

Oh no, and I just cancelled my alien-theft insurance coverage!

## Next Month

- ▶ Victory's Hammer 106 Evaluated
- ▶ Honda's CBR600RR with CABS Evaluated
- ▶ Home tire-changing tools tested

# Motorcycle

## CONSUMER NEWS

40-06

PERIODICALS MAIL

## TREYSIT Sirometer

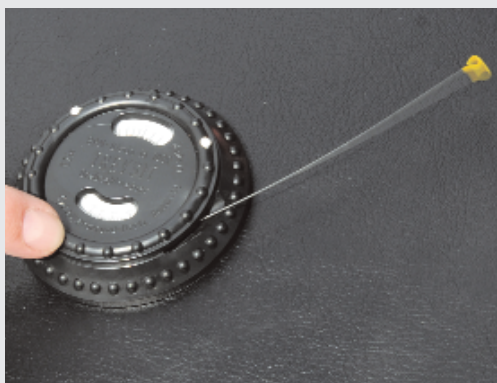
INNOVATION OF THE MONTH

**M**CN'S APRIL BULLETINS referred to a bill proposed in New Hampshire that would require all motorcycles to have exhausts quieter than 95dB measured at a 45° angle 20" away from the exhaust outlet (a standard sound test procedure). While the proposed dB limit isn't unreasonable, what is ridiculous is the bill's stipulation that all motorcycles must have a working tachometer (as such tests are typically conducted at half maximum rpm). As you know, most cruisers and dual sport motorcycles don't leave the factory with a tachometer and fitting an electronic tach can be complicated and expensive...if you can find one.

But Southern California-based DPS Technical, Inc., offers a rather nifty solution that's not well-known. A tach that is inexpensive, accurate, easy to read and portable. It's called a sirometer, it retails for \$40 and it works.

Manufactured by a company in Germany called TREYSIT, the sirometer is a resonating reed-style tachometer, a device first developed in the 1950s. It can be used on any engine that vibrates, from simple garden equipment to the most exotic performance machines. It works by contact. Resonant vibration of the reed indicates when a given rpm has been reached. It has a range from 800–50,000 rpm.

The sirometer is a 1.5 oz., 3/4" disc-shaped plastic device that contains a length of wire. Twisting the face like an Oreo cookie extends the wire outside the housing to a length that corresponds with the desired rpm frequency shown on the face of the sirometer. The device can then



The sirometer's resonant vibration is clearly seen as a fan-shaped figure-eight pattern.

be held against the machine, either by hand on the seat or taped to the gas tank. When the indicated rpm is reached, the wire on the sirometer will vibrate in a uniform, fan-shaped pattern. When properly calibrated, the sirometer is very accurate, says DPS Technical's Chris Real.

"Typically, they are accurate within 150-200 rpm on any engine and within 50 rpm on a single-cylinder motorcycle," Real says. "That's damn close."

Surprisingly, the sirometer cannot be tripped up or fooled by secondary shaft vibrations within the same engine, such as what might be encountered with a counterbalancer. Real says that since the piston outweighs the counterbalancer and there is a shock from the combustion process, the sirometer will "listen" to that frequency instead.

Once the sirometer is calibrated and its performance verified—a process completed on every sirometer sold through DPS Technical—it is suitable for evidence-gathering purposes, such as to verify rpm for sound emissions testing. In fact, that's the instrument's primary use by the DPS Technical crew, which is often contracted by everyone from Japanese OEMs to government agencies to conduct EPA sound tests on various products, using SAE test procedures.

"It's a wonderful little tool," Real says. "It's a basic mechanical device that works on a very well-established principle of vibration measurement. But I wouldn't call it crude. It actually works very similarly to the accelerometers that are used in Formula 1 cars. Still, it's so simple it's stupid. It's like a hammer. They haven't been able to improve upon the design over the years."

—Scott Rousseau

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