

TROUBLE SHOOTING CHART

TROUBLE	PROBABLE CAUSE	REMEDY
	Poor battery connection	Check connections of wires to battery and check to be sure clip is firmly and correctly attached to glow head.
	Weak or dead battery	A good battery should test 1½ volts or connect battery to a glow head that is known to be good. If glow head filament does not glow bright orange - replace battery.
WILL NOT START - ACTS LIKE BATTERY WASN'T ATTACHED TO GLOW HEAD.	Burned out glow head	With a battery that tests 1½ volts connected to glow head, check for bright orange reflection on top of piston seen through exhaust port. If no glow appears, replace glow head.
	Engine wasn't primed	Squirt a few drops of fuel through exhaust port and onto side of piston then continue with starting procedure.
	Engine flooded, top much fuel in cylinder	Close needle valve 1 full turn and start again (without priming). 4 or 5 starts may be required to clear engine. (Cox Sure Starter will clear engine quickly).
ENGINE POPS AND/OR "KICKS" - WON'T START.	Loose propeller screw	Tighten propeller screw.
ENGINE STIFF, PROPELLER TURNS HARD OR "KICKS"	Engine flooded, top much fuel in cylinder	Close needle-valve completely. Leave battery attached and turn propeller (without priming) until short starting "burst" occurs. Then open needle-valve 5½ turns, and start again.
SHORT RUNNING "BURST" (BRIEF START, THEN STOP).	Engine not getting enough fuel (mixture too lean or tank empty)	Check tank fuel level - refill if necessary; or, open needle valve another ½ turn, prime and start again. It may be necessary to repeat this procedure 3 or 4 times, opening the needle valve ½ turn each time.
	Clunk jammed forward from hard landing	Point nose straight up and tap side of engine. If "clunk" is still jammed, disassemble engine tank and free it.
ROUGH SOUNDING ENGINE, SLUGGISH, WEAK POWER	Loose Glow Head	Tighten Glow Head with wrench supplied.

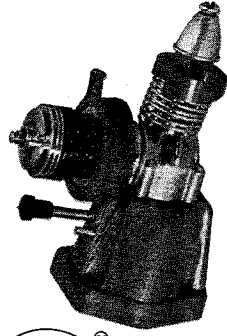
COX HOBBIES INC. 1505 East Warner Avenue, Santa Ana, California 92702
a subsidiary of LEISURE DYNAMICS, INC.

Litho in U.S.A. RO/6-79

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CARE AND OPERATION OF YOUR



R/C BEE ENGINE

INTRODUCTION

Your Cox R/C BEE engine incorporates many of the features most wanted by serious modelers like yourself. The crankcase is cast for light-weight strength. The fuel tank is extra-large and includes a 'clunk' fuel pickup for extended flying time and easy inverted flight. The mylar reed fuel induction system assures easy starting while the new Snap Starter eliminates the problem of having the engine start backwards.

NOTES

- To prevent fuel leakage from the rear of the tank, the engine must always be mounted so that the back plate of the fuel tank is pressed firmly against the firewall or mounting support.
- A "clunking" sound in your fuel tank is normal and is caused by the weighted pickup on the fuel intake hose.
- Use only Cox Flight Power Fuel (blue can) during break-in.
- For starting, and during break-in, leave the throttle in the 'fast' or 'high' position.
- To simplify priming and help the engine run cooler, remove the flexible muffler during break-in.

BREAK-IN

As with any precision-built product, a little care and preparation will help your R/C BEE to give you top performance. While most R/C BEE engines can be flown without break-in, a little time spent breaking the engine in properly will pay many dividends in good flying later.

- Mount the engine in a break-in test mount or in the model. The back plate of the fuel tank is held in place against the sealing gasket by the pressure of the engine against the firewall or mount. To prevent fuel leakage from the rear of the tank, make sure that there is sufficient pressure applied to the back plate to hold it firmly in place. Do not hold the engine in your hand or directly in the jaws of a vise. The mounting hole location of the R/C BEE is the same as for Cox's other reed-valve engines.
- Install a Cox 5" Dia. X 3" Pitch propeller (Cat. no. 858). The flat side of the propeller goes toward the engine. Tighten the propeller screw securely. Remove the flexible muffler from the throttle sleeve and lay aside.

- Start the engine as described in the "Starting The Engine" section. When the engine is running, close the needle valve (clockwise) slowly until the engine runs smoothly (a shrill, high-pitched sound should not be heard, nor should the engine slow down). Remove the glow head clip. Let the tank run dry.
- Refill the tank and restart the engine. Repeat step 3 until 4 tanks of fuel have been burned. Remove the 5" Dia. X 3" Pitch propeller and replace with a Cox 6" Dia. X 3" Pitch propeller (Cat. no. 862). Open the needle valve one additional turn (counterclockwise).

- Refill the tank and restart the engine. Repeat step 3 until 3 additional tanks of fuel have been burned.
- The engine is now ready to fly. When the engine is mounted on the model, refill and restart the engine. Adjust the needle valve until the engine reaches top speed (a shrill, high-pitched whine), then open the needle valve an additional ½ turn. Remove the glow head clip and tip the nose of the model so that it is pointed upward at an angle of about 45°. Readjust the needle valve if necessary.

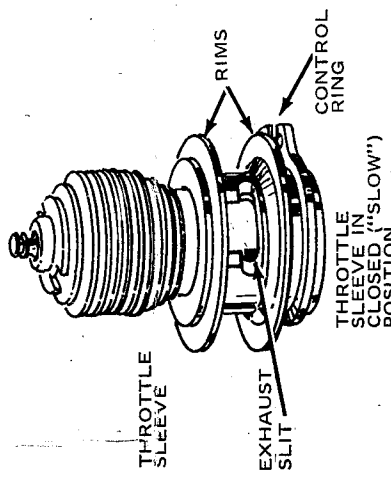
- For the first few flights it is recommended that the flexible muffler be left off. This will allow the engine to run at a cooler temperature while completing its break-in. After a total of 10 to 12 tanks of fuel have been burned (break-in and flight combined) the flexible muffler may be reinstalled.

STARTING THE ENGINE

We recommend the use of a Cox 6" Dia. X 3" Pitch Propeller (Cat. no. 862) after break-in. If you prefer to use a wooden propeller, it should be balanced to assure good performance with little vibration.

- Connect the glow head clip to a 1½ volt battery or Cox Sure Starter (Cat. no. 760). Attach the fuel filler hose to a can of Cox Flight Power fuel.
- Pull the flexible muffler away from the rim of the throttle sleeve far enough to verify that the throttle is in the 'fast' or 'high' position.

NOTE: The flexible muffler has been removed for clarity.



- Close the needle valve (clockwise) but **DO NOT FORCE** or overtighten. Open the needle valve 5½ turns.

- Push the end of the fuel filler hose onto the fuel tank filler tube. Fill the tank slowly to avoid flooding the engine. Fill until fuel spurts out of the overflow. Remove the fuel filler hose. Wipe any excess fuel off the engine and tank.

- Prime the engine by pulling the flexible muffler away from the rim of the throttle sleeve far enough to allow the end of the fuel filler hose to be inserted. Squirt several drops of fuel into the engine exhaust slits but be careful not to flood it. Remove the fuel filler hose and flip the propeller several times to work the fuel into the engine. Snap the flexible muffler (if used) back into place.

- Connect the glow head clip to the glow head. Turn the propeller **ONE** full turn backwards (clockwise) after the starter cam engages and release. **MORE THAN ONE TURN WILL DAMAGE THE STARTER SPRING!**

- If the engine does not start, repeat step 6 three more times. If the engine will still not start and run, remove the glow head clip and repeat steps 5 and 6.

- If engine refuses to start, open the needle valve ½ turn and repeat steps 5 through 7. If engine still

will not start, refer to the troubleshooting section.

9. When the engine starts, adjust the needle valve for the desired speed (either for break-in or for flight), and remove the glow head clip. When adjusting the needle valve, allow a short amount of time between valve adjustments and engine response to avoid "overshooting" the desired setting. This engine has been especially designed to be less critical in adjustment than most engines of this size. For this reason there is a short delay between a movement of the needle valve and a change in the engine speed.

THE FUEL PICKUP

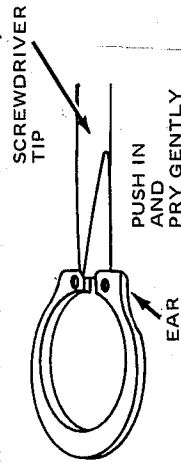
Tubing used inside the tank is a super-flexible silicone-based material that will stay flexible through long immersion in fuel. If for some reason the tubing should have to be replaced, you may obtain a new one from Cox. See the parts list for directions on how to obtain the tubing. The weight and the inlet tube to the engine have openings of only .062 inch diameter. Dirt in the fuel may cause these openings to become plugged. If this happens, they may be cleaned by blowing the dirt out or by inserting a thin piece of wire into the openings.

Access to the inside of the tank can be gained by snapping the rear plate and gasket off the back of the tank. In use, this plate is held in place by the pressure of the engine being held against the firewall.

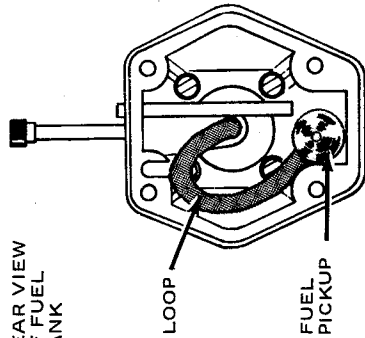
OPERATING TIPS

If it should be necessary to adjust the throttle control ring, in order to make the throttle operate correctly, it can be easily moved by slipping the end of a screwdriver in between the ears of the control ring and then turning the sleeve as required. Do not use force to turn the ring. If the sleeve does not move easily, spread the ears on the control ring slightly by prying gently with the screwdriver. Take care not to bend the control ring.

THROTTLE CONTROL RING (SHOWN REMOVED FROM SLEEVE FOR CLARITY)



If the fuel tank back plate is removed and the fuel intake hose removed or extended from the tank, remember to put a loop in the tubing when putting it back into place, otherwise the fuel pickup will not work as designed.



Never put the engine away with fuel in the tank, but instead run the engine until the tank is dry. The lubricant in the fuel will thicken after exposure to air and may clog the fuel intake. If the intake does become plugged, disassemble the engine and wash all parts in alcohol or fresh fuel.

When storing the engine, oil it lightly with a good quality light oil (3-in-1, sewing machine oil, etc.) and wrap in a plastic bag or a clean cloth. In cold weather, or for more power, you may wish to substitute Cox Racing Fuel.

WARNING USE OF THE FOLLOWING EQUIPMENT CAN DAMAGE YOUR ENGINE AND WILL VOID YOUR WARRANTY!

- ELECTRIC STARTERS
- DIESEL CONVERSION KITS
- SHAVED OR EXTREMELY HIGH COMPRESSION HEADS

WARRANTY

Your Cox engine is fully warranted against factory defects for 90 days from the date of purchase. GLOW HEADS are NOT WARRANTED since they normally require periodic replacement. Should your engine require warranty service, you may contact Cox at the address given in the "Replacement Parts" section.

FACTORY REPAIR SERVICE

Minor repairs, examinations, or adjustments \$2.50 plus parts. Complete overhaul (new engine performance guaranteed) \$10.00. Including parts. On all C.O.D. fees. (Prices subject to change without notice).

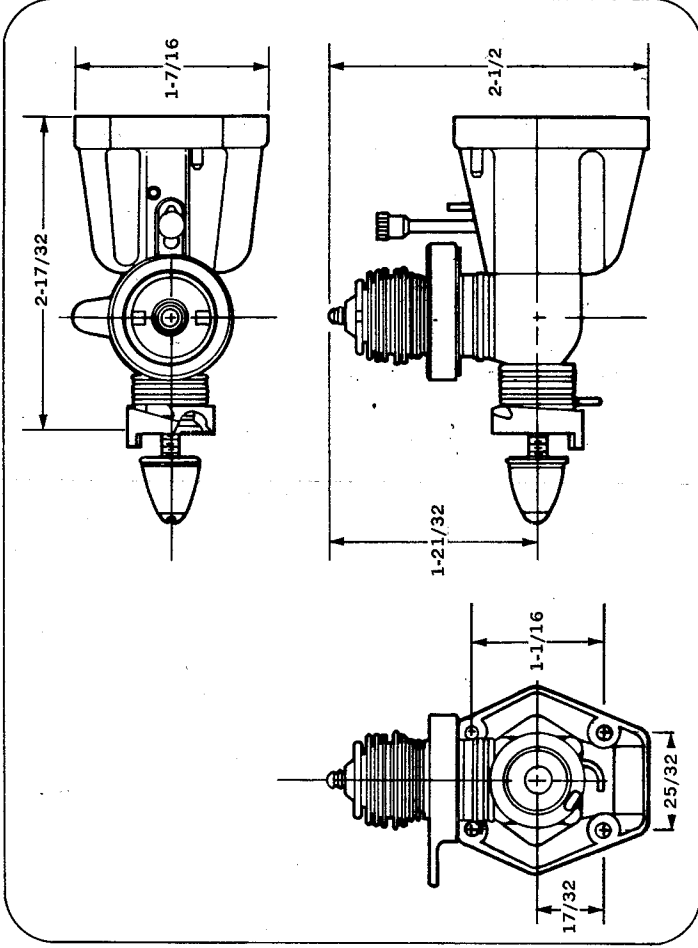
REPLACEMENT PARTS

Cox offers a replacement part and repair service for this engine through our Authorized Factory Service Centers. To save time, we suggest that you contact your nearest Service Center if you need assistance or repair parts. We have listed those parts which are most apt to require replacement during the life of your engine in the chart below.

PARTS LIST

REF. PART NO.	DESCRIPTION	PRICE EACH
1 20460	Crankcase and Shaft Assembly	\$5.00
2 325	Glow Head and Gasket Assembly	1.75
3 1718	Prop Spinner and Screw	1.25
4 3615	Throttle/Muffler Assembly	5.00
5 333	Snap Starter Assy.	1.00
6 20461	Piston/Cylinder Assembly	5.00
7 20462	Fuel Intake Hose and Weight	1.25
8 1968	Needle Valve and Extension	1.00
9 20463	Carburetor and Tank Assembly with Back, Gasket and Screws	5.00
10 364	Reed	.25

Prices subject to change without notice.

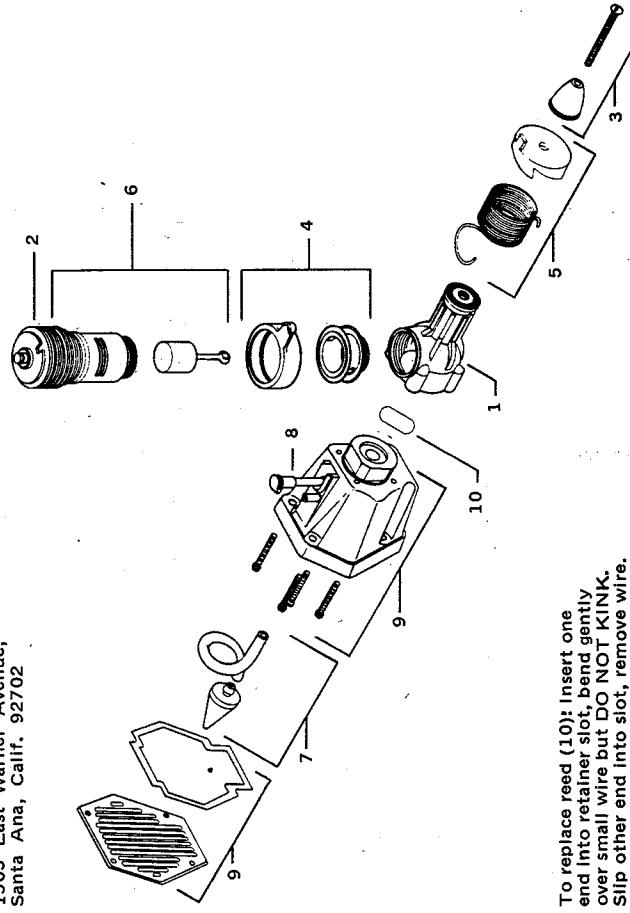


ORDERING INSTRUCTIONS:

When ordering from Cox please enclose your check or money order for the full amount (include a \$1.00 handling charge). California residents only add State Sales Tax. C.O.D. or telephone orders will not be accepted.

Send your order to:

Customer Service Department
COX HOBBIES INC.
1505 East Warner Avenue,
Santa Ana, Calif. 92702



To replace reed (10): Insert one end into retainer slot, bend gently over small wire but DO NOT KINK. Slip other end into slot, remove wire.