

## BSR 710/X Total Turntable



### MANUFACTURER'S SPECIFICATIONS

**Speeds:** 33 and 45 rpm. **Wow and Flutter:** Less than 0.1% DIN. **Rumble:** Less than 55 dB DIN. **Minimum Tracking Force:** 1/2 gram. **Record Stack:** 6 records. **Record Sizes:** 12-, 10-, or 7-in. **Dimensions:** 17<sup>1</sup>/<sub>8</sub> in. W x 14<sup>9</sup>/<sub>16</sub> in. D x 8<sup>3</sup>/<sub>4</sub> in. H with base and dust cover. **Price:** \$150.00 (incl. cartridge).

The 710/X might be considered an economy version of the top-of-the-line model 810 which we reviewed in June, 1972. The main differences are a lighter platter—4 pounds against 7, and ball-bearing pivots for the tonearm instead of gimbals. Appearance is almost identical with the same black motor board and contrasting satin-finish panel and pushbutton controls. Three of these adjust the arm for 7-, 10-, or 12-inch records and the other three are labelled STOP, SINGLE-AUTO and MANUAL. Behind them is the viscous-damped cue lever and next to it is a knob which adjusts the set-down position of the arm from a minimum of 5<sup>1</sup>/<sub>2</sub> inches from the record center to a maximum of six inches. Near the arm mounting is another knob—the anti-skating control which has scales for conical and elliptical styli. Tracking force is set by a control on the arm mounting and the dial is calibrated in steps of one gram up to four grams.

The speed control is at the front, to the extreme left, and it consists of a rocker-type lever centered in a vernier adjustment ring. Like the 810, the 710/X employs what BSR calls "a sequential cam system" which consists of eight pre-programmed cams located on a shaft running parallel with the chassis. The motor is also similar—a four-pole synchronous type that can be used on 120 or 240 volts by a simple wiring change. An additional motor pulley is supplied for 50 Hz line frequencies—thus the 710/X can be used in most parts of the world without too much trouble. Also supplied is a short

spindle (called a stub) which replaces the long automatic spindle for manual operation. In this mode, the arm is positioned by hand but the motor stops automatically when the record has been played. If the selector switch is set to AUTO instead of MANUAL, the record will repeat—until you get tired of it and push the STOP button. Accessories supplied with the 710/X include a strobe disc, stylus brush, stylus overhang locating gauge and adaptor bracket, manual 45 rpm adaptor, and slide-in cartridge carrier.

Our model came complete with a Shure M91E cartridge which we replaced with an ADC-XLM for some of the tests.

### Measurements

Wow and flutter measured a low 0.06% and 0.08% respectively. Rumble measured -35 dB (unweighted) corresponding to an ARLL (audible rumble loudness level) of about -59 dB. The vernier speed control gave a total variation of five percent. The cueing lever was nice and smooth in operation but tended to be a little slow if used at the maximum position. Calibration of the tracking force dial was very accurate and tracking error itself was under 0.5 degrees per inch over the whole record. There was no speed variation with change in line voltage from 85 to 135 volts. Cycling time measured 17 seconds from a standing start and 12 seconds from trip to set down in the automatic mode—a little slow, we thought.

The 710/X was very easy to set up and even the absolute beginner will have no difficulty in understanding the well-written instruction manual. Using the M91E, we found the optimum tracking to be just under 1<sup>1</sup>/<sub>4</sub> grams with the anti-skating dial set for two grams. No trouble was experienced from acoustic feedback (the suspension coils are foam damped and placed on rubber shock mounts). Changing cartridges is simple—the slide adaptor is lined up with an alignment post mounted on the motor board. When this is done and the cartridge fixed, a stylus cleaning brush is mounted on the post. The anti-skating adjustment is not at all critical and tracking force should be set for about 1<sup>1</sup>/<sub>4</sub> to 1<sup>1</sup>/<sub>2</sub> grams for cartridges like the M91E.

How does the 710/X compare with the 810? Well, rumble, wow and flutter figures were not significantly inferior and the only real difference concerns the extra friction of the arm mounting. We could track down to one gram without trouble, but if you want to use a super cartridge like the Shure V-15 Mk. III, ADC-XLM, or Empire 1000 ZE/X tracking at 3/4 gram, then the extra expense of the 810 is justified.

Incidentally, the unit can be bought without base, dust cover and cartridge. Designated model 700, this unit is priced at \$129.50.

*George W. Tilleit*

Check No. 55 on Reader Service Card

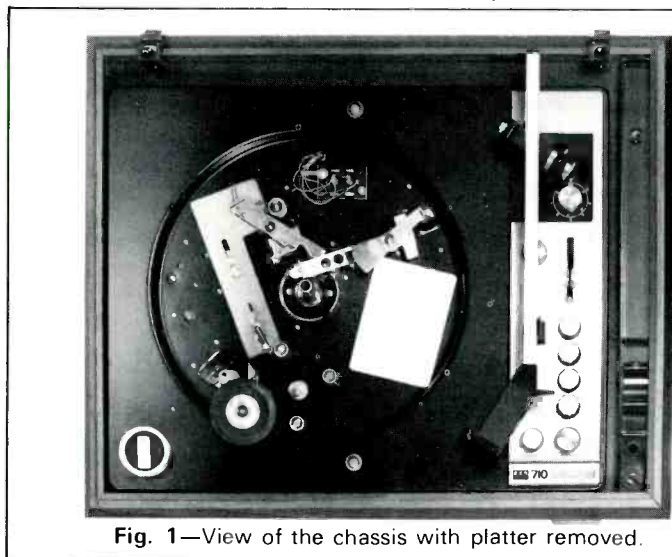


Fig. 1—View of the chassis with platter removed.



Fig. 2—View of the 710/X arm mount.