7. To remove the glow head from a hot engine—pour a little fuel slowly over the glow head to reduce the head temperature. Do not run it over the glow head. The head will then release easily. A hot head will stick and forced removal may damage the cylinder.

8. Do not tighten the carburetor retainer nut more than enough to hold the carburetor body from rattling. Overtightening will distort the front bearing and cause power drop and inconsistent running.

9. Tighten the needle nut only enough to hold needle valve body in position. Overtightening may strip the thread from the plastic carburetor body.

10. The needle valve body may be removed and replaced in the opposite position if desired.

(E) PRESSURIZING
Pressurizing is very critical when taken directly off the crankcase. On this engine pressurizing means have been provided and the rotary valve controls the pressure to normal operating limits. The hole in the pressure fitting on this engine is already started, but the hole will have to be drilled through the crankcase at this point before you can run on pressure. To rig up for pressure observe the following steps:

1. Remove the back cover, cylinder, piston and rod assembly, venturi and needle valve assembly. (To remove cylinder, use wrench the way shown in Fig. 2.)

2. Rotate crankshaft until the port opening in the shaft points towards the pressure fitting on the right side of the black plastic carburetor body.

3. Continue drilling the hole already started in the pressure fitting through the crankcase. Use a #60 drill (.040 diameter).

4. Return carburetor to the debrill hole. Repeat these steps if necessary.

5. Flush crankcase and shaft thoroughly with methanol to remove all metal particles.

6. Lubricate shaft with light weight oil and reassemble engine.

The fuel tank must be air tight in order for the engine to operate properly on pressure. Be sure the tubing that connects the pressure fitting on the engine to the tank is also air tight. If the engine does not run smoothly air is getting into the pressure system. Check it thoroughly.

With pressure, the venturi may be opened to 7/32" diameter to attain maximum power.

ENGINE SPEEDS (RPM)
The following speeds are typical of engines selected at random and run under Contest conditions:  

<table>
<thead>
<tr>
<th>PROP SIZE</th>
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</tr>
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<tbody>
<tr>
<td>7&quot; Dow. x 4 P</td>
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L. M. COX MANUFACTURING CO.
730 Poinsettia
P.O. Box 476
Santa Ana, Calif.

Printed in U.S.A. 1-65 2759

FACTORY REPAIR SERVICE

PARTS ORDER
Purchase parts from your dealer. If not available, order direct from factory. No C.O.D.'s please. Send remittance with your order. Orders less than $2.00 add 35c handling charge. In California add 4% sales tax.

Prices and design of parts subject to change without notice.

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</table>

(C) FAILURE TO START
1. If the engine coughs and spits a bit of fuel from the exhaust ports and immediately flip the propeller over counter clockwise. For quick starting the propeller must be flipped quite vigorously. The engine should start instantly if it has been primed with the correct amount of fuel in the exhaust port.

2. When the engine starts it will be running very rich and slow. The first time the engine is started let it continue to run for a period of 60 seconds. After approximately 60 seconds, slowly close the needle valve until the engine to best running position and remove the battery connection. Subsequent starts may be adjusted to best running position immediately.

3. If starting is delayed for any reason, close the needle valve, otherwise engine will become flooded. This precaution is only necessary if the tank is mounted or the fuel level is higher than the carburetor the hose will fill itself when the needle valve is closed.

B. STARTING THE COX SPECIAL MARK II ENGINE
If you are with small engines you will have better luck with these engines if you follow directions exactly as listed and do each operation in the exact order given.

1. Fill the Thimble-Drome fuel tank (in the red can). Send remittance with your order. Orders less than $2.00 add 35c handling charge. In California add 4% sales tax.

2. If it starts up with lots of power and dies immediately it is too lean. Open the needle valve slightly clockwise exactly 4 turns.

3. If the fuel level in the tank is lower than the carburetor venturi, put your finger over the air intake of the engine and pull the prop thru compression until the fuel hose is full. Use a clear plastic fuel line so this can be checked visually.

4. Elimination of break-in is not attained through normal operating limits.

5. In the proper position and remove the battery connection. Subsequent starts may be adjusted to best running position immediately.

6. Open the fuel tank must be air tight in order for the engine to operate properly on pressure. Be sure the tubing that connects the pressure fitting on the engine to the tank is also air tight. If the engine does not run smoothly air is getting into the pressure system. Check it thoroughly.

7. With pressure, the venturi may be opened to 7/32" diameter to attain maximum power.

ENGINE SPEEDS (RPM)

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(C) FAILURE TO START
1. If the engine coughs and spits a bit of fuel from the exhaust, it is too rich. Close the needle valve and continue cranking until engine starts briefly. Open the needle valve again and crank it over, it should start immediately. Blowing into the exhaust ports before starting will help clear the excess fuel out of the glow plug.

2. If it starts up with lots of power and dies immediately it is too lean. Open the needle valve
a half turn, prime the engine, and crank it over again. If the trouble persists and the tank is lower than the carburetor try choking again as in Section B. Par. 4. If the engine hasn't been run for some time it is possible that thick castor oil is clogging the jets. Choking will clean this out.

3. If the engine still persists in above action it is possible the carburetor jets are stopped up. Remove the venturi nut and needle valve body. Three tiny jet holes will be found in the groove around the venturi tube. Clean these jet holes with a piece of fine wire. Reassemble and the engine should run.

4. If the engine refuses to fire or at all screw the glow plug out and connect it to the clip. If the little coil inside does not get red hot, it is either burnt out or the battery is dead, or the connections are made incorrectly. Replace the battery or the plug, or, correct the connections. Glow plugs are never guaranteed. Do not return the engine to the factory for a burnt out glow plug because the cost to you will be excessive. Buy one from your dealer.

5. If you are not using Thimble-Drome fuel, try it. Never use gasoline or gasoline type fuels.

(D) OPERATING TIPS AND ENGINE CARE

1. The glow plug is built right into the head in one unit. When the plug burns out just replace the entire head at the regular glow plug price.

2. After the last run, oil the engine with a light oil (SAE 10 is good) and wrap it with cloth or otherwise protect it from dust and dirt.

3. If the engine gets dirt in it through crack-up or otherwise, do not run it until it is thoroughly cleaned. Take it apart, wash it, oil it, and reassemble.

4. If the engine gets tight it is not frozen up. Do not send to factory. A new engine will sometimes tighten up a few times, especially after slow runs. This is more likely to happen, and will occur more often to an engine that is properly fitted, and has properly smooth wearing surfaces. Do not run it tight. The lightness is caused by a shellac-like deposit on the cylinder wall. Screw the head off. Remove the cylinder and scour the inside wall very lightly with a bit of medium steel wool. Wash, oil, and replace. The engine will then turn over freely and run properly. Never use sandpaper, emery cloth, or abrasives of any kind, or scrapers. Such methods will ruin the cylinder. Steel wool will not harm the bore.

5. Certain kinds of weather, especially warm humid sticky weather will cause excessive shellacking in a new cylinder. There is no known way to eliminate this nuisance and the smoother the fit the more susceptible is the engine to this trouble.

6. Do not tighten the head too firmly. Set it up very lightly. Allow the engine to cool before removing head so it will loosen most easily. Too much pressure against the exhaust ports so hold the cylinder from turning may force the cylinder out of round or even turn a burr into the bore. A new cylinder is usually required to remedy such damage.