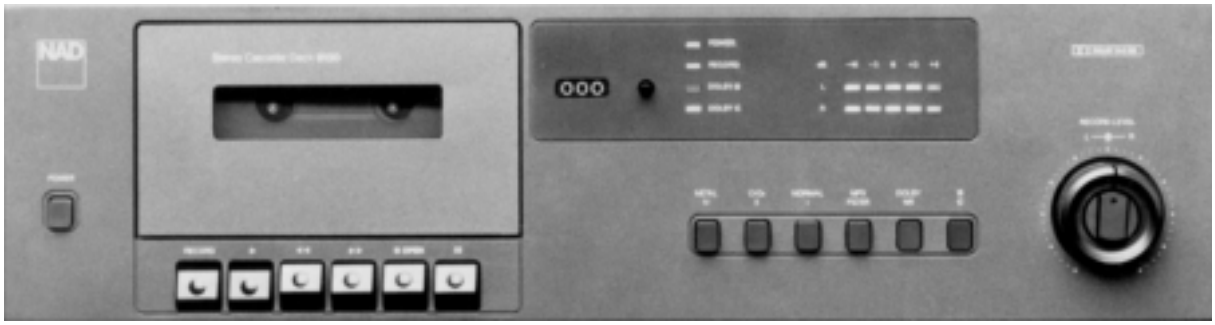
6130 Cassette Deck

Date of manufacture : ? - Jan 86

Please note that this document contains the text from the original product brochure, and some technical statements may now be out of date



The NAD 6130 is the newest in a popular series of budget-priced cassette decks that embody the well-known NAD philosophy of equipment design. The goal of this approach is to deliver maximum achievable performance at any price level.

When manufacturing costs must be reduced the savings are made on the outside, by omitting seldom-used features and by eliminating cosmetic frills (elaborately engraved front panels and machine-tooled metal knobs, for example). Most of the manufacturing budget is invested inside-on low-noise circuitry, a high-precision low-flutter tape transport, and a hard permalloy record/play head that produces low-distortion recordings over a wide dynamic range. This adds up to a level of performance, in both recording and playback, that normally is found only in more costly tape decks.

While the 6130 may be a budget-priced machine, it was designed to work at its best with premium-quality tapes, producing first-class recordings. In addition, its wide-range response, low flutter, and very quiet electronics provide a superb playback environment for the many high-quality prerecorded music cassettes that are available today.

The NAD 6130 includes these important features:

DOLBY C-TYPE NOISE REDUCTION

The Dolby C-type NR system was specifically tailored to extract optimum performance from the cassette recording medium. Its development included very thorough psycho-acoustic testing to ensure that the substantial benefits of its noise-reduction cannot be compromised by musically unnatural side effects such as “breathing” (in which the background hiss rises and falls with each musical note). Dolby C NR operates on the same fundamental principles as the universally accepted Dolby B NR system, but its circuitry is approximately three times more complex, and it produces two dramatic improvements in recording performance.

Much lower noise

Dolby C NR provides a full 20 dB of noise reduction over a broad range of frequencies, virtually eliminating background noise (hiss) as a potential annoyance Increased high-frequency headroom. The Dolby C NR circuit contains a special “anti-saturation” network that eliminates dulling of the high treble frequencies at high recording levels-a problem that has traditionally limited the fidelity of cassette recordings, Together these two improvements yield a major increase in useful dynamic range, just what you need to cope with the wide dynamics of today’s digital recordings. Further details on the performance of the Dolby C NR system are on the reverse side of this page.

QUIET ELECTRONICS

The benefits of Dolby C NR could be wasted if the recorder’s circuits generated audible hiss and hum of their own. But NAD’s no-compromise electronics are quieter than any tape (including new tape formulations presently being developed), guaranteeing that the recorder will never limit the dynamic range of your recordings.

HIGH HEADROOM FOR PEAKS

The 6130 is equipped with a hard permalloy record/play head. Permalloy has long been recognised as an ideal material for recording heads, because it has lower distortion at high signal levels than most other head materials. With this head you can take advantage of the greater dynamic range of today's high-performance tapes to capture dynamic musical peaks with maximum clarity and power.

The ability of the permalloy head to handle high signal levels without saturating is especially important with high-bias (chrome) and metal-particle tape formulations. These tapes excel in high-frequency dynamic range, allowing you to capture the full brilliance and power of cymbals, bells, brass, and synthesisers in clear, airy sound.

DOLBY B NR FOR COMPATIBILITY

The NAD 6130 contains a correctly calibrated Dolby B-type noise-reduction circuit for optimum compatibility with prerecorded music cassettes throughout the world. Dolby B-type NR can also be used when recording tapes for friends or for playback in a portable or auto tape player.

RELIABLE LOW-FLUTTER TAPE TRANSPORT

In a budget-priced tape deck, one of the greatest challenges is to obtain-consistently low flutter from beginning to end of every tape, Even a modest amount of flutter, too slight to be separately audible as a wobbling of the musical pitch, can cause a loss of clarity-making a recorded tape seem unsteady and fatiguing to listen to. The tape transport in the NAD 6130 is an economical design whose apparent simplicity of construction belies its excellent reliability. It employs a quiet, smooth-running DC motor whose torque, as in a fine turntable, is transferred to the capstan spindle via a rubber belt and a balanced flywheel to smooth out any irregularities, reducing the flutter to well below the threshold of audibility.

INSTANT-RELEASE PAUSE CONTROL

Ideally, a Pause control should provide a precise interruption in recording or playback-but many Pause controls are anything but precise, with an audible delay in their response. In the 6130 the Pause control provides a virtually instantaneous resumption of recording or playback, providing clean edits and allowing you to make recordings that start exactly when you want them to.

PEAK READING LED METERS

Fast, accurate metering is not a frill in a tape recorder; it is an essential aid to making good recordings. When taping dynamic music it is important not to allow the transient peaks in the music to saturate the tape; but if the recording level is set too conservatively, the signal to noise ratio may be poor. Therefore the NAD 6130 has a simple but fast-acting LED display that registers even brief peaks in the sound, with a highly visible change from green to amber to red when the signal level approaches the saturation level of the tape. Even inexperienced recordists will find it easy to make first-rate recordings on the 6130, simply by adjusting the recording level control so that the red LEDs flash on and off during the peaks.

THE BENEFITS OF DOLBY C NR: A CLOSER LOOK

The accompanying graph illustrates the dramatic quieting of tape hiss that the Dolby C NR system provides. The top curve is a measurement of the background noise of a blank cassette tape, "A-weighted" to reflect the way the ear responds to low-level sounds. Without the Dolby NR system operating, the noise consists mainly of high-frequency hiss and is rather obtrusive.

The middle curve shows that the standard Dolby B-type noise reduction circuit reduces the tape hiss by about 10 decibels at the mid-treble frequencies where the ear is most sensitive. The bottom curve demonstrates the dramatic quieting provided by Dolby C NR: a full 20 dB of noise reduction over a broad range of frequencies. When you listen to the 6130 your ears will confirm what the graph shows: tape hiss is no longer an important problem in cassette recording.

The second advantage of Dolby C NR is its improved resistance to tape saturation at high frequencies (a major cause of dull sound in cassette recordings). Dolby C NR includes complementary circuits that reduce the strength of loud high-frequency signals during recording and then restore them precisely to their original strength in playback. Even if you over-record and some high-frequency saturation does occur, the Dolby C NR circuits are "desensitised" above 10 kHz so that mild high-frequency losses in the recording will not cause mistracking in playback.
The result, in simple language, is that the NAD 6130 with Dolby C NR accurately preserves the tonal balance of musical sounds over a very wide entire dynamic range. You can record music at high levels without its brilliance being dulled by tape saturation, and you can record music at low levels without its inner detail being veiled by an audible layer of tape hiss. The 6130 captures the tonal richness of every musical sound, naturally and accurately.

Speed accuracy		±1.5%
Wow and flutter		<0.1% JIS weighted, RMS
		<0.2% DIN weighted, peak
Frequency response		40Hz - 15kHz ±3dB
MPX filter response		Flat within 1dB to 15kHz
Harmonic distortion		<0.3% at -10dB
THD at 0dB	Normal tape	<1%
	CrO^2, Metal	<2%
Signal/Noise ratio	Dolby off	53dB
	Dolby B	63dB
	Dolby C	73dB
Channel separation		35dB broadband
Erasure		>65dB at 1kHz
Input sensitivity		60mV
Input impedance		8.2kΩ
Maximum input level		10V
Output level at 0dB		380mV
Output impedance		4.7kΩ
Remote		No
NAD Link		No
PHYSICAL SPECIFICATIONS		
Dimensions (W x H x D)		420 x 127 x 229mm
Net weight		3.4kg
Shipping weight		4.2kg

Dimensions are of unit's cabinet without attached feet; add up to 18mm for total height.

Dimension depth excludes terminals, sockets, controls and buttons.