



# 7020i Stereo Receiver

Date of manufacture : Feb 90 - ?

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note that this document contains the text from the original product brochure, and some technical statements may now be out of date



- Conservatively rated at 20 W/channel continuous power, with +3 dB of IHF Dynamic Headroom. Dynamic power exceeds 40 W/channel at 8 or 4 ohms, 50 W/ channel at 2 ohms.
- High-current output stage delivers peak currents up to 15 amperes, for precise control of voice-coil motion with speaker impedances as low as 2 ohms.
- Gold-plated phono input jacks for a long life of corrosion-free contact in this sensitive low level signal path.
- Heavy duty speaker binding-post connections provide a secure, low resistance connection for all speaker wires and banana plugs.
- Flexibility: the 7020i's pre and power amplifier are connected by external jumpers which are removable to allow for greater flexibility to upgrade your system.
- Sensitive precise digital tuning with three stages of I.F. filtering for outstanding freedom from noise and interference.

The modest cost and simple controls of the NAD 7020i Stereo Receiver make it an ideal choice for the person who wants fine musical reproduction without becoming involved in the technicalities of hi-fi.

NAD's approach to audio design can be characterised in one phrase: "high-value engineering" . When you choose an NAD receiver, you are investing in quality behind the front panel . innovative circuit design, selected parts, high-current transistors, exacting quality control, and solid construction for consistent performance and long-term reliability.

The rated "continuous" power of a receiver tells you how well it plays sine-wave test tones; but real musical waveforms are much more complex and dynamic. The NAD 7020i is conservatively rated at 20 watts per channel for test tones, but its high-voltage design produces extra power for rapidly changing waveforms -over 40 watts per channel of dynamic power for the exciting peaks and climaxes in music (especially in digital Compact Discs).

Many FM receivers look good on paper; but in side-by- side comparisons, NAD receivers often pull in weak or difficult stations with audibly better freedom from noise and interference, thanks to sensitive dual-gate MOSFET amplification and sophisticated multi-stage I.F. filtering.

## Circuit Features High-Current Output Stage

NAD was the first manufacturer to emphasise the importance of output current capacity. The 7020i can deliver peak currents as high as 15 amperes. The "20-watt" 7020i employs the same high-speed output transistors that other manufacturers use in their "50-watt" receivers.

## Impedance Selector

NAD's unique Speaker Impedance selector and high-current output stage deliver maximum power to loudspeakers of any impedance - high or low, simple or complex. The 7020i will even drive a 2 ohm impedance safely, without current-limiting or distortion.

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### Soft Clipping™

When the 7020i is overdriven beyond its power capacity, the exclusive NAD Soft Clipping™ circuit gently limits the waveform voltage so that the output transistors are never driven into saturation, i.e. into "hard clipping". Thus the receiver can safely be overdriven substantially beyond its rated power on peaks, yet still continue to sound smooth and musical.

### Digital-ready Dynamic Range

The 7020i's over-load- proof inputs for video, tape and digital Compact Disc can accommodate a dynamic range greater than 100 dB. Every circuit in the receiver, including its low-impedance tone-control stage, is designed to minimise background noise and preserve the clarity of your recordings.

### Quiet Phono Preamplifier

Unlike many receivers that employ low-cost integrated-circuit (IC) chips for the phono stage, the NAD 7020i employs a refined discrete-transistor phono preamplifier circuit whose signal-to-noise ratio is so good (75 dB with the phono cartridge connected) that you won't hear any preamp hiss, even when playing the quietest recordings.

### Musically Useful Tone Controls

Correctly designed tone controls can be a genuinely helpful aid to enjoyable music listening. In the NAD 7020i, the bass and treble controls do what their names imply: they allow you to vary the strength of the bass and the treble. But at moderate boost/cut settings the important midrange from 300 to 1500 Hz remains essentially flat.

### Sensitive Digital Tuning

The 7020i employs precise frequency-synthesis digital tuning; each station is tuned with crystal-controlled accuracy. A dual-gate MOSFET FM circuit pulls in weak stations well but resists overloading on strong signals. Multi-stage I.F. filtering provides an optimum combination of sharp selectivity (to separate closely-spaced stations) and minimum distortion of the stereo signal.

### Quiet AM tuning

The AM section is based on an IC that was especially developed for use in digital tuners. It is surprisingly sensitive, unusually resistant to noise, and provides a more extended high-frequency range than in most other AM tuning circuits.

## PRE-AMP SECTION

### Phono input

Input impedance <i>(R and C)</i>	47k $\Omega$ / 100pF
Input sensitivity, 1kHz	2.4mV ref. 20W
Signal/Noise ratio <i>(A-weighted with cartridge connected)</i>	75dB ref. 5mV
THD <i>(20Hz - 20kHz)</i>	<0.04%
RIAA response accuracy <i>(20Hz - 20kHz)</i>	$\pm$ 0.5dB

### Line level inputs

Input impedance <i>(R and C)</i>	40k $\Omega$ / 100pF
Input sensitivity <i>(ref. 20W)</i>	150mV
Maximum input signal	>10V
Signal/Noise ratio <i>(A-weighted ref 1W)</i>	84dB
Frequency response <i>(20Hz - 20kHz)</i>	+0.5dB, -1.0dB
Infrasonic filter	-3db at 15Hz, 24dB/octave

### Line level outputs

Output impedance	Tape	Source Z + 1k $\Omega$
	Phones	220 $\Omega$
Maximum output level	Tape	10V
	Phones	>10V into 600 $\Omega$ >500mV into 8 $\Omega$

### Tone controls

Treble	$\pm$ 7dB at 10kHz
Bass	$\pm$ 10dB at 50Hz

## POWER AMP SECTION

Continuous output power into 8 $\Omega$ *	20W (13dBW)	
Rated distortion <i>(THD 20Hz - 20kHz)</i>	0.03%	
Clipping power <i>(maximum continuous power per channel)</i>	25W	
IHF Dynamic headroom at 8 $\Omega$	+2.5dB	
IHF dynamic power <i>(maximum short term power per channel)</i>	8 $\Omega$	35W (15.5dBW)
	4 $\Omega$	35W (15.5dBW)
	2 $\Omega$	50W (17dBW)
Damping factor <i>(ref. 8<math>\Omega</math>, 50Hz)</i>	>30	
Input sensitivity <i>(for rated power into 8<math>\Omega</math>)</i>	900mV	

## FM TUNER SECTION

Input sensitivity	Mono -30dB THD+N	11.3dBf (2.0 $\mu$ V/300 $\Omega$ )
	Mono 30dB S/N	15dBf (3.0 $\mu$ V/300 $\Omega$ )
	Stereo 50dB S/N	37dBf (40 $\mu$ V/300 $\Omega$ )
	Stereo 60dB S/N	47dBf (120 $\mu$ V/300 $\Omega$ )
	Capture ratio <i>(45 - 65dBf)</i>	<1.5dB
AM rejection <i>(45 - 65dBf)</i>	>60dB	
Selectivity, alternate channel	58dB	
Image rejection	70dB	
I F rejection	90dB	
Harmonic distortion	Mono	0.1%
	Stereo	0.1%
Signal/Noise ratio	Mono	>80dB
	Stereo	>74dB
Frequency response $\pm$ 0.5dB	30Hz - 15kHz	
Channel separation at 1kHz	45dB	

## AM TUNER SECTION

Usable sensitivity	5 $\mu$ V
Selectivity	30dB
Image rejection	45dB
I F rejection	35dB
Signal/Noise ratio	45dB
Harmonic distortion	0.5%

Remote	No
NAD Link	No

## PHYSICAL SPECIFICATIONS

Dimensions (W x H x D)	420 x 91x 273mm
Net weight	5.5kg
Shipping weight	6.8kg
Power consumption <i>(120 - 240V, 50/60Hz)</i>	150W

\* Minimum power per channel, 20Hz - 20kHz, both channels driven with no more than rated distortion.

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

Dimension depth excludes terminals, sockets, controls and buttons.