(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. To rig up for pressure the crankshaft must be removed. The hose connector on the side of the carburetor body is located exactly over the spot where the pressure is taken off. The metal parts are not drilled however, and a drill of the correct size to fit the hose connector or slightly smaller must be used to continue this hole through the metal parts. The burr must then be carefully removed from the interior of the bearing and the engine reassembled. The hose connector is then connected to the tank with a piece of plastic fuel tubing.

With pressure, the venturi may be opened to 1/16" on the .010 or 3/32" on the .020 engine to attain maximum power although the gain is very little.

SPECIFICATIONS

	TEE DEE .010	TEE DEE .020
Weight	.49 oz.	.85 oz.
Bore	.237"	.300"
Stroke	.226"	.282"
Displacement	.00997 Cu. In. .163 cc	.0199 Cu. In. .3266 cc
Overall Height	1-17/32"	1-13/16"
Overall Length	1 1/2"	1 7/8"
Width	1-1/16"	1 1/8"

SPEEDS

The following speeds are typical of engines selected at random and run under average conditions:

TEE DEE .010		TEE DEE .020	
Prop Size	**RPM**	**Prop Size**	**RPM**
3" Dia. x 1 1/4 P	27,500	3 1/8" Dia. x 2 1/2 P (3-blade)	22,750
		4" Dia. x 2 1/2 P	19,500

WARRANTY

The 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)—$4.75, 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.

PARTS LIST

PART	TEE DEE .010 Cat. No.	TEE DEE .010 List Price	TEE DEE .020 Cat. No.	TEE DEE .020 List Price
Crankcase	1301	1.75	1601	1.75
Glow Head	1302	.75	1032	.65
Piston & Rod Assy.	1303	1.75	1033	1.50
Cylinder	1304	1.75	1004	1.50
Crankshaft	1305	2.25	1605	2.00
Needle Valve & Spring	1309	.60	1609	.60
Prop Drive Plate	1310	.35	1610	.35
Tank Back	1311	.30	1611	.30
Tank Only	1313	.75	1613	.75
Screw Set	1315	.20	1615	.20
Venturi	1317	.75	1617	.75
Prop Spinner & Screw	1319	.30	1618	.30
Retainer Nut	1321	.25	1621	.25
Carburetor Body	1324	.50	1624	.50
Carburetor Complete	1325	2.50	1625	2.50
Needle Valve Body	1326	.75	1626	.75
Engine Mount	1327	.50	1627	.50
Wrench	1330	.30	1030	.30

Order Parts by Catalogue Number

Note: Prices subject to change without notice

Order Parts by Catalogue Number

L. M. COX MANUFACTURING CO.

P.O. Box 476 Santa Ana, Calif.

Printed in U.S.A. 1-62 1359

CARE AND OPERATION OF YOUR COX TEE DEE .020 AND TEE DEE .010 ENGINES

THESE ENGINES ARE HIGHLY PRECISE CONTEST-TYPE ENGINES

Keep your engine immaculately clean, use Thimble Drome Racing Fuel in the red can and it will maintain its winning characteristics for a long period of time.

This engine is precisely fitted at the factory for immediate, easy starting and immediate flight. A break-in period in the ordinary sense is not necessary for flight, in fact, a slow, easy break-in is not desirable. Most of these engines will develop full power within one minute of running time; but a few, those which are slightly on the tight side, may not develop full power under one hour. Even these will develop sufficient power for average flying almost immediately. The only break-in required is very rich (slow) running the first 60 seconds after starting the first time. After 60 seconds it should be ready to go.

Elimination of break-in is not attained through loose or sloppy fitting, but through very precise fitting, together with super fine wearing surfaces.

Remember—your Tee Dee Engine is much happier at high speeds. Let it wind up. Do not use oversize props.

If a special tank is used, the tank which is mounted on the engine may be by-passed and used for mounting only; or it may be removed and the smaller, close-up mounting plate which is also furnished, may be used.

(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 suitable mount. Do not hold the engine directly in a vise. Use the appropriate template from either Fig. 2 or Fig. 3 to drill mounting holes.

2. Place propeller on the shaft with the flat side of the blades toward the engine, and lock securely with the propeller screw.

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. The strainer keeps dirt out of the can, and any particles that might already be in the can, from getting into the carburetor jet. These engines will not continue to run on any unscreened fuel. The jets are too tiny.

4. Procure a 1 1/2 volt dry cell battery, #6 or equivalent, and connect it with 2 flexible insulated wires to the glow plug clip as shown in the diagram A and B—Fig. 1. 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 prevent the bare ends of the wires from touching and "shorting" the battery. Be sure the battery is a good one. Your hobby dealer sells batteries and glow plug clips. The Thimble Drome plastic mounted glow plug clip with wires already attached is recommended, and requires no soldering. (Cat. #755 — Price 35c).

5. Balance and trim the propeller. This is essential for contest performance. Sand off any bead of plastic along the edges of the blades. Fit a drill or shaft through the hole, and rest the shaft on razor blades set in a wooden block as shown in C—Fig. 1. Sand the heavy blade until the propeller will balance in a horizontal position. Care must be taken to do the sanding without spoiling the airfoil characteristics of the propeller blades.

(B) STARTING THE TEE DEE ENGINES

No matter how expert 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 just the order given.

1. Close the carburetor needle valve B—Fig. 2 or 3, by turning it clockwise until it stops. Do not force it.

2. Fill the fuel tank with Thimble-Drome racing fuel (in the red can).

3. Open the needle valve (counter clockwise) exactly 5 full turns.

4. Put your finger over the air intake and pull the prop thru compression until the fuel line is full. Use a clear plastic fuel line so this can be checked visually. If the tank is mounted so the fuel level is higher than the carburetor the hose will fill itself when the needle valve is opened.

5. Connect the battery by snapping the clip on the glow plug. B—Fig. 1.

6. Engage the spring starter and pull the prop around one turn only. Stop so that the exhaust ports are open for the .020 and closed for the .010

7. Squirt a few drops of fuel into the exhaust port and immediately release the prop. With the .010 close the exhaust ports to prime. The fuel that will gather at the port will run in as the port opens and is sufficient for priming. Release the prop by sliding your finger off the end of the blade and away so your finger is out of range of the spinning propeller as the engine will start instantly when released, if primed with the right amount of fuel.

8. 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 60 seconds. After approximately 60 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.

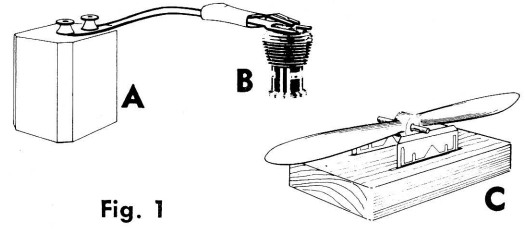

Fig. 1

FULL SCALE VIEWS OF THE TEE DEE .010
FOR INSTALLATION INFORMATION

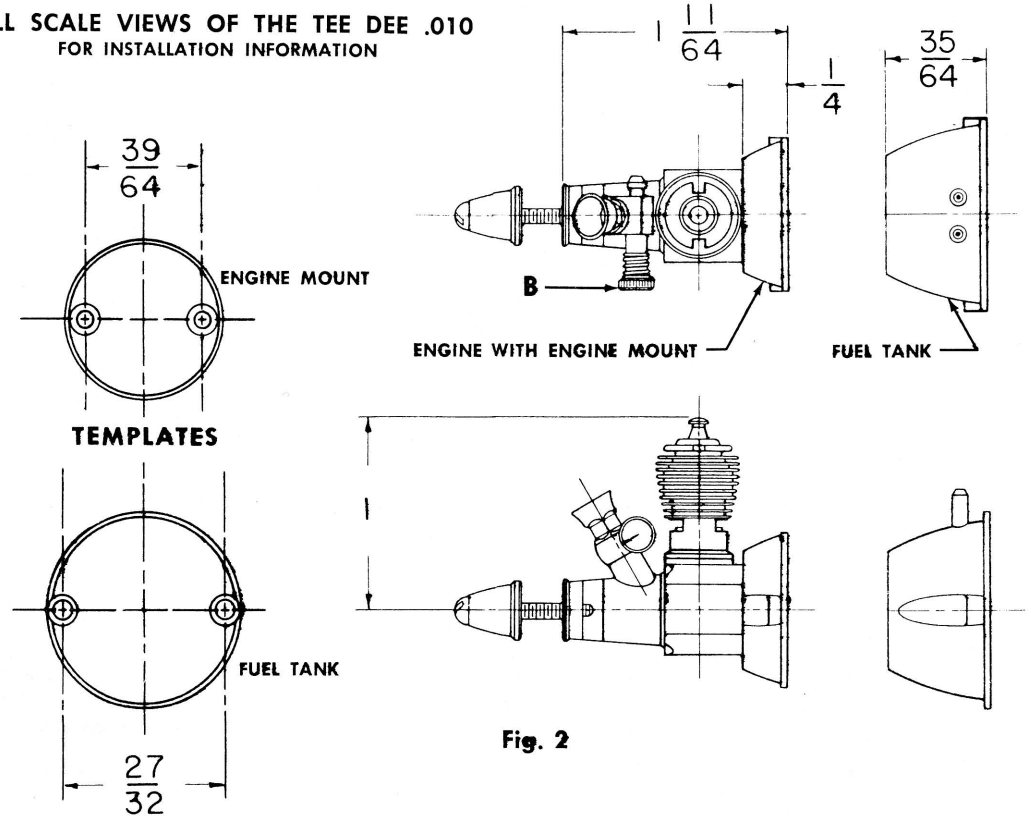

Fig. 2

9. If starting is delayed for any reason, close needle valve otherwise engine will become flooded.

(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 with the spring starter until the engine starts briefly. Open the needle valve again and engage the spring starter. The engine should start instantly.

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 if the engine hasn't been run for some time it is also possible that thick castor oil is clogging the jets. Choking, as in Par. 4, Sect. B, will clear this.

3. If the engine still persists in the 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. Re-assemble and the engine should run.

4. If the engine refuses to fire at all, screw the glow head off 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 head or correct the connection. Glow heads are **never** guaranteed. Do not return the engine to the factory for a burnt out glow head 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

WARNING—If the engine is taken apart and then reassembled, be very careful not to overtighten the parts that screw together. This is particularly true in the case of the .010 engine. Overtightening the cylinder or head, will force the cylinder out of round, and cause the engine to bind. Clearances and tolerances are so fantastically small that the slightest distortion will render the engine inoperative. So remember—snug parts up very lightly!

FULL SCALE VIEWS OF THE TEE DEE .020
FOR INSTALLATION INFORMATION

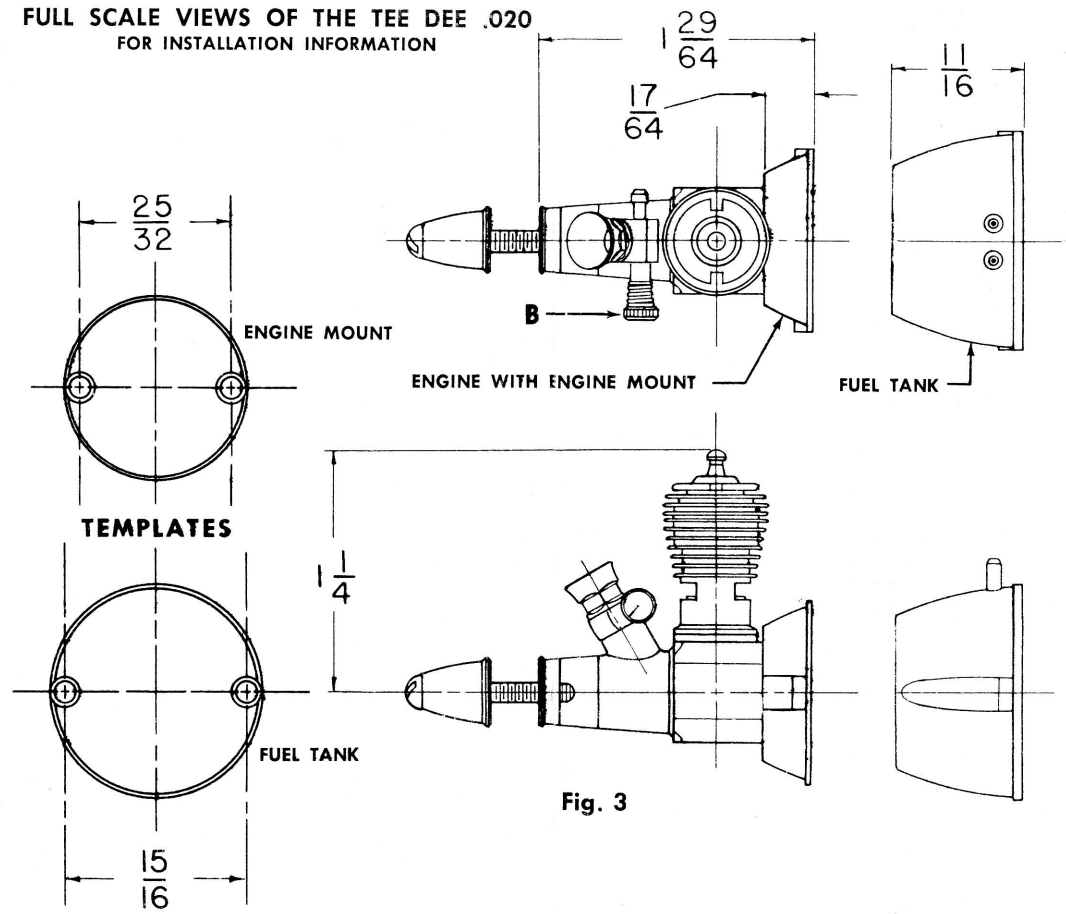

Fig. 3

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 on 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. This 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 fine or medium steel wool. Wash, oil, and replace. The engine will then turn over freely and run properly. **Never** use sand-paper, 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 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.

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 cylinder. The head will then release easily. A hot head will stick, and forced removal may damage the cylinder.