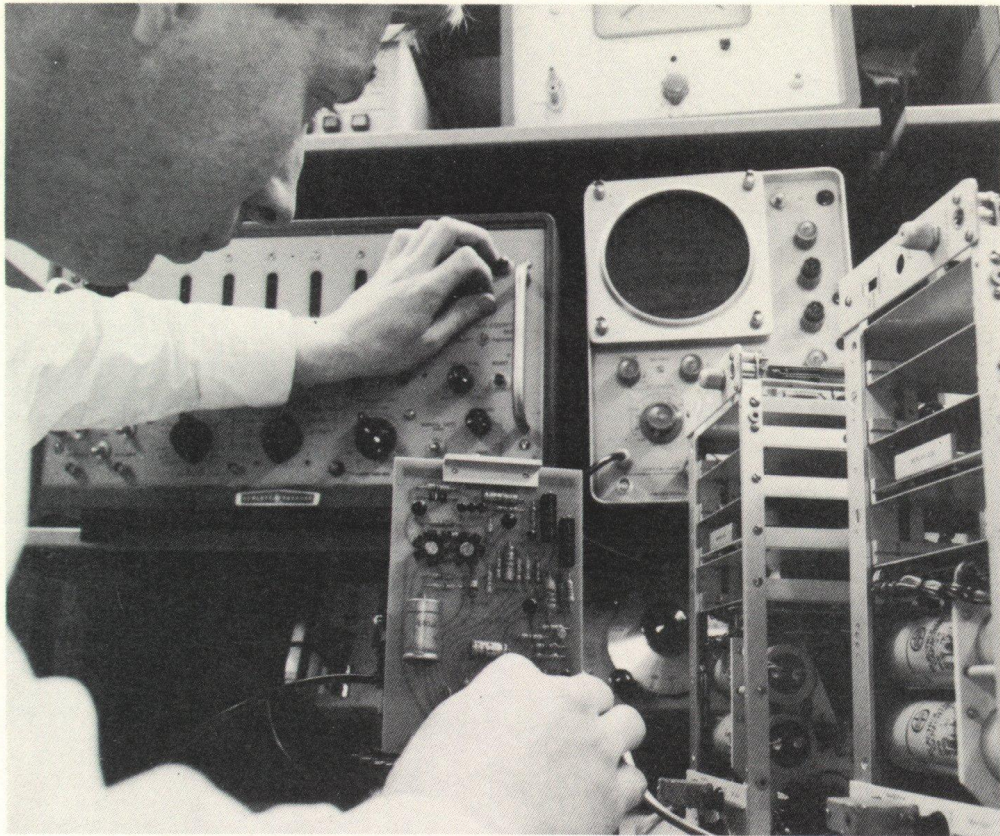


**Plessey
Components
Australia**

**CT 80
Series
Cartridge
Recorders**



Rola Division
The Boulevard Richmond Victoria



CT 80 Series Cartridge Recorders

This new range of CT80 Series Plessey Cartridge Recorders has been evolved and manufactured by Australian designers and engineers to meet the demands of the broadcasting industry and other professional users of high quality magnetic tape recorder equipment.

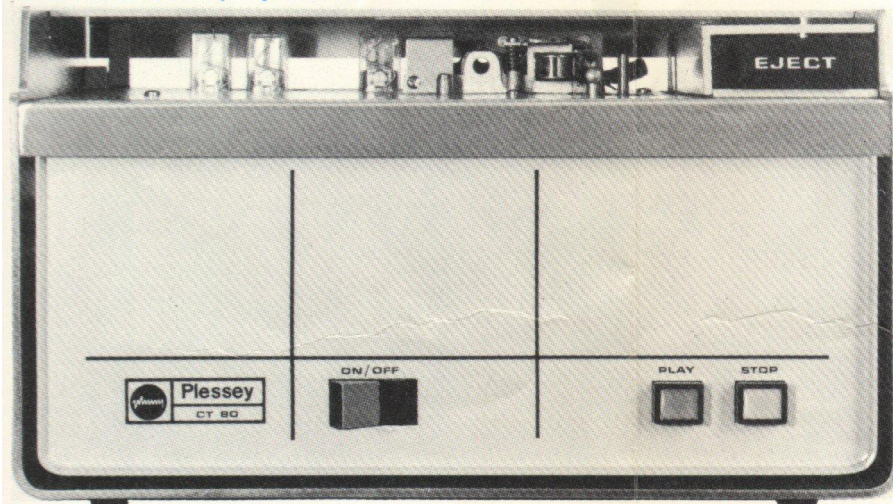
Two basic models are available—
CT80R Record/Replay Unit
CT80P Replay Unit

Both of these two basic units are available in the following mountings—

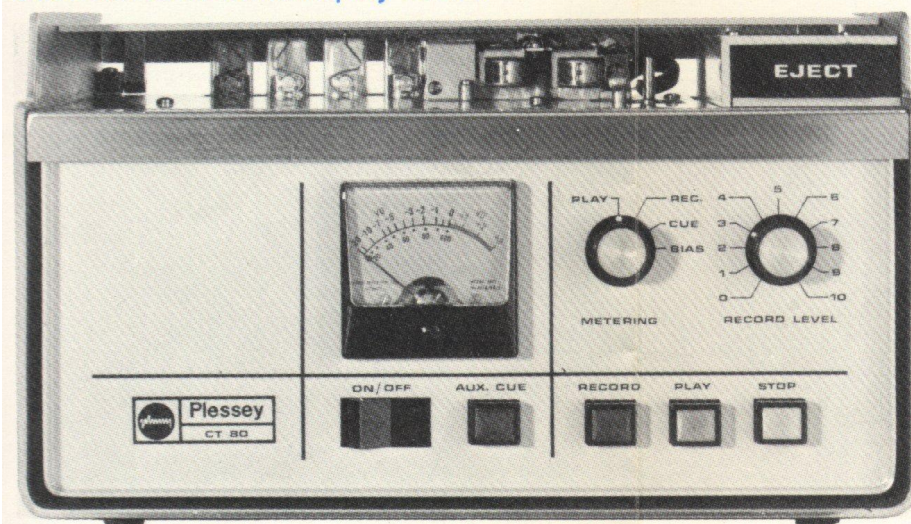
Desk Top Mounting
Recessed Desk Mounting
Standard 19" Rack Mounting



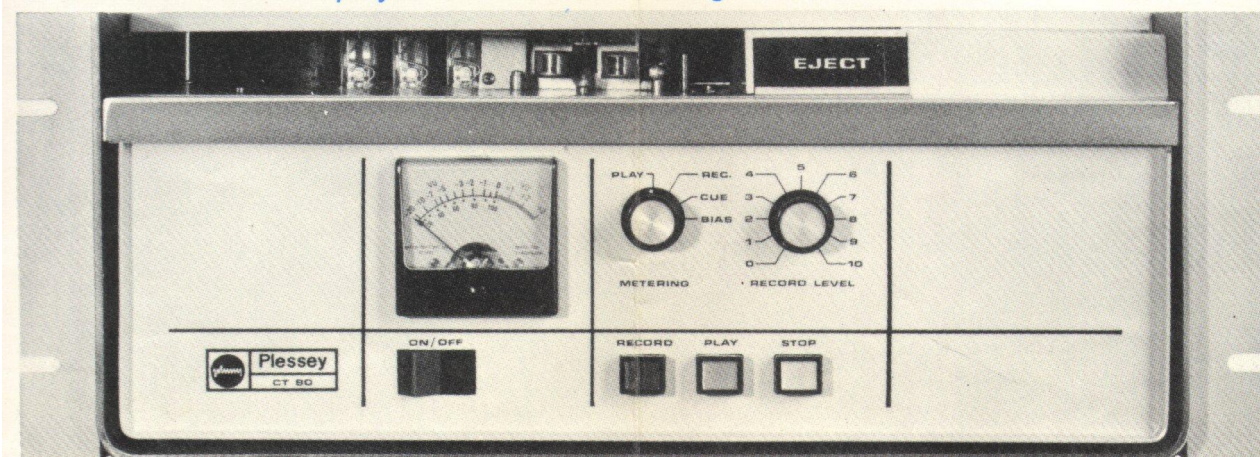
CT80 Series Replay model

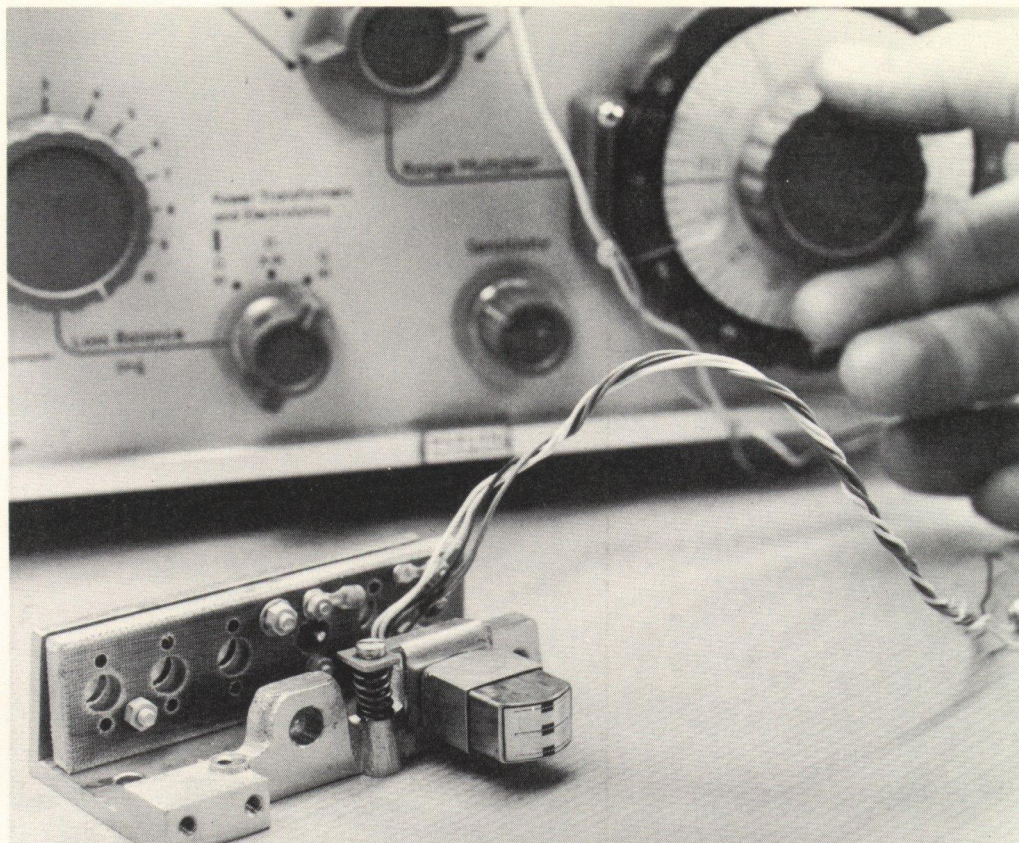


CT80 Series Record/Replay model



CT80 Series Record/Replay model — rack mounting





Description

The Plessey CT80 Series is an endless loop cartridge tape transport mechanism combined with record and/or replay electronics and automatic cueing facilities.

The recording medium is $\frac{1}{4}$ " magnetic tape in a semi-sealed plastic cartridge wound onto a rotating hub with the inner and outer ends extended out into a loop to form an endless path of tape.

The units are designed to operate with standard NAB type A, B or C cartridges having maximum unrepeatable playing times of 8 minutes, 16 minutes or 31 minutes respectively at $7\frac{1}{2}$ inches per second.

Units are also available to operate at $3\frac{3}{4}$ inches per second where high quality installations are required for automatically cued voice announcements, continuously operating background music, standby music and announcements at remote locations.

A standard NAB "stop cue" is provided on all models and is automatically recorded upon each depression of the "Record" button. This "Stop cue" pulse is detected on subsequent replay and used to automatically stop and re-cue the tape. Optional auxiliary cue tones for automatically performing other functions can be provided with models CT80RX and CT80PX.

The CT80 Series are constructed in a heavy duty modular form. Electronic reliability is assured with 100% solid state silicon circuitry and associated components on epoxy glass printed circuit boards. The regulated 24V DC power supply, with overload and short-circuit protection by triggered control rectifier, assures correct

operating parameters at all times for peak efficiency and long component life. By the use of extremely stable circuitry incorporating heavy DC feedback loops and diode stabilisation, where necessary, uniform performance from -20°C to $+60^{\circ}\text{C}$ is obtained.

An important feature of the CT80 Series is the advance design head assembly. It consists of a precision machined casting mounted on the main deck plate by three screws. During manufacture of this rugged unit, head track height and zenith are permanently fixed by accurate jig-aligned machining. No adjustment of these parameters is necessary during the life of the heads. Positive vernier adjustment is provided for azimuth correction.

Reliability

The heart of the Plessey CT80 Series is an exclusive integral direct drive capstan motor, solenoid and puck wheel assembly. The puck wheel actuating arm and solenoid are mounted on a precision machined casting and both the puck wheel and actuating arm are fitted with self-lubricated bearings. In this separate assembly the puck wheel capstan pressure can be preset and locked, prior to fitting to the main unit—puck wheel pressure problems are virtually eliminated.

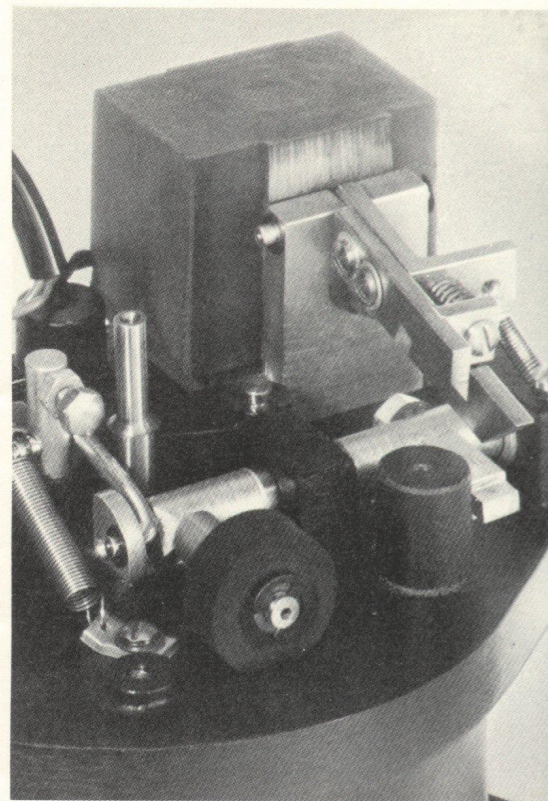
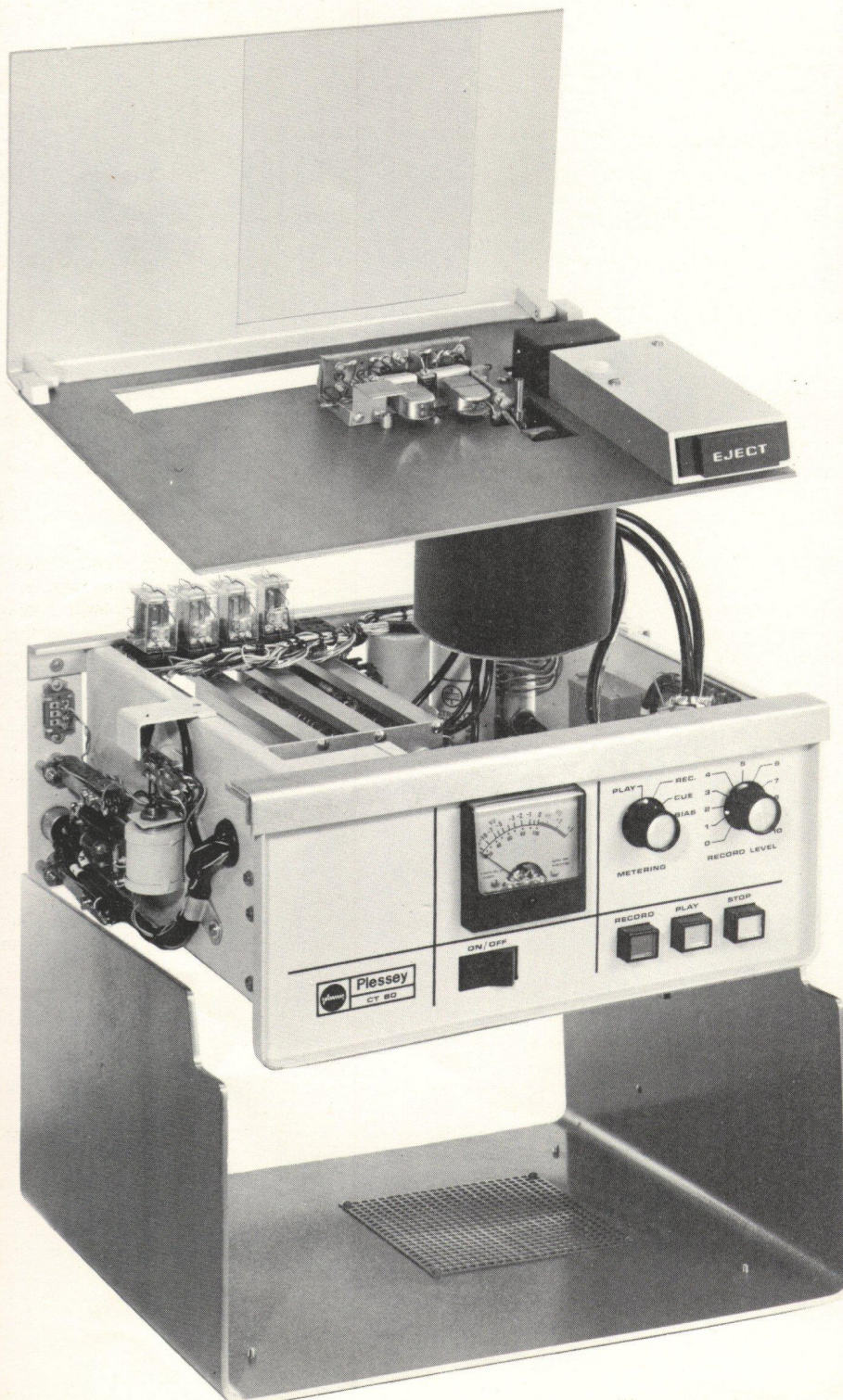
The new high torque synchronous motor with internal flywheel features machined phosphor-bronze bearings with sealed oil reservoirs. The rotor and flywheel are dynamically balanced to better than 20 milligrams inch and the hard chromed tape driving shaft is ground with the motor in

Testing and aligning CT80 electronic circuit modules

Measuring inductance and Q factor of a CT80 replay head assembly

Modular construction of the CT80 series allows flexibility for flush mounting or deck only mounting

Integral direct drive capstan motor, solenoid and puck wheel assembly



the normal running mode to a tolerance of better than ± 0.0001 ". This precise alignment provides a speed accuracy between $-0 + 0.25\%$ of nominal speed, comparable to the finest reel to reel machines. Tape driving shaft ovality is held to better than 0.00002 ", making transport wow and flutter less than $.2\%$ RMS.

No belts and pulleys are used with the direct drive capstan motor. There are no bearing alignment problems, a minimum amount of maintenance is necessary and great reliability with long operating life is assured.

Under stringent test conditions units have withstood drop tests on concrete, a temperature range of -20°C to $+60^{\circ}\text{C}$, vibration tests on all planes and acceleration tests to a peak level of 2G. The puck wheel actuating arm and solenoid have performed 4,000,000 individual operations under test without fault. In addition a cartridge was inserted, run, stopped and withdrawn 2,000,000 times, resulting in no significant wear to any of the mechanical parts.

Service

Quick change modular construction of all important electronic circuits, individually mounted in sturdy metal frames, gives shielding and strength with ease of maintenance and quick changeover for servicing. Circuit boards may be tested with the use of a board extension unit. All preset controls are adjustable with the circuit boards in position.

For ease of maintenance complete head assemblies, circuit boards and motor/transport assemblies can be provided as spare parts, pre-aligned for immediate use.



Operational features

The CT80 Series is designed to permit snap-in cartridge loading—a split-second one hand operation. Features include—

Visual indication of cue pulse recording without need to replay tape

Choice of Record mode engagement by either single button for speed and simplicity or interlocked two buttons for safety

Back panel switch to enable Record mode to be engaged without recording Stop cue

All cues may be recorded at any time while tape is in motion

“Ready” lamp to indicate that cartridge is properly loaded

Simultaneous replay available at output jack while recording

Cue sensing while in “Record” mode to prevent over-recording

Remote control of all functions

Remote indicator lamps showing mode condition of recorder

Eject button mechanically interlocked to prevent cartridge release while tape is in motion

Instantaneous starting (less than .2 second)

Automatic cartridge lock-in lifts the pinch wheel into the “ready” position and automatically starts the drive motor

Fully shielded laminated heads with all metal faces specially contoured to provide minimum oxide build-up

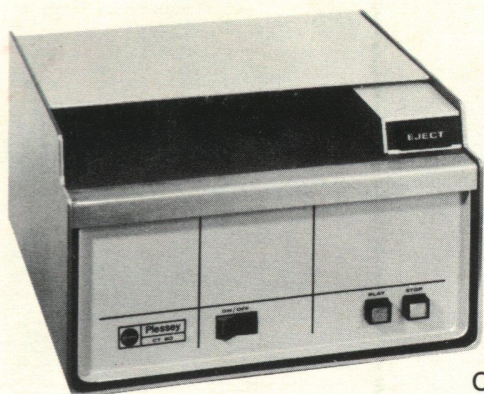
Independent azimuth adjustment can be reset using a positive vernier control

Tape head track height and zenith fixed during manufacture. No adjustment is necessary during the life of the heads

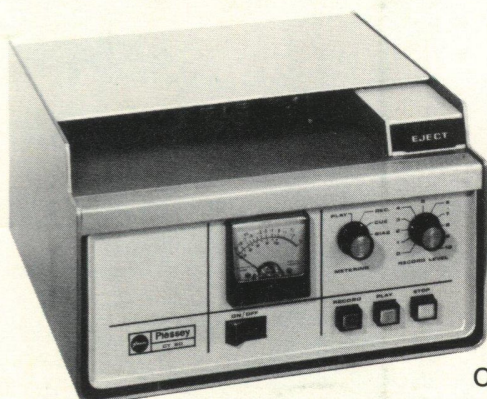
Specifications the CT80 Series

operating method	Press button, electro-mechanical interlock Separate illuminated “Stop”, “Play”, “Record” and “Aux Cue” buttons. Mains “On/Off” switch
tape speed	7½ or 3¾ inches per second
maximum playing time	31 minutes at 7½ inches per second 62 minutes at 3¾ inches per second
tape drive	Capstan directly driven by a high torque synchronous motor with integral flywheel
starting and stopping time	Less than 0.2 second
timing accuracy	—0 +0.25% of nominal speed
wow and flutter	Less than 0.2% RMS
heads	Separate “Record” and “Play” heads. For simplified head interchange the head assembly is designed so that either the complete assembly or individual heads can be readily removed.
azimuth adjustment	Individual, positive vernier adjustment on each head
bias frequency	100KHz nominal
cue signals	NAB standard cue signals
distortion	Less than 3% at 1000Hz including tape distortion. Input level +18dbm to output level +21dbm (peak recording level*)
overall frequency response	50-12,000 Hz±2db at 7½" per second 50-7000 Hz±2db at 3¾" per second
equalisation	Standard NAB. Controls are provided for correcting the frequency response of the replay channel to compensate for varying tape characteristics
signal to noise ratio	Not less than —52db below peak recording level* (3% T.H.D. at 1KHz) of a signal recorded on the tape and replayed at an output of +16dbm
inputs	Balanced 600 ohm or balanced “Bridge-in” (switchable on back panel)
input and output connectors	Standard ring, tip and sleeve jacks
output	Peak level +21dbm at balanced 600 ohm output
circuit metering	Standard 3" VU Meter switchable to read Record level Replay level Cue Bias
recorder interlock	Optional strapping to interlock the “Play” and “Record” buttons, i.e., both “Record” and “Play” buttons must be pressed for record mode
remote control	Press button control of all functions—available via multipin connector at rear (complementary connector plug supplied)
cartridges	Standard NAB types A, B and C
tape	¼" graphite lubricated. Recommended types Scotch 151, 153
mounting	Desk Top Mounting Recessed Desk Mounting Standard 19" Rack Mounting
dimensions	Desk Top—12½" x 11¼" x 7½" Rack mounted—19" x 12" x 7"
weight	Desk top—32 lbs. Rack mounted—34 lbs.
ambient temperature range	—20°C to +60°C
power	210-250 Volts 50Hz AC
power consumption	CT80R 60VA CT80P 55VA
fuses	AC 1A Slow Blow DC .75A Slow Blow
*Peak recording level	equals 10db above normal record level

CT 80 Series Cartridge Recorders



CT80 Series Replay model



CT80 Series Record/Replay model



CT80 Series Record/Replay model — rack mounting



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