C 720BEE Stereo Receiver

- 50W x 2 Continuous Power into 8 ohms
- 110W, 160W, 220W, IHF Dynamic power into 8, 4 and 2 ohms, respectively
- PowerDrive™
- AM/FM Tuner with 30 station presets
- RDS data service for FM
- Multisource Zone 2 with independent line level output
- Speaker A and B switching
- Full System Remote control
- Headphones socket
- Relay Input Switching
- Toroidal Power transformer
- 7 Line inputs
- All discrete circuitry utilizing Class A gain modules
- Short signal path from input to output
- All sockets Gold plated
- Tone controls defeat switch
- Main-amp input & pre-amp output
- Soft Clipping™
- IR In & Out
- 12 volt trigger output

NAD has always had a formidable reputation when it comes to high performance receivers, by combining our most popular amplifiers with a high performance AM/FM tuner to make receivers with a genetic advantage. The NAD 7020, and more recently the NAD C740 have received world-wide accolades for their outstanding musical performance and superb value. As an encore, NAD is proud to present an updated version called the C720BEE. This combines our award winning C320BEE amplifier with an RDS AM/FM tuner, and includes a Multi-source Zone 2 facility that allows you to listen to your music independently in another room of your home by simply adding an amplifier and another pair of speakers.

The Story Behind BEE

Many of NAD's most innovative circuit designs have come from the creative mind of Bjorn Erik Edvardsen, Director of Advanced Developments. Soft Clipping, Power Envelope, and PowerDrive are just a few examples of Erik's superb engineering skill. The BEE moniker for NAD's latest receiver recognizes Erik's contribution to the marque, now in its 32nd year.

Features:

The C720BEE is fully remote controlled and comes supplied with the NAD SR5 system remote control. The remote control will also operate other NAD products such as CD players. We also include a small Zone 2 remote that allows input switching from a remote zone when used with an IR extender eye. A simple second zone can be configured by using the switchable Speakers B option. Flexibility is another NAD strong point. The C720BEE has 7 line inputs and the pre-amplifier section can be separated from the power amplifier for easy upgrades or adding ancillary equipment. Thus the C720BEE can be expanded to meet future system needs.

For remote on/off switching of ancillary components in a system, such as power amplifiers or active speakers, the C720BEE is equipped with a 12V-trigger system. When switching the amplifier on, the 12V- trigger output is also activated, which when connected to a device with a 12V-trigger input will switch on the remote device. Besides the 12V-trigger, the C720BEE also has an AC switched outlet (North American version only) so you can easily switch your entire system on or off with the remote control or from the front panel.

It is fashionable to omit tone controls nowadays: however, provided that the tone controls are properly designed, they can be really useful tools in making improvements to the overall sound. The C720BEE tone controls only work at the frequency extremes leaving the critical mid-band essentially unaltered. The tone control circuits can be completely bypassed by using the tone defeat switch.

The C720BEE also incorporates NAD's acclaimed switchable "Soft Clipping" circuit, which significantly reduces the risk of damage to loudspeakers due to prolonged high power operation.

Design: PowerDrive :
NAD takes a stance to the overblown power ratings quoted by many competitors, which don't give a realistic indication of an amplifier's true capabilities. NAD's Full Disclosure Power ratings give the guaranteed minimum continuous power output under the "worst case" loading of 4 Ohms and 20Hz to 20kHz with both channels driven simultaneously, as well as the more meaningful in actual use dynamic power ratings.

The C720BEE benefits from NAD's proprietary PowerDrive topology, this further refinement of Power Envelope and ISC, is now well established and used throughout the NAD product range. PowerDrive endows the C720BEE with tremendous dynamic power and low impedance drive capability, seemingly contradictory traits to be found in a single amplifier. This is accomplished by using a multistage power supply with a very sophisticated analog computer determining whether to switch in a high voltage or a high current rail depending on the specific operating condition. This optimization is fully automatic and utterly transparent in operation; the result is that the C720BEE sounds far larger and more powerful than its continuous power rating would suggest.

PowerDrive is a practical approach to enable an amplifier to easily deal with musical dynamics and difficult speaker loads. Most impressive are the C720BEE's dynamic capabilities; up to 220 Watts into 2 ohms and up to 50 amps peak current capability!

Performance:
The C720BEE features many circuit refinements trickled down from NAD's award winning amplifiers including active current sources and common base current followers in the power amp section. This dramatically reduces dynamic intermodulation distortion between music signal components in different frequency ranges, and between the music signals and the power supply ripple and distortion components. In measurement terms, both static and dynamic IM distortion are reduced by between 10dB to 20dB. (to between -90dB and - 100dB.)

In audible terms this improves definition, purity and resolution, hence imaging.

Compared to its predecessor the C740, we have improved the accuracy of the tone controls, increasing their boost/cut range by 1.5dB and have specified a better quality volume control. While some of these are small improvements in and of themselves, there is an additive effect that results in a more refined and authoritative sound, building on the strengths of the already very good design of the C740 and making it the equal of the C320BEE. The sensible Tone Control characteristics, sonically transparent relay input switching, and Pure Class A modular preamp stages and power amp driver stages, are directly carried over from the C320BEE. So are the patented power amp output stages, unique low resistance binding post design, copper bus bars for high-current paths, and low-noise discrete regulators.

Pre-Amp Section	
Line level inputs	
Input impedance (R+C)	200kΩ / 320pF
Input sensitivity, rated power	220mV
Frequency response (-3dB - 70kHz)*	±0.3dB
Line level outputs	
Output impedance	220Ω
Record Out/Zone 2	Source Z + 1kΩ
Maximum output level	Zone 2 out >10V
Pre-Out	>12V
Tone Controls	
Treble	±5dB at 10kHz
Base	±5dB at 100Hz
Remote Control	SR-5 / ZR-3 2nd Zone
Power Amp Section	
Continuous output power †	50W (17dBW)
Rated distortion (THD 20Hz-20kHz)	0.03%
Clipping power ‡	68W (18dBW)
IHF dynamic headroom at 8Ω	3.4dB
IHF dynamic power at 8Ω	100W (20dBW)
IHF dynamic power at 4Ω	145W (21.6dBW)
IHF dynamic power at 2Ω	180W (22.5dBW)
Damping factor (ref. 8Ω, 50Hz)	>60
Line level inputs	
Input impedance	20kΩ/ 470pF
Input sensitivity (for rated power into 8Ω)	630mV
Frequency response; 20Hz-20kHz	+/-0.3dB
Signal/noise ratio; ref 1W (A-weighted)	100dB
Signal/noise ratio; ref rated power	117dB
Tuner Section	
Usable input sensitivity; FM mono	16.1dBf
50dB Quieting sensitivity; FM stereo	36.1dBf
Harmonic distortion; FM mono	0.25%
Harmonic distortion; FM stereo	0.5%
Signal/noise; mono	60dB
Signal/noise; stereo	55dB
Channel separation at 1kHz	40dB
Frequency response; ± 1.5dB	30Hz - 15Hz
Physical Specifications	
Dimensions (W x H x D)	17 1/8 x 5 3/16 x 13 3/4" (435 x 132 x 350mm)
Net Weight	14.33 lbs (6.5kg)
Shipping Weight	16.98 lbs (7.7kg)