

CARE AND OPERATION OF YOUR

Thimble-Drome RR-1 Engine

The Fastest and Most Powerful Rotary Valve Engine in
the 1/2 A Class. Very Easy Starting

No other manufacturer of 1/2 A engines can truthfully
make this claim.

Keep this engine immaculately clean, use **Thimble-Drome Fuel**
(in the red can), and it will maintain its winning characteristics for
a long period of time.

Because of the increased areas of friction, this engine unlike
the Thermal Hopper, will require a little running before it will
develop maximum speed and power. About 15 minutes running
should bring in peak performance. An exceptionally tight engine
may require an hour. Almost all of this time may be used in actual
service. A minute of very rich running occasionally during the
first 15 minutes will be beneficial.

(A) PREPARATION FOR RUNNING

1. Mount the engine in the plane or if you want to give it some
running first, mount it on a narrow board, about 2" wide and
fasten the other end of the board in a vise or nail it to some-
thing. **Do not hold the engine directly in a vise.** The 4 ears at
the rear of the tank are for mounting. Use the template, A-Fig.
1, to drill mounting holes and breather hole.
2. Place propeller on the shaft with the flat side of the blades
toward engine. **Do not tighten the propeller screw; or it may
be broken off in the crankshaft.**
3. Use a Thimble-Drome filler spout with stainless steel strainer
in your fuel can. Your engine will thus be filled direct from
the can and protected from dirt and foreign matter, that
would otherwise stop up the carburetor jet.
4. Procure a 1 1/2 volt dry cell battery, #6 or equivalent, and
connect it with 2 flexible insulated wires to a glow plug clip
as shown in the diagram A & B-Fig. 2. Do not use a stronger
battery. If you do the plug will burn out. The connections
should be soldered to insure good contact and taped to pre-
vent bare ends of wire from getting together and "shorting"
the battery. Be sure the battery is a good one. Your dealer
sells batteries, wire, and glow plug clips.
5. **Balance and trim the propeller. This is very essential for good
performance.** Sand off any bead of plastic along edges of
blades and sand the edges sharp. Fit a drill or shaft through
the hole and rest the shaft on razor blades set in wooden
blocks as shown in C-Fig. 2. Sand the heavy blade until the
propeller will balance in a horizontal position. Care must
be exercised to do the sanding without spoiling the airfoil
characteristics.

10. Never put a bar through the exhaust ports or a pair of pliers
on the cylinder to loosen plug or cylinder. Use the wrenches
carefully.
11. **Do not** under any circumstances use a plastic propeller on
this engine unless the manufacturer of such propeller ex-
pressly recommends it for use on Thimble-Drome engines and
so labels it.
12. If the plane requires the engine to be mounted right or left.
The tank **must** be turned **with** the engine. The entire engine
may be turned unless it is desirable to have the needle valve
in some specific position in which case the back plate only
may be turned. The vent and filler tubes will work in reverse
for normal use if the engine is turned over 180°, but it may
be desirable to plug them up and put in new ones if you only
want to turn the engine over 90°. In turning the engine over
do not forget to change the pick up position of the fuel hose.
13. The first time you start your engine the excess castor oil from
the exhaust will be dark colored for a few seconds but will
clear up immediately. All engines do this if they have never
been run before. This is due to excessive wear during the
first few seconds as the wearing surfaces polish in.
14. To use a timer drill 2 holes in the tank of a size to fit tight
around the fuel hose. Connect the timer to the back plate
connection with one hose and to the desired pickup position
with the other hose. To use a special tank merely drill one
hole in the engine tank and run the fuel hose through this hole
to the back plate connection. The engine tank is thus inopera-
tive and acts only as an engine base.

SPECIFICATIONS

Wt.—1.93 oz. Bore—.406", Stroke .386", Displacement .0499 Cu.
In. Mounting radial, Overall height—2 9/32", length 3 1/16",
Width—1 1/8", Shaft Size—1/8", Piston—no rings, Intake Valve—
rotary, Rotation—counter clockwise from front.

WARRANTY

This engine is guaranteed against defects in materials and
workmanship for 30 days from date of purchase. Glow plugs are
never guaranteed because of their delicate nature. No other guar-
antee is made or implied. If engine is returned to the factory
within warranty, include 50c to cover cost of handling and re-
turn postage.

Do not take engine back to your dealer.

FACTORY REPAIR SERVICE

Minor repairs, examinations, or adjustments—\$1.00 plus parts.
Complete overhaul (guaranteed new engine performance)—\$3.75,
including parts. On all C.O.D. shipments, purchaser pays postage
and C.O.D. fees.

PARTS ORDERS

Purchase parts from your dealer. If not available, order direct from factory. No C.O.D.'s please. Send remittance with your order. On 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.

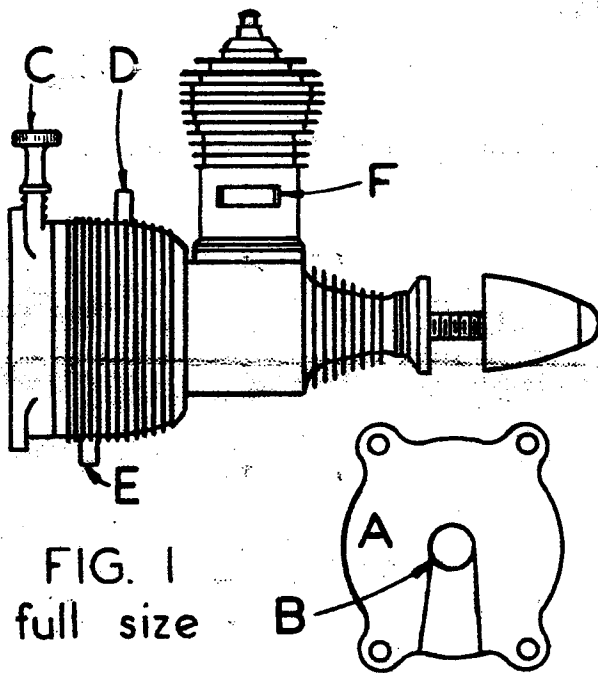


FIG. 1
full size

(B) STARTING THE RR-1 ENGINE

No matter how expert you are with small engines you will have better luck with this one if you follow directions exactly as listed and do each operation in the exact order given.

1. Close the carburetor needle valve, C-Fig. 1, by turning it clockwise till it stops. Do not force it.
2. Slip the filler hose of your pump or fuel can over the filler tube, D-Fig. 1, pump in fuel till it overflows through E-Fig. 1. Do not use gasoline. Use **Thimble-Drome Fuel (in the red can.)**
3. Connect the battery by snapping the clip on the glow plug, B-Fig. 2.
4. Open the needle valve (counter clockwise) exactly 5½ full turns.
5. Turn the propeller to the position so that the exhaust ports F-Fig. 1 are wide open. Squirt 5 or 6 drops of fuel into the cylinder through one of the port openings. This is called **priming**.
6. Flip the propeller over snappily with the finger tip to start. Use Thimble-Drome Finguard to protect finger.
7. When the engine starts it will be running very rich and slow. The first time the engine is started let it continue to run rich for a period of 30 seconds. After approximately 30 seconds, slowly close the needle valve clockwise to the best running position and remove the battery connection. Subsequent starts may be adjusted to best running position immediately.
8. If starting is delayed for any reason, close needle valve otherwise engine will become flooded.

ENGINE PARTS LIST For RR-1 ENGINE

Catalogue Number	Part	List Price
376	Crankcase	\$1.50
302-A	Cylinder Head & Glow Plug (standard).....	.65
303	Piston & Rod	1.50
304-A	Cylinder	1.50
355	Crankshaft	1.75
309	Needle Valve & Spring.....	.60
352	Propeller Drive Washer.....	.15
372	Fuel Tank—Rear Section.....	.75
357	Fuel Tank—Front Section.....	1.00
375	Gasket Set20
367	Set of Screws.....	.20
379	Prop Spinner and Screw.....	.25
318	Propeller 6"-3 Pitch.....	.20
356	Rotary Valve75
356-L	Left Hand Rotary Valve.....	.75

Order Parts by Catalogue Number

L. M. COX MANUFACTURING CO.

730 Poinsettia

P. O. Box 476

Santa Ana, Calif.

10. Never put a bar through the exhaust ports or a pair of pliers on the cylinder to loosen plug or cylinder. Use the wrenches carefully.
11. Do not under any circumstances use a plastic propeller on this engine unless the manufacturer of such propeller expressly recommends it for use on Thimble-Drome engines and so labels it.
12. If the plane requires the engine to be mounted right or left. The tank **must** be turned **with** the engine. The entire engine may be turned unless it is desirable to have the needle valve in some specific position in which case the back plate only may be turned. The vent and filler tubes will work in reverse for normal use if the engine is turned over 180°, but it may be desirable to plug them up and put in new ones if you only want to turn the engine over 90°. In turning the engine over do not forget to change the pick up position of the fuel hose.
13. The first time you start your engine the excess castor oil from the exhaust will be dark colored for a few seconds but will clear up immediately. All engines do this if they have never been run before. This is due to excessive wear during the first few seconds as the wearing surfaces polish in.
14. To use a timer drill 2 holes in the tank of a size to fit tight around the fuel hose. Connect the timer to the back plate connection with one hose and to the desired pickup position with the other hose. To use a special tank merely drill one hole in the engine tank and run the fuel hose through this hole to the back plate connection. The engine tank is thus inoperative and acts only as an engine base.

SPECIFICATIONS

Wt.—1.93 oz. Bore—.406", Stroke .386", Displacement .0499 Cu. In. Mounting radial, Overall height—2 9/32", length 3 1/16", Width—1 1/8", Shaft Size—1/8", Piston—no rings, Intake Valve—rotary, Rotation—counter clockwise from front.

WARRANTY

This engine is guaranteed against defects in materials and workmanship for 30 days from date of purchase. Glow plugs are never guaranteed because of their delicate nature. No other guarantee is made or implied. If engine is returned to the factory within warranty, include 50c to cover cost of handling and return postage.

Do not take engine back to your dealer.

FACTORY REPAIR SERVICE

Minor repairs, examinations, or adjustments—\$1.00 plus parts. Complete overhaul (guaranteed new engine performance)—\$3.75, including parts. On all C.O.D. shipments, purchaser pays postage and C.O.D. fees.

(C) FAILURE TO START

1. If the engine coughs and spits a bit of fuel spray from the exhaust, it is too rich. Close the needle valve and continue cranking until the engine starts briefly. Open the needle valve again and crank it over. It should start immediately.
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.
3. If engine fires with a burst of power then dies repeatedly after each time it is primed, and this is not cured by opening the needle valve more, the fuel jet is stopped up. If the engine has not been run for some time it is likely that it is only stopped up with castor oil. Clean the engine by holding a finger over the intake, B-Fig. 1, and flip the propeller over 3 or 4 times. This will remove the castor oil and the engine should start. If the same symptoms re-occur, the jet possibly has dirt in it and this should be blown out as per next paragraph.

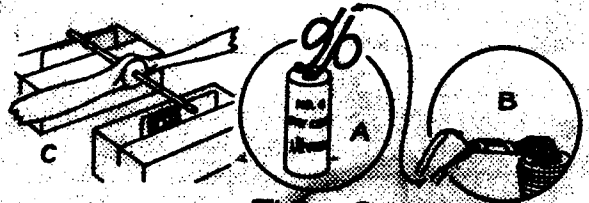


FIG. 2

4. Stopped up fuel line or jet. Remove the needle valve. Blow in the filler tube, D-Fig. 1, with high pressure air such as available at service stations. If this does not remedy the trouble, the pickup tube inside the tank may be kinked shutting off the fuel. Open the tank and re-assemble being sure to not kink the tube. If the tube appears to be too long cut about 3/16 off the length.
5. If the engine refuses to fire 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 its cost to you will be excessive. Buy one from your dealer.
6. Weak cranking sometimes retards starting. Crank with a snap.
7. If you are not using Thimble-Drome fuel, in the red can, try it. **Never use gasoline or gasoline type fuels.**
8. Very heavy priming is often required for starting. These engines do not flood out as easily as most. Unless it is actually spitting out raw fuel it may need even more priming even though you have already primed it as much as most engines will stand.
9. Should the needle valve be removed do not force it when replacing. It will screw in easily if not cross threaded. If it does not screw in easily it is crossed and should not be forced, otherwise it will be ruined.

(D) OPERATING TIPS AND ENGINE CARE

Connecting rod trouble may develop from running tight engine.

Refer to Paragraph 7.

1. The fuel filler hose may be placed to pick up fuel at various spots in the tank according to the kind of flying that will be done. Fuel should be picked up off the bottom at the rear for free flight. For U control the fuel should be picked up about 45° up from the bottom. For counter clockwise, on the right side, and for clockwise flying, on the left side. For stunt flying counter clockwise, fuel should be picked up 90° on the right side and for clockwise stunt flying fuel should be picked up 90° on the left side. The tube should be cut at an angle to prevent stoppage against the backplate and the end placed into a proper segment in the backplate. When the tank is put together the tube cannot fall out.
2. 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.
3. Always empty the fuel tank on your last run by running the engine until it quits. Never put the engine away with fuel in it.
4. 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.
5. If the engine gets dirt on it through crack-up, or otherwise, do not run it until it is thoroughly cleaned. **Take it apart**, wash it, oil it, and re-assemble.
6. 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. This is caused from 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 fine or medium steel wool. Wash, oil, and replace. The engine will then turn over freely and run good. **Never** use sandpaper, emery cloth, abrasives of any kind, or scrapers. Such methods will ruin the cylinder.
7. During the first 2 hours of running time do not use a propeller that will lug the engine. A 6"-3 pitch, a 6"-2 pitch, or a 5"-4 pitch will do. Unless you are flying a very small or very fast plane do not use more pitch than recommended because lugging the engine will cause the cylinder to shellac up and get tight.
8. Certain kinds of weather, especially warm humid (sticky) weather will cause excessive shellacing 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.
9. Do not tighten the head too firmly. Set it up very lightly. Allow the engine to cool before removing head so it will loosen easier. Too much pressure against the exhaust ports to 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.

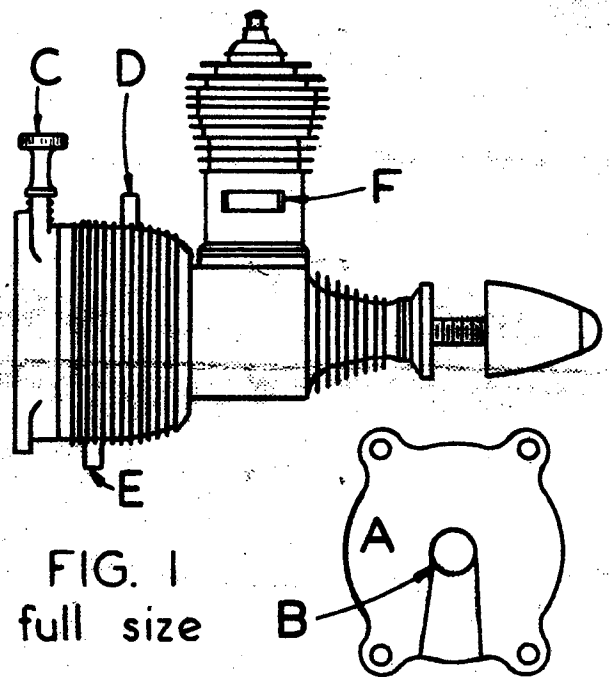


FIG. 1
full size

(B) STARTING THE RR-1 ENGINE

No matter how expert you are with small engines you will have better luck with this one if you follow directions exactly as listed and do each operation in the exact order given.

1. Close the carburetor needle valve, C-Fig. 1, by turning it clockwise till it stops. Do not force it.
2. Slip the filler hose of your pump or fuel can over the filler tube, D-Fig. 1, pump in fuel till it overflows through E-Fig. 1. Do not use gasoline. Use **Thimble-Drome Fuel (in the red can.)**
3. Connect the battery by snapping the clip on the glow plug, B-Fig. 2.
4. Open the needle valve (counter clockwise) exactly 5½ full turns.
5. Turn the propeller to the position so that the exhaust ports F-Fig. 1 are wide open. Squirt 5 or 6 drops of fuel into the cylinder through one of the port openings. This is called **priming**.
6. Flip the propeller over snappily with the finger tip to start. Use Thimble-Drome Finguard to protect finger.
7. When the engine starts it will be running very rich and slow. The first time the engine is started let it continue to run rich for a period of 30 seconds. After approximately 30 seconds, slowly close the needle valve clockwise to the best running position and remove the battery connection. Subsequent starts may be adjusted to best running position immediately.
8. If starting is delayed for any reason, close needle valve otherwise engine will become flooded.