

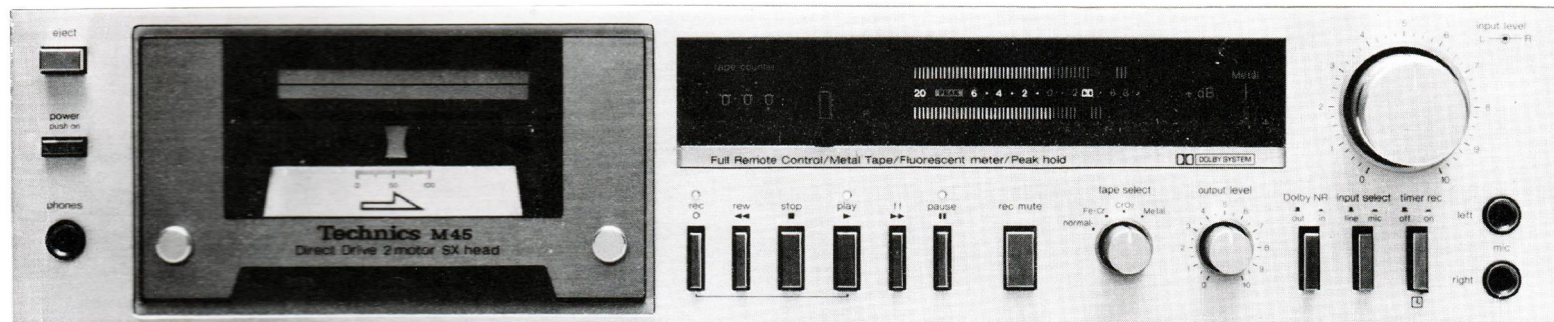
Technics RS-M45

Metal Tape Compatible Direct-Drive Stereo Cassette Deck with Peak-Hold, 2-Color FL Meters, and Feather-Touch Controls. Full Function Remote Control Optionally Available.



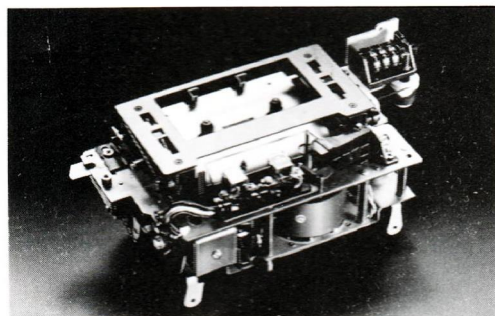
METAL
METAL TAPE

RS-M45 Metal Tape Recording Excellence in a Slim Line Direct-Drive Cassette Deck



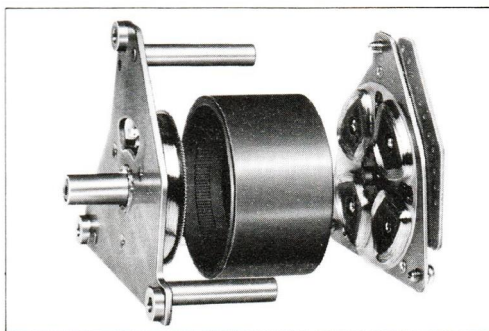
The RS-M45 delivers an extraordinary combination of style, performance, and faithful audio reproduction. This deck is equipped to take full advantage of the new metal tape formulation. The specially designed Technics' record/playback and erase heads can handle the very high magnetic coercivity and retentivity of metal tape. Because of these devices, the deck can translate metal tape into a very wide dynamic range with a flat, extended high-range frequency response. As a listener, you will enjoy a cassette deck which produces a precise, clear sound. Of course, metal tape handling capability is accompanied by high performance in other areas, including motor design, amplifier circuitry, and head design.

Direct-Drive System



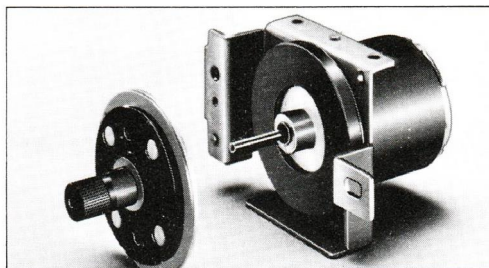
Planar-Opposed Direct-Drive Capstan Motor

In the RS-M45, a separate capstan motor and reel table drive motor are used to promote high performance and dependability. The direct-drive capstan motor eliminates any intermediate devices such as pulleys or belts that could interfere with the transmission of rotational energy. Specifically, we have employed our highly reliable "planar-opposed" DC motor, originally developed for use within the front-loading, vertical-hold, cassette deck format where conventional direct-drive motors would not fit. This motor has an integral FG (frequency generator) mechanism with 160-tooth annular gears which generate 960 discrete pulses per second. The planar-opposed configuration provides extremely high accuracy and long-term dependability. The pulses generated by



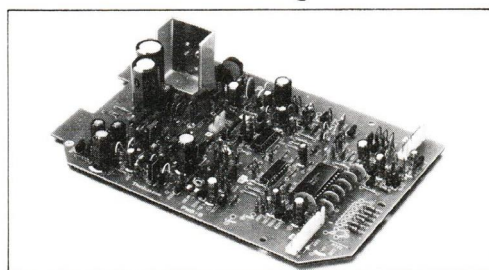
motor rotation are compared with a precise reference, which instantly corrects any deviations in rotational speed. The result is incredibly low wow and flutter of only 0.035% (WRMS).

2 Motor Drive — Separate Reel Motor with Magnetic Clutch



In all of the RS-M45's tape transport modes, the supply and take-up reels are driven by a DC motor equipped with a magnetic clutch device. As the motor rotates at high speed, it drives a disc-shaped magnet attached to the motor shaft. Above the magnet is a metal disc and pulley arrangement, so that the magnet and the metal disc are coupled by a magnetic charge. This design regulates the appropriate amount of energy which is transferred to the reels, minimizing mechanical friction problems and wear and tear on moving parts. It also maintains constant tape tension throughout the full run of the cassette tape.

Feather-Touch Logic Control



Direct Mode-to-Mode Switching with Only 0.8mm Stroke

Switching from one tape transport mode to another is easy and straightforward, thanks to this advanced switching system based on I²L (Integrated Injection Logic) IC control. This circuitry automatically calculates switching times so that no excess strain is placed on the tape or the deck's mechanisms. The tape transport control buttons are designed to operate with a slight 0.8mm stroke and only 70g of pressure. Full auto-stop and remote control capabilities are also included in this logic-control system.

Full Function Remote Control Optionally Available

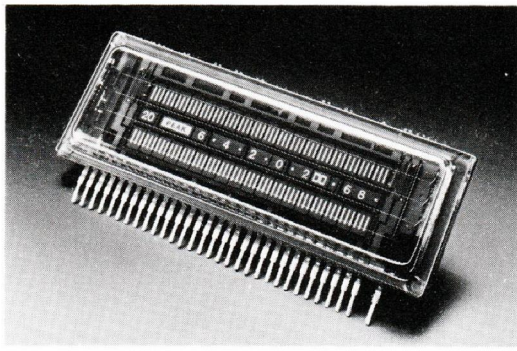


With the optional remote control box RP-9645, you can operate all tape transport modes from a comfortable listening position. Record, rewind, play, fast-forward, pause, stop, and record muting can all be controlled from an independent location. With the pause and record muting controls, it's easy to edit out unwanted program material and produce a clean, professional sounding tape. And the feather-touch remote control buttons further the enjoyment of remote control.

Peak-Hold 2-Color FL Meters

Auto-Reset Peak-Hold Indication

With our new auto-reset peak-hold indicating meters, you can tell at a glance the highest peaks occurring in the last two seconds. An FL (fluorescent) bar-graph meter employs a memory circuit to hold the peak level for about two seconds, after which it is automatically reset. Of course, the instantaneous musical peaks are simultaneously displayed. This means that even under the most difficult recording conditions you will be able to accurately set recording levels to achieve maximum dynamic range with minimum noise and distortion.

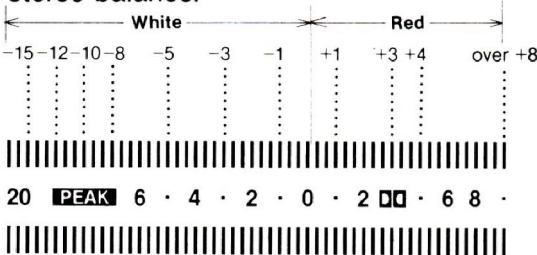


No Overshoot, No Delayed Response

These meters are completely electronic, true peak-indicating instruments. Instantaneous signal peaks are displayed by fluorescent tube segments rather than conventional mechanical needles. As a result, response is instantaneous, and there are no ballistics problems such as overshoot or delayed response to interfere with meter accuracy. Furthermore, there are no moving parts to wear out.

18-Segment 2-Color Display

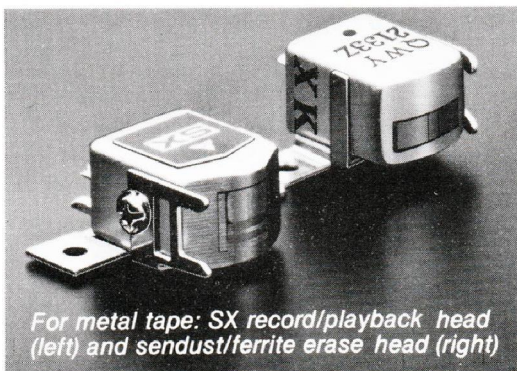
The parallel bar-graph configuration is divided up into 18 segments for high accuracy and easy reading. Below 0dB, the indication is white; above 0dB it switches to red so that you can better judge critical, large signal peaks. Since the left and right channel meters are arranged in parallel, it's also easier to compare signal levels to insure optimum stereo balance.



Metal Tape Recording

New Advances in Cassette Tape Recording

After years of rumors and high hopes among audiophiles, metal tape has finally arrived. This new type of tape utilizes pure metal particles, instead of oxides, in its magnetic particle formulation. These pure metal particles contain nearly twice the coercivity and retentivity of their predecessors. High retentivity allows higher signal levels to be recorded and played back without



overloading the tape and causing distortion. The major benefit of high retentivity is greater midrange headroom, which results in an increased dynamic range. High coercivity is also an important advantage because it prevents self-erasure during the recording of higher frequencies. This is why metal tape displays a remarkably extended high range response (20—20,000Hz). But, in order to achieve this performance, a tape deck must provide much more bias current than conventional tape formulations require. It also must provide special recording equalization even though the playback equalization in CrO₂ equivalent and metal tape is identical. Moreover, erasure current must be much greater because of the high coercivity of metal tape. These conditions create the need for vastly improved tape heads, since conventional heads are not designed to handle such large signals.

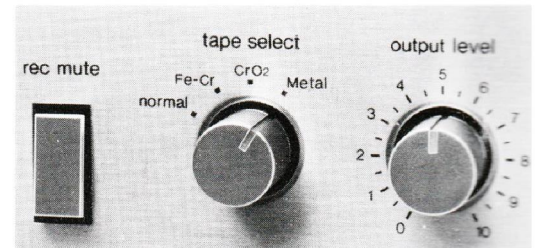
SX Record/Playback Head with High Saturation Flux Density

Since metal tape has about twice the coercivity and retentivity of ordinary tape, it will hold much more information before reaching a saturation point. Getting the information onto the tape in the first place is the difficult endeavor, in which the rec/pb head plays a key role. In designing a head for metal tape recording, the major requirement is that the head should not reach a saturation point before the tape does. Our SX rec/pb head has a saturation flux density of 9,000 gauss, so there is plenty of extra headroom to handle the large bias current and higher recording levels. SX (Sendust Extra) is our proprietary sendust formulation, manufactured with our own squeeze casting technology, which incorporates a performance-enhancing additive mixture. The head's laminated core construction aids high frequency response by reducing eddy current loss. The hardness and smoothness of the tape contact area provide great resistance to abrasion while the precise gap dimensions accentuate the metal tape's potential. Even ordinary tape formulations will probably exceed your expectations with this head.

Sendust/Ferrite Erase Head with High Efficiency

Coercivity is a measure of how difficult it is to erase magnetism that has been imparted to a material. Although the high coercivity of metal tape protects it from self-erasure at high frequencies, it also makes it difficult to erase a previously recorded tape. Ordinary erase heads do not have the efficiency required to wipe metal tape clean in order to re-record. If erasure bias current is increased in an ordinary erase head, the head itself heats up rather than erasing the tape. This problem will not occur, however, with our sendust/ferrite erase head because its maximum flux density is high enough to handle the large erasure bias current needed to erase metal tape. The ferrite core of the head prevents an unwanted temperature rise, while the sendust tape contact area resists abrasion.

Metal Tape Selector for Correct Bias and E

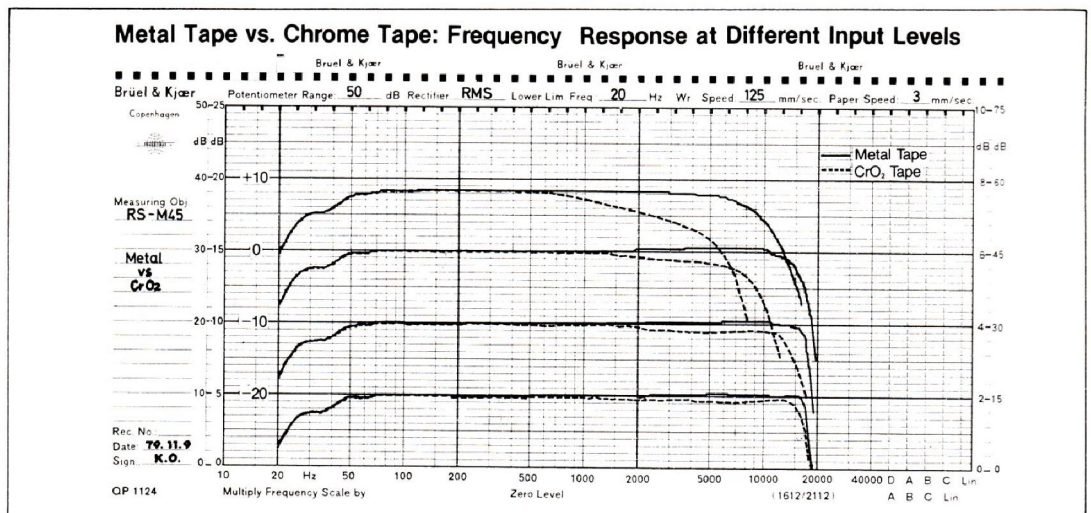


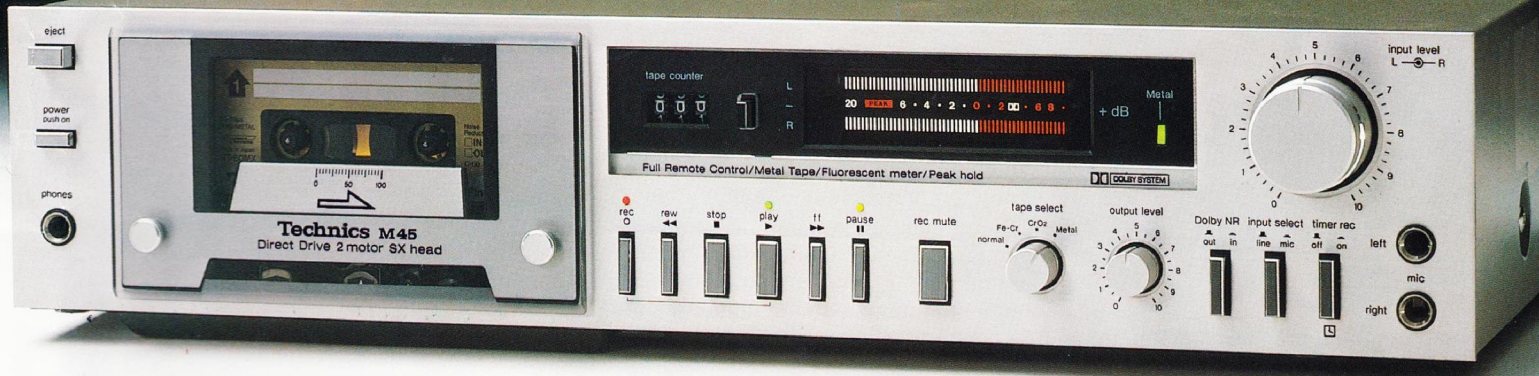
In addition to the conventional CrO₂, FeCr, and normal tape selector positions, the M45 has a separate position to provide the very high bias current and recording equalization needed to handle metal tape. Although playback equalization is the same as CrO₂ or FeCr tape, this 4-position tape selector provides greater convenience than separate EQ and bias selectors.

High Linearity Recording Amp and Strengthened Oscillator Circuitry

Because of the wider dynamic range encountered in metal tape recording, the M45 recording amp circuitry is built for high linearity.

The oscillator circuit has also been strengthened to provide the large amounts of bias current required to deal with the high coercivity of metal particle formulation.





Handling Convenience

Record Muting Switch

An independent "rec mute" button on the front panel makes it easy to record no-signal areas on the tape. This is convenient for editing out undesired program material.

Rec mute can be controlled from the optional remote control panel.

Timer Recording/Playback Switch

With an optional audio timer connected to the deck, recording will begin automatically if the cassette's erasure prevention tabs have not been broken off. If the tabs have been broken off, the deck will then automatically begin playback at the preselected time.

Dolby* NR Switch with Built-in MPX Filter

With the Dolby noise reduction switch "on" during recording and playback, you can expect a 10dB improvement in the

S/N ratio above 5kHz. The built-in MPX filter prevents FM Stereo pilot signal interference with proper Dolby operation.

*Dolby is a trademark of Dolby Laboratories.

High Gain Headphone Amp with Output Level Control

The headphone amp circuitry features an SEPP output stage. The line output level control knob on the front panel also controls headphone volume.

Electronic Full Auto-Stop Mechanism

A Hall-effect IC is used to electronically detect the end of the tape, thereby assuring highly reliable auto-stop operation in all tape transport modes.

Oil-Damped Soft Loading and Ejection

The tape compartment door has an oil-damped mechanism for smooth and quiet cassette loading and ejection.

Other Features

- Large, easy-viewing, cassette compartment window with internal illumination from the rear of the cassette.
- Compartment door is easy to remove for cleaning tape heads. Head assembly is visible through a small window for checking.
- L/R friction coupled, input level controls.
- Mic/line input selector.
- Front panel headphone and microphone jacks.
- Tape counter with reset button.
- Remaining tape scale.

Technical Specifications

Track System:	4-track 2-channel stereo recording and playback
Tape Speed:	4.8 cm/s (1-7/8 ips)
Wow and Flutter:	0.035% (WRMS)
Frequency Response:	Metal tape; 20—20,000 Hz 30—17,000 Hz (±3dB)
	CrO ₂ /FeCr tape; 20—18,000 Hz 30—16,000 Hz (±3dB)
	Normal tape; 20—17,000 Hz 30—15,000 Hz (±3dB)
Signal-to-Noise Ratio:	Dolby NR in; 68dB (above 5 kHz) Dolby NR out; 58dB (signal level = max. recording level, FeCr/CrO ₂ type tape)
Fast Forward and Rewind Time:	Approx. 85 sec. with C-60 cassette tape
Inputs:	
Mic;	Sensitivity 0.25 mV, input impedance 100kΩ, applicable microphone impedance 400Ω—10kΩ
Line;	Sensitivity 60 mV, input impedance 47kΩ

Outputs:	
Line;	Output level 700 mV, output impedance 2.5kΩ or less, load impedance 22kΩ over
Headphone;	Output level 125 mV, load impedance 8—125Ω
Bias Frequency:	85 kHz
Motors:	2-motor system 1-FG servo controlled direct-drive DC motor for capstan drive 1-DC motor for reel-table drive
Heads:	2-head system 1-SX (Sendust Extra) head for record/playback 1-sendust/ferrite double-gap head for erasure
Power Requirements:	AC 120 V, 50-60 Hz
Power Consumption:	40W
Dimensions (H×W×D):	9.8cm × 43cm × 34.5cm (3-7/8" × 16-7/8" × 13-5/8")
Weight:	6.1kg (13 lbs. 7 oz.)

Technics

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Division of Matsushita Electric Corporation of America

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