

**Lenco Variable-Speed Turntable,
Model L-75**



MANUFACTURER'S SPECIFICATIONS

Speeds: Continuously variable. **Motor:** 4-pole induction. **Platter diameter:** 12 in. **Platter weight:** 8.8 lbs. **Arm:** Integral, with counterbalance, stylus-force adjustment weight, and anti-skating provision. **Cartridge mounting:** Removable head. **Dimensions:** 17½ in. W by 13¾ in. D by 6⅞ in. H. **Weight:** 32 lbs. **Price:** \$99.50.

While most of us are satisfied with turntables which operate at only three (or four) standard speeds, 78, 45, 33½, (and 16⅔) rpm, there are many applications where a continuously variable turntable speed is desirable. Not only the usual ±3% variation available on most of the better turntables, but anywhere throughout the entire range. Perhaps the user wants to dub a record with a complete change of pitch—rather more than the 3 per cent normally available. Perhaps he wants to create an effect by speeding up the tempo or lowering it to match a scene on his home movie film. Whatever the reason, some users need a wider range of speeds than they can obtain in the average turntable. Yet when he wishes to operate normally, he can do so without having to make a tiresome adjustment of the variable speed to arrive at the desired standard speeds.

Mechanically, the L-75 consists of a horizontally-mounted motor driving a long tapered shaft parallel to the turntable surface. An idler wheel, running on a similarly horizontal spindle and movable longitudinally throughout the entire length of the tapered motor shaft, contacts both the shaft and the machined underside of the turntable. As the idler is moved along the shaft, the rotational speed of the idler changes proportionally depending on the diameter of the shaft at the point of contact. At the same time, as the motor shaft increases in diameter, the idler is contacting a smaller radius of the platter which means that the motor shaft need not have so wide a ratio between its largest and smallest diameters. In fact, it is rather a neat problem to design the shaft and the travel of the idler to arrive at the desired speed range. The motor shaft tapers quite rapidly from a maximum diameter of 0.425 in. at the large end near the motor to about 0.200 in. over the range from above 78 rpm down to about 30 rpm, then steps down slightly and ends up with a diameter of about 0.100 in. at the 16-rpm end. The idler wheel travels the radius of the platter for a distance of 1.5 in. approximately. The movement is controlled by the speed-change lever at the right-front corner of the chassis. This lever moves

through an arc of about 25 degrees, and to facilitate setting to the standard speeds there are adjustable notches into which the lever latches. These "notches" can be moved slightly by loosening a single screw for each one and sliding the notch to the exact position desired. Thus in addition to having a continuously variable speed when desired, the user can select the four standard speeds accurately whenever fixed-speed operation is desired.

At the right front of the chassis is the ON/OFF switch which in addition to applying power to the motor also moves the idler into contact with the tapered motor shaft and the underside of the platter.

The arm is completely counterbalanced with a large weight at the rear, and the stylus force is adjusted over the range from zero to 4 grams by a smaller weight on an offset rod which extends forward from the tubular arm just back of the vertical pivot. This rod is calibrated in half-gram steps for ease in adjusting stylus force to the required amount.

Another rod is mounted on the rotating arm mount and extends backward. This, too, is marked with a number of notches into one of which a loop of fine plastic "thread" is placed. This thread carries a small weight on the other end, and the thread is dropped in an adjacent loop of corkscrew-like rod also extending backward, but attached as a stationary part of the arm mounting. This provides for anti-skating

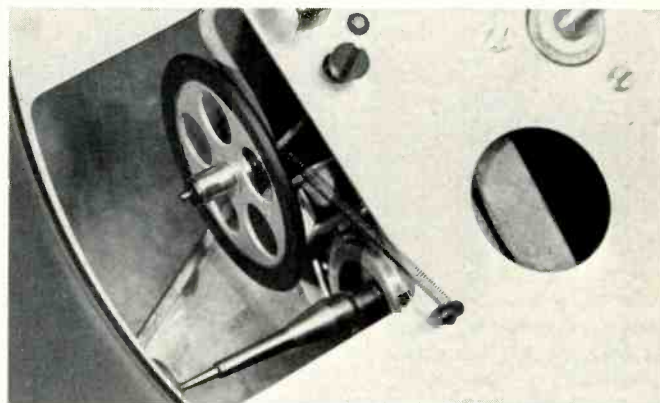


Fig. 1—Close-up of the idler retracted from the motor shaft. In operation, the idler contacts both the motor shaft and the underside of the platter.



Fig. 2—ON/OFF switch at the right-front corner of chassis, with the arm rest just back of it, followed by the cueing lever.

compensation, and with the two weights furnished any degree of compensation may be attained. Tables in the accompanying instruction booklet indicate the weight to be used and the notch into which the thread should be placed for the correct adjustment for the stylus force being used. The hole through the large counterweight is placed eccentrically to permit adjustment to compensate for the bent-arm design of the tonearm. The cartridge mounts in a removable shell which is held on the end of the arm by a locking ring.

A large curved lifter located between the arm mounting and the platter is raised or lowered by a lever just behind the ON/OFF switch. The forward end of the arm can be held on its arm rest—a plastic molding which holds the arm quite firmly.

The 8.8-lb platter is neatly machined on the underside where the idler contacts it, and it is dynamically balanced. A heavy molded pad completes the unit, and accommodates a stroboscope disc at its center, with discs being furnished for both 50 and 60 Hz.

The turntable chassis is solidly mounted to a base frame, neatly finished in walnut, and the frame itself is flexibly suspended on a particle-board baseplate, using damped springs for the mounting method. Thus the whole base is flexibly mounted, contributing additional mass and therefore considerably better silencing and isolation from external vibrations. The baseplate is restrained by two metal plates which are attached to the base frame by wood screws.

Performance

Putting the unit through the usual tests, we found that wow measured 0.08 per cent, with flutter somewhat less at a comfortable 0.06 per cent. Signal-to-noise was measured at 39 dB below a recorded level of 3.54 cm/sec at 1000 Hz, which is our standard method of making S/N measurements. Rated under the commonly used "ARLL" (audible rumble loudness level) figures, the *audible* rumble works out to be approximately -58 dB, while actually measured with the "A" network, rumble was noted as -56 dB, which is excellent.

One performance feature which is desirable but not always retained on automatic turntables is the accuracy with which the stylus lands in the groove from which it was lifted when the cue control is operated. Our reaction is that if a cue control is provided—as it usually is—it should drop the stylus down exactly into the groove from which it was lifted, and the Lenco L-75 does just that. Not all do.

The idler in this unit deserves a special mention because of its unique design. Most idlers used in phono turntables

have a thickness of about 3/32 in. and when they contact the tapered motor pulley or shaft, there is likely to be a variation in speed because of the finite thickness of the idler. It could be contacting the motor shaft on its upper edge or on the lower edge, or anywhere in between, resulting in a small speed variation. In the Lenco L-75, the idler wheel surface is tapered to ensure contact only at the center of the idler's thickness, which means that the point of contact is relatively fixed when set, and the speed variation is therefore minimized. This is, in our opinion, a good feature, and worth mentioning.

Furnished with our test model was an Elac STS-344 cartridge, and with it we found that tracking remained effective down to a stylus force of ½ gram. The limitation appears to be in the cartridge rather than with the turntable and arm combination. For the user who wants complete flexibility in speed control, the Lenco L-75 is probably the only unit on the market which will provide a rotational speed of 34.87 rpm if the user should actually want that speed—or even 56.14 rpm, or any other speed between 15 and 83, for whatever reason a user might have for such un-standard values. It is attractive in appearance and effective in operation.

C. G. McProud

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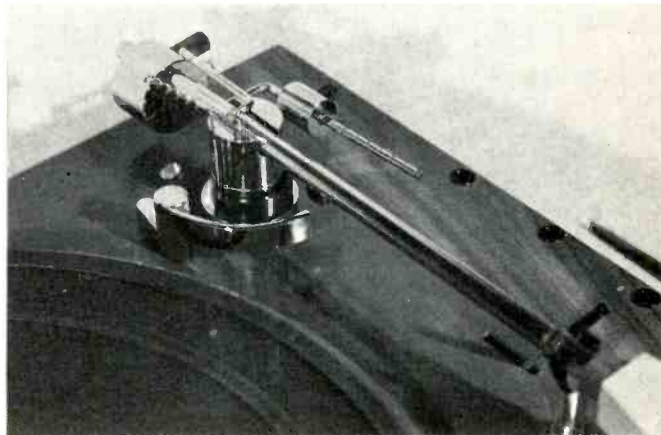


Fig. 3—The mounting of the Lenco arm, showing counterweight with its eccentric hole, stylus-force adjustment weight, fixed and moving arms for the anti-skating mechanism, and the curved cueing lift.