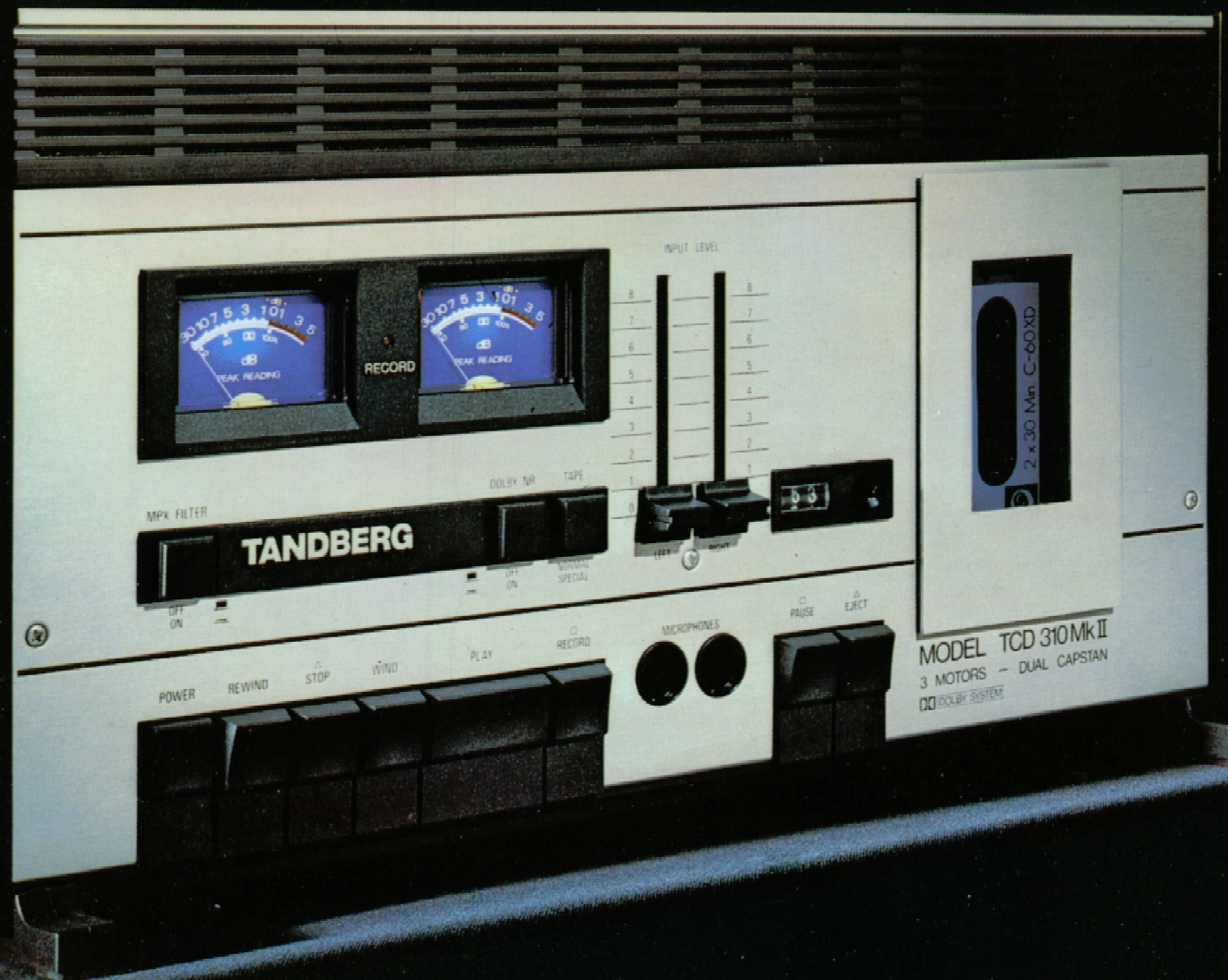


TANDBERG

TCD 310 MK II STEREO



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TCD 310 Mk II STEREO

-3 motors, dual-capstan closed-loop tape drive system, Dolby B* noise reduction system

The TCD 310 Mk II is a new model in the series of cassette tape decks from Tandberg. It was developed from the Model TCD 310 which has been test-reported in Hi-Fi magazines in many countries. The tests have placed the TCD 310 among the best cassette tape decks in the world.

- Frequency range: 30 Hz to 16 000 Hz (DIN 45 500)!
- Tape transport system has 2 capstans and 2 pressure rollers (closed loop). Amongst other things means that speed variations are reduced to a very low level
- Electronic control
- Tandberg-developed input circuits, optimized for minimum noise regardless of source impedance
- High quality magnetic heads
- Large peak level meters
- Mixing in mono
- Automatic stop
- Jack output for stereo headphones
- Built-in multiplex-filter for recording FM stereo programmes
- Can be used in vertical position
- For use with separate Hi-Fi stereo amplifier

The tape transport

The dual-capstan closed-loop system consists of 2 capstans with precision fly-wheels and 2 pinch rollers. This provides a stable tape path with minimum speed variations. The mechanism is simple and solid giving a reliable performance. Even heavily worn cassettes will not be damaged in the TCD 310 Mk II because it has a built-in safety device that automatically stops the tape-drive if the tape is jammed.

3 motors

The TCD 310 Mk II has one synchronous motor for record/replay and two motors for fast forward and backward winding. These two motors are in direct contact with the spool spindles. This ensures that the number of moving parts is reduced to a minimum, and there is no complicated mechanical transmission that could eventually wear and reduce the performance of the machine.

Self-adjusting input amplifier

This novel self-adjusting input amplifier was specially designed at Tandbergs Radiofabrikk. While conventional input amplifiers are optimized to a particular program source and are often badly matched to other program sources, this amplifier adjusts itself automatically to different program sources (radio, record player with ceramic pick-up, amplifier, microphone). The result is something that cannot be achieved with conventional amplifiers: a full dynamic range and the absolute minimum noise from the input circuits — regardless of which program source and which recording level are used.

Why the TCD 310 Mk II has peak meters

A VU meter only indicates the average value of the sound level which is somewhere between the weakest level and the strongest level during a given time interval. This type of meter will not reveal the peak intensity of short, powerful sound impulses and therein lies its disadvantage — exactly where there is the biggest danger of distortion. In practice it is impossible to avoid overloading a tape now and then on a tape recorder equipped with this type of level meter. Tandberg tape recorders have always been equipped with *peak-indicating meters* because we believe they give the truest indication of the sound level. On all Tandberg tape recorders the level meters are connected *after* the frequency-corrected record amplifier. For this reason the meters measure direct the current flowing in the record head. Tandberg is one of the very few manufacturers in the world who connect peak-indicating meters in this way! Peak-indicating meters *always show the most powerful components in the sound signal regardless of the frequency of the sound.*

Correct use of the large, precise peak meters on the TCD 310 Mk II results in: correct indication of the level at all times, never any audible distortion, and full exploitation of all the characteristics of the tape!

The Dolby B system

The TCD 310 Mk II has the Dolby noise reduction system. This reduces tape noise by about 10 dB compared with conventional systems. The Dolby system is especially important in a cassette tape recorder because the tape noise is higher than in a reel-to-reel tape recorder. The Dolby system can be connected and disconnected with a switch.

Multiplex filter can be switched in and out

All FM stereo transmissions have a pilot tone that needs to be attenuated by a filter before the program is recorded. In tape recorders using the Dolby system (such as the TCD 310 Mk II) it is essential to have a filter because the Dolby circuits accept the pilot tone as a program signal. If the filter is not present, the recording will have the wrong frequency curve and the reproduction will not be true.

General

Dimensions: width 17" (43 cm), height 4 1/4" (10.5 cm) and depth 9 1/4" (23 cm).
Weight: 14 1/4 lb (6.0 kg).

Technical specification

Power requirements: 240 V, 50 Hz or 115 V, 60 Hz.
Power consumption: 34 watts.
Tape speed: 1 7/8" (4.75 cm) per second.
Speed tolerances: ± 1% maximum with nominal power voltage and normal operating temperature.
Speed variations: maximum 0.2% according to DIN 45 511, peak, weighted.
Frequency range: 30 Hz to 16 000 Hz (DIN 45 500, the MPX filter disconnected).
Signal/tape noise ratio, measured with Tandberg Tape or equal tape, Dolby circuits connected. Reference 3%, 3rd harmonic distortion: greater than 65 dB (IEC A curve and DIN 45 500, Geräuschspannung). Greater than 55 dB (IEC, linear RMS and DIN 45 500, Fremspannung).
Channel separation at 1 000 Hz: greater than 60 dB from side 1 to side 2 and greater than 35 dB from track 1 to track 2.
Harmonic distortion: less than 0.3% from the amplifier with 0 dB rec. level: less than 3% from the tape with 0 dB rec. level.
Inputs: MIC: the input impedance adjusts itself automatically to dynamic microphones with an impedance between 100 and 800 ohms. Sensitivity from 0.15 mV to 20 mV. LINE: input impedance 220 k ohms. Sensitivity from 40 mV to 5 V. RADIO: input impedance 47 k ohms. Sensitivity from 8 mV to 1 V.
Outputs: RADIO/LINE: output impedance 10 k ohms. Voltage level 0.775 V. HEADPHONES: minimum load impedance 8 ohms. Output power 2 mW at 8 ohms.

* The name Dolby is a registered trade mark of Dolby Laboratories Inc., USA.