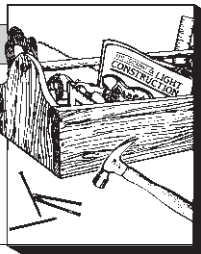


Hammer Drill With Brains

by Clayton DeKorne



The buzzword "smart" was originally adopted by the computer industry to describe computer-automated systems. Since then manufacturers have touted "smart" appliances, "smart" thermostats, and "smart" houses. And now *Metabo*, a West German tool manufacturer (Metabo Corporation, 1231 Wilson Drive, West Chester, PA 19380; 215/436-9072), is promoting a line of power tools with the same claim. I tested a Metabo HD 800 hammer drill to see just how smart it really is. For Metabo, "smart" seems to mean simply "electronic control;" the actual microchip wizardry involved is limited. Those of you, like myself, who were expecting an R2D2-like employee replacement, have to be patient. Nonetheless, the tools do promise improved performance.

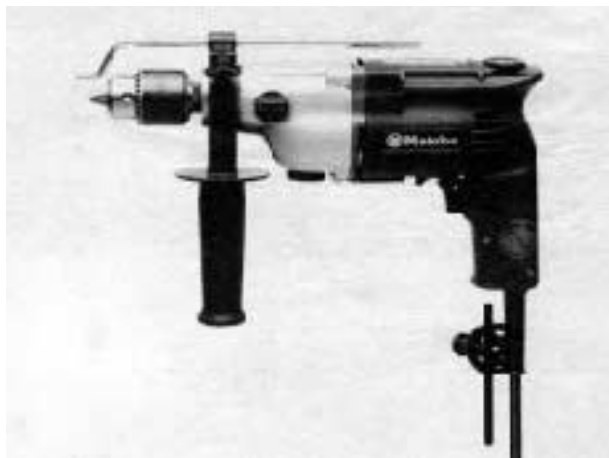
The Metabo HD 800 is the Cadillac (or rather, BMW) among hammer drills. Its body is well-balanced. It is identical in shape to the AEG 1/2-inch hammer drill except that the front half of the body is cast in aluminum rather than plastic. It is

up the voltage to maintain the set number of RPMs. Thus, when you hear down on the tool, the motor doesn't bog down.

Maintaining the RPM of a drill motor seems most important when drilling through very dense materials. In soft brick, low-strength concrete, or concrete block, the drill didn't perform noticeably faster than the AEG 1/2-inch hammer drill. But when drilling a 1/2-inch hole 3 inches into high strength concrete, the Metabo drill performed about a minute faster than the other drill. This may not sound like an impressive gain but if you drill a lot of large diameter holes into concrete or steel, the time can add up.

More significant than the time savings to me is the fact that the motor was not strained by leaning into it for a long period of time. This suggests that the tool may be less likely to burn out. If that is true, buying this hammer drill may be a smart investment.

If the motor does heat up from overloading, a monitor that senses



The HD-800 hammer drill maintains constant rpms, and won't overload or jam.

heavier than the AEG, and more heavy-duty. A 7-amp motor powers a two-speed reduction gear, referred to as the "turtle gear" and the "rabbit gear." The low-speed range (indicated by a turtle on the dial) runs continuously between 150 to 950 RPM; the high-speed range (indicated by a rabbit) runs from 1,200 to 2,400 RPM. The drill is double-insulated and reversible. And it has a slow-starting trigger switch so the motor speed picks up slowly. This smart little feature avoids a sudden jerk when the drill is started at high speed.

But the heart of "smart" on the Metabo drill is an electronic device called a *thyristor*, which "doses" voltage to the drill motor under load. When the drill is spinning freely at a given RPM, the motor only uses some of the 115 volts available to it. Under load, the thyristor automatically steps

temperature of the windings will cut off the power supply. I made an effort to activate this feature and failed. This alone is significant. I was thwarted in my effort not only by the thyristor, but also by a safety clutch. If I pushed sideways on the drill in an attempt to jam the bit in its hole (not a smart thing to do) the clutch stopped the chuck's rotation. This feature probably saved me from a broken wrist as well as saving the life of the motor.

The Metabo HD 800 is a bit pricey. Suggested retail price is \$302, compared to \$159 for the AEG. If you use a hammer drill regularly and want a tool that will be a permanent part of your collection, you should try to afford the Metabo. If you can, I doubt you'll regret owning it. ■