

## Cox Tee Dee .15



## ENGINE REVIEW

by P. G. F. Chinn

## COX TEE DEE .15

Second of the '61 engines in our review, the Tee Dee .15 is the first to reach a power performance of .400 bhp.

Compared with reed valve Olympic model, the Tee Dee some weight yet with 25% more power.

► For a good many years, diesel motors have greatly outnumbered glow motors in international and world championship FAI class (.15 cu. in.) free flight contests. During this period, glow motors first lagged a little behind top diesels in performance and later equalled them. In the last few months, however, glow .15's have appeared that are clearly superior in output to the best and latest diesels of similar displacement. Until recently, .15 engines that could better 0.30 brake horsepower were rare. Over the past year, three stock production diesels have been introduced (one British, one Italian and one Japanese) that are capable of outputs approaching .35 bhp. but the latest high performance glows are now pushing ahead with outputs substantially exceeding this and one of the most impressive to date is Cox's new Tee Dee .15.

The Tee Dee .15 is aimed squarely at the contest field and supersedes the reed valve Cox Olympic .15 introduced two years ago. At the time of its introduction, the Olympic was clearly one of the most powerful FAI class motors available, but it was subsequently found to be, somewhat critical to fuel delivery, under flight conditions, and thereby failed to achieve the popularity, with contest flyers, that it would otherwise have deserved.

The new front rotary valve Tee Dee .15 has been developed from the Olympic, via experiments with

rear rotary valve conversions, a number of which latter experimental models were given contest workouts last year by leading carries a molded-in pressure nipple. To convert to pressure, one simply removes the crankshaft and extends the bleed hole through the bearing by carefully drilling out. The carburetor venturi may at the same be reamed out to 3/16 in. and some increase in top end power can be expected from this.



Massive 7/16" journal, equals big valve port, equals better volumetric efficiency, power.



Tee Dee features new cylinder head with reviled contour, compare with Olympic on left.

## Cox Tee Dee .15

The rest of the design is typical of Cox practice, except for a new cylinder bead which, distinct from the earlier domed internal contours giving a hemispherical combustion chamber, has a reversed curvature giving a coned "pagoda roof" shape. Refinements, such as the triple peripheral jet carburetor, art continued. The adjustable and reversible needle-block adapts well to the front carburetor position. Weight is roughly the same as for the Olympic and the engine fits the same bearer spacing.

Two Tee Dee 15's were used to collect performance data. Both were given a one hour break-in before any tests were undertaken. Starting qualities were found to be good, although, unlike the Olympic, the Tee Dee seems to prefer to be port primed for warm restarts as well as for cold starting.

Immediately apparent, On test, was the high torque developed by the Tee Dee in comparison with all other production .15's tested to date. Both engines topped .14 lb. ft. at around 12.000 rpm. on 30 percent nitromethane and this, which means a brake mean effective pressure exceeding 70 lb./sq. in., is very good indeed for any model engine irrespective of size and type. From the power curves subsequently plotted the following output figures were obtained:

At	rpm	bhp
10.000		.257
11.000		.292
12.000		.322
13.000		.346
14.000		.366
15.000		.381
16.000		.391
17.000		.395
18.000		.396
19.000		.388
20.000		.368

Needless to say, approximately .4 horse power from a .15 an outstanding performance. Even so, with pressure feed, opened up intake and, perhaps, hotter fuel, still higher power may well be liberated. Spot checks were also made on various props and yielded 10.600 on a Top Flite

10x3 ½ 13.200 on a Tornado 9x4. 15.500 on a Tornado 8x4, 17.100 on a Top Flite 8x3 ½ and 18.700 on a 7x4 Power Prop. We had one glow filament burn-out during tests. This was during an 18.000 rpm run oral after the engine had logged about 2 hours.

### Summary of Data:

**Type:** Reverse flow scavenged two cycle with shaft type rotary valve induction.

**Weight:** 4.1 oz.

**Displacement:** .1495 cu. in. or 2.45 c.c.

**Bore:** .585 in.

**Stroke:** .586 in.

**Stroke/Bore Ratio:** 0.95:1

**Specific Output (as tested):** 2.85 bhp/cu.in.

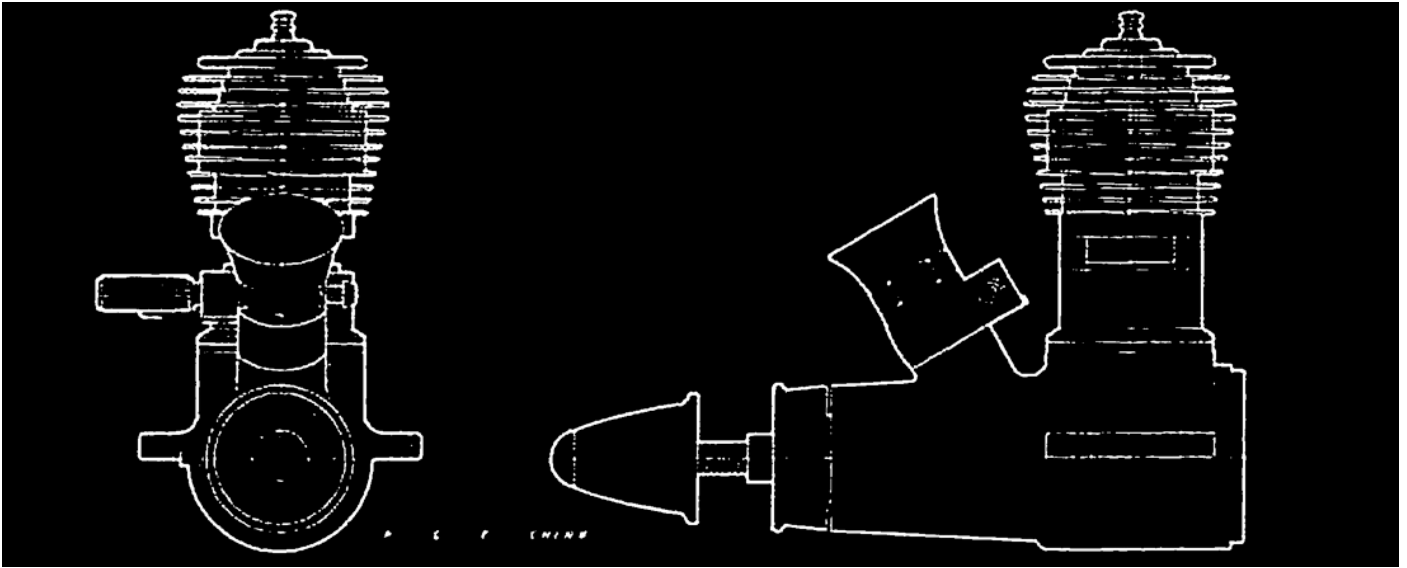
**Power/Weight Ratio (as tested):** 1.51 bhp/lb.

**Price:** \$12.98

**Manufacturer:** L. M. Cox Manufacturing Co. Inc.,  
730. Poinsettia Street, Santa Ana, California.



## Cox Tee Dee .15



More: [https://flyinghlsat.com/search.php?search\\_keywords=Cox-Engines](https://flyinghlsat.com/search.php?search_keywords=Cox-Engines)