

TD 20A - SE Tape Deck

**STEREO
SHOWCASE**

334-0744

1608 EAST BOULEVARD
CHARLOTTE, N. C. 28203

OPEN
TUES. - SAT.
10 A.M. - 6 P. M.



TANDBERG®
— The European Alternative

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Tandberg has always had a reputation for craftsmanship and innovative excellence in its tape recorders. For years, Tandberg's recording technique has set a performance standard for the industry.

With the new special tape equalization the TD 20A-SE has now moved the tape noise barrier to an unbelievable - 80 dB.

Tandberg's patented DYNEQ® recording system reduces intermodulation distortion and prevents overload of the tape - resulting in recordings which mirror the original sound.

The special equalization

The tape noise level in analog open reel tape recorders has up to now been limited by the standardized record-and playback equalization curves. By adapting the record- and playback equalization curves to the properties of the improved modern tapes the TD 20A-SE reduces the tape noise level to -80 dB.

The equalization can be switched between the normal IEC or NAB standards and the special curves. This also allows tapes to be recorded and played back according to the existing standards.

| Equalization | Special record EQ | Playback |
|--------------|-------------------|-------------|
| 7½ ips | Normal | 50 usec. |
| | Special | 50/25 usec. |
| 15 ips | IEC Normal | 35 usec. |
| | Special | 35/10 usec. |
| 15 ips | NAB Normal | 50 usec. |
| | Special | 35/10 usec. |

Audio signal circuits

The exceptional recording quality is achieved, in particular, by two unique Tandberg-patented circuits: DYNEQ® — the dynamic equalization system, and ACTILINEAR® — the active linear recording output stage.

Conventional recording amplifiers have a steadily rising gain at high frequencies in order to obtain a flat frequency response over the entire audio frequency range. This rising gain (equalization) has a bad effect on high recording levels (loud passages) where a distortion-free performance is more important than a linear frequency response.

Tandberg engineers have recently developed a unique dynamic equalization amplifier — DYNEQ® — which overcomes this problem. The DYNEQ® system is a self-regulating circuit where the signal level at the input determines the gain.

DYNEQ® automatically adjusts amplification at high frequencies and prevents tape overload. It reduces intermodulation distortion dramatically, and increases the maximum recording levels of both microphone and line inputs.

The benefits of ACTILINEAR® recording include a considerable increase (20 dB) in the signal handling capacity of the record electronics, making them essentially immune to slew-rate limiting and transient intermodulation distortion (TIM). This means better transient response and lower distortion overall.

Front panel bias adjustment controls have been included to facilitate optimum performance with any known or prospective tape. Tandberg's equalized, peak-reading record level indicators have been retained, ensuring that you will always know the true signal level being fed to the tape. They have been graphically designed for easy reading. A phase-correction network has been added to sharpen the stereo image and prevent phase non-linearity. Four separate record-level controls, plus a master gain control, permit full mic/line and line/line mixing. Even switchable "simul-sync" has been included, with the possibility of making synchronized recordings of the two channels.

The transport mechanism of the TD 20A-SE is as advanced and noteworthy as its electronics. Capable of accepting reels up to 10.5" in diameter, the TD 20A-SE transport contains four motors. The capstan is driven by a brushless synchronous motor and uses a belt drive and heavy flywheel to eliminate vibrations being induced into the capstan. The two reel motors are direct drive to the reel turntables. The fourth motor is used to operate the pinch roller and tape gate, achieving smooth, noiseless control. All transport functions are controlled by a PROM (Programmable Read Only Memory). Tandberg's full-logic button control permits you to go from rewind into playback with complete safety, and allows the inclusion of "step-stop" editing with full monitoring capability. An optional PCM remote control operating by infrared signals is available. The TD 20A-SE is Tandberg's answer today to the challenge of the future.

Technical data (Two track — High speed model)

| | |
|---|--------------------------|
| Operating voltage: | 230 V/50 Hz ± 10% |
| | 115 V/60 Hz ± 10% |
| Power consumption: | 110 W |
| Speed tolerance, max. *: | ± 0.5% |
| Tracks: | 2 |
| Tape speed, inches per second: | 15 — 7½ |
| Speed variations, max. (Wow & Flutter) | |
| W.R.M.S. | 15 ips.: 0.03% |
| | 7½ ips.: 0.05% |
| Frequency ranges | |
| ± 2 dB | 15 ips.: 20—30,000 Hz |
| | 7½ ips.: 20—25,000 Hz |
| Signal/tape noise ratio minimum at max. speed, with recommended tape, see instructions for use. | |
| IEC-A-CURVE: | 80 dB |
| IEC linear R.M.S.: | 70 dB |
| Cross talk at 1000 Hz, minimum | Mono: 64 dB |
| | Stereo: 54 dB |
| Harmonic distortion, max. | |
| From tape at 320 nWb/m recording level: | 0.5% |
| Inputs. Input impedance/sensitivity/maximum voltage at 400 Hz. (The sensitivity of the microphone inputs adjusts itself according to the impedance of the microphone.) | |
| Microphone: | 800 ohms/ 0.2 mV — 20 mV |
| Line In 1: | 150 kohms/50 mV — 5 V |
| Line In 2: | 250 kohms/50 mV — 5 V |
| Outputs. Min. load impedance/voltage by unloaded output. | |
| Line Out: | 100 ohms/ 1.5 V |
| Headphones: | 8 ohms/1.3 V |
| Dimensions, | |
| Width: | 17 1/8" (43.5 cm) |
| Height: | 17 3/4" (45.0 cm) |
| Depth: | 7 3/4" (19.5 cm) |
| Weight: | 37.5 lbs (17.0 kg) |

* With nominal voltage/frequency and normal operating temperature.

● Specifications are subject to change for further improvement without notice.

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