



# Nakamichi 550

Versatile Cassette System





# Nakamichi brings studio quality to on-location cassette recording.

From the same dedicated design team that created the world famous Nakamichi 1000 Three-Head Cassette System comes a new in-the-field recording instrument of unique quality and outstanding reliability. A machine that is destined to become the standard by which all the others will be judged.

## Nakamichi 550

With the new Model 550 Versatile Cassette System, Nakamichi Research extends their revolution in cassette technology to in-the-field recording.

Like the impressive Nakamichi 500, whose outstanding performance it closely matches, the 550 employs Nakamichi's exclusive Crystalloy Super Head for extended high frequency response and extremely low distortion.

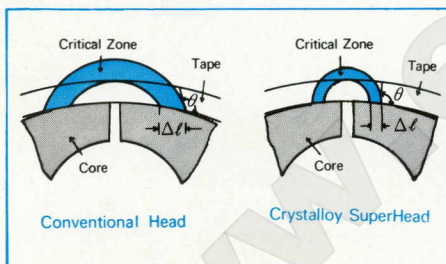
Complete with its own self contained battery power supply, the Nakamichi 550 may also be operated from a car battery or from a standard AC line (with adaptors supplied).

Professional 45 dB range, peak level meters attest to the unit's extended dynamic range and are especially useful during live recording sessions.

Speed control is absolute. A built-in Super Stabilizer prevents power supply voltage fluctuations. And a pulse controlled DC servomotor maintains absolute speed stability.

No matter where you are, under the most rigorous field conditions or in the comfort of your living room, the Nakamichi 550 is the perfect companion.

## Crystalloy SuperHead



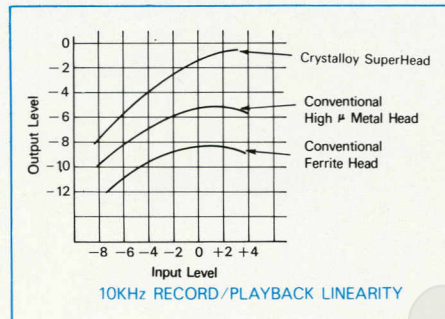
This simplified illustration shows how the record head applies magnetic modulation to the tape during recording.

It is commonly believed that recording quality is largely determined by the width of the head gap, when actually it is dependent on the attenuation of the bias field (critical zone) as the tape passes the trailing edge of the gap.

As the illustration shows, the critical zone of the Nakamichi Crystalloy Super Head differs from that of conventional heads. The Nakamichi curve is much sharper.

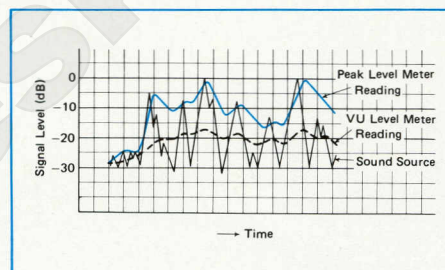
For quality recording, it is vital that the angle  $\theta$  be a right angle and that  $\Delta l$  be as narrow as possible. As can be seen, conventional heads simply do not meet these two vital criteria. As a result, distortion is increased and high frequency response can be severely attenuated. On the other hand, the Crystalloy Super Head satisfies these two important requirements and the result is demonstrably superior performance.

## Playback Head Gap

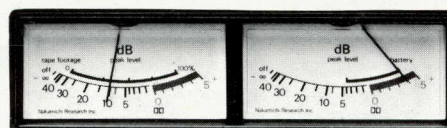


For playback, the head gap should be critically maintained at 1.5 microns or less to assure superior high frequency performance. Unfortunately, with most heads the "effective gap" is extended magnetically (often to 2 microns or more) due to stresses imposed during their manufacture. To avoid this problem and the attendant high frequency losses, Nakamichi has developed advanced micro-precision head assembly techniques that prevent magnetic extension and insure an unvarying gap of 1 micron.

## Peak Level Meters



The extraordinary dynamic range of the Nakamichi 550 permits the use of 45 dB peak reading meters. These large full-range meters are exclusive with Nakamichi and have a very fast attack time (120 ms) and a slow release time to more accurately reflect true recording conditions. They are especially helpful in preventing over-recording during live sessions.



In addition, the right channel meter can be switched to indicate battery condition, while the left channel meter also indicates elapsed tape time during recording and playback.

Still another switch permits illumination of the meters under poor light conditions (the meters are normally unlit) and helps to extend battery life.

## Record Level Calibration

A 400 Hz test tone oscillator (built-in) provides a reference tone for adjusting the record/playback level for different tape formulations.

## Dolby Noise Reduction

Dolby noise reduction circuits are activated in either record or playback by simply pressing the appropriate button. Noise reduction of up to 10 dB, at high frequencies, may be achieved. Since all Dolby recording is standardized, recordings made with other machines can be successfully reproduced on the Nakamichi 550. Individual calibration controls and a built-in test tone help attain an extraordinary signal-to-noise ratio of more than 60 dB.

## Tape Selector Switch

A special tape selector switch permits the use of two different tape formulations, high-density low noise tapes such as Nakamichi EX and EXII, or high-coercivity tapes, such as Nakamichi SX, with switchable bias and equalization settings.

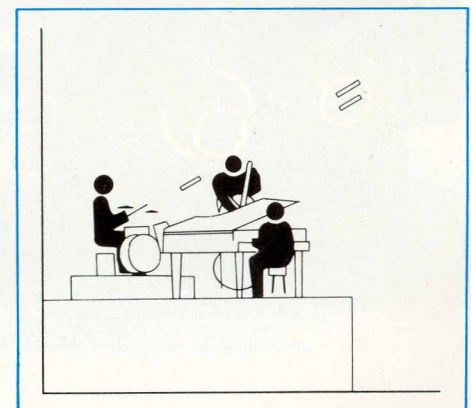
Please refer to the recommendations in the owner's manual.

## Peak Limiter

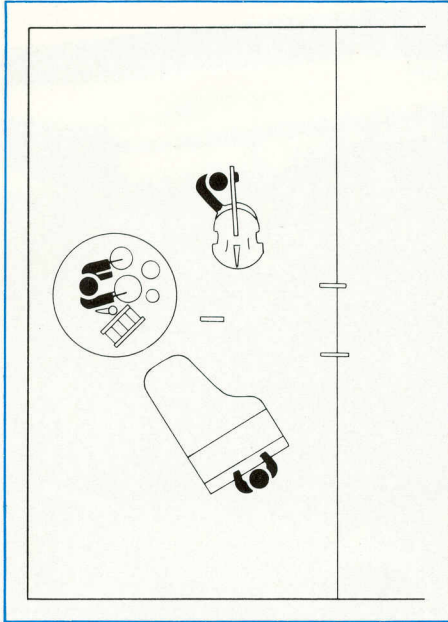
Despite the unusually wide dynamic range of the Nakamichi 550, there are those occasions, especially during live recording, when tape overload may occur. In such instances, you can switch on the built-in peak limiter. It acts, almost instantaneously, to reduce possible distortion. And its action is so subtle that the resulting signal compression is virtually undetectable.

## 3-Point Microphone Mixing

In addition to the standard (L&R) mic inputs, a third blend mic input is provided. Each input has its own level control, thus permitting professional quality mixing. The blend mic is particularly helpful in high lighting solo instruments and voices.







### • Headphone Amplifier

A built-in extra-power headphone amplifier furnishes more than enough power to drive a pair of 8 ohm headphones, enabling the user to monitor the program being recorded. It is completely independent of the rear panel output controls which are used when the 550 is installed in a home music system.

### • Input Level Control

The input level controls affect both the mic and line inputs. When the microphones are plugged in, the line inputs become inoperative. For the best possible signal-to-noise ratio the mic inputs are shorted in the absence of a microphone.

### • Duty Controlled DC Servomotor

A specially developed servo-controlled DC motor assures unconditional speed stability, extremely low wow and flutter and exceptionally low current drain for long battery life.

### • DC-DC Converter

An ingenious DC-DC converter with a convertible efficiency of better than 90% guarantees consistent performance by maintaining a constant output of 12 volts even if the battery voltage varies from 7 to 14 volts.

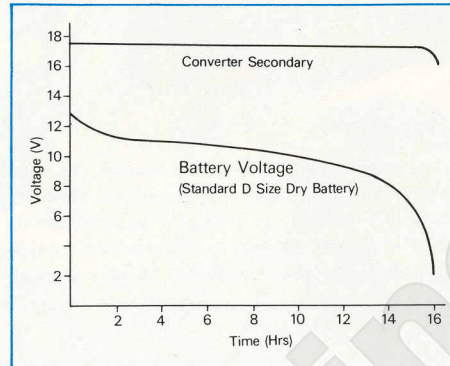
### • Tape Counter

An accurate three digit tape counter is provided.

### • Battery Life

Because of its extremely low current drain, the Nakamichi 550 may be operated for 15 hours continuously on a set of (8) standard D cell batteries. With alkaline batteries useful life is

extended by a factor of three.



### • Automatic Shutoff

An automatic end-of-tape shutoff provides complete mechanical disengagement.

### • Power Supply

In normal use, the 550 is powered by a built-in 12 volt battery power supply. However, it may also be run off a car battery or from a standard AC line with suitable adaptors (provided).



### • Line Input and Output

Though the Nakamichi 550 was primarily designed as an in-the-field recorder of superb quality, it may also be used to advantage as an integral part of a high quality home music system.

To this end, line inputs and outputs are provided. In addition, separate rear panel output controls enable the user to adjust the output of the recorder to match the level of the other components in the system.

### • Programing Timer



The Nakamichi 550 can be programmed to operate for a predetermined period of time by

setting a built-in timing mechanism. At the conclusion of the time period, a front panel light (LED) flashes to alert the operator.

### Specifications

Power Supply	•••• DC 12 V (D Size Dry Battery x 8, Car Battery, AC with AC pack)
Tape Speed	••••• 1-7/8 ips $\pm$ 1.5 %
Wow Flutter	••••• 0.13 % WTD Peak 0.08 % Wrms.
Frequency Response	••• 40-17,000 Hz $\pm$ 3 dB (SX or EXII Tape)
Signal to Noise Ratio	••••• Better than 65 dB (Dolby NR In Wrms CCITT 400 Hz 3% Distortion)
Total Harmonic Distortion	••••• Less than 1.5 % (1 KHz 0 dB)
Erase	••••• Better than 60 dB (1 KHz Saturation Level)
Channel Separation	•• Better than 35 dB (1 KHz 0 dB)
Cross Talk	••••• Better than 60 dB (1 KHz 0 dB)
Bias Frequency	••• 105 KHz
Input	••••• Mic 0.2 mV 600 ohm (-72 dBm) Line... 70 mV 150 K ohm
Output	••••• Line... 580 mV Headphone... 100 mV (1 KHz 0 dB) 300 mW Max.
Battery Life	••••• 15 Hrs (Continuous use)
Size	••••• 12-1/4"(W) x 3-1/2"(H) x 13-3/4"(D) 311 m/m(W) x 89 m/m(H) x 350 m/m(D)
Weight	••••• 11-1/4 lbs (5.1 Kg) (Without Batteries)

- Specifications and appearance design are subject to change for further improvement without notice.
- Dolby NR under license from Dolby Laboratories Inc.
- The word "DOLBY NR" and the Double-D-Symbol are trademarks of Dolby Laboratories Inc.



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Programming Timer

Tape Counter

Cassette Compartment

Pause

Fast Forward

Play

Stop/Eject

Rewind

Record

Blend Mic Level Control

Input Level Controls

Tape Alarm

Headphone Jack

Peak Level Meter, Battery and  
Tape-Footage Indicators



Mic Input

Blend Mic Input

Power Switch

Meter Lamp Switch

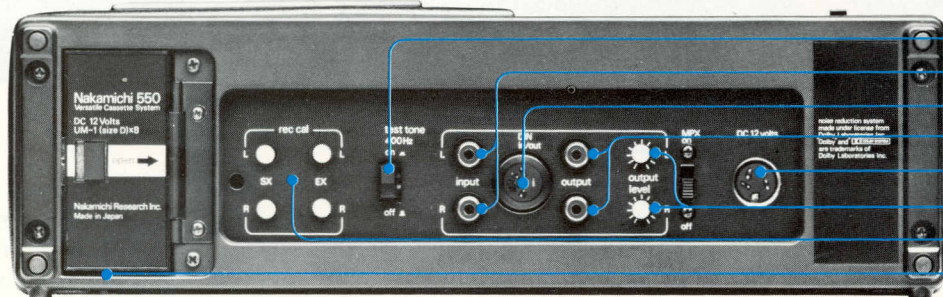
Limiter

Dolby NR Switch

Tape Selector

Meter Selector

Headphone Level



400Hz Test Tone Switch

Input Jacks

DIN IN/OUT Socket

Output Jacks

DC12V Socket

Output Level

Record Level Calibration

Dry Battery Compartment



The new Nakamichi 550 Cassette System.  
Incomparable versatility.  
Matchless performance.





## Nakamichi Cassette Tapes and Demagnetizer

ALL Nakamichi cassette tapes are single coated formulations that feature extra quality control for superior consistency, and jam/skew resistant micro-precision housings. They are available in C-60 and C-90 lengths.



### SX Tape

A high coercivity/high resolution formulation of ionized cobalt on gamma ferric oxide — utilizes 70 microsecond equalization for the best possible signal-to-noise ratio — features low abrasion and very high output.



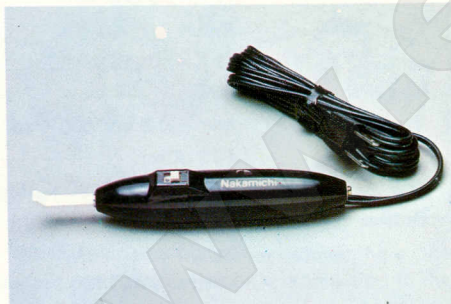
### EX II Tape

A high-density/high-output/low-noise ferricobalt formulation featuring excellent overload characteristics for an unusually wide dynamic range — utilizes EX bias and is intended for use primarily with the standard 120 microsecond equalization.



### EX Tape

A pure ferric high-output/low-noise formulation with superior consistency and wide dynamic range — for use with 120 microsecond equalization.



### Demagnetizer

A specially designed demagnetizer featuring built-in power switch and exceptional ease of use with cassette recorders.

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