

## Dual 601 Turntable



### MANUFACTURER'S SPECIFICATIONS

**Speeds:** 33-1/3 and 45 rpm. **Wow & Flutter:** Less than 0.06% DIN B. **Rumble:** -63 dB, weighted. **Variable Speed Range:**  $\pm 3\%$ . **Dimensions:** 12-1/2 in. W x 14-3/4 in. D x 4-1/2 in. H, less cover. **Price:** Less than \$270.00.

Dual must be one of the oldest companies in the audio business, in fact they celebrate their 75th anniversary this year! The first Dual turntable appeared back in 1926 and curiously enough, it used dual motors, one a.c. powered and the other clockwork. Both could operate the turntable and the choice was up to the user. At that time, twin operation was not uncommon but usually the two motors were clockwork or an a.c. motor might be employed to wind up the spring—a method preferred by many broadcast stations because of hum problems!

The Dual line of automatic record changers have long been noted for exceptionally fine workmanship and outstanding performance. Recently two single-play models were introduced, the Models 601 and 701, the latter being a direct-drive unit costing \$400. Model 601 is similar in many respects, but it has a belt drive and a slightly different tone arm. Styling is neat and attractive in charcoal black and silver with a highly polished tonearm, and it comes complete with a walnut finish base and hinged, plastic dust cover. Although the 601 looks fairly conventional, it has some rather unusual features. For example, the two-position speed con-

trol on the left is a rotary lever type, but at the shaft end is a small concentric knob which controls the pitch—in other words, a fine speed adjustment. This does not use an eddy current wheel or tapered spindle but it actually *expands or contracts the drive spindle*. Engineers who use lathes or coil winders are familiar with this concept, but as far as I know, the 601 is the only turntable to make use of it.

On the right is another rotary lever for *Start-Stop* and to the right of that is a small control for single-play or repeat. Behind it is the cue lever, and further to the rear is the anti-skating control which is calibrated for conical, elliptical or CD-4 styli. The tonearm is 8-3/4 in. long, and the counterweight is elastically damped to reduce the possible effects of arm resonances. A four-point gimbel suspension is used, and the rotary dial of the stylus force gauge is calibrated from 0 to 3 grams. (Many years ago, I designed a phono cartridge and its weight was four ounces. The stylus was made of steel and held by a set screw that probably weighed more than a hundred modern styli!) The cartridge holder of the 601 has a quick release lever and an alignment gauge is supplied—a most important item. The motor is an eight-pole synchronous type, and a belt links it to a flywheel beneath the platter itself. The platter is a 12-in. aluminum casting, weighing 4-1/2 lbs, and is dynamically balanced. Speed indication is given by a strobe, which is located in a window to the left of the *Start* switch.

### Measurements

The cartridge used for the tests was a Shure V-15 Mk III, and no difficulty was experienced in mounting it in the shell with the hardware supplied. (Nothing is more infuriating than finding out that the screws supplied with a cartridge holder are a sixteenth of an inch too short! Have you ever tried buying these tiny screws?) The first measurements were for wow and flutter, and the combined figure came out at less than 0.05% using the DIN standard. Rumble was also extremely low at -65 dB (ARLL weighting). Tracking error is quoted as less than 0.3 degrees per inch and this was confirmed. The stylus force gauge was found to be remarkably accurate, with deviations less than 5% above one gram. Vertical and lateral arm bearing friction was insignificant, the figures specified being only 7 and 15 milligrams. Arm resonance, with the Shure cartridge, was low in amplitude

with the maximum points at two frequencies—8 and 13 Hz, a result of the decoupled counterbalance. The force required to operate the arm return mechanism was very small and not likely to bother the most fragile cartridge. Finally, the pitch control was checked, and the range was found to be +3 and -4% which is more than adequate for most purposes.

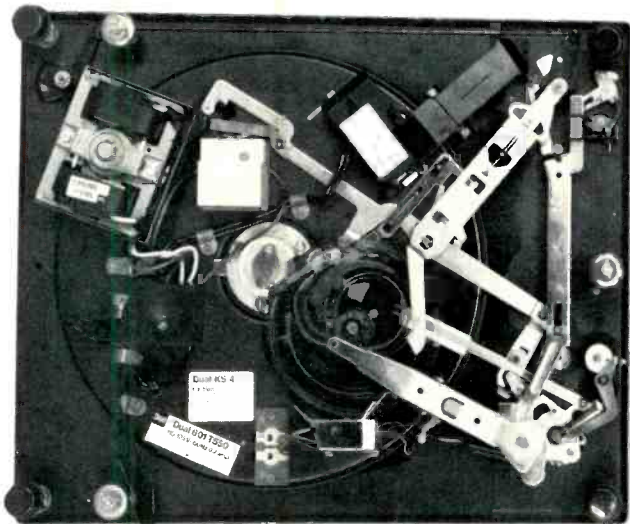


Fig. 1—View from beneath the Dual 601.

### In-Use Test

Records can be played manually or automatically. In the latter mode the control switch is turned to *Start* and the arm will move to the record lead-in groove (if the selector switch is set to 45, the arm will drop to the correct position for 7-in. records). The alternative is to simply move the arm to the required position and then gently lower it with the cue lever—by which time the turntable will have reached its correct speed. The cue lever is well-damped and positive in operation with no side shifting—a pleasure to use. The whole player unit is spring mounted to the base but the tension is tighter than usual and acoustic feedback should not be a problem. The special dual-compliance arm counter weight helps a lot too, and it was surprising how much vibration could shake the base before audible mistracking occurred. Incidentally, the Shure V-15 tracked nicely down to 0.75 gram, but to be on the safe side the weight was increased to just over 1 gram. The instruction manual contains a table giving optimum settings of the anti-skating control for various tracking forces and styli, but I didn't find the adjustment *that* critical although it might be with CD-4 cartridges. The connecting leads were unsuitable for CD-4 use, but I understand that special low-capacity types are available.

Summing up: The Dual 601 is unquestionably one of the finest single-play turntables in its price range and it deserves the best phono cartridge to go with it. What more is there to say?

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