

less antimony and thus softer shot. When I tested Remington STS target ammo against Remington Gun Club, I found that the softer lead in the Gun Club ammunition opened my patterns about one choke designation. This isn't necessarily bad, but you should be aware of it. For very long range shooting, you want the hardest shot you can find.

I don't know how much longer the relatively high cost of reloading and relatively low cost of some factory ammo will prevail. I do know that this is a good time to lay in a supply of certain brands of factory shells. It is a lousy time to take an aggressive position on bagged lead shot.

BOREMASTER

Some of you are wise enough to

pick up a gun and, if you shoot it well, leave it alone. If a choke gives a good break on a target, that's all you need to know. Others of us aren't quite so lucky. We analyze, tinker and fuss with our guns. A difference of .002" of choke constriction is an absolutely vital statistic. We simply must know the length of our forcing cones and exactly how much a barrel has been 'backbored'. In short, we wallow in nit picking.

For this tormented minority (to which I confess I belong), there's a new bore gauge that you might like to take a look at. It's called the BoreMaster. With it you can measure chokes, bores, forcing cones, chambers and wall thickness. It's the brain child of Bob Foege, CEO of Robert Louis, Inc. You might remember them as the suppliers of the most excellent

Shotgun Combo Gauge stock measuring device.

A quick flip through Brownell's catalogue will show no fewer than half a dozen bore gauges, plus a wall thickness gauge. You'd think that would be enough, but there is always room for a better mousetrap. Most of the gauges on the market are three-ball gauges on a single stick probe with a dial or digital indicator head. The three balls are spring loaded and self-center in the bore. I used the Stan Baker bore gauge for years and found it easy to use and accurate.

The BoreMaster is completely different. It uses a pair of 6" fingers, not a single probe. Think of a digital machinist's caliper with long, thin jaws. This approach has a number of advantages and disadvantages. First of all, the BoreMaster can measure just

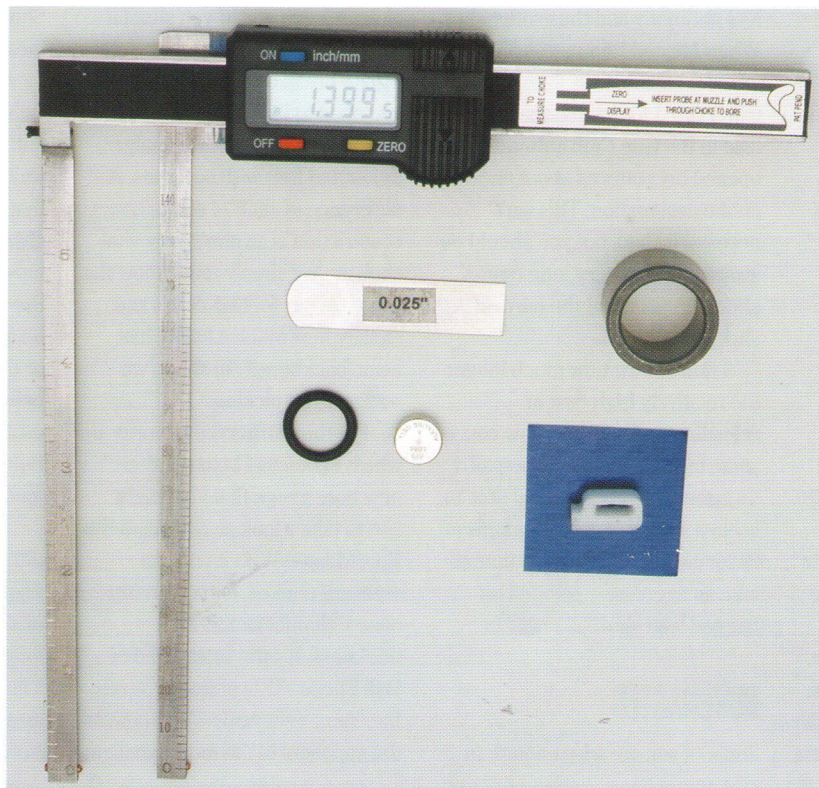
about anything from a .410 to a four bore. None of the others do that. It will also easily measure barrel wall thickness, which the others can't do either. It does it all with a digital readout, for which the others charge considerably more. You can read in millimeters or inches as you prefer. The big advantage to digital readout isn't accuracy so much as it is clarity and the ability to instantly zero.

The BoreMaster's digital readout has 'on', 'off' and 'zero' buttons. You can choose to measure in thousandths of an inch or in hundredths of a millimeter. The gauge has a calibration screw which you initially use to index the device to the .725" calibration ring supplied. You need only do this once.

Use is simplicity itself. To measure a choke, simply turn on the digital read-out and insert the probes into the choke right at the muzzle lip in the very front. Zero the gauge and push the choke slowly back into the bore. The difference between the choke diameter and the bore diameter is your choke dimension. Always push the gauge from the narrow to broader measurement or it won't work correctly.

The six inch fingers are marked in both millimeters and inches, so it's easy to measure the length of the conical and parallel sections of the choke. Ditto chambers and forcing cones. The probes will separate to 1.4" so you can measure really big shotguns or small canons too.

In addition to bore, choke, chamber, forcing cone measurements, it also measures wall thickness. Normally, this requires a separate \$100 tool, but the BoreMaster does it easily. Just slip on a rubber 'O' ring to provide closing pressure on the probes,



install a nylon fitting on the end of one probe and measure away. Nothing easier.

The big pluses to the BoreMaster are: the ability to handle virtually any size shotgun barrels; the convenience of digital readout and the ability to measure barrel wall thickness. A fourth big plus is price. At \$269.95 the BoreMaster is considerably less expensive than any other digital read-out bore reader that covers the same broad range of sizes. Brownell's lists the excellent Stan Baker 10 ga to .410 bore reader at \$422, but it's not digital and can't do wall thickness. Skeet's Universal Digital Gauge is \$395.80 from Brownell's. CSP Professional's digital bore micrometer set is \$528.35.

So, it's a no-brainer, right? Well... not exactly. My main concern with the BoreMaster was that it was easy to use, but difficult to use accurately. I've fooled around with the gauge for over three months and am just starting to get the feel of how to use it. It

requires a very subtle touch indeed. For me, the conventional three ball gauges from Baker, Skeet's and CSP were initially easier and more accurate to use. With the BoreMaster my readings were, at first, so varied that they were useless. I found myself taking repeated measurements to see which number came up the most often and then going with that. As I became more familiar with "wiggling the probes about so that they settle properly in the bore's centerline" (a quote from the instructions), I did better. I still vary a few thou from measurement to measurement, but I'm improving. I don't think that the BoreMaster will ever be as accurate as a three ball system because there is more flexure in the probes, but it can be acceptable.

Another concern with the BoreMaster is that it only has 6" probes, while the competition is up to 16" long. Measuring from the breech and again from the muzzle, a 16" gauge will cover an entire 32"

barrel. Six inch probes won't cover a standard chamber and exceptionally long 4" forcing cones. Nor are they long enough to measure some very long fixed full chokes or some more exotic barrel interiors like Fabarm's 'Tri-bore' barrels. They also won't reach more than 6" into the barrel to measure wall thickness. Still, the 6" probes will cover 95 percent of the measurements you will need. I also had trouble measuring more than a fixed .036" choke. With more relief than that, the probes edges expand to the choke walls and the measuring balls float. Of course, this was only the case with a fixed choke. Screw chokes of any

dimension were easily measured because you could go in from the back.

Quality of the BoreMaster tool is adequate, but not exceptional. The marking of the inches on one probe could have been done more clearly. If you are looking for consistent accuracy to .001", I don't think that this is the tool for you. But, if you are willing to take some time to get the feel of using the BoreMaster and need accuracy within a few thou, the price and convenience of this tool is appealing.

The BoreMaster comes in a good quality foam lined plastic box with a .725" ring test gauge, a .025" flat test gauge, a barrel wall thickness plastic fitting, two 'O' rings and a spare battery. Also included are several pages of detailed operating instructions with diagrams. The product guaranty is one year. (Robert Louis Company, Inc., 31 Shepard Hill Road, Newton, CT 06470, tel: 800-979-9156.) www.shotguncombogauge.com ■