburetor should be obvious. The machined scratch in the barrel port meters fuel in the intermediate range and any alterations to it should be made very, very cautiously.

SERVICE
Factory service is available should you want to send your motor to the factory. Labor has become so expensive that minor repairs are best done by yourself. Only send the motor to the factory in the event that you are unsuccessful. No estimates or Dealer discounts can be given, however, we do assure you that no repair bill will exceed 2/3 the retail price of the motor. Advice can be obtained from the factory at any time by writing or by calling Area 501-646-1656 during business hours. Dealers are encouraged to stock minor maintenance items, but should your dealer not have the parts you need, a phone call to the factory will get them coming to you by airmail.

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