

FOX 40RC PARTS LIST

Crankcase (without carb)	R4001	7.00
Cylinder head	S4002	2.50
Cylinder liner & Piston	R4004	6.00
Fin Section	S4005	2.00
Wrist Pin	S4006	.75
Connecting Rod	S4007	2.50
Crankshaft	S4008	5.00
Thrust Washer	S4009	.75
Rear Cover	S4011	2.00
Prop Nut	12	.25
Prop Washer	13	.25
Screw & Gasket set	S4014	.50
Head Gasket only	15	.25
Wrist Pin Snap Rings	S4040	.25
Complete Carburetor Assembly (including arms & needles)	5A00	10.00
Throttle Casting	5A60	4.00
Throttle Barrel	5A61	3.00
Idle Stop Screw & Spring	5A62	.25
Low Speed Needle & Spring	5A63	.75
High Speed Needle	4A64	.75
Idle Stop Arm	5A65	1.00
Servo Arm	4A66	.50
Exhaust Valve (incl. snap rings & wire)	4A67	1.00
Spring Clip for High Speed Needle	5A68	.25
$\frac{1}{4}$ -32 Nuts	4A70	.25



5305 TOWSON AVENUE 72903

FORT SMITH, ARKANSAS

Area Code 501 Mission 6-1656

FOX 40 OWNERS MANUAL.

WARNING

The Fox 40RC has several unconventional features with which you should familiarize yourself before attempting to operate or dis-assemble this motor.

SUITABLE MODELS

The Fox 40RC will fly quite nicely the majority of models that ordinarily call for 45 to 60 size motors. 60 size pattern ships of course will not fly quite as spectacularly as with a 60 motor, but the power is more than adequate to fly five and six pound models through ordinary pattern maneuvers. The lighter weight, more economical fuel consumption and lower noise level of the Fox 40RC makes it ideal for people with limited space and budgets.

INSTALLATION

The preferred mounting is hardwood beams with 4-40 machine screws and nuts. In the event a firewall mount is required, Fox builds a nice zero thrust line firewall type mount which can be obtained tapped to fit the Fox 40RC. The fuel tank should be mounted with the center line of the fuel tank about $\frac{1}{2}$ " above the beams and as far forward as practical. If the motor tends to run lean at a high speed the tank vent should be pointed into the airstream. If it tends to richen it should be pointed away from the airstream. We recommend that you use rubber fuel line, not plastic, as plastic will sometimes harden and leak at the connections.

RECOMMENDED FUEL, PLUGS AND PROPELLERS

A 10" diameter 6" pitch propeller is recommended as a good starting point. Missile Mist is our preferred fuel. However Duke's Fuel runs quite nicely, produces slightly less power and costs less. The plug to use is the Fox RC Long.

PROCEDURE FOR STARTING THE MOTOR

1. The throttle should be closed during the filling procedure to avoid forcing fuel into the engine and flooding the engine before it is started. A safer way is to fill through the tube that goes to the carburetor.
2. Prime the cylinder by inserting about five drops of fuel into the exhaust and about three or four drops into the intake, then turn the engine over three or four times. Bring the propeller backward against compression.
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 counter clock-wise with a short snapping action. The throttle should be in the half open position. The motor should start in a few flips. Let it run and warm up before removing the booster battery lead.
5. Cautiously experiment opening and closing the throttle. The intermediate mixture is fixed. The high speed mixture is adjusted by the needle on the bypass side. Screw in to lean and out to richen. The idle mixture is adjusted

by the needle on the exhaust side, in to lean out to richen. Both should be adjusted so that squeezing the fuel line produces a slight increase in RPM before the motor starts dying.

BREAK IN

Since the Fox 40RC has a bronze bushing and a lapped piston a considerable amount of running is necessary to bring the engine to peak performance. I feel, however, that the best breakin is flying the motor. The main precaution is to not get your airplane in such a situation that you cannot bring it back for landing should your engine stop. As the engine becomes freed up, it's mixture tolerance becomes broader and the idle more reliable. The motor should be broke in after 25 or 30 flights and should hold adjustment, and should idle reliably.

IN CASE YOU HAVE A PROBLEM

Most problems can be summed up by saying the motor quits. Just how it quits is the clue to the probable cause. If it quits quickly, within a few seconds while producing full power probably the piston is too tight. This will eventually cure itself, but if you don't want to wait, the piston can be loosened by dis-assembling and hand lapping the piston and cylinder with garnet and re-assembling. If the motor slows down and produces about half power and seems to fly along no matter what you do, the bearing is probably dry. This is usually cured by dis-assembling and extending the oil groove a little bit further forward. Also, honing the bearing slightly larger is another way to get lubrication. If the motor seems to quit at one particular throttle setting, the throttle is either rich or lean at that point. The mid-range of the carburetor is fixed and requires alteration of the throttle barrel to change. Filing a little additional air notch on the lower side of the barrel will make it run leaner. Enlarging the hair line port will make it run richer. It is recommended that any alterations of the throttle barrel be done with exceeding caution.

IN CASE OF A CRACKUP

If the motor meets the ground with any great velocity it is best to remove the motor from the airplane and remove the glow plug. Wash the motor off thoroughly in some stoddard solvent. If you can rotate the crankshaft with your fingers the motor is probably not harmed. If it turns over with any difficulty, or won't turn over at all, it should be dis-assembled for further inspection.

TO DIS-ASSEMBLE THE CARBURETOR

The carburetor casting had been installed in the crankcase with Dev-con which is an aluminum filled epoxy. Should it come loose clean the surfaces and re-epoxy it in place. Be very careful not to get epoxy down where the crankshaft will get glued in. The throttle barrel is ground tapered. This should be removed from the throttle casting only on the by-pass side. To remove the throttle barrel, take the nut off

on the exhaust side and remove the cast arm. The throttle barrel with the actuating arm and high speed needle can then be removed. In re-assembling, caution should be taken to clean the casting and barrel very thoroughly and oil before assembling. This is a very close fit and fuel is metered thru the intersection of the barrel and casting. A burr or scratch on this surface can ruin the throttle casting.

TO DIS-ASSEMBLE THE MOTOR

If it becomes necessary to dis-assemble your Fox 40RC proceed as follows:

1. Remove the rear cover.
2. Remove the six cylinder head screws. Lift off the head, fin section and cylinder.
3. Bring the crank pin to top dead center which will expose the wrist pin. Remove the snap ring and then the wrist pin. The piston can then be removed.
4. The rod can then be moved back off of the pin and then the crankshaft can be removed.

To reassemble, reverse this procedure. We recommend that you replace all the screws and gaskets.

CAUTION: The surface that the fin section sets on in the by-pass has a very narrow seal. If you do not position the gasket very carefully, crankcase compression will crawl past the gasket and up the screw hole and bubble out around the head of the screw. A small amount of leaking this way does not seem to materially affect starting or running, but it sure messes up the head.

FACTORY REPAIRS

Labor and shipping charges being what they are we think that you would want to make your own repairs when possible. If you undertake to do so, and are not successful, we will be happy to do what is necessary to get your motor in good operating condition. You will not be penalized in any way for dis-assembling the motor and attempting the repair. To eliminate the time delay and the cost of letter writing, we want it understood that when we receive a motor we are authorized to make whatever repairs we feel are necessary to make the motor perform as new. We assure you that you will never be billed more than 60% of the list price of a new motor. Please enclose with your motor an explanation of the problems you were having. We can allow no discounts to Dealers, so please mail the motor yourself to reduce the possibility of any mis-understanding. Put your name and address on the inside of the box as well as on the outside of the box.

FOX
American-Made Engines
5305 TOWSON AVE.
FORT SMITH, ARK. 72901
501 / 646-1656