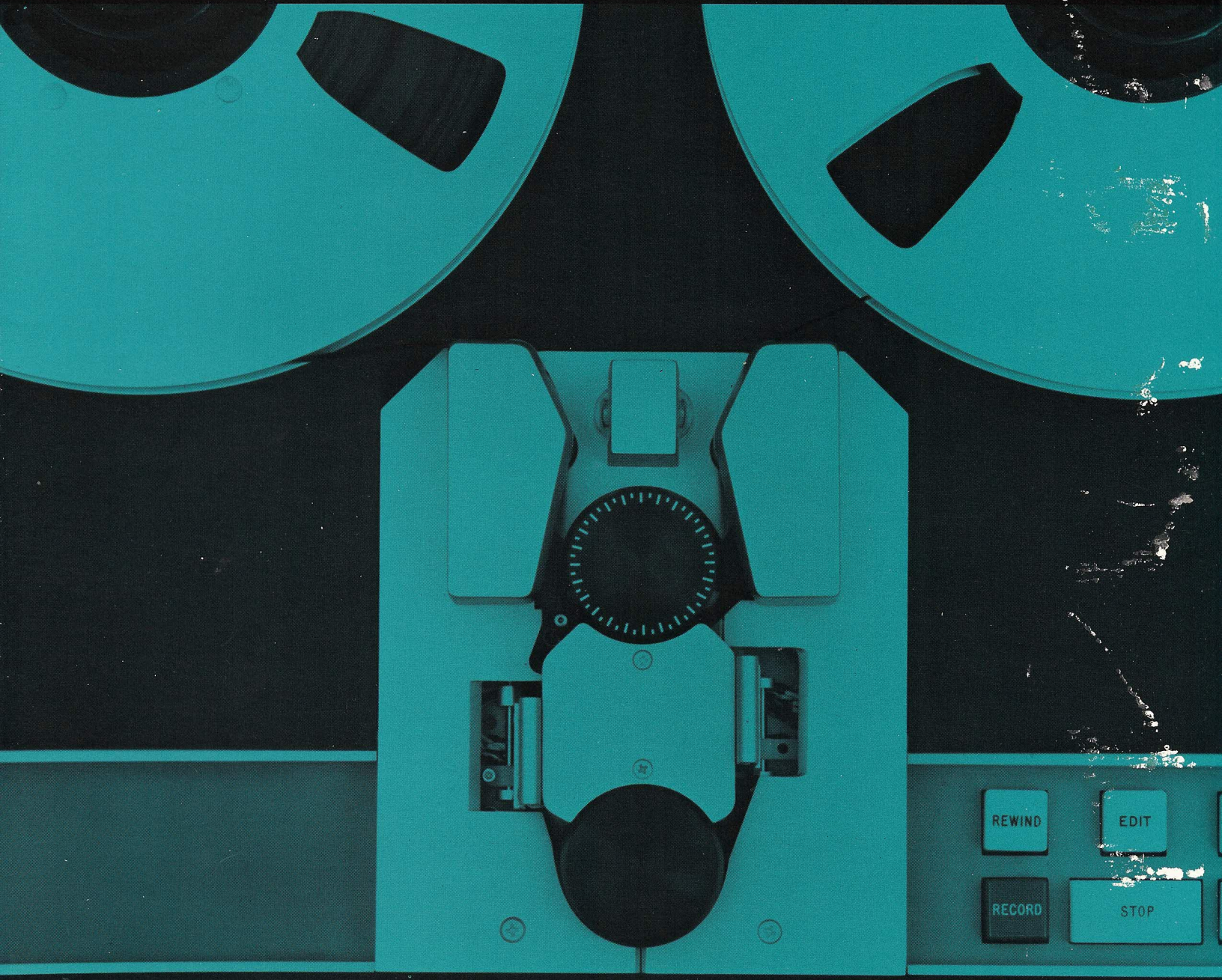


# 3M Series 79 Professional Audio Recorders

FOR RECORDING STUDIOS OR ON REMOTE,  
THE MOST ADVANCED LINE OF  
AUDIO RECORDER/REPRODUCERS MADE.



**If you're a creative engineer  
and hard-headed businessman,  
this gear was designed for you.**



Buying new gear requires a hard-headed decision. You depend on your equipment for results, and your reputation hinges on making the right choice.

That's why leading recording studios around the world use 3M Pro Audio gear. They demand great performance, whatever the job, and the 3M Brand Series 79 Professional Audio Recorders are designed to deliver it. Series 79 recorders are available in 2-, 4-, 8-, 16-, and 24-track configurations.

**Series 79 Recorders incorporate state-of-the-art design in mechanical and signal capabilities.**

Transport function in all recorders is critical. All Series 79 models feature the unique 3M Isoloop<sup>®</sup> differential capstan drive. (By reducing unsupported tape length to 3½", it achieves low wow and flutter and excellent head-to-tape contact.) Its design ensures smooth tape flow, convenient threading and editing, and precise tape handling without the high tensions necessary with other drive techniques. Capstan speed is controlled by a d.c. servo for fast response and accurate tape speed.

Mode to mode transport changes are made via logic circuits for finger-tip direction change and braking, without the worry of jams, tape spill, or machine

damage. The three standard speeds of 7½, 15, and 30 ips are switch selectable with automatic equalization for each speed. Variable speed control (6 to 36 ips) is standard on the multi-track models and optional on the 2- and 4-track models. Our optional Selectake<sup>®</sup> locator completes this flexible system.

**Accessible, field-proven electronics are the key of the Series 79 reliability.**

All signal electronics for a channel are mounted on a single, plug-in card accessible from the front of the console. Each channel card has its own record failure indicator for easy troubleshooting and maintenance.

The signal electronics on all models have separate equalization adjustments for sync and normal reproduction. Equalization is selectable for NAB, AES or CCIR. The 2- and 4-track models feature built-in overdub and are compatible with the same accessories as the larger multi-track machines.

As your needs change, optional heads and guides are available for low cost conversion between ¼" and ½" tapes on the 2- and 4-track models. The 8-track can be expanded to 16-track or 24-track and the 16-track model may be expanded to 24-track.

Advanced Series 79 design and your imagination...creative dynamite!

**3M quality means exceptional resale value**

Remember, resale is an important consideration when you trade in or trade up.

Recording people know that 3M gear is built to last a long time. That proven reputation helps it keep its value.

**A superb service organization.**

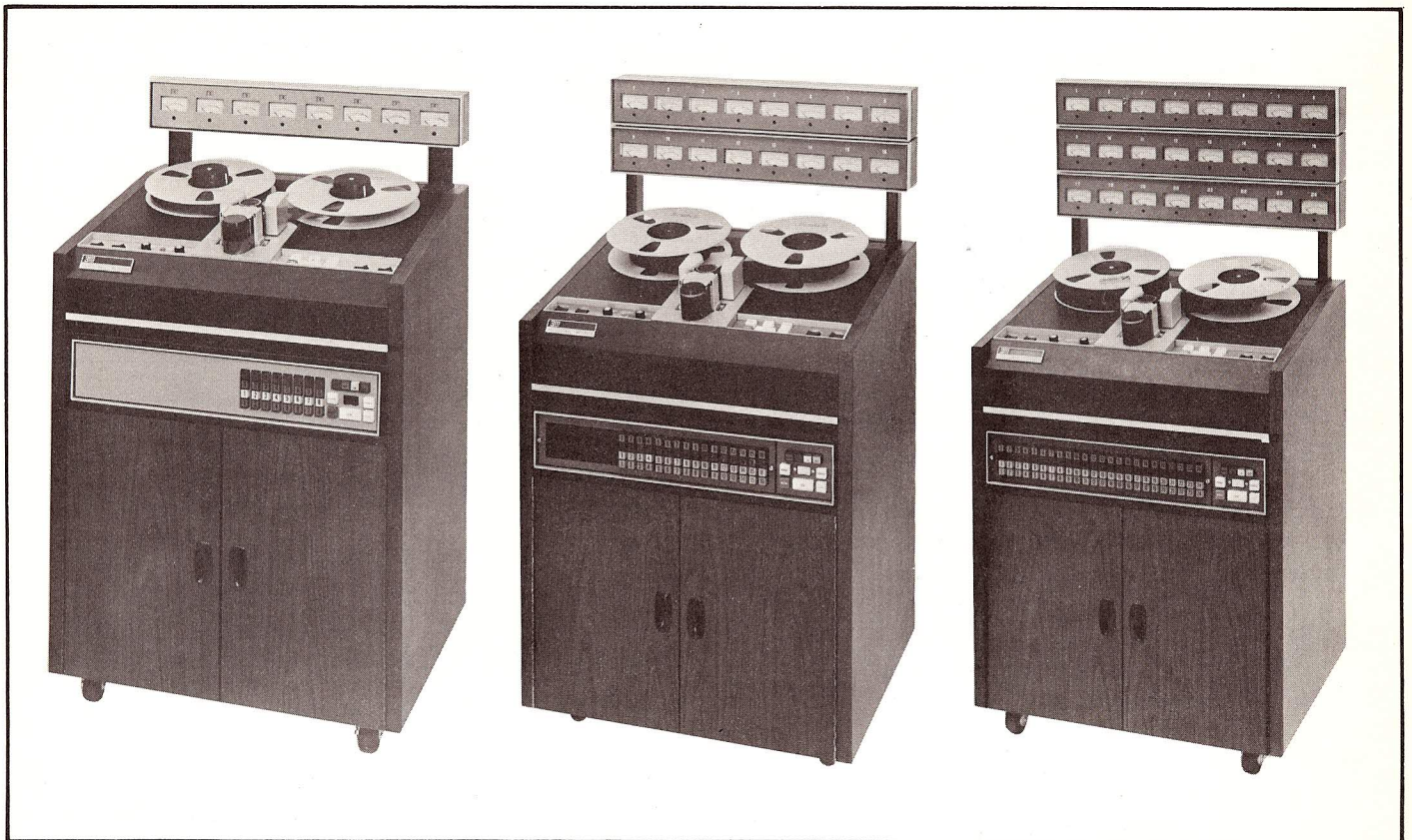
We have twelve major service centers. In New York City, Memphis, Washington, D.C., Detroit, Chicago, San Francisco, Los Angeles, Atlanta, Pittsburgh, Providence, and Grand Prairie, Texas. Plus our flying squad of troubleshooters that operate out of our St. Paul headquarters.

For more information, write:  
3M Company, Mincom Division  
(Pro-Audio), Bldg. 223, 3M Center,  
St. Paul, Minnesota 55101.

PROFESSIONAL AUDIO PRODUCTS  
**Mincom Division** **3M**  
COMPANY  
3M CENTER • ST. PAUL, MINNESOTA 55101

# 3M BRAND SERIES 79

## PERFORMANCE SPECIFICATIONS 8, 16 & 24 TRACK PROFESSIONAL AUDIO REC.



Model M79/8

Model M79/16

Model M79/24

### NAB-CCIR/IEC-AES 30 IPS CHARACTERISTIC

The electronics can be setup for all NAB, all CCIR or combination: NAB at low speed, machine will automatically switch to CCIR or 30 ips 17.5 $\mu$ s characteristic at high speed. Terminals can be linked on the electronics boards to obtain required function.

**SIGNAL-TO-NOISE RATIO:** 8, 16 and 24 channel models.

	Standby	Biased Tape
Normal	68 dB	64 dB
Sync	68 dB	64 dB

70 mil track width 20 Hz - 20 kHz bandwidth, with reference to 3% maximum third harmonic distortion level at 700 Hz, using 3M 206 or 207 tape.

**EQUALIZATION:** Machines are normally equalized for NAB 15 ips and 17.5 $\mu$ s 30 ips. Equalizers automatically switch electronically when tape speed is changed. When variable speed is used, LO or HI equalizers may be selected.

**CAPSTAN DRIVE:** Dc servo control with following switched selection: VAR LO, VAR HI, LO, HI, and EXTERNAL. A local control is provided to vary the speed from 5 - 45 ips. External control is available from a single variable resistor or voltage source. Fixed speeds, 7.5 and 15, or 15 and 30 ips by plug-in selector.

**REEL DRIVE:** Contains solid state power switching with three rate response modes. Nominal winding velocity 300 ips. Maximum capacity 10-1/2 inch reel, NAB hub. 14" reel capacity optional.

**FREQUENCY RESPONSE:**

IPS	Mode	Limit
7.5	reproduce	±2 dB 40 Hz - 12 kHz
7.5	rec/repro	±2 dB 40 Hz - 12 kHz
15	reproduce	+1 dB -2 dB 50 Hz - 15 kHz
15	rec/repro	+1 dB -2 dB 50 Hz - 15 kHz
30	reproduce	+1 dB -2 dB 50 Hz - 15 kHz
30	rec/repro	+1 dB -2 dB 50 Hz - 15 kHz

Sync response same as normal reproduce (separate equalizers and amplifier).

**PHASING:** On all channels, input to output polarity is maintained. 1 mil wavelength error is less than 90° between a center track and any other track.

**CHANNEL SEPARATION:** Better than 55 dB at 500 Hz for 8 and 16 track machines. Better than 50 dB for 24 track machines.

**ELECTRONICS INPUT:** Input transformers yielding a 20K ohm, fully floating, or unbalanced line. -6 to +16 dBm range on 600 ohm bus.

**ELECTRONICS OUTPUT:** +4 dBm reference level into 600 ohm load, termination switches provided. +26 dBm maximum output.

**BIAS AND ERASE OSCILLATOR:** Master oscillator on tape transport supplies 234 kHz low impedance bus feeding individual bias and erase power amplifiers for each channel.

**DEGREE OF ERASURE:** A 1 kHz signal at 3% distortion level is reduced 75 dB or more by erase head.

**POWER INPUT:** 110 to 135 or 220 to 250 volts, ac 50 or 60 Hz. All power to machine is electronically regulated within the power supply unit.

8 track unit	400 VA maximum
16 track unit	450 VA maximum
24 track unit	500 VA maximum

**MECHANICAL:**

Weight: 300 lbs. (24 trk)  
 Height: 8 trk 46", 16 trk 50 1/2", 24 trk 55"  
 Width: 27 inches  
 Depth: 23 1/2 inches

**FLUTTER PERFORMANCE:****NAB UNWEIGHTED**

IPS	Flutter Band (Hz)	Max RMS Flutter
30	0.5-200	0.06%
15	0.5-200	0.06%
7 1/2	0.5-200	0.08%

**IEC/DIN WEIGHTED ±PEAK %:**

IPS	
30	0.04 Maximum
15	0.04 Maximum
7 1/2	0.05 Maximum

**NOTE:** All measurements of flutter made by recording a tone on machine under test, rewinding and measuring flutter on replay. Flutter measurement is maximum cumulative.

**TIMING ACCURACY:** ±0.2%

**REMOTE CONTROL:** A control unit is provided and provides full control for all functions excepting speed selection. Positive indication of erase current flow is provided for each channel.

**START TIME:** Less than 0.5 second to reach PLAY speed.

**STOP TIME:** Less than 0.5 second from PLAY mode. Less than 4.0 seconds from FAST FWD or RWD.

**REWIND TIME:** Less than 1.5 minutes for 2,500 feet.

**OPTIONAL EXTRAS:**

A Selectake Counter Locator unit can be supplied.

14" Reel capability.

PROFESSIONAL AUDIO PRODUCTS  
**Mincom Division** **3M**  
 COMPANY  
 3M CENTER • ST. PAUL, MINNESOTA 55101

# Free your brain for creative recording. Use ours for cue locating.

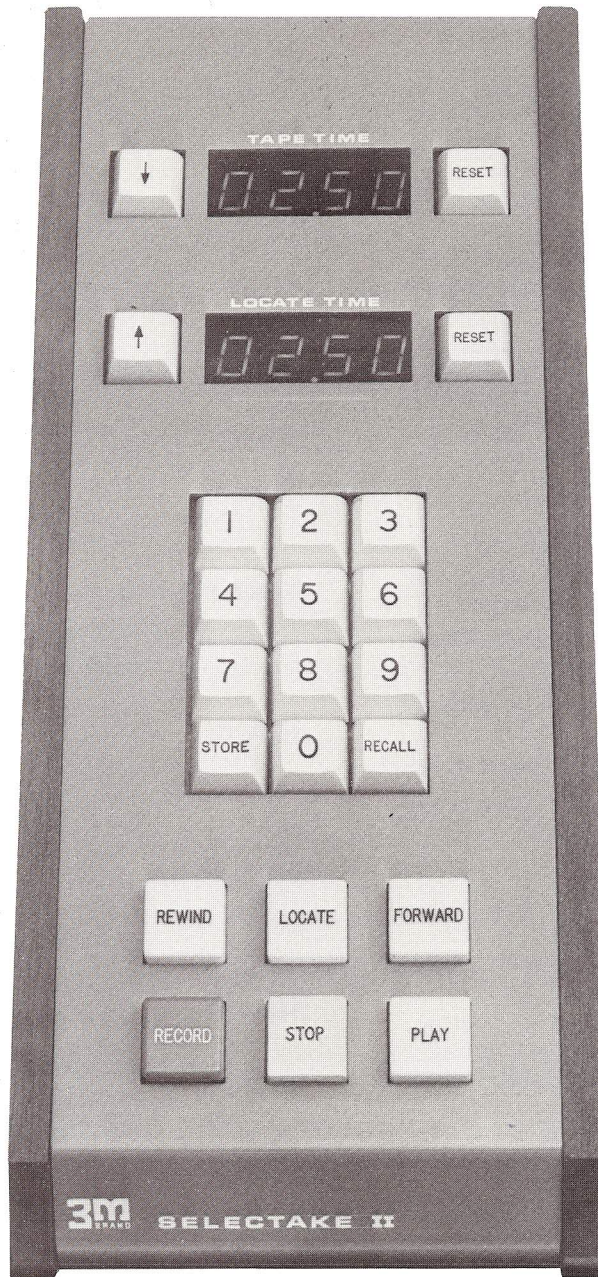
You work hard to create a good sound, whether you're laying down tracks or mixing them. When everything's going good and the mood's just right. It's easy to break that rhythm and lose it, when you have to search for that place to punch in.

We've found a better way to locate cues that is fast and accurate. The *new* Selectake II tape position locator from 3M.

We accomplished it by putting a small, very powerful microprocessor into a calculator-style case. Selectake II features a keyboard, mode controls, and two large readable digital time displays. One display is for Tape Time, the other is for Locate Time.

Programming a cue during a session is as easy as touching the STORE button and entering the displayed locate time on the keyboard. Up to NINE separate cues can be entered and stored in the microprocessor memory.

Locating a cue is just as easy. Recall from the memory your cue on the Locate



Time display, punch the LOCATE mode button and the tape quickly drives right to the cue. And, as the difference between Tape Time and Locate Time narrows, the tape speed slows down to stop right on cue (within  $\pm$  one count). Cue overshoot and long crawl times are completely eliminated. Or, punch Locate and Play and the machine will start in play after reaching the cue.

The new Selectake II is compatible with the entire 3M Series 79 line of professional audio gear, the most technically sophisticated and reliable audio recording equipment available. Built in 2-through 24-track configurations, they're used in recording studios worldwide.

So save time and guesswork. Let our "Brainy" Selectake II do your cue finding for you. It will never take the credit.

**Mincom Division** **3M**  
COMPANY

# Selectake II specifications

## Tape Time Display

Tape motion driven, digital time display covering times from 00.00 through 99.99 minutes.

Automatic "Hi-Low" speed switching (manual select for 7½-15 ips and 15-30 ips ranges).

Associated RESET button allows independent "zeroing" and can be "set" to any desired time by shifting in the Locate Time (covered below).

Associated ↓ (shift) button allows shifting of Tape Time into the Locate Time. This allowed *direct* Locate Time entry while playing a tape.

Automatically set to 00.00 upon application of power.

Display "frozen" on tape run out. This allows rethreading without loss of location in the event of tape runout.

## Locate Time Display

Digital display covering times from 00.00 through 99.99 minutes. (The displayed time is the tape time to which the machine will "home" if the locate function is initiated.)

Time entry is via the keyboard, shifting in the Tape Time, or from one of nine memory points (covered below).

Associated RESET button allows independent "zeroing" of display without affecting the memory.

Display is automatically set to zero upon application of power.

Associated ↑ (shift) button allows shifting of the displayed Locate Time into the Tape Time display.

## Keyboard

Numbers 0 through 9 plus STORE and RECALL.

Used to enter locate times and to store times in memory (up to nine points—press STORE, then desired memory position number, 1 through 9) or to recall a previously stored time from memory (press RECALL, then desired memory position number).

## Mode Controls

**Locate—** Backlighted pushbutton causes the tape to be driven at high speed to Locate Time and stop within  $\pm 1$  count without hunting. (See also PLAY). During the LOCATE cycle, a PLAY command (machine or remote) can be stored, then entered at the end of the cycle.

Can be entered from any mode.

Is cancelled by any (machine or remote) STOP, REWIND, or FORWARD command or tape run out.

**Play—** Backlighted pushbutton. Causes tape to be driven by the capstan. Can be entered from STOP, REWIND, and FORWARD. If entered in LOCATE the command (machine or remote) is stored until the cycle is complete, then the PLAY mode will be initiated.

**Record—** Backlighted pushbutton. Energized RECORD buss. Can only be entered in combination with PLAY when the tape is stopped or capstan driven.

**Rewind—** Backlighted pushbutton. Causes tape to wind at high speed on the supply reel. Can be entered from any mode.

**Forward—** Backlighted pushbutton. Causes the tape to wind on the take up reel at high speed. Can be entered from any mode.

**Stop—** Backlighted pushbutton. Causes tape motion to cease and places machine in a standby (ready for any mode command) status. Can be entered from any mode.

