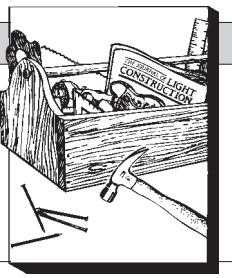

Tapeless Measures

by Clayton DeKorne

How often have you had to ask a customer to hold the end of your tape measure while you were scoping out a job? With an ultrasonic measurer that reflects sound waves off a distant wall or ceiling, you may be able to wow that customer instead. But be careful; these devices are limited. You can't measure from the ground to the peak of a gable end, for instance. The ultrasonic "beam" must hit square to a surface or the echo won't be reflected back to the sensor. Furniture, curtains, or pictures on the wall can absorb or scatter the beam, giving an inaccurate measurement or none at all. Even if you aim the instrument correctly, a measurement still can be altered by humidity and wind speed. Because of their limitations, these measures are not suitable for either framing or finish carpentry. But they may work well for estimating work. A few of the ultrasonic measures that have been pitched to the construction market are reviewed here.

These devices reflect sound waves off surfaces to measure distances. They are not accurate enough for either framing or finish work, but they are useful for estimating. Shown here (clockwise from left), are the Digitape, the Sonin 250 target and transmitter, the Dimension Master Plus, and the Sonin 30.

Tapeless Measure Comparison

	List Price	range	Automatic Shut-off Time	Ability to Calculate	Smallest Units Displayed
Digitape	$ 49.95	2-33 ft.	20 sec.	None	1/10 ft.
Sonin 30	59.95	2-30 ft.	2 min.	Add, multiply	1/4 in. or 0.1 cm
Sonin 60	79.99	2-60 ft.	2 min.	Add, subtract, multiply	1/4 in. or 0.1 cm
Dimension Master Plus	99.95	11/2-60 ft.	7 min.	Add, subtract, multiply, divide; Full keypad with conversion keys	1/4 in. or 0.1 cm
Sonin 250	169.99	21/2-250 ft.	2 min.	Add, subtract, multiply	1/4 in. or 0.1 cm

HouseWorks makes a simple, relatively inexpensive tapeless measure that is widely available from mail order houses (for information, contact International Consumer Brands, Inc., 126 Monroe Turnpike, Trumbell, CT 06611; 203/268-0200). Digitape uses a single Polaroid transducer that transmits and receives the ultrasonic pulse. Like all the electronic measures reviewed here, the Digitape accounts for its own length and measures from the target surface to its back end. Thus, it can be held up against one wall and will measure the total distance to another wall. Unlike the other measures, the Digitape is powered by a lithium battery, which is good for ten years. Unfortunately, the Digitape reads measurements in tenths of a foot. This may be relevant to engineers but it isn't too useful for contractors and designers.

Sonin offers four different tapeless measures, which are available in home centers and hardware stores (for information, contact Sonin Inc., 672 White Plains Rd., Scarsdale, NY 10583; 800/223-7511). The Sonin 30 and Sonin 60 read measurements off a distant surface like the Digitape. The Sonin 150 and Sonin 250 are long-distance measures that are used with an electronic target. While these two-piece devices are less convenient because they require a helper or a tripod to hold the target, they are more versatile and more accurate. The Sonin 150 and Sonin 250 emit an infrared signal to activate the target, which sends an ultrasonic pulse back to the receiver. The receiver accounts for the difference between the speed of the light beam and that of the sound waves to obtain a measurement.

Sonin has developed its own transducer that operates at a different frequency than the Polaroid. The signal is narrower (about 2 degrees) and can measure through doorways and down narrow hallways. Sonin calls it a "Smart Beam" because it only reads the strongest signal and weeds out weak, unwanted reflections that bounce off furniture or side walls. Unfortunately, the Sonin 30 often doesn't read anything if the response is scattered, as it is off uneven surfaces such as clapboards or heavily textured ceilings. The Sonin 60 uses two transducers, so the signal is clearer and the response is more consistent.

All four of the Sonin models add up linear runs, multiply for square and cubic measurements, and have simple memories.

Calculated Industries makes two 60-foot measures that can be ordered from the company by mail (contact Calculated Industries, 22720 Savi Ranch Parkway, Yorba Linda, CA 92686; 800/854-8074 or 800/231-0546 in California). The Dimension Master and Dimension Master Plus have three Polaroid transducers focused to a narrow beam. These are arranged on the face of the instrument instead of on the end, like the other measures reviewed here; operating the Dimension Master is more like using a camera than a garage door opener. It is awkward to use, however, even with two hands.

The Dimension Master Plus has an aiming light that flashes on a target surface up to 40 feet away. This helps to avoid obstacles. The biggest plus with this model is a feet/inch calculator with a full user memory. Not only can measurements be calculated, but any number can be entered on the keypad. An estimator can divide a linear measurement by 16 to figure the number of studs in a partition wall, for instance. The calculator will also convert measurements to feet and inches, feet and tenths of feet, or just inches, yards, or meters. These features make the Dimension Master Plus the best all-around estimating tool.

All of the measures reviewed here performed accurately to within one inch in 15 feet (99.93%). The Sonin models are slightly more accurate in this range, but in a series of repeated measurements they showed the most fluctuation. The Dimension Master Plus gave me the most consistent reading. Over the total range for each instrument the accuracy drops to about 99% for the Digitape, 99.5% for the Dimension Master, and 99.85% for the Sonin models. It is impressive that the Sonin 250 can maintain this degree of accuracy over such a long distance. This would be the one I would trust to lay out the excavations for a foundation. . .but I'd still check my measurements when setting the forms. ■