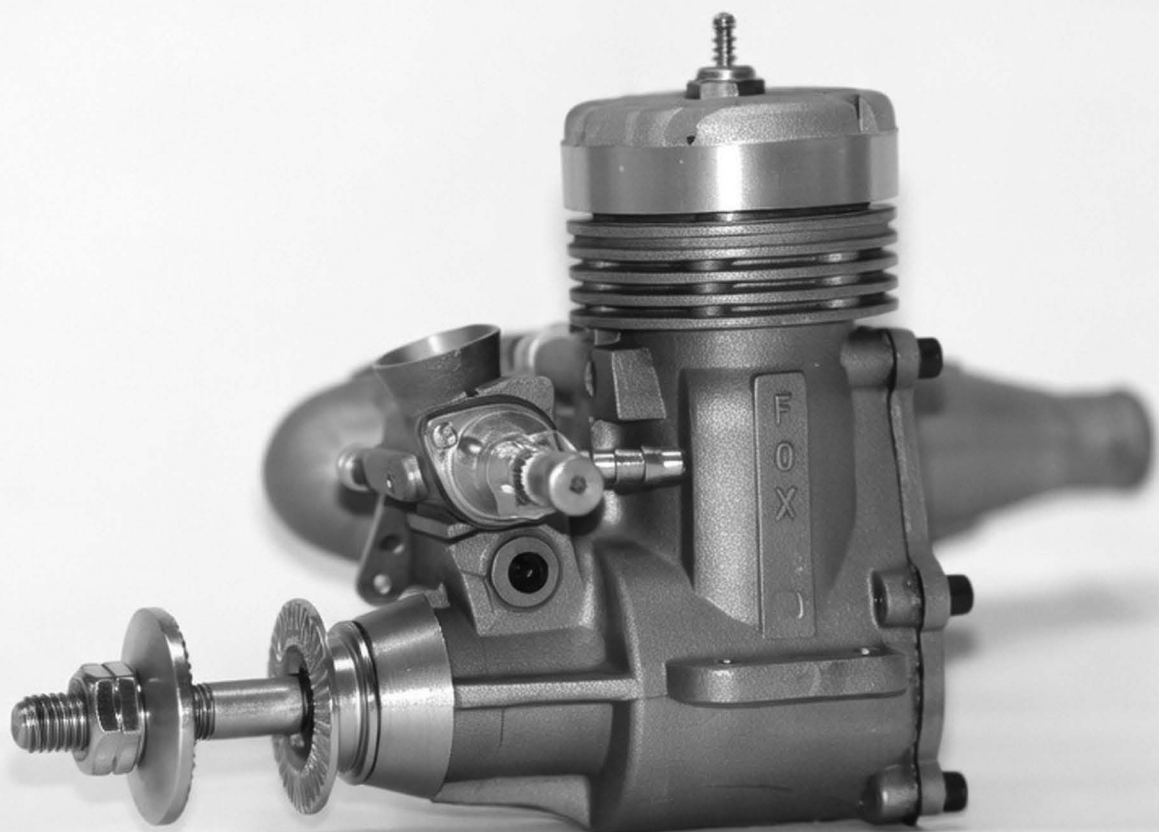
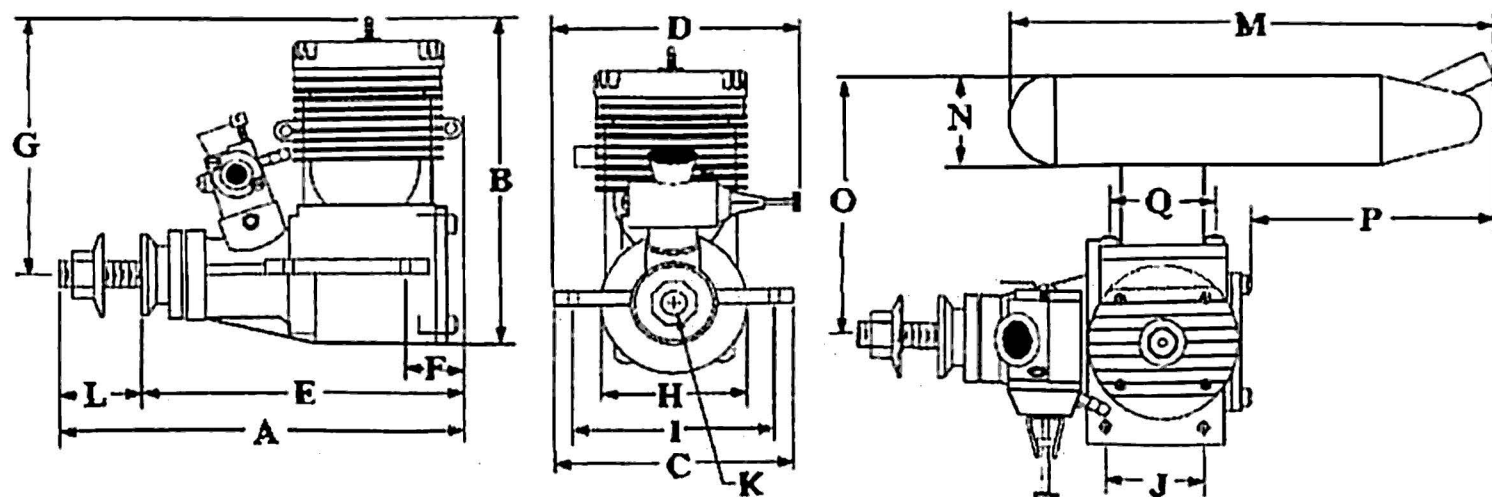


PRODUCT TEST REPORT



Engine	Fox .40 R/C (#24095)
Manufacturer	Fox Mfg. Co. 5305 Towson Ave. Ft. Smith, AR 72901 (501)646-1656 www.foxmanufacturing.com
List Price	\$120.95
Typical Street Price	\$79.99
Warranty	One year
Muffler Included	Yes (downswept)
Glowplug Included	Yes
Tools	One Allen wrench
Accessories	None
Bore x Stroke	0.840 x 0.715"
Actual Displacement	0.396 c.i.
Recommended RPM Range	2,000 to 12,800
Advertised HP	N/A

Schnuerle Ported	Yes
ABC Design	No
Ball Bearings	None
Engine Weight	9.94 oz.
Muffler Weight	1.96 oz.
Recommended Props	None suggested
A. Overall Length	4.1"
B. Overall Height	3.56" w/plug
C. Overall Width at Mount	2"
D. Overall Width at Carb	2.5"
E. Firewall to Prop, minimum	2.85"
F. Firewall to First Mounting Hole	0.56"
G. Crank Center to Outermost Point	3"
	(muffler not included)
H. Mounting Beam Width	1.37"
I. Mounting Hole Centers, Side to Side	1.64"
J. Mounting Hole Centers, Front to Rear	0.64"



K. Propshaft Diameter	.25"
L. Propshaft Length	1.23"
M. Muffler Length	4.38"
N. Maximum Muffler Diameter	1.4"
O. Side Projection	3.5"
P. Rear Projection	2.25"
Q. Muffler Screws Centers	1.06"
Fuel Used	Morgan's Omega 10%
Glowplug Used	Fox Miracle Plug
Weather/Power Factor	1.0156

NOTE: All Test Props are Zinger wood props unless otherwise noted.

Minimum Reliable Idle

Propeller	RPM
9x6	3,100
10x6	2,400
11x5	2,200

Maximum Measured Noise

Propeller	dB(A)
9x6	98.5
10x6	92.5
11x5	92.5

Maximum Measured RPM

Propeller	RPM	Thrust (in oz.)
9x6	14,400	74
9x7	12,800	66
10x4	14,100	86
10x5	12,600	76
10x6	11,800	77
10x7	11,100	73
11x5	11,000	89
11x6	10,800	83
12x4	10,600	95

OTHER 10x6 PROPS

APC	13,200
Bolly	12,700
Graupner	12,500
Master Airscrew	13,000
Top Flite	11,800

CHEERS - Very light weight; comes with muffler and glow plug; down-swept muffler allows for easy installation and removal (an up-swept version is also available); very good value for the performance; generally user friendly.

JEERS - Basically unchanged since 1987; no mention of warranty in paperwork; instructions give no recommended prop sizes; down-swept muffler may be a problem to fit on some models and most engine test stands; inconvenient placement of muffler pressure fitting; old-style air-bleed carburetor; louder than average for its size.

Our first review of a Fox .40 engine, the .40 Compact, appeared in our September 1986 issue, when we compared over 20 sport .40 2C engines. Despite being among the lightest and lowest priced .40's available at the time, it performed well above average. In 1987 Fox began producing their equally light and low cost Fox .40 BB Std, basically the same engine but with twin ball bearings. We reviewed one of the first examples in our January 1988 issue, but its performance was so incredibly good, we feared we'd gotten a fluke... an inadvertent better than average example. We immediately ordered a second engine for a Revisit Review in the very next issue. Surprise, surprise... that engine performed *slightly* better than the first! By then we'd begun to hear from readers responding to the first review, telling us of their experiences with this amazingly powerful little engine.

Tim Batt, one of our columnists at the time, was so impressed with the Fox .40, he designed a special fun fly plane around the engine, calling it the FoxBat. Needless to say, it became a very popular engine in our workshops, and Brian Lee even unleashed some more power by making a few slight modifications to the ports and crankshaft. I still have one of those modified engines on a Competition Fun Fly model today, and I have a couple of stock versions for sport use.

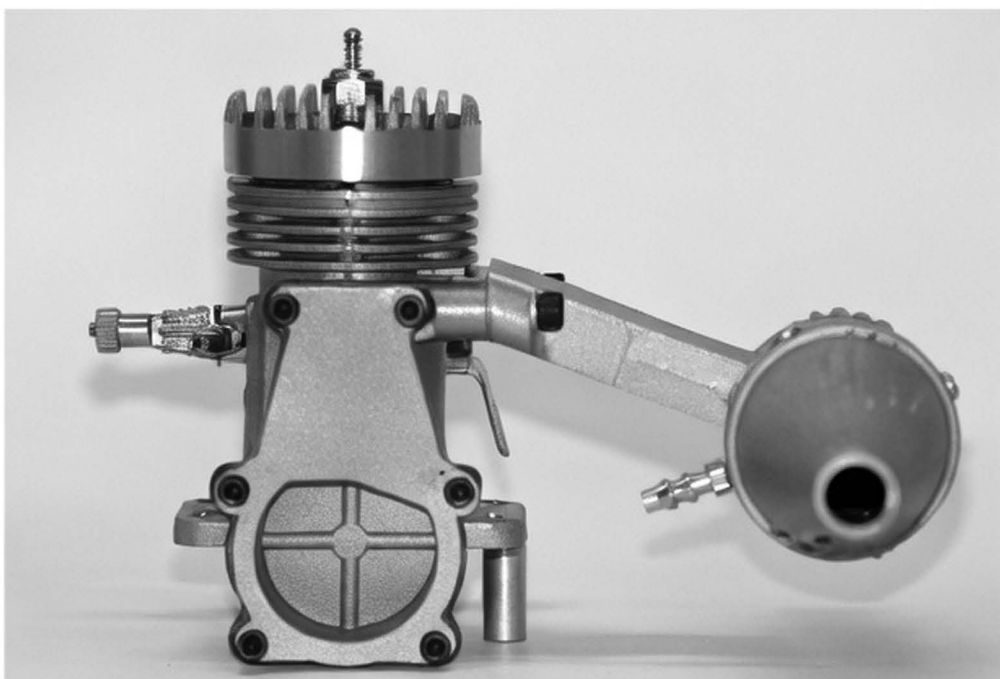
Fox also began producing the engine in a plain bearing model, which cost less and weighed less, but performed just as well. The engine reviewed here is just such an engine, with no ball bearings.

Most engine manufacturers replace their current lineup with something new and different every few years. Sometimes the changes make a better engine, and sometimes they don't. Fox, however, stuck with their successful designs of the late 80's, and very few changes have been made since.

Although we've had very few requests for Fox engine reviews lately, Fox Mfg. was kind enough to donate a Fox .40 Std. for our charity raffle, so we took this opportunity to revisit this old friend.

Although the engine and basic muffler appear unchanged, the muffler's fuel tank pressure fitting has been moved to an odd and generally inconvenient location. Instead of being high and easily accessible, now it's unusually low and hard to reach when installed on a model or engine test stand. I have no idea why this was done. Fox also offers an upswept muffler, by the way.

This latest example of the venerable old Fox .40 Std. performed very well, and still makes better than average power



This rear view shows the unusual backplate and the low position of the fuel tank pressure fitting on the down-swept muffler.

for its class, but it fell far short of the peak RPM figures we measured back in the late 80's. Since it has a cast iron piston and a steel sleeve, we gave it plenty of break-in running, too. Again, it still performs extremely well for its size and price range, but it's not the shocker it was in 1988.

Also missing from the 1988 production is the famous old Fox Lifetime Warranty, which they honored admirably for many years. This engine, however, came with no mention of any warranty at all, so we called and asked. It seems there is no written warranty, but Fox will handle any factory defects for one year.

The muffler installs with two screws that thread into the engine crankcase, which we don't like. We've seen a number of these engines with stripped and broken holes following even mild crashes, because when the muffler gets ripped away from the impact, the threaded holes in the aluminum crankcase give way to the steel screws. We've long preferred engine designs where the muffler screws thread into the muffler, which is cheaper and easier to replace than engine crankcases.

When the muffler screws thread into the crankcase, the muffler often gets in the way of easily accessing the two screws. Fox eliminated this problem early on, however, by offering their mufflers in down-swept and up-swept models, leaving easy access to the screws. The low-swept mufflers, however, sometimes complicates installing the engine in models, and almost always makes it difficult to fit the engine on an engine test stand. (See our Engine Test Stand Shootout in the Dec 2004 issue.)

What hasn't changed, however, is the overall user friendly nature of this engine. Although noticeably louder than most sport .40 engines, the Fox .40 Std. starts readily by hand, it idles well with normal size props, it accelerates instantly and cleanly, and is easy to adjust with a non-critical high-speed needle. Although the idle circuit still uses the somewhat ancient air bleed screw, it works quite well.

All in all, the Fox .40 Std. still represents a very good value, with very good performance.

*-Gordon Banks
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