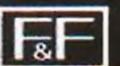


SONY®

Stereo Cassette Deck **TC-K96R**

New Sony TC-K96R Stereo
Cassette Deck Offers
Double Convenience with
Microprocessor Auto Reverse
and Remote Control



DOLBY SYSTEM

Sony Introduces the New TC-K96R with Doubly Convenient Auto Reverse and Remote Control

The new TC-K96R brings unprecedented convenience to recording and playback of stereo cassettes. Auto Reverse takes the work out of cassette changeover with automatic head and tape reversal. And the control panel detaches for easy, fingertip operation.

At the heart of this convenience is Sony's new microprocessor — electronics in the vanguard of today's computer revolution. This digital technology eliminates complex systems, dramatically increases reliability, and provides versatile logic control for added operating convenience.

In addition, recording and playback is highly accurate. Two motors — new BSL motors — and simplified tape transport assure constant tape speed for faithful reproduction. The ultra-hard ferrite-and-ferrite head provides stable tape-to-head contact for improved sound quality. Dolby NR System reduces tape hiss and increases clarity. Selectable bias and equalization enable optimal tape performance.

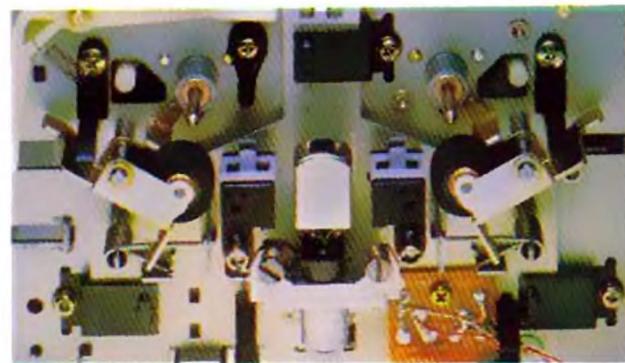
More great features include MEMORY counter, TIMER switch, REC MUTE, large VU meters with LED peak level indicators, MIC and LINE inputs with level controls, headphones output with level control, Auto Shut Off, and Soft Eject.

Truly convenient operation and highly accurate performance put the new TC-K96R at the limits of today's technology.

AUTO REVERSE

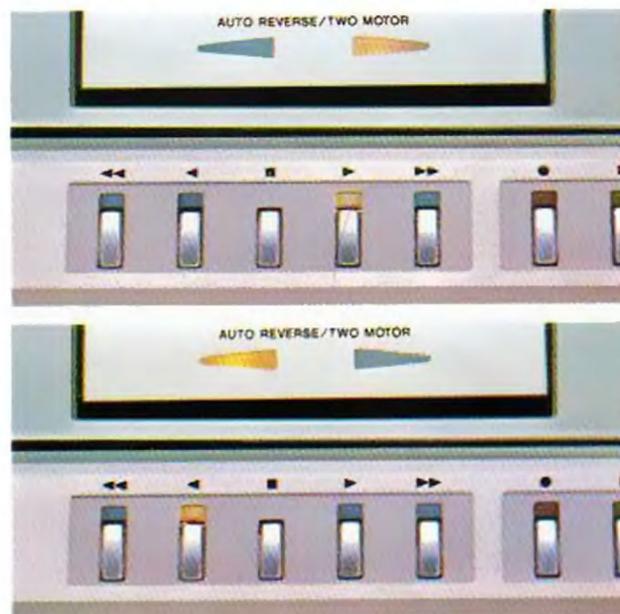
Roto Bi-lateral Head Provides Auto Reverse Convenience

Previously available only on Sony's top-of-the-line open-reel tape



decks, the Roto Bi-lateral head now provides extremely convenient Auto Reverse for cassette decks.

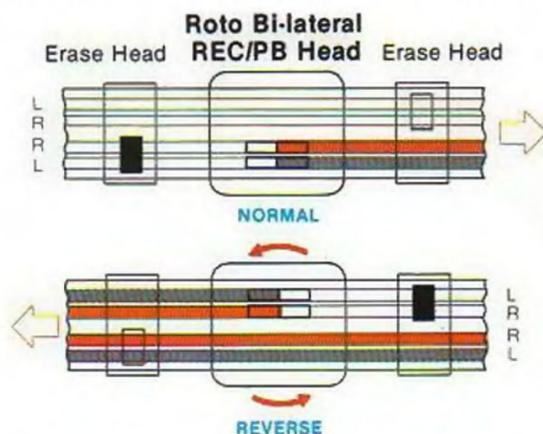
This patented system takes advantage of the fact that tape sides A and B left channels are on the outside portion of the tape and right channels are on the inside portion (a standard system used for all tapes). At the end



of the tape, in either record or playback mode, an end-of-tape sensor provides a signal to the TC-K96R microprocessor. This sophisticated electronic device stops tape motion, rotates the head 180°, and re-starts tape motion in the reverse direction — automatically. And because the response time is very quick, record and playback operation is almost interruption-free.

Roto Bi-lateral Head Ensures Optimal Performance

In addition to hands-off convenience, the Roto Bi-lateral head ensures

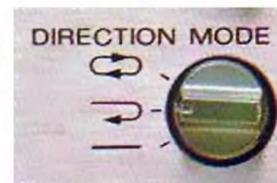


optimal performance. Conventional auto reverse systems either move the head linearly across the tape and electrically switch channels or use two

separate heads. The Roto Bi-lateral head, however, as shown in the diagram, rotates 180° so that left and right channels are identical for both tape directions. This means that record/playback characteristics are identical in both tape directions for optimal performance.

Direction Mode Switch Controls Auto Reverse

The three-position DIRECTION MODE switch makes available three modes of operation: no auto reverse —; auto reverse for one complete tape cycle —; and auto reverse for three complete tape cycles —.



REMOTE CONTROL

Remote Control Provides Convenient Operation At a Distance



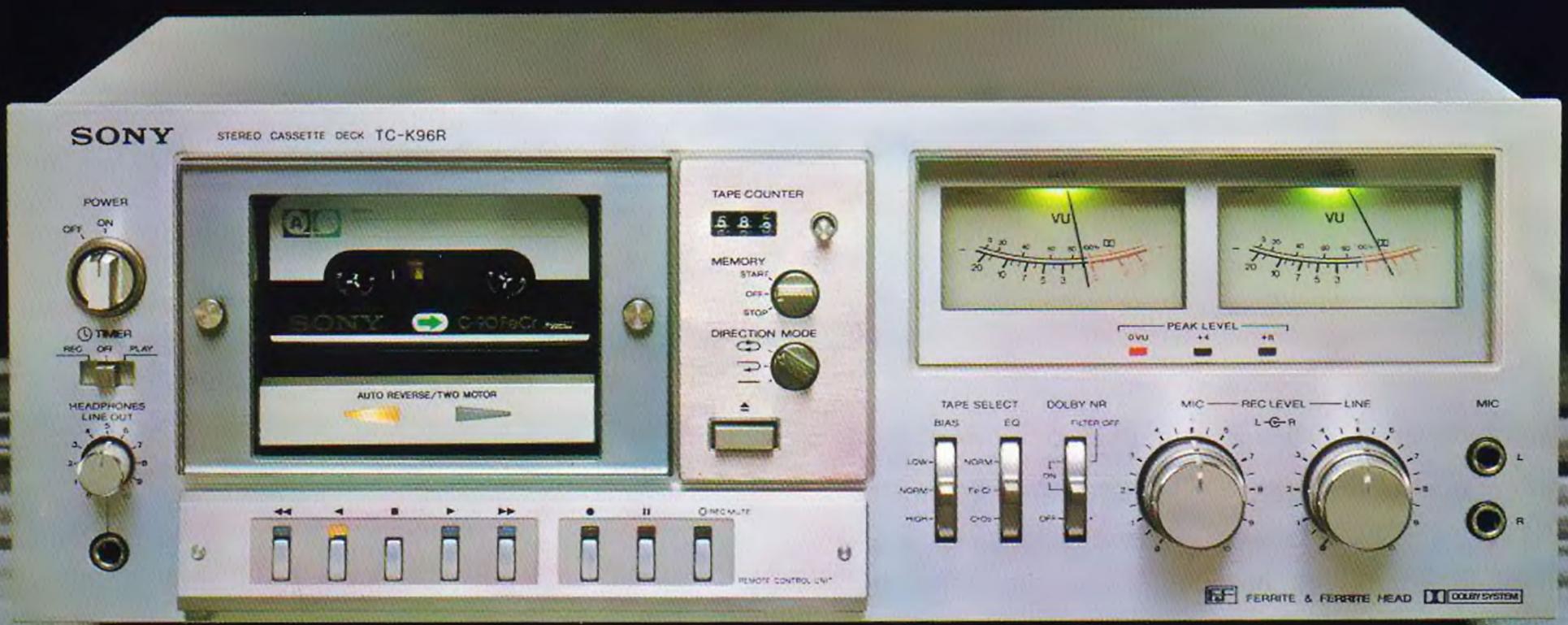
The TC-K96R control panel snaps off to become a remote control unit for convenient operation at a distance. This one unit, as an integral panel, or as a remote controller, provides all operations: Fast Reverse, Reverse Stop, Forward, Fast Forward, Record, Pause, and REC MUTE. Panel lamps indicate operating status. And a lightweight connecting cord allows remote control up to five meters distance.

All the Advantages of Logic Control

A solid-state electronic system replaces bulky mechanical levers to obtain all the advantages of logic control. And all the advantages of electronics.

In addition to high reliability, quiet operation, and quick response time, logic control enables any sequence of

Direction Mode in Auto Reverse (↔) provides automatic playback in Forward and Reverse for three complete tape cycles.



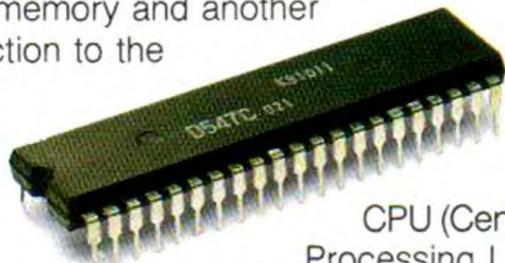
operations by merely pressing the appropriate feather-touch bar. For example, to go from Forward to Reverse is only one step, and there is no need to go through Stop. All other operations are similarly convenient.

MICROPROCESSOR

New Microprocessor Is at the Heart of TC-K96R Convenience

At the heart of TC-K96R convenience is Sony's new microprocessor, a "computer on a chip". In the vanguard of the computer revolution, this digital technology eliminates complex systems, dramatically increases reliability, and provides versatile logic control.

Essentially, the microprocessor comprises a tiny 4.8 x 5.9 mm chip of silicon onto which over 17,000 transistors have been integrated. One small section of the chip is dedicated to memory and another section to the



CPU (Central Processing Unit).

When a command such as "Forward" is inputted, the CPU refers to Memory for instructions. The Micro-

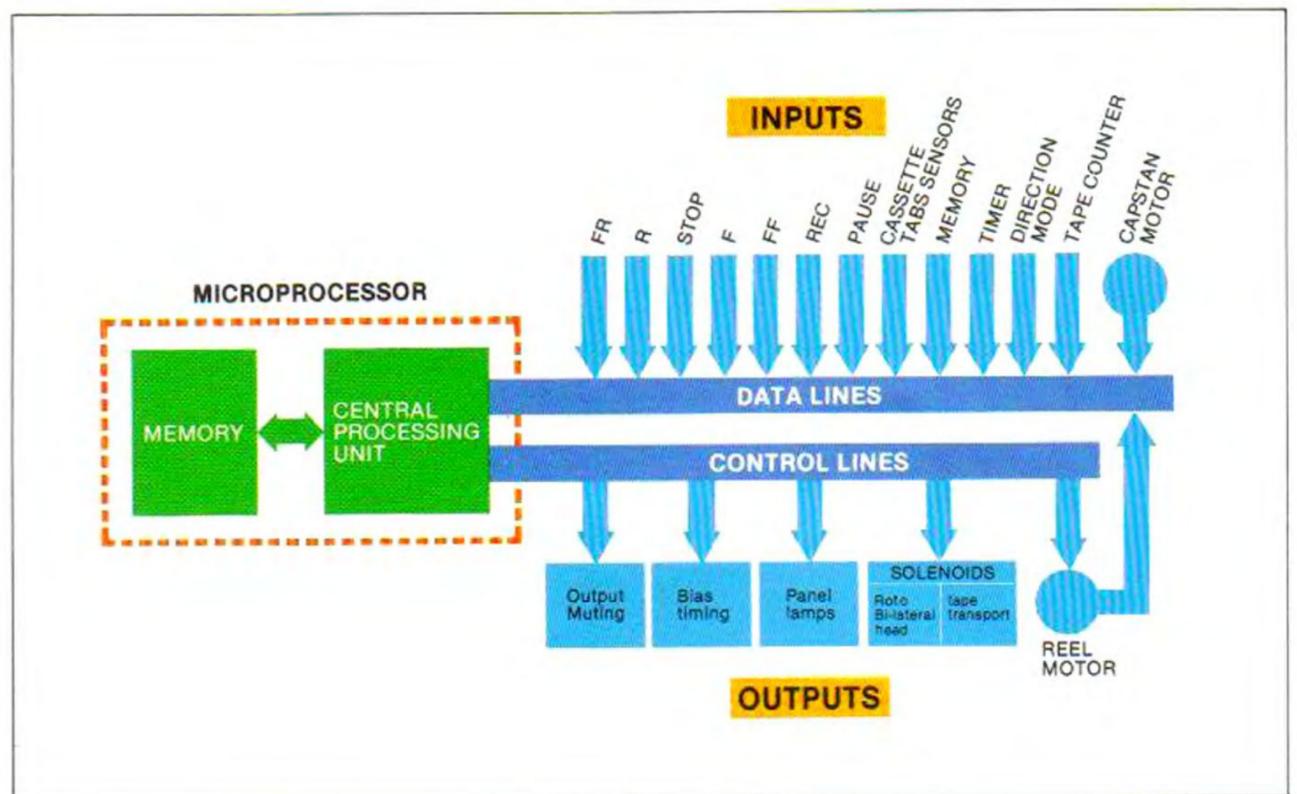
processor is continuously informed of current operating status (Stop, Record, Fast Reverse, or whatever) via a digital signal from the capstan motor. Then, according to the operating status, the CPU receives a series of instructions which the CPU outputs in proper sequence.

Microprocessor Increases Simplicity and Speed

Although the internal circuitry of the microprocessor is enormously complex, the number of external com-

ponents is greatly reduced and associated circuitry simplified. The control panel, for instance, has eight functions but requires only four wires in a single cable.

A further benefit is quick response time because the microprocessor handles command signals at extremely rapid speeds in accordance with actual operating status. This means rapid response to all commands as well as accurate, quick Auto Reverse.



TWO MOTORS

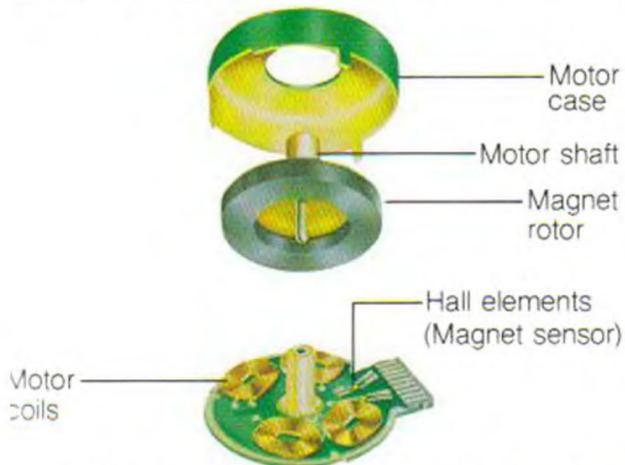
Simplified Tape Transport, Increased Reliability

The TC-K96R employs two servo-controlled BSL motors for capstan drive and reel drive. Principal benefits are simplified tape transport and increased reliability.



Servo-Controlled BSL Motor

Sony's new linear torque BSL (Brush-less and Slot-less) motor assures constant tape speed for faithful sound reproduction. The extreme accuracy and smooth rotation of the BSL motor in combination with precision tape transport, flat drive belt, and large flywheel reduce wow and flutter to an incredibly low 0.05%.



A major design breakthrough, this brushless and slotless motor has no slots to cause uneven torque distribution ("cogging", a mechanical fluctuation caused by slots). And the simple design greatly increases long-term reliability. Moreover, sophisticated servo-control electronics maintain tape motion at precise speed.

FERRITE-AND-FERRITE HEAD

The TC-K96R Ferrite-and-Ferrite head lasts virtually forever. Compared to a conventional permalloy head, the F & F head lasts 200 times longer.



Unlike ordinary heads, the Sony F & F heads uses micropolished, ultra-hard ferrite both in the magnetic core and guard portions. This ensures precisely parallel head gaps, wide frequency and phase response, excellent linearity, and a high signal-to-noise ratio. A further benefit includes stable tape-to-head contact for improved sound quality.

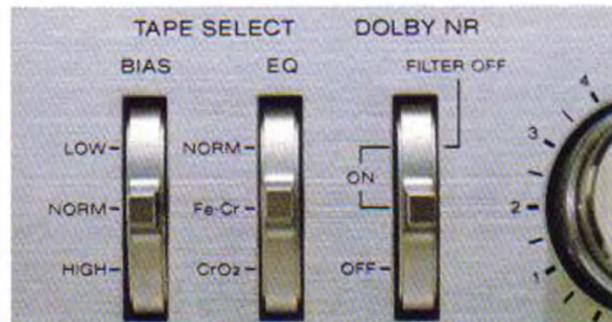
DOLBY NOISE REDUCTION SYSTEM

Reduced Noise, Increased Clarity

The TC-K96R uses the Dolby NR System to reduce hiss noise over a wide dynamic range. Tape hiss usually noticeable in passages of very soft music is dramatically suppressed for greatly increased clarity. Dolby NR improves the signal-to-noise ratio by about 5 dB at 1 kHz, and by about 10 dB above 5 kHz.

MPX (Multiplex) Filter

Recording FM Stereo with Dolby NR ON may cause misoperation of



Dolby NR. This potential problem is caused by leakage of the 19 kHz pilot and 38 kHz sub-carrier signals used in transmitting FM stereo signals.

When recording from other than FM radio, the MPX filter is not required. The DOLBY NR switch FILTER OFF position switches the filter out of the circuit, further extending frequency response.

PERMISSIBLE RECORDING DIRECTION INDICATORS

The TC-K96R microprocessor makes available yet another new feature: Permissible Recording Direction Indicators. Cassette tab sensors located in the cassette compartment signal the microprocessor the directions in which recording can take place. Pressing the feather-touch bar for Record causes flashing tape direction lights to indicate permissible recording direction.

MEMORY

A most convenient feature, MEMORY automatically returns the tape to any preselected point for repeated listening of the desired tape segment.

To use this function, set MEMORY switch to START for automatic return and re-play, or to STOP for automatic return only. Press the TAPE COUNTER button to obtain "000", and begin listening to the tape segment. At the end of the segment press the

feather-touch bar for Fast Reverse (Forward playback mode) or for Fast Forward (Reverse playback mode). The tape will automatically rewind to (and play from) the beginning of the tape segment.



BIAS AND EQUALIZATION

Magnetic Tapes Require Proper Bias and Equalization

With three decades of experience in high-technology magnetic recording, Sony engineers thoroughly understand magnetic tape — and the need for proper bias and equalization to overcome hysteresis, the natural resistance of tape particles to being magnetized/demagnetized.

Bias and Equalization Switches Optimize Performance

Separate BIAS and EQ switches optimize the performance of all types and brands of cassette tapes to assure high output, low noise, wide dynamic range, and exceptional fidelity. Three settings for each switch — a total combination of nine settings — accommodate all types and brand variations of magnetic tape: Normal (ferric oxide), Fe-Cr (ferri-chrome), and CrO₂ (chromium dioxide). For excellent recording and playback, BIAS and EQ switches should be positioned to recommended settings.

TIMER SWITCH

The easy-to-use TIMER switch in combination with an optional timer makes available unattended recording and automatic playback. Unlike ordinary tape cassette decks, the TC-K96R TIMER switch enables numerous record or playback operations during the unattended interval. The number of operations is limited only by the capacity of the optional timer.

To use, first set the optional timer to the desired time(s) to begin unattended recording or automatic playback. Then set the TIMER switch to either REC or PLAY. Thereafter, as determined by the timer, operation is entirely automatic.



Detachable control panel becomes a remote control unit for convenient recording at a distance.



REC MUTE

The feather-touch bar for REC MUTE makes available professional quality recording. In combination

with the feather-touch bar for

Pause, appropriate intervals between taped materials are easily obtained. And operation — mechanically and electrically — is completely silent.

Muting of commercials, for example, during off-the-air recording, is accomplished by pressing REC MUTE. Muting continues to be effective for as long as REC MUTE continues to be pressed. Pause can be pressed at the same time to stop tape motion and adjust interval length.

LARGE VU METERS, LED PEAK LEVEL INDICATORS

Large, Illuminated VU Meters



Large, illuminated VU meters clearly indicate signal levels from -20 dB to +5 dB. Brightly illuminated,

these unusually large meters occupy a significant area of the front panel for extra easy reading.

LED Peak Level Indicators

Three LED indicators provide accurate and highly visible peak level indication in three calibrated increments: 0 dB, +4 dB, and +8 dB.

MORE FEATURES...

ADD-ON RECORDING allows recording to be added at any desired moment during playback. Continue to press the Forward touch bar, and at the desired moment of add-on recording press both Forward and Record touch bars.

AUTO SHUT OFF at tape end — in every tape mode — disengages the capstan and pinch roller and turns the tape transport off automatically.

TWO INPUTS and REC LEVEL independently adjustable

concentric controls enable mixing of line and microphone inputs.



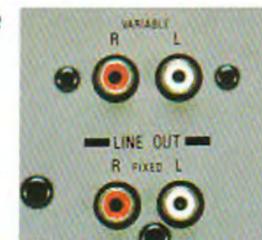
SOFT EJECT gently whirrs open the tape compartment for air-cushioned protection of cassettes.

CASSETTE BACK LIGHT in combination with large cassette window shows at a glance the amount of remaining tape.

UPRIGHT CASSETTE LOADING and high visibility of almost the entire cassette enable easy reading of the tape index.

CASSETTE COVER is easily removable for convenient cleaning of capstan, pinch roller, and head.

TWO OUTPUTS, Fixed is 0.435 volts (-5 dB); Variable is 0.026~0.775 volts (-30 dB~0 dB), adjustable by the front panel LINE OUT control.



SAFETY INTERLOCK prevents opening cassette compartment during tape run and protects both tape transport and cassette tape against damage.

HEADPHONES JACK facilitates monitoring and provides private listening. The headphones level is adjustable by the front panel HEADPHONES control.

Features

TC-K96R

- Auto Reverse with Roto Bi-lateral head
- Remote control unit (Detachable control panel)
- Microprocessor and versatile logic control
- Two motors and simplified tape transport
- Servo-controlled BSL motors
- Ferrite-and-Ferrite head
- Dolby Noise Reduction System
- Permissible recording direction indicators
- Memory counter
- Equalization and bias switches
- Timer switch
- REC MUTE switch
- Large VU meters
- LED peak level indicators
- Add-on recording
- Auto shut off tape transport
- Two inputs and Rec Level controls
- Soft eject cassette compartment
- Cassette back light
- Upright cassette loading
- Removable cassette compartment cover
- Two outputs, fixed and variable
- Safety interlock
- Headphones jack and level control

Design and specifications subject to change without notice.

Dolby is a registered trademark of Dolby Laboratories, Inc.

Specifications

TC-K96R STEREO CASSETTE DECK

System:	4-track 2-channel stereo recording and playback
Frequency response:	20 Hz - 18,000 Hz (Fe-Cr) 20 Hz - 17,000 Hz (CrO ₂)
S/N ratio:	59 dB (Fe-Cr, Dolby off, peak)
Wow and flutter:	0.05% rms weighted
Harmonic distortion:	1.3%
Rewind and fast forward time:	90 sec/C-60
Inputs:	Microphone 0.25 mV (-70 dB) low impedance Line 77.5 mV (-20 dB) 100 k ohms REC/PB 10 k ohms or less Line 0.775 V (0 dB), max, variable 0.435 V (-5 dB), fixed 10 k ohms or more REC/PB 0.775 V (0 dB) 50 k ohms Headphone -20 dB, max, 8 ohms
Outputs:	
Power requirements:	110, 120, 220, 240 V 50, 60 Hz 33 W
Dimensions:	155 × 430 × 325 mm (w/h/d) (6 ¹ / ₈ × 17 × 12 ⁷ / ₈ inches)
Weight:	8.5 kg (18 lb 12 oz)

Accessories



C-90FeCr C-60FeCr C-46FeCr

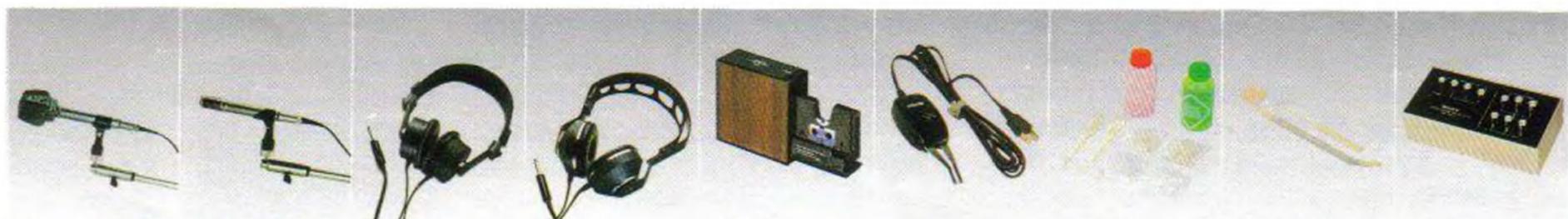
Ferri-Chrome Cassette Tape combines the advantages of ferric oxide's excellent low-frequency response with chromium dioxide's superior high-frequency response in a double-coated tape for faithful reproduction of sound over a wide dynamic range.

C-90CR C-60CR

Chromium Dioxide Tape provides excellent frequency response and high signal-to-noise ratio over a wide dynamic range with increased output at high frequencies for extremely clear reproduction of sound.

C-120HF C-90HF C-60HF C-46HF

High Fidelity Cassette Tape employs special ferric oxide to be used in Normal tape position for high fidelity reproduction of sound.



ECM-990F Stereo Back Electret Condenser Microphone

Stereo Back Electret Condenser Microphone combines two high-quality microphones for one-point stereo pickup. 4-position directivity switch, LED battery checker, low frequency cut filter.

ECM-270F Back Electret Condenser Microphone

Unidirectional Back Electret Condenser Microphone picks up sound mostly from the front to reduce noise, increase isolation between performers, and suppress feedback.

DR-6M Stereo Headphones

High-quality dynamic stereo headphones accurately reproduce sound over an exceptionally wide frequency range.

DR-30 Stereo Headphones

High-quality dynamic stereo headphones with exceptionally comfortable two-piece headband offer smooth response over a wide frequency range for excellent reproduction of music.

BE-9H Cassette Tape Bulk Eraser

Completely erases prerecorded tapes and eliminates stray magnetic fields from blank tapes in one simple operation.

HE-3 Head Demagnetizer

Head Demagnetizer used routinely maintains head in non-magnetized state to prevent sound quality deterioration of prerecorded tapes and to ensure accurate reproduction of sound.

KK-2 Tape Transport Cleaning Kit

Cleaning kit contains solvents, pads and holders required to thoroughly clean capstan, pinch roller, and head to maintain accurate sound reproduction.

CLH-3 Head Cleaning Pen

Felt-tipped cleaning pen breaks loose caked-on oxide deposits to effectively clean heads.

SB-300 Tape Deck Selector

Selector allows convenient inter-connection between an amplifier and up to three tape decks for easy monitoring and dubbing.