

Gunson Digital Gastester

WHILE FEW OF US can afford to own our very own dynamometers, there are a few other modern, high-tech tuning tools that are both cost and utility effective for the home mechanic. Gunson's Digital Gastester happens to be one such tool. The digital gastester measures the amount of carbon monoxide (CO) coming out of the exhaust on your bike. By measuring the amount of CO, the carburetors or throttle bodies can be precisely adjusted for proper fuel/air mixture. The tester functions by measuring the CO passing through a "sniffer" probe. The probe is connected to the gastester via clear rubber tubing and is placed in the end of an exhaust canister. A diaphragm is fitted to the end of the tubing closest to the tester, to drain off condensed water. The percentage of CO is displayed on a bright LED readout.

The unit is constructed of non-crashproof plastic. This characteristic was tested by accident, due to the short hosing spanning the distance between the probe and the unit. The length of hosing is fine for low-slung pipes on cruisers, but not for upswept pipes. The strength of the unit was assessed after it fell off a crate from a height of two feet. A sizeable crack in one side of the unit resulted from the fall, causing us to apply the heal-all of duct tape. Still, after the unit's accuracy was validated with CO meters in other garages, it resumed service in my garage.

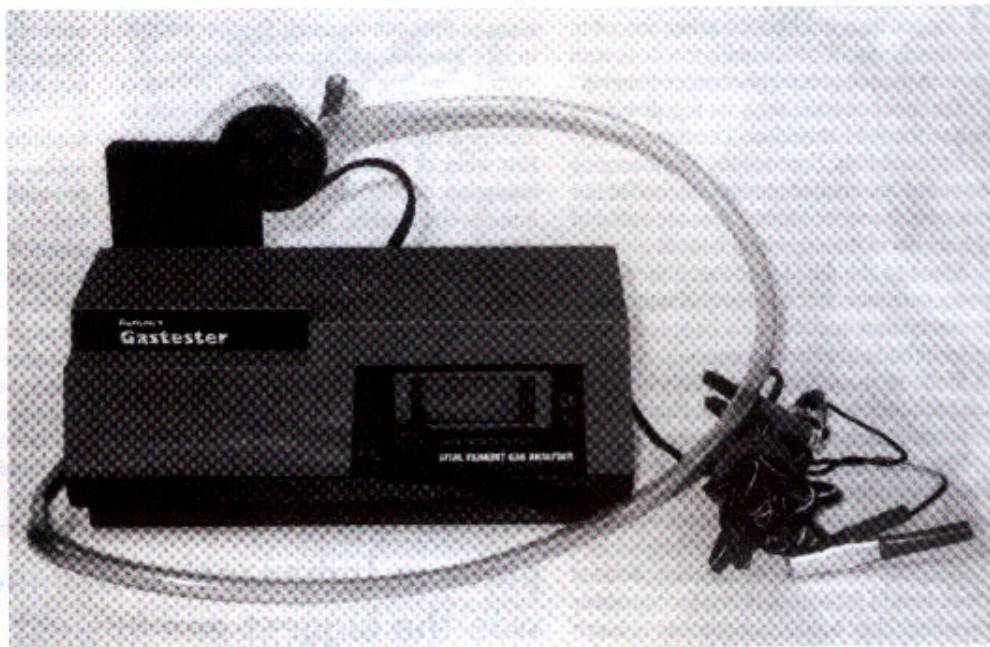
While the hosing of the unit isn't long enough, the power cord is. A 20-foot cord with alligator clips is included. The clips are designed to clamp onto the 12 volt battery of any bike, making the unit truly portable. It would be nice to be able to power the unit from a 110 volt wall outlet as well, but we certainly understand Gunson's intent to make the unit portable.

There are two keys to using the unit, and both involve taking one's time. In order for the unit to perform properly, it must be allowed to "warm up," and establish a baseline reading (achieved by leaving the unit plugged in for 20 minutes). After a 20-minute period, a small dial is then adjusted until a CO percentage of 2.0 is displayed. This baseline reading matches

the unit to the average ambient CO percentage in the air we breathe. From this baseline measurement, the bike can then be measured. The other key is ensuring the bike is properly warmed up before initial readings are taken. This is particularly necessary on fuel-injected motorcycles, because the mixture (and corresponding CO) varies as the bike comes up to operating temperature. Also, an incorrect read-

Fortunately, the unit still functions properly with or without the diaphragm hard-mounted to the base of the unit.

In order to test the accuracy of the Gastester, we compared it to two "multi-thousand-dollar" units used in professional garages. In both comparisons, the Gunson Gastester was within 0.5% of the professional unit. Yes, that's one-half of one percent. We also ran tests whereby



ing will be achieved if the bike is warmed up in close proximity to the cycling Gastester. The best method for success and accuracy is to first cycle the Gastester for 20 minutes, and then begin warming up the bike. The current draw of the Gastester is low enough that it doesn't present any threat to the bike's battery.

While the gastester is an effective tool, it is not a substitute for measuring CO percentages under varying loads and rpm. The only way for this to be performed is by using a gas analyzer in conjunction with a dynamometer. However, it is useful for solving one of the most vexing problems with carburetors—setting the fuel/air mixture at idle conditions.

We have used our Gunson Gastester faithfully for five years. The only design flaw we noted (other than the short hosing) is the mounting of the condenser diaphragm. The diaphragm is mounted to the unit on a small plastic flange that quickly shears if the hose is stretched.

the unit was repeatedly cycled up, disconnected, and cycled yet again to test the consistency of the readouts. The readouts always settled back to within 0.1% of each other.

The deciding factor influencing my own purchase was the retail sticker price of \$149.95. With an accuracy comparable to expensive professional Gastesters, the Gunson unit is a real bargain. For those with commercial garages, Gunson also offers a more rugged version with a beefier case for more money.

—LT Snyder

Auto Expert Products Inc.
800 795 6958

john@autoexpertproducts.com
www.autoexpertproducts.com

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