



Cassette Decks

DR-1  
DR-2  
DR-3



With technology consistently at the cutting edge of the art, Nakamichi cassette decks continue to deliver performance that sets the standard for the world.

**The pinnacle of Nakamichi technology — a cassette deck at the leading edge of analog tape recording**

To deliver the finest analog recording system for home use, Nakamichi has endowed the DR-1 with the latest-generation technologies and the most advanced operating features. Together they provide the user with the utmost in record/play performance, superb operational "feel" and accurate control. Frequency response is guaranteed to be within  $\pm 3$  dB from 20–21,000 Hz, *even with normal bias tape*. And a user-adjustable playback azimuth fine-tune control ensures optimum performance with any tape, even those recorded on other decks.

**DR-1** Discrete 3-Head Cassette Deck



**Incomparable Nakamichi Discrete 3-Head technology in its most accessible form**

Providing the essential performance and features of the DR-1 at an even more attractive price, the DR-2 is an exceptional value among today's cassette decks. The Discrete 3-Head System, Asymmetrical Dual-Capstan Diffused Resonance Transport, state-of-the-art electronics, and multi-regulated power supply are but a few of the remarkable technological features that make the DR-2 a standout performer.

**DR-2** Discrete 3-Head Cassette Deck



**An economical 2-head model with performance surpassing most competitive 3-head decks**

Nakamichi's sophisticated magnetic head technology, outstanding tape transport mechanism, superb electronics, and precision manufacture put the DR-3 at the forefront of 2-head cassette decks. Frequency response is an incredible 20–20,000 Hz  $\pm 3$  dB *with normal tape* — incredible because this would be considered a remarkable achievement for an expensive 3-head deck. As a highly affordable 2-head deck, however, nothing comes close to the DR-3.

**DR-3** 2-Head Cassette Deck





## The Company That Brought "Concert Hall" Realism To The Cassette Continues To Set The Standard.

Today, it's easy to forget that the inventors of the audio cassette never intended it to be used for high-fidelity music recording. But few have forgotten the company that did what was once thought impossible and forever changed the course of cassette history: Nakamichi.

And if you need a reminder, you only need examine today's Nakamichi cassette decks. Descended from a long, prestigious line of products that have raised the standard of cassette performance at every turn, Nakamichi decks continue to outperform the competition with tape recording technology that remains without peer to this day.

For example, while others continue to experiment with new, "exotic-material" magnetic heads, Nakamichi has continually refined the exclusive Crystalloy head. Possessing near-ideal magnetic properties, Nakamichi Crystalloy heads defy imitation even today, 20 years since their introduction.

Nakamichi transport mechanisms, too, have an illustrious history of leadership. The closed-loop double-capstan transport that shook the world in 1973 has evolved into the Asymmetrical Dual-Capstan Diffused-Resonance Transport mechanism, widely regarded as today's pre-eminent design.

Moreover, because musical accuracy is not only about numbers, part of every Nakamichi product development cycle are extensive "live vs. reproduced" tests, made possible by a specially designed concert hall and listening room at Nakamichi's headquarters R&D facility.

What may be an extravagance for others is a basic necessity for Nakamichi. But that's what it takes to establish the standard of excellence to which all other cassette decks must be compared.

### Discrete 3-Head Technology

The primary advantage of using separate erase, record, and play heads is *performance*. By independently optimizing design parameters, such as shape, material, and gap length, each head can perform its assigned function without compromise. However, the use of three heads, in and of itself, does not guarantee superior performance.

Nakamichi's acclaimed Discrete 3-Head Technology, employed in the DR-1 and DR-2

decks, comprises physically separate Crystalloy record and play heads. Unlike typical "sandwich" or combination heads, where the record and play sections share a common housing, the Nakamichi Discrete 3-Head system allows *independent alignment* of the record and play head gaps. It's the only way to assure extended frequency response, low distortion, and wide dynamic range.

Furthermore, combination heads suffer from noise pickup and crossfeed, which can lead to mistracking of the Dolby circuits and audible pre-echo during monitoring. The discrete Nakamichi heads, however, are individually shielded and are thus immune to such problems. Nakamichi head coils are wound using the highest grade oxygen-free-copper (OFC) wire. And the proprietary precision-laminated Crystalloy cores in the record and play heads deliver nearly ideal magnetic performance. They take full advantage of today's advanced cassette tape formulations as no other magnetic heads can.



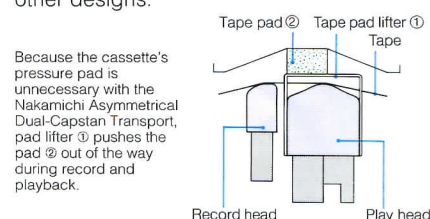
The DR-1 and DR-2 head complement

### Asymmetrical Dual-Capstan Diffused-Resonance Transport

The DR-1 and DR-2 also feature Nakamichi's Asymmetrical Dual-Capstan Diffused-Resonance Transport mechanism, which uses different diameters (and, hence, rotational speeds) for the two capstans and flywheels. This, plus the use of special vibration-absorbing materials in the head-base assembly, attenuates and randomizes resonances, so that their effects are far less audible. The resulting reduction of modulation noise assures a purity and stability of reproduction that cannot be adequately expressed by wow-and-flutter measurements alone.

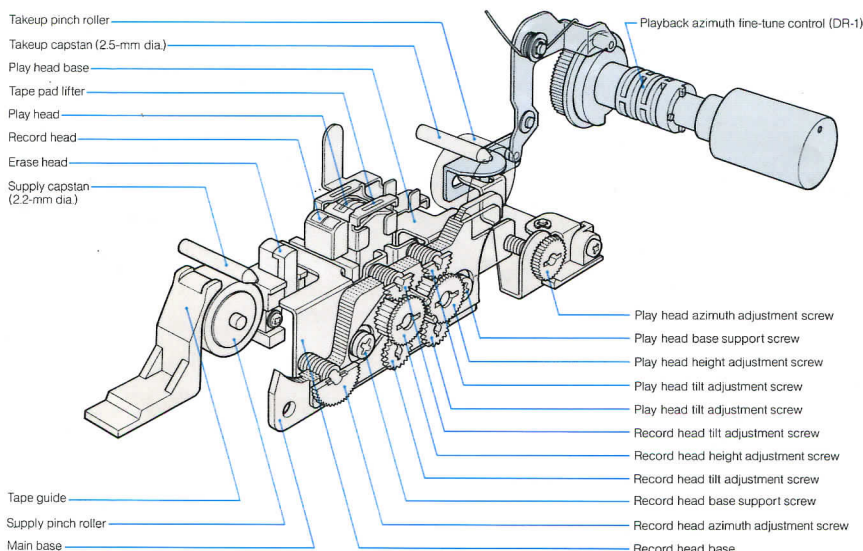
The Asymmetrical Dual-Capstan Transport ensures such a high degree of tape travel precision and tension uniformity that the pressure pad in the cassette is not needed. Accordingly, the play head is fitted with a

unique pressure pad lifter to prevent the pad from contacting the tape. This reduces head wear, prevents tape skewing, and greatly reduces "scrape flutter." The result is a remarkably open and transparent sound quality that simply cannot be matched by other designs.



### Additional Advanced Features

- **Playback Azimuth Fine-Tune Control** lets you adjust the play head alignment to make the gap perfectly perpendicular to the direction of tape travel. This feature ensures optimum high-frequency response during playback, even when playing a tape that was recorded on another deck. And a center detent position on the azimuth control always lets you return the play head to its factory-calibrated position. (DR-1 only)
- **Integrated play head/amplifier assembly** places the playback circuitry right at the head assembly to minimize signal degradation. (DR-1 and DR-2)
- **Mirror-polished, precision Sendust record/play head** with 3-layer core and 1.2-micron gap assures low distortion recording with extended frequency response. (DR-3 only)
- **DC servo capstan motor** responds instantaneously to load fluctuations, further suppressing flutter components.
- **Cam-operated, microprocessor-controlled Silent Mechanism** assures smooth, quiet, foolproof transport operation.
- **Bias fine-tune control** enables you to adjust for minor variations among tape brands and formulations to achieve flat frequency response every time.



- **Multi-regulated power supply** provides separate feeds to the various circuit sections to improve stability and eliminate mutual noise interference.
- **Dual-mono amplifier construction** ensures reduced crosstalk and superior stereo separation.
- **Bi-directional auto-search** feature seeks the "zero" counter position in rewind or fast-forward. The search can be activated from stop, play, or pause, with the deck automatically returning to the pre-search transport mode.
- **Automatic tape slack take-up** mechanism winds any loose tape fully onto the hubs as soon as you insert a cassette. This prevents potential misfeeding, jamming, and damage to your precious tapes.
- **Dolby B and C type Noise Reduction** circuitry is incorporated in all three decks.
- **Nakamichi System Remote** terminal, when connected to a Nakamichi receiver, enables remote deck operation using the receiver's handheld control.



## Feature Comparison

	DR-1	DR-2	DR-3		DR-1	DR-2	DR-3
Playback azimuth fine-tune control	•			Dolby B/C Noise Reduction	•	•	•
Discrete 3-Head System	•	•		Defeatable MPX filter	•	•	•
Asymmetrical Dual-Capstan Diffused-Resonance Transport	•	•		Auto repeat	•	•	•
DC servo capstan motor	•	•	•	Timer record/play	•	•	•
Microprocessor-controlled Silent Mechanism	•	•	•	Record mute	•	•	•
Pressure pad lifter	•	•		Output level control	•		
Automatic tape slack take-up	•	•	•	Tape selector with automatic EQ selection	•	•	•
Integrated play head/amplifier assembly	•	•		Large FL display	•	•	•
Multi-regulated power supply	•	•	•	Nakamichi System Remote compatible	•	•	•
Bi-directional auto-search	•	•	•	Gold-plated input/output jacks	•		
Program check	•	•		4-digit tape counter	•	•	•
Bias fine-tune control	•	•	•				

## Specifications

	DR-1	DR-2	DR-3
Track Configuration	4 tracks, 2-channel stereo	4 tracks, 2-channel stereo	4 tracks, 2-channel stereo
Heads	erase head x 1 record head x 1 play head x 1	erase head x 1 record head x 1 play head x 1	erase head x 1 record/play head x 1
Motors	DC servo (capstan) x 1 DC (reel) x 1 DC (mechanism cam) x 1	DC servo (capstan) x 1 DC (reel) x 1 DC (mechanism cam) x 1	DC servo (capstan) x 1 DC (reel) x 1 DC (mechanism cam) x 1
Tape Speed	4.8 cm/sec.; 1-7/8 ips $\pm 0.5\%$	4.8 cm/sec.; 1-7/8 ips $\pm 0.5\%$	4.8 cm/sec.; 1-7/8 ips $\pm 0.5\%$
Wow-and-Flutter	Less than $\pm 0.06\%$ wtd peak Less than 0.035% wtd RMS	Less than $\pm 0.06\%$ wtd peak Less than 0.035% wtd RMS	Less than $\pm 0.11\%$ wtd peak Less than 0.06% wtd RMS
Fast Wind Time (w/60 min. cassette)	Approx. 95 seconds	Approx. 95 seconds	Approx. 80 seconds
Frequency Response (-20 dB, Type I, II, or IV tape)	20-21,000 Hz $\pm 3$ dB	20-21,000 Hz $\pm 3$ dB	20-20,000 Hz $\pm 3$ dB
Signal-to-Noise Ratio (400 Hz, 3% THD, IHF A-wtd RMS with Type IV tape, 70 $\mu$ s EQ) with Dolby C NR with Dolby B NR	Better than 72 dB Better than 66 dB	Better than 72 dB Better than 66 dB	Better than 70 dB Better than 64 dB
Total Harmonic Distortion (400 Hz, 0 dB) with Type IV tape with Type I, II tapes	Less than 0.8% Less than 1.0%	Less than 0.8% Less than 1.0%	Less than 1.0% Less than 1.0%
Channel Separation (1 kHz, 0 dB)	Better than 37 dB	Better than 37 dB	Better than 36 dB
Crosstalk (1 kHz, 0 dB)	Better than 60 dB	Better than 60 dB	Better than 60 dB
Erasure (100 Hz, +10 dB)	Better than 60 dB	Better than 60 dB	Better than 60 dB
Bias Frequency	105 kHz	105 kHz	105 kHz
Input Sensitivity/Impedance	50 mV/40 k ohms	50 mV/40 k ohms	50 mV/40 k ohms
Output Level/Impedance (400 Hz, 0 dB) Line Headphone	0.5 V/2.2 k ohms <sup>1</sup> 5.0 mW/8 ohms	0.5 V/2.2 k ohms 5.0 mW/8 ohms	0.5 V/2.2 k ohms 2.2 mW/8 ohms
Power Requirement	120, 230, 240 or 110-127/220-240 V AC, 50/60 Hz (according to country of sale)	120, 230, 240 or 110-127/220-240 V AC, 50/60 Hz (according to country of sale)	120, 230, 240 or 110-127/220-240 V AC, 50/60 Hz (according to country of sale)
Power Consumption	26 W max.	26 W max.	20 W max.
Dimensions (WxHxD)	430 x 100 x 320 mm 16-15/16 x 3-15/16 x 12-5/8 inches	430 x 100 x 320 mm 16-15/16 x 3-15/16 x 12-5/8 inches	430 x 100 x 320 mm 16-15/16 x 3-15/16 x 12-5/8 inches
Approximate Weight	5.4 kg; 11 lb. 14 oz.	5.4 kg; 11 lb. 14 oz.	5.4 kg; 11 lb. 14 oz.

<sup>1</sup> output level control at maximum


0 dB = 200 nWb/m

Dimensions do not include protruding parts. Height is the panel height without feet.

Specifications and features are subject to change without notice.

All non-metric weights and measures are approximate.

Dolby noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

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