

suggest alternative methods for recalibrating the tone arm for correct stylus force with the Groov-Kleen installed. The Bib Changer Groov-Kleen Model 45 is priced at \$3.95.

● **Comment.** For test purposes, the Groov-Kleen was installed on the arm of a Dual Model 701 record player (the other Dual models use a similar cartridge housing). It appeared that, with most cartridges and most tone arms, the dimensions of the Groov-Kleen and its pivoted members would not interfere with correct cartridge mounting. Since the Groov-Kleen, when installed, does not extend appreciably above the top of the cartridge housing, in a properly adjusted record changer it should not contact the bottom of a stack of records on the spindle. We determined that the best technique for resetting the tracking force to compensate for the Groov-Kleen

weight was to rebalance the arm with the counterweight, so that the brush and pad rested on the record while the stylus just cleared the record surface. After this, the stylus force could be "dialed in" accurately in the normal fashion. Other tone-arm designs may require a different approach.

Using high-velocity test records, we found that, with the Groov-Kleen in use, the player's anti-skating dial should be set about 2 grams higher than normal for the selected tracking force. With a cartridge tracking at 1 gram, a 3-gram setting of the anti-skating dial tested just about right. We determined that the Bib Groov-Kleen had no discernible effect on cartridge tracking or arm resonance. Most of its slight mass is coupled loosely, if at all, to the arm during play. When we played our severely warped "test" record, which had previously caused mistracking on the record player, we no-

ticed a slight improvement in resistance to lateral groove jumping. The stylus still left the groove, but tended to return to approximately the same point instead of (occasionally) entering an adjacent groove.

The Bib Changer Groov-Kleen Model 45 seemed to be an effective dust gatherer, although most of what it picked up appeared to be surface dust; we doubt that the tracking brush penetrated the record grooves significantly. The only inconvenience we noted in its use was the difficulty of seeing the cartridge stylus for precise cueing. Of course, when a player is used as a record changer, this is of no importance. Overall, the inexpensive Groov-Kleen is a worthwhile addition to any automatic record-changing system. It helps solve the dust problem without introducing any undesirable side effects.

Circle 107 on reader service card

Akai GX-285D Stereo Tape Deck



● **THE Akai GX-285D** is the first of that company's open-reel tape decks to have built-in Dolby B-Type noise-reducing circuits. It is a two-speed ($3\frac{3}{4}$ and $7\frac{1}{2}$ ips), three-head, quarter-track stereo machine that accepts reels up to 7 inches in diameter. The GX-285D has provisions for bi-directional playback, tape reversal being initiated either by a strip of metal foil on the tape or manually by pushbutton. If foil is applied to both ends of a tape, the tape will cycle back and forth indefinitely.

The solenoid-controlled tape transport is operated by light-touch pushbuttons or through an accessory remote-control unit. It has three motors and a logic system that permits any mode to be engaged from any other without first pressing the STOP button (except for the RECORD function). The necessary time delays are built into the system, with the tape coming to a full stop and pausing for about a

second when going from fast wind or rewind to normal speed. The reversing operation takes about 3 seconds. The playback head is shifted mechanically to pick up the recorded tracks in the reverse direction.

The GX-285D is equipped with Akai's glass and crystal ferrite heads whose shaped poles provide extended high-frequency response without the need for large amounts of high-frequency equalization when the deck is recording. A pushbutton switch optimizes the bias level for standard or low-noise tape formulations. Speed change is by pushbutton, as is the selection of quarter-track mono or normal stereo operation. In addition to automatic end-of-tape motor shut off, the recorder can be switched to a full shut-down mode, in which the line power is switched off when the tape runs out.

The RECORD-interlock button, which must be pressed along with the FWD button to make a recording, is close enough to the transport controls for this to be a one-handed operation, yet not so close that there is any danger of engaging it accidentally. The PAUSE button (push to engage, push to release) stops and starts the tape almost instantly without releasing the record function.

Along the bottom of the control panel are the two $\frac{1}{4}$ -inch microphone-input jacks (for medium-impedance dynamic microphones) and a stereo-headphone jack for 8-ohm phones. Two large illuminated meters indicate recording and playback levels. There are separate microphone and line-input level controls

(each of which is a concentric pair for individual channel adjustment) plus a concentric pair of playback-level controls. The microphone and line inputs can be mixed, or, by using the DIN input jack which goes through the microphone gain controls, one can mix two line sources. A pushbutton activates the Dolby system (there is a green indicator light), another connects each channel's playback output to the opposite recording input for sound-on-sound recording, and a third switches the line outputs to the source or to the playback amplifiers.

In the rear of the recorder are an unswitched a.c. convenience outlet, a socket for the remote-control accessory, and the line inputs and outputs (these are paralleled by a DIN connector, with a switch for use with amplifiers having different output levels). The Akai GX-285D, in its walnut cabinet, is about 18 x 17 x 10 $\frac{1}{4}$ inches and weighs about 48 $\frac{1}{2}$ pounds. Price: \$750.

● **Laboratory Measurements.** The Akai GX-285D is factory adjusted for Akai SRT-F low-noise tape, which we used in our tests. Other high-quality, low-noise tapes, such as Maxell UD35-7, gave similar performance. The playback response over the range of the Ampex NAB-standard test tapes was ± 1 dB from 50 to 8,000 Hz at $7\frac{1}{2}$ ips, rising to +3 dB at 15,000 Hz. At $3\frac{3}{4}$ ips, the response over the range of the test tape (50 to 7,500 Hz) was ± 0.8 dB. The frequency response was virtually identical in both directions of tape travel, indicating

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